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EMC TEST REPORT

Dates of Tests: June 29 - 30, 2022

Test Report S/N: LR500172303H

Test Site : LTA Co., Ltd.

Model No.

PRN-6410DB4

APPLICANT

Hanwha Vision Co., Ltd

Equipment Name : NVR
Manufacturer : Hanwha Vision Co., Ltd
Model Name : PRN-6410DB4
Additional Model Name : PRN-6400DB4
Test Device Serial No.: Identification
Rule Part(s) : VCCI-CISPR 32:2016

Date of issue : March 03, 2023

This test report is issued under the authority of:

The test was supervised by:

Young Kyu Shin, Technical Manager

Jong chae Kim, 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. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

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	08.06.2020	LR500172006V	Initial
1	07.12.2020	LR500172012M	Technology change by CPU, RAM
2	06.04.2021	LR500172104E	Add Additional Model (PRN-6400DB4)
3	16.12.2021	LR500172112AF	Delete the country of manufacture (China) and change the PCB. (using with the PCB that has not changed)
4	05.07.2022	LR500172207D	change the PCB. (using with the PCB that has not changed)
5	03.03.2023	LR500172303H	Change company name and manufacturer name

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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
 Web site : <http://www.ltalab.com>
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 Facsimile : +82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which “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
NVLAP	U.S.A	200723-0	2022-09-30	ECT accredited Lab.
	KOREA		-	
RRA	U.S.A	KR0049	2023-04-08	RRA accredited Lab.
	CANADA		2022-10-18	
		C-14948	2023-09-10	
VCCI	JAPAN	T-12416	2023-09-10	VCCI registration
		R-14483	2023-10-15	
		G-10847	2024-12-13	
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 : +82-70-7147-8753(http://hanhwa-security.com)

Factory #1

Company name : HANWHA VISION VIETNAM COMPANY LIMITED
 Address : Lot O-2, Que Vo Industrial Zone extended area ,Nam Son commune, Bac Ninh city, 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 : NVR
 Model Name : PRN-6410DB4
 Additional Model Name : PRN-6400DB4
 Additional model has deleted FR Function (SW Finction).
 Serial number : Identification
 Date of receipt : June 21, 2022
 EUT condition : Pre-production, not damaged
 Interface ports : AC IN #1 ~ #2, USB #1 ~ #4, HDMI #1 ~ #2, LAN #1 ~ #3, Audio Out, Alarm In, Alarm Out
 Console Port is unused port.
 Power rating : AC 100 V, 50 Hz

2-3 Modification

- NONE

2-4 Test conditions

Temp. / Humid. / Pressure : 23 °C / 48 % R.H.
 Tested Model : PRN-3210B4
 Test mode : Operating mode (AC #1), Operating mode (AC #2)
 Test Voltage : AC 100 V, 50 Hz

2-5 List of EUT and ACCESSORY

EUT				
Equipment Name	Model Name	Serial No.	Manufacturer	Remarks
NVR	PRN-6410DB4	N/A	HANWHA VISION VIETNAM COMPANY LIMITED D-TECH CO.,LTD.	-
MOUSE	MOKJUO	22G05346	Primax Electronics Ltd.	-
ACCESSORY / Operating mode (AC #1), Operating mode (AC #2)				
Equipment Name	Model Name	Serial No.	Manufacturer	Remarks
USB Memory #1	N/A	N/A	Axxen	16 GB
USB Memory #2	N/A	N/A	Axxen	16 GB
USB Memory #3	N/A	N/A	Axxen	16 GB
Notebook	NP-RV711	N/A	SAMSUNG	-
Notebook Adapter	CPA09-004A	N/A	Chicony	-
Monitor #1	P2018H	N/A	DELL	-
Monitor #2	6230VP	N/A	SAMBO	-
PoE Injector	IPTIME PoE408	N/A	IPTIME	-
PoE Injector Adapter	ANY480A5C-NI	N/A	N/A	-
Network Camera #1	QNV-6023R	N/A	HANWHA TECHWIN CO.,LTD.	-
Network Camera #2	QNV-6023R	N/A	HANWHA TECHWIN CO.,LTD.	-
Mobile Phone	SM-G930L	R39HB 02T65	SAMSUNG	-
Earphone	N/A	N/A	N/A	-

2-6 Cable List

Cable List / Operating mode (AC #1), Operating mode (AC #2)						
From		To		Length (m)	Shielding	
Type	I/O Port	Type	I/O Port		Cable	backshell
EUT	AC IN #1	AC POWER SOURCE	3 PIN AC LINE	1.2	NO	Plastic
	AC IN #2	AC POWER SOURCE	3 PIN AC LINE	1.3	NO	Plastic
	USB #1	USB Memory #1	USB	-	-	-
	USB #2	USB Memory #2	USB	-	-	-
	USB #3	USB Memory #3	USB	-	-	-
	USB #4	Mouse	USB	1.2	NO	Plastic
	Audio Out	Earphone	Audio In	1.0	NO	Plastic
	HDMI #1	Monitor #1	HDMI	1.2	YES	Metal
	HDMI #2	Monitor #2	HDMI	1.4	YES	Metal
	LAN #1	Notebook	LAN	5.0	NO	Plastic
	LAN #2	PoE Injector	LAN #1	3.0	NO	Plastic
	LAN #3	PoE Injector	LAN #2	3.0	NO	Plastic
	Alarm In	Alarm #1	Alarm Out	1.1	NO	Plastic
	Alarm Out	Alarm #2	Alarm In	0.7	NO	Plastic
PoE Injector	DC IN	PoE Injector Adapter	DC OUT	1.0	NO	Plastic
	LAN #3	Network Camera #1	LAN	1.2	NO	Plastic
	LAN #4	Network Camera #2	LAN	1.3	NO	Plastic
Notebook	DC IN	Notebook Adapter	DC OUT	1.2	NO	Plastic
PoE Injector Adapter	AC IN	AC POWER SOURCE	2 PIN AC LINE	0.7	NO	Plastic
Notebook Adapter	AC IN	AC POWER SOURCE	3 PIN AC LINE	1.2	NO	Plastic
Monitor #1	AC IN	AC POWER SOURCE	3 PIN AC LINE	1.3	NO	Plastic
Monitor #2	AC IN	AC POWER SOURCE	3 PIN AC LINE	1.2	NO	Plastic
Network Camera #1	Audio In	Mobile Phone	Audio Out	1.1	NO	Plastic

※ The test Photographs are based on Operating mode (AC #1).

3. Test Report

3.1 Summary of tests

Parameter	Applied Standard	Status
I. Emission		
Conducted Emissions	VCCI-CISPR 32:2016	C
Conducted Emissions at telecommunication ports	VCCI-CISPR 32:2016	C
Radiated Emissions	VCCI-CISPR 32:2016	C
Radiated Emissions at above 1 GHz	VCCI-CISPR 32:2016	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. EMISSION

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	: VCCI-CISPR 32:2016
Measurement Frequency range	: 150 kHz - 30 MHz
Measurement RBW	: 9 kHz
Test Location	: Shielded Room
Test mode	: Operating mode (AC #1), Operating mode (AC #2)
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 Emissions 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 0.15MHz to 0.5MHz

Limits for Conducted Emissions 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) / Operating mode (AC #1)



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EUT /Model No. : PRN-6410DB4

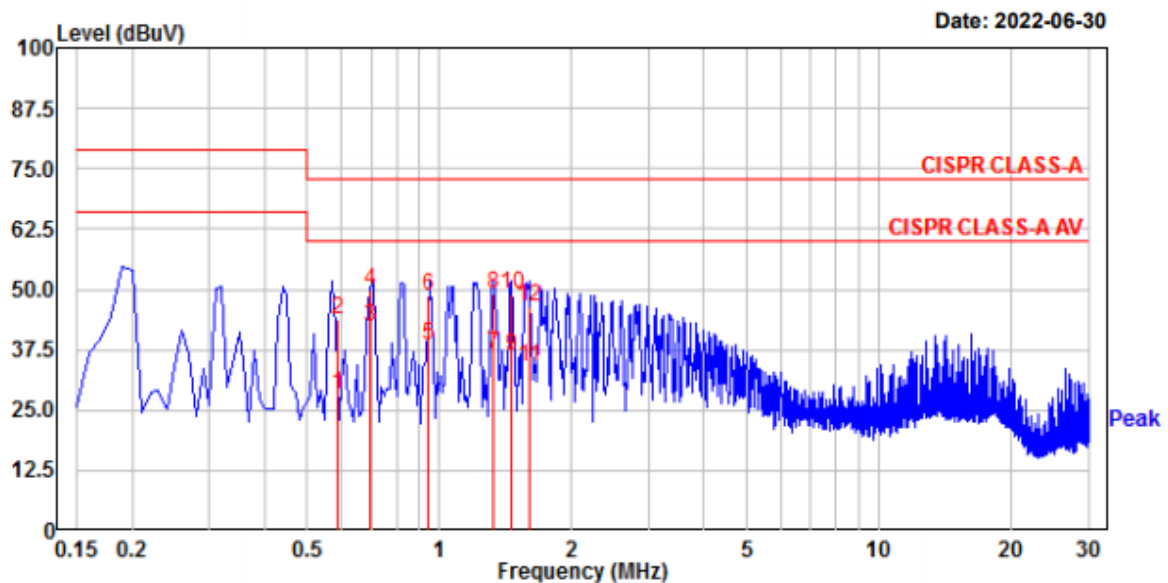
Phase : Line

Test Mode : Operating mode(AC #1)

Test Power : 100 V / 50 Hz

Temp./ Humi. : 23 'C / 48 % R.H

Test Engineer : NAM Y H



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.	0.585	24.17	8.89	19.49	43.66	28.38	73.00	60.00	29.34	31.62	Line
4.	0.695	30.24	22.60	19.49	49.73	42.09	73.00	60.00	23.27	17.91	Line
6.	0.946	29.28	19.05	19.51	48.79	38.56	73.00	60.00	24.21	21.44	Line
8.	1.330	29.68	16.92	19.52	49.20	36.44	73.00	60.00	23.80	23.56	Line
10.	1.464	29.35	16.75	19.53	48.88	36.28	73.00	60.00	24.12	23.72	Line
12.	1.597	26.74	14.50	19.53	46.27	34.03	73.00	60.00	26.73	25.97	Line

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

Conducted Emissions (NEUTRAL) / Operating mode (AC #1)



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EUT /Model No. : PRN-6410DB4

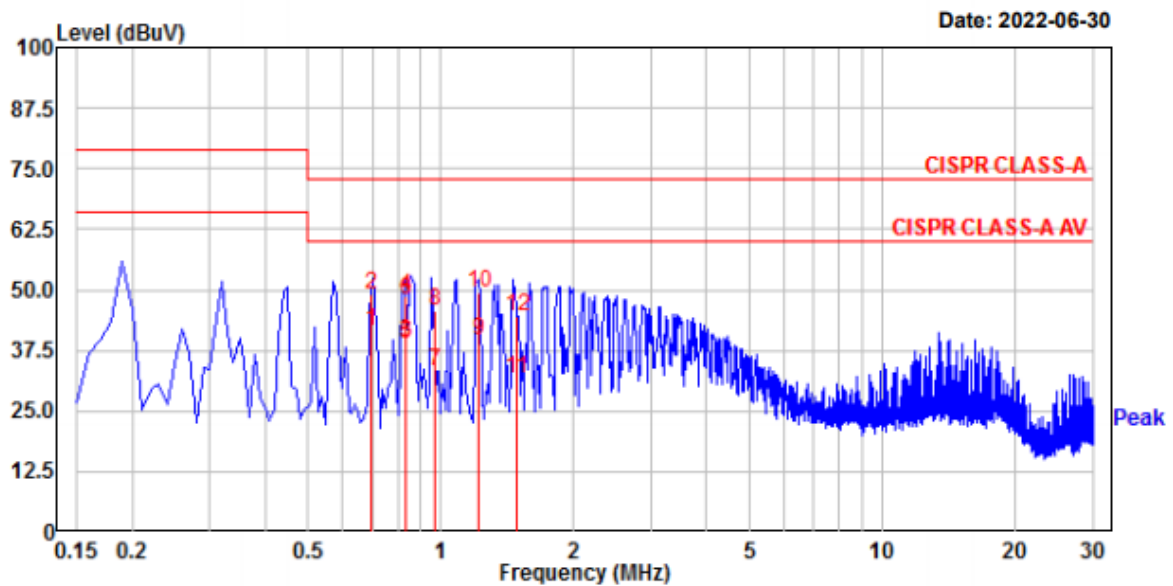
Phase : Neutral

Test Mode : Operating mode(AC #1)

Test Power : 100 V / 50 Hz

Temp./ Humi. : 23 'C / 48 % R.H

Test Engineer : NAM Y H



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.	0.697	29.50	21.82	19.52	49.02	41.34	73.00	60.00	23.98	18.66	neutral
4.	0.834	29.17	19.78	19.53	48.70	39.31	73.00	60.00	24.30	20.69	neutral
6.	0.835	28.51	19.31	19.53	48.04	38.84	73.00	60.00	24.96	21.16	neutral
8.	0.969	26.17	13.58	19.55	45.72	33.13	73.00	60.00	27.28	26.87	neutral
10.	1.214	30.05	19.95	19.55	49.60	39.50	73.00	60.00	23.40	20.50	neutral
12.	1.485	24.92	12.10	19.55	44.47	31.65	73.00	60.00	28.53	28.35	neutral

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

Conducted Emissions (LINE) / Operating mode (AC #2)



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EUT /Model No. : PRN-6410DB4

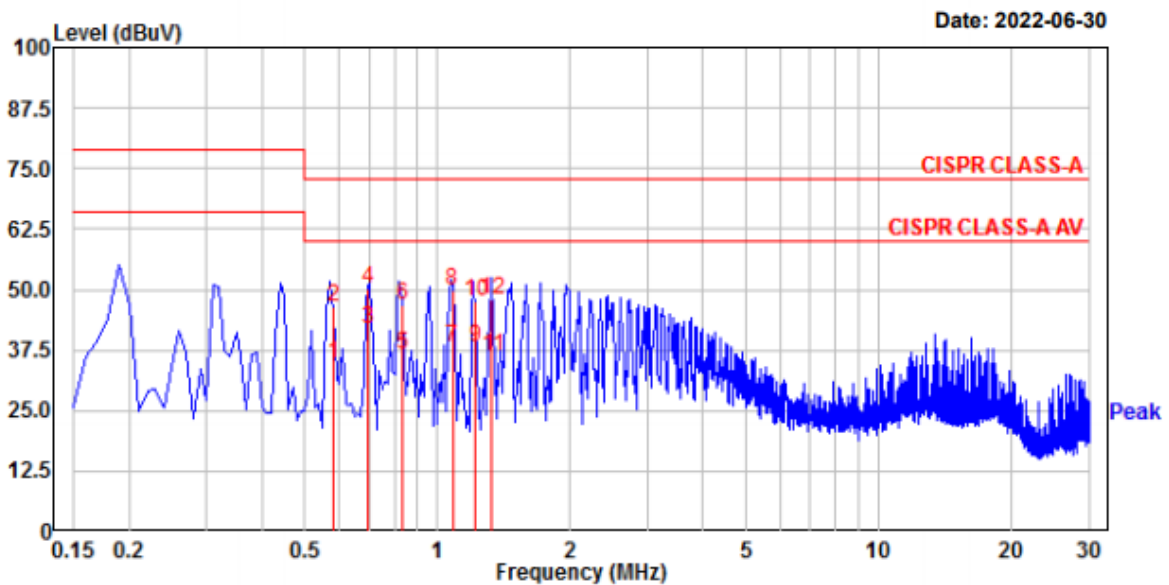
Phase : Line

Test Mode : Operating mode(AC #2)

Test Power : 100 V / 50 Hz

Temp./ Humi. : 23 'C / 48 % R.H

Test Engineer : NAM Y H



No.	Freq MHz	RD QP dBuV	RD AV dBuV	C.F dB	Result QP dBuV	Result AV dBuV	Limit QP dBuV	Limit AV dBuV	Margin QP dB	Margin AV dB	Phase
2.	0.581	26.93	15.21	19.49	46.42	34.70	73.00	60.00	26.58	25.30	Line
4.	0.698	30.61	22.34	19.49	50.10	41.83	73.00	60.00	22.90	18.17	Line
6.	0.835	27.24	17.28	19.50	46.74	36.78	73.00	60.00	26.26	23.22	Line
8.	1.082	30.31	18.62	19.52	49.83	38.14	73.00	60.00	23.17	21.86	Line
10.	1.216	28.06	18.56	19.52	47.58	38.08	73.00	60.00	25.42	21.92	Line
12.	1.329	28.52	16.71	19.52	48.04	36.23	73.00	60.00	24.96	23.77	Line

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

Conducted Emissions (NEUTRAL) / Operating mode (AC #2)



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EUT /Model No. : PRN-6410DB4

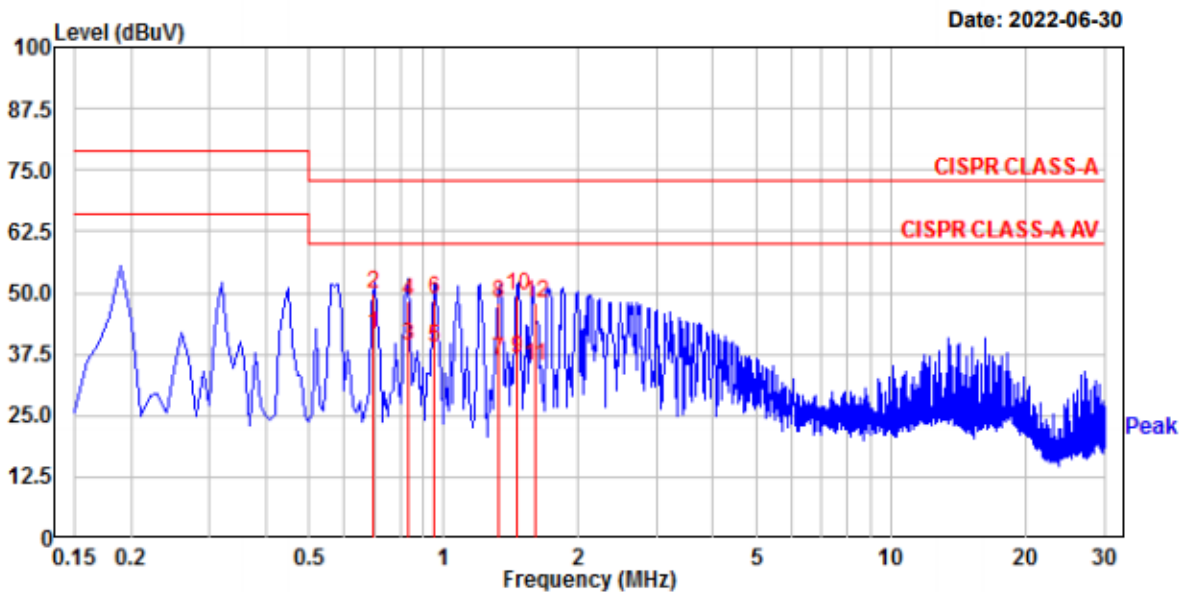
Phase : Neutral

Test Mode : Operating mode(AC #2)

Test Power : 100 V / 50 Hz

Temp./ Humi. : 23 'C / 48 % R.H

Test Engineer : NAM Y H



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.	0.698	30.18	22.11	19.52	49.70	41.63	73.00	60.00	23.30	18.37	neutral
4.	0.834	28.69	19.71	19.53	48.22	39.24	73.00	60.00	24.78	20.76	neutral
6.	0.949	29.00	19.46	19.55	48.55	39.01	73.00	60.00	24.45	20.99	neutral
8.	1.330	28.27	16.70	19.55	47.82	36.25	73.00	60.00	25.18	23.75	neutral
10.	1.464	29.87	17.13	19.55	49.42	36.68	73.00	60.00	23.58	23.32	neutral
12.	1.599	28.45	15.61	19.55	48.00	35.16	73.00	60.00	25.00	24.84	neutral

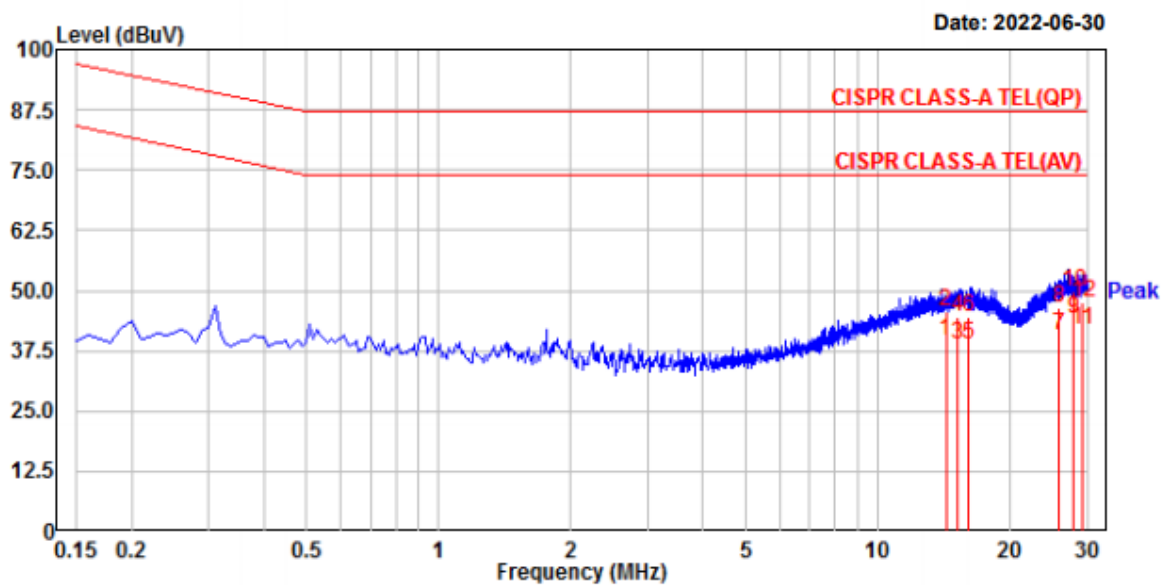
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_10 M) / Operating mode (LAN #1)



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EUT /Model No. : PRN-6410DB4	Phase : TEL_10M(LAN #1)
Test Mode : Operating mode	Test Power : 100 V / 50 Hz
Temp./ Humi. : 23 'C / 48 % R.H	Test Engineer : NAM Y H



No.	Freq MHz	RD QP dBuV	RD AV dBuV	C.F dB	Result QP dBuV	Result AV dBuV	Limit QP dBuV	Limit AV dBuV	Margin QP dB	Margin AV dB	Phase
2.	14.273	25.77	19.98	19.77	45.54	39.75	87.00	74.00	41.46	34.25	Line
4.	15.143	24.77	18.97	19.79	44.56	38.76	87.00	74.00	42.44	35.24	Line
6.	16.069	24.88	19.15	19.83	44.71	38.98	87.00	74.00	42.29	35.02	Line
8.	25.732	26.21	20.40	20.21	46.42	40.61	87.00	74.00	40.58	33.39	Line
10.	27.891	29.61	24.03	20.29	49.90	44.32	87.00	74.00	37.10	29.68	Line
12.	29.155	27.20	21.41	20.35	47.55	41.76	87.00	74.00	39.45	32.24	Line

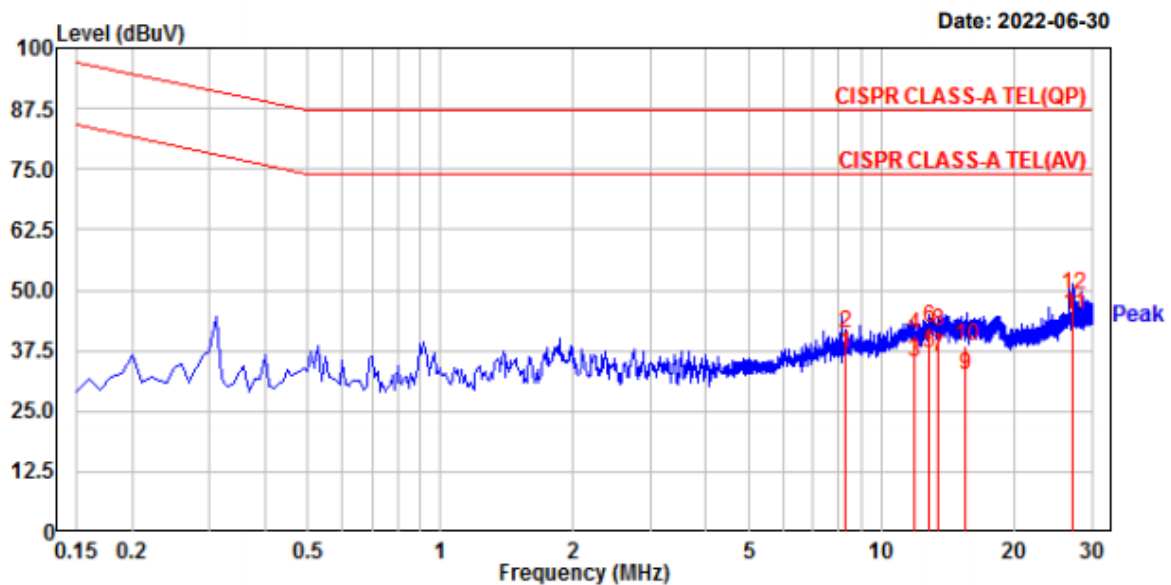
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_1000 M) / Operating mode (LAN #1)



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EUT /Model No. : PRN-6410DB4	Phase : TEL_1000M(LAN #1)
Test Mode : Operating mode	Test Power : 100 V / 50 Hz
Temp./ Humi. : 23 'C / 48 % R.H	Test Engineer : NAM Y H



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.	8.303	21.75	17.48	19.40	41.15	36.88	87.00	74.00	45.85	37.12	Line
4.	11.894	21.26	15.56	19.47	40.73	35.03	87.00	74.00	46.27	38.97	Line
6.	12.746	22.94	17.46	19.49	42.43	36.95	87.00	74.00	44.57	37.05	Line
8.	13.421	22.19	16.65	19.51	41.70	36.16	87.00	74.00	45.30	37.84	Line
10.	15.513	19.01	12.89	19.54	38.55	32.43	87.00	74.00	48.45	41.57	Line
12.	27.158	29.21	25.03	19.78	48.99	44.81	87.00	74.00	38.01	29.19	Line

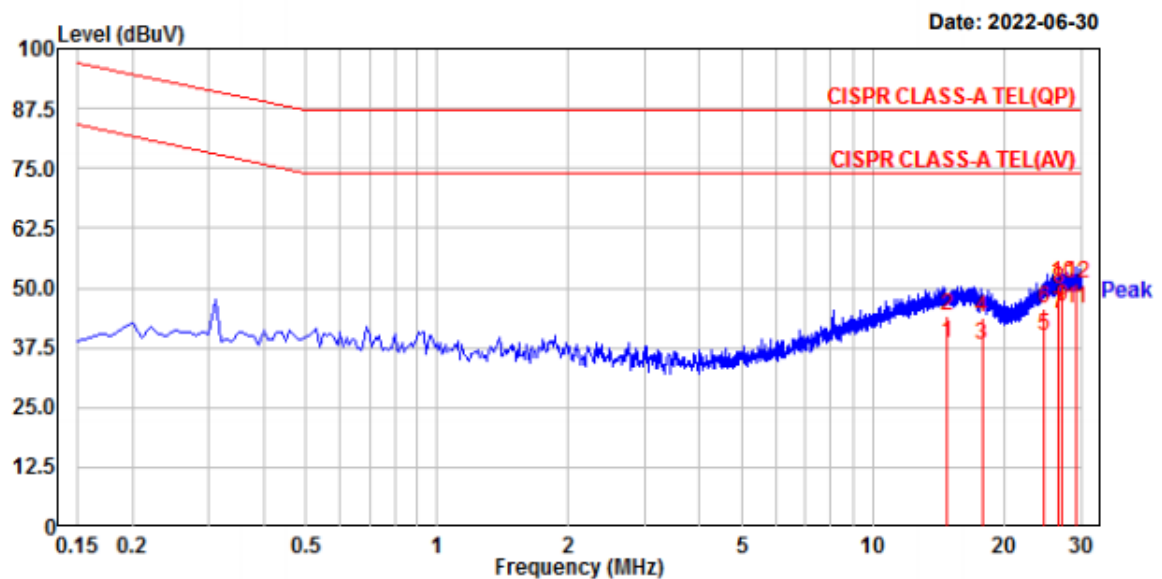
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_10 M) / Operating mode (LAN #2)



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EUT /Model No. : PRN-6410DB4	Phase : TEL_10M(LAN #2)
Test Mode : Operating mode	Test Power : 100 V / 50 Hz
Temp./ Humi. : 23 'C / 48 % R.H	Test Engineer : NAM Y H



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.	14.756	24.53	18.82	19.78	44.31	38.60	87.00	74.00	42.69	35.40	Line
4.	17.756	23.85	18.06	19.90	43.75	37.96	87.00	74.00	43.25	36.04	Line
6.	24.705	25.69	19.96	20.16	45.85	40.12	87.00	74.00	41.15	33.88	Line
8.	26.486	29.41	24.15	20.23	49.64	44.38	87.00	74.00	37.36	29.62	Line
10.	27.157	30.73	25.61	20.27	51.00	45.88	87.00	74.00	36.00	28.12	Line
12.	29.236	30.50	25.19	20.35	50.85	45.54	87.00	74.00	36.15	28.46	Line

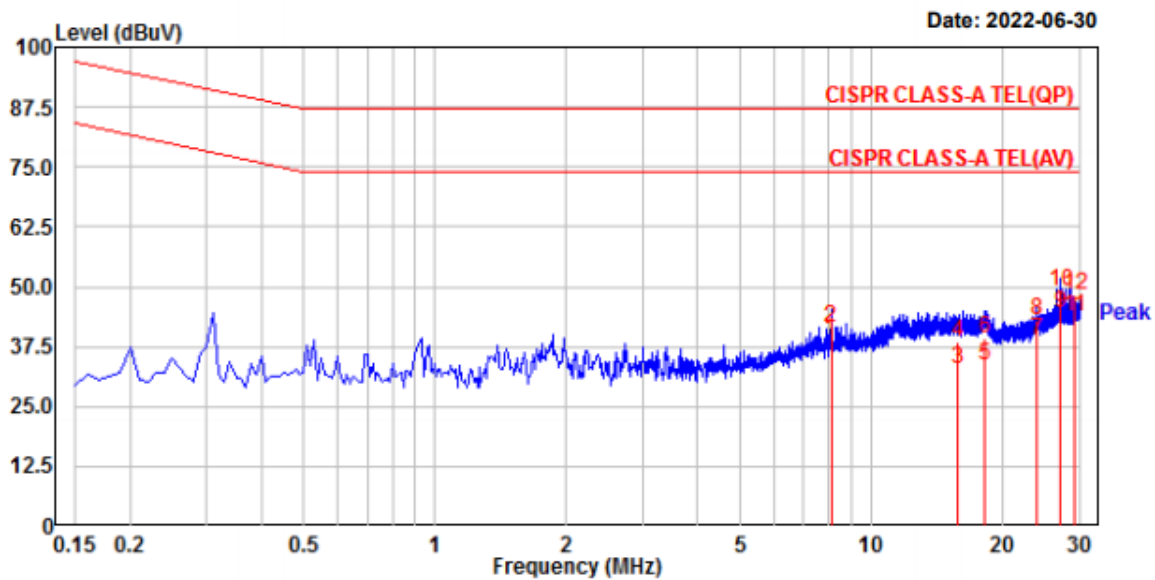
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_1000 M) / Operating mode (LAN #2)



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EUT /Model No. : PRN-6410DB4	Phase : TEL_1000M(LAN #2)
Test Mode : Operating mode	Test Power : 100 V / 50 Hz
Temp./ Humi. : 23 'C / 48 % R.H	Test Engineer : NAM Y H



No.	Freq MHz	RD QP dBuV	RD AV dBuV	C.F dB	Result QP dBuV	Result AV dBuV	Limit QP dBuV	Limit AV dBuV	Margin QP dB	Margin AV dB	Phase
2.	8.080	22.01	19.35	19.39	41.40	38.74	87.00	74.00	45.60	35.26	Line
4.	15.764	18.97	13.10	19.56	38.53	32.66	87.00	74.00	48.47	41.34	Line
6.	18.152	19.78	14.06	19.59	39.37	33.65	87.00	74.00	47.63	40.35	Line
8.	24.000	23.18	19.25	19.71	42.89	38.96	87.00	74.00	44.11	35.04	Line
10.	27.159	29.30	24.84	19.78	49.08	44.62	87.00	74.00	37.92	29.38	Line
12.	29.235	28.64	24.03	19.82	48.46	43.85	87.00	74.00	38.54	30.15	Line

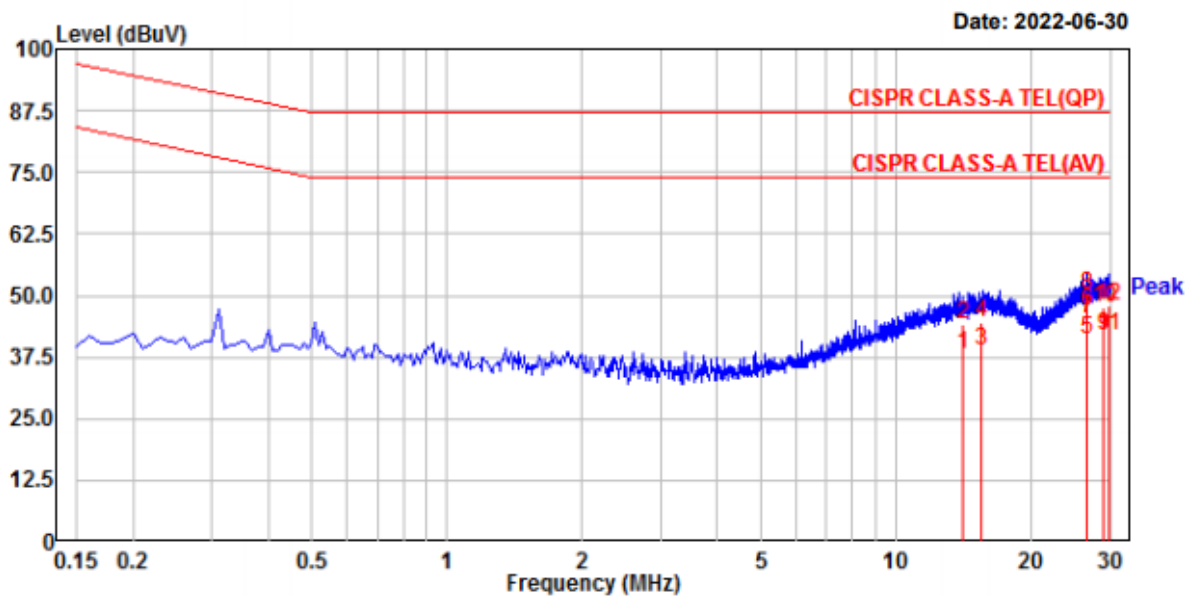
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_10 M) / Operating mode (LAN #3)



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Fax:+82-31-3236010

EUT /Model No. : PRN-6410DB4	Phase : TEL_10M(LAN #3)
Test Mode : Operating mode	Test Power : 100 V / 50 Hz
Temp./ Humi. : 23 'C / 48 % R.H	Test Engineer : NAM Y H



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.	14.135	24.21	18.47	19.76	43.97	38.23	87.00	74.00	43.03	35.77	Line
4.	15.426	24.90	19.10	19.80	44.70	38.90	87.00	74.00	42.30	35.10	Line
6.	26.529	26.61	20.79	20.24	46.85	41.03	87.00	74.00	40.15	32.97	Line
8.	26.610	30.03	24.93	20.24	50.27	45.17	87.00	74.00	36.73	28.83	Line
10.	29.045	27.16	21.37	20.35	47.51	41.72	87.00	74.00	39.49	32.28	Line
12.	29.629	27.36	21.62	20.38	47.74	42.00	87.00	74.00	39.26	32.00	Line

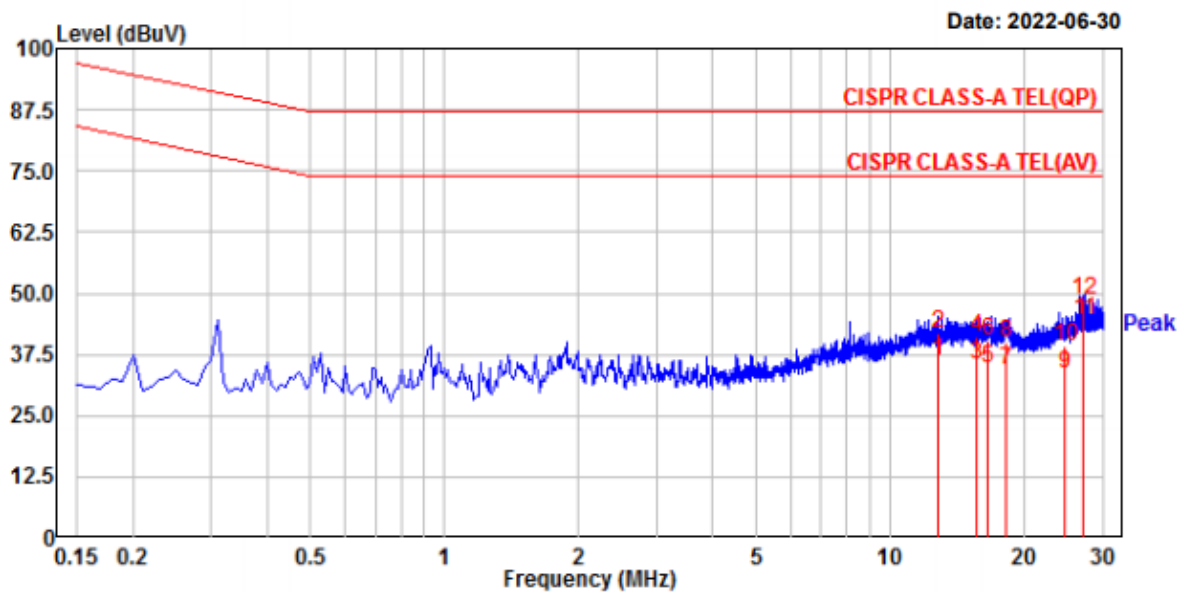
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

Conducted Emissions (TEL_1000 M) / Operating mode (LAN #3)



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Fax:+82-31-3236010

EUT /Model No. : PRN-6410DB4	Phase : TEL_1000M(LAN #3)
Test Mode : Operating mode	Test Power : 100 V / 50 Hz
Temp./ Humi. : 23 'C / 48 % R.H	Test Engineer : NAM Y H



No.	Freq MHz	RD QP dB μ V	RD AV dB μ V	C.F dB	Result QP dB μ V	Result AV dB μ V	Limit QP dB μ V	Limit AV dB μ V	Margin QP dB	Margin AV dB	Phase
2.	12.749	22.51	16.91	19.49	42.00	36.40	87.00	74.00	45.00	37.60	Line
4.	15.617	21.70	16.03	19.54	41.24	35.57	87.00	74.00	45.76	38.43	Line
6.	16.472	20.93	15.02	19.56	40.49	34.58	87.00	74.00	46.51	39.42	Line
8.	18.239	20.24	14.68	19.59	39.83	34.27	87.00	74.00	47.17	39.73	Line
10.	24.537	19.51	14.02	19.73	39.24	33.75	87.00	74.00	47.76	40.25	Line
12.	27.160	29.03	24.72	19.78	48.81	44.50	87.00	74.00	38.19	29.50	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	: VCCI-CISPR 32:2016
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.
(The highest internal source of an EUT : 4 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) / V



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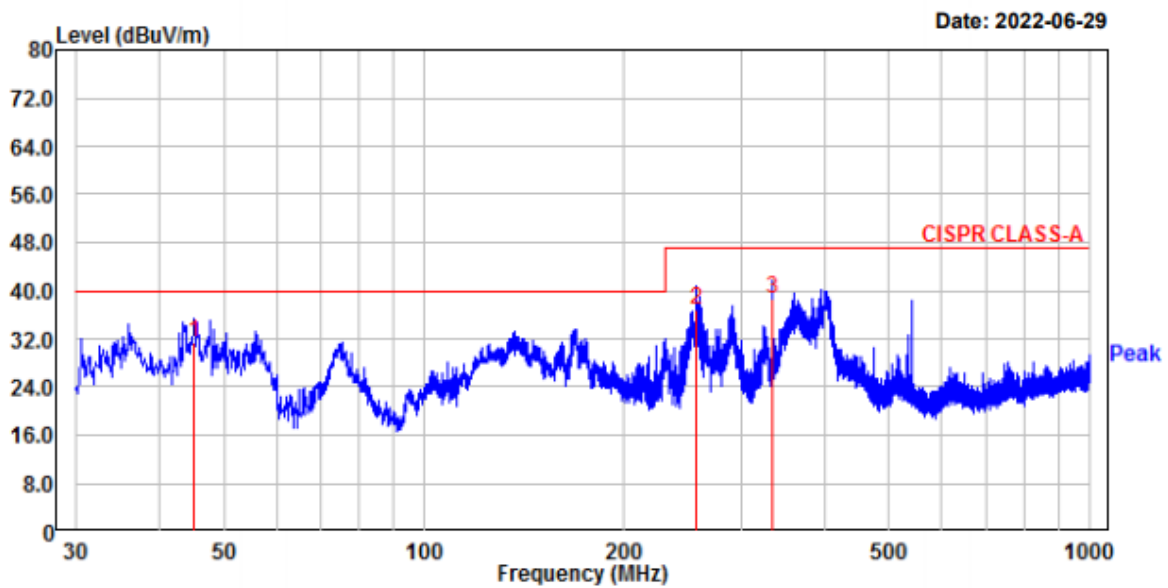
EUT/Model No.: PRN-6410DB4

Temp/Humi: 23 'C / 48 % R.H.

Test Mode : Operating mode

Tested by: NAM Y H

Power : 100 V / 50 Hz



No.	Freq MHz	Reading dBuV	C.F dB	Result QP dBuV/m	Limit dBuV/m	Margin dB	Height cm	Angle deg	Polarity
1.	45.16	42.73	-11.31	31.42	40.00	8.58	118	25	vertical
2.	256.01	47.78	-10.89	36.89	47.00	10.11	164	75	vertical
3.	334.10	46.49	-7.75	38.74	47.00	8.26	167	334	vertical

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

Radiated Emissions (Below 1 GHz) / H



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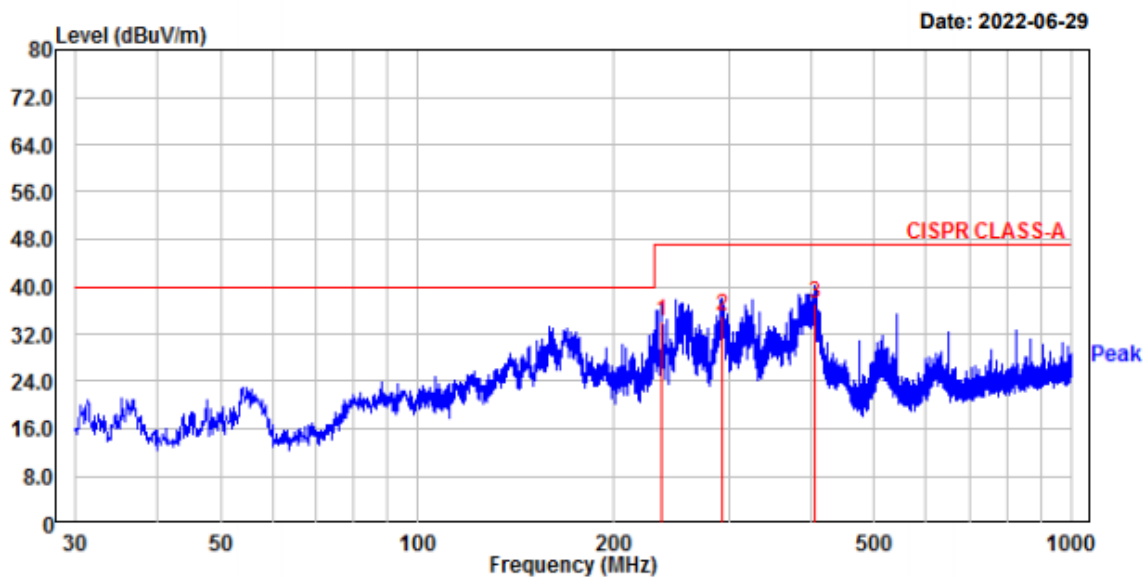
EUT/Model No.: PRN-6410DB4

Temp/Humi: 23 'C / 48 % R.H.

Test Mode : Operating mode

Tested by: NAM Y H

Power : 100 V / 50 Hz



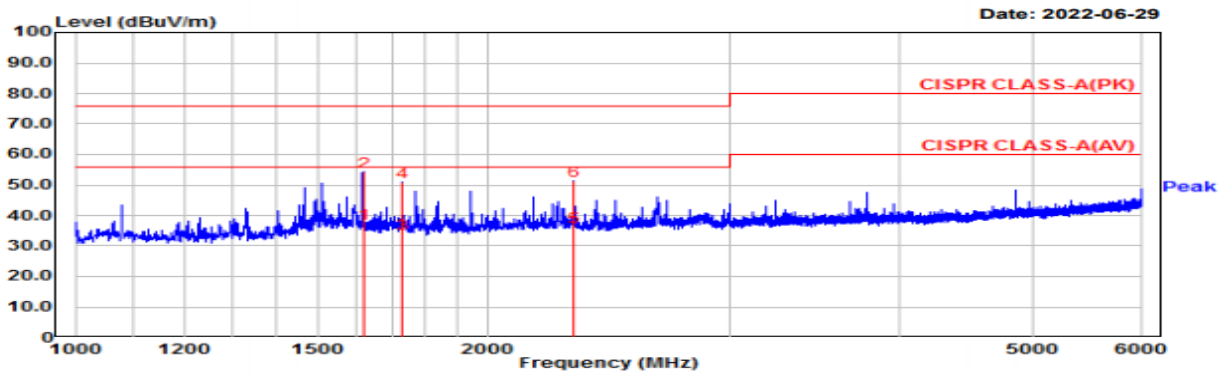
No.	Freq MHz	Reading dBμV	C.F dB	Result QP dBμV/m	Limit dBμV/m	Margin dB	Height cm	Angle deg	Polarity
1.	236.37	45.74	-11.71	34.03	47.00	12.97	379	221	horizontal
2.	292.51	44.27	-9.27	35.00	47.00	12.00	306	360	horizontal
3.	406.12	42.62	-5.51	37.11	47.00	9.89	352	320	horizontal

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

Radiated Emissions

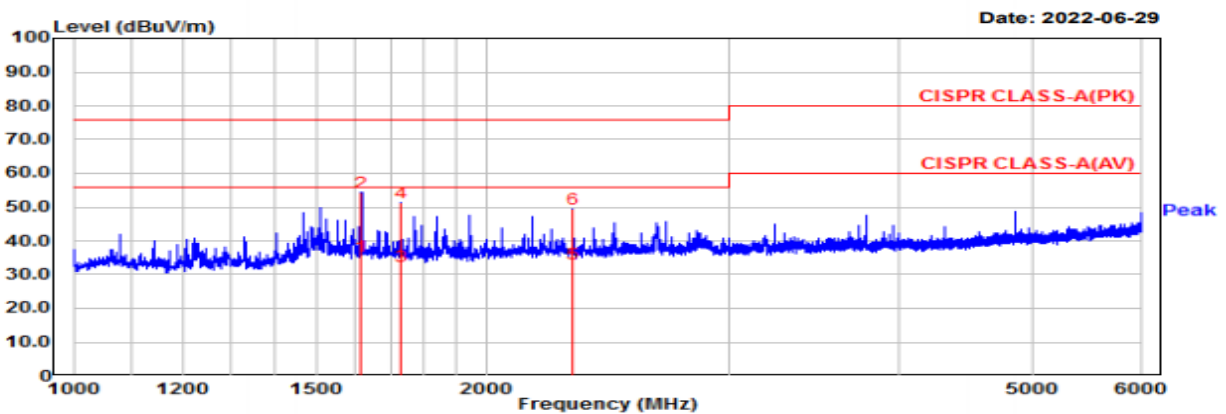
(Above 1 GHz) / V

EUT/Model No.: PRN-6410DB4 Temp/Humi: 23 °C / 48 % R.H.
 Test Mode : Operating mode Tested by: NAM Y H
 Power : 100 V / 50 Hz



(Above 1 GHz) / H

EUT/Model No.: PRN-6410DB4 Temp/Humi: 23 °C / 48 % R.H.
 Test Mode : Operating mode Tested by: NAM Y H
 Power : 100 V / 50 Hz



Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.

Test Date

Temp.:
[°C]Humidity:
[%]Distance
(m)

Model : PRN-6410DB4

2022.06.29

23.00

48.00

3.8

TEST mode : Operating mode

Frequency MHz	Reading(PK) dBuV	Reading(AV) dBuV	C.F dB	Result(PK) dBuV/m	Result(AV) dBuV/m	Limit(PK) dBuV/m	Limit(AV) dBuV/m	Margin(PK) dB	Margin(AV) dB	Height cm	Angle deg	Polarity H/V
1619.38	60.26	41.26	-3.86	56.40	37.40	76.00	56.00	19.60	18.60	100	24	H
1728.13	56.64	37.64	-3.24	53.40	34.40	76.00	56.00	22.60	21.60	100	338	H
2310.00	51.02	35.02	0.40	51.42	35.42	76.00	56.00	24.58	20.58	100	162	H
1620.00	60.11	43.11	-3.85	56.26	39.26	76.00	56.00	19.74	16.74	100	8	V
1728.13	56.30	39.30	-3.24	53.06	36.06	76.00	56.00	22.94	19.94	100	320	V
2309.38	52.92	37.92	0.39	53.31	38.31	76.00	56.00	22.69	17.69	100	148	V

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	2023.03.14	1 year
☒	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	2023.03.14	1 year
☒	ISN	ISN T800	TESEQ	27109	2022.09.06	1 year
☒	ISN	ENY81-CA6	Rohde & Schwarz	101565	2022.09.06	1 year
☐	ISN	ISN S8	Schwarzbeck	79	2022.09.02	1 year
☐	CURRENT PROBE	EZ-17	Rohde & Schwarz	100508	2022.09.02	1 year
☐	CDN	TSCDN-C1-BNC-75	F.C.C	07004	2023.03.14	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	100378	2022.09.02	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	101468	2022.09.02	1 year
☒	LISN(main)	ENV216	Rohde & Schwarz	100408	2022.09.02	1 year
☒	LISN(sub)	LT32C/10	AFJ	32031518210	2022.09.02	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	2022.09.02	1 year
☒	Amplifier	8447D	HP	1937A03453	2022.11.30	1 year
☒	BILOG Antenna	VULB 9168	SCHWARZBECK	775	2023.03.22	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	2022.09.02	1 year
☐	EMI TEST Receiver	ESU	Rohde & Schwarz	100092	2022.09.02	1 year
☒	Amplifier	8449B	Agilent	3008A02126	2023.03.14	1 year
☐	Amplifier	PAM-840A	COM-POWER	461314	2023.03.17	1 year
☐	HORN ANTENNA	3116B	ETS	133350	2024.03.22	2 year
☐	HORN ANTENNA	3116B	ETS	81109	2024.04.25	2 year
☒	HORN ANTENNA	3115	ETS	114105	2023.05.12	2 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

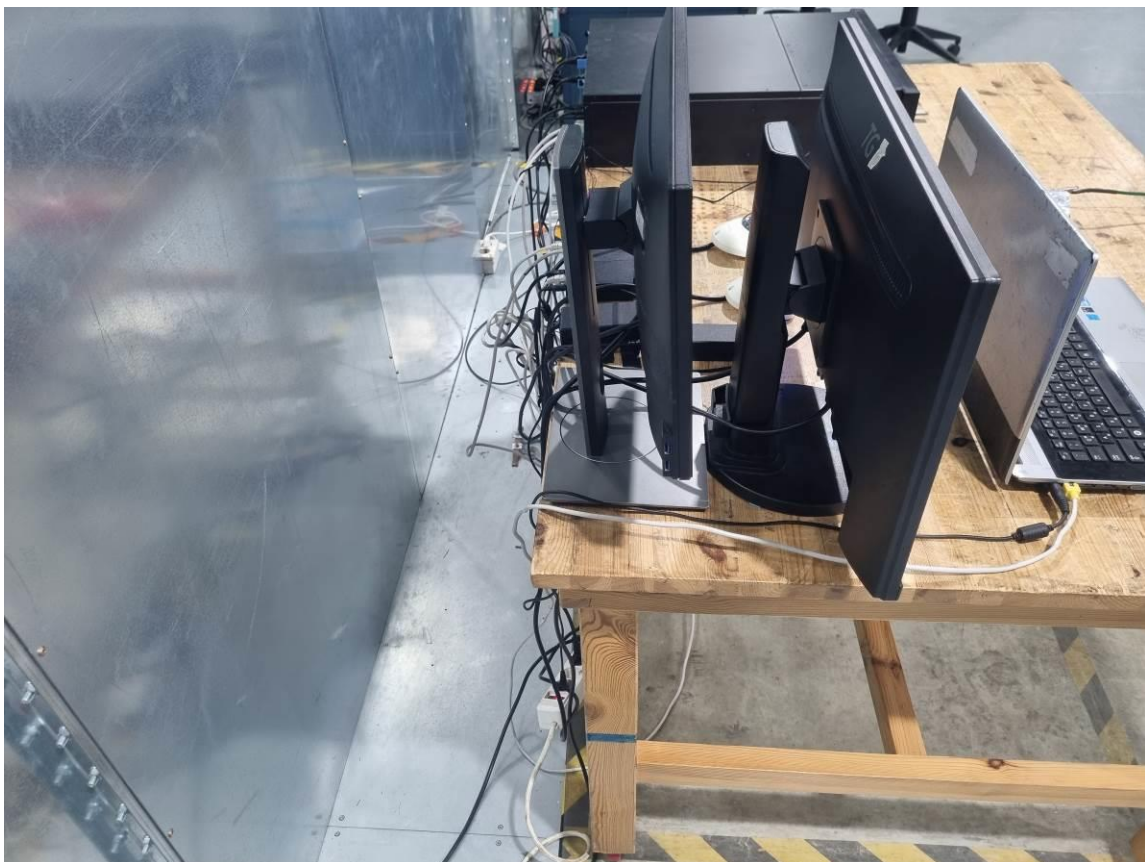
APPENDIX B

PHOTOGRAPHS

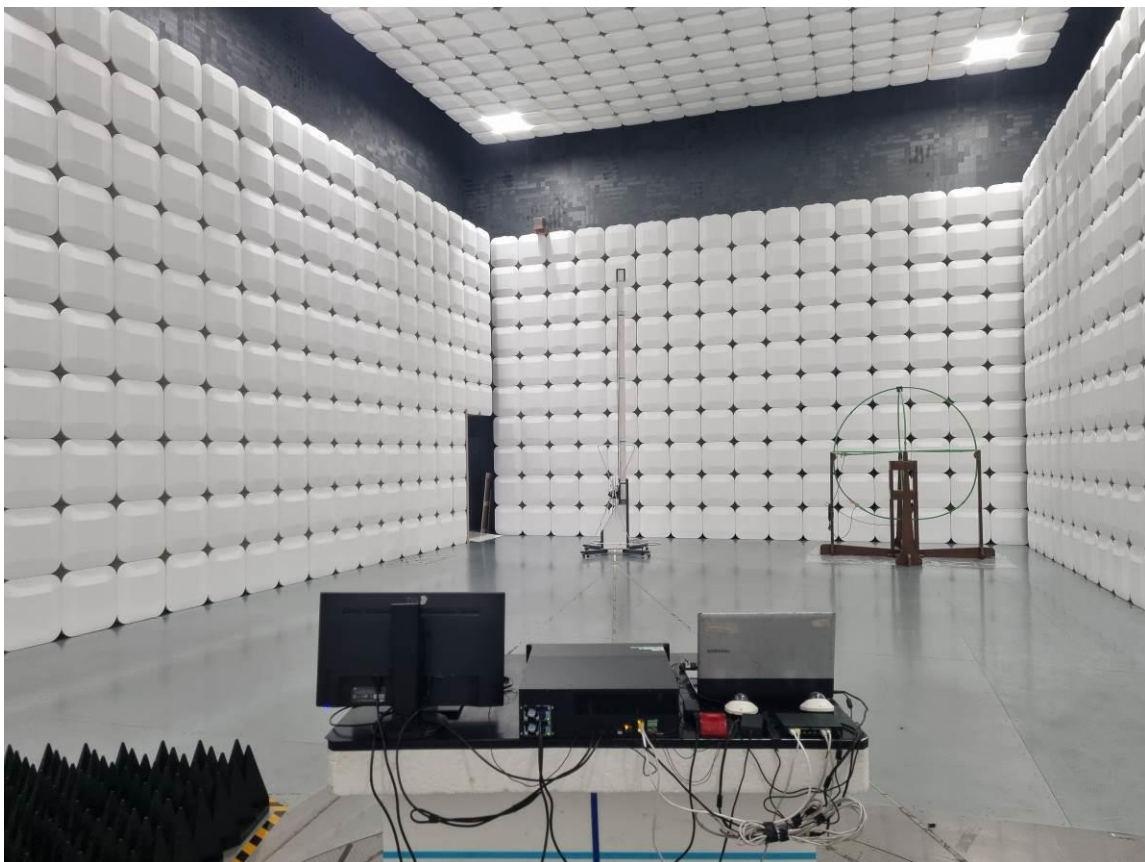
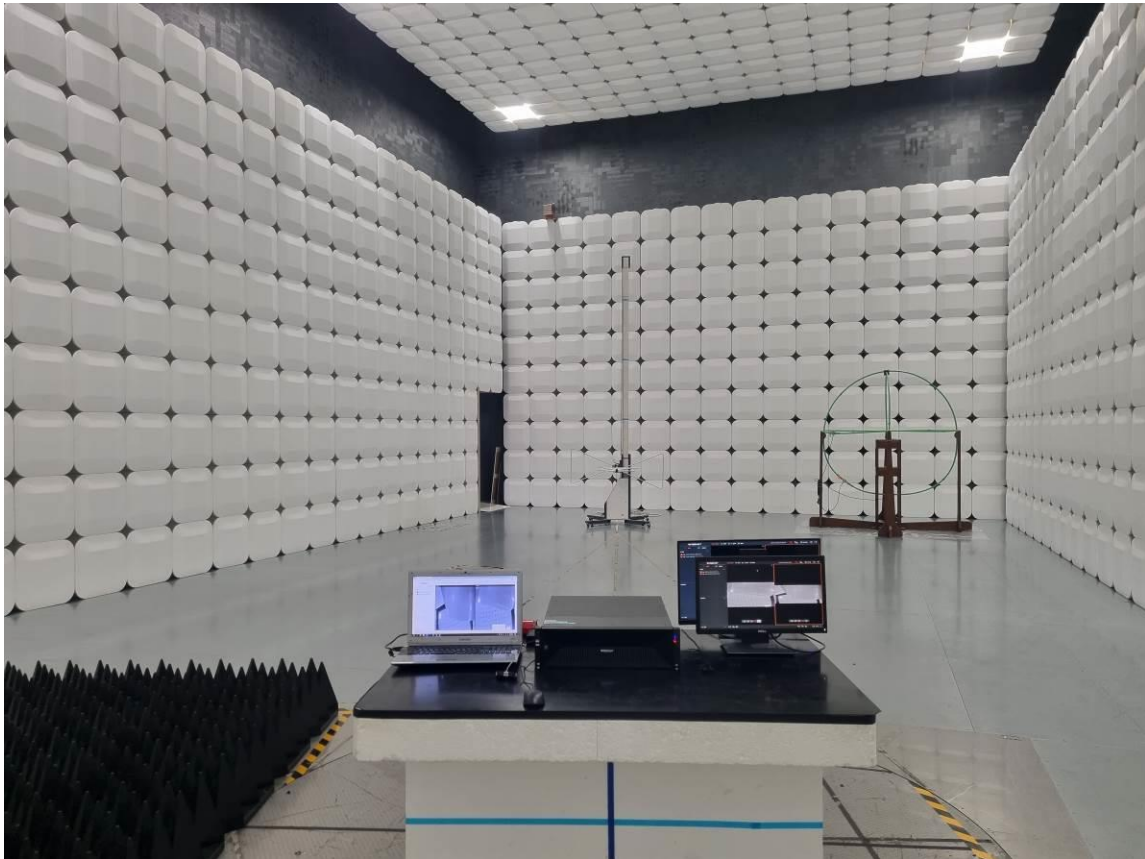
Conducted Emissions



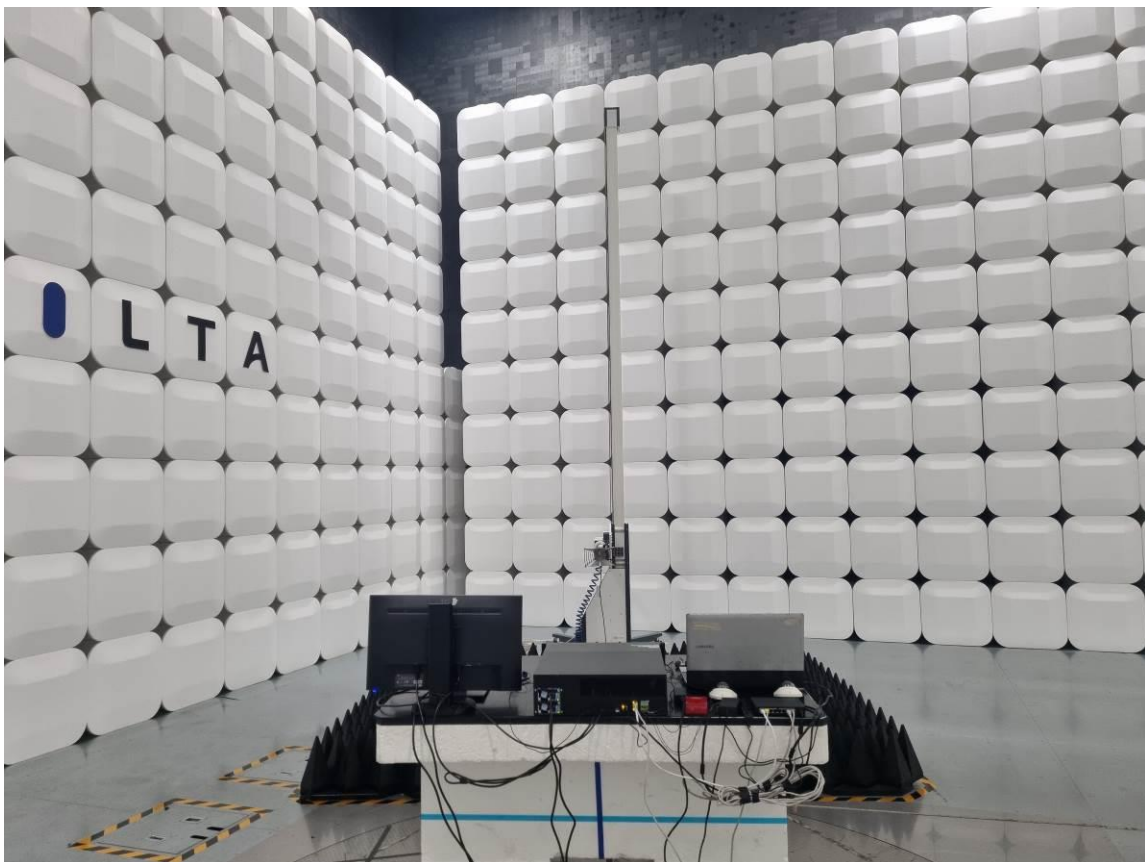
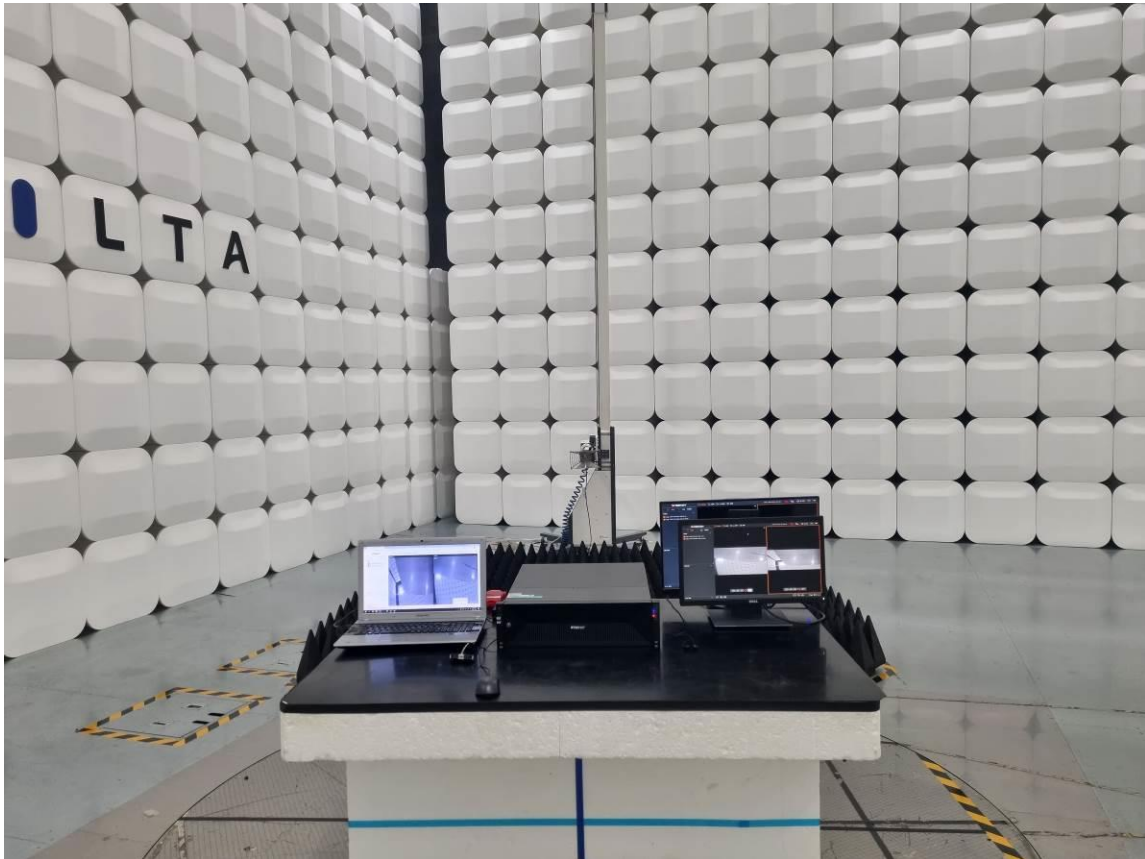
Conducted Emissions (TEL)



Radiated Emissions - Below 1 GHz



Radiated Emissions - Above 1 GHz



EUT



EUT

