LTA

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http://www.ltalab.com

EMC TEST REPORT

Dates of Tests: November 15, 2023
Project No: 250731-1170
Test Site : LTA Co., Ltd.

Model No. **AIB-800**

APPLICANT **Hanwha Vision Co., Ltd**

Equipment Name	:	**AI BOX**
Manufacturer	:	**Hanwha Vision Co., Ltd**
Model name	:	**AIB-800**
Additional Model Name	:	**AIB-800A**
Test Device Serial No.:	:	**Identification**
Rule Part(s)	:	**AS/NZS CISPR 32:2015**
		CISPR 32 Ed2.0
Date of issue	:	**August 04, 2025**

This test report is issued under the authority of:

Young Kyu Shin, Technical Manager

The test was supervised by:

Min Su Han, Test Engineer

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory.
This test report is not related to KS Q ISO/IEC 17025 and KOLAS accreditation.

Revision history

Revision	Date of issue	Test report No.	Description
0	31.10.2023	LR500122310S	Initial
1	23.11.2023	LR500122311V	Add gasket tape
2	04.08.2025	LR500122310S-A1	Add Additional Model name

TABLE OF CONTENTS

1. General information's

1-1 Test Performed

Company name	:	**LTA Co., Ltd**
Address	:	4, Songju-ro 236beon-gil, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, 17159, Korea
Web site	:	http://www.ltalab.com
E-mail	:	chahn@ltalab.com
Telephone	:	+82-31-323-6008
Facsimile		+82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competents of calibration and testing laboratory".

1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
RRA	KOREA	KR0049	-	RRA accredited Lab.
	U.S.A		2027-02-27	
	CANADA		2026-08-05	
VCCI	JAPAN	C-14948	2026-09-10	VCCI registration
		T-12416	2026-09-10	
		R-14483	2026-10-15	
		G-10847	2027-12-13	
KOLAS	KOREA	KT551	2025-10-12	KOLAS accredited Lab.

2. Information's about test item

2-1 Client / Manufacturer

Company name	:	Hanwha Vision Co., Ltd
Address	:	6, Pangyo-ro 319 Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488, KOREA
Telephone /Facsimile	:	+82-10-2667-4196 / +82-70-7147-8361

Factory #1

Company name	:	HANWHA VISION VIETNAM COMPANY LIMITED
Address	:	Lot O-2, Que Vo Industrial Zone Extended Area, Nam Son Ward, Bac Ninh Province, Vietnam

Factory #2

Company name	:	D-TECH CO.,LTD.
Address	:	173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea (Suwon Industrial Complex)

2-2 Equipment Under Test (EUT)

Class	:	A
Category	:	AI BOX
Model name	:	AIB-800
Additional Model name	:	AIB-800A
Serial number	:	Identification
Date of receipt	:	November 02, 2023
EUT condition	:	Pre-production, not damaged
Interface Ports	:	DC IN, LAN, ALARM IN, ALARM OUT, GROUND
Power rating	:	AC 240 V, 50 Hz

2-3 Modification

- gasket tape inside / Material: gasket tape (model name: N/A, manufacturer: N/A, number: 1 EA)

2-4 Test conditions

Temp. / Humid.	:	(20 - 21) ℃ / (40 - 45) % R.H.
Tested Model	:	AIB-800
Test mode	:	Operating mode
Test Voltage	:	AC 240 V, 50 Hz

2-5 List of EUT and ACCESSORY

EUT				
Equipment Name	**Model Name**	**Serial No.**	**Manufacturer**	**Remarks**
AI BOX	**AIB-800**	**ZTZC70GWA0000JH**	**HANWHA VISION VIETNAM COMPANY LIMITED D-TECH CO.,LTD.**	**EUT**
Adapter	**KPL-048F-VI**	**N/A**	**Channel Well Technology(Guangzhou) Co.,Ltd.**	**EUT**
ACCESSORY				
Equipment Name	**Model Name**	**Serial No.**	**Manufacturer**	**Remarks**
MONITOR	AM24MB	N/A	ATEC	-
Mouse	MOKJUO	34O04812	Primax Electronics Ltd.	-
ALARM JIG #1	N/A	N/A	N/A	-
ALARM JIG #2	N/A	N/A	N/A	-
IP Camera	LND-6032R	ZNDJ6V4M90000CM	HANWHA TECHWIN CO.,LTD.	-
NVR	XRN-1620S/TE	ZSV66V4T90002JB	HANWHA VISION VIETNAM COMPANY LIMITED D-TECH CO.,LTD.	-

2-6 Cable List

Cable List					
From		To		Length (m)	Shied
Type	I/O Port	Type	I/O Port		
EUT	DC IN	Adapter	DC OUT	1.0	NO
	LAN	NVR	LAN #1	3.0	NO
	ALARM IN	ALARM ZIG #1	-	1.0	NO
	ALARM OUT	ALARM ZIG #2	-	1.0	NO
	GROUND	GROUND	GROUND	1.4	NO
Adapter	AC IN	AC POWER SOURCE	AC OUT	1.9	NO
NVR	AC IN	AC POWER SOURCE	AC OUT	2.0	NO
	LAN #2	IP Camera	LAN	3.0	NO
	HDMI	MONITOR	HDMI	1.4	YES
	USB	Mouse	-	1.0	NO
MONITOR	AC IN	AC POWER SOURCE	AC OUT	1.6	NO

3. Test Report

3.1 Summary of tests

Parameter	Applied Standard	Status
I. Emission		
Conducted Emissions	AS/NZS CISPR 32:2015	C
Radiated Emissions	AS/NZS CISPR 32:2015	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

4. Test Items

4-1 Conducted Emissions

Definition:

The test assesses the ability of the EUT to limit its internal noise from being present on the AC mains Power In/Output/Telecommunication ports.

We were performed the test according to LTA procedure LTA-QI-04.

Test method	:	AS/NZS CISPR 32:2015
Measurement Frequency range	:	150 kHz - 30 MHz
Measurement RBW	:	9 kHz
Test Location	:	Shielded Room
Test mode	:	Operating mode
Result	:	**Complies**

Measurement Data:

- Refer to the Next page (Maximum emission configuration)

A sample calculation:

COR. F (correction factor)= LISN Insertion loss + Cable loss + Pulse Limiter Factor

Emission Level= meter reading + COR.F

Limits for conducted disturbance at the mains ports of class A ITE

Frequency Range	Quasi-peak	Average
(0.15 - 0.5) MHz	79 dBµV	66 dBµV
(0.5 – 30) MHz	73 dBµV	60 dBµV
Note: The limits will decrease with the frequency logarithmically within 0.15 MHz to 0.5 MHz		

Limits for conducted disturbance at the mains ports of class B ITE

Frequency Range	Quasi-peak	Average
(0.15 – 0.5) MHz	(66 – 56) dBµV	(56 - 46) dBµV
(0.5 – 5) MHz	56 dBµV	46 dBµV
(5 – 30) MHz	60 dBµV	50 dBµV
Note: The limits will decrease with the frequency logarithmically within 0.15 MHz to 0.5 MHz		

Limits of conducted common mode (asymmetric mode) disturbance at telecommunication ports in the frequency range 0.15 MHz to 30 MHz for class A equipment

Frequency Range	Voltage limits		Current limits	
	Quasi-peak	Average	Quasi-peak	Average
(0.15 - 0.5) MHz	(97 – 87) dBμV	(84 – 74) dBμV	(53 – 43) dBμV	(40 – 30) dBμV
(0.5 – 30) MHz	87 dBμV	74 dBμV	43 dBμV	30 dBμV

Note 1: The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Note 2: The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the telecommunication port under test (conversion factor is 20 $\log_{10}$ 150/I= 44 dB)

Limits of conducted common mode (asymmetric mode) disturbance at telecommunication ports in the frequency range 0.15 MHz to 30 MHz for class B equipment

Frequency Range	Voltage limits		Current limits	
	Quasi-peak	Average	Quasi-peak	Average
(0.15 - 0.5) MHz	(84 – 74) dBμV	(74 – 64) dBμV	(40 – 30) dBμV	(30 – 20) dBμV
(0.5 – 30) MHz	74 dBμV	64 dBμV	30 dBμV	20 dBμV

Note 1: The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Note 2: The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the telecommunication port under test (conversion factor is 20 $\log_{10}$ 150/I= 44 dB)

Conducted Emissions (LINE)

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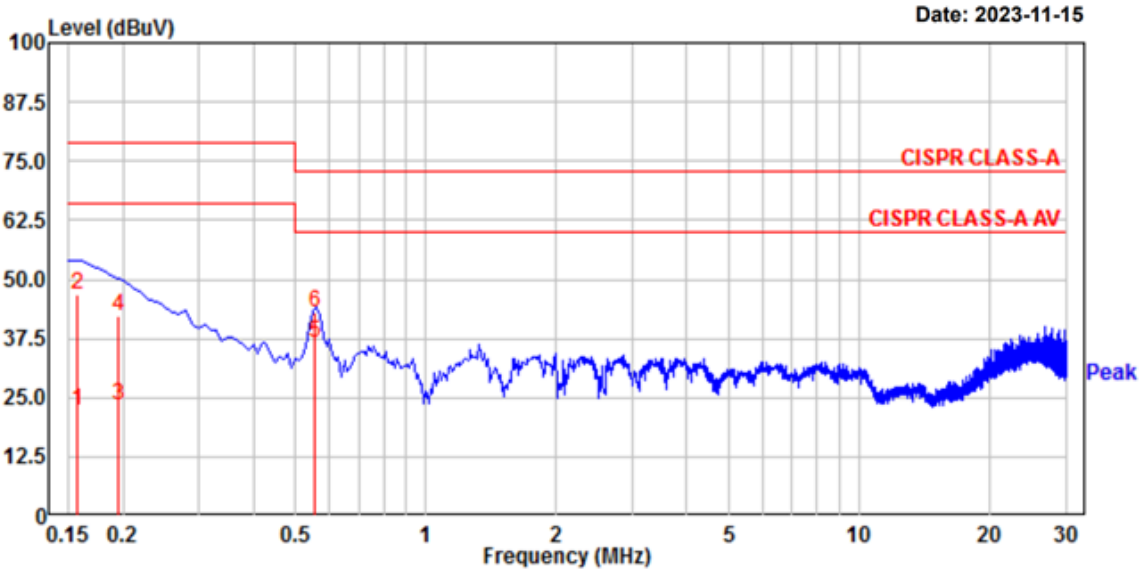
Project No.	: 231102-0012	Phase	: Line
Test Mode	: Operating	Test Power	: AC 240 V / 50 Hz
Temp./ Humi.	: 20 'C / 40 % R.H.	Test Engineer	: HAN M S



No.	Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Phase
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	
2.	0.158	27.30	2.76	19.41	46.71	22.17	79.00	66.00	32.29	43.83	Line
4.	0.196	22.69	4.16	19.41	42.10	23.57	79.00	66.00	36.90	42.43	Line
6.	0.555	23.67	17.07	19.44	43.11	36.51	73.00	60.00	29.89	23.49	Line

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (NEUTRAL)

4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
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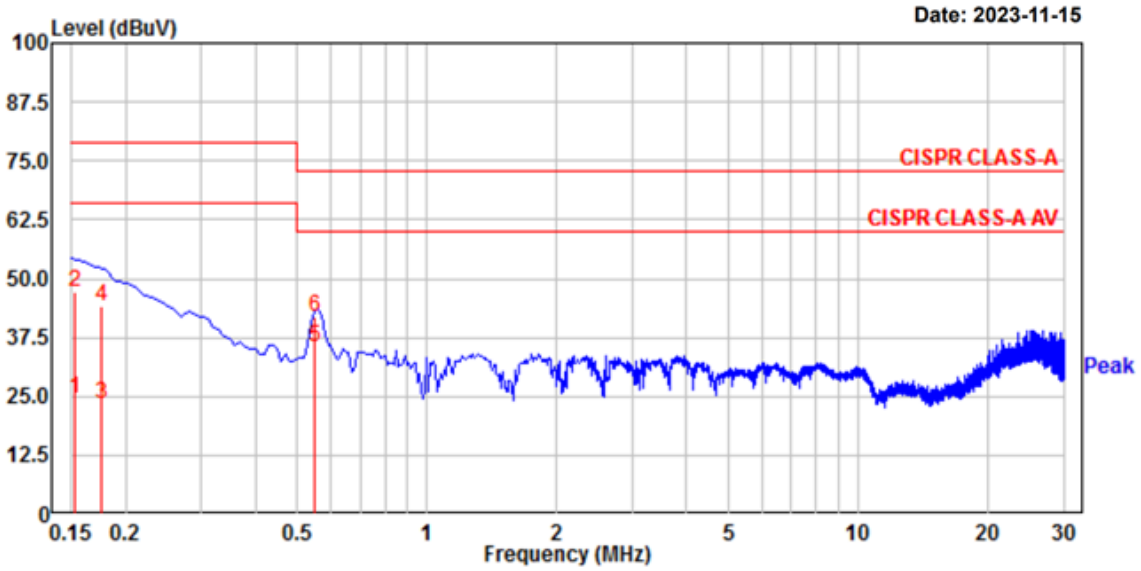
Project No.	: 231102-0012	Phase	: Neutral
Test Mode	: Operating	Test Power	: AC 240 V / 50 Hz
Temp./ Humi.	: 20 'C / 40 % R.H.	Test Engineer	: HAN M S



No.	Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Phase
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	
2.	0.152	27.79	5.00	19.40	47.19	24.40	79.00	66.00	31.81	41.60	neutral
4.	0.177	24.83	4.07	19.40	44.23	23.47	79.00	66.00	34.77	42.53	neutral
6.	0.549	22.57	15.98	19.43	42.00	35.41	73.00	60.00	31.00	24.59	neutral

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_1000 M)

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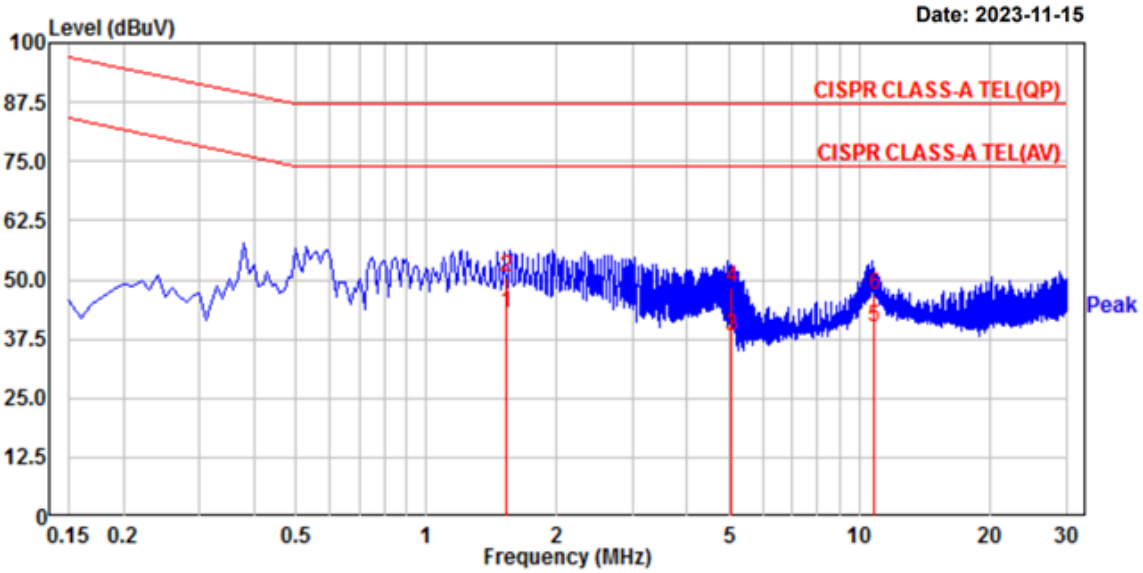
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

Project No.	: 231102-0012	Phase	: TEL_1000M
Test Mode	: Operating	Test Power	: AC 220 V / 60 Hz
Temp./ Humi.	: 20 'C / 40 % R.H.	Test Engineer	: HAN M S



No.	Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Phase
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	
2.	1.533	31.51	23.72	19.23	50.74	42.95	87.00	74.00	36.26	31.05	Line
4.	5.032	28.88	18.98	19.26	48.14	38.24	87.00	74.00	38.86	35.76	Line
6.	10.821	27.34	20.64	19.42	46.76	40.06	87.00	74.00	40.24	33.94	Line

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

4-2 Radiated Emissions

Definition:

The test assesses the ability of ancillary equipment to limit their internal noise from being radiated from the enclosure.

We were performed the test according to LTA procedure LTA-QI-04.

Test method	:	AS/NZS CISPR 32:2015
Measuring Distance	:	10 m below 1 GHz / 3 m above 1 GHz
Measurement Frequency range	:	30 MHz – 6 000 MHz
Measurement RBW	:	120 kHz @ 10 m / 1 MHz @ 3 m
Test Location	:	10 m Chamber
Test mode	:	Operating mode
Result	:	**Complies**

Measurement Data:

- Refer to the Next page (Maximum emission configuration)
- The highest internal source of an EUT is higher than 108 MHz, the measurement shall only be made up to 6 GHz.

A sample calculation:

COR. F (correction factor)= Antenna factor + Cable loss- Amp.gain- Distance correction

Emission Level= meter reading + COR.F

Limit of 10 m below 1 GHz

CLASS A

Frequency Range	Quasi-peak
(30 – 230) MHz	40 dBμV/m
(230 – 1 000) MHz	47 dBμV/m

CLASS B

Frequency Range	Quasi-peak
(30 – 230) MHz	30 dBμV/m
(230 – 1 000) MHz	37 dBμV/m

Limit of 3m above 1 GHz

CLASS A

Frequency Range	Average Limit @ 3m (dBμV/m)	Peak limit @ 3m (dBμV/m)
(1 000 – 3 000) MHz	56	76
(3 000 – 6 000) MHz	60	80

NOTE: The lower limit applies at the transition frequency.

CLASS B

Frequency Range	Average Limit @ 3m (dBμV/m)	Peak limit @ 3m (dBμV/m)
(1 000 – 3 000) MHz	50	70
(3 000 – 6 000) MHz	54	74

NOTE: The lower limit applies at the transition frequency.

Radiated Emissions (Below 1 GHz) / H

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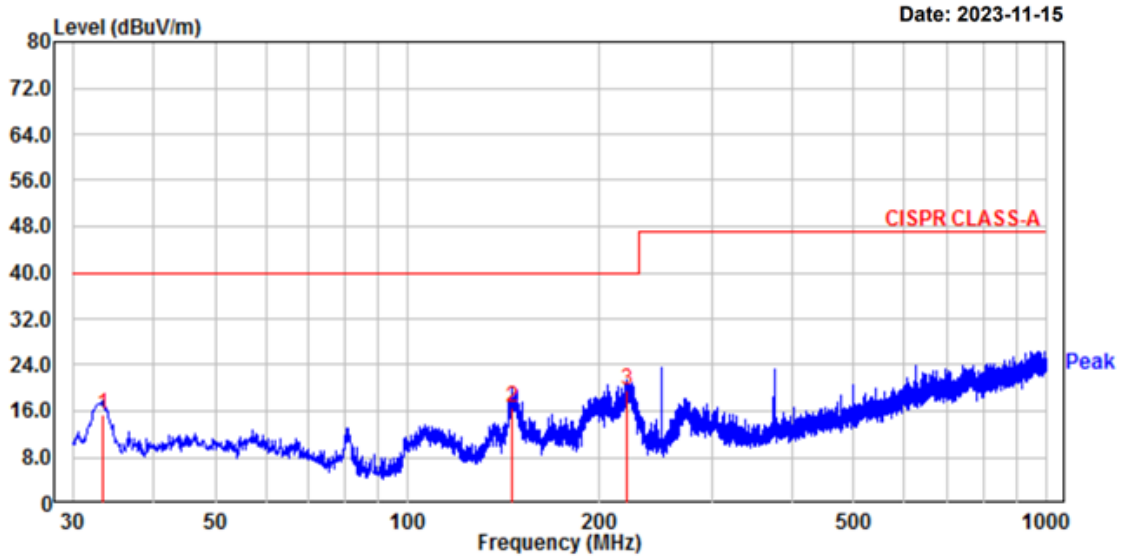
Project No. : 231102-0012 Temp/Humi: 21 'C / 45 % R.H.

Test Mode : Operating Tested by: HAN M S

Power : AC 240 V / 50 Hz



No.	Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	cm	deg	
1.	33.40	28.70	-13.17	15.53	40.00	24.47	255	51	horizontal
2.	145.92	27.60	-10.95	16.65	40.00	23.35	193	125	horizontal
3.	220.73	33.01	-13.27	19.74	40.00	20.26	376	89	horizontal

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Radiated Emissions (Below 1 GHz) / V

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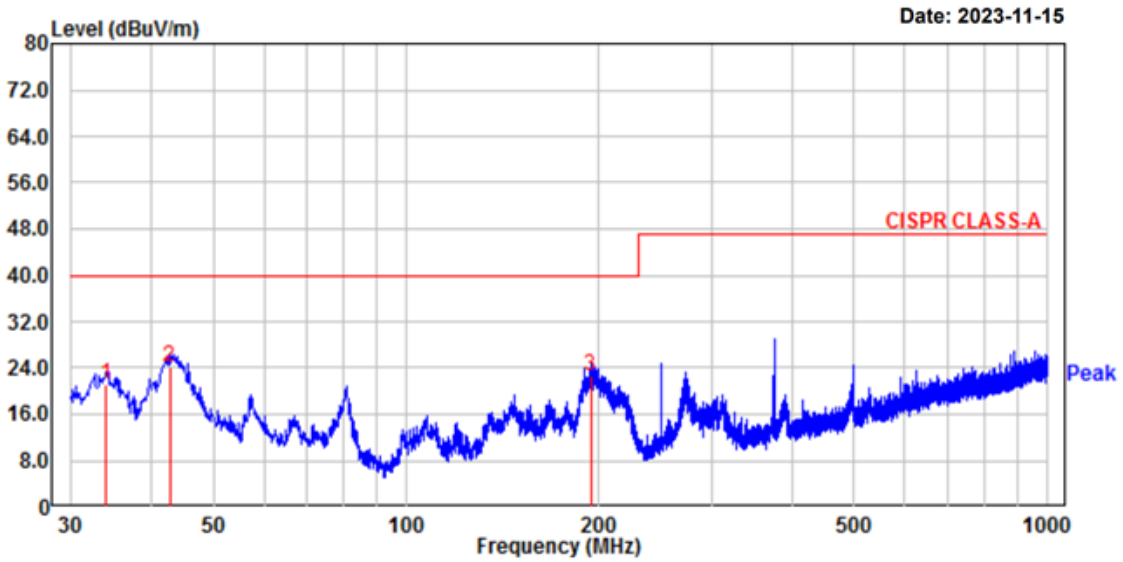
Fax : +82-31-3236010
www.ltalab.com

Project No. : 231102-0012 Temp/Humi: 21 'C / 45 % R.H.

Test Mode : Operating Tested by: HAN M S

Power : AC 240 V / 50 Hz



No.	Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	cm	deg	
1.	34.00	34.40	-13.22	21.18	40.00	18.82	101	330	vertical
2.	42.73	36.20	-12.13	24.07	40.00	15.93	162	80	vertical
3.	193.93	35.90	-13.36	22.54	40.00	17.46	133	161	vertical

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Radiated Emissions (Above 1 GHz) / H

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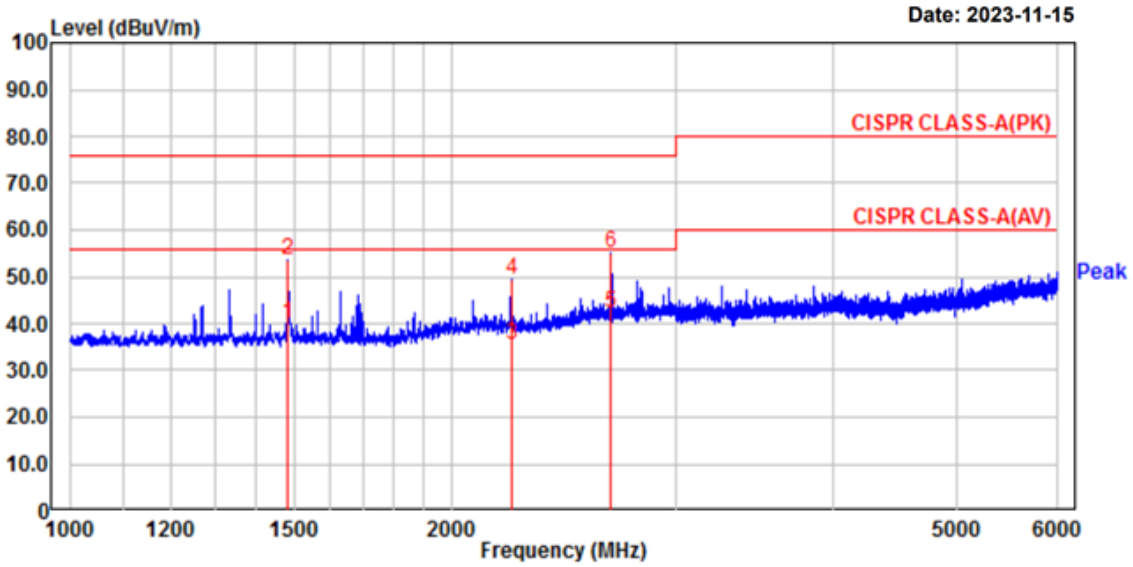
Project No. : 231102-0012 Temp/Humi: 21 'C / 45 % R.H.

Test Mode : Operating Tested by: HAN M S

Power : AC 240 V / 50 Hz Measure distance : 4.3 m



No.	Freq	RD PK	RD AV	C.F	Result PK	Result AV	Limit PK	Limit AV	Margin PK	Margin AV	Height	Angle	Polarity
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	cm	deg	
2.	1483.13	55.70	41.90	-1.95	53.75	39.95	76.00	56.00	22.25	16.05	100	146	horizontal
4.	2225.63	46.79	32.49	2.79	49.58	35.28	76.00	56.00	26.42	20.72	100	304	horizontal
6.	2670.00	48.91	36.01	6.26	55.17	42.27	76.00	56.00	20.83	13.73	100	163	horizontal

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss + Measure distance - Preamp gain

Radiated Emissions (Above 1 GHz) / V

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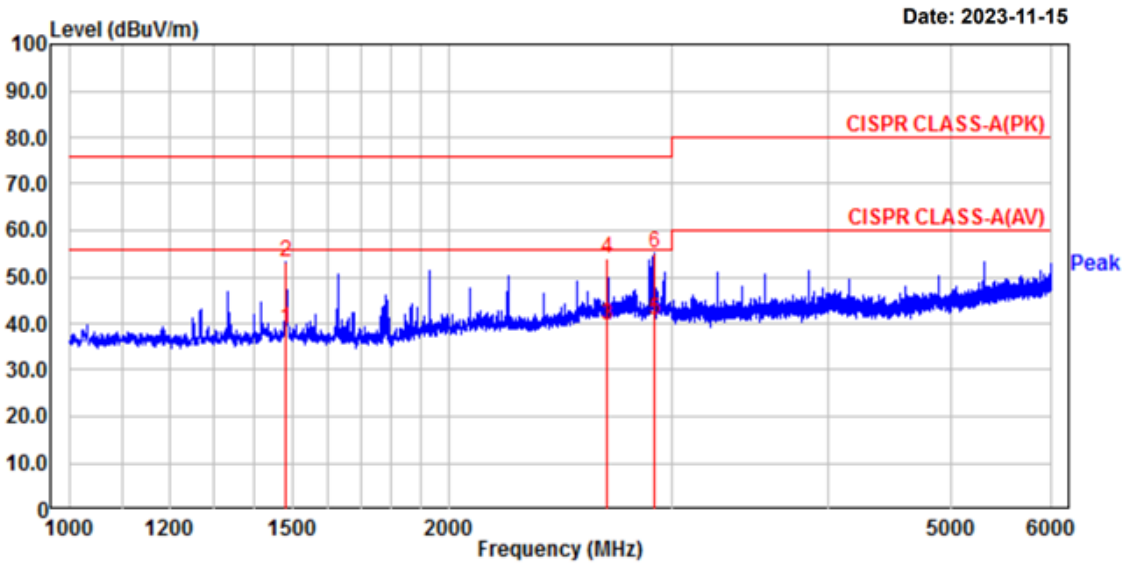
www.ltalab.com

Project No. : 231102-0012 Temp/Humi: 21 'C / 45 % R.H.

Test Mode : Operating Tested by: HAN M S

Power : AC 240 V / 50 Hz Measure distance : 4.3 m



No.	Freq	RD PK	RD AV	C.F	Result PK	Result AV	Limit PK	Limit AV	Margin PK	Margin AV	Height	Angle	Polarity
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	cm	deg	
2.	1483.13	55.30	40.90	-1.95	53.35	38.95	76.00	56.00	22.65	17.05	100	318	vertical
4.	2670.63	47.60	33.30	6.27	53.87	39.57	76.00	56.00	22.13	16.43	100	300	vertical
6.	2906.88	48.20	33.60	7.02	55.22	40.62	76.00	56.00	20.78	15.38	100	4	vertical

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss + Measure distance - Preamp gain

APPENDIX A

TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment are identified by the Test Laboratory.

Conducted Emissions

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESR	Rohde & Schwarz	101499	2024.03.13	1 year
☒	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	2024.03.13	1 year
☐	ISN	ISN T800	TESEQ	27109	2024.08.17	1 year
☒	ISN	ENY81-CA6	Rohde & Schwarz	101565	2024.08.17	1 year
☐	ISN	ISN S8	Schwarzbeck	79	2024.08.17	1 year
☐	CURRENT PROBE	EZ-17	Rohde & Schwarz	100508	2024.08.23	1 year
☐	CDN	TSCDN-C1-BNC-75	F.C.C	07004	2024.03.13	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	100378	2024.08.22	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	101468	2024.08.22	1 year
☒	LISN(main)	ENV216	Rohde & Schwarz	102872	2024.09.07	1 year
☒	LISN(sub)	LT32C/10	AFJ	32031518210	2024.08.22	1 year
☒	TEST PROGRAM	e3_ce 20181212a (V9)	AUDIX	-	-	-

Radiated Emissions – Below 1 GHz

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESCI7	Rohde & Schwarz	100772	2024.08.22	1 year
☒	Amplifier	8447D	HP	1937A03453	2024.08.22	1 year
☒	BILOG Antenna	VULB 9168	SCHWARZBECK	749	2025.03.29	2 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

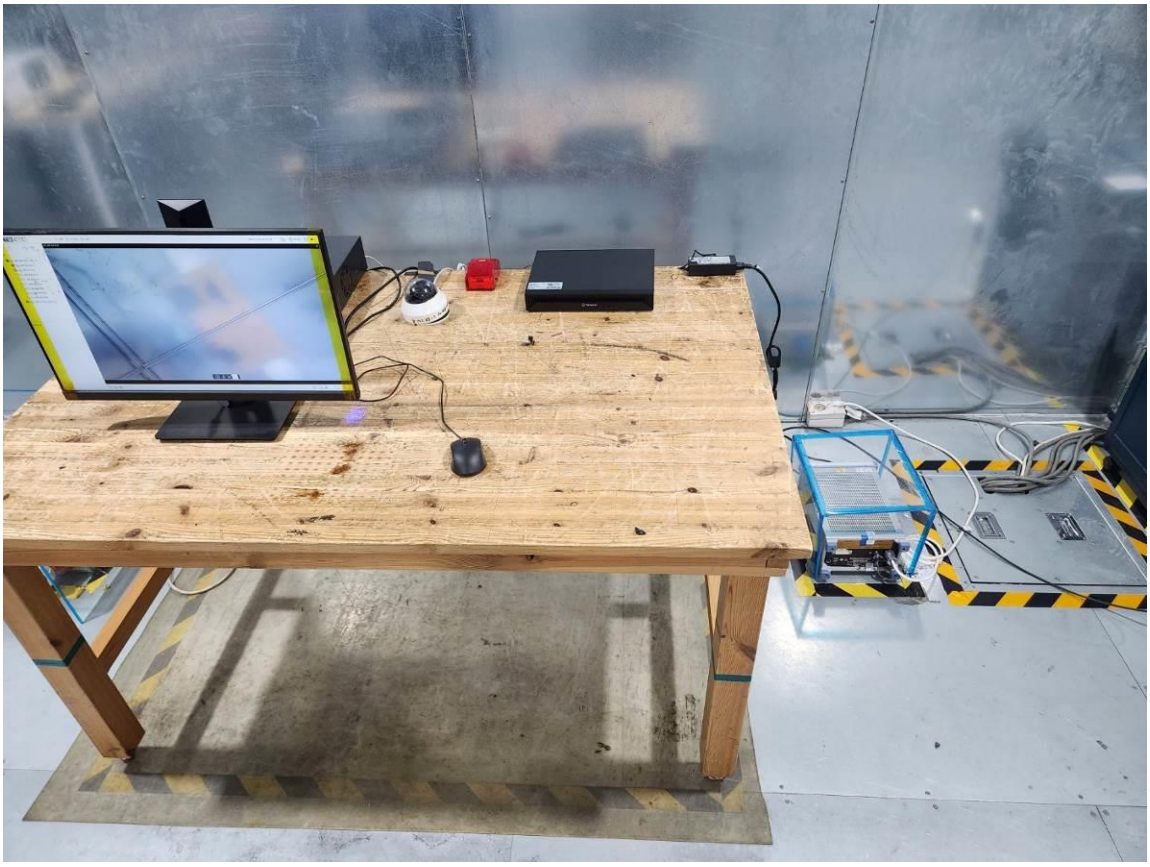
Radiated Emissions – Above 1 GHz

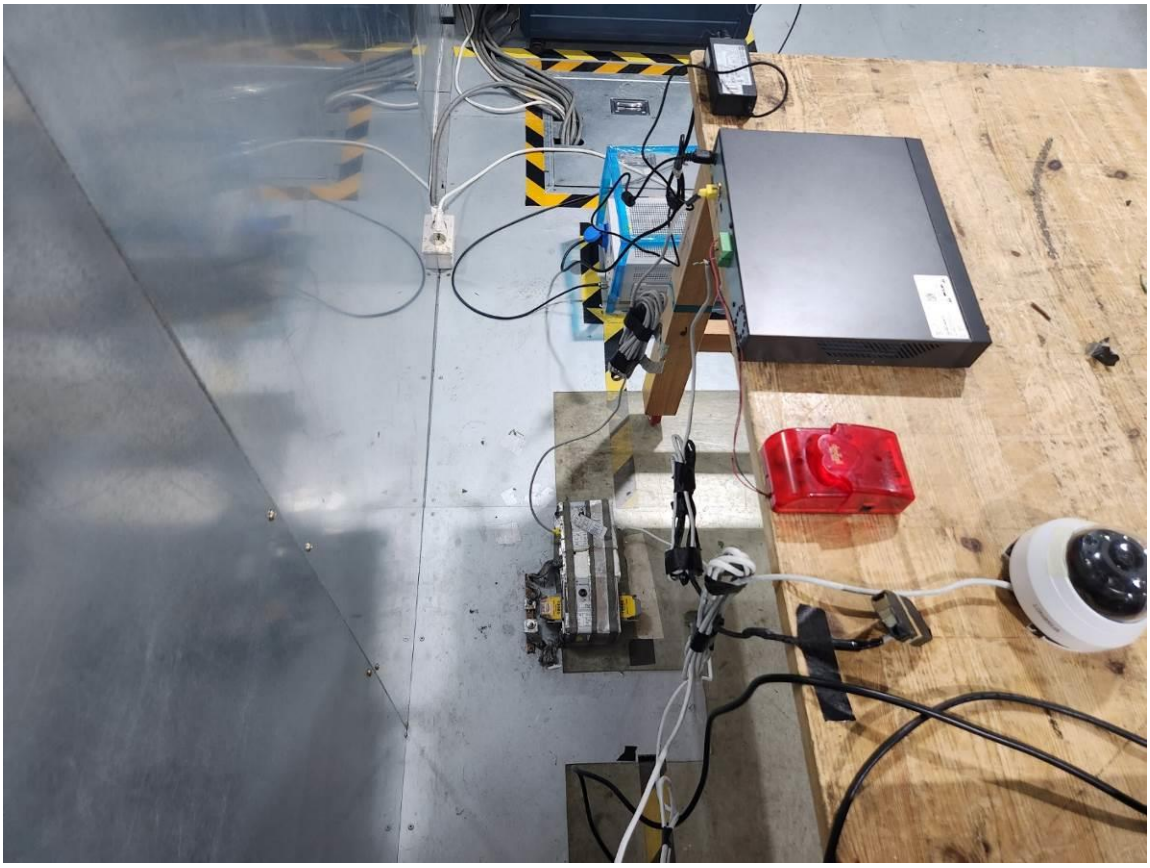
	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESCI7	Rohde & Schwarz	100772	2024.08.22	1 year
☐	EMI TEST Receiver	ESU	Rohde & Schwarz	100092	2024.08.22	1 year
☒	Amplifier	8449B	Agilent	3008A02126	2024.03.14	1 year
☐	Amplifier	PAM-840A	COM-POWER	461314	2024.03.15	1 year
☐	HORN ANTENNA	3116B	ETS	133350	2024.03.22	1 year
☐	HORN ANTENNA	3116B	ETS	81109	2024.04.25	1 year
☒	HORN ANTENNA	3115	ETS	114105	2024.04.20	1 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

APPENDIX B

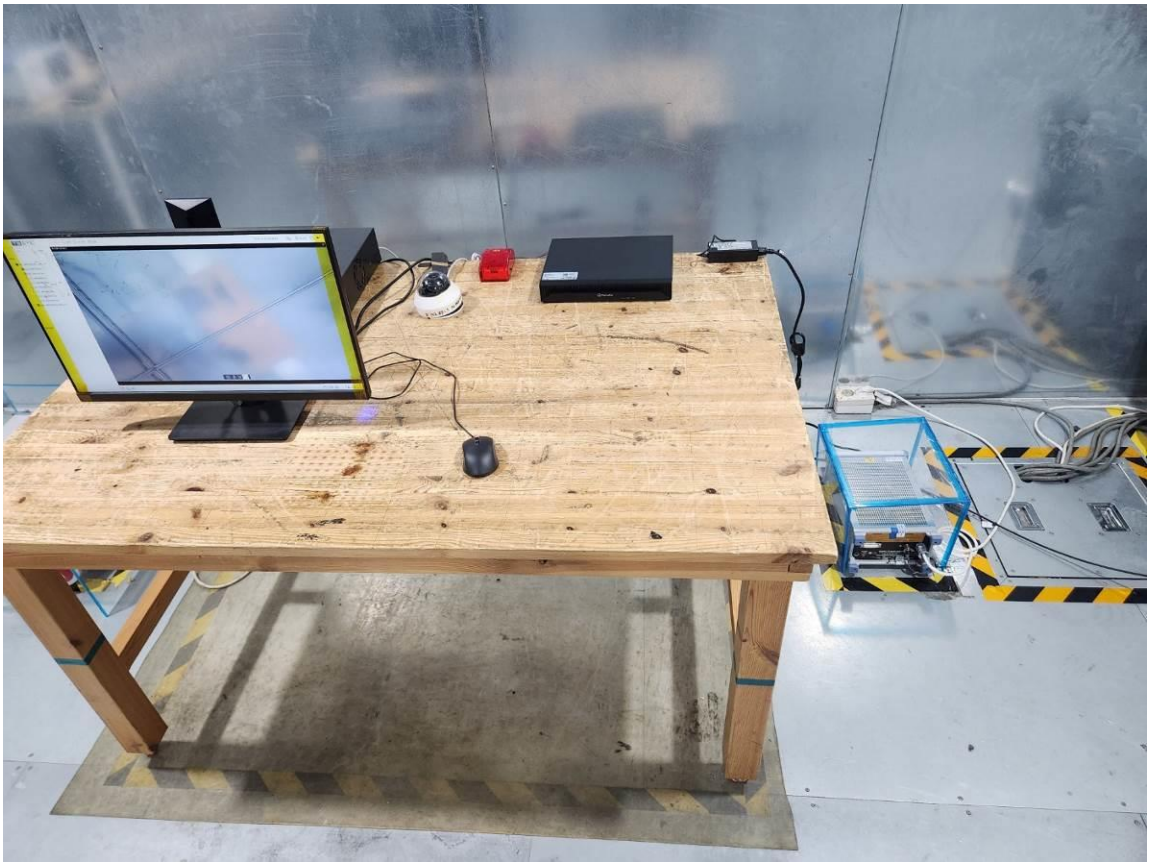
PHOTOGRAPHS

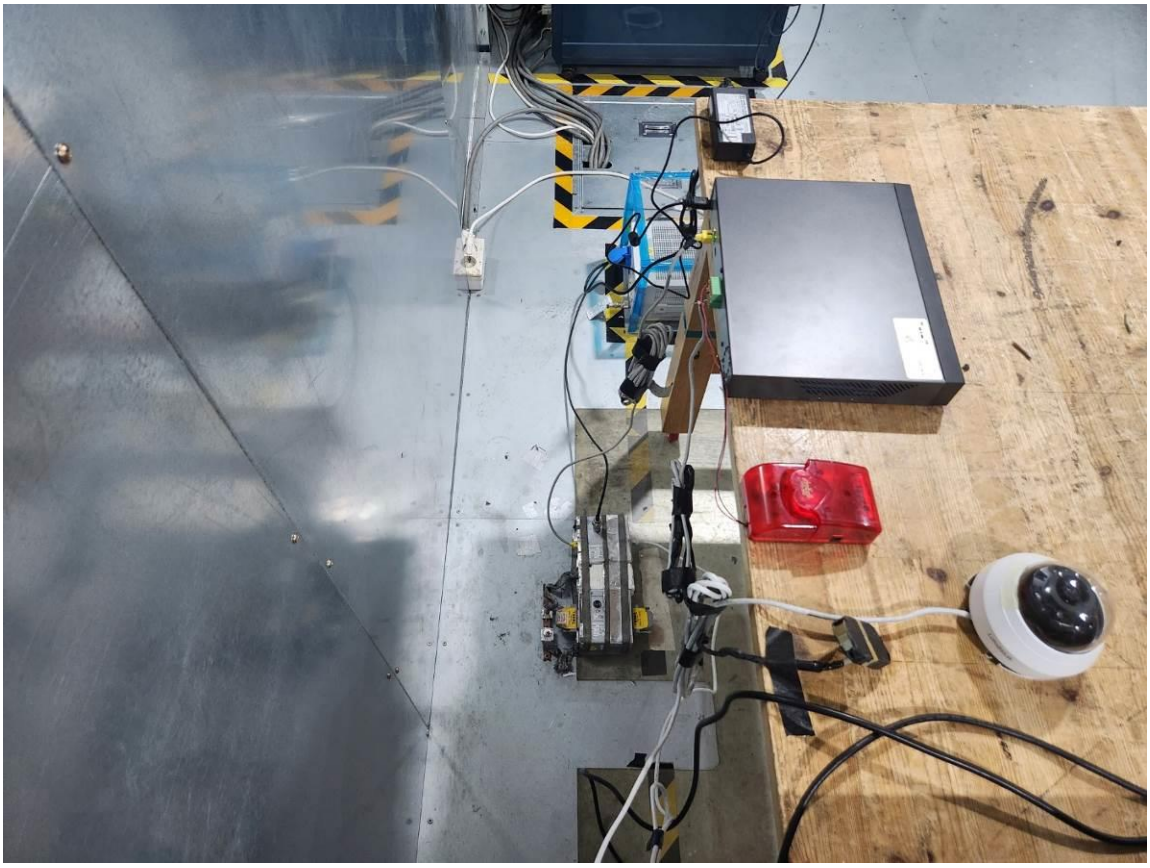
Conducted Emissions



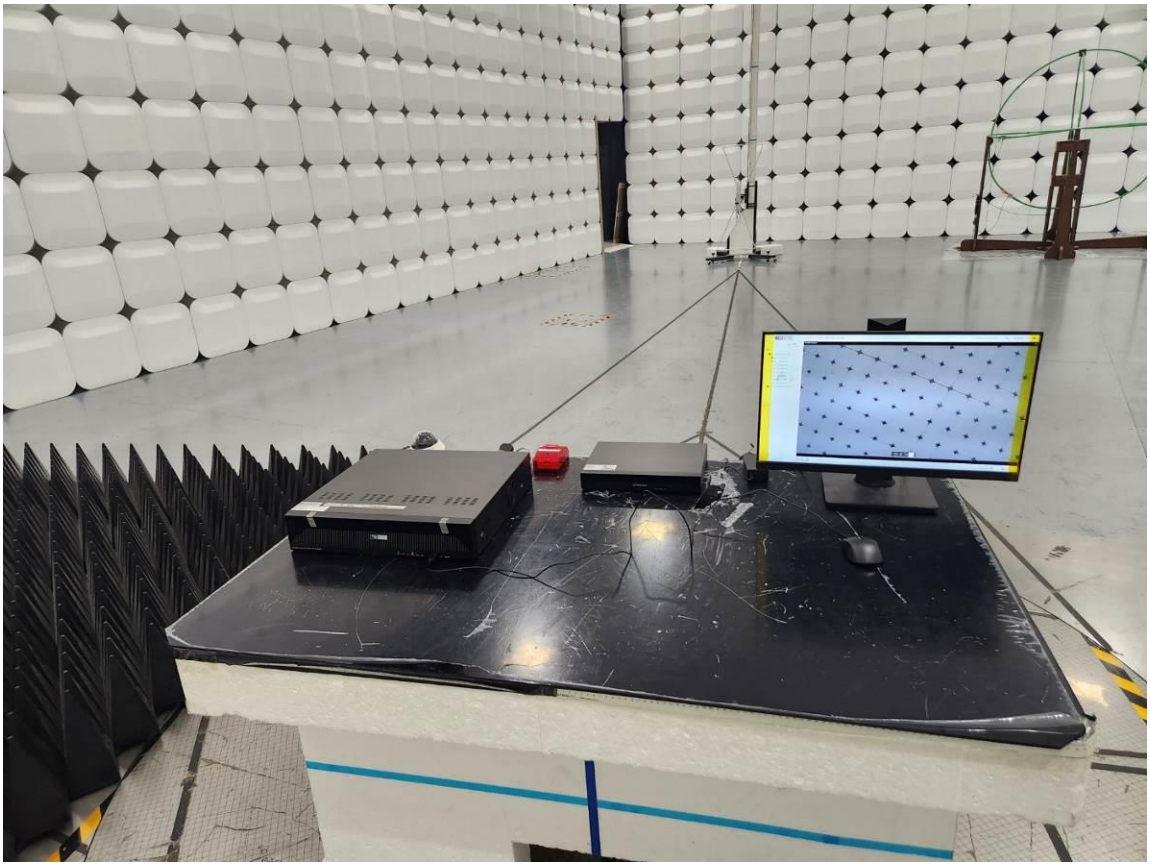


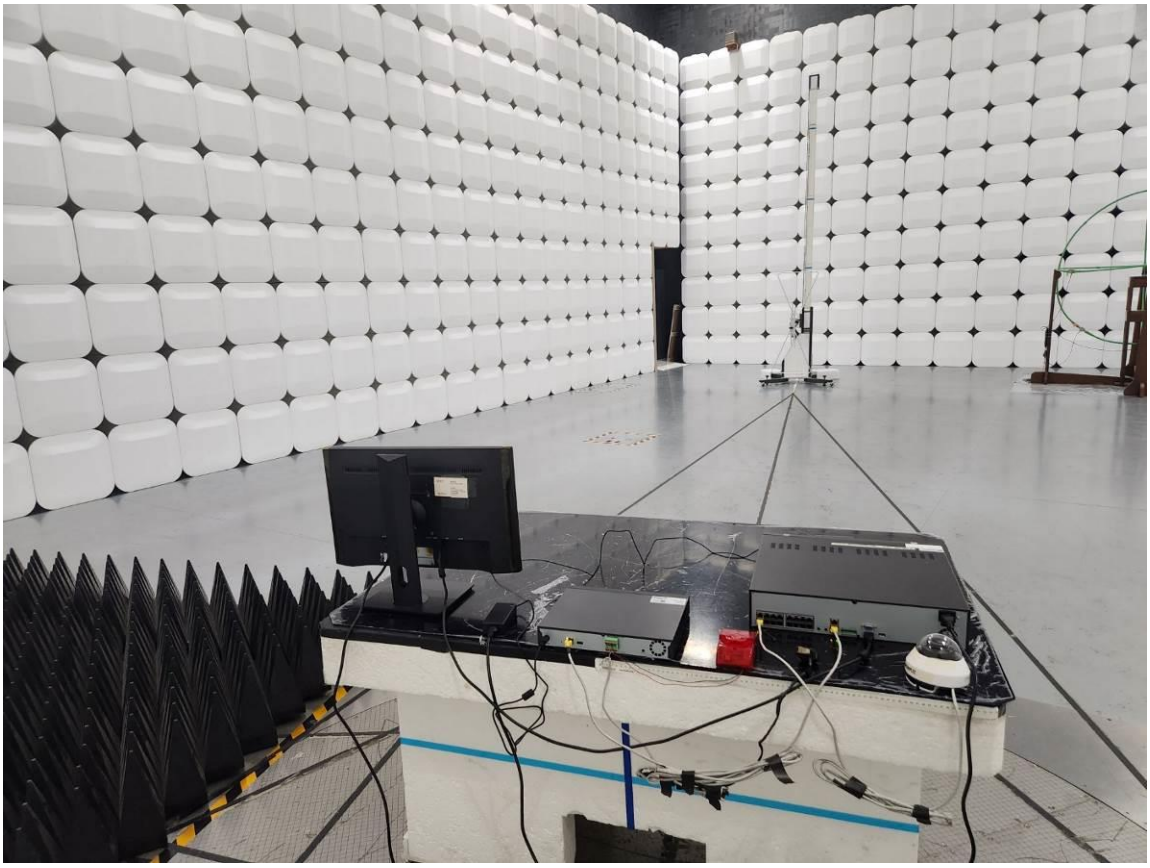
Conducted Emissions (TEL)



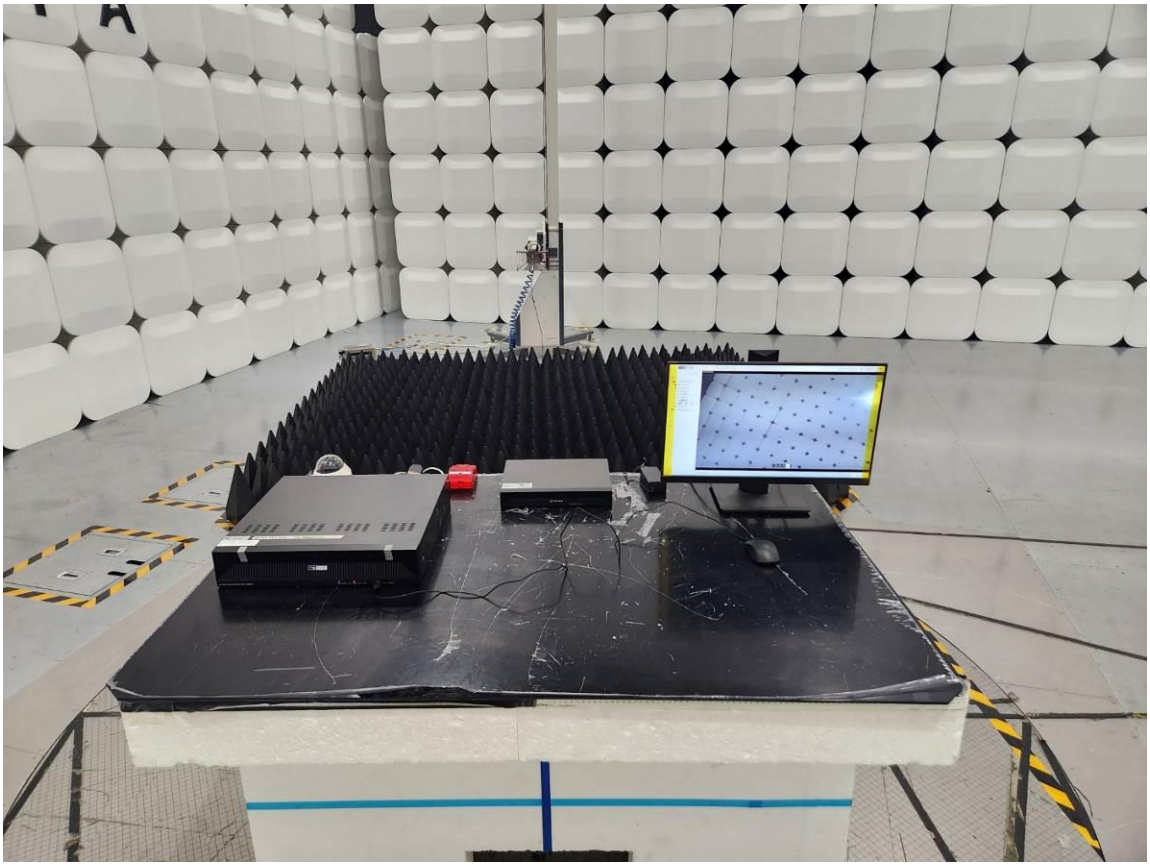


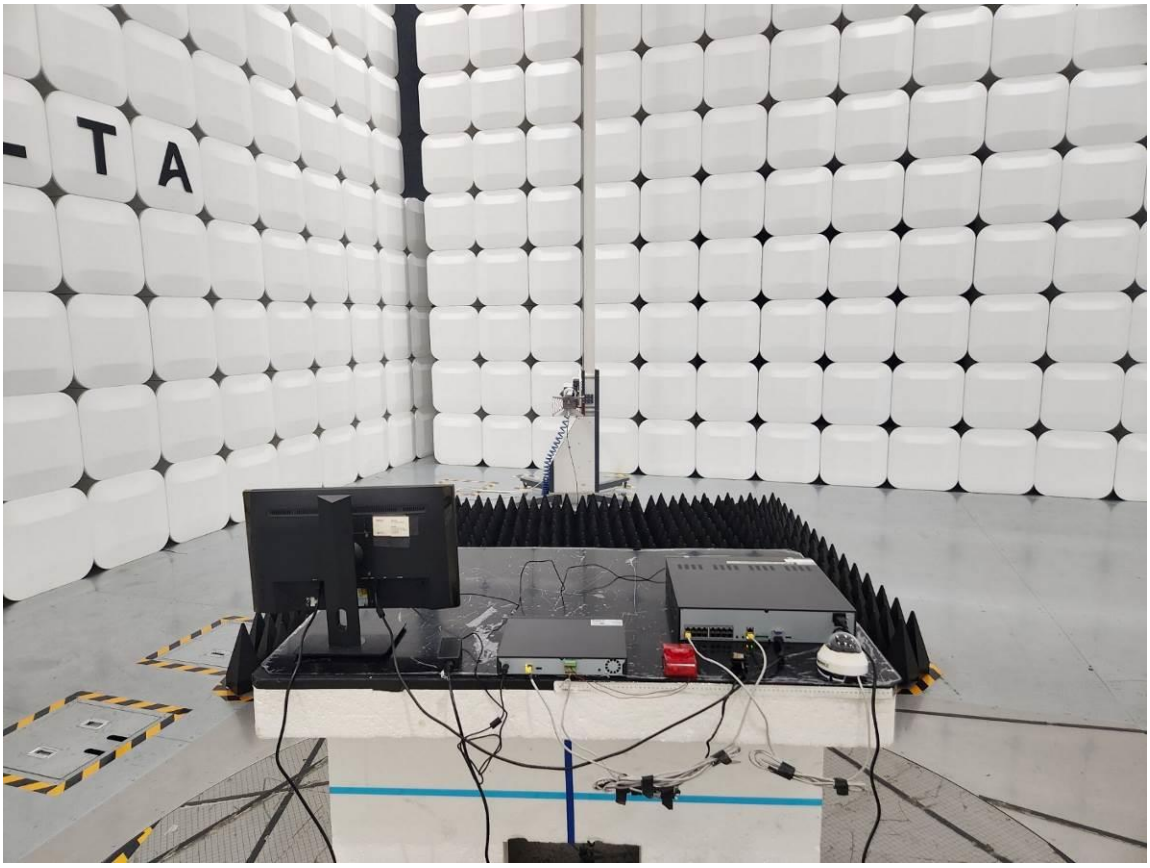
Radiated Emissions - Below 1 GHz





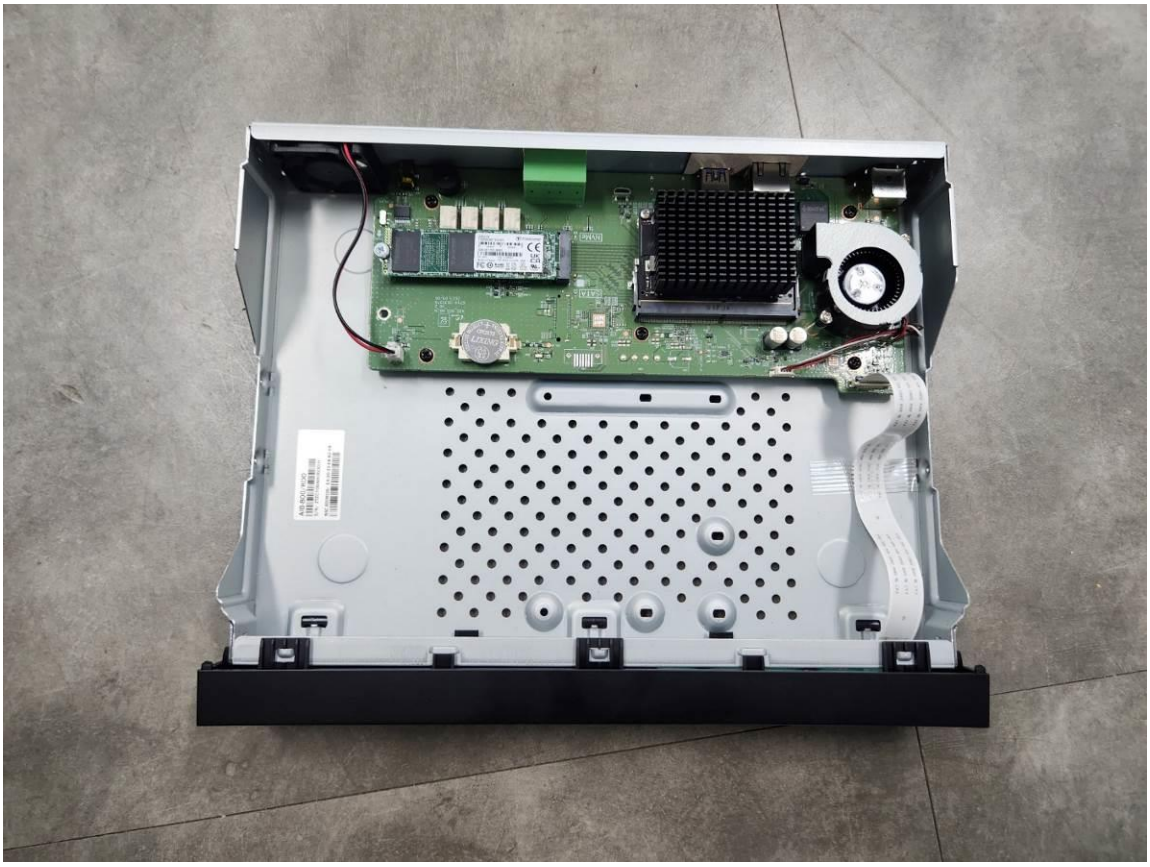
Radiated Emissions - Above 1 GHz





EUT

EUT



Modification