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EMC TEST REPORT

Dates of Tests: October 14, 2025
Project No: 250919-1430
Test Site : LTA Co., Ltd.

Model No.

BRB-X32101E

APPLICANT

Hanwha Vision Co., Ltd

Equipment Name : VMS(Video Management Software) Appliance
Manufacturer : Hanwha Vision Co., Ltd
Model name : BRB-X32101E
Additional Model Name : -
Test Device Serial No.: : Identification
Rule Part(s) : AS/NZS CISPR 32:2015
CISPR 32 Ed2.0

Date of issue : **October 22, 2025**

This test report is issued under the authority of:

The test was supervised by:

Young Kyu Shin, Technical Manager

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	22.10.2025	LR5001225100	Initial

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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
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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
	KOREA		-	
RRA	U.S.A	KR0049	2027-02-27	RRA accredited Lab.
	CANADA		2026-08-05	
		C-14948	2026-09-10	VCCI registration
		T-12416	2026-09-10	
VCCI	JAPAN	R-14483	2026-10-15	
		G-10847	2027-12-13	
KOLAS	KOREA	KT551	2029-10-12	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 : VMS(Video Management Software) Appliance
 Model name : BRB-X32101E
 Additional Model name : -
 Serial number : Identification
 Date of receipt : September 19, 2025
 EUT condition : Pre-production, not damaged
 Interface Ports : AC IN, DP, HDMI, USB #1~ #4, LAN #1 ~ #2, AUX OUT, Console(Unused)
 Power rating : AC 240 V, 50 Hz

2-3 Modification

- Complementary part: Inside gasket tape / Material: gasket tape (model name: N/A, manufacturer: N/A)

2-4 Test conditions

Tested Model : BRB-X32101E
 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
VMS(Video Management Software) Appliance	BRB-X32101E	N/A	HANWHA VISION VIETNAM COMPANY LIMITED D-TECH CO.,LTD.	EUT
Keyboard	K8862	N/A	N/A	EUT
Mouse	MOKJUO	N/A	Primax Electronics Ltd.	EUT (MSIP-REM-PMX-MMOKJUO)
ACCESSORY				
Equipment Name	Model Name	Serial No.	Manufacturer	Remarks
Monitor #1	S22E450F	N/A	SAMSUNG	-
Monitor #2	24BK550Y	N/A	LG	-
PoE Injector	PT-PSE109GBRO-AH-S	N/A	Dongguan PROCET Network Technology Co.,Ltd	-
Notebook	Lenovo V15 G3 IAP	N/A	LCFC (HeFei) Electronics Co.,Ltd	-
Camera	XND-8020RP	N/A	HANWHA TECHWIN CO.,LTD.	-
USB Memory Stick	Cruzer Blade 8GB	N/A	SanDisk	2 EA
Headset	SHS-150V/W	TAKN400069Y	SAMSUNG	-

2-6 Cable List

Cable List					
From		To		Length (m)	Shield
Type	I/O Port	Type	I/O Port		
EUT	AC IN	AC POWER SOURCE	AC OUT	1.0	NO
	DP	Monitor #2	DP	1.1	YES
	HDMI	Monitor #1	HDMI	1.2	YES
	LAN #1	PoE Injector	LAN DATA	3.0	YES
	LAN #2	Notebook Computer	LAN	3.0	NO
	USB #1	EUT(Keyboard)	USB	1.0	NO
	USB #2	EUT(Mouse)	USB	0.9	NO
	USB #3	USB Memory Stick #1	USB	-	-
	USB #4	USB Memory Stick #2	USB	-	-
	AUX OUT	Headset	AUX IN	1.3	NO
	GND	GND	-	-	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 dB μ V	66 dB μ V
(0.5 – 30) MHz	73 dB μ V	60 dB μ V

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) dB μ V	(56 - 46) dB μ V
(0.5 – 5) MHz	56 dB μ V	46 dB μ V
(5 – 30) MHz	60 dB μ V	50 dB μ V

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) dB μ V	(84 – 74) dB μ V	(53 – 43) dB μ V	(40 – 30) dB μ V
(0.5 – 30) MHz	87 dB μ V	74 dB μ V	43 dB μ V	30 dB μ V

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) dB μ V	(74 – 64) dB μ V	(40 – 30) dB μ V	(30 – 20) dB μ V
(0.5 – 30) MHz	74 dB μ V	64 dB μ V	30 dB μ V	20 dB μ V

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

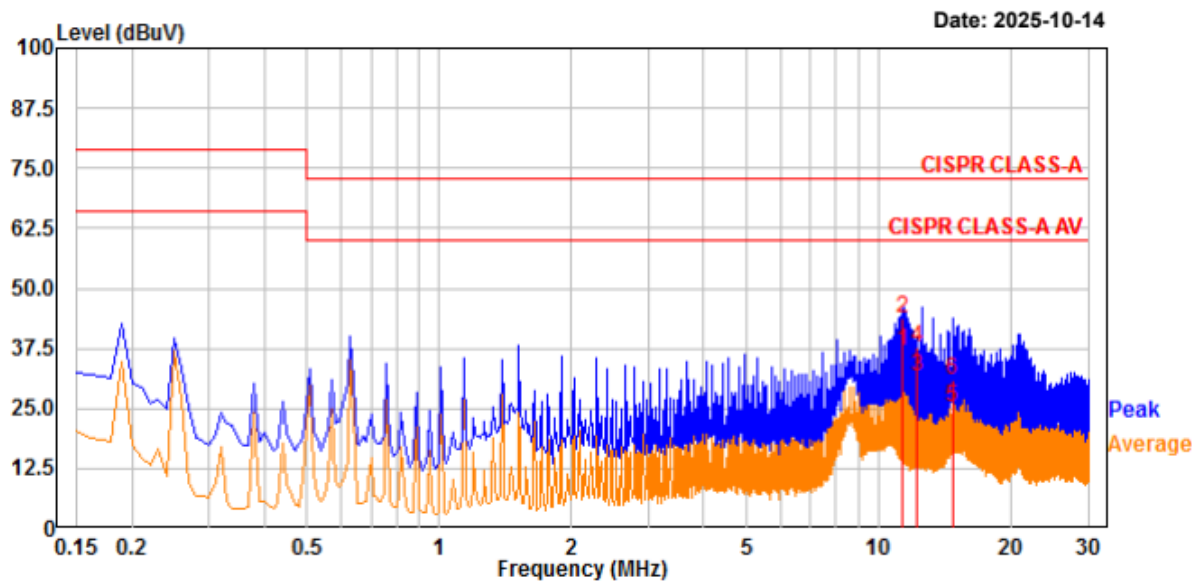
Note 2: The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the telecommunication port under test (conversion factor is $20 \log_{10} 150/I = 44$ dB)

Conducted Emissions (LINE)



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Project No.	: 250919-1430	Phase	: Line
Test Mode	: Operating	Test Power	: AC 240 V / 50 Hz
Temp./ Humi.	: 24 'C / 54 % R.H.	Test Engineer	: HAN M S



No.	Freq MHz	RD QP dBμV	RD AV dBμV	C.F dB	Result QP dBμV	Result AV dBμV	Limit QP dBμV	Limit AV dBμV	Margin QP dB	Margin AV dB	Phase
2.	11.332	23.90	16.97	19.87	43.77	36.84	73.00	60.00	29.23	23.16	Line
4.	12.155	17.92	11.89	19.88	37.80	31.77	73.00	60.00	35.20	28.23	Line
6.	14.689	11.20	5.36	19.92	31.12	25.28	73.00	60.00	41.88	34.72	Line

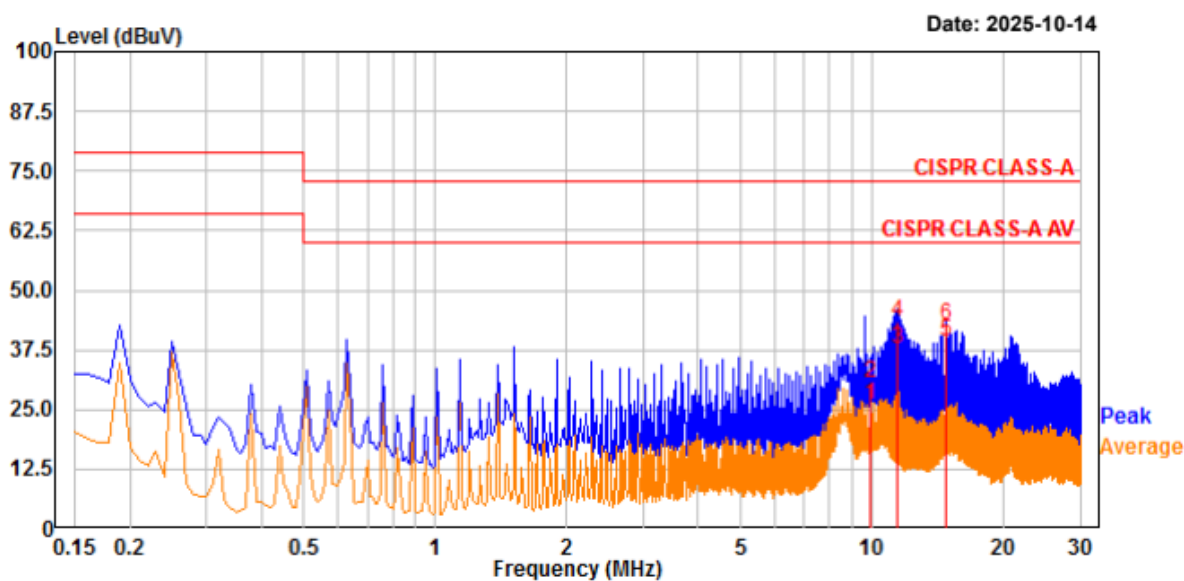
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (NEUTRAL)



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Project No.	: 250919-1430	Phase	: Neutral
Test Mode	: Operating	Test Power	: AC 240 V / 50 Hz
Temp./ Humi.	: 24 'C / 54 % R.H.	Test Engineer	: HAN M S



No.	Freq MHz	RD QP dBμV	RD AV dBμV	C.F dB	Result QP dBμV	Result AV dBμV	Limit QP dBμV	Limit AV dBμV	Margin QP dB	Margin AV dB	Phase
2.	9.874	10.66	6.16	19.83	30.49	25.99	73.00	60.00	42.51	34.01	neutral
4.	11.397	23.70	17.95	19.86	43.56	37.81	73.00	60.00	29.44	22.19	neutral
6.	14.746	22.86	19.24	19.92	42.78	39.16	73.00	60.00	30.22	20.84	neutral

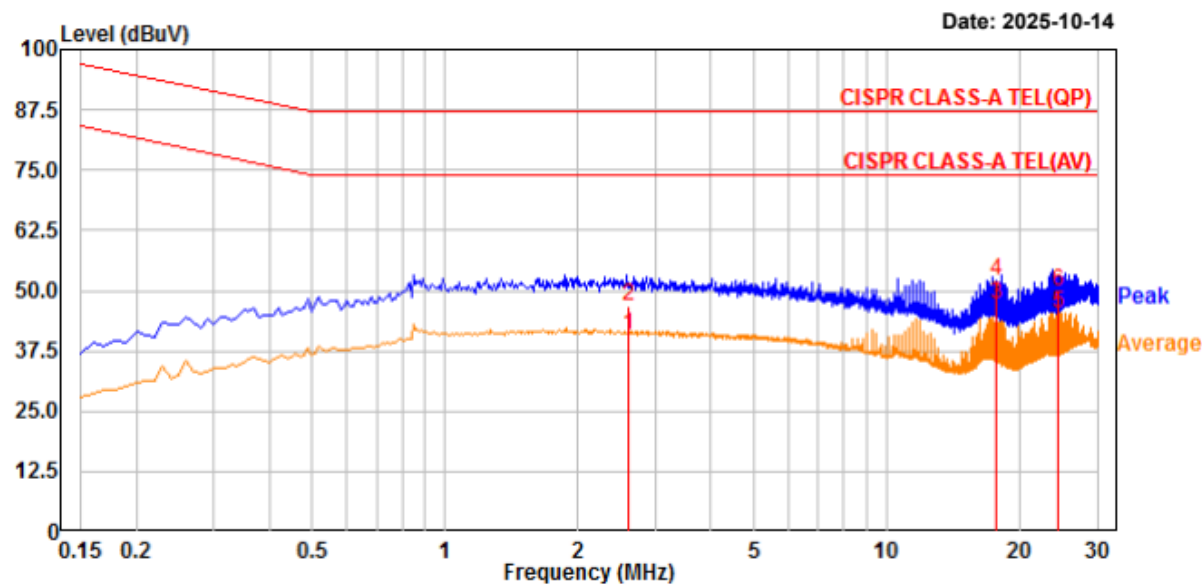
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_1000M(LAN #1))



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Project No.	: 250919-1430	Phase	: TEL_1000M(LAN #1)
Test Mode	: Operating	Test Power	:
Temp./ Humi.	: 24 'C / 54 % R.H.	Test Engineer	: HAN M S



No.	Freq MHz	RD QP dBμV	RD AV dBμV	C.F dB	Result QP dBμV	Result AV dBμV	Limit QP dBμV	Limit AV dBμV	Margin QP dB	Margin AV dB	Phase
2.	2.610	27.50	21.69	19.21	46.71	40.90	87.00	74.00	40.29	33.10	Line
4.	17.693	32.67	27.74	19.27	51.94	47.01	87.00	74.00	35.06	26.99	Line
6.	24.428	30.11	25.64	19.55	49.66	45.19	87.00	74.00	37.34	28.81	Line

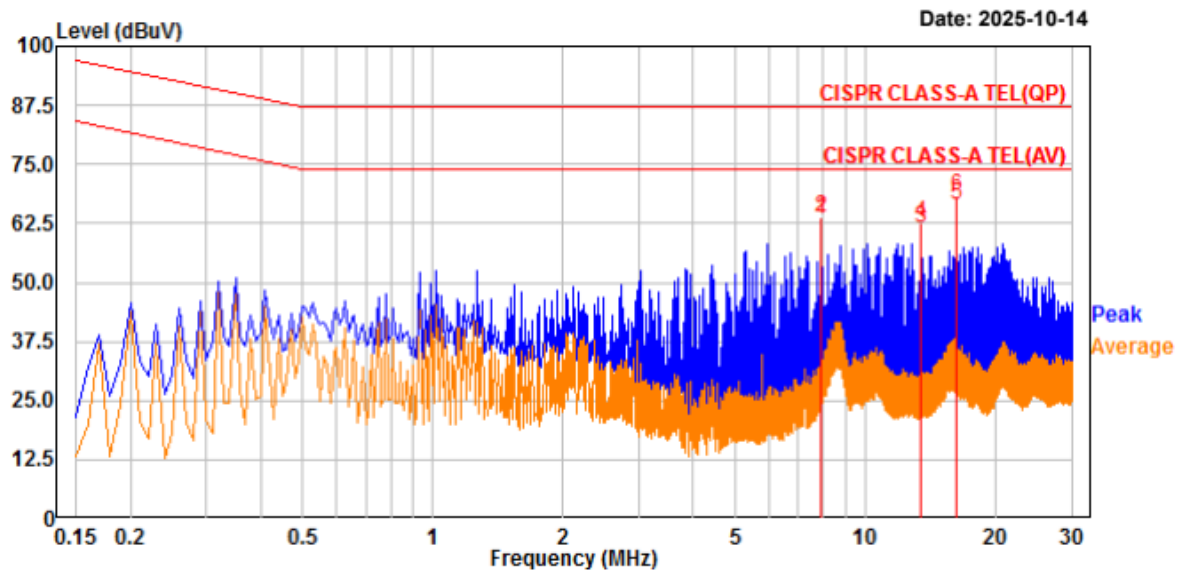
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_1000M(LAN #2))



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Project No.	: 250919-1430	Phase	: TEL_1000M(LAN #2)
Test Mode	: Operating	Test Power	:
Temp./ Humi.	: 24 'C / 54 % R.H.	Test Engineer	: HAN M S



No.	Freq MHz	RD QP dBμV	RD AV dBμV	C.F dB	Result QP dBμV	Result AV dBμV	Limit QP dBμV	Limit AV dBμV	Margin QP dB	Margin AV dB	Phase
2.	7.923	44.57	44.18	19.31	63.88	63.49	87.00	74.00	23.12	10.51	Line
4.	13.419	43.06	42.00	19.44	62.50	61.44	87.00	74.00	24.50	12.56	Line
6.	16.167	48.89	46.90	19.50	68.39	66.40	87.00	74.00	18.61	7.60	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 3.4 GHz, 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 dB μ V/m
(230 – 1 000) MHz	47 dB μ V/m

CLASS B

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

Limit of 3m above 1 GHz

CLASS A

Frequency Range	Average Limit @ 3m (dB μ V/m)	Peak limit @ 3m (dB μ V/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 (dB μ V/m)	Peak limit @ 3m (dB μ V/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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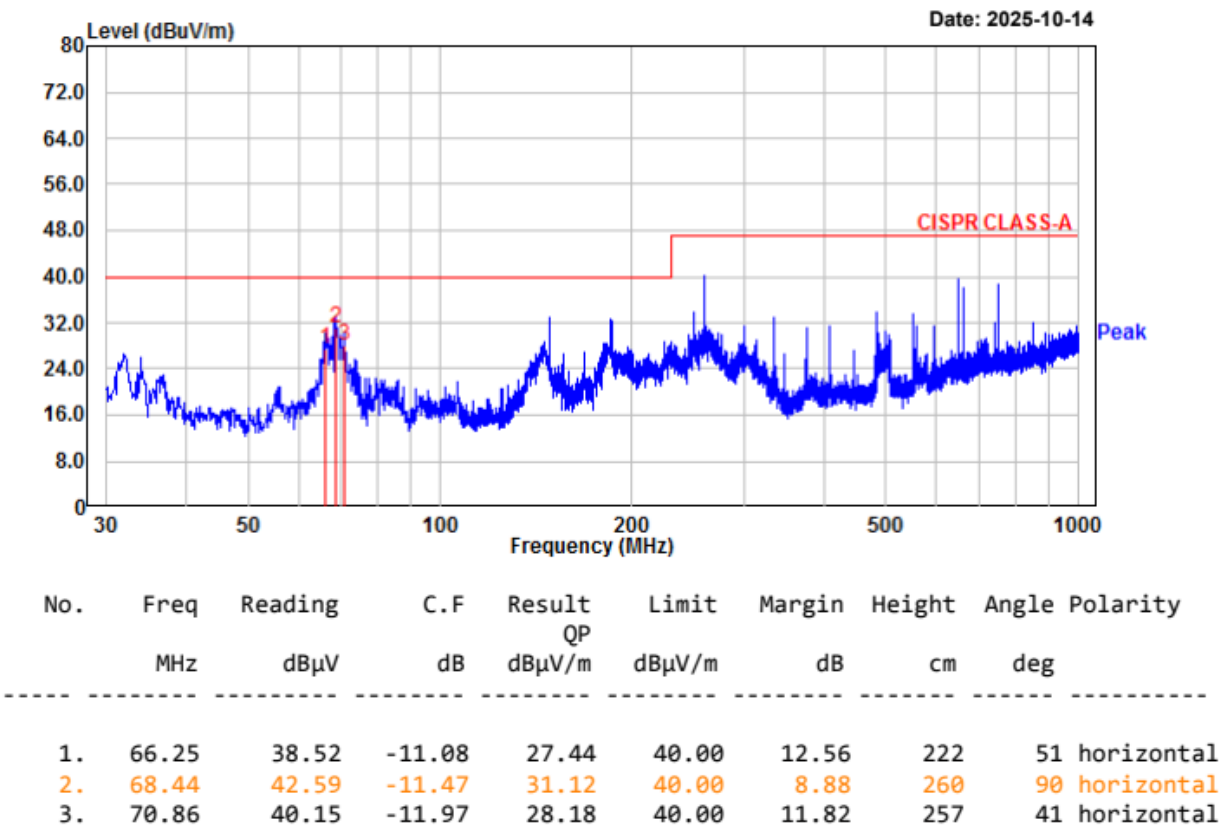
Project No. : 250919-1430

Temp/Humi: 23 'C / 51 % R.H.

Test Mode : Operating

Tested by: HAN M S

Power : AC 240 V / 50 Hz



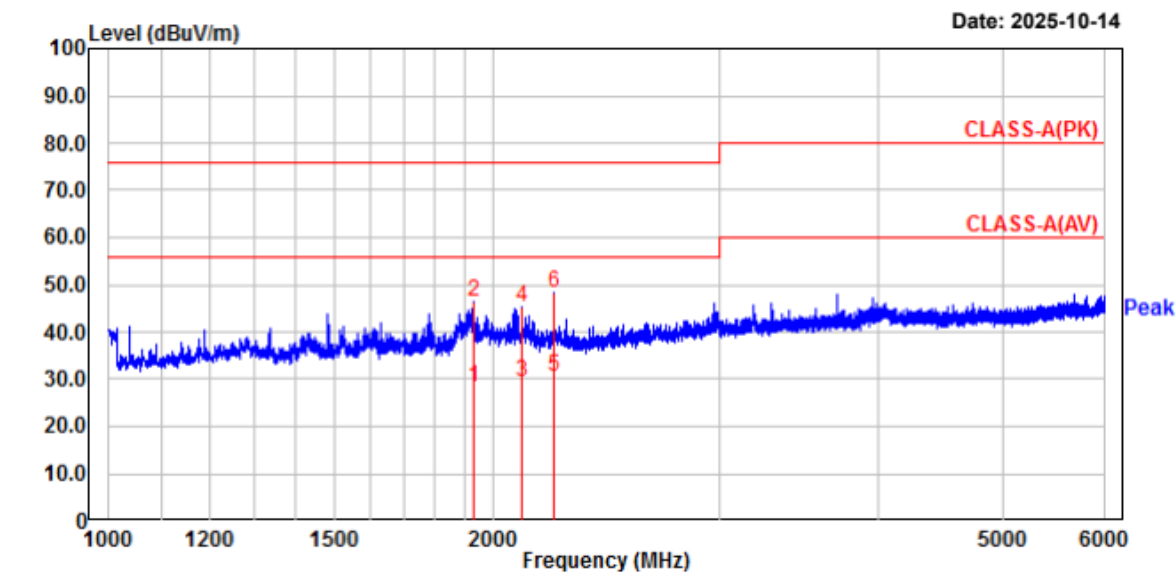
Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Radiated Emissions (Above 1 GHz) / H



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Project No.	: 250919-1430	Temp/Humi:	23 'C / 51 % R.H.
Test Mode	: Operating	Tested by:	HAN M S
Power	: AC 240 V / 50 Hz	Measure distance :	3.7 m



No.	Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Polarity
	MHz	PK	AV	dB	PK	AV	PK	AV	PK	AV	cm	deg	
2.	1930.63	44.39	26.10	2.13	46.52	28.23	76.00	56.00	29.48	27.77	100	105	horizontal
4.	2101.88	41.21	25.47	4.04	45.25	29.51	76.00	56.00	30.75	26.49	100	0	horizontal
6.	2227.50	44.53	27.10	3.63	48.16	30.73	76.00	56.00	27.84	25.27	100	23	horizontal

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

Radiated Emissions (Above 1 GHz) / V



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Project No. : 250919-1430

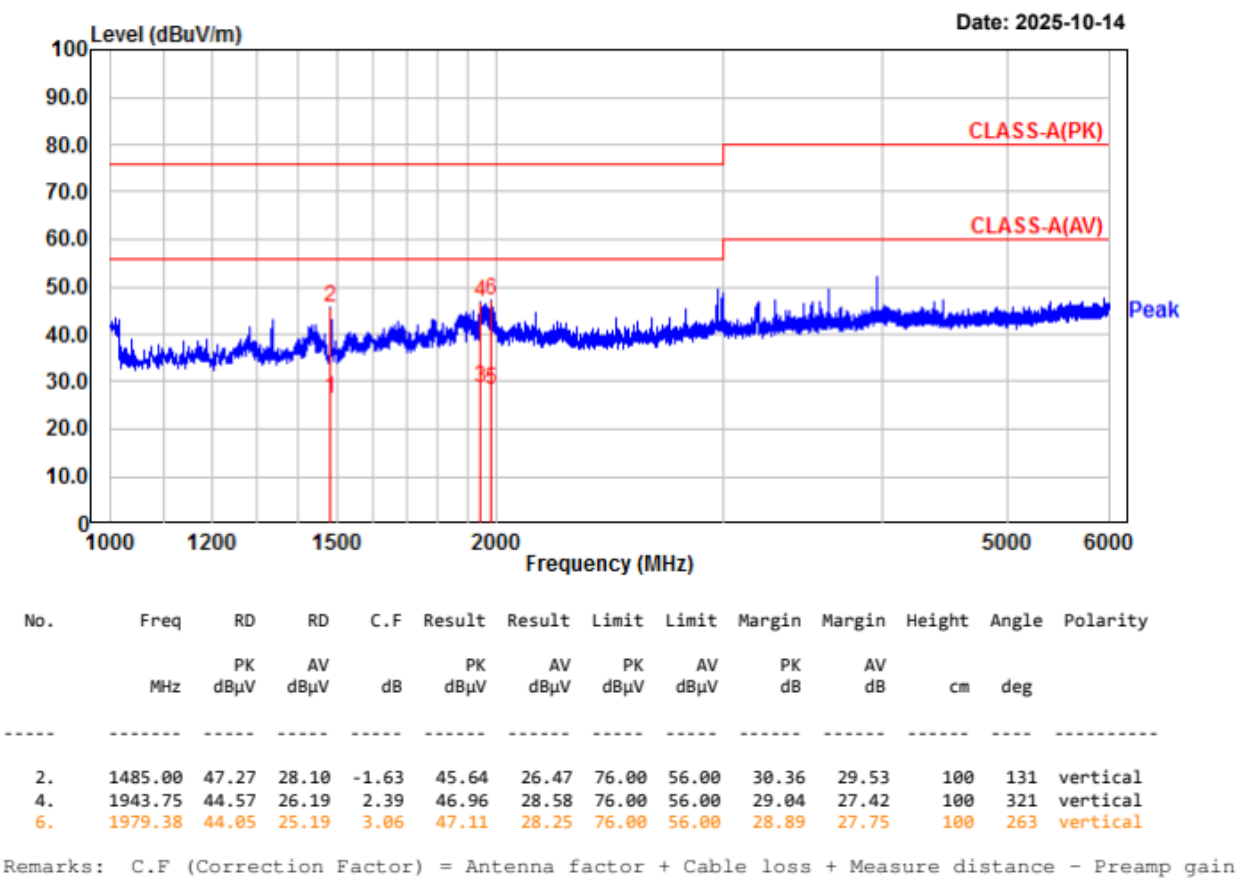
Temp/Humi: 23 'C / 51 % R.H.

Test Mode : Operating

Tested by: HAN M S

Power : AC 240 V / 50 Hz

Measure distance : 3.7 m



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	2026.03.05	1 year
☒	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	2026.03.05	1 year
☐	ISN	ISN T800	TESEQ	27109	2026.08.20	1 year
☒	ISN	ENY81-CA6	Rohde & Schwarz	101565	2026.08.20	1 year
☐	ISN	ISN S8	Schwarzbeck	79	2026.08.18	1 year
☐	CURRENT PROBE	EZ-17	Rohde & Schwarz	100508	2026.08.19	1 year
☐	CDN	TSCDN-C1-BNC-75	F.C.C	07004	2026.03.05	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	100378	2026.08.18	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	101468	2026.08.18	1 year
☒	LISN(main)	ENV216	Rohde & Schwarz	102872	2026.08.18	1 year
☒	LISN(sub)	ENV216	Rohde & Schwarz	101222	2026.08.18	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	2026.08.18	1 year
☒	Amplifier	310N	SONOMA INSTRUMENT	240504	2026.03.11	1 year
☒	BILOG Antenna	VULB 9168	SCHWARZBECK	749	2027.03.13	2 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

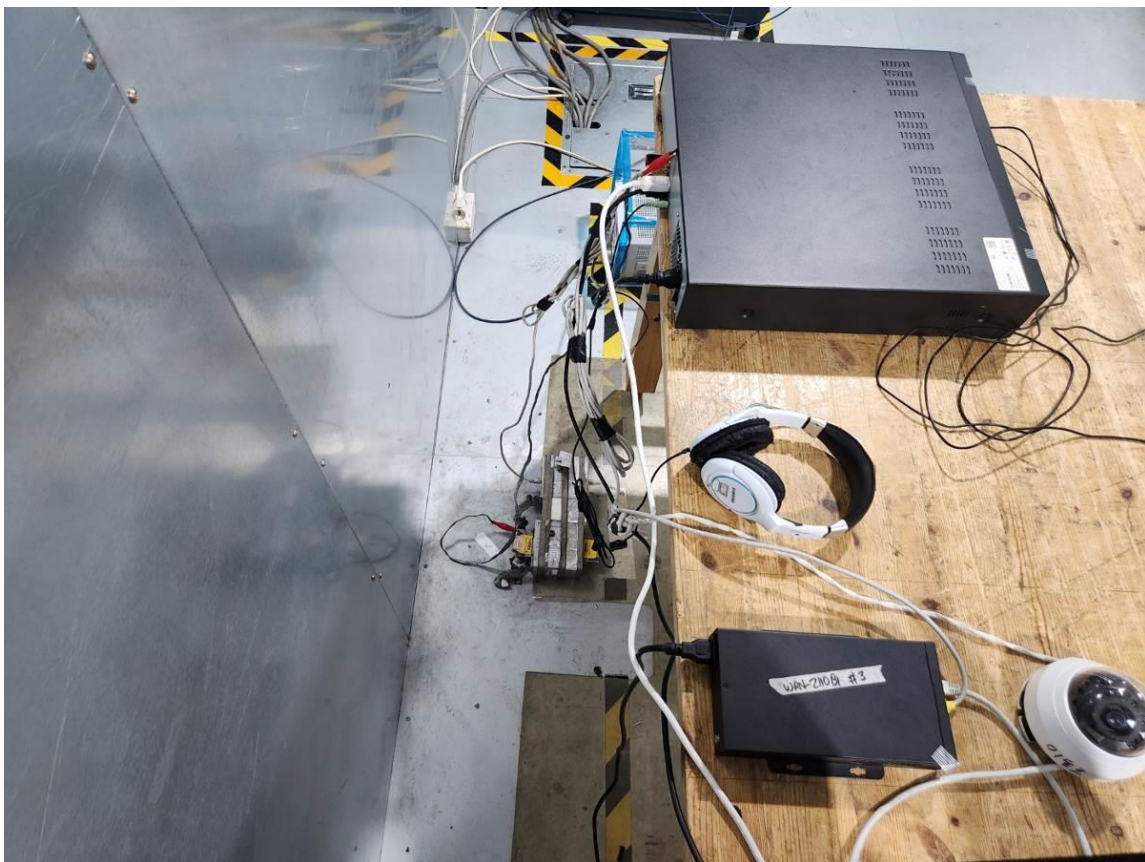
Radiated Emissions – Above 1 GHz

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESCI7	Rohde & Schwarz	100772	2026.08.18	1 year
☒	EMI TEST Receiver	ESU	Rohde & Schwarz	100092	2026.08.18	1 year
☒	Amplifier	8449B	Agilent	3008A02126	2026.03.05	1 year
☒	HORN ANTENNA	3115	ETS	114105	2026.03.24	1 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	

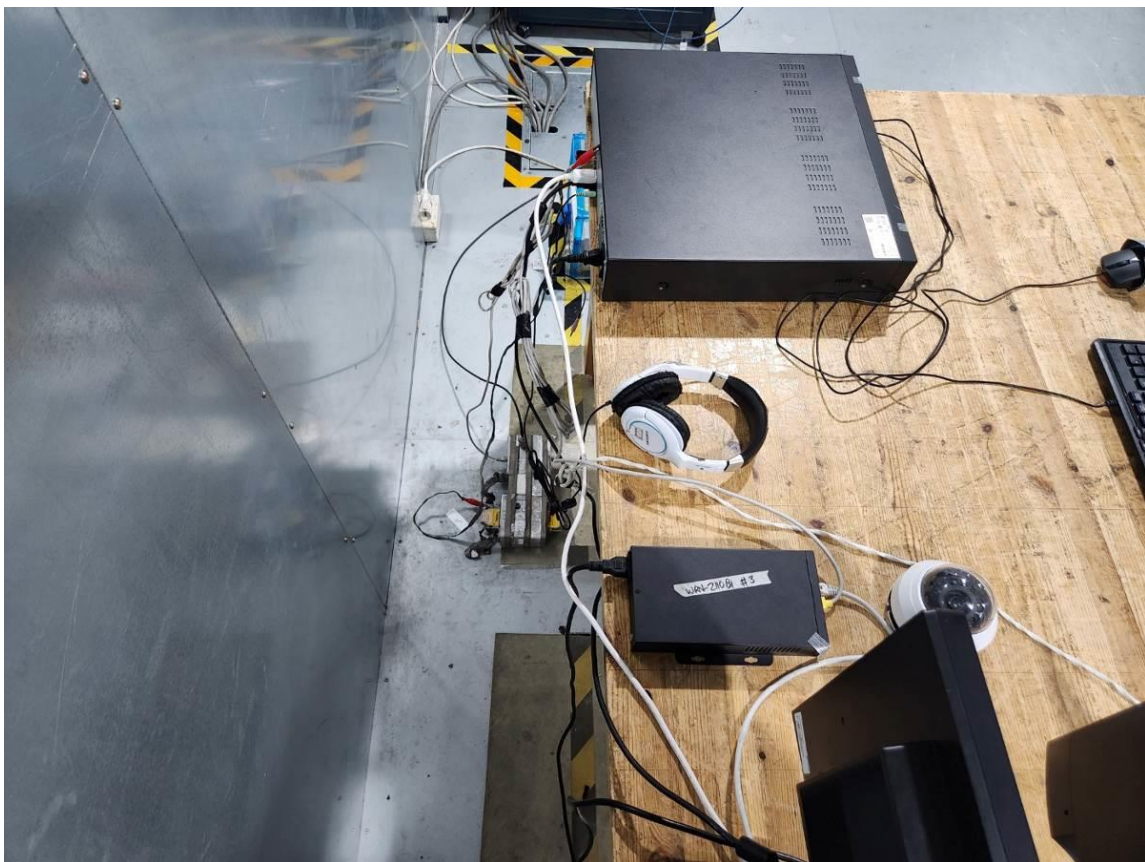
APPENDIX B

PHOTOGRAPHS

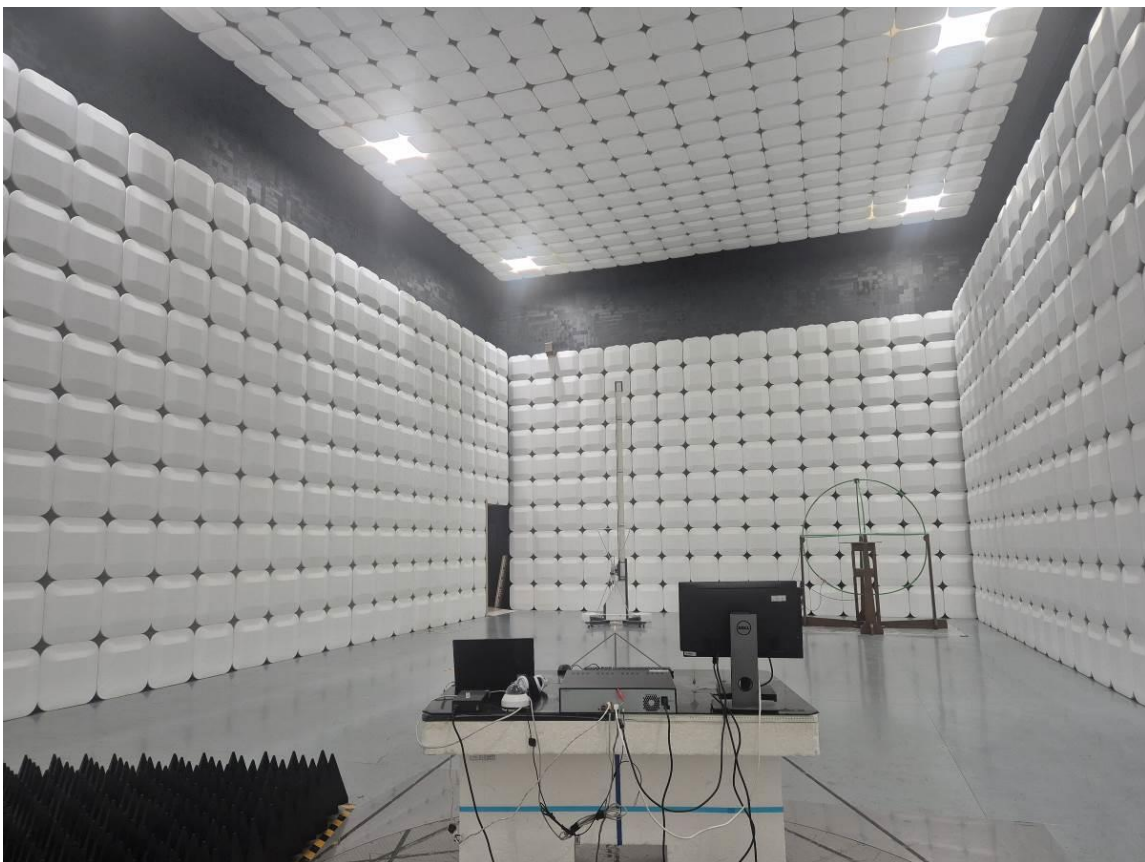
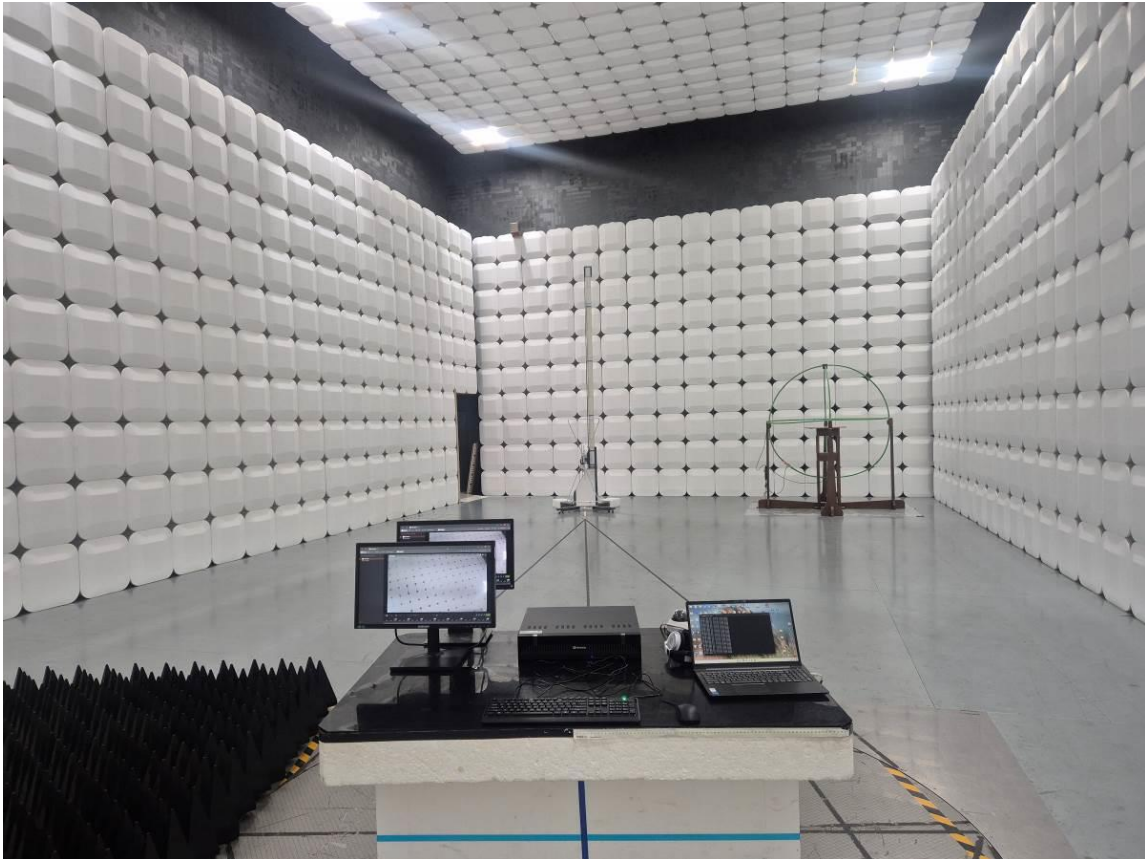
Conducted Emissions



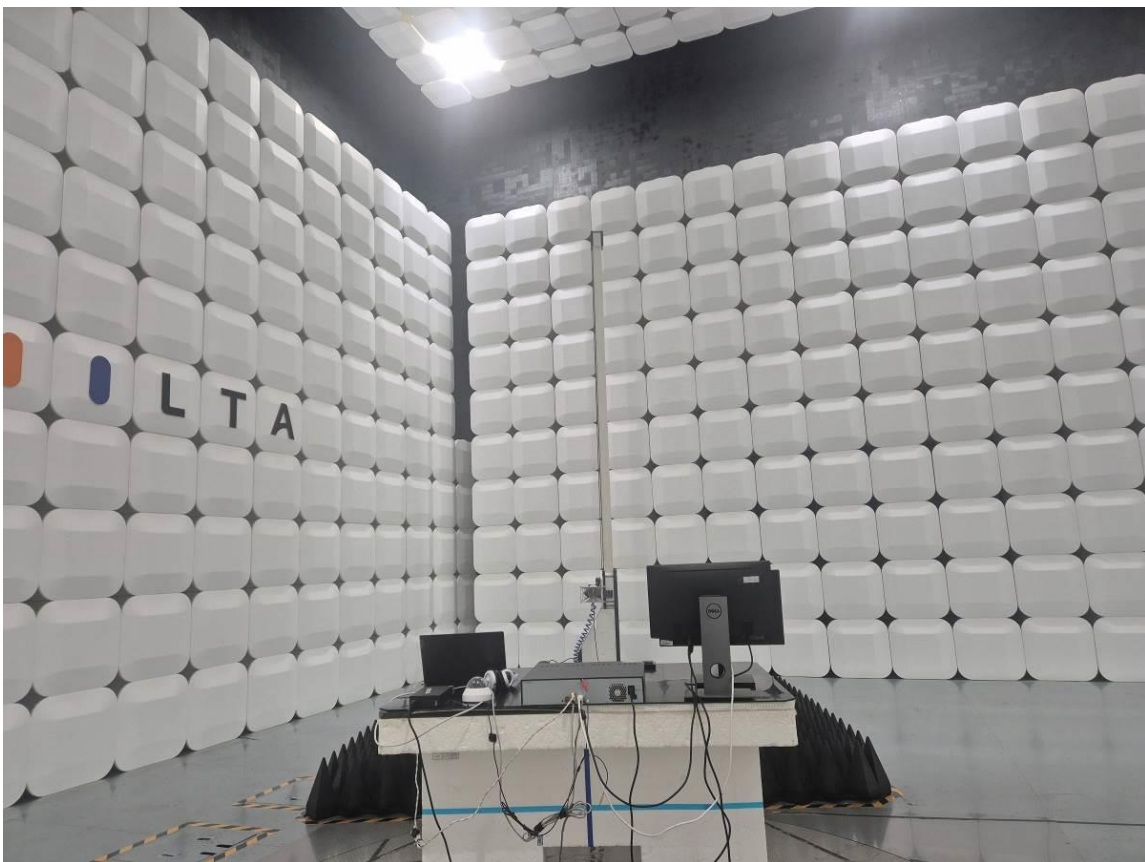
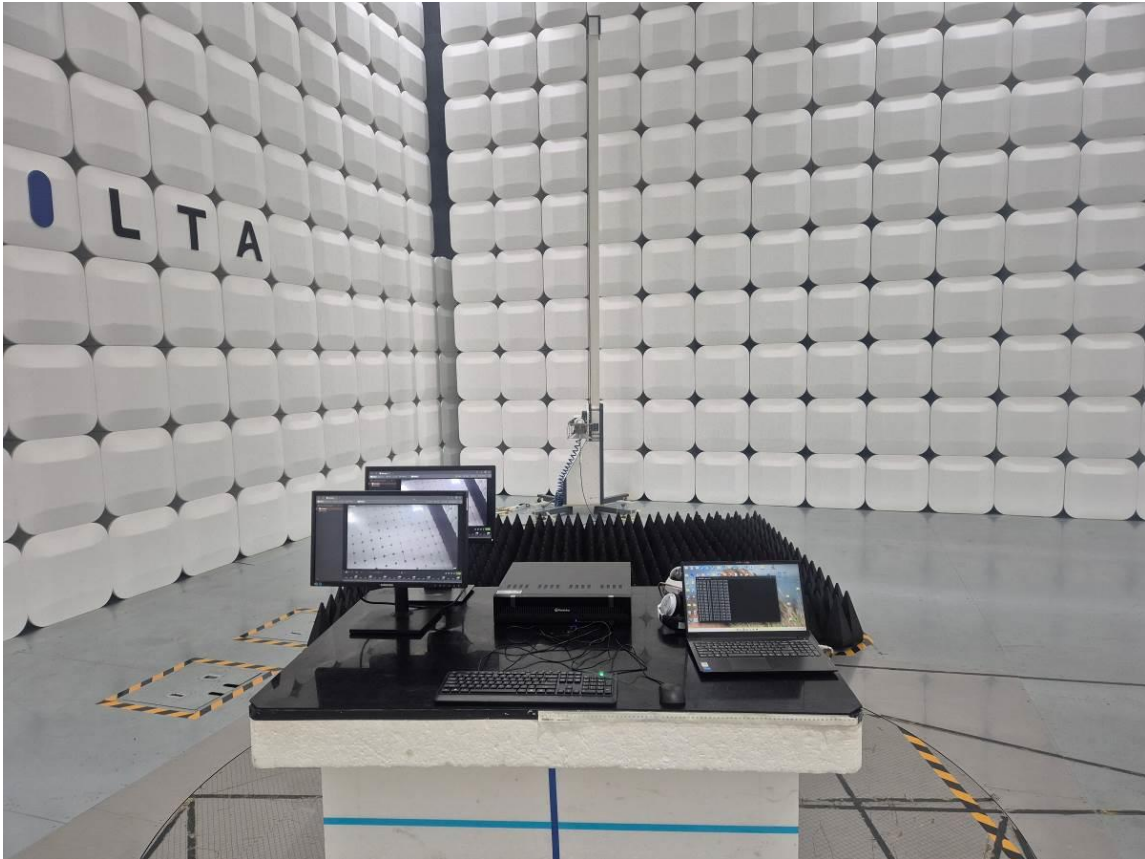
Conducted Emissions (TEL)



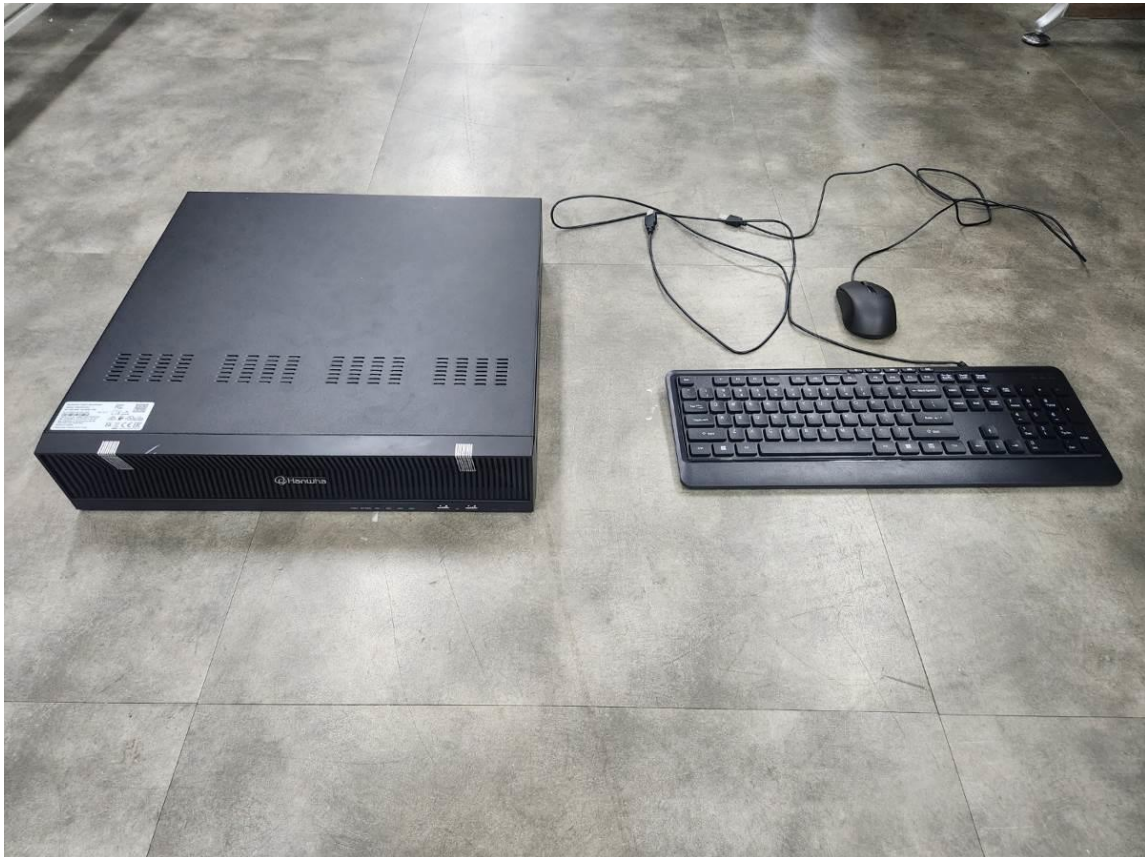
Radiated Emissions - Below 1 GHz



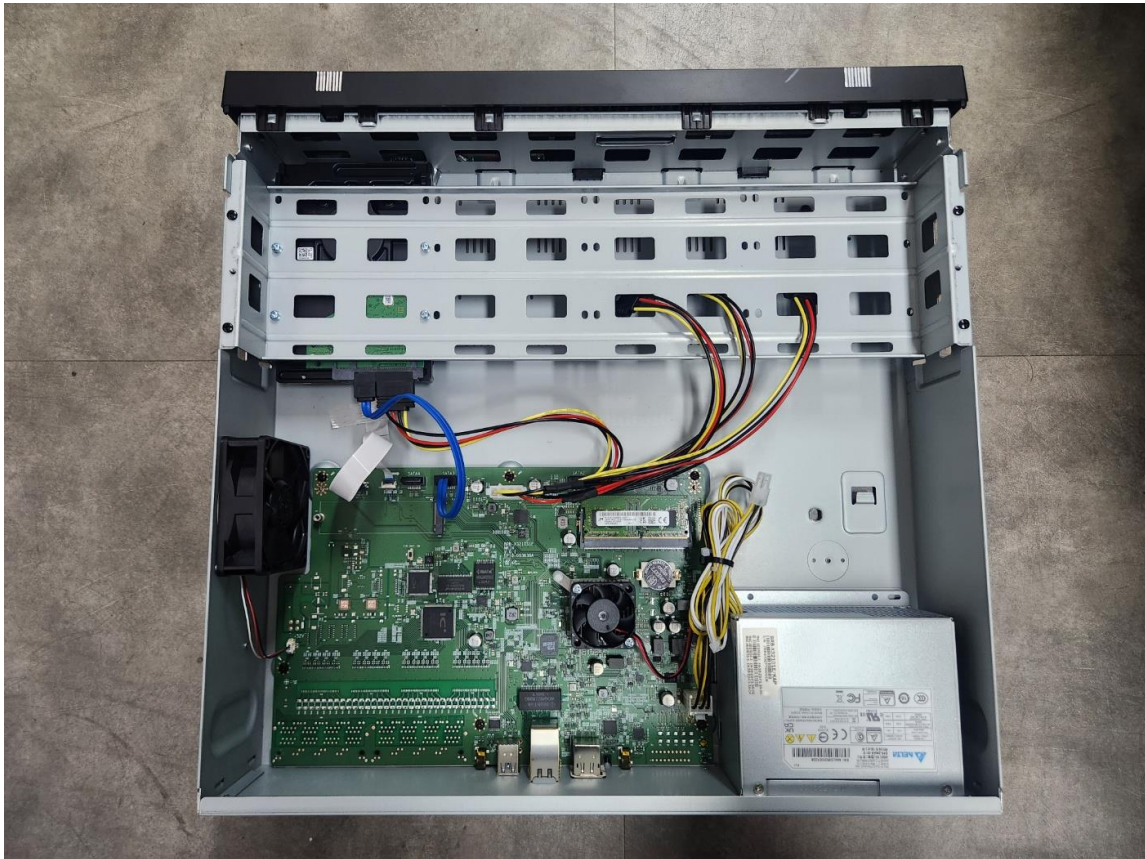
Radiated Emissions - Above 1 GHz



EUT



EUT



Modification

