



TEST REPORT



Report No. : KES-EM252719

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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 : IP Controller
- Model name : NHP-P400
- Variant model : -
- Manufacturer etc. : HANWHA VISION VIETNAM COMPANY LIMITED
- Manufacturer address : Lot O-2, Que Vo Industrial Zone Extended Area, Nam Son Ward, Bac Ninh Province, Vietnam
- Manufacturer etc. : D-TECH CO.,LTD.
- Manufacturer address : 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea (Suwon Industrial Complex)

3. Date of test : 2025. 08. 08. ~ 2025. 08. 27.

4. Location of Test : Permanent Testing Lab
○ Address : 473-21, Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Republic of Korea

5. Test method used : EN 55032:2015/A1:2020, EN 50130-4:2011/A1:2014,
EN IEC 61000-3-2:2019, EN 61000-3-3:2013/A2:2021

6. Test result : PASS

This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager by
	Name : JunKi Kim	Name : SeongMin Choi

2025.08.28

KES Co., Ltd.

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
2025.08.28	KES-EM252719	Issued

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

- ☒ No decision rule is specified by the standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").
- ☐ Other (to be specified, for example when required by the standard or client)



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1 Laboratory Information

1.1 Test Location

Category	Details
Address	473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Republic of Korea
Telephone Number	070-4910-6200
Facsimile Number	031-341-3838

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 Class	Test Voltage
Class A	AC 230 V, 50 Hz

2.2 Summary of Test Results

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

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



2.3 Remarks when standards applied

- The USB Type-C port on the EUT is an administrator port and was therefore excluded from testing.

2.4 Variant Model Differences

N/A

2.5 Device Modifications

N/A





3 General Product Description

Model Name : NHP-P400 (IP Controller)	
Hardware	
Readers	4 Readers Port (capable of supporting 8 OSDP Readers or 4 Wiegand Readers)
Reader Port Specs	OSDP Protocol (v2.2), Legacy Wiegand Support 350mA @ 12VDC per port
General Purpose Inputs	18ea (4ea Door Position, 4ea REX, 2ea Aux In + 8 additional input if OSDP is used) 0.025W (5mA sink, 5V nominal) 0 to +5VDC Ref 10 supervised input ports (Door Position Switch 4ea, REX 4ea, Aux Input 2ea)
General Purpose Outputs	4ea (Door Locks) Dry/12VDC/24VDC Field selectable power (per door) 30VDC @ Max 2A DRY, 12VDC @ Max 500mA WET, 24VDC @ Max 250mA WET * Door 3 and Door 4 only support Dry Contact when PoE++ power is used.
Dedicated Inputs	Housing tamper (built-in; removal of housing cover; removal from wall) 1 FAI for Power Drop
Auxiliary Outputs	1ea Relay Out, Dry, rated to handle 2A (at up to 30V)
REX Power Port (DC)	12VDC 50mA per Port (for PIR Power)
Diagnostic Lights	* Totally 23 Lights - Host, Status, FAI, Network - (Output, Reader, REX, DPS) X 4 - Aux In1, Aux In2, Aux Out * 2 Color Lights (G, R) - Host, Reader, Output, Aux Out
Access	
Doors	4 Doors
Credentials	Server/Cloud Based: 250,000 EntryGuard: 400
Cardholders	Server/Cloud Based: 250,000 EntryGuard: 200
Event History	250,000 (offline cache event)
Operational	
Operation Mode	Server/Cloud Controlled, Online Mode, Offline Mode, Standalone Mode
Network	
Ethernet	RJ-45(10/100BASE-T)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, NTP, HTTP, HTTPS, SSL/TLS, SMTP, ICMP, IGMP, SNMP V3(MIB-2), ARP, DNS, DNS, UPnP, Bonjour, LLDP
Network Security	HTTPS/SSL login authentication, Digest login authentication, IP address filtering, User access log, 802.1X authentication(EAP-TLS, EAP-LEAP), SNMP v3, TLS 1.2/1.3 Device certificate(Hanwha Techwin Root CA)
Data Security	Database partition encrypt, Secure Boot, Firmware verification, TPM with RIPS 140-3 Level 3
System Integration	
Supported Accessories	Surface Mount Backbox, DIN Rail Mount
Application Programming Interface	ONVIF Profile A/C, SUNAPI (HTTP API), Wisenet OpenPlatform
Environmental & Electrical	
Operating Temperature / Humidity	-20°C~+60°C / 20~85% RH (non-condensing)
Storage Temperature / Humidity	-50°C~+60°C / Less than 95% RH
Input Voltage	PoE++, 12VDC / 24VDC
Power Consumption	PoE++ : 55W @ Max 0.93A, 12VDC @ Max 5.08A / 24VDC IN @ Max 2.58A
Mechanical	
Color / Material	White / Aluminum
Product dimensions / weight	240 x 194 x 65(mm), 2.2Kg
Conduit hole	None (cable entry through base of panel)
Diagnostic lights	Host connection, Internet connection, Board health, Input active, Output active
General	
Webpage Language	English, Korean
Included Accessories	Installation guide(Printed Quick Guide), terminal blocks, Wiring Guide (Printed), Wire for FAI Connection
Memory	8GB eMMC
Warranty	5 years
Certifications	PCC, IC, CE, UKCA, UL 62368-1, KC, IK10, IP52 * In progress : UL 294, UL2043, California Prop 65, SIA * IK10 : Excluding front Window * IP52 rating is based on the controller being properly installed and affixed to the wall.



4 EUT Setup and Operation Mode

4.1 EUT Configuration

Product Name	Model Number	Serial Number	Manufacturer	Remarks
IP Controller	NHP-P400	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
AC/DC Adaptor 1	KPL-048F-VI	-	Channel Well Technology (guangzhou) Co.,Ltd.	-
AC/DC Adapter 2	KPL-060M-VI	-	Channel Well Technology (guangzhou) Co.,Ltd.	-
PoE Injector	POE 29U-1AT	-	PHIHONG	-
Laptop	NT500R5W	-	Samsung Electronics	-
Laptop Adapter	A13-040N2A	-	Chicony Power Technology Co., Ltd.	-
Switch 1	-	-	-	-
Switch 2	-	-	-	-
Card	-	-	-	-
LED Alarm	PRO-SL	-	SENSOR PRO	-
Lock	-	-	Super Lock Co., Ltd.	4 EA
Button	-	-	-	4 EA
Card Reader	20K	-	ANATEL	4 EA

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	I/O Port	Length(m)	Shield
IP Controller (EUT)	DC Input (2 Pin)	AC /DC Adapter 1	Line-Out (DC Jack)	1.5	U
	RJ-45 (DATA)	Laptop	RJ-45	3.1	U
	FAI	Switch 1	2 Pin	3.2	U
	AUX IN	Switch 2	2 Pin	3.2	U
	AUX OUT	LED Alarm	3 Pin	3.5	U
	DPS+OUT (4 Pin) 1 EA	Lock 1	4 Pin	3.5	U
	DPS+OUT (4 Pin) 3 EA	Lock 2 ~ 4	4 Pin	0.2	U
	REX (4 Pin) 1 EA	Button 1	4 Pin	3.5	U
	REX (4 Pin) 3 EA	Button 2 ~ 4	4 Pin	0.2	U
	READER (6 Pin) 1 EA	Card Reader 1	6 Pin	3.5	U
	READER (6 Pin) 3 EA	Card Reader 2 ~ 4	6 Pin	0.3	U
Laptop	DC Jack	Laptop Adapter	Line-Out (DC Jack)	1.3	U
Card Reader	RFID	Card	RFID	-	-



Mode 3, Mode 4

Start		End		Cable Spec.	
Product Name	I/O Port	Product Name	I/O Port	Length(m)	Shield
IP Controller (EUT)	DC Input (2 Pin)	AC /DC Adapter 2	Line-Out (DC Jack)	1.5	U
	RJ-45 (DATA)	Laptop	RJ-45	3.1	U
	FAI	Switch 1	2 Pin	3.2	U
	AUX IN	Switch 2	2 Pin	3.2	U
	AUX OUT	LED Alarm	3 Pin	3.5	U
	DPS+OUT (4 Pin) 1 EA	Lock 1	4 Pin	3.5	U
	DPS+OUT (4 Pin) 3 EA	Lock 2 ~ 4	4 Pin	0.2	U
	REX (4 Pin) 1 EA	Button 1	4 Pin	3.5	U
	REX (4 Pin) 3 EA	Button 2 ~ 4	4 Pin	0.2	U
	READER (6 Pin) 1 EA	Card Reader 1	6 Pin	3.5	U
	READER (6 Pin) 3 EA	Card Reader 2 ~ 4	6 Pin	0.3	U
Laptop	DC Jack	Laptop Adapter	Line-Out (DC Jack)	1.3	U
Card Reader	RFID	Card	RFID	-	-



Mode 5, Mode 6

Start		End		Cable Spec.	
Product Name	I/O Port	Product Name	I/O Port	Length(m)	Shield
IP Controller (EUT)	RJ-45 (PoE)	PoE Injector	RJ-45 (DATA)	3.1	U
	FAI	Switch 1	2 Pin	3.2	U
	AUX IN	Switch 2	2 Pin	3.2	U
	AUX OUT	LED Alarm	3 Pin	3.5	U
	DPS+OUT (4 Pin) 1 EA	Lock 1	4 Pin	3.5	U
	DPS+OUT (4 Pin) 3 EA	Lock 2 ~ 4	4 Pin	0.2	U
	REX (4 Pin) 1 EA	Button 1	4 Pin	3.5	U
	REX (4 Pin) 3 EA	Button 2 ~ 4	4 Pin	0.2	U
	READER (6 Pin) 1 EA	Card Reader 1	6 Pin	3.5	U
	READER (6 Pin) 3 EA	Card Reader 2 ~ 4	6 Pin	0.3	U
PoE Adaptor	RJ-45 (DATA)	Laptop	RJ-45	1.5	U
Laptop	DC Jack	Laptop Adapter	Line-Out (DC Jack)	1.3	U
Card Reader	RFID	Card	RFID	-	-

* Unshielded=U, Shielded=S



4.4 EUT Operating Mode(s)

Category	Mode	Operating
Mode 1	DC 12 V_REX	1. I ran Web Viewer on my laptop and confirmed that it was working properly. 2. I checked the network status by performing a PingTest on my laptop. 3. I pressed the button connected to the REX port and confirmed that the Web Viewer was operating normally and that the lock was operating normally. 4. The card was recognized by the card reader and normal operation and lock operation were confirmed in the Web Viewer. 5. I pressed the switch connected to the FAI port and confirmed normal operation and lock operation in the Web Viewer.
Mode 2	DC 12 V_AUX	1. I ran Web Viewer on my laptop and confirmed that it was working properly. 2. I checked the network status by performing a PingTest on my laptop. 3. I pressed the switch connected to the AUX port and confirmed normal operation and lock operation in the Web Viewer. 4. The card was recognized by the card reader and normal operation and lock operation were confirmed in the Web Viewer. 5. I pressed the switch connected to the FAI port and confirmed normal operation and lock operation in the Web Viewer.
Mode 3	DC 24 V_REX	1. I ran Web Viewer on my laptop and confirmed that it was working properly. 2. I checked the network status by performing a PingTest on my laptop. 3. I pressed the button connected to the REX port and confirmed that the Web Viewer was operating normally and that the lock was operating normally. 4. The card was recognized by the card reader and normal operation and lock operation were confirmed in the Web Viewer. 5. I pressed the switch connected to the FAI port and confirmed normal operation and lock operation in the Web Viewer.
Mode 4	DC 24 V_AUX	1. I ran Web Viewer on my laptop and confirmed that it was working properly. 2. I checked the network status by performing a PingTest on my laptop. 3. I pressed the switch connected to the AUX port and confirmed normal operation and lock operation in the Web Viewer. 4. The card was recognized by the card reader and normal operation and lock operation were confirmed in the Web Viewer. 5. I pressed the switch connected to the FAI port and confirmed normal operation and lock operation in the Web Viewer.



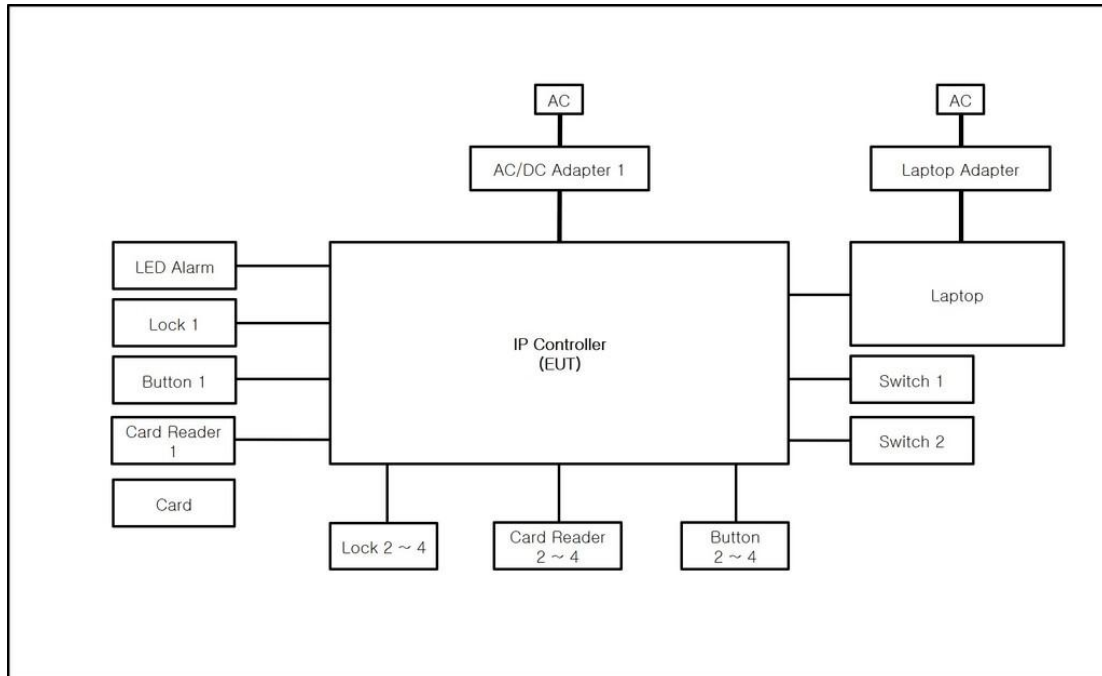
Mode 5	PoE_REX	1. I ran Web Viewer on my laptop and confirmed that it was working properly. 2. I checked the network status by performing a PingTest on my laptop. 3. I pressed the button connected to the REX port and confirmed that the Web Viewer was operating normally and that the lock was operating normally. 4. The card was recognized by the card reader and normal operation and lock operation were confirmed in the Web Viewer. 5. I pressed the switch connected to the FAI port and confirmed normal operation and lock operation in the Web Viewer.
Mode 6	PoE_AUX	1. I ran Web Viewer on my laptop and confirmed that it was working properly. 2. I checked the network status by performing a PingTest on my laptop. 3. I pressed the switch connected to the AUX port and confirmed normal operation and lock operation in the Web Viewer. 4. The card was recognized by the card reader and normal operation and lock operation were confirmed in the Web Viewer. 5. I pressed the switch connected to the FAI port and confirmed normal operation and lock operation in the Web Viewer.

4.5 Test operating S/W

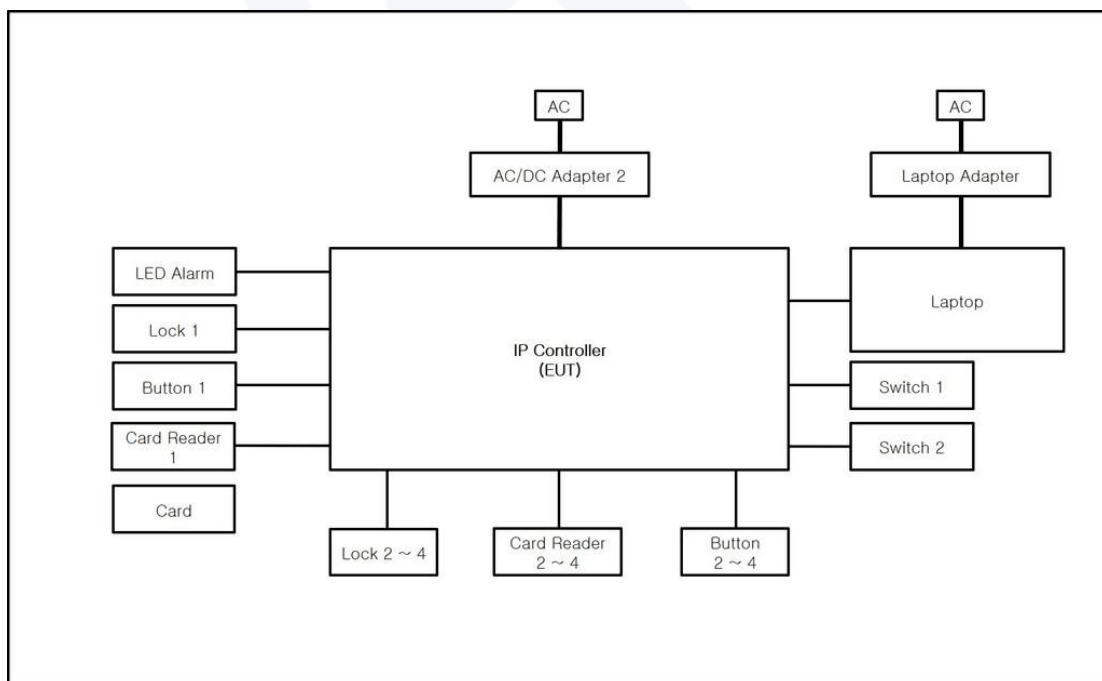
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd.



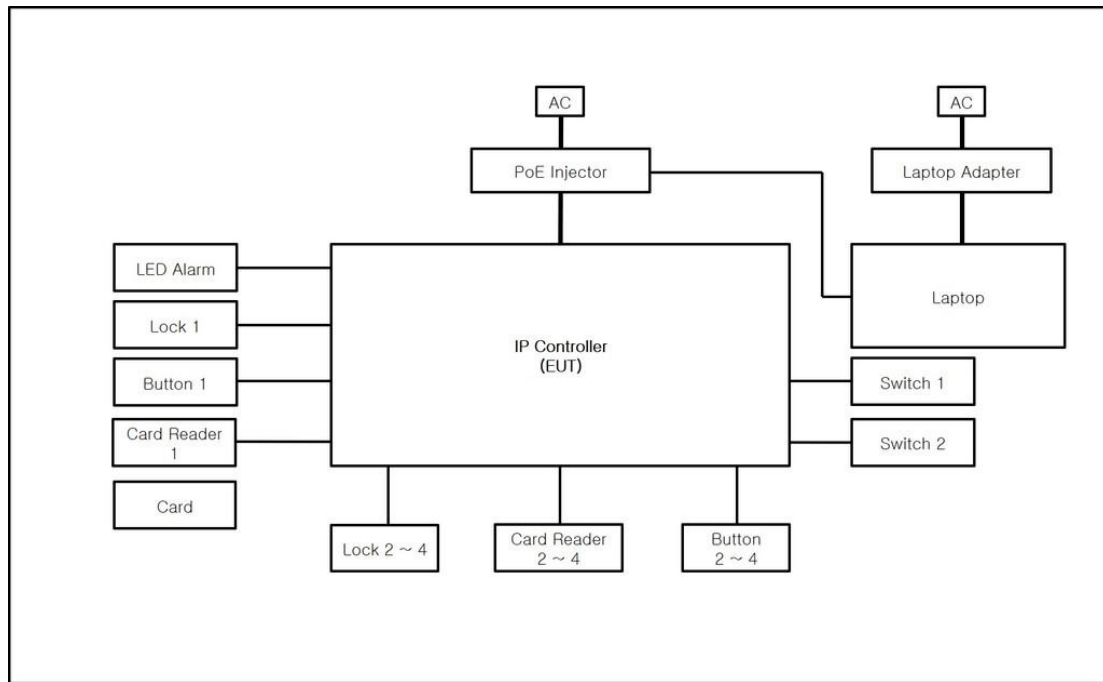
4.6 Configuration



Mode 1, Mode 2



Mode 3, Mode 4



Mode 5, Mode 6



5 General Performance Criteria

Criteria for compliance was based on the following guidelines:

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

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

If as a result of the application of the tests defined in this standard, the apparatus becomes dangerous or unsafe then the apparatus shall be deemed to have failed the test.

A functional description and a definition of performance by the manufacture and noted in the test report, based on the following criteria:

Electrostatic discharge

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

Flickering of an indicator during the application of discharge is permissible, providing that is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

Radiated electromagnetic fields

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

Flickering of an indicator during the application of discharge is permissible, providing which could be interpreted by associated equipment as a change, and no such Flickering of indicators occurs at a field strength of 3 V/m.

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

- (a) there is no permanent damage or change to EUT
(e.g. no corruption of memory or changes to programmable setting etc.)
- (b) at 3 V/m, any deterioration of the picture is so minor that the system could still be used; and
- (c) there is no observable deterioration of the picture at 1 V/m.

Fast transient burst / slow high energy voltage surge

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

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

That there is no residual is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.



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

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

then deterioration of the picture is allowed at $U = 140 \text{ dB}\mu V$, 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 $U = 130 \text{ dB}\mu V$, 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 $U = 120 \text{ dB}\mu V$.

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.



6 Test Item

6.1 Conducted Emissions at Mains Power Ports

6.1.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #6	-	DYMSTEC	-	-	-	■
EMC32 Measurement Software	EMC32	R&S	9.12.00	-	-	■
EMI TEST RECEIVER	ESR3	Rohde & Schwarz	101783	2024-11-06	2025-11-06	■
LISN	ENV216	Rohde & Schwarz	101786	2025-01-09	2026-01-09	■
ARTIFICIAL MAINS NETWORK	ESH2-Z5	Rohde & Schwarz	100450	2024-11-06	2025-11-06	■
PULSE LIMITER	ESH3-Z2	Rohde & Schwarz	101915	2024-11-06	2025-11-06	■

6.1.2 Test Location : SHIELD ROOM #6

6.1.3 Test Conditions :

Temperature	Relative Humidity
(25.4 ~ 25.5) °C	(57.9 ~ 58.1) % R.H.



6.1.4 Test Result

- Test Date : 2025-08-11
- Test Mode : Mode 1

Test Report

Test Description:

Job No.:

Phase:

Mode:

Operator Name:

Conducted Emission

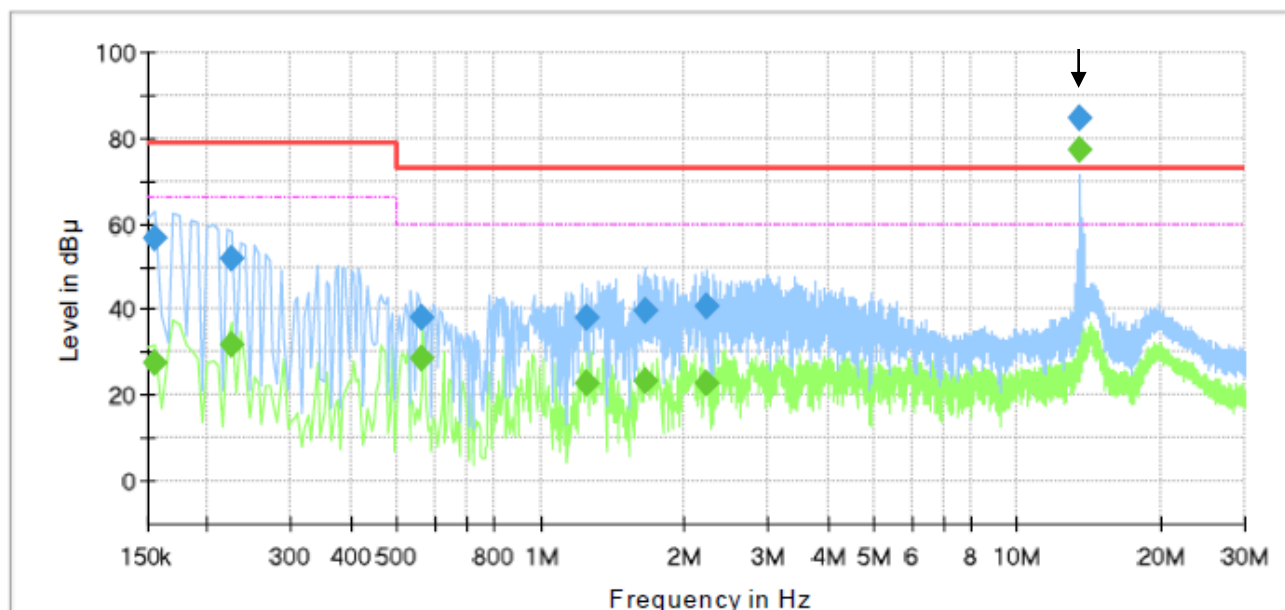
KES-EM252719

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Mode 1

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	27.51	66.00	38.49	1000.0	9.000	L1	19.5
0.155000	56.66	---	79.00	22.34	1000.0	9.000	L1	19.5
0.225000	---	31.63	66.00	34.37	1000.0	9.000	L1	19.5
0.225000	51.64	---	79.00	27.36	1000.0	9.000	L1	19.5
0.565000	---	28.61	60.00	31.39	1000.0	9.000	L1	19.6
0.565000	38.11	---	73.00	34.89	1000.0	9.000	L1	19.6
1.255000	---	22.69	60.00	37.31	1000.0	9.000	L1	19.6
1.255000	38.05	---	73.00	34.95	1000.0	9.000	L1	19.6
1.655000	---	23.39	60.00	36.61	1000.0	9.000	L1	19.6
1.655000	39.94	---	73.00	33.06	1000.0	9.000	L1	19.6
2.225000	---	22.53	60.00	37.47	1000.0	9.000	L1	19.7
2.225000	40.73	---	73.00	32.27	1000.0	9.000	L1	19.7
13.560000	---	77.02	60.00	-17.02	1000.0	9.000	L1	20.2
13.560000	84.88	---	73.00	-11.88	1000.0	9.000	L1	20.2



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● Test Mode : Mode 1

Test Report

Test Description:

Conducted Emission

Job No.:

KES-EM252719

Phase:

N

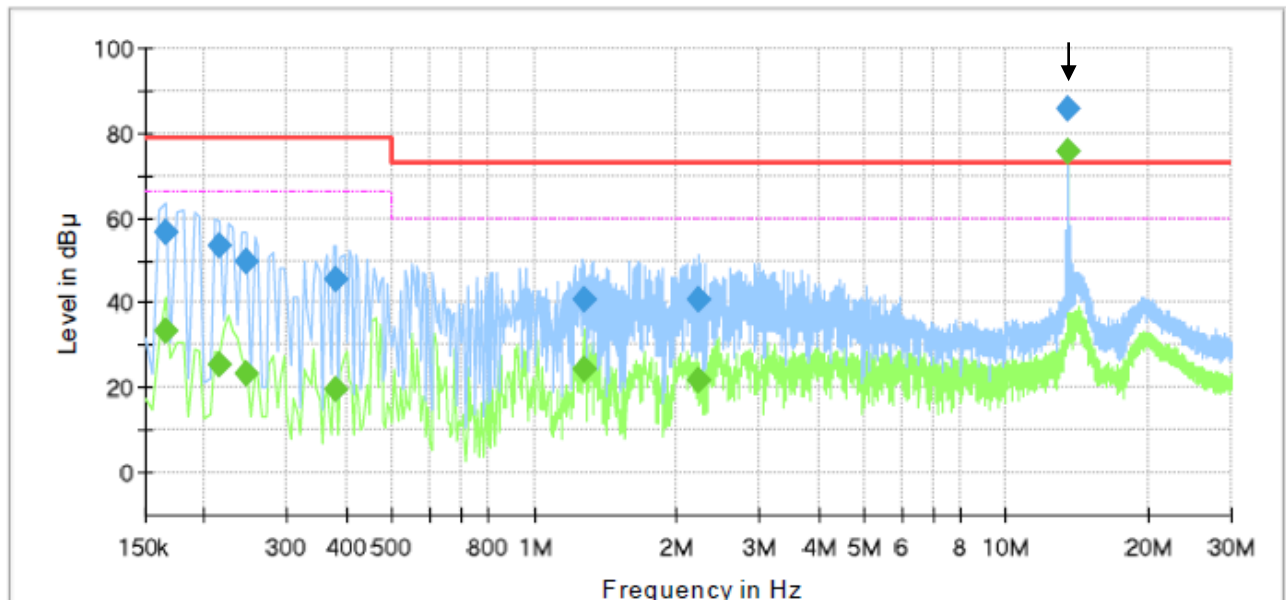
Mode:

Mode 1

Operator Name:

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	33.45	66.00	32.55	1000.0	9.000	N	19.5
0.165000	56.70	---	79.00	22.30	1000.0	9.000	N	19.5
0.215000	---	25.39	66.00	40.61	1000.0	9.000	N	19.5
0.215000	53.25	---	79.00	25.75	1000.0	9.000	N	19.5
0.245000	---	23.57	66.00	42.43	1000.0	9.000	N	19.5
0.245000	49.85	---	79.00	29.15	1000.0	9.000	N	19.5
0.380000	---	19.42	66.00	46.58	1000.0	9.000	N	19.5
0.380000	45.49	---	79.00	33.51	1000.0	9.000	N	19.5
1.270000	---	24.29	60.00	35.71	1000.0	9.000	N	19.6
1.270000	40.66	---	73.00	32.34	1000.0	9.000	N	19.6
2.225000	---	21.97	60.00	38.03	1000.0	9.000	N	19.6
2.225000	40.93	---	73.00	32.07	1000.0	9.000	N	19.6
13.560000	---	75.92	60.00	-15.92	1000.0	9.000	N	20.2
13.560000	85.79	---	73.00	-12.79	1000.0	9.000	N	20.2



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○ Test Date : 2025-08-11

● Test Mode : Mode 2

Test Report

Test Description:

Conducted Emission

Job No.:

KES-EM252719

Phase:

L

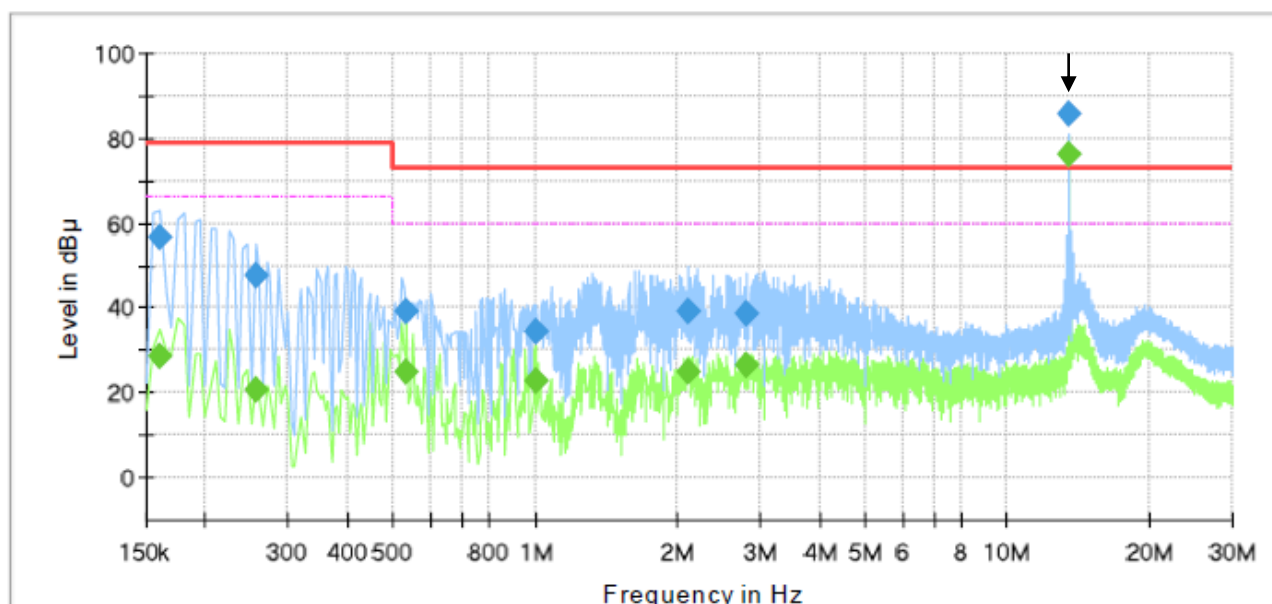
Mode:

Mode 2

Operator Name:

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	28.35	66.00	37.65	1000.0	9.000	L1	19.5
0.160000	56.51	---	79.00	22.49	1000.0	9.000	L1	19.5
0.255000	---	20.41	66.00	45.59	1000.0	9.000	L1	19.5
0.255000	47.51	---	79.00	31.49	1000.0	9.000	L1	19.5
0.535000	---	25.13	60.00	34.87	1000.0	9.000	L1	19.6
0.535000	39.34	---	73.00	33.66	1000.0	9.000	L1	19.6
1.000000	---	22.58	60.00	37.42	1000.0	9.000	L1	19.6
1.000000	34.60	---	73.00	38.40	1000.0	9.000	L1	19.6
2.115000	---	25.08	60.00	34.92	1000.0	9.000	L1	19.7
2.115000	39.03	---	73.00	33.97	1000.0	9.000	L1	19.7
2.800000	---	26.46	60.00	33.54	1000.0	9.000	L1	19.7
2.800000	38.88	---	73.00	34.12	1000.0	9.000	L1	19.7
13.560000	---	76.45	60.00	-16.45	1000.0	9.000	L1	20.2
13.560000	85.60	---	73.00	-12.60	1000.0	9.000	L1	20.2



Report No. : KES-EM252719

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○ Test Date : 2025-08-11

● Test Mode : Mode 2

Test Report

Test Description:

Conducted Emission

Job No.:

KES-EM252719

Phase:

N

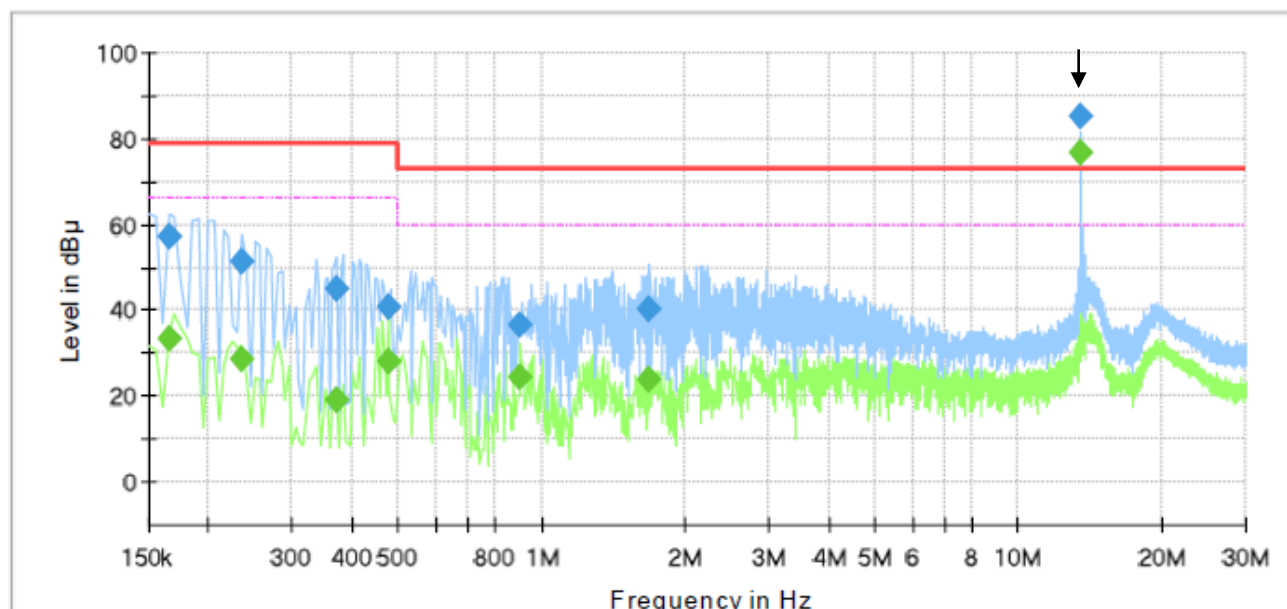
Mode:

Mode 2

Operator Name:

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	33.39	66.00	32.61	1000.0	9.000	N	19.5
0.165000	56.90	---	79.00	22.10	1000.0	9.000	N	19.5
0.235000	---	28.67	66.00	37.33	1000.0	9.000	N	19.5
0.235000	51.23	---	79.00	27.77	1000.0	9.000	N	19.5
0.370000	---	19.32	66.00	46.68	1000.0	9.000	N	19.5
0.370000	45.07	---	79.00	33.93	1000.0	9.000	N	19.5
0.475000	---	27.87	66.00	38.13	1000.0	9.000	N	19.5
0.475000	40.67	---	79.00	38.33	1000.0	9.000	N	19.5
0.900000	---	24.28	60.00	35.72	1000.0	9.000	N	19.6
0.900000	36.75	---	73.00	36.25	1000.0	9.000	N	19.6
1.685000	---	23.72	60.00	36.28	1000.0	9.000	N	19.6
1.685000	40.25	---	73.00	32.75	1000.0	9.000	N	19.6
13.560000	---	76.94	60.00	-16.94	1000.0	9.000	N	20.2
13.560000	85.42	---	73.00	-12.42	1000.0	9.000	N	20.2



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○ Test Date : 2025-08-11

● Test Mode : Mode 3

Test Report

Test Description:

Job No.:

Phase:

Mode:

Operator Name:

Conducted Emission

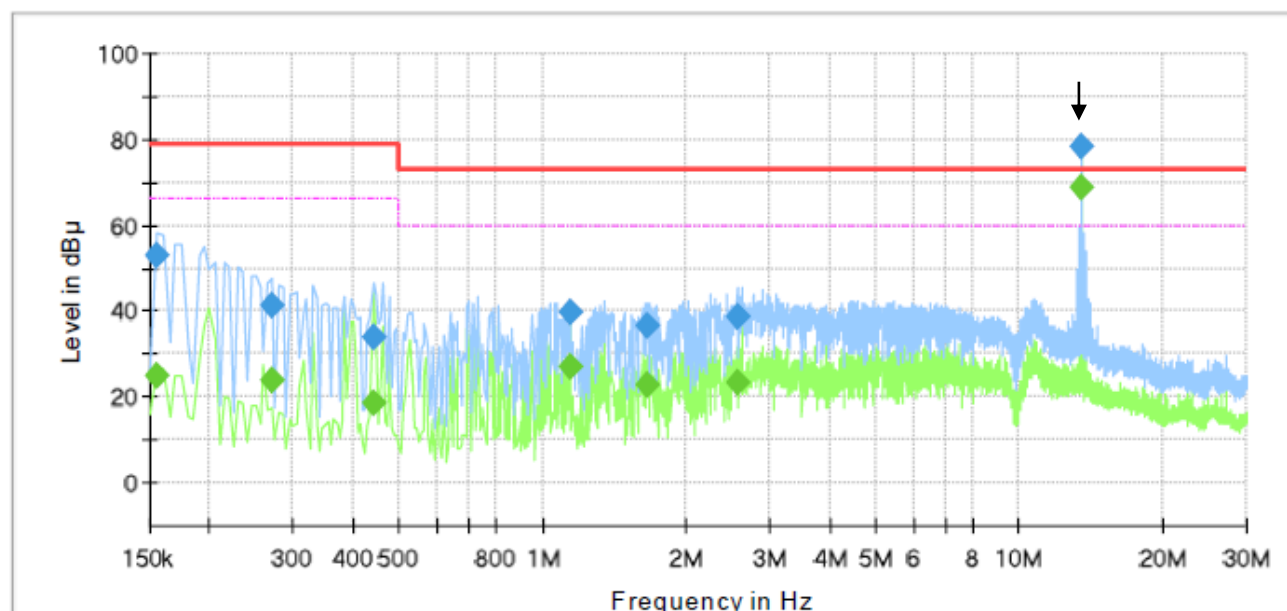
KES-EM252719

L

Mode 3

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	24.69	66.00	41.31	1000.0	9.000	L1	19.5
0.155000	52.78	---	79.00	26.22	1000.0	9.000	L1	19.5
0.270000	---	24.01	66.00	41.99	1000.0	9.000	L1	19.5
0.270000	41.45	---	79.00	37.55	1000.0	9.000	L1	19.5
0.440000	---	18.42	66.00	47.58	1000.0	9.000	L1	19.6
0.440000	33.84	---	79.00	45.16	1000.0	9.000	L1	19.6
1.145000	---	27.16	60.00	32.84	1000.0	9.000	L1	19.6
1.145000	39.73	---	73.00	33.27	1000.0	9.000	L1	19.6
1.660000	---	22.78	60.00	37.22	1000.0	9.000	L1	19.6
1.660000	36.56	---	73.00	36.44	1000.0	9.000	L1	19.6
2.555000	---	23.57	60.00	36.43	1000.0	9.000	L1	19.7
2.555000	38.55	---	73.00	34.45	1000.0	9.000	L1	19.7
13.560000	---	69.02	60.00	-9.02	1000.0	9.000	L1	20.2
13.560000	78.23	---	73.00	-5.23	1000.0	9.000	L1	20.2



Report No. : KES-EM252719

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○ Test Date : 2025-08-11

● Test Mode : Mode 3

Test Report

Test Description:

Job No.:

Phase:

Mode:

Operator Name:

Conducted Emission

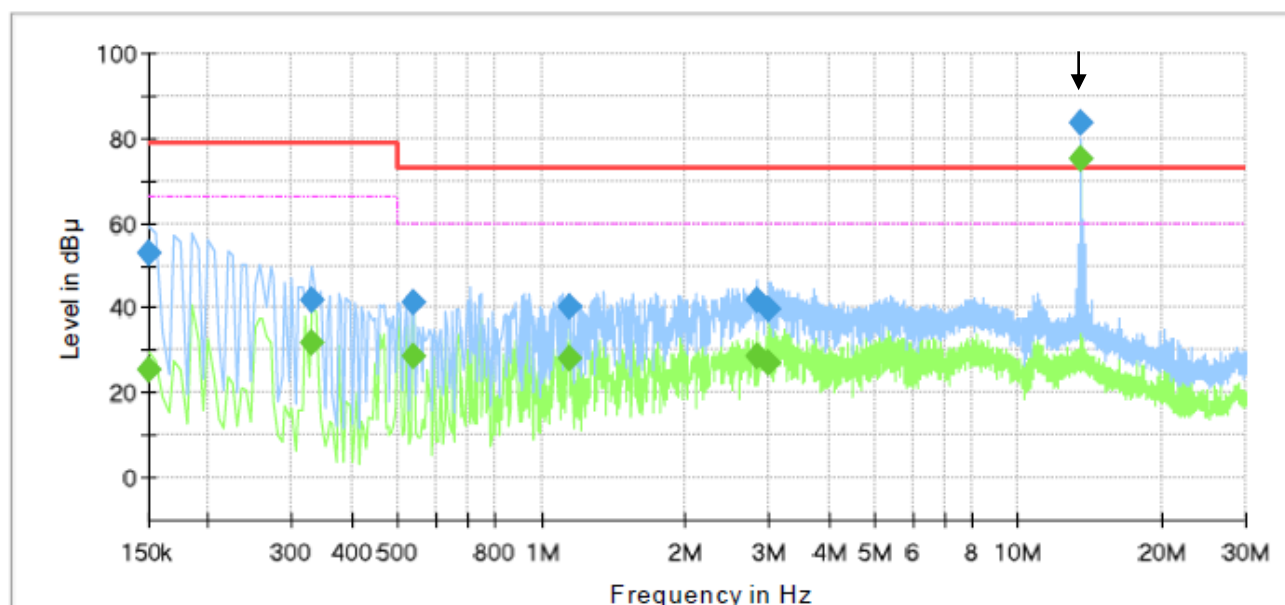
KES-EM252719

N

Mode 3

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	25.56	66.00	40.44	1000.0	9.000	N	19.5
0.150000	52.88	---	79.00	26.12	1000.0	9.000	N	19.5
0.330000	---	31.87	66.00	34.13	1000.0	9.000	N	19.5
0.330000	41.90	---	79.00	37.10	1000.0	9.000	N	19.5
0.540000	---	28.39	60.00	31.61	1000.0	9.000	N	19.5
0.540000	41.06	---	73.00	31.94	1000.0	9.000	N	19.5
1.150000	---	27.85	60.00	32.15	1000.0	9.000	N	19.6
1.150000	40.35	---	73.00	32.65	1000.0	9.000	N	19.6
2.830000	---	28.83	60.00	31.17	1000.0	9.000	N	19.7
2.830000	41.90	---	73.00	31.10	1000.0	9.000	N	19.7
3.000000	---	27.05	60.00	32.95	1000.0	9.000	N	19.7
3.000000	39.74	---	73.00	33.26	1000.0	9.000	N	19.7
13.560000	---	75.22	60.00	-15.22	1000.0	9.000	N	20.2
13.560000	83.81	---	73.00	-10.81	1000.0	9.000	N	20.2



Report No. : KES-EM252719

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○ Test Date : 2025-08-11

● Test Mode : Mode 4

Test Report

Test Description:

Conducted Emission

Job No.:

KES-EM252719

Phase:

L

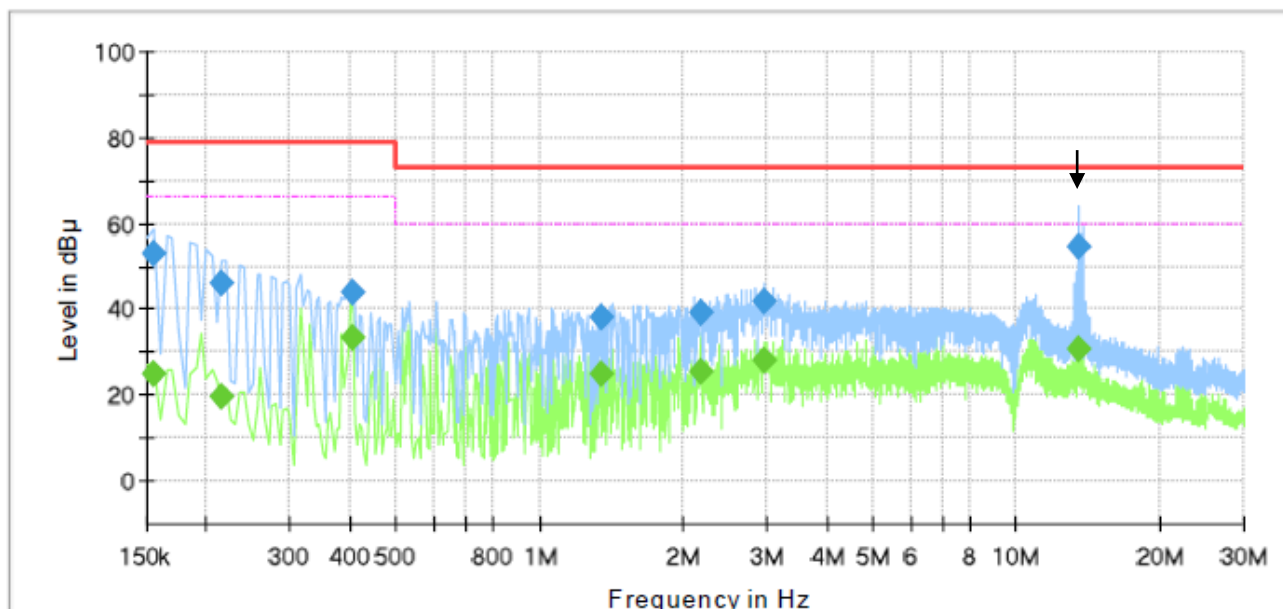
Mode:

Mode 4

Operator Name:

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	24.69	66.00	41.31	1000.0	9.000	L1	19.5
0.155000	52.84	---	79.00	26.16	1000.0	9.000	L1	19.5
0.215000	---	19.82	66.00	46.18	1000.0	9.000	L1	19.5
0.215000	46.12	---	79.00	32.88	1000.0	9.000	L1	19.5
0.405000	---	33.27	66.00	32.73	1000.0	9.000	L1	19.6
0.405000	43.85	---	79.00	35.15	1000.0	9.000	L1	19.6
1.350000	---	25.02	60.00	34.98	1000.0	9.000	L1	19.6
1.350000	38.37	---	73.00	34.63	1000.0	9.000	L1	19.6
2.170000	---	25.47	60.00	34.53	1000.0	9.000	L1	19.7
2.170000	39.25	---	73.00	33.75	1000.0	9.000	L1	19.7
2.960000	---	27.99	60.00	32.01	1000.0	9.000	L1	19.7
2.960000	41.74	---	73.00	31.26	1000.0	9.000	L1	19.7
13.560000	---	30.74	60.00	29.26	1000.0	9.000	L1	20.2
13.560000	54.31	---	73.00	18.69	1000.0	9.000	L1	20.2



○ Test Date : 2025-08-11

● Test Mode : Mode 4

Test Report

Test Description:

Job No.:

Phase:

Mode:

Operator Name:

Conducted Emission

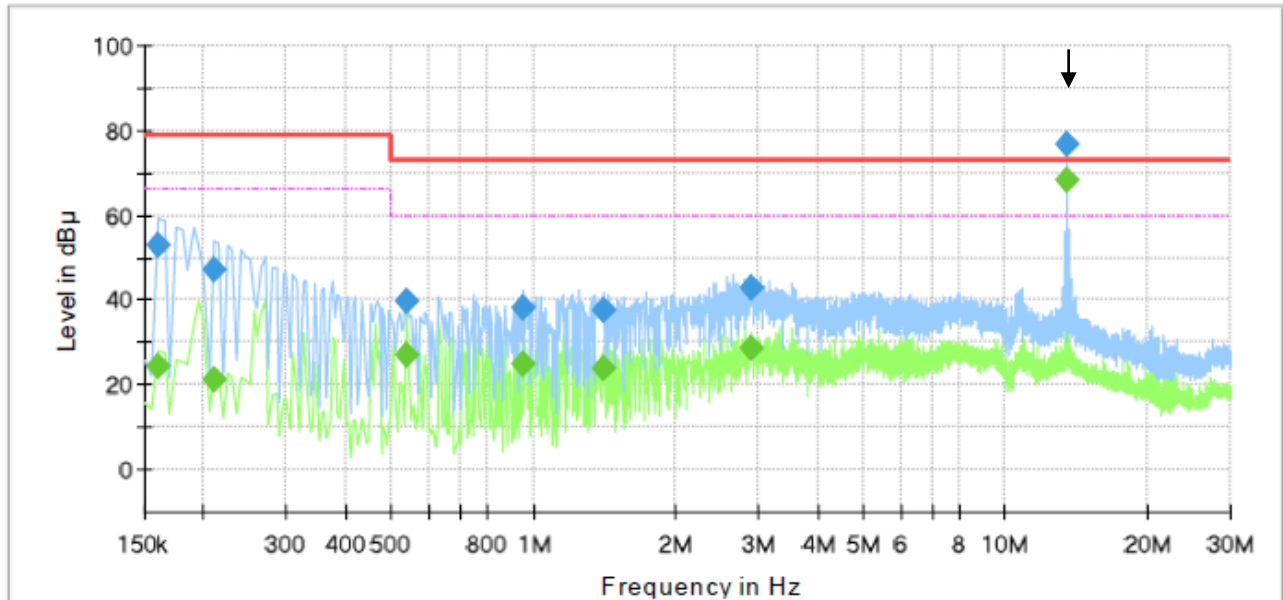
KES-EM252719

N

Mode 4

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	24.49	66.00	41.51	1000.0	9.000	N	19.5
0.160000	52.88	---	79.00	26.12	1000.0	9.000	N	19.5
0.210000	---	21.46	66.00	44.54	1000.0	9.000	N	19.5
0.210000	47.37	---	79.00	31.63	1000.0	9.000	N	19.5
0.540000	---	26.84	60.00	33.16	1000.0	9.000	N	19.5
0.540000	39.86	---	73.00	33.14	1000.0	9.000	N	19.5
0.950000	---	24.70	60.00	35.30	1000.0	9.000	N	19.6
0.950000	38.24	---	73.00	34.76	1000.0	9.000	N	19.6
1.410000	---	24.10	60.00	35.90	1000.0	9.000	N	19.6
1.410000	37.86	---	73.00	35.14	1000.0	9.000	N	19.6
2.885000	---	28.72	60.00	31.28	1000.0	9.000	N	19.7
2.885000	42.70	---	73.00	30.30	1000.0	9.000	N	19.7
13.555000	---	68.39	60.00	-8.39	1000.0	9.000	N	20.2
13.555000	76.50	---	73.00	-3.50	1000.0	9.000	N	20.2

6.1.5 Remark

Complies with the test requirements.

Mode 1 ~ 4 : Associated equipment wireless frequency 13.56 MHz (Exclusion band)



6.2 Conducted Emissions at Telecommunication Ports

6.2.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #6	-	DYMSTEC	-	-	-	■
EMC32 Measurement Software	EMC32	R&S	9.12.00	-	-	■
EMI TEST RECEIVER	ESR3	Rohde & Schwarz	101783	2024-11-06	2025-11-06	■
LISN	ENV216	Rohde & Schwarz	101786	2025-01-09	2026-01-09	■
ARTIFICIAL MAINS NETWORK	ESH2-Z5	Rohde & Schwarz	100450	2024-11-06	2025-11-06	■
PULSE LIMITER	ESH3-Z2	Rohde & Schwarz	101915	2024-11-06	2025-11-06	■
8-WIRE ISN CAT3,5	ENY81	Rohde & Schwarz	100174	2024-11-12	2025-11-12	■

6.2.2 Test Location : SHIELD ROOM #6

6.2.3 Test Conditions :

Temperature	Relative Humidity
(25.4 ~ 25.8) °C	(55.0 ~ 58.1) % R.H.



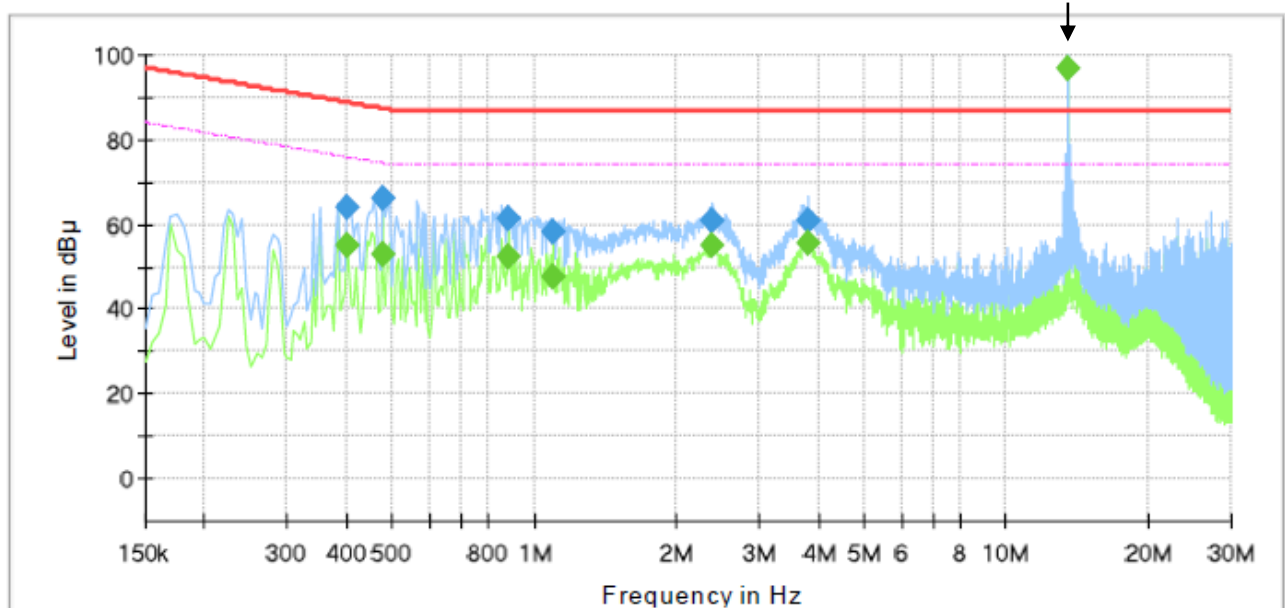
6.2.4 Test Result

- Test Date : 2025-08-11
- Test Mode : Mode 1, Mode 2

Test Report

Test Description: Telecommunication Emission
Job No.: KES-EM252719
Mode : Mode 1, Mode 2
Speed : 100 Mbps
Operator Name: KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.400000	---	55.28	75.85	20.57	1000.0	9.000	Single Line	19.5
0.400000	64.27	---	88.85	24.58	1000.0	9.000	Single Line	19.5
0.475000	---	52.88	74.43	21.55	1000.0	9.000	Single Line	19.5
0.475000	66.37	---	87.43	21.06	1000.0	9.000	Single Line	19.5
0.885000	---	52.59	74.00	21.41	1000.0	9.000	Single Line	19.4
0.885000	61.22	---	87.00	25.78	1000.0	9.000	Single Line	19.4
1.095000	---	47.44	74.00	26.56	1000.0	9.000	Single Line	19.4
1.095000	58.34	---	87.00	28.66	1000.0	9.000	Single Line	19.4
2.390000	---	55.10	74.00	18.90	1000.0	9.000	Single Line	19.4
2.390000	60.73	---	87.00	26.27	1000.0	9.000	Single Line	19.4
3.795000	---	55.54	74.00	18.46	1000.0	9.000	Single Line	19.5
3.795000	61.00	---	87.00	26.00	1000.0	9.000	Single Line	19.5
13.560000	---	96.99	74.00	-22.99	1000.0	9.000	Single Line	19.7
13.560000	105.20	---	87.00	-18.20	1000.0	9.000	Single Line	19.7



Report No. : KES-EM252719

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- Test Date : 2025-08-11
- Test Mode : Mode 3, Mode 4

Test Report

Test Description:

Job No.:

Mode :

Speed :

Operator Name:

Telecommunication Emission

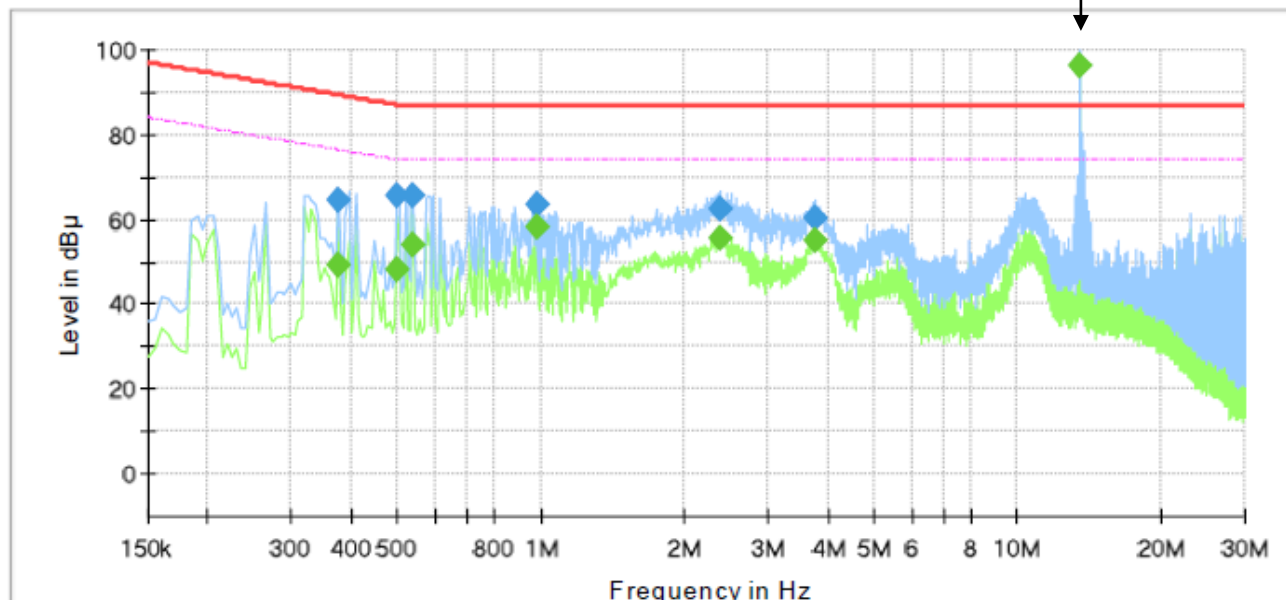
KES-EM252719

Mode 3, Mode 4

100 Mbps

KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dB μV)	CAverage (dB μV)	Limit (dB μV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.375000	---	49.08	76.39	27.31	1000.0	9.000	Single Line	19.5
0.375000	64.51	---	89.39	24.88	1000.0	9.000	Single Line	19.5
0.500000	---	48.06	74.00	25.94	1000.0	9.000	Single Line	19.5
0.500000	65.70	---	87.00	21.30	1000.0	9.000	Single Line	19.5
0.540000	---	53.90	74.00	20.10	1000.0	9.000	Single Line	19.5
0.540000	65.81	---	87.00	21.19	1000.0	9.000	Single Line	19.5
0.980000	---	58.37	74.00	15.63	1000.0	9.000	Single Line	19.4
0.980000	63.70	---	87.00	23.30	1000.0	9.000	Single Line	19.4
2.375000	---	55.74	74.00	18.26	1000.0	9.000	Single Line	19.4
2.375000	62.21	---	87.00	24.79	1000.0	9.000	Single Line	19.4
3.765000	---	55.08	74.00	18.92	1000.0	9.000	Single Line	19.5
3.765000	60.47	---	87.00	26.53	1000.0	9.000	Single Line	19.5
13.560000	---	96.26	74.00	-22.26	1000.0	9.000	Single Line	19.7
13.560000	107.89	---	87.00	-20.89	1000.0	9.000	Single Line	19.7



Report No. : KES-EM252719

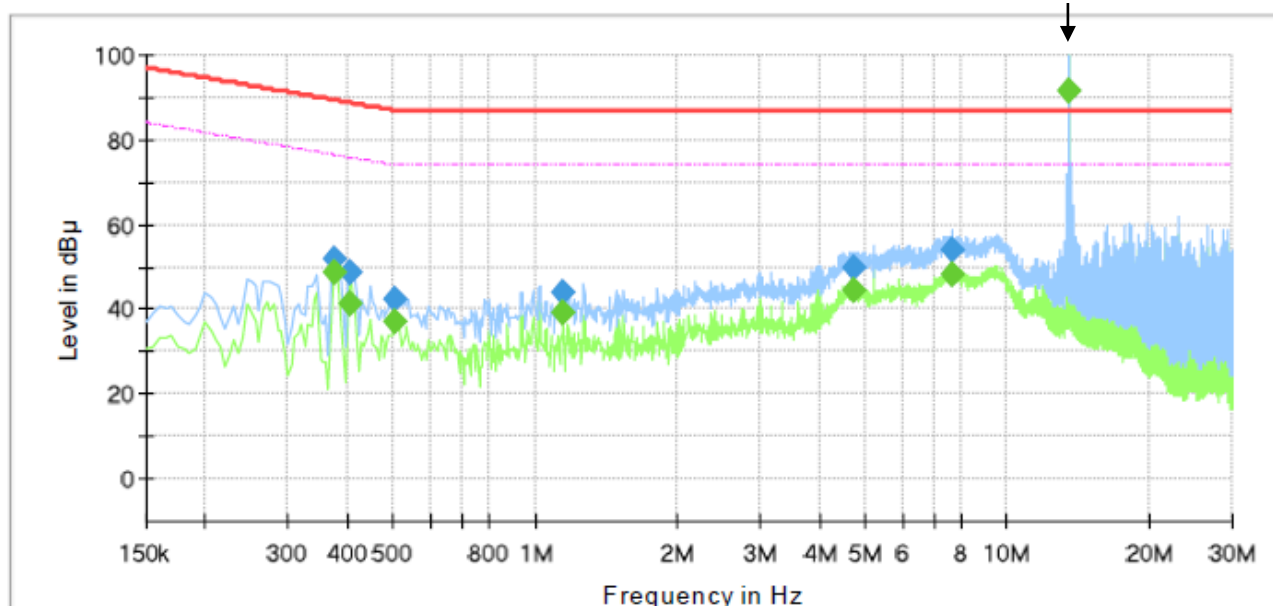
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- Test Date : 2025-08-12
- Test Mode : Mode 5, Mode 6

Test Report

Test Description: Telecommunication Emission
Job No.: KES-EM252719
Mode : Mode 5, Mode 6
Speed : 100 Mbps
Operator Name: KES

↓ : Associated equipment wireless frequency



Final_Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.375000	---	48.44	76.39	27.95	1000.0	9.000	Single Line	19.5
0.375000	52.09	---	89.39	37.30	1000.0	9.000	Single Line	19.5
0.405000	---	41.46	75.75	34.29	1000.0	9.000	Single Line	19.5
0.405000	48.45	---	88.75	40.30	1000.0	9.000	Single Line	19.5
0.505000	---	36.97	74.00	37.03	1000.0	9.000	Single Line	19.5
0.505000	42.47	---	87.00	44.53	1000.0	9.000	Single Line	19.5
1.145000	---	39.02	74.00	34.98	1000.0	9.000	Single Line	19.4
1.145000	43.82	---	87.00	43.18	1000.0	9.000	Single Line	19.4
4.750000	---	44.32	74.00	29.68	1000.0	9.000	Single Line	19.5
4.750000	49.96	---	87.00	37.04	1000.0	9.000	Single Line	19.5
7.680000	---	48.22	74.00	25.78	1000.0	9.000	Single Line	19.6
7.680000	53.97	---	87.00	33.03	1000.0	9.000	Single Line	19.6
13.560000	---	91.66	74.00	-17.66	1000.0	9.000	Single Line	19.7
13.560000	100.10	---	87.00	-13.10	1000.0	9.000	Single Line	19.7



6.2.5 Remark

Complies with the test requirements.

Mode 1 ~ 6 : Associated equipment wireless frequency 13.56 MHz (Exclusion band)





6.3 Radiated Emissions(Below 1 GHz)

6.3.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #4(10 m)	-	DYMSTEC	-	-	-	■
EP5/RE Software	EP5/RE	TOYO	6.0.0	-	-	■
EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100551	2025-02-13	2026-02-13	■
AMPLIFIER	SCU 01	Rohde & Schwarz	100603	2024-11-06	2025-11-06	■
BILOG ANTENNA	VULB 9168	SCHWARZBECK	9168-461	2024-05-09	2026-05-09	■
ATTENUATOR	6806.17.A	HUBER+SUHNER	-	2025-02-13	2026-02-13	■

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

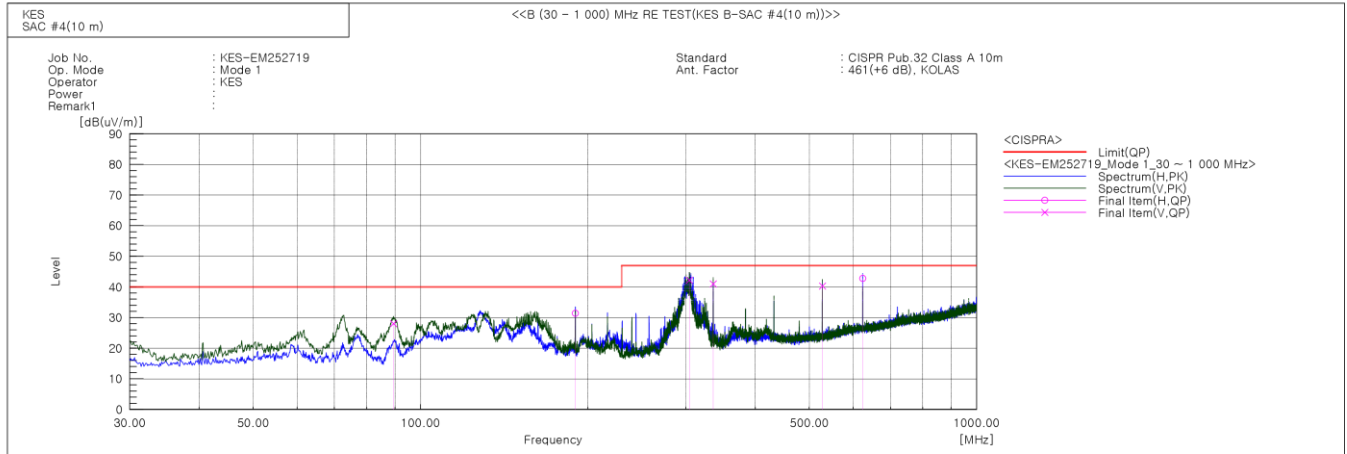
6.3.3 Test Conditions :

Temperature	Relative Humidity
(26.3 ~ 26.6) °C	(56.3 ~ 57.5) % R.H.



6.3.4 Test Result

- Test Date : 2025-08-09
- Test Mode : Mode 1



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	89.413	V	54.1	-26.1	28.0	40.0	12.0	115.0	213.0	
2	189.808	H	53.0	-21.6	31.4	40.0	8.6	214.0	99.0	
3	304.389	V	59.0	-16.8	42.2	47.0	4.8	150.0	1.0	
4	336.035	V	56.9	-15.9	41.0	47.0	6.0	100.0	150.0	
5	527.974	V	49.8	-9.5	40.3	47.0	6.7	142.0	1.0	
6	624.004	H	49.4	-6.6	42.8	47.0	4.2	400.0	230.0	

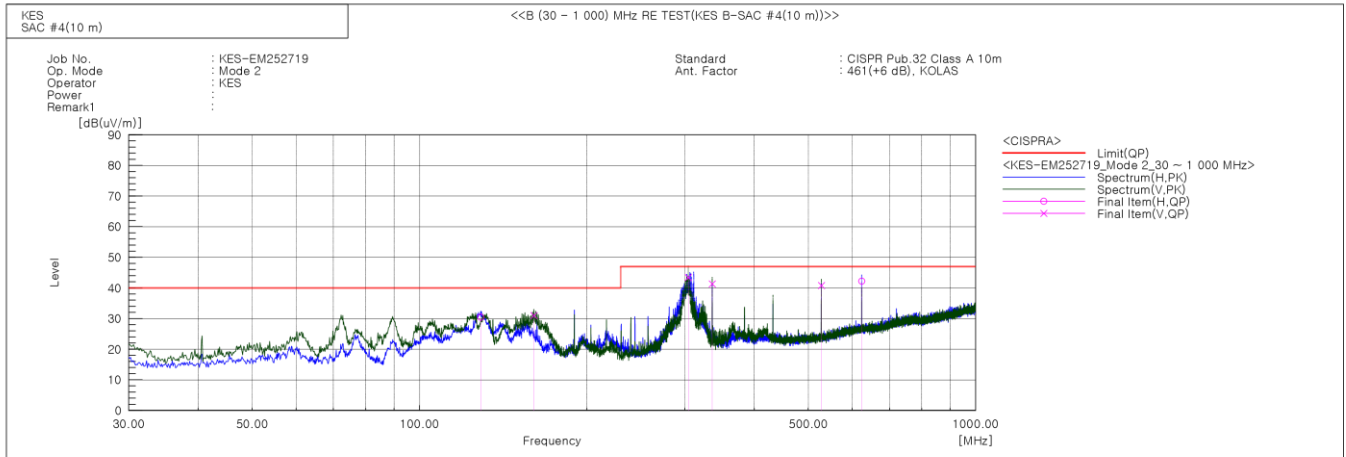
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



Report No. : KES-EM252719

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- Test Date : 2025-08-09
- Test Mode : Mode 2



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	128.819	H	51.7	-21.3	30.4	40.0	9.6	186.0	273.0	
2	160.586	V	50.5	-19.5	31.0	40.0	9.0	120.0	145.0	
3	304.389	V	60.2	-16.8	43.4	47.0	3.6	133.0	10.0	
4	336.035	V	57.2	-15.9	41.3	47.0	5.7	100.0	149.0	
5	527.974	V	50.3	-9.5	40.8	47.0	6.2	157.0	3.0	
6	624.004	H	48.8	-6.6	42.2	47.0	4.8	400.0	228.0	

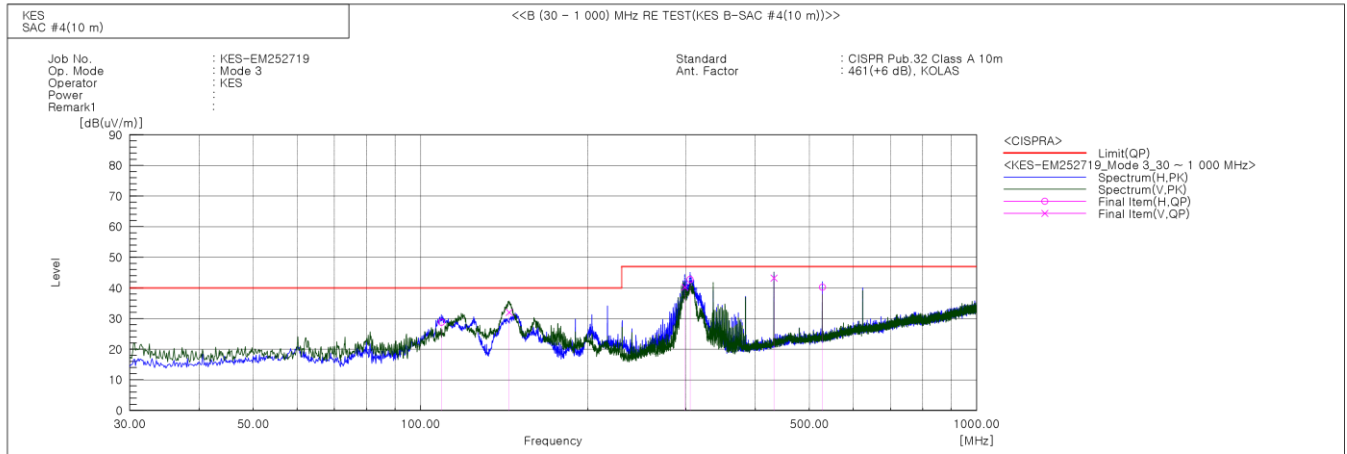
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



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- Test Date : 2025-08-09
- Test Mode : Mode 3



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	109.055	H	52.4	-23.6	28.8	40.0	11.2	100.0	174.0	
2	144.339	V	51.6	-19.6	32.0	40.0	8.0	164.0	235.0	
3	298.690	V	57.2	-17.0	40.2	47.0	6.8	100.0	329.0	
4	305.359	H	59.6	-16.8	42.8	47.0	4.2	366.0	84.0	
5	432.065	V	55.4	-12.2	43.2	47.0	3.8	140.0	172.0	
6	527.974	H	49.7	-9.5	40.2	47.0	6.8	200.0	31.0	

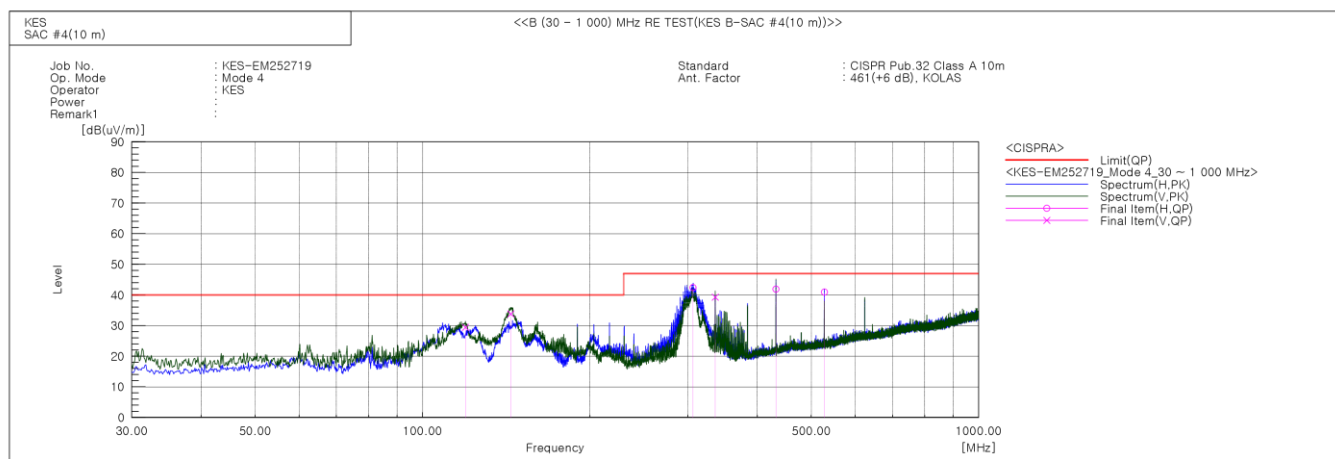
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



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- Test Date : 2025-08-09
- Test Mode : Mode 4



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	119.483	V	51.8	-22.4	29.4	40.0	10.6	112.0	310.0	
2	144.096	V	53.4	-19.6	33.8	40.0	6.2	100.0	221.0	
3	306.571	H	59.2	-16.8	42.4	47.0	4.6	380.0	72.0	
4	336.035	V	55.2	-15.9	39.3	47.0	7.7	145.0	210.0	
5	431.944	H	54.1	-12.2	41.9	47.0	5.1	400.0	330.0	
6	527.974	H	50.4	-9.5	40.9	47.0	6.1	400.0	30.0	

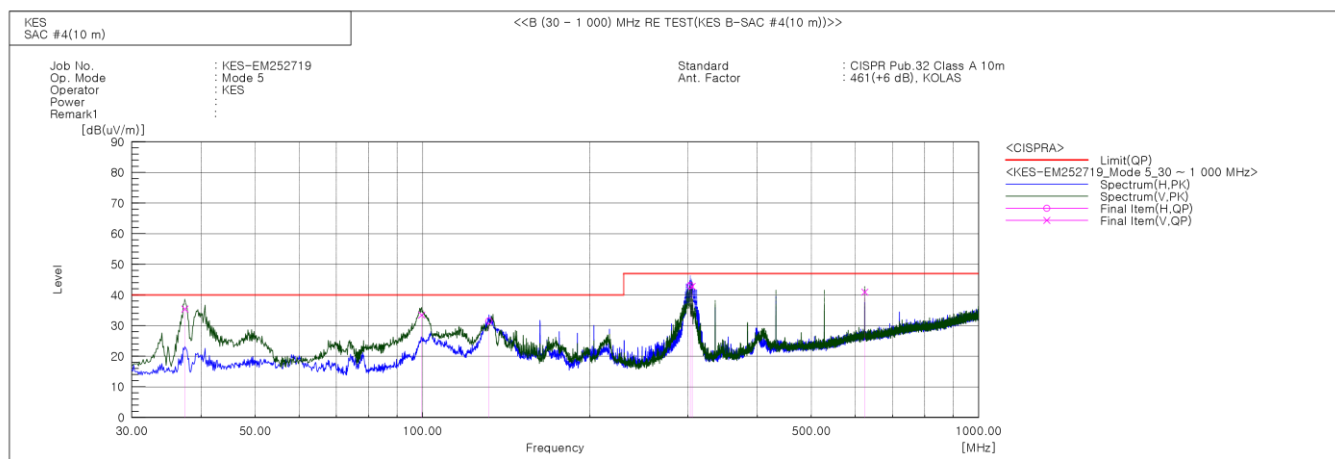
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



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- Test Date : 2025-08-11
- Test Mode : Mode 5



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	37.396	V	57.4	-22.0	35.4	40.0	4.6	100.0	32.0	
2	99.598	V	58.3	-24.9	33.4	40.0	6.6	156.0	292.0	
3	131.729	H	52.5	-21.0	31.5	40.0	8.5	210.0	80.0	
4	303.176	H	60.0	-16.9	43.1	47.0	3.9	400.0	39.0	
5	305.238	V	59.6	-16.8	42.8	47.0	4.2	125.0	357.0	
6	624.004	V	47.5	-6.6	40.9	47.0	6.1	100.0	198.0	

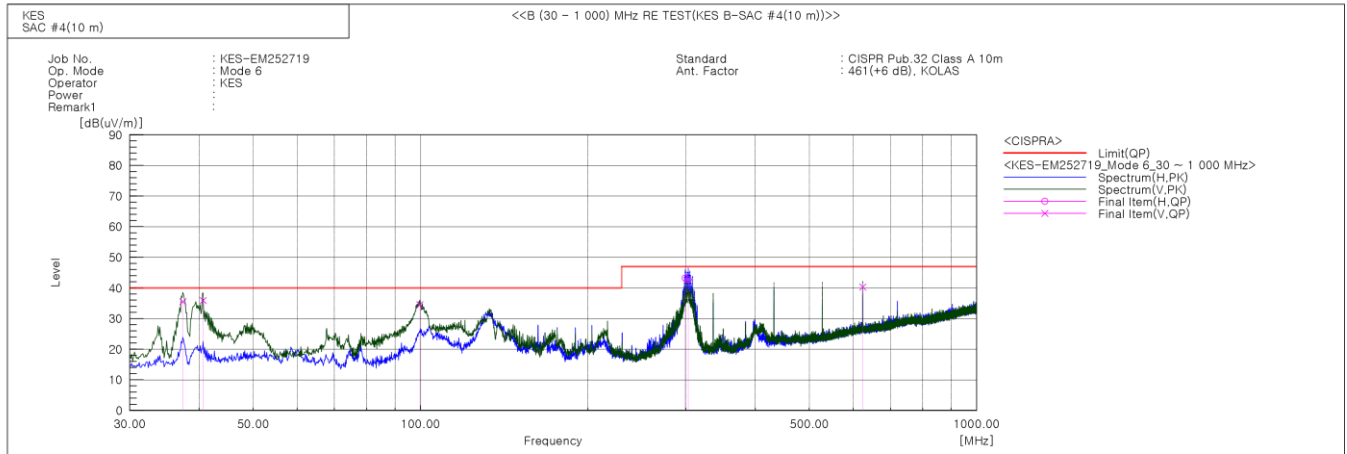
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



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○ Test Date : 2025-08-11

● Test Mode : Mode 6



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	37.396	V	57.5	-22.0	35.5	40.0	4.5	116.0	317.0	
2	40.670	V	57.7	-21.8	35.9	40.0	4.1	100.0	136.0	
3	99.719	V	59.4	-24.9	34.5	40.0	5.5	128.0	95.0	
4	299.175	H	60.2	-17.0	43.2	47.0	3.8	400.0	8.0	
5	303.176	H	59.6	-16.9	42.7	47.0	4.3	385.0	2.0	
6	624.004	V	46.9	-6.6	40.3	47.0	6.7	100.0	46.0	

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

6.3.5 Remark

Complies with the test requirements.



6.4 Radiated Emissions(Above 1 GHz)

6.4.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #5	-	SY Corporation	-	-	-	■
ES10/RE Software	ES10/RE	TOYO	2022.01.000	-	-	■
EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	2025-02-13	2026-02-13	■
PREAMPLIFIER	8449B	HP	3008A00538	2025-04-30	2026-04-30	■
ATTENUATOR	8491B	HP	23094	2025-02-13	2026-02-13	■
HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	2024-11-04	2025-11-04	■

6.4.2 Test Location : SEMI ANECHOIC CHAMBER #5

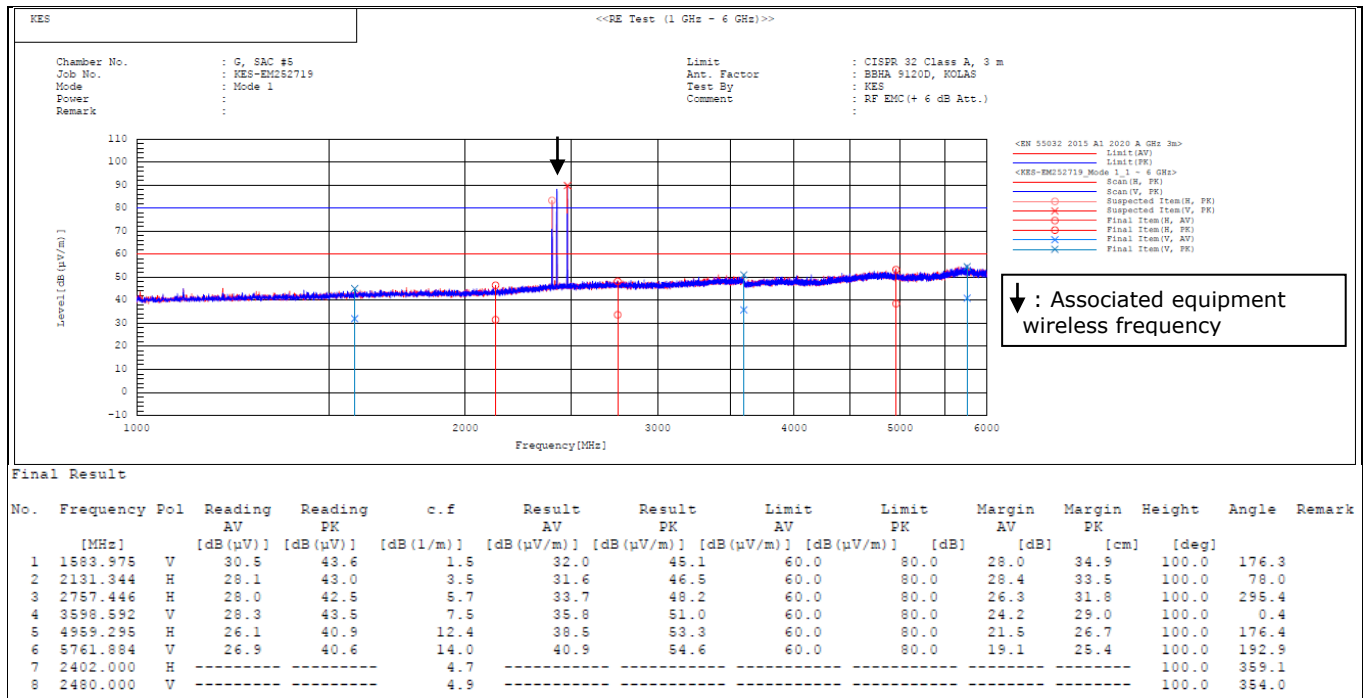
6.4.3 Test Conditions :

Temperature	Relative Humidity
(26.8 ~ 27.1) °C	(53.8 ~ 54.4) % R.H.



6.4.4 Test Result

- Test Date : 2025-08-25
- Test Mode : Mode 1



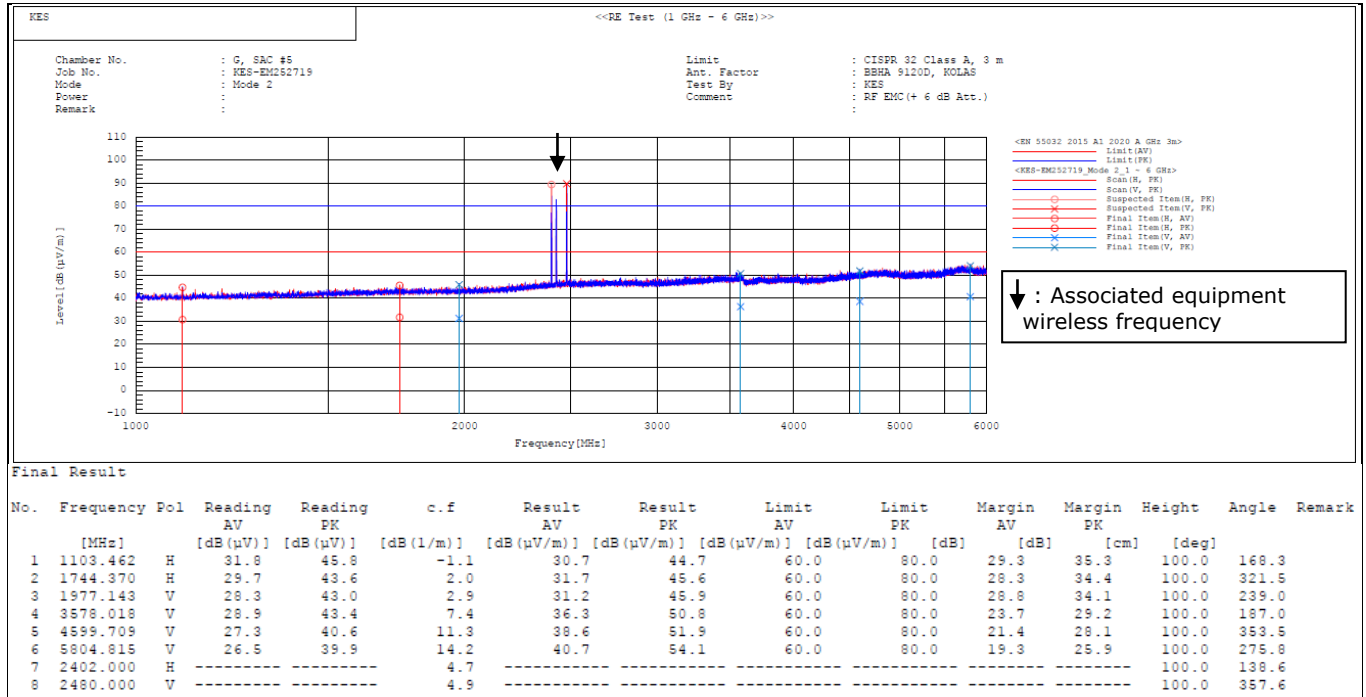
- ※ The data is the result of measured by the detector in PK and CISPR Average on the Peak graph.
- ※ The Average of the test data is the cispr average result.



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- Test Date : 2025-08-25
- Test Mode : Mode 2



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

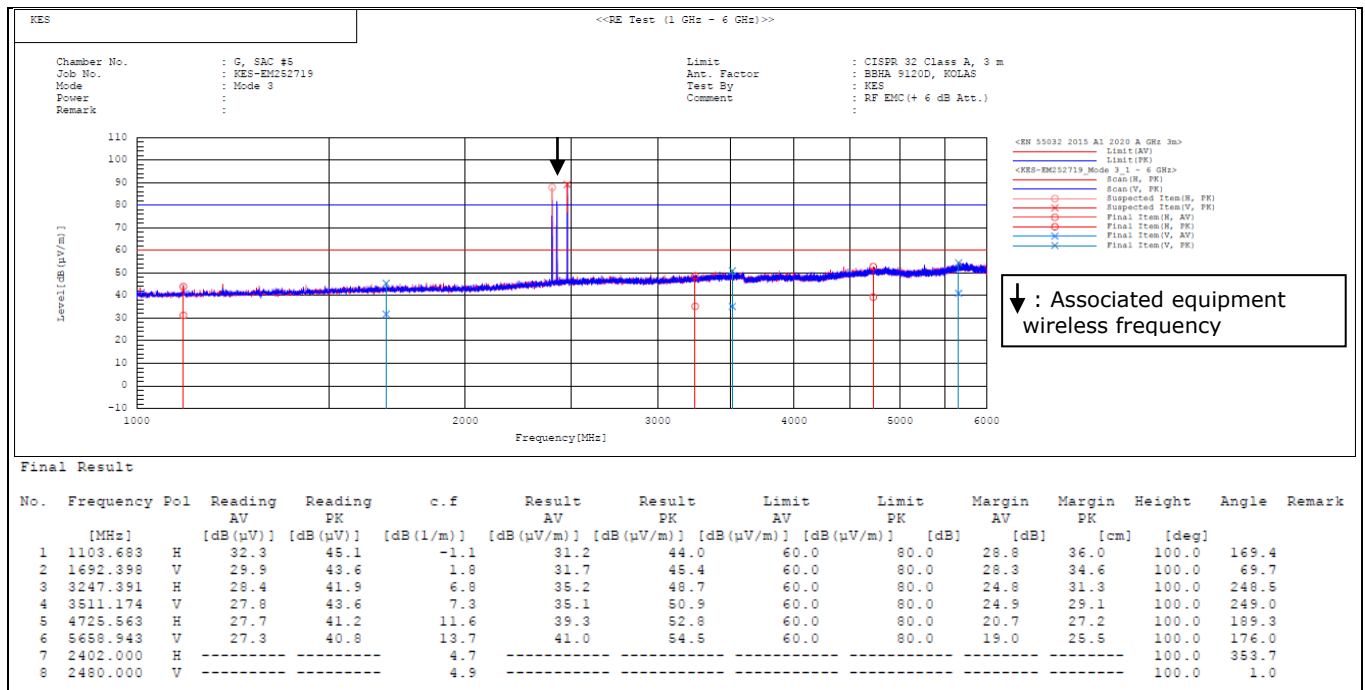


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○ Test Date : 2025-08-25

● Test Mode : Mode 3



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

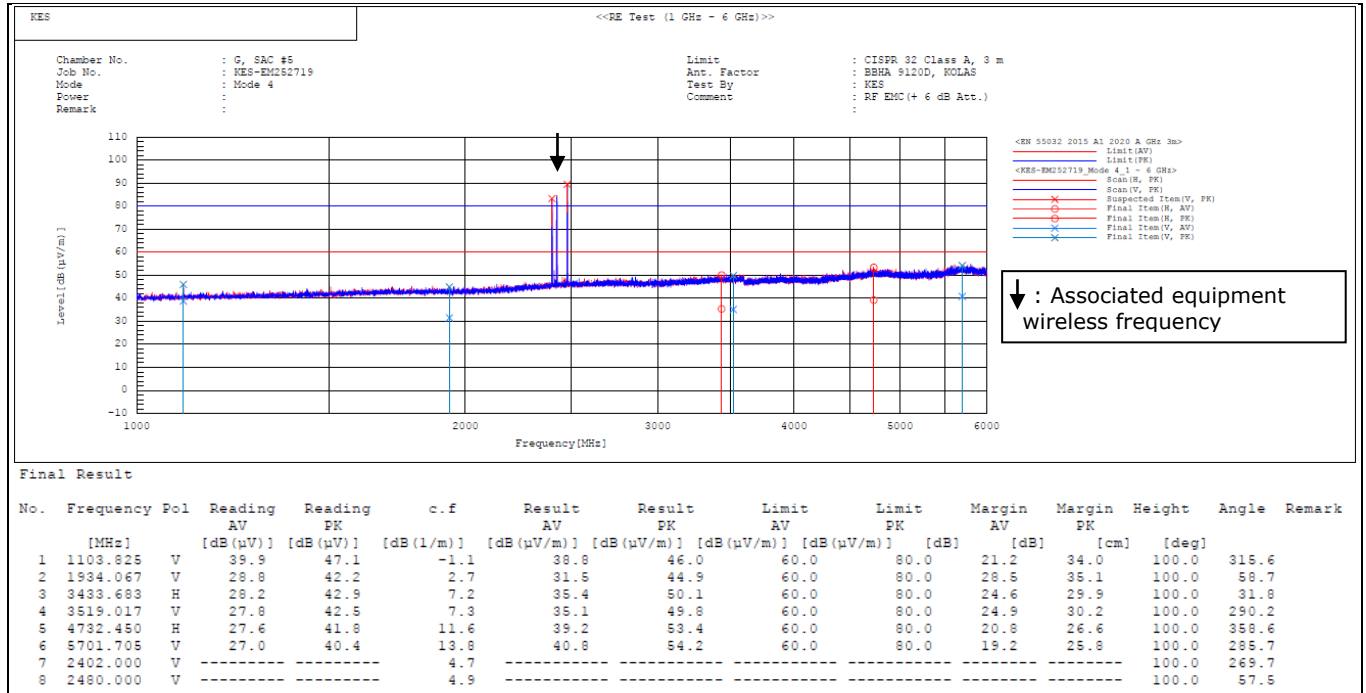


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○ Test Date : 2025-08-25

● Test Mode : Mode 4



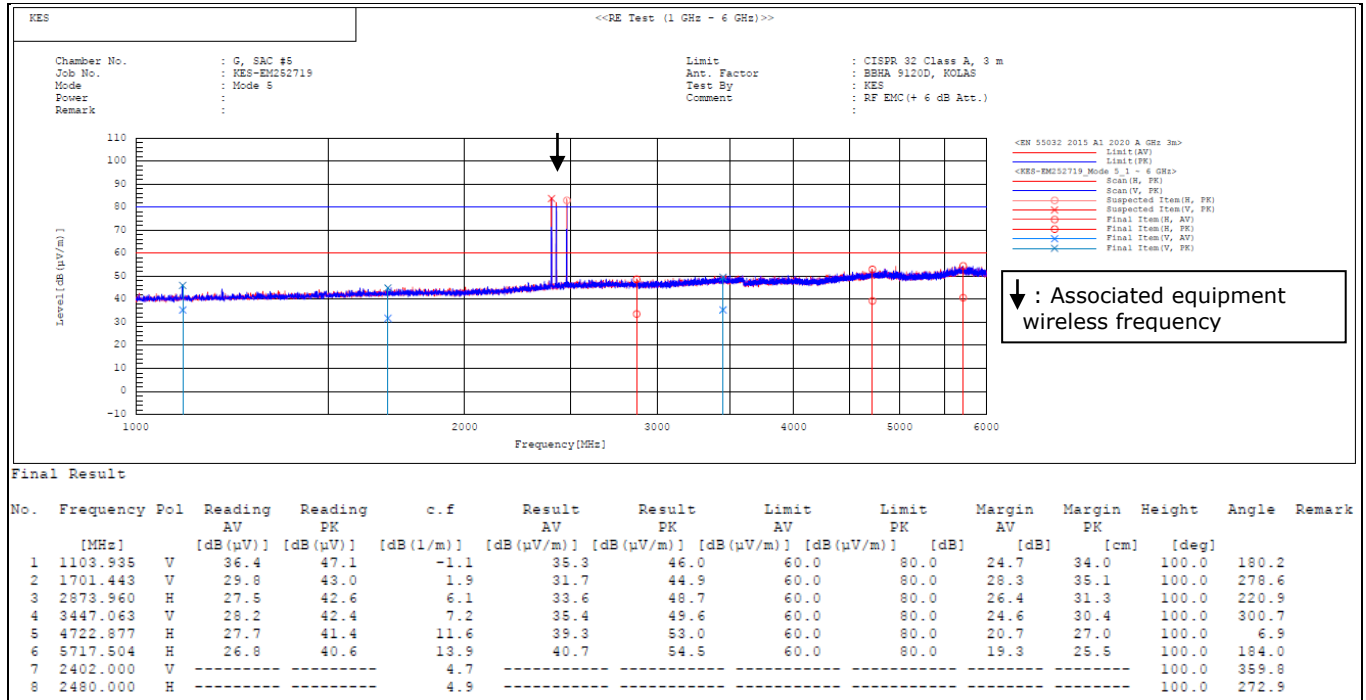
- ⊗ The data is the result of measured by the detector in PK and CISPR Average on the Peak graph.
⊗ The Average of the test data is the cispr average result.



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- Test Date : 2025-08-26
- Test Mode : Mode 5



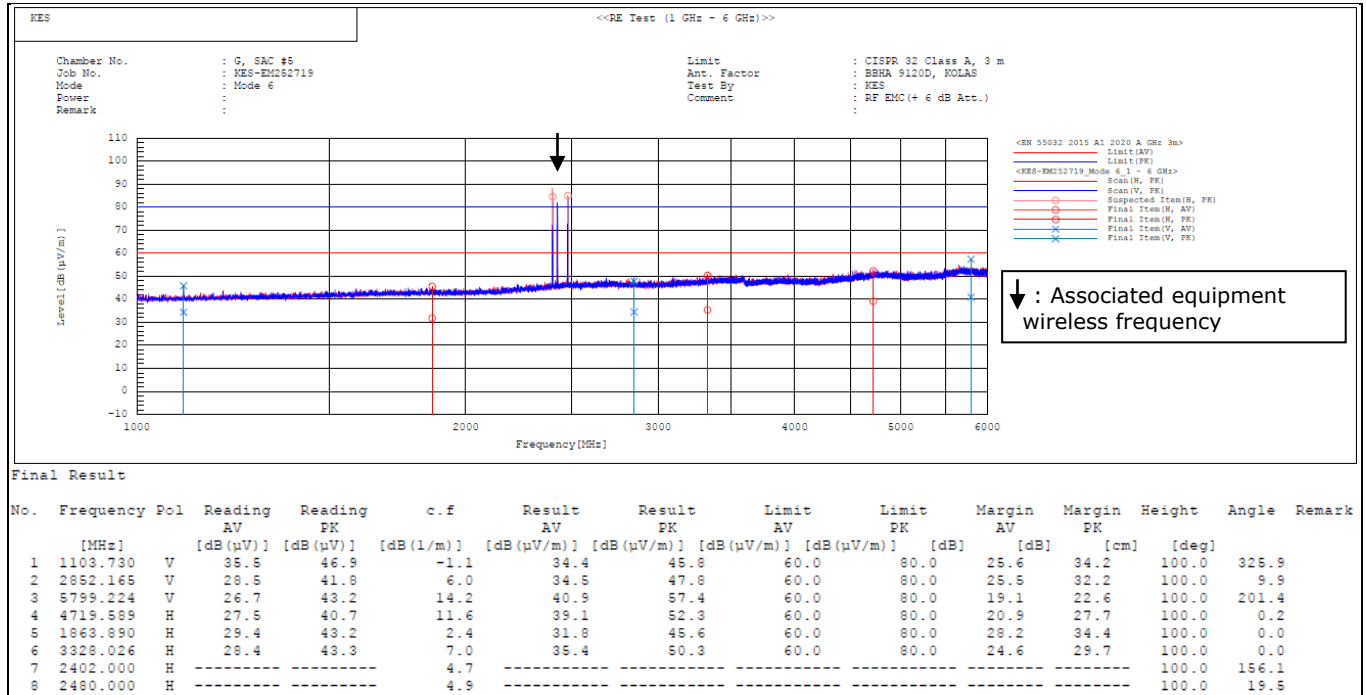
- ※ The data is the result of measured by the detector in PK and CISPR Average on the Peak graph.
- ※ The Average of the test data is the cispr average result.



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- Test Date : 2025-08-26
- Test Mode : Mode 6



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

6.4.5 Remark

Complies with the test requirements.

Mode 1 ~ 6 : Associated equipment wireless frequency (2 402 ~ 2 480) MHz (Exclusion band)



6.5 Harmonic Current Emissions

6.5.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
net.control Software	net.control	EM TEST	2.1.4	-	-	■
DIGITAL POWER ANALYZER (Harmonic)	DPA 500N	EM TEST	V1024106759	2025-03-31	2026-03-31	■
POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-	-	■

6.5.2 Test Location : SHIELD ROOM #7

6.5.3 Test Conditions :

Temperature	Relative Humidity
(26.4 ~ 26.6) °C	(54.9 ~ 55.7) % R.H.

6.5.4 Classification of Equipment for Harmonic Current Emissions

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



6.5.5 Test Result

- Test Date : 2025-08-26
- Test Mode : Mode 1

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.123			
2	0.004	0.220	1.620	n/a
3	0.117	3.401	3.450	PASS
4	0.003	0.489	0.645	n/a
5	0.114	6.685	1.710	PASS
6	0.004	0.962	0.450	n/a
7	0.111	9.581	1.155	PASS
8	0.003	0.985	0.345	n/a
9	0.107	17.794	0.600	PASS
10	0.004	1.287	0.276	n/a
11	0.101	20.484	0.495	PASS
12	0.004	1.601	0.230	n/a
13	0.095	30.071	0.315	PASS
14	0.003	1.687	0.197	n/a
15	0.088	38.941	0.225	PASS
16	0.003	1.722	0.173	n/a
17	0.080	40.435	0.199	PASS
18	0.003	1.942	0.153	n/a
19	0.072	40.769	0.178	PASS
20	0.003	2.225	0.138	n/a
21	0.064	40.009	0.161	PASS
22	0.003	2.547	0.125	n/a
23	0.056	38.436	0.147	PASS
24	0.003	2.548	0.115	n/a
25	0.048	35.844	0.135	PASS
26	0.003	2.625	0.106	n/a
27	0.041	32.722	0.125	PASS
28	0.002	2.529	0.099	n/a
29	0.034	28.945	0.116	PASS
30	0.002	2.555	0.092	n/a
31	0.027	25.094	0.109	PASS
32	0.002	2.444	0.086	n/a
33	0.022	21.140	0.102	PASS
34	0.002	2.104	0.081	n/a
35	0.016	16.765	0.096	PASS
36	0.002	2.266	0.077	n/a
37	0.012	12.931	0.091	PASS
38	0.001	2.001	0.073	n/a
39	0.008	9.130	0.087	PASS
40	0.001	2.160	0.069	n/a

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



Test Data - Harmonics (continued)

Average harmonic current results				
Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.118			
2	0.003	0.297	1.080	n/a
3	0.112	4.889	2.300	PASS
4	0.003	0.667	0.430	n/a
5	0.109	9.588	1.140	PASS
6	0.004	1.324	0.300	n/a
7	0.106	13.752	0.770	PASS
8	0.003	1.366	0.230	n/a
9	0.103	25.654	0.400	PASS
10	0.003	1.775	0.184	n/a
11	0.098	29.582	0.330	PASS
12	0.003	2.217	0.153	n/a
13	0.091	43.473	0.210	PASS
14	0.003	2.323	0.131	n/a
15	0.084	56.264	0.150	PASS
16	0.003	2.344	0.115	n/a
17	0.077	58.546	0.132	PASS
18	0.003	2.664	0.102	n/a
19	0.070	59.314	0.118	PASS
20	0.003	3.076	0.092	n/a
21	0.063	39.033	0.161	PASS
22	0.003	3.550	0.084	n/a
23	0.055	37.677	0.147	PASS
24	0.003	3.521	0.077	n/a
25	0.048	35.348	0.135	PASS
26	0.003	3.591	0.071	n/a
27	0.041	32.480	0.125	PASS
28	0.002	3.468	0.066	n/a
29	0.034	28.845	0.116	PASS
30	0.002	3.417	0.061	n/a
31	0.027	24.885	0.109	PASS
32	0.002	3.305	0.058	n/a
33	0.021	20.803	0.102	PASS
34	0.002	2.910	0.054	n/a
35	0.016	16.392	0.096	PASS
36	0.002	3.103	0.051	n/a
37	0.011	12.555	0.091	PASS
38	0.001	2.785	0.048	n/a
39	0.008	8.840	0.087	PASS
40	0.001	2.952	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 Date : 2025-08-26
- Test Mode : Mode 2

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.112			
2	0.003	0.215	1.620	n/a
3	0.106	3.082	3.450	PASS
4	0.003	0.505	0.645	n/a
5	0.104	6.063	1.710	PASS
6	0.004	0.952	0.450	n/a
7	0.101	8.729	1.155	PASS
8	0.004	1.018	0.345	n/a
9	0.098	16.255	0.600	PASS
10	0.004	1.335	0.276	n/a
11	0.093	18.804	0.495	PASS
12	0.004	1.662	0.230	n/a
13	0.087	27.719	0.315	PASS
14	0.004	1.810	0.197	n/a
15	0.081	36.084	0.225	PASS
16	0.003	1.832	0.173	n/a
17	0.075	37.802	0.199	PASS
18	0.003	2.064	0.153	n/a
19	0.068	38.439	0.178	PASS
20	0.003	2.320	0.138	n/a
21	0.061	38.213	0.161	PASS
22	0.003	2.629	0.125	n/a
23	0.055	37.206	0.147	PASS
24	0.003	2.582	0.115	n/a
25	0.048	35.257	0.135	PASS
26	0.003	2.609	0.106	n/a
27	0.041	32.760	0.125	PASS
28	0.002	2.491	0.099	n/a
29	0.034	29.536	0.116	PASS
30	0.002	2.454	0.092	n/a
31	0.028	25.895	0.109	PASS
32	0.002	2.381	0.086	n/a
33	0.023	22.097	0.102	PASS
34	0.002	2.145	0.081	n/a
35	0.017	17.836	0.096	PASS
36	0.002	2.273	0.077	n/a
37	0.013	13.987	0.091	PASS
38	0.001	2.006	0.073	n/a
39	0.009	10.157	0.087	PASS
40	0.001	2.038	0.069	n/a

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



Test Data - Harmonics (continued)

Average harmonic current results				
Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.111			
2	0.003	0.298	1.080	n/a
3	0.106	4.607	2.300	PASS
4	0.003	0.678	0.430	n/a
5	0.103	9.037	1.140	PASS
6	0.004	1.317	0.300	n/a
7	0.100	12.984	0.770	PASS
8	0.003	1.396	0.230	n/a
9	0.097	24.302	0.400	PASS
10	0.003	1.809	0.184	n/a
11	0.093	28.107	0.330	PASS
12	0.003	2.260	0.153	n/a
13	0.087	41.446	0.210	PASS
14	0.003	2.399	0.131	n/a
15	0.081	53.814	0.150	PASS
16	0.003	2.424	0.115	n/a
17	0.074	56.276	0.132	PASS
18	0.003	2.731	0.102	n/a
19	0.068	57.454	0.118	PASS
20	0.003	3.087	0.092	n/a
21	0.061	38.105	0.161	PASS
22	0.003	3.536	0.084	n/a
23	0.054	37.131	0.147	PASS
24	0.003	3.460	0.077	n/a
25	0.047	35.178	0.135	PASS
26	0.002	3.461	0.071	n/a
27	0.041	32.672	0.125	PASS
28	0.002	3.361	0.066	n/a
29	0.034	29.438	0.116	PASS
30	0.002	3.289	0.061	n/a
31	0.028	25.779	0.109	PASS
32	0.002	3.234	0.058	n/a
33	0.022	21.969	0.102	PASS
34	0.002	2.900	0.054	n/a
35	0.017	17.706	0.096	PASS
36	0.002	2.964	0.051	n/a
37	0.013	13.834	0.091	PASS
38	0.001	2.747	0.048	n/a
39	0.009	9.984	0.087	PASS
40	0.001	2.818	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 Date : 2025-08-26

● Test Mode : Mode 3

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.116			
2	0.003	0.207	1.620	n/a
3	0.111	3.079	3.450	PASS
4	0.003	0.498	0.645	n/a
5	0.104	6.012	1.710	PASS
6	0.004	0.954	0.450	n/a
7	0.103	8.701	1.155	PASS
8	0.004	1.043	0.345	n/a
9	0.100	16.253	0.600	PASS
10	0.004	1.375	0.276	n/a
11	0.094	18.504	0.495	PASS
12	0.004	1.896	0.230	n/a
13	0.089	27.678	0.315	PASS
14	0.004	1.856	0.197	n/a
15	0.085	36.031	0.225	PASS
16	0.003	1.869	0.173	n/a
17	0.075	37.790	0.199	PASS
18	0.003	2.016	0.153	n/a
19	0.068	38.478	0.178	PASS
20	0.003	2.341	0.138	n/a
21	0.061	38.234	0.161	PASS
22	0.003	2.516	0.125	n/a
23	0.055	37.233	0.147	PASS
24	0.003	2.590	0.115	n/a
25	0.048	35.309	0.135	PASS
26	0.003	2.588	0.106	n/a
27	0.041	32.812	0.125	PASS
28	0.002	2.578	0.099	n/a
29	0.034	29.687	0.116	PASS
30	0.002	2.451	0.092	n/a
31	0.028	26.412	0.109	PASS
32	0.002	2.417	0.086	n/a
33	0.023	22.394	0.102	PASS
34	0.002	2.198	0.081	n/a
35	0.015	18.094	0.096	PASS
36	0.002	2.204	0.077	n/a
37	0.013	14.650	0.091	PASS
38	0.001	2.006	0.073	n/a
39	0.009	10.532	0.087	PASS
40	0.001	2.034	0.069	n/a

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



Test Data - Harmonics (continued)

Average harmonic current results				
Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.109			
2	0.003	0.291	1.080	n/a
3	0.107	4.594	2.300	PASS
4	0.003	0.685	0.430	n/a
5	0.102	9.013	1.140	PASS
6	0.004	1.327	0.300	n/a
7	0.100	12.890	0.770	PASS
8	0.003	1.407	0.230	n/a
9	0.096	24.108	0.400	PASS
10	0.003	1.809	0.184	n/a
11	0.093	27.953	0.330	PASS
12	0.004	2.280	0.153	n/a
13	0.087	41.247	0.210	PASS
14	0.003	2.385	0.131	n/a
15	0.081	53.567	0.150	PASS
16	0.003	2.466	0.115	n/a
17	0.074	56.004	0.132	PASS
18	0.003	2.753	0.102	n/a
19	0.068	57.190	0.118	PASS
20	0.003	3.098	0.092	n/a
21	0.061	38.114	0.161	PASS
22	0.003	3.469	0.084	n/a
23	0.055	37.155	0.147	PASS
24	0.003	3.476	0.077	n/a
25	0.047	35.265	0.135	PASS
26	0.002	3.510	0.071	n/a
27	0.041	32.702	0.125	PASS
28	0.002	3.417	0.066	n/a
29	0.035	29.689	0.116	PASS
30	0.002	3.314	0.061	n/a
31	0.028	25.985	0.109	PASS
32	0.002	3.234	0.058	n/a
33	0.022	21.969	0.102	PASS
34	0.002	2.901	0.054	n/a
35	0.017	17.706	0.096	PASS
36	0.002	2.960	0.051	n/a
37	0.013	13.812	0.091	PASS
38	0.001	2.790	0.048	n/a
39	0.009	10.237	0.087	PASS
40	0.001	2.843	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 Date : 2025-08-26

● Test Mode : Mode 4

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.111			
2	0.003	0.208	1.620	n/a
3	0.105	3.047	3.450	PASS
4	0.003	0.503	0.645	n/a
5	0.103	5.997	1.710	PASS
6	0.004	0.961	0.450	n/a
7	0.100	8.633	1.155	PASS
8	0.004	1.048	0.345	n/a
9	0.097	16.091	0.600	PASS
10	0.004	1.345	0.276	n/a
11	0.092	18.629	0.495	PASS
12	0.004	1.653	0.230	n/a
13	0.087	27.496	0.315	PASS
14	0.004	1.812	0.197	n/a
15	0.081	35.838	0.225	PASS
16	0.003	1.831	0.173	n/a
17	0.075	37.657	0.199	PASS
18	0.003	2.099	0.153	n/a
19	0.068	38.326	0.178	PASS
20	0.003	2.288	0.138	n/a
21	0.061	38.132	0.161	PASS
22	0.003	2.598	0.125	n/a
23	0.055	37.249	0.147	PASS
24	0.003	2.577	0.115	n/a
25	0.048	35.368	0.135	PASS
26	0.003	2.562	0.106	n/a
27	0.041	32.961	0.125	PASS
28	0.003	2.550	0.099	n/a
29	0.035	29.828	0.116	PASS
30	0.002	2.439	0.092	n/a
31	0.029	26.224	0.109	PASS
32	0.002	2.435	0.086	n/a
33	0.023	22.468	0.102	PASS
34	0.002	2.179	0.081	n/a
35	0.018	18.314	0.096	PASS
36	0.002	2.195	0.077	n/a
37	0.013	14.466	0.091	PASS
38	0.001	2.040	0.073	n/a
39	0.009	10.620	0.087	PASS
40	0.001	2.016	0.069	n/a

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



Test Data - Harmonics (continued)

Average harmonic current results				
Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.110			
2	0.003	0.289	1.080	n/a
3	0.105	4.557	2.300	PASS
4	0.003	0.695	0.430	n/a
5	0.102	8.936	1.140	PASS
6	0.004	1.330	0.300	n/a
7	0.099	12.848	0.770	PASS
8	0.003	1.427	0.230	n/a
9	0.096	24.059	0.400	PASS
10	0.003	1.836	0.184	n/a
11	0.092	27.856	0.330	PASS
12	0.004	2.290	0.153	n/a
13	0.086	41.126	0.210	PASS
14	0.003	2.442	0.131	n/a
15	0.080	53.461	0.150	PASS
16	0.003	2.485	0.115	n/a
17	0.074	55.996	0.132	PASS
18	0.003	2.770	0.102	n/a
19	0.068	57.270	0.118	PASS
20	0.003	3.125	0.092	n/a
21	0.061	38.049	0.161	PASS
22	0.003	3.560	0.084	n/a
23	0.055	37.149	0.147	PASS
24	0.003	3.481	0.077	n/a
25	0.048	35.282	0.135	PASS
26	0.002	3.506	0.071	n/a
27	0.041	32.874	0.125	PASS
28	0.002	3.434	0.066	n/a
29	0.035	29.730	0.116	PASS
30	0.002	3.336	0.061	n/a
31	0.028	26.130	0.109	PASS
32	0.002	3.276	0.058	n/a
33	0.023	22.380	0.102	PASS
34	0.002	2.933	0.054	n/a
35	0.017	17.651	0.096	PASS
36	0.002	2.949	0.051	n/a
37	0.013	13.964	0.091	PASS
38	0.001	2.765	0.048	n/a
39	0.009	10.434	0.087	PASS
40	0.001	2.749	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.

6.5.6 Remark

Complies with the test requirements.



6.6 Voltage Fluctuations and Flicker

6.6.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
net.control Software	net.control	EM TEST	2.1.4	-	-	■
DIGITAL POWER ANALYZER (Harmonic)	DPA 500N	EM TEST	V1024106759	2025-03-31	2026-03-31	■
POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-	-	■

6.6.2 Test Location : SHIELD ROOM #7

6.6.3 Test Conditions :

Temperature	Relative Humidity
(26.4 ~ 26.6) °C	(54.9 ~ 55.7) % R.H.



6.6.4 Test Result

- Test Date : 2025-08-26
- Test Mode : Mode 1

Flicker Measurements					
	P _{It}	Max P _{st}	Max D _c	Max D _{max}	Max T _{max}
Line 1:	0.028	0.028	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

- Test Date : 2025-08-26
- Test Mode : Mode 2

Flicker Measurements					
	P _{It}	Max P _{st}	Max D _c	Max D _{max}	Max T _{max}
Line 1:	0.028	0.028	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

- Test Date : 2025-08-26
- Test Mode : Mode 3

Flicker Measurements					
	P _{It}	Max P _{st}	Max D _c	Max D _{max}	Max T _{max}
Line 1:	0.028	0.028	0.005	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

- Test Date : 2025-08-26
- Test Mode : Mode 4

Flicker Measurements					
	P _{It}	Max P _{st}	Max D _c	Max D _{max}	Max T _{max}
Line 1:	0.028	0.028	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

6.6.5 Remark

Complies with the test requirements.



6.7 Electrostatic Discharge

6.7.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #6	-	DYMSTEC	-	-	-	■
ESD SIMULATOR	ESS-2000	NoiseKen	ESS01Z0454	2025-01-21	2026-01-21	■
HCP	-	KES	-	-	-	■
VCP	-	Noise Ken	-	-	-	■

6.7.2 Test Location : SHIELD ROOM #6

6.7.3 Test Conditions :

Temperature	Relative Humidity
Temperature(15 ~ 35) °C	(25.4 ~ 25.8) °C
Relative Humidity(30 ~ 60) % R.H.	(54.6 ~ 58.1) % R.H.
Atmospheric Pressure(86 ~ 106) kPa	(99.7 ~ 99.7) kPa

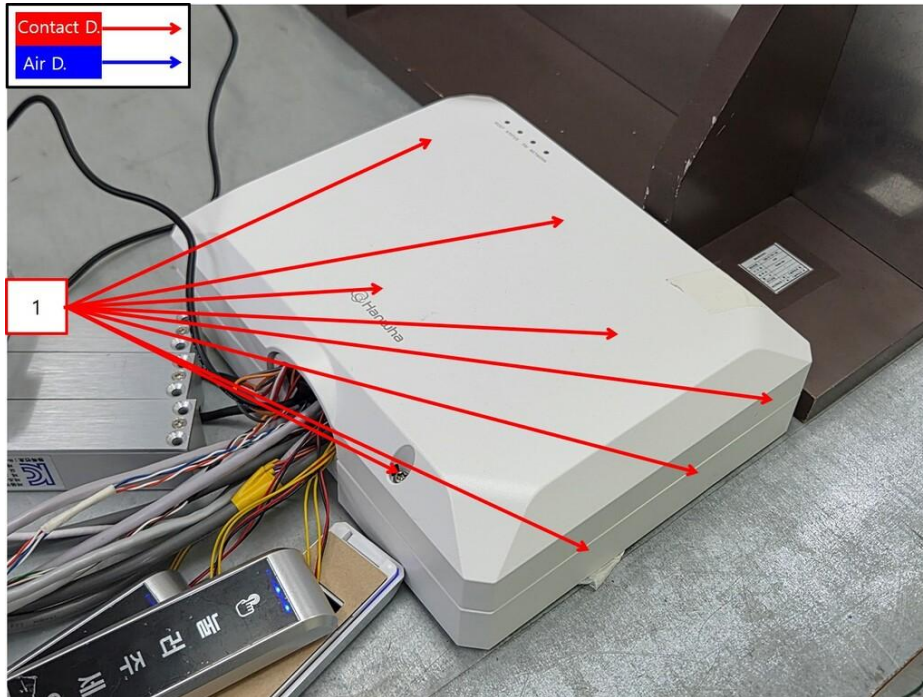
6.7.4 Test Specifications :

Discharge Factor	: 1 s
Discharge Impedance	: 330 Ω / 150 pF
Kind of Discharge	: Direct Discharge - Contact Discharge, Air Discharge Indirect Discharge - HCP, VCP
Polarity	: Positive and Negative
Number of Discharge	: 10 at all locations for Contact Discharge, 10 at all locations for Air Discharge
Performance Criteria	: Complied
Discharge Voltage	:

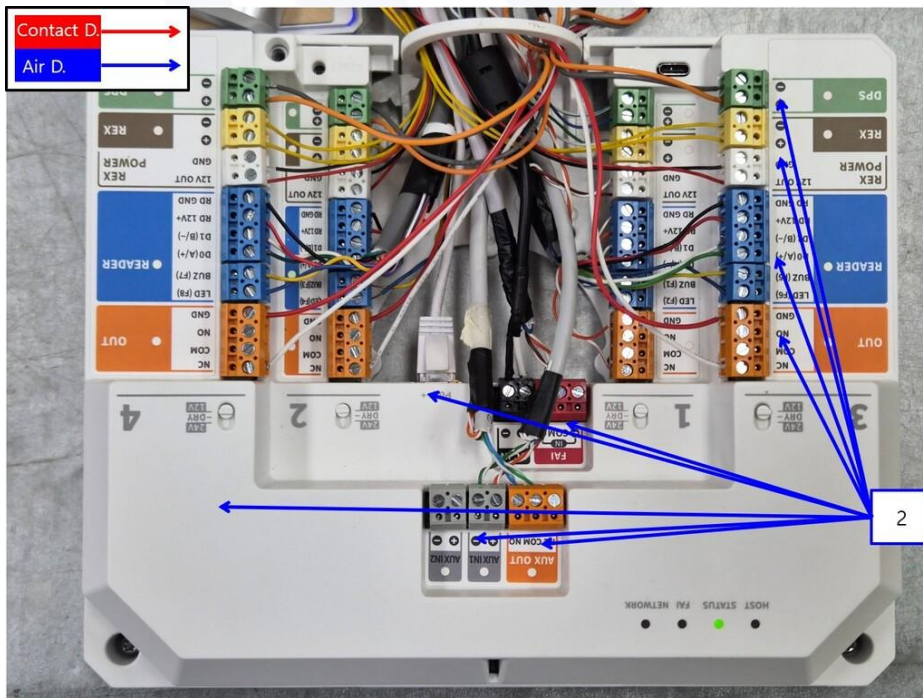
Type	Direct Discharge		Indirect Discharge	
	Contact Discharge	Air Discharge	Horizontal Coupling Plane	Vertical Coupling Plane
Test Voltage	-	± 2 kV	-	-
	± 6 kV	± 4 kV	± 6 kV	± 6 kV
	-	± 8 kV	-	-



6.7.5 Location of Discharge



<Location of Discharge-1>



<Location of Discharge-2>

**6.7.6 Test Result**

○ Test Date : 2025-08-11

● Test Mode : Mode 1

○ Indirect Discharge

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

○ Direct Discharge

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

○ Test Date : 2025-08-11

● Test Mode : Mode 2

○ Indirect Discharge

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

○ Direct Discharge

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



○ Test Date : 2025-08-12

● Test Mode : Mode 3

○ Indirect Discharge

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

○ Direct Discharge

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

○ Test Date : 2025-08-12

● Test Mode : Mode 4

○ Indirect Discharge

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

○ Direct Discharge

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



○ Test Date : 2025-08-12

● Test Mode : Mode 5

○ Indirect Discharge

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

○ Direct Discharge

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

○ Test Date : 2025-08-12

● Test Mode : Mode 6

○ Indirect Discharge

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

○ Direct Discharge

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

6.7.7 Remark

No loss of performance of function.



6.8 Continuous RF electromagnetic field disturbances

6.8.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #3	-	DYMSTEC	-	-	-	■
EMC32 Measurement Software	EMC32	R&S	10.10.02	-	-	■
SIGNAL GENERATOR	SMB 100A	Rohde & Schwarz	108252	2025-07-28	2026-07-28	■
HIGH POWER DUAL AMP	SSA532	SUNGSAN	SSA532-001	-	-	■
POWER METER	E4419B	Agilent	GB40203000	2025-02-13	2026-02-13	■
DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H. SYSTEM,INC	781	2025-03-05	2026-03-05	■
AVERAGE POWER SENSOR	E9301A	Agilent	MY52170007	2025-02-13	2026-02-13	■
AVERAGE POWER SENSOR	E9301A	Agilent	MY41498669	2025-02-13	2026-02-13	■
STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	SCHWARZBEC K	9128ES-121	-	-	■

6.8.2 Test Location : SEMI ANECHOIC CHAMBER #3

6.8.3 Test Conditions :

Temperature	Relative Humidity
(23.8 ~ 24.8) °C	(58.3 ~ 59.1) % R.H.



6.8.4 Test Specifications :

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

**6.8.5 Test Result**

○ Test Date : 2025-08-10

● Test Mode : Mode 1

○ Enclosure Port

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

○ Test Date : 2025-08-10

● Test Mode : Mode 2

○ Enclosure Port

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

○ Test Date : 2025-08-13

● Test Mode : Mode 3

○ Enclosure Port

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



○ Test Date : 2025-08-13

● Test Mode : Mode 4

○ Enclosure Port

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

○ Test Date : 2025-08-16

● Test Mode : Mode 5

○ Enclosure Port

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

○ Test Date : 2025-08-16

● Test Mode : Mode 6

○ Enclosure Port

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

6.8.6 Remark

No loss of performance of function.



6.9 Electrical Fast Transients/Bursts

6.9.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #3	-	SEMITEC	-	-	-	■
iec.control Software	iec.control	EM TEST	7.1.2	-	-	■
ULTRA COMPACT SIMULATOR	UCS 500N5	EM TEST	V0936105120	2025-02-14	2026-02-14	■
MOTOR VARIAC	MV2616	EM TEST	V0936105123	2025-02-14	2026-02-14	■
CAPACITIVE COUPLING CLAMP	HFK	EM TEST	0709-25	2025-02-14	2026-02-14	■

6.9.2 Test Location : SHIELD ROOM #3

6.9.3 Test Conditions :

Temperature	Relative Humidity
(25.1 ~ 25.2) °C	(47.5 ~ 48.3) % R.H.

6.9.4 Test Specifications :

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



6.9.5 Test Result

○ Test Date : 2025-08-21

● Test Mode : Mode 1

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45	Complied	Complied
FAI	Complied	Complied
AUX IN	Complied	Complied
AUX OUT	Complied	Complied
DPS + OUT (4 Pin)	Complied	Complied
REX (4 Pin)	Complied	Complied
READER (6 Pin)	Complied	Complied



○ Test Date : 2025-08-21

● Test Mode : Mode 2

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45	Complied	Complied
FAI	Complied	Complied
AUX IN	Complied	Complied
AUX OUT	Complied	Complied
DPS + OUT (4 Pin)	Complied	Complied
REX (4 Pin)	Complied	Complied
READER (6 Pin)	Complied	Complied



○ Test Date : 2025-08-21

● Test Mode : Mode 3

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45	Complied	Complied
FAI	Complied	Complied
AUX IN	Complied	Complied
AUX OUT	Complied	Complied
DPS + OUT (4 Pin)	Complied	Complied
REX (4 Pin)	Complied	Complied
READER (6 Pin)	Complied	Complied



○ Test Date : 2025-08-21

● Test Mode : Mode 4

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45	Complied	Complied
FAI	Complied	Complied
AUX IN	Complied	Complied
AUX OUT	Complied	Complied
DPS + OUT (4 Pin)	Complied	Complied
REX (4 Pin)	Complied	Complied
READER (6 Pin)	Complied	Complied



○ Test Date : 2025-08-22

● Test Mode : Mode 5

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45 (PoE)	Complied	Complied
FAI	Complied	Complied
AUX IN	Complied	Complied
AUX OUT	Complied	Complied
DPS + OUT (4 Pin)	Complied	Complied
REX (4 Pin)	Complied	Complied
READER (6 Pin)	Complied	Complied



○ Test Date : 2025-08-22

● Test Mode : Mode 6

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45 (PoE)	Complied	Complied
FAI	Complied	Complied
AUX IN	Complied	Complied
AUX OUT	Complied	Complied
DPS + OUT (4 Pin)	Complied	Complied
REX (4 Pin)	Complied	Complied
READER (6 Pin)	Complied	Complied

6.9.6 Remark

No loss of performance of function.



6.10 Surge

6.10.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
iec.control Software	iec.control	EM TEST	5.4.8	-	-	■
ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	2024-11-07	2025-11-07	■
MOTOR VARIAC	MV 2616	EM TEST	P1552169719	2024-11-07	2025-11-07	■

6.10.2 Test Location : SHIELD ROOM #7

6.10.3 Test Conditions :

Temperature	Relative Humidity
(25.3 ~ 26.3) °C	(52.9 ~ 53.3) % R.H.

6.10.4 Test Specifications :

Surge	: Input a.c power ports	Line to Line ± 0.5 kV, ± 1.0 kV
		Line to Ground ± 0.5 kV, ± 1.0 kV, ± 2.0 kV
	Other supply / Signal lines	Line to Ground ± 0.5 kV, ± 1.0 kV
Input a.c / Other supply / Signal lines		
Open-Circuit Voltage Waveform	: 1.2/50 μ s	
Short-Circuit Current Waveform	: 8/20 μ s	
Number of Applications	: Apply 5 surges for each polarity	
Phase Angle	: 0° ~ 270° (input a.c. power port)	
Polarity	: Positive and Negative	
Repetition Rate	: 1 surge per 30 s	
Performance Criteria	: Complied	

**6.10.5 Test Result**

○ Test Date : 2025-08-27

● Test Mode : Mode 1

○ Input a.c power ports

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

○ Signal ports and telecommunication ports

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

○ Test Date : 2025-08-27

● Test Mode : Mode 2

○ Input a.c power ports

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

○ Signal ports and telecommunication ports

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



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○ Test Date : 2025-08-27

● Test Mode : Mode 3

○ Input a.c power ports

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

○ Signal ports and telecommunication ports

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

○ Test Date : 2025-08-27

● Test Mode : Mode 4

○ Input a.c power ports

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

○ Signal ports and telecommunication ports

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



○ Test Date : 2025-08-27

● Test Mode : Mode 5

○ Input a.c power ports

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

○ Signal ports and telecommunication ports

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

○ Test Date : 2025-08-27

● Test Mode : Mode 6

○ Input a.c power ports

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

○ Signal ports and telecommunication ports

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

6.10.6 Remark

No loss of performance of function.



6.11 Continuous Induced RF Disturbances

6.11.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
icd.control Software	icd.control	EM TEST	8.0.0	-	-	■
TEST SYSTEM FOR CONDUCTED AND RADIATED	NSG4070	TESEQ	65585	2024-11-18	2025-11-18	■
ATTENUATOR	ATT 6/80	EM TEST	P1614178148	2024-11-06	2025-11-06	■
CDN	CDN M016	TESEQ	43694	2024-11-07	2025-11-07	■
CDN	CDN M016	TESEQ	43697	2024-11-07	2025-11-07	■
CDN	CDN T8 RJ45	SCHWARZBECK	00103	2025-07-07	2026-07-07	■
EM CLAMP	KEMZ 801A	TESEQ	44099	2024-11-08	2025-11-08	■

6.11.2 Test Location : SHIELD ROOM #7

6.11.3 Test Conditions :

Temperature	Relative Humidity
(25.3 ~ 26.3°C)	(51.2 ~ 58.7) % R.H.

6.11.4 Test Specifications

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

**6.11.5 Test Result**

- Test Date : 2025-08-08
- Test Mode : Mode 1
- Input a.c power ports

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

- Input d.c power ports

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

- Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN	Complied
FAI	Clamp	Complied
AUX IN	Clamp	Complied
AUX OUT	Clamp	Complied
DPS + OUT (4 Pin)	Clamp	Complied
REX (4 Pin)	Clamp	Complied
READER (6 Pin)	Clamp	Complied



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○ Test Date : 2025-08-08

● Test Mode : Mode 2

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN	Complied
FAI	Clamp	Complied
AUX IN	Clamp	Complied
AUX OUT	Clamp	Complied
DPS + OUT (4 Pin)	Clamp	Complied
REX (4 Pin)	Clamp	Complied
READER (6 Pin)	Clamp	Complied



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○ Test Date : 2025-08-20

● Test Mode : Mode 3

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN	Complied
FAI	Clamp	Complied
AUX IN	Clamp	Complied
AUX OUT	Clamp	Complied
DPS + OUT (4 Pin)	Clamp	Complied
REX (4 Pin)	Clamp	Complied
READER (6 Pin)	Clamp	Complied



○ Test Date : 2025-08-20

● Test Mode : Mode 4

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN	Complied
FAI	Clamp	Complied
AUX IN	Clamp	Complied
AUX OUT	Clamp	Complied
DPS + OUT (4 Pin)	Clamp	Complied
REX (4 Pin)	Clamp	Complied
READER (6 Pin)	Clamp	Complied



○ Test Date : 2025-08-24

● Test Mode : Mode 5

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45 (PoE)	CDN	Complied
FAI	Clamp	Complied
AUX IN	Clamp	Complied
AUX OUT	Clamp	Complied
DPS + OUT (4 Pin)	Clamp	Complied
REX (4 Pin)	Clamp	Complied
READER (6 Pin)	Clamp	Complied



○ Test Date : 2025-08-24

● Test Mode : Mode 6

○ Input a.c power ports

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

○ Input d.c power ports

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

○ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45 (PoE)	CDN	Complied
FAI	Clamp	Complied
AUX IN	Clamp	Complied
AUX OUT	Clamp	Complied
DPS + OUT (4 Pin)	Clamp	Complied
REX (4 Pin)	Clamp	Complied
READER (6 Pin)	Clamp	Complied

6.11.6 Remark

No loss of performance of function.



6.12 Voltage Dips and Interruptions

6.12.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
iec.control Software	iec.control	EM TEST	5.4.8	-	-	■
ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	2024-11-07	2025-11-07	■
MOTOR VARIAC	MV 2616	EM TEST	P1552169719	2024-11-07	2025-11-07	■

6.12.2 Test Location : SHIELD ROOM #7

6.12.3 Test Conditions :

Temperature	Relative Humidity
(25.7 ~ 26.0) °C	(52.9 ~ 53.3) % R.H.

6.12.4 Test Specifications

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

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

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



6.12.5 Test Result

- Test Date: 2025-08-27
- Test Mode: Mode 1

○ Voltage Dips and Short Interruptions

Depth	Duration [in period]	Observations
20 % Voltage reduction	250 / 5 000	Complied
30 % Voltage reduction	25 / 500	Complied
60 % Voltage reduction	10 / 200	Complied
100 % Voltage reduction	250 / 5 000	Degradation

○ Voltage variations

Voltage Variations	Supply Voltage	Observations
Supply Voltage max ($U_{\max} = U_{\text{nom}} + 10\%$)	253 V	Complied
Supply Voltage min ($U_{\min} = U_{\text{nom}} - 15\%$)	195.5 V	Complied

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

- Test Date: 2025-08-27
- Test Mode: Mode 2

○ Voltage Dips and Short Interruptions

Depth	Duration [in period]	Observations
20 % Voltage reduction	250 / 5 000	Complied
30 % Voltage reduction	25 / 500	Complied
60 % Voltage reduction	10 / 200	Complied
100 % Voltage reduction	250 / 5 000	Degradation

○ Voltage variations

Voltage Variations	Supply Voltage	Observations
Supply Voltage max ($U_{\max} = U_{\text{nom}} + 10\%$)	253 V	Complied
Supply Voltage min ($U_{\min} = U_{\text{nom}} - 15\%$)	195.5 V	Complied

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



○ Test Date: 2025-08-27

● Test Mode: Mode 3

○ Voltage Dips and Short Interruptions

Depth	Duration [in period]	Observations
20 % Voltage reduction	250 / 5 000	Complied
30 % Voltage reduction	25 / 500	Complied
60 % Voltage reduction	10 / 200	Complied
100 % Voltage reduction	250 / 5 000	Degradation

○ Voltage variations

Voltage Variations	Supply Voltage	Observations
Supply Voltage max ($U_{\max} = U_{\text{nom}} + 10\%$)	253 V	Complied
Supply Voltage min ($U_{\min} = U_{\text{nom}} - 15\%$)	195.5 V	Complied

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

○ Test Date: 2025-08-27

● Test Mode: Mode 4

○ Voltage Dips and Short Interruptions

Depth	Duration [in period]	Observations
20 % Voltage reduction	250 / 5 000	Complied
30 % Voltage reduction	25 / 500	Complied
60 % Voltage reduction	10 / 200	Complied
100 % Voltage reduction	250 / 5 000	Degradation

○ Voltage variations

Voltage Variations	Supply Voltage	Observations
Supply Voltage max ($U_{\max} = U_{\text{nom}} + 10\%$)	253 V	Complied
Supply Voltage min ($U_{\min} = U_{\text{nom}} - 15\%$)	195.5 V	Complied

 U_{nom} = Nominal mains voltage, $U_{\max}$ = (Maximum U_{nom}) + 10 %, $U_{\min}$ = (Minimum U_{nom}) – 15 %.**6.12.6 Remark**

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



7 Test Setup Photos and EUT Photographs

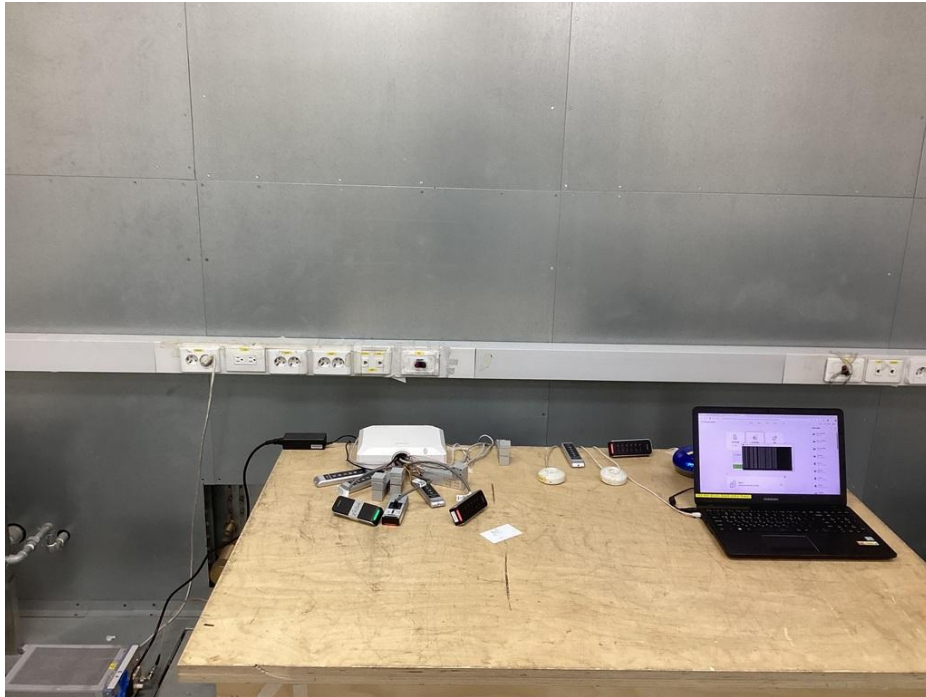
7.1 Test Setup Photos



<Conducted Emissions at Mains Power Ports - Front> Mode 1, Mode 2



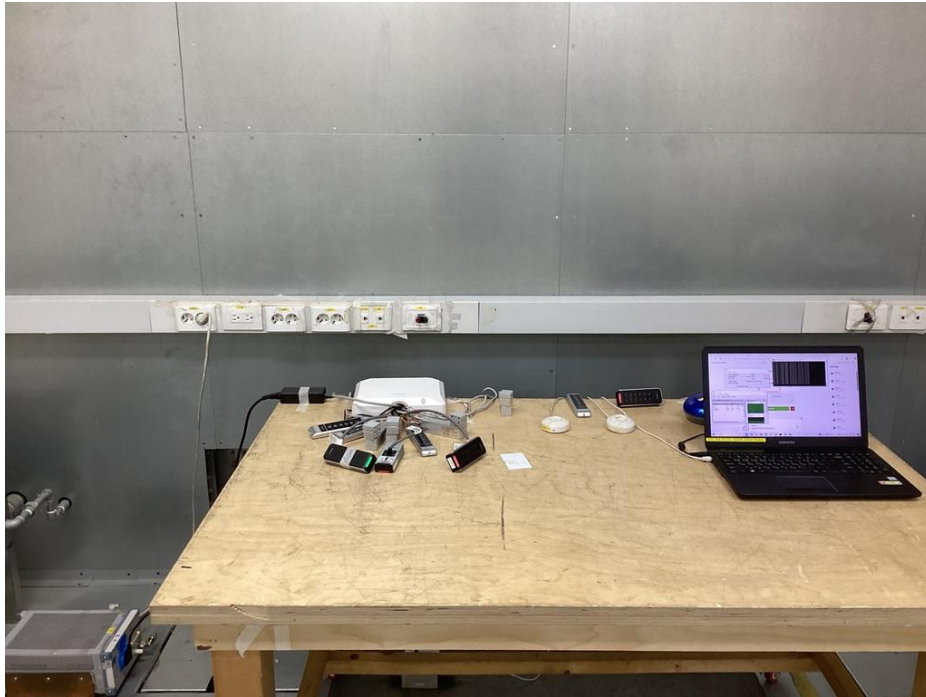
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<Conducted Emissions at Mains Power Ports - Front> Mode 3, Mode 4



<Conducted Emissions at Mains Power Ports - Rear> Mode 3, Mode 4



<Conducted Emissions at Telecommunication Ports - Front> Mode 1, Mode 2



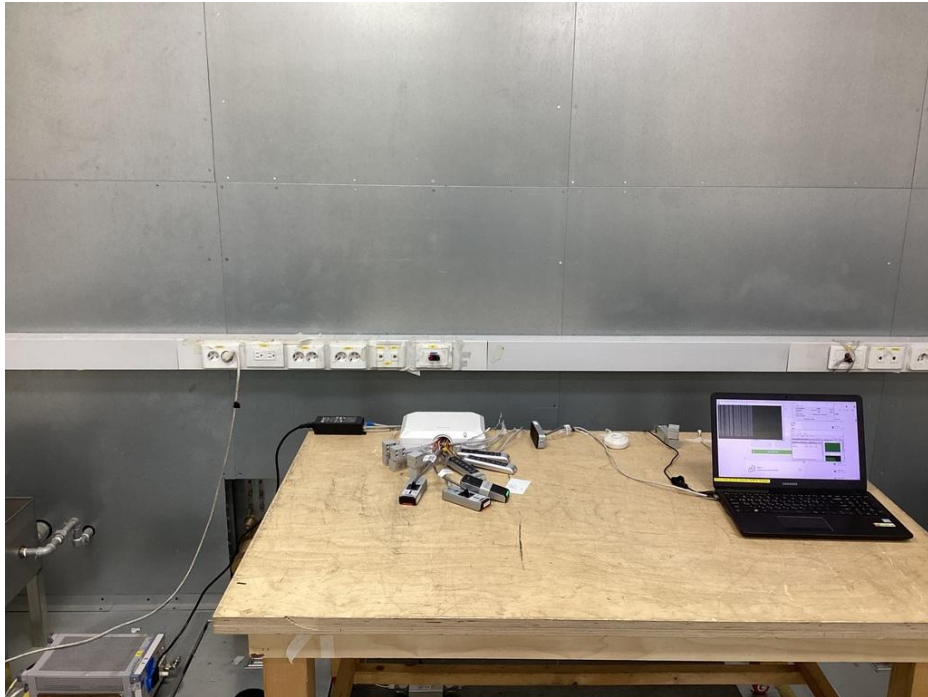
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<Conducted Emissions at Telecommunication Ports - Front> Mode 3, Mode 4



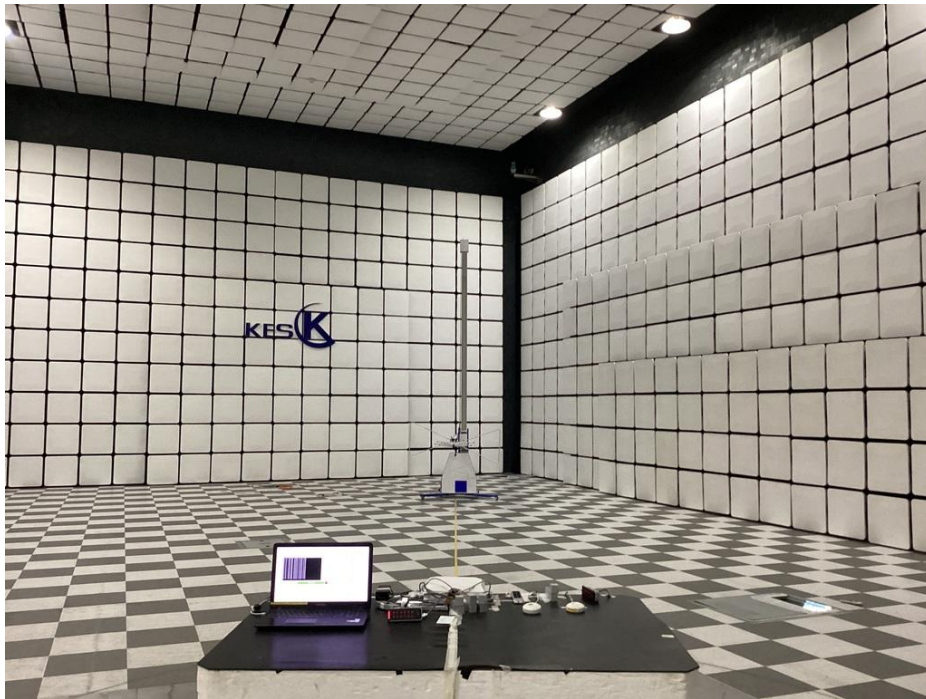
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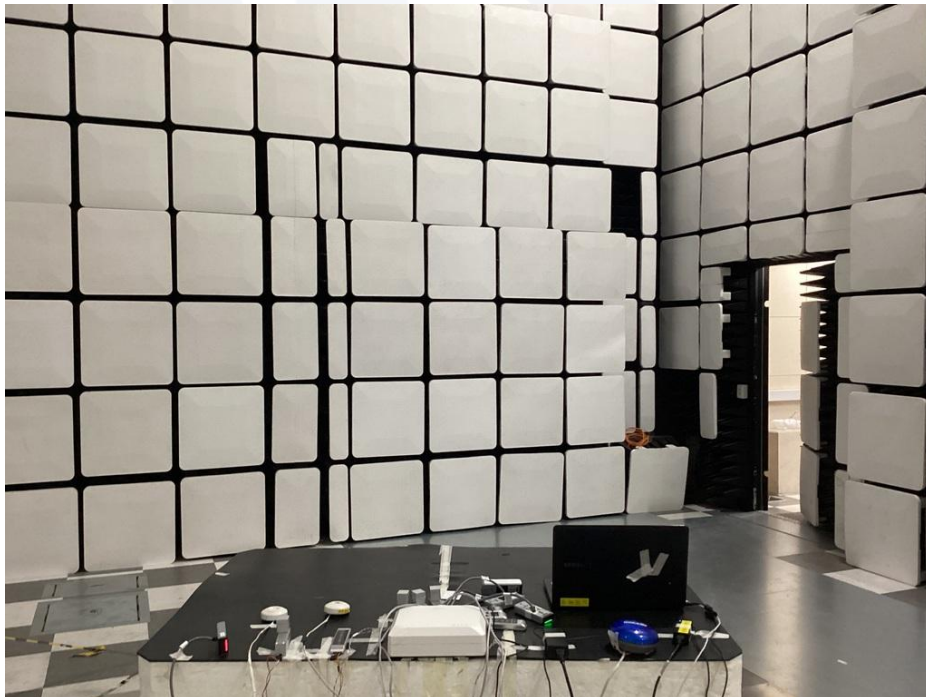
<Conducted Emissions at Telecommunication Ports - Front> Mode 5, Mode 6



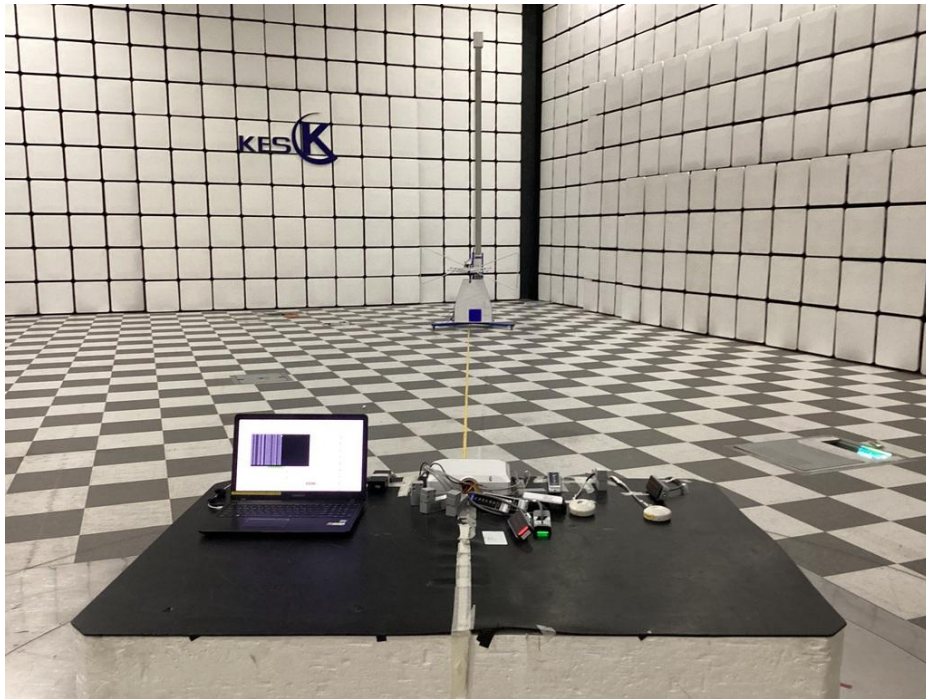
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<Radiated Emissions(Below 1 GHz) - Front> Mode 1, Mode 2



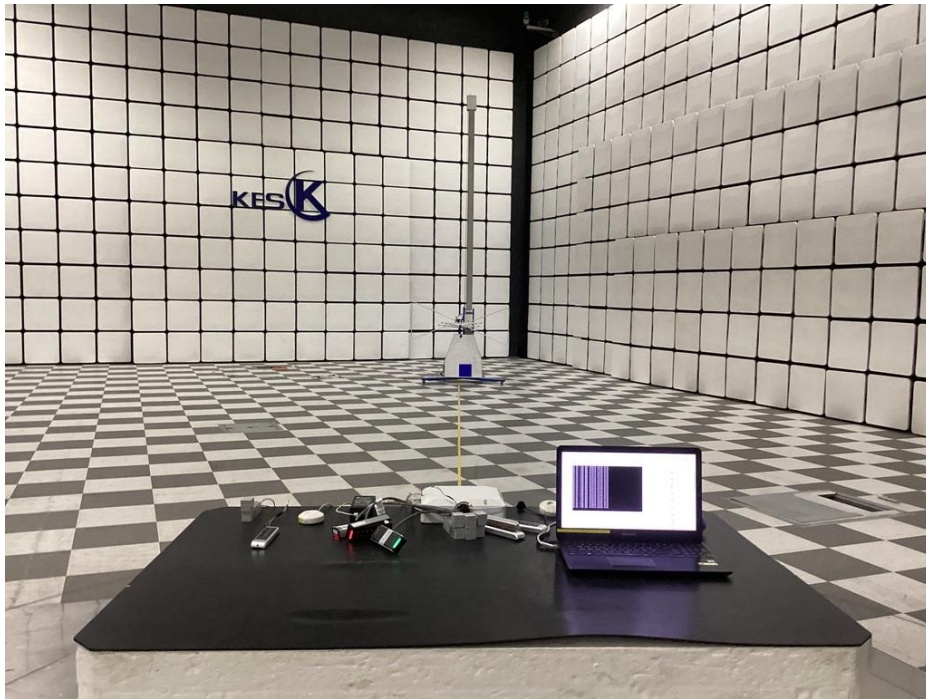
<Radiated Emissions(Below 1 GHz) - Rear> Mode 1, Mode 2



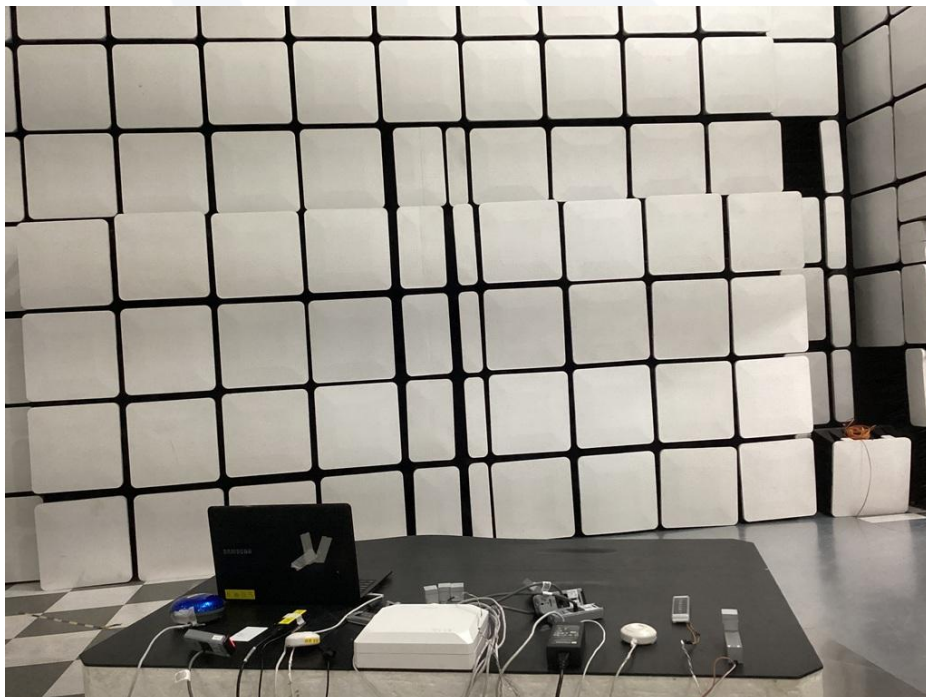
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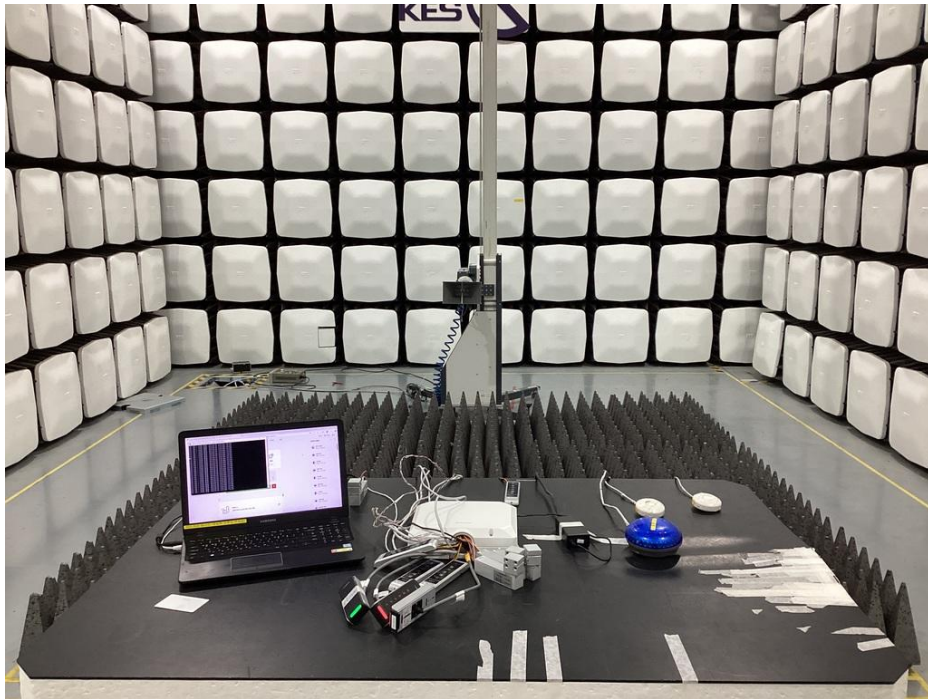
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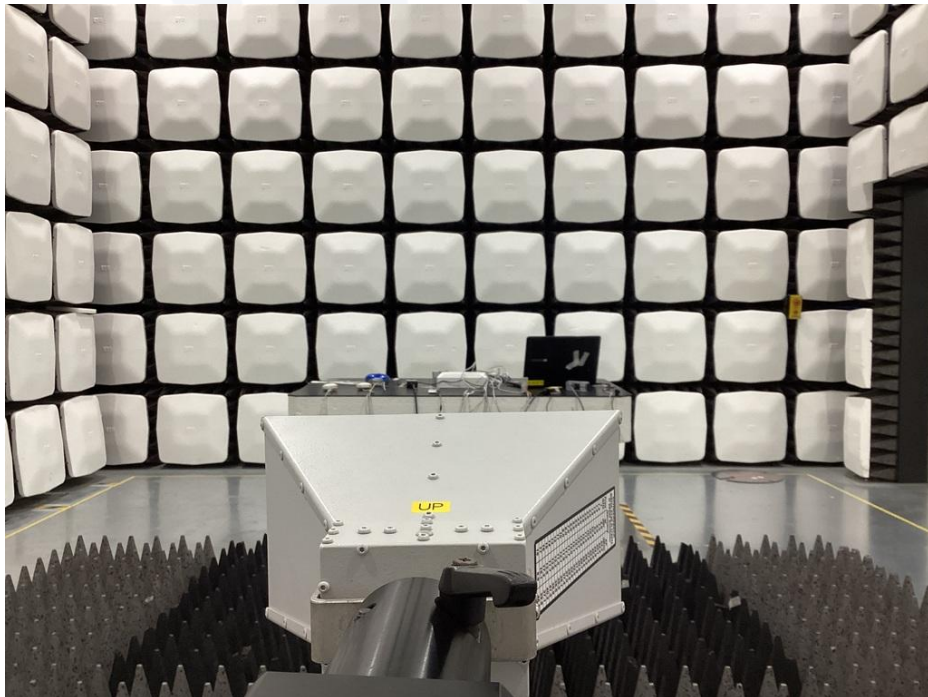
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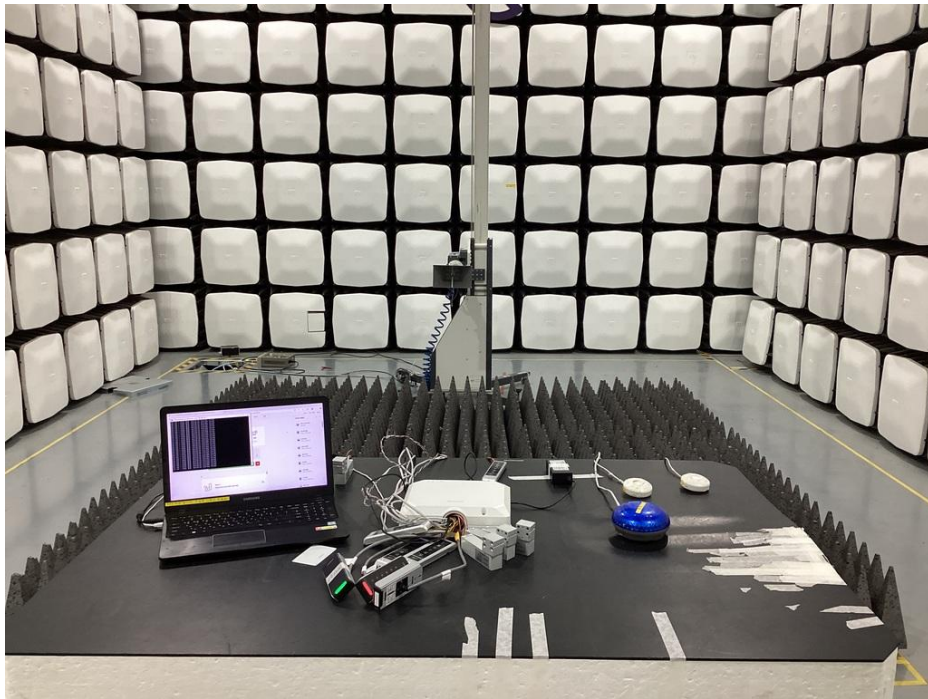
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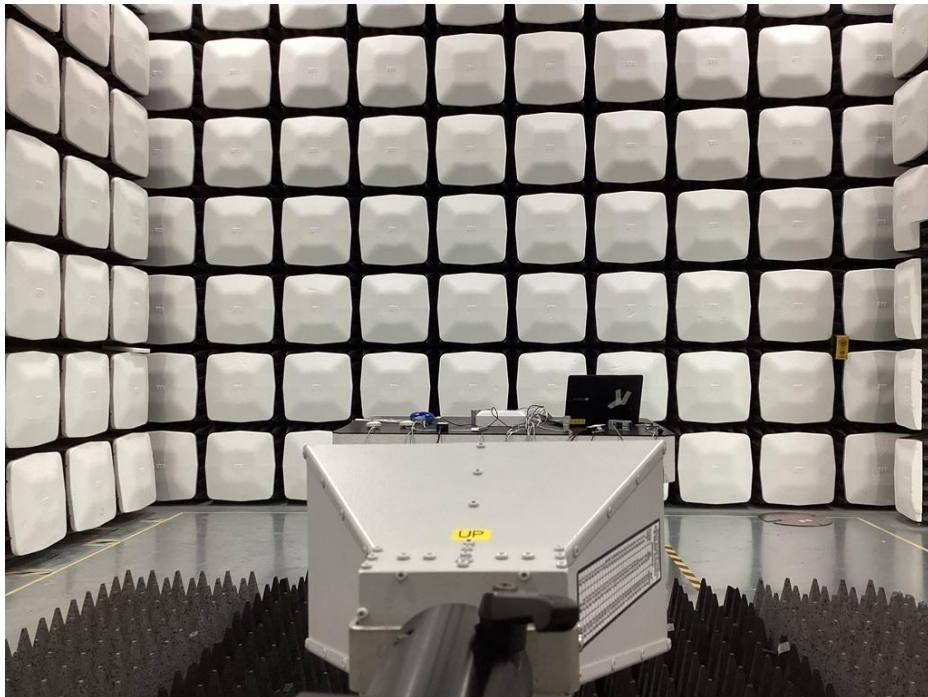
<Radiated Emissions(Above 1 GHz) - Front> Mode 1, Mode 2



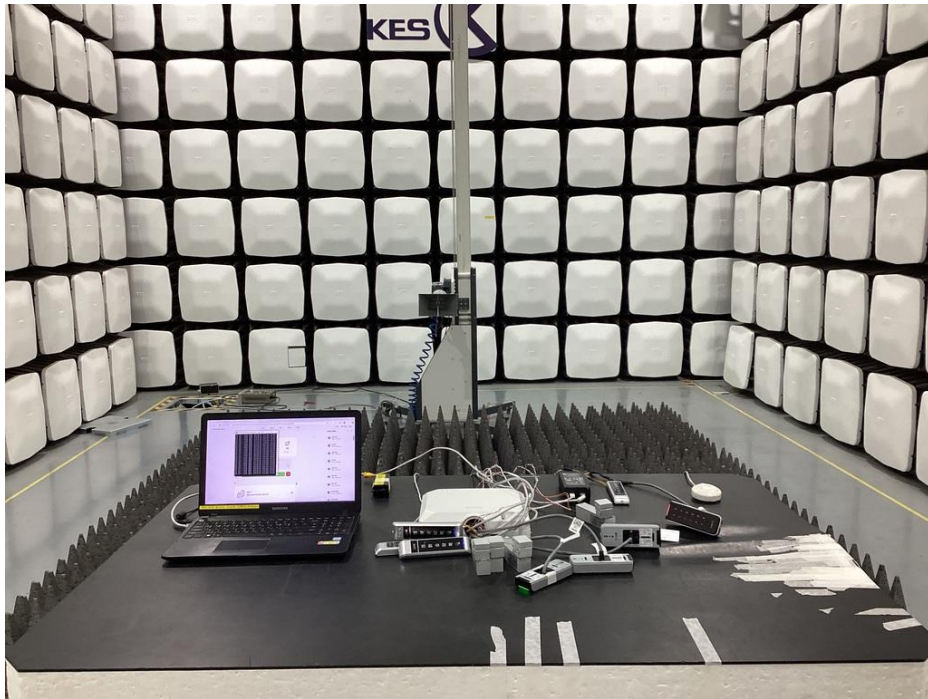
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<Radiated Emissions(Above 1 GHz) - Front> Mode 3, Mode 4



<Radiated Emissions(Above 1 GHz) - Rear> Mode 3, Mode 4



<Radiated Emissions(Above 1 GHz) - Front> Mode 5, Mode 6



<Radiated Emissions(Above 1 GHz) - Rear> Mode 5, Mode 6



<Harmonic Current Emissions and Voltage Fluctuations and Flicker> Mode 1, Mode 2



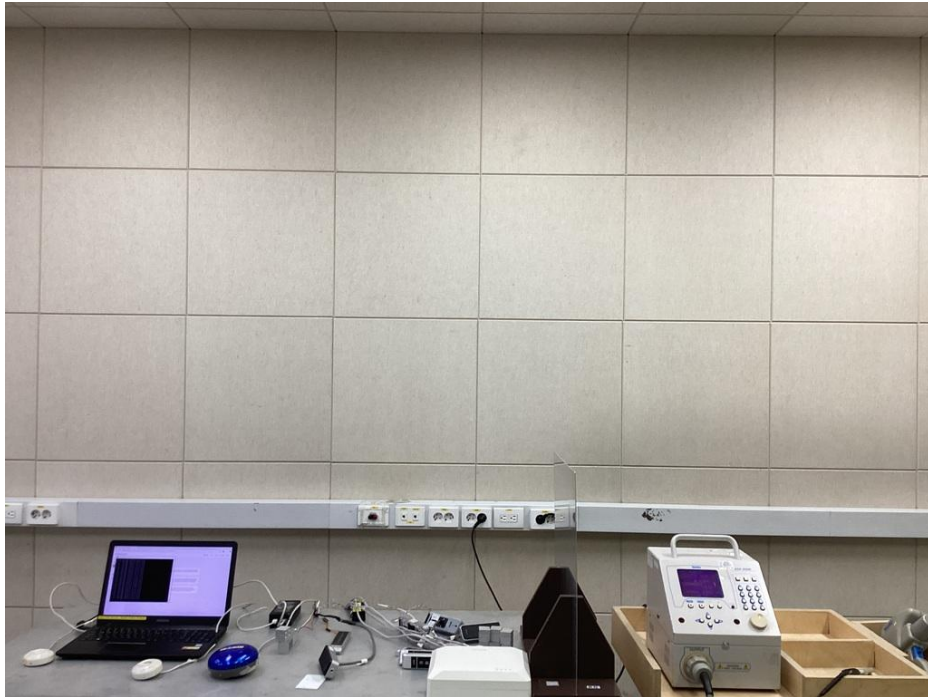
<Harmonic Current Emissions and Voltage Fluctuations and Flicker> Mode 3, Mode 4



<Electrostatic Discharge> Mode 1, Mode 2



<Electrostatic Discharge> Mode 3, Mode 4



<Electrostatic Discharge> Mode 5, Mode 6



<Continuous RF electromagnetic field disturbances> Mode 1, Mode 2



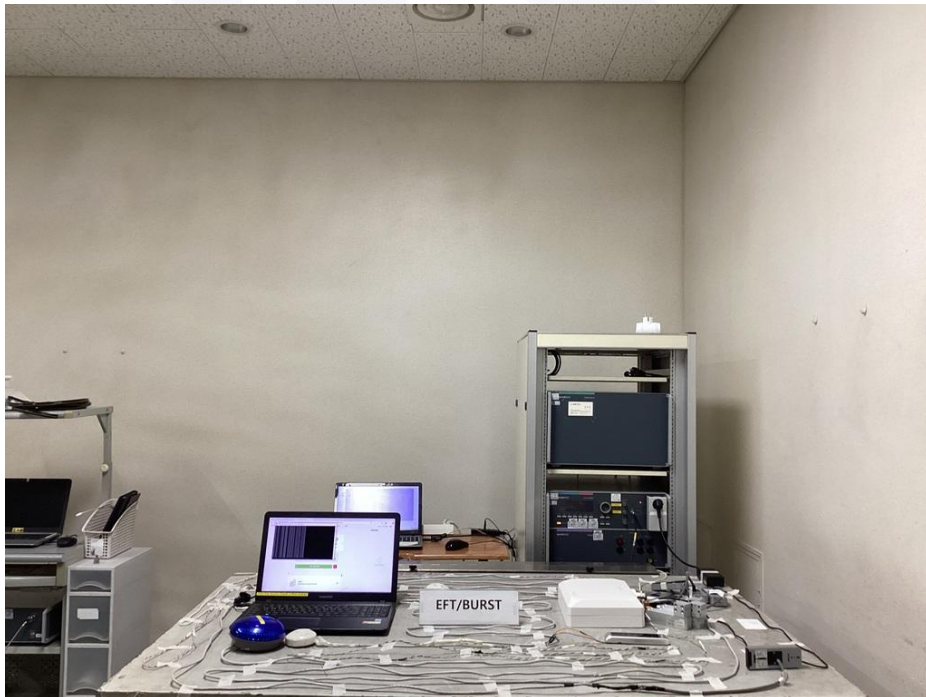
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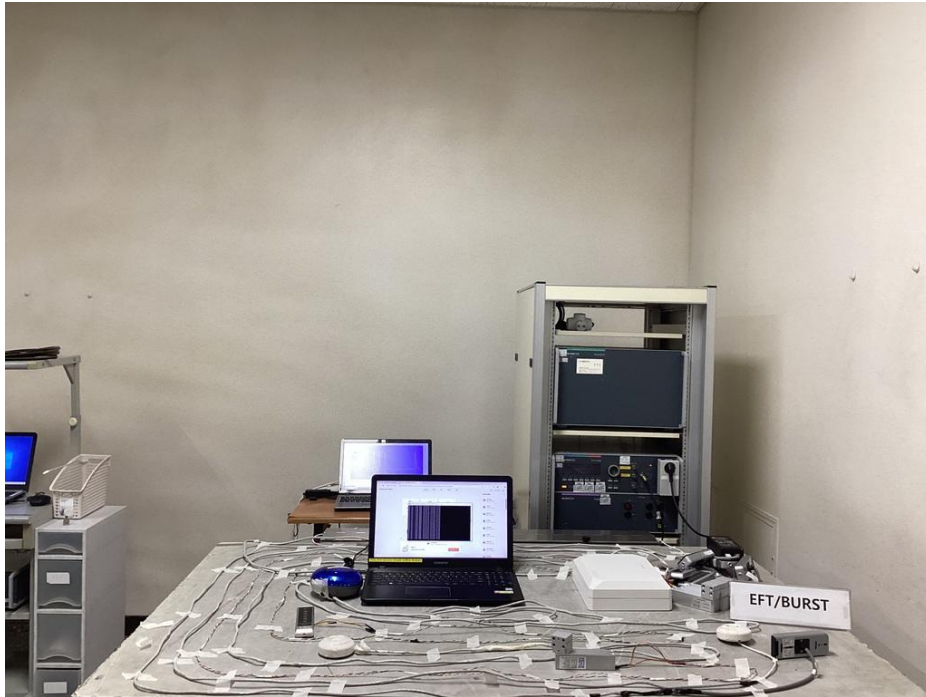
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<Electrical Fast Transients/Bursts> Mode 1, Mode 2



<Electrical Fast Transients/Bursts> Mode 3, Mode 4



<Electrical Fast Transients/Bursts> Mode 5, Mode 6



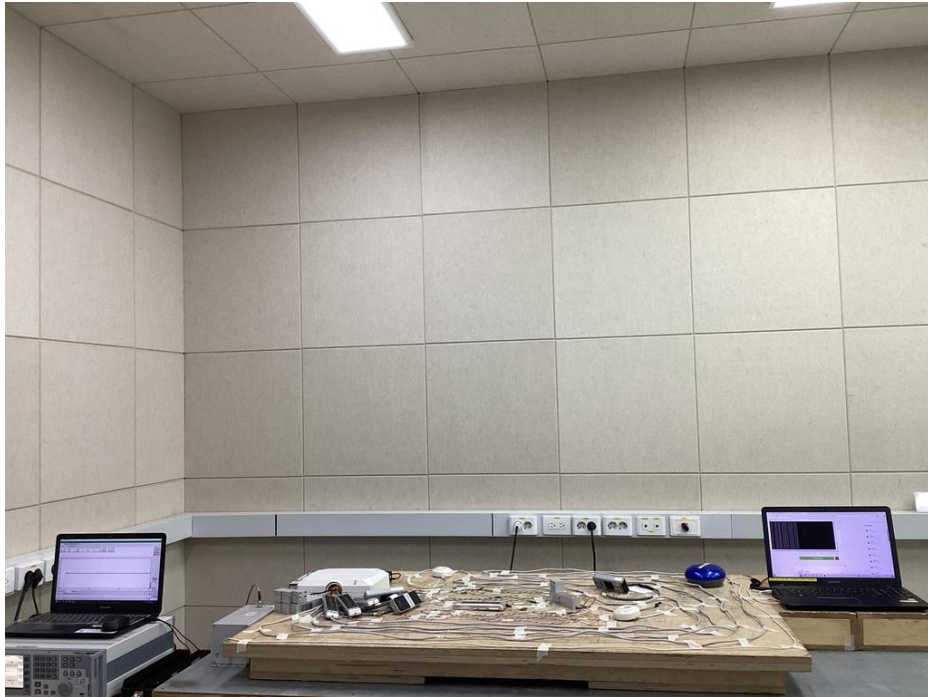
<Surge> Mode 1, Mode 2



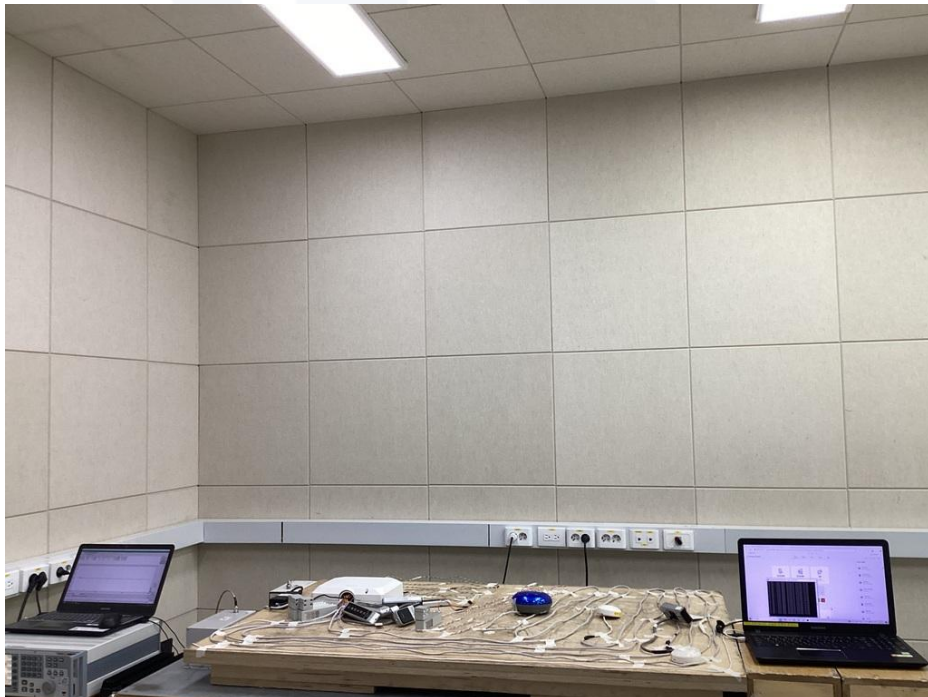
<Surge> Mode 3, Mode 4



<Surge> Mode 5, Mode 6



<Continuous Induced RF Disturbances> Mode 1, Mode 2



<Continuous Induced RF Disturbances> Mode 3, Mode 4



<Continuous Induced RF Disturbances> Mode 5, Mode 6



<Voltage Dips and Interruptions> Mode 1, Mode 2



<Voltage Dips and Interruptions> Mode 3, Mode 4



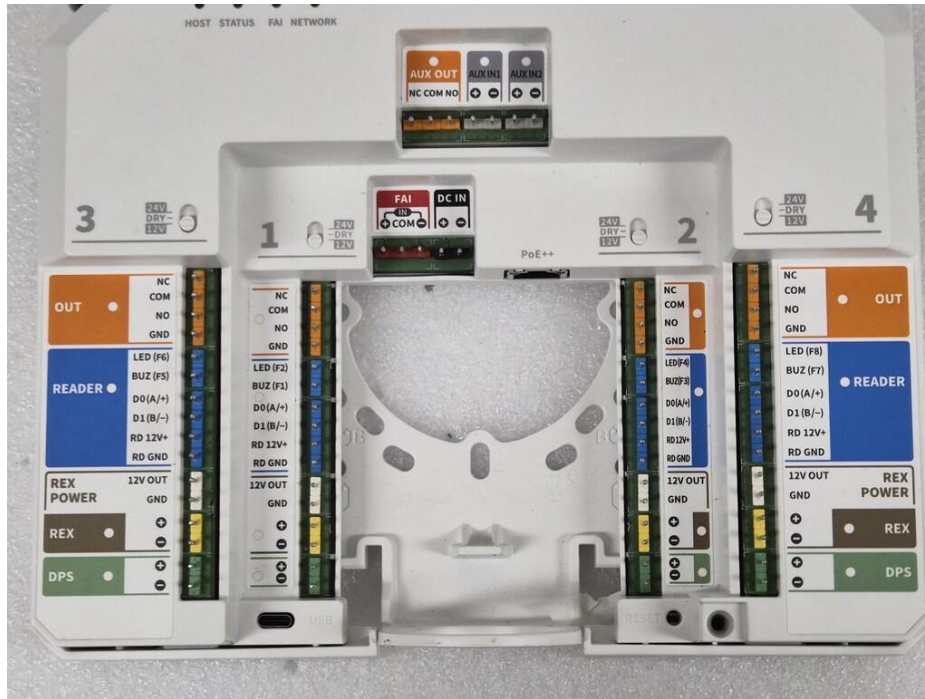
7.2 EUT Photographs



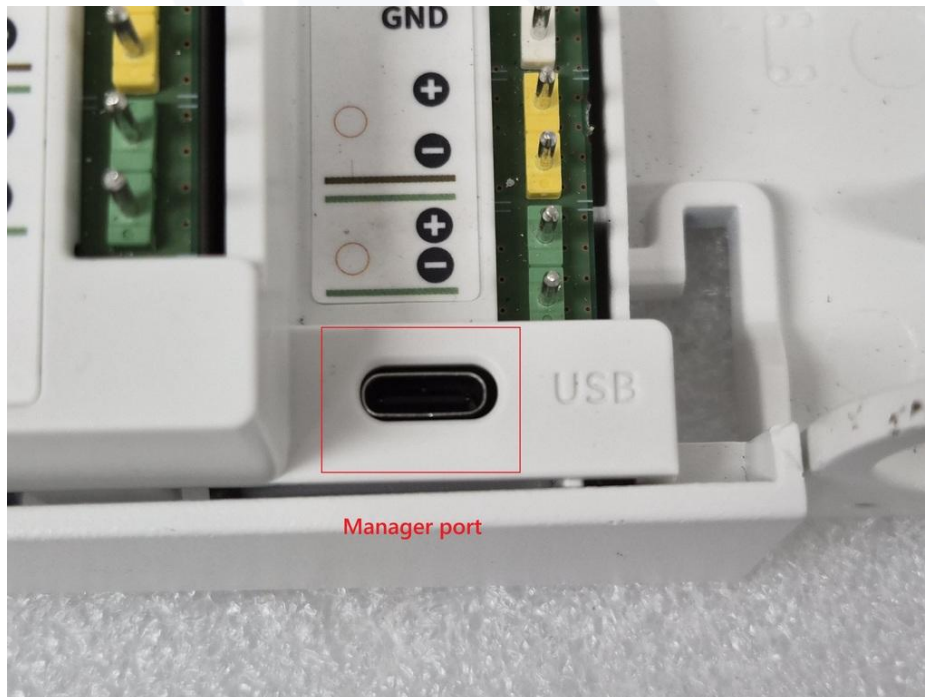
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<EUT External Photographs - Bottom>



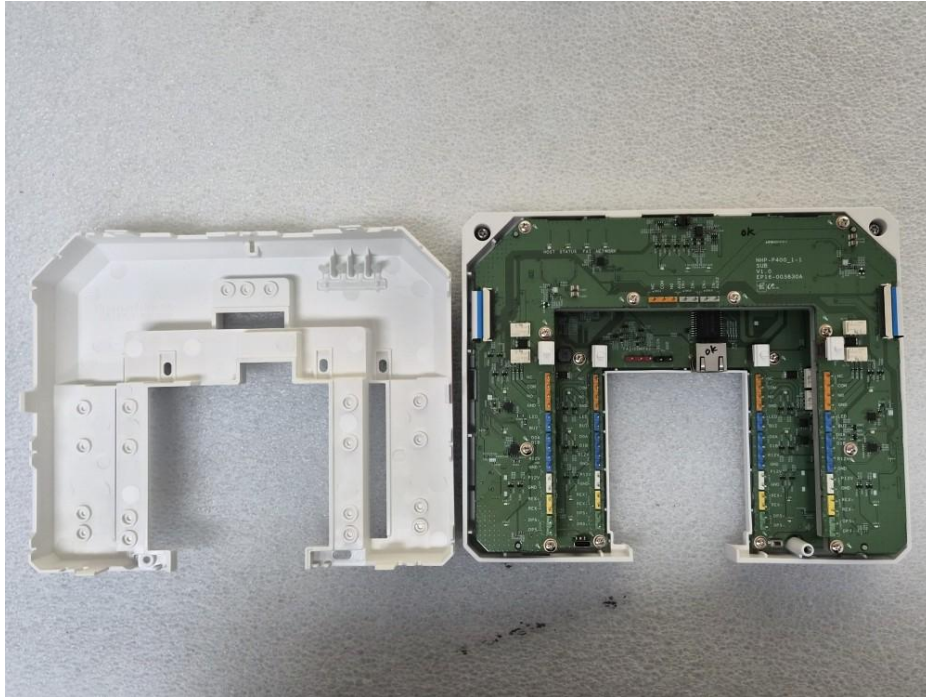
<Port-1>



<Port-2>



<Port-3>



<EUT Internal Photographs>



7.3 Label



Name : Hanwha Vision Co., Ltd.
Product item : IP Controller
Model name : NHP-P400

The End.

