



TEST REPORT



Report No. : KES-EM261716-R1

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KES Co., Ltd.

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1. Client

- Name : HUMANINTECH
- Address : 2236, Yonggu-daero, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea

2. Sample Description

- Product item : Access Control Terminal
- Model name : PV700S
- Variant model : -
- Manufacturer etc. : HUMANINTECH
- Manufacturer address : 2236, Yonggu-daero, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea

3. FCC ID : 2BV8SPV700S

4. Date of test : 2026. 06. 03. ~ 2026. 06. 04.

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

6. Test method used : FCC 47 CFR Part 15, Subpart B (ANSI C63.4a-2017)

7. Test result : PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
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This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager by
	Name : SungKeun Park	Name : DongHun Jang

2026. 06. 17.

KES Co., Ltd.

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
2026. 06. 09.	KES-EM261716	Issued
2026. 06. 17.	KES-EM261716-R1	Reissuance of revision of report in response to request for short-term confidentiality

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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	031-883-5092
Facsimile Number	031-883-5169

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

1.2 Laboratory Accreditations and Listings

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



2 Test Summary

2.1 Class and Voltage

Test Class	Test Voltage
Class A	DC 12 V

2.2 Summary of Test Results

Regulation			
47 CFR Part 15, Subpart B			
Test Item	Test Standard	Test Result	Remark
Conducted Emissions at Mains Power Ports	ANSI C63.4a-2017	N/A	NOTE 1
Radiated Emissions(Below 1 GHz)		PASS	-
Radiated Emissions(Above 1 GHz)		PASS	-
* N/A: Not Applicable			
(NOTE 1) The EUT is Powered by DC			

2.3 Remarks when standards applied

N/A

2.4 Variant Model Differences

N/A

2.5 Device Modifications

N/A



3 General Product Description

Division		Specificity
Internal Operating Frequency		Above 108 MHz
Power		DC 12 V
Test Power		DC 12 V
I/O Port		DC IN 1 EA, RJ-45 1 EA, 12 Pin 1 EA, USB TYPE C 1 EA
Management Port		N/A
Function	Product Features	Access Control Terminal
	Wireless Function	Bluetooth, NFC
Components		EUT 1 EA



4 EUT Setup and Operation Mode

4.1 EUT Configuration

Product Name	Model Number	Serial Number	Manufacturer	Remarks
Access Control Terminal	PV700S	-	HUMANINTECH	EUT
Laptop	U1000	-	THINKWARE CORPORATION	-
Laptop Adapter	-	-	THINKWARE CORPORATION	-
JIG BOARD	-	-	-	-
RS-485 to USB Converter	-	-	-	-
USB Memory	-	-	-	-
NFC Card	-	-	-	-
Bluetooth Controller	-	-	-	-
Bluetooth Controller Adapter	ANY520U2	-	Wendeng Any Electronics Co.,Ltd	-

4.2 System Configuration

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



4.3 External I/O Cabling

Mode 1

Start		End		Cable Spec.	
Product Name	I/O Port	Product Name	I/O Port	Length(m)	Shield
EUT	DC IN	DC Power	DC OUT	2.0	U
	RJ-45	Laptop	RJ-45	1.0	U
	12 Pin (3 Pin)	RS485 to USB Converter	Line	2.0	U
	12 Pin (9 Pin)	JIG BOARD	Line	2.2	U
	USB TYPE C	USB Memory	USB TYPE C	-	-
	Wireless	NFC Card	Wireless	-	-
Laptop	DC IN	Laptop Adapter	DC OUT	1.5	U
	USB TYPE A	RS485 to USB Converter	USB TYPE A	0.5	U
JIG BOARD	DC IN	JIG BOARD Adapter	DC OUT	1.8	U

Mode 2

Start		End		Cable Spec.	
Product Name	I/O Port	Product Name	I/O Port	Length(m)	Shield
EUT	DC IN	DC Power	DC OUT	2.0	U
	RJ-45	Laptop	RJ-45	1.0	U
	12 Pin (3 Pin)	RS485 to USB Converter	Line	2.0	U
	12 Pin (9 Pin)	JIG BOARD	Line	2.2	U
	USB TYPE C	USB Memory	USB TYPE C	-	-
	Wireless	Bluetooth Controller	Wireless	-	-
Laptop	DC IN	Laptop Adapter	DC OUT	1.5	U
	USB TYPE A	RS485 to USB Converter	USB TYPE A	0.5	U
JIG BOARD	DC IN	JIG BOARD Adapter	DC OUT	1.8	U

* Unshielded=U, Shielded=S



4.4 EUT Operating Mode(s)

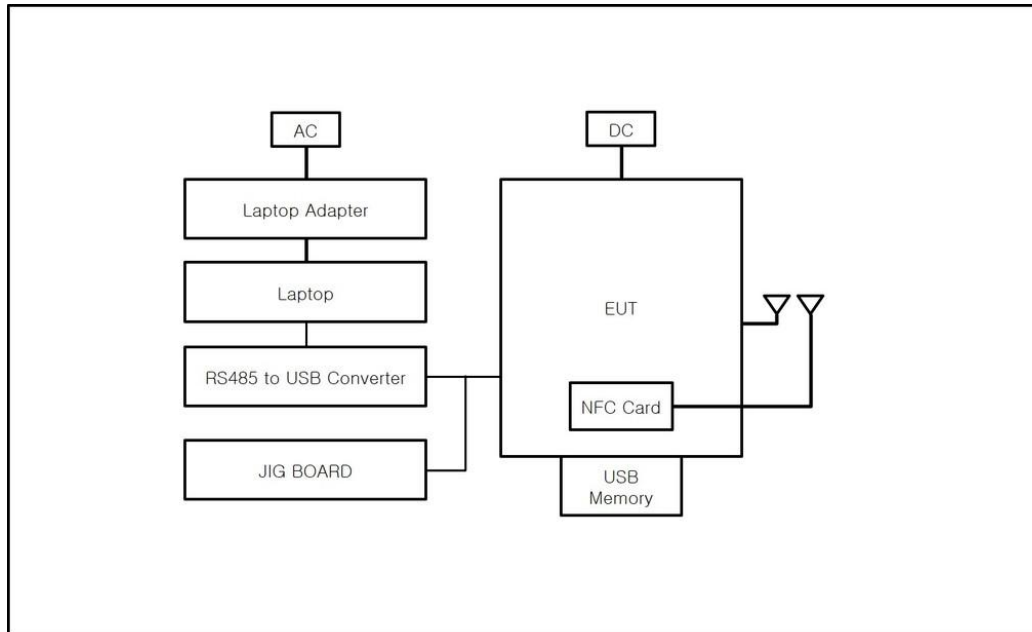
Category	Mode	Operating
Mode 1	NFC + DATA	1. Connect the EUT and the laptop via RJ-45, then run a ping test to check the network connection status. 2. After connecting the EUT and the test jig, verify the normal operating status of the EUT using the TeraTerm program. 3. Verify normal operation by repeatedly reading and writing data to the USB memory. 4. Tag the NFC card on the EUT to check the recognition status through the EUT's LCD
Mode 2	Bluetooth	1. Connect the EUT and the laptop via RJ-45, then run a ping test to check the network connection status. 2. After wirelessly connecting the EUT and the Bluetooth controller, check the communication status through the EUT's LCD screen.

4.5 Test operating S/W

Name	Version	Manufacture Company
-	-	-

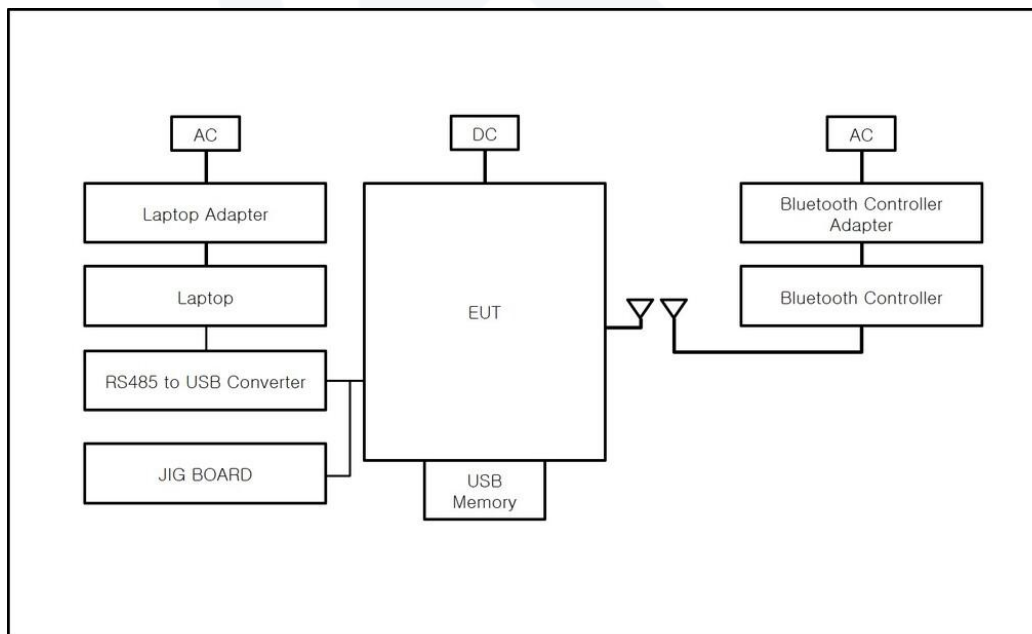


4.6 Configuration



EUT – NFC Card : NFC

Mode 1



EUT – Bluetooth Controller : Bluetooth

Mode 2



5 Measurement Procedure

- Conducted Emissions

The conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

- Radiated Electric Field Emissions

The test was done at a SEMI ANECHOIC CHAMBER with quasi-peak detector. The final test data was measured using a Quasi-Peak detector below 1 GHz at 10 m or 3 m distance and a Peak and Average detector above 1 GHz at 3 m distance. Test was proceeded worst case test mode and cable configuration. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

Measurement procedures was In accordance with ANSI C63.4 or CISPR 32.

◆ Calculation

- Conducted Emissions

$\text{QuasiPeak[dBuV]} / \text{CAverage[dBuV]} = \text{Reading Value[dBuV]} + \text{Corr. [dB]}$

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

- Radiated Emissions(Below 1 GHz)

$\text{Result(QP) [dB(}\mu\text{V/m)]} = (\text{Reading(QP)[dB(}\mu\text{V)]} + \text{c.f[dB(1/m)]}$

$\text{Margin(QP)[dB]} = \text{Limit[dB(}\mu\text{V/m)]} - \text{Result(QP) [dB(}\mu\text{V/m)]}$

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

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

- Radiated Emissions(Above 1 GHz)

$\text{Result(PK/CAV) [dB(}\mu\text{V/m)]} = (\text{Reading(PK/CAV)[dB(}\mu\text{V)]} + \text{c.f[dB(1/m)]}$

$\text{Margin(PK/CAV)[dB]} = \text{Limit[dB(}\mu\text{V/m)]} - \text{Result(PK/CAV) [dB(}\mu\text{V/m)]}$

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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



6 Test Item

6.1 Radiated Emissions(Below 1 GHz)

6.1.1 Test Equipment

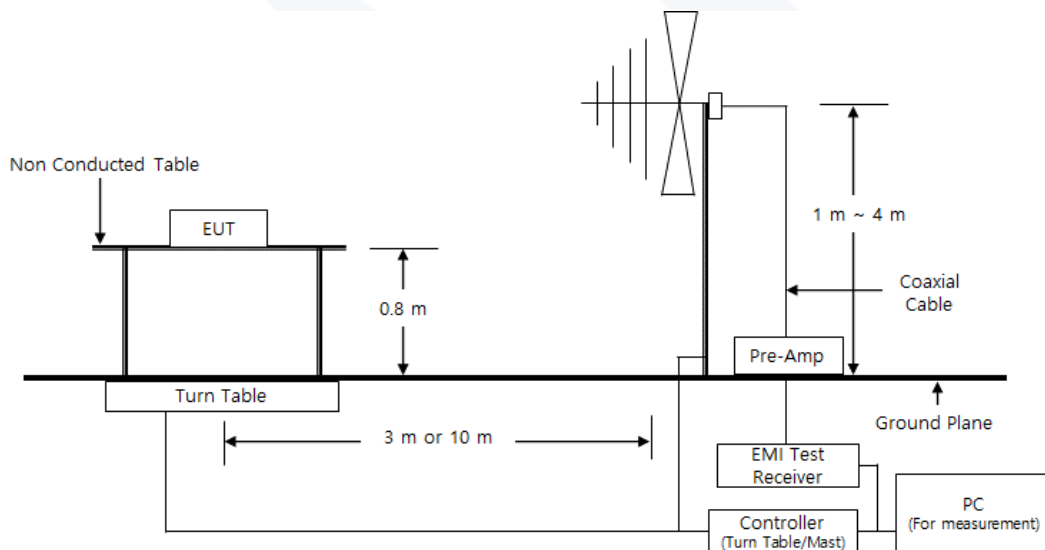
Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #4(10 m)	-	DYMSTEC	-	-	-	■
EP5/RE Software	EP5/RE	TOYO	6.0.0	-	-	■
EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100551	2026-02-12	2027-02-12	■
AMPLIFIER	SCU 01	Rohde & Schwarz	100574	2026-04-24	2027-04-24	■
TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	2024-11-08	2026-11-08	■

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

6.1.3 Test Conditions :

Temperature	Relative Humidity
(23.1 ~ 23.3) °C	(52.0 ~ 52.2) % R.H.

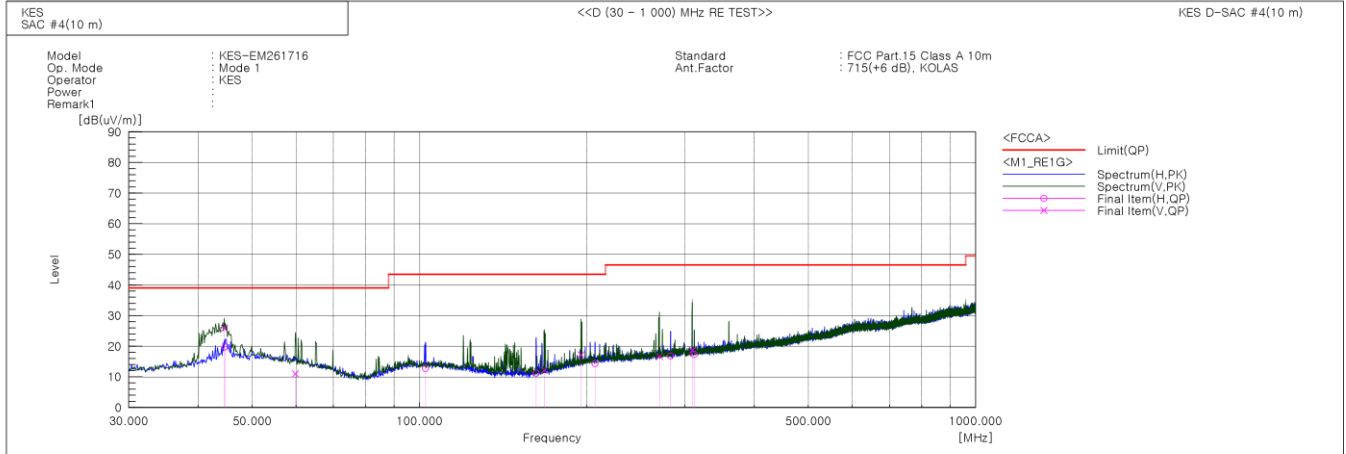
6.1.4 Diagram of test setup





6.1.5 Test Result

- Test Date : 2026-06-04
- 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	44.550	V	47.4	-21.5	25.9	39.0	13.1	100.0	8.0	
2	44.793	H	41.2	-21.4	19.8	39.0	19.2	389.0	41.0	
3	59.828	V	33.2	-22.2	11.0	39.0	28.0	122.0	11.0	
4	102.508	H	35.1	-22.4	12.7	43.5	30.8	400.0	128.0	
5	162.163	H	35.7	-24.5	11.2	43.5	32.3	271.0	261.0	
6	167.740	V	36.3	-24.1	12.2	43.5	31.3	150.0	108.0	
7	195.143	V	38.7	-21.5	17.2	43.5	26.3	163.0	349.0	
8	206.783	H	34.9	-20.6	14.3	43.5	29.2	178.0	71.0	
9	269.954	V	35.0	-18.3	16.7	46.5	29.8	112.0	14.0	
10	282.806	H	34.7	-17.9	16.8	46.5	29.7	200.0	113.0	
11	309.360	V	35.6	-16.9	18.7	46.5	27.8	213.0	145.0	
12	312.028	H	34.2	-16.9	17.3	46.5	29.2	230.0	166.0	

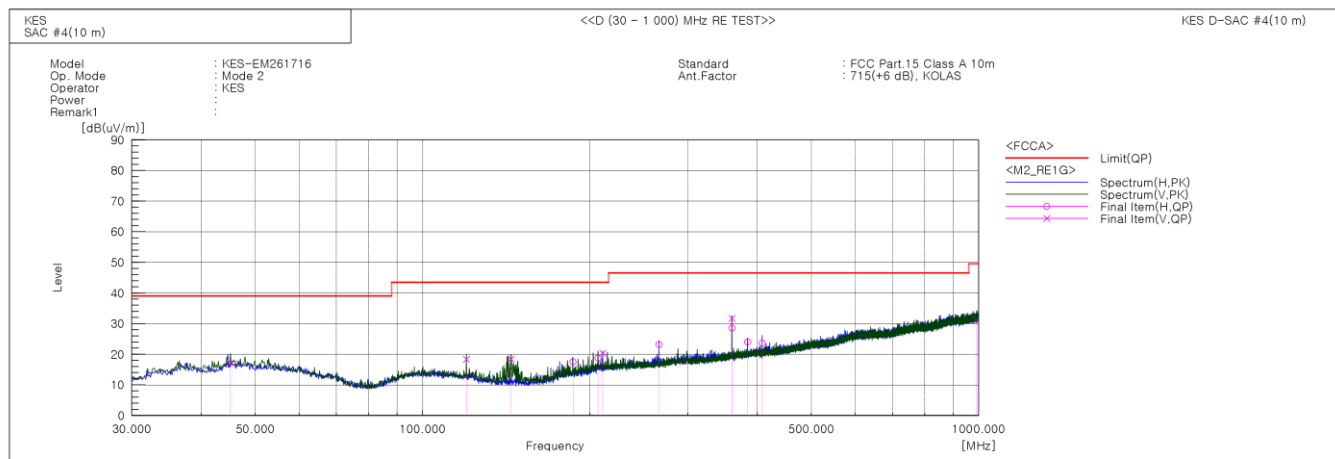
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



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- Test Date : 2026-06-04
- 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	45.156	V	38.6	-21.4	17.2	39.0	21.8	100.0	24.0	
2	119.968	V	41.8	-23.5	18.3	43.5	25.2	121.0	255.0	
3	144.218	V	43.5	-25.1	18.4	43.5	25.1	166.0	279.0	
4	186.413	H	39.8	-22.3	17.5	43.5	26.0	400.0	108.0	
5	206.783	H	39.3	-20.6	18.7	43.5	24.8	272.0	88.0	
6	210.905	V	40.7	-20.4	20.3	43.5	23.2	205.0	163.0	
7	266.195	H	41.6	-18.4	23.2	46.5	23.3	314.0	349.0	
8	360.043	V	46.8	-15.1	31.7	46.5	14.8	200.0	230.0	
9	360.043	H	43.7	-15.1	28.6	46.5	17.9	285.0	2.0	
10	384.050	H	38.1	-14.1	24.0	46.5	22.5	198.0	20.0	
11	408.058	H	37.1	-13.5	23.6	46.5	22.9	176.0	16.0	
12	991.028	V	32.7	-1.5	31.2	49.5	18.3	156.0	263.0	

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

6.1.6 Remark

Complies with the test requirements.



6.2 Radiated Emissions(Above 1 GHz)

6.2.1 Test Equipment

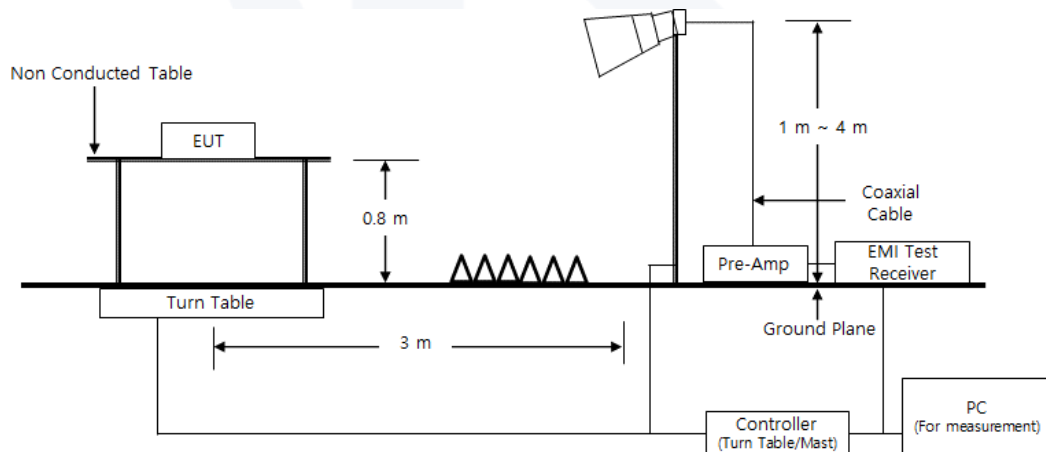
Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #5	-	SY Corporation	-	-	-	■
ES10/RE Software	ES10/RE	TOYO	2022.01.000	-	-	■
EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	2026-02-12	2027-02-12	■
PREAMPLIFIER	8449B	HP	3008A00538	2026-04-29	2027-04-29	■
HORN ANTENNA	BBHA 9120D	SCHWARZBEC K	9120D-1802	2025-11-05	2026-11-05	■
ATTENUATOR	8491B	HP	23094	2026-02-12	2027-02-12	■

6.2.2 Test Location : SEMI ANECHOIC CHAMBER #5

6.2.3 Test Conditions :

Temperature	Relative Humidity
(22.4 ~ 22.6) °C	(42.5 ~ 42.7) % R.H.

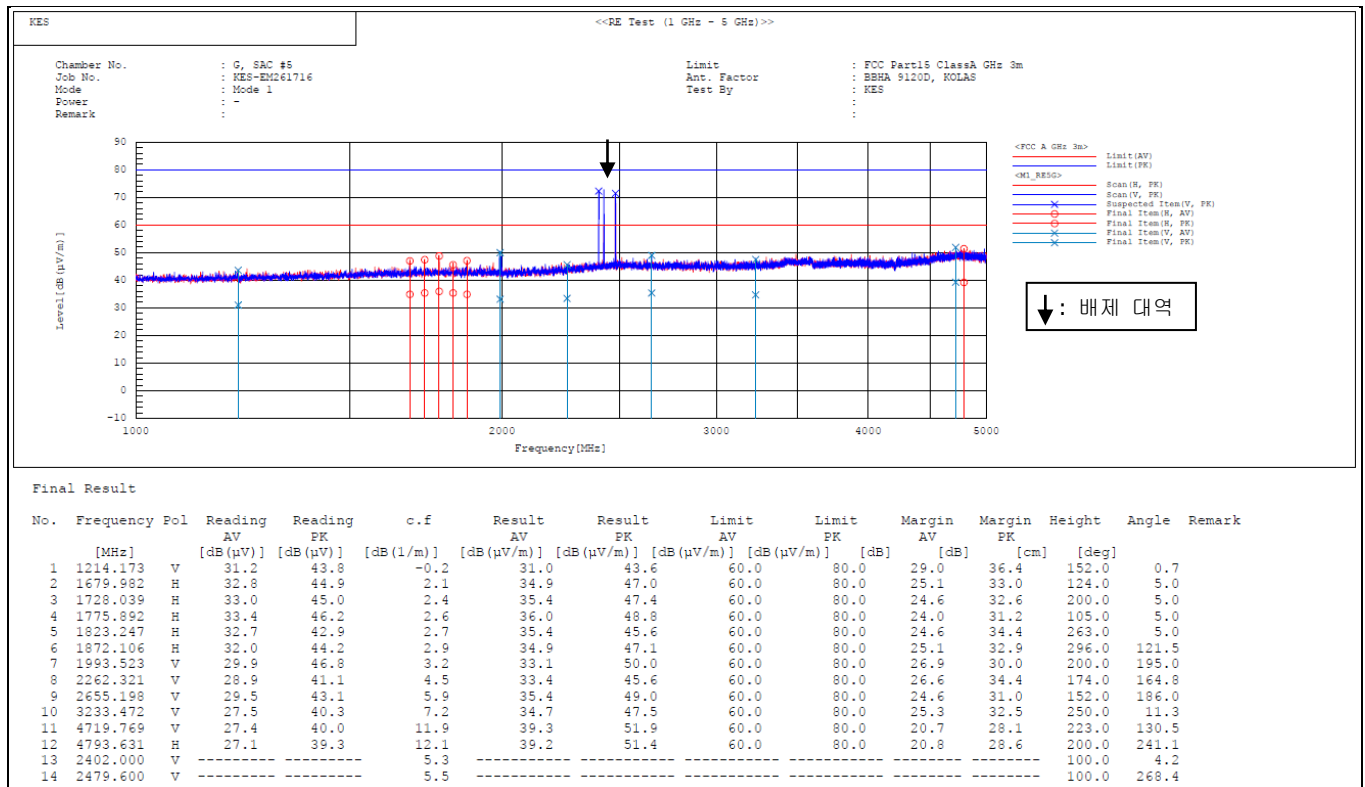
6.2.4 Diagram of test setup





6.2.5 Test Result

- Test Date : 2026-06-03
- 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.



○ Test Date : 2026-06-03

● Test Mode : Mode 1

(5 ~ 18) GHz

PK

Frequency (MHz)	Reading PK (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 765.574	38.500	H	1.000	33.070	8.740	33.710	46.600	80.000	33.400
6 905.784	38.600	V	1.000	35.970	9.860	34.690	49.740	80.000	30.260
7 849.524	38.700	H	1.000	36.610	10.940	33.840	52.410	80.000	27.590
8 847.905	39.400	V	1.000	38.160	15.190	34.190	58.560	80.000	21.440

Cispr-AV

Frequency (MHz)	Reading CISPR AV (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 765.574	26.200	H	1.000	33.070	8.740	33.710	34.300	60.000	25.700
6 905.784	26.400	V	1.000	35.970	9.860	34.690	37.540	60.000	22.460
7 849.524	26.300	H	1.000	36.610	10.940	33.840	40.010	60.000	19.990
8 847.905	26.400	V	1.000	38.160	15.190	34.190	45.560	60.000	14.440

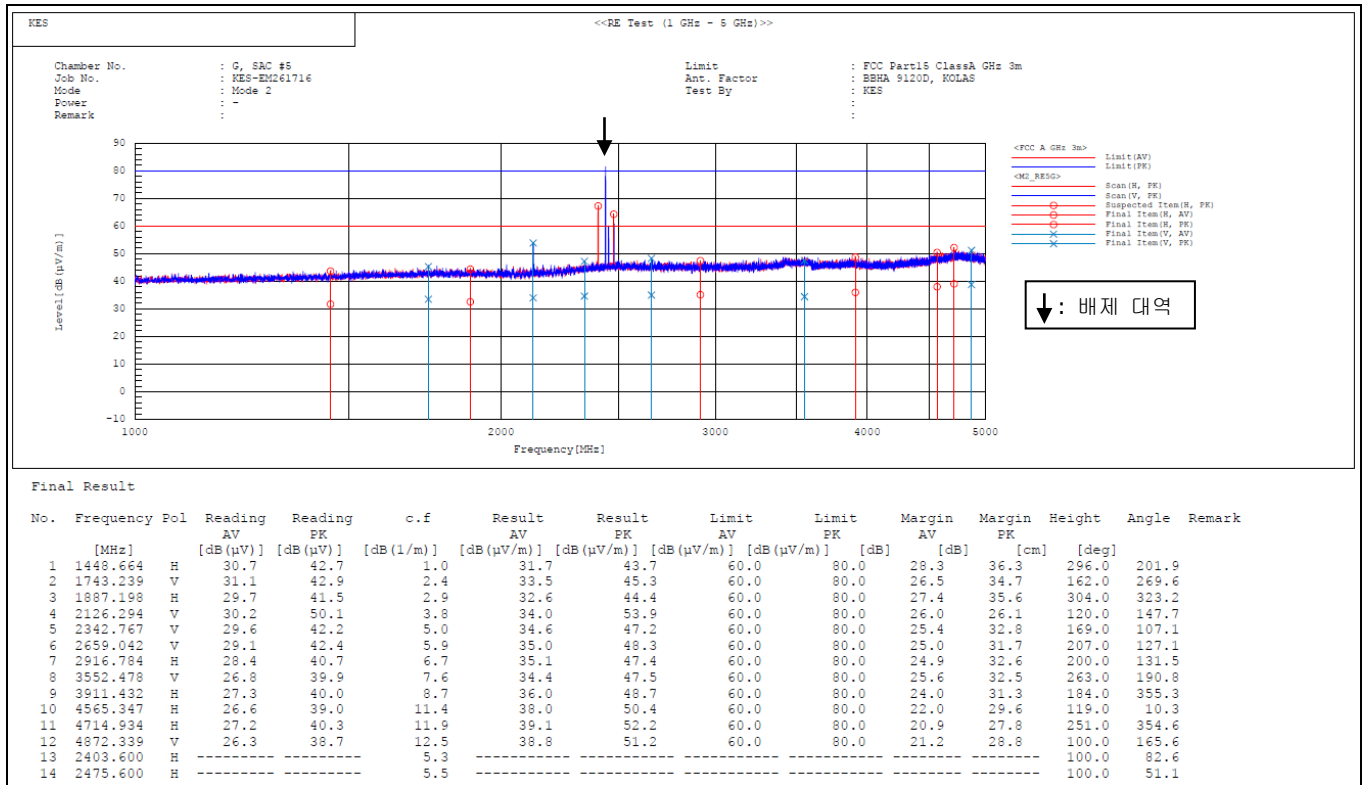
※ No spurious emission were detected above 5 GHz



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- Test Date : 2026-06-03
- 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.



○ Test Date : 2026-06-03

● Test Mode : Mode 2

(5 ~ 18) GHz

PK

Frequency (MHz)	Reading PK (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 665.534	39.100	V	1.000	32.630	8.770	33.830	46.670	80.000	33.330
6 627.627	38.900	V	1.000	34.690	9.440	34.810	48.220	80.000	31.780
6 960.431	38.700	H	1.000	36.220	9.950	34.670	50.200	80.000	29.800
7 731.129	38.000	H	1.000	36.540	11.150	33.530	52.160	80.000	27.840

Cispr-AV

Frequency (MHz)	Reading CISPR AV (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 665.534	26.400	V	1.000	32.630	8.770	33.830	33.970	60.000	26.030
6 627.627	26.500	V	1.000	34.690	9.440	34.810	35.820	60.000	24.180
6 960.431	26.000	H	1.000	36.220	9.950	34.670	37.500	60.000	22.500
7 731.129	26.200	H	1.000	36.540	11.150	33.530	40.360	60.000	19.640

※ No spurious emission were detected above XX GHz

6.2.6 Remark

Complies with the test requirements.

Mode 1: (2 402 ~ 2 480) MHz (Exclusion band)

Mode 2: (2 402 ~ 2 480) MHz (Exclusion band)