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<http://www.ltalab.com>

EMC TEST REPORT

Dates of Tests: June 27 – July 1, 2022

Test Report S/N: LR500122303A

Test Site : LTA Co., Ltd.

Model No.

PRN-3210B4

APPLICANT

Hanwha Vision Co., Ltd

Equipment Name : NVR
Manufacturer : Hanwha Vision Co., Ltd
Model Name : PRN-3210B4
Additional Model Name : PRN-3200B4
Test Device Serial No.: : Identification
Rule Part(s) : AS/NZS CISPR 32:2015
CISPR 32 Ed2.0

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	05.06.2020	LR500122006K	Initial
1	06.04.2021	LR500122104J	Add Additional Model (PRN-3200B4)
2	13.12.2021	LR500122112P	Delete the country of manufacture (China) and change the PCB. (using with the PCB that has not changed)
3	05.07.2022	LR500122207B	change the PCB. (using with the PCB that has not changed)
4	03.03.2023	LR500122303A	Change company name and manufacturer name

TABLE OF CONTENTS

1. General information’s4

2. Information’s about test item5

3. Test Report8

4. Test Items9

 4-1 Conducted Emissions9

 4-2 Radiated Emissions19

APPENDIX A TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS.....24

APPENDIX B PHOTOGRAPHS26

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
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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
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-3210B4
 Additional Model Name : PRN-3200B4
 Additional model has deleted FR Function (SW Function).
 Serial number : Identification
 Date of receipt : June 21, 2022
 EUT condition : Pre-production, not damaged
 Interface ports : AC IN, USB #1 ~ #4, HDMI #1 ~ #2, Audio Out, LAN #1 ~ #3, Alarm In, Alarm OUT
 Console Port is unused port.
 Power rating : AC 240 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
 Test Voltage : AC 240 V, 50 Hz

2-5 List of EUT and ACCESSORY

EUT				
Equipment Name	Model Name	Serial No.	Manufacturer	Remarks
NVR	PRN-3210B4	N/A	HANWHA VISION VIETNAM COMPANY LIMITED D-TECH CO.,LTD.	-
MOUSE	MOKJUO	22G05346	Primax Electronics Ltd.	-
ACCESSORY				
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						
From		To		Length	Shielding	
Type	I/O Port	Type	I/O Port	(m)	Cable	backshell
EUT	AC IN	AC POWER SOURCE	3 PIN AC LINE	1.2	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

3. Test Report

3.1 Summary of tests

Parameter	Applied Standard	Status
I. Emission		
Conducted Emissions	AS/NZS CISPR32:2015	C
Radiated Emissions	AS/NZS CISPR32:2015	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 CISPR32:2015
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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EUT /Model No. : PRN-3210B4

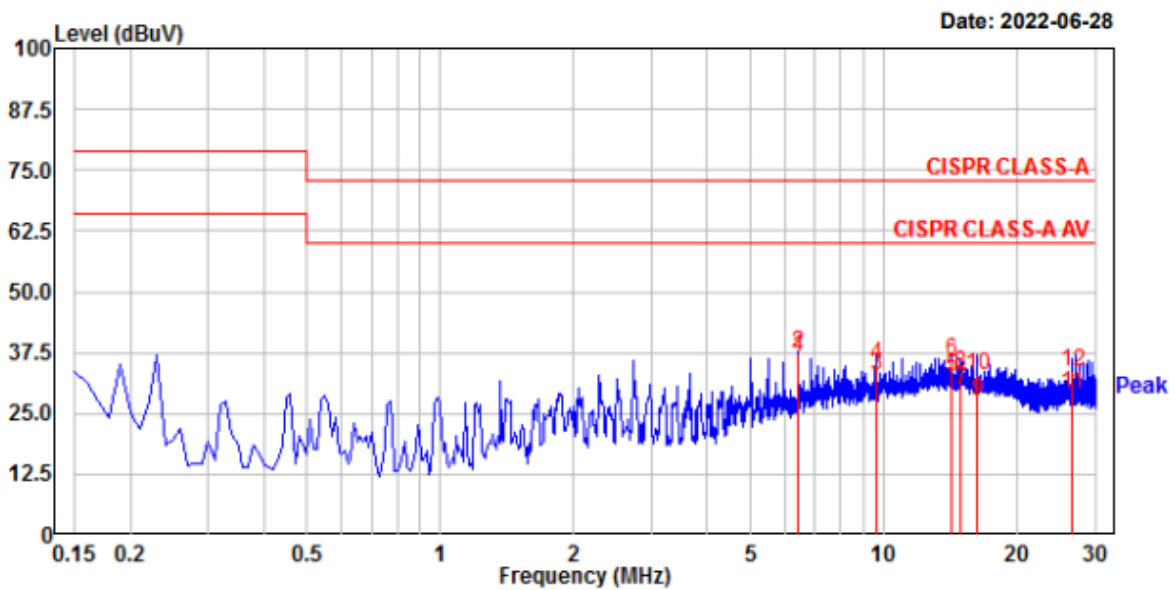
Phase : Line

Test Mode : Operating mode

Test Power : 240 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.	6.391	17.62	17.08	19.68	37.30	36.76	73.00	60.00	35.70	23.24	Line
4.	9.589	15.33	12.94	19.78	35.11	32.72	73.00	60.00	37.89	27.28	Line
6.	14.155	16.06	12.67	19.91	35.97	32.58	73.00	60.00	37.03	27.42	Line
8.	14.836	13.18	9.83	19.92	33.10	29.75	73.00	60.00	39.90	30.25	Line
10.	16.167	12.97	7.77	19.95	32.92	27.72	73.00	60.00	40.08	32.28	Line
12.	26.484	13.64	8.85	20.11	33.75	28.96	73.00	60.00	39.25	31.04	Line

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

Conducted Emissions (NEUTRAL)



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EUT /Model No. : PRN-3210B4

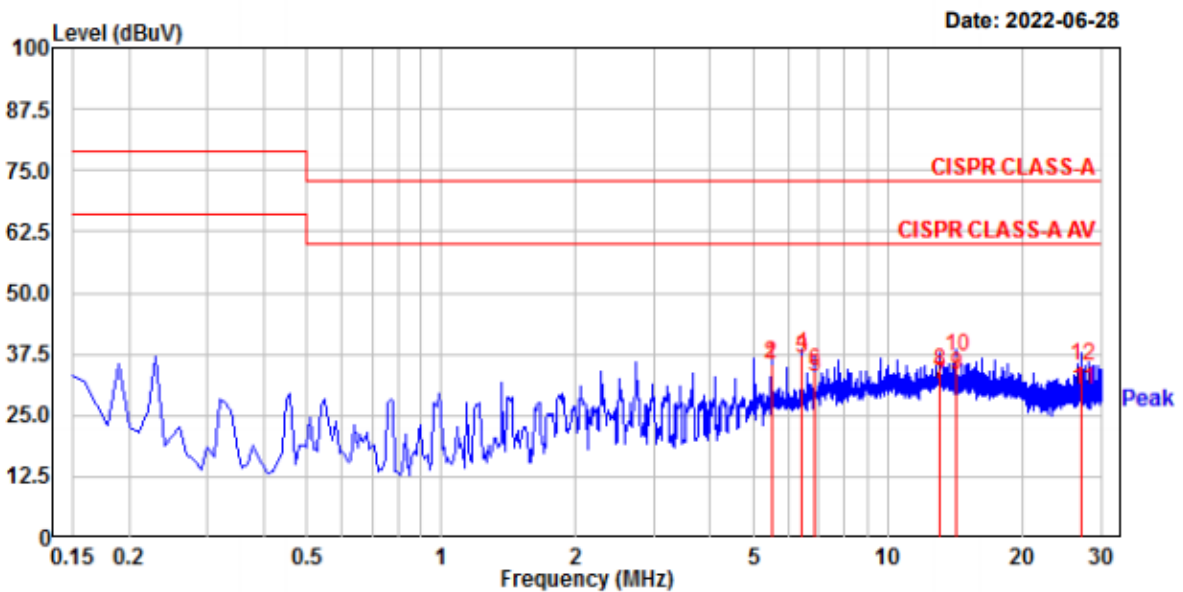
Phase : Neutral

Test Mode : Operating mode

Test Power : 240 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.	5.478	15.94	15.46	19.67	35.61	35.13	73.00	60.00	37.39	24.87	neutral
4.	6.392	17.61	17.05	19.71	37.32	36.76	73.00	60.00	35.68	23.24	neutral
6.	6.848	14.17	12.97	19.73	33.90	32.70	73.00	60.00	39.10	27.30	neutral
8.	13.012	14.11	11.30	19.92	34.03	31.22	73.00	60.00	38.97	28.78	neutral
10.	14.153	17.04	13.39	19.96	37.00	33.35	73.00	60.00	36.00	26.65	neutral
12.	27.158	14.72	10.03	20.24	34.96	30.27	73.00	60.00	38.04	29.73	neutral

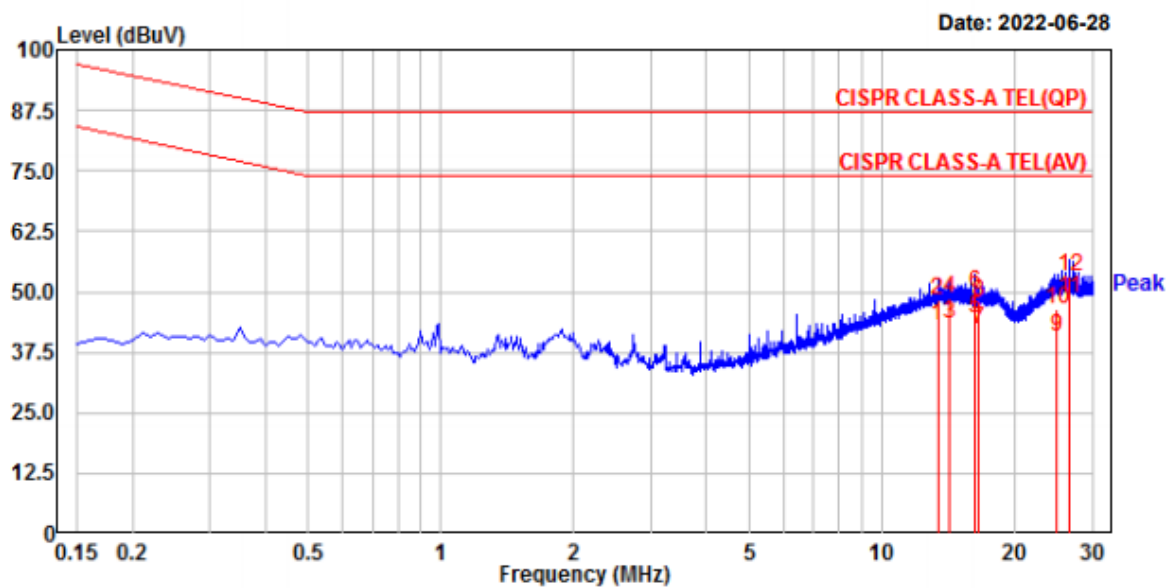
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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



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EUT /Model No. : PRN-3210B4	Phase : TEL_10M(LAN #1)
Test Mode : Operating mode	Test Power : 240 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.	13.358	28.72	23.35	19.73	48.45	43.08	87.00	74.00	38.55	30.92	Line
4.	14.153	29.03	23.66	19.77	48.80	43.43	87.00	74.00	38.20	30.57	Line
6.	16.165	29.98	24.70	19.83	49.81	44.53	87.00	74.00	37.19	29.47	Line
8.	16.473	28.03	22.49	19.84	47.87	42.33	87.00	74.00	39.13	31.67	Line
10.	24.846	26.29	20.52	20.17	46.46	40.69	87.00	74.00	40.54	33.31	Line
12.	26.486	33.07	28.34	20.23	53.30	48.57	87.00	74.00	33.70	25.43	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-3210B4

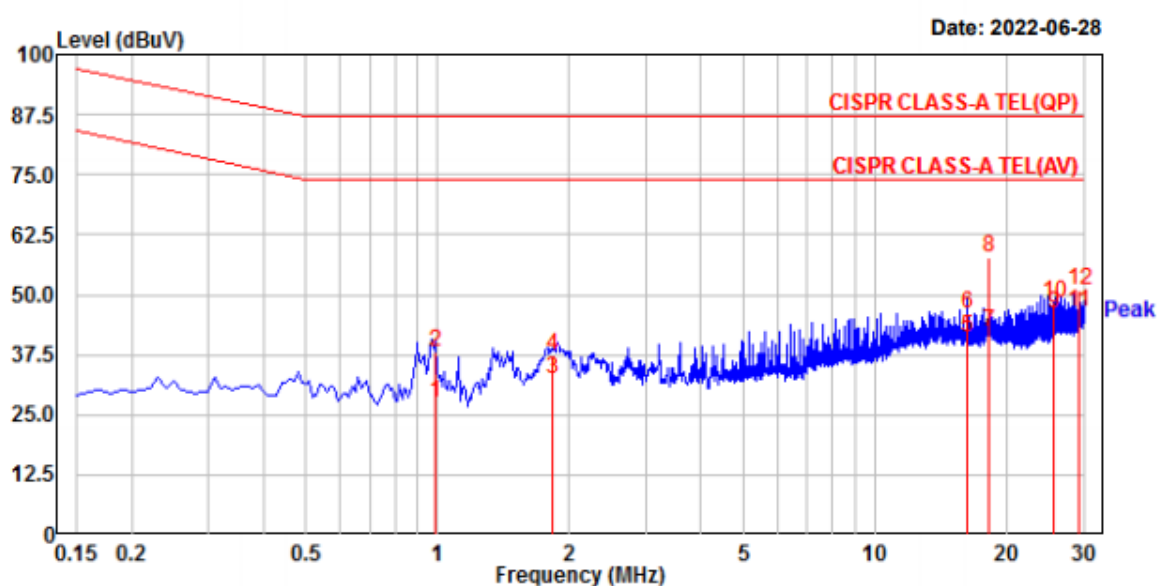
Phase : TEL_1000M(LAN #1)

Test Mode : Operating mode

Test Power : 240 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.	0.989	18.73	8.17	19.34	38.07	27.51	87.00	74.00	48.93	46.49	Line
4.	1.827	17.92	13.06	19.28	37.20	32.34	87.00	74.00	49.80	41.66	Line
6.	16.168	26.47	21.49	19.56	46.03	41.05	87.00	74.00	40.97	32.95	Line
8.	18.242	38.21	22.52	19.59	57.80	42.11	87.00	74.00	29.20	31.89	Line
10.	25.580	28.55	26.26	19.74	48.29	46.00	87.00	74.00	38.71	28.00	Line
12.	29.235	30.97	26.46	19.82	50.79	46.28	87.00	74.00	36.21	27.72	Line

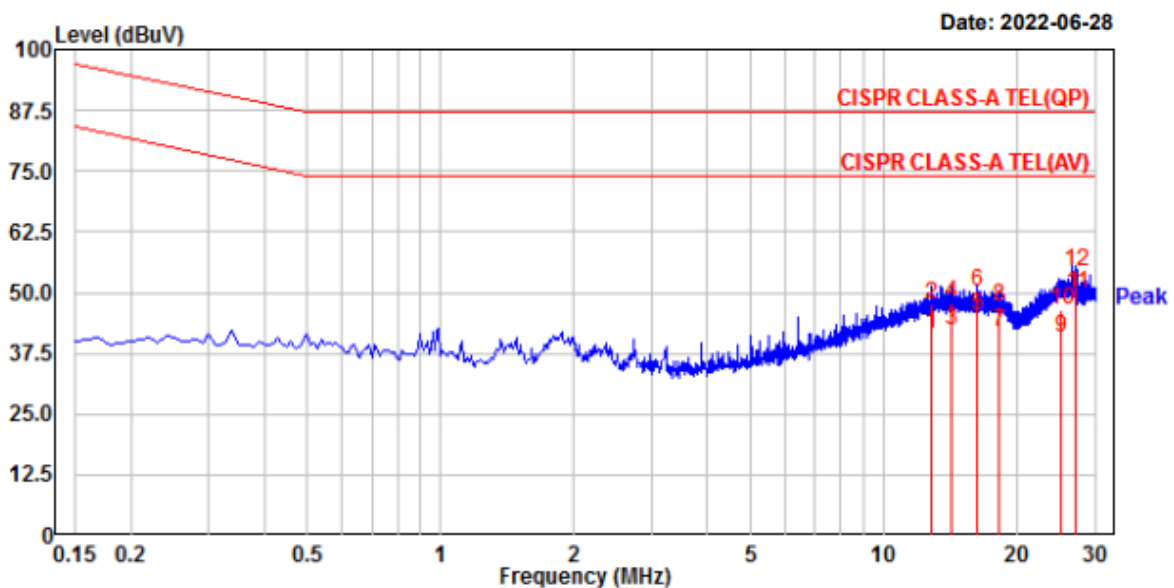
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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



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EUT /Model No. : PRN-3210B4	Phase : TEL_10M(LAN #2)
Test Mode : Operating mode	Test Power : 240 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.	12.746	27.79	21.96	19.73	47.52	41.69	87.00	74.00	39.48	32.31	Line
4.	14.150	28.03	22.49	19.77	47.80	42.26	87.00	74.00	39.20	31.74	Line
6.	16.228	30.34	25.53	19.84	50.18	45.37	87.00	74.00	36.82	28.63	Line
8.	18.242	27.35	21.86	19.91	47.26	41.77	87.00	74.00	39.74	32.23	Line
10.	24.997	26.38	20.59	20.17	46.55	40.76	87.00	74.00	40.45	33.24	Line
12.	27.159	34.01	29.46	20.27	54.28	49.73	87.00	74.00	32.72	24.27	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-3210B4

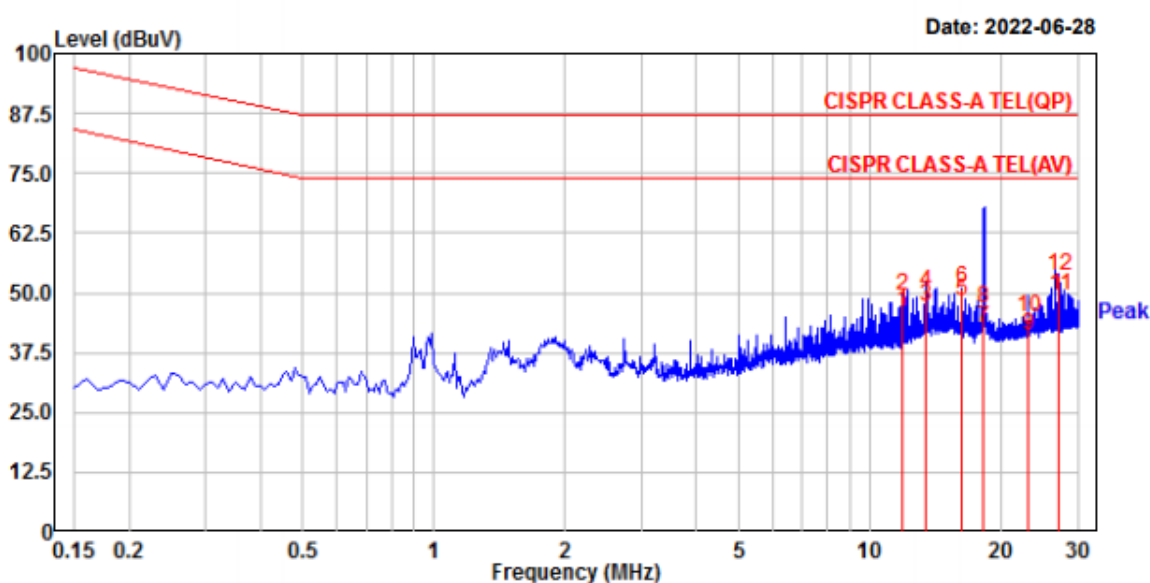
Phase : TEL_1000M(LAN #2)

Test Mode : Operating mode

Test Power : 240 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.	11.893	30.01	26.59	19.47	49.48	46.06	87.00	74.00	37.52	27.94	Line
4.	13.419	30.58	27.72	19.51	50.09	47.23	87.00	74.00	36.91	26.77	Line
6.	16.228	31.39	28.66	19.56	50.95	48.22	87.00	74.00	36.05	25.78	Line
8.	18.241	27.18	23.17	19.59	46.77	42.76	87.00	74.00	40.23	31.24	Line
10.	23.129	25.35	21.34	19.69	45.04	41.03	87.00	74.00	41.96	32.97	Line
12.	27.159	33.90	29.83	19.78	53.68	49.61	87.00	74.00	33.32	24.39	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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EUT /Model No. : PRN-3210B4

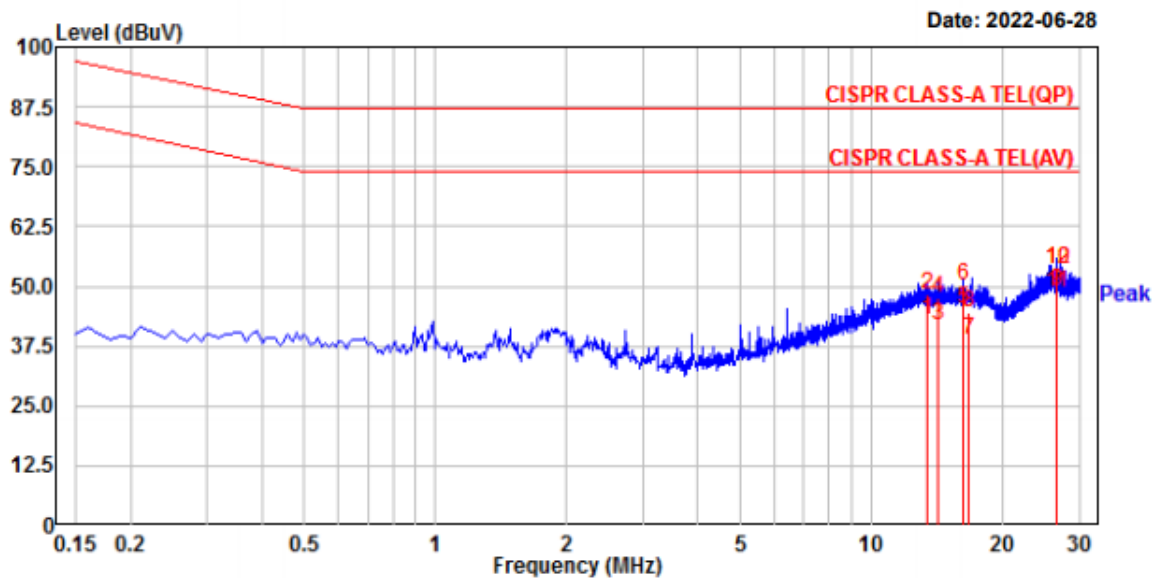
Phase : TEL_10M(LAN #3)

Test Mode : Operating mode

Test Power : 240 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.	13.418	28.63	23.16	19.75	48.38	42.91	87.00	74.00	38.62	31.09	Line
4.	14.149	27.73	22.13	19.77	47.50	41.90	87.00	74.00	39.50	32.10	Line
6.	16.227	30.26	25.26	19.84	50.10	45.10	87.00	74.00	36.90	28.90	Line
8.	16.659	24.66	19.02	19.85	44.51	38.87	87.00	74.00	42.49	35.13	Line
10.	26.477	33.39	28.72	20.23	53.62	48.95	87.00	74.00	33.38	25.05	Line
12.	26.486	33.20	28.58	20.23	53.43	48.81	87.00	74.00	33.57	25.19	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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EUT /Model No. : PRN-3210B4

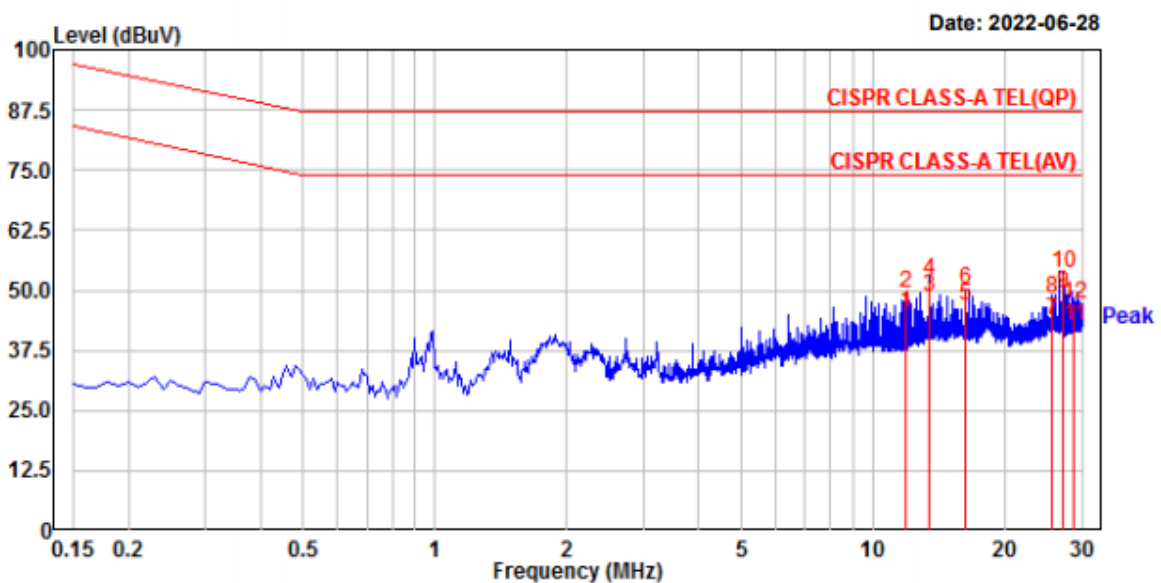
Phase : TEL_1000M(LAN #3)

Test Mode : Operating mode

Test Power : 240 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.	11.893	29.79	25.74	19.47	49.26	45.21	87.00	74.00	37.74	28.79	Line
4.	13.419	32.47	29.35	19.51	51.98	48.86	87.00	74.00	35.02	25.14	Line
6.	16.229	30.76	27.36	19.56	50.32	46.92	87.00	74.00	36.68	27.08	Line
8.	25.693	28.63	24.07	19.75	48.38	43.82	87.00	74.00	38.62	30.18	Line
10.	27.159	33.84	29.67	19.78	53.62	49.45	87.00	74.00	33.38	24.55	Line
12.	28.687	27.45	22.90	19.81	47.26	42.71	87.00	74.00	39.74	31.29	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 CISPR32:2015
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.
(The highest internal source of an EUT : 3.5 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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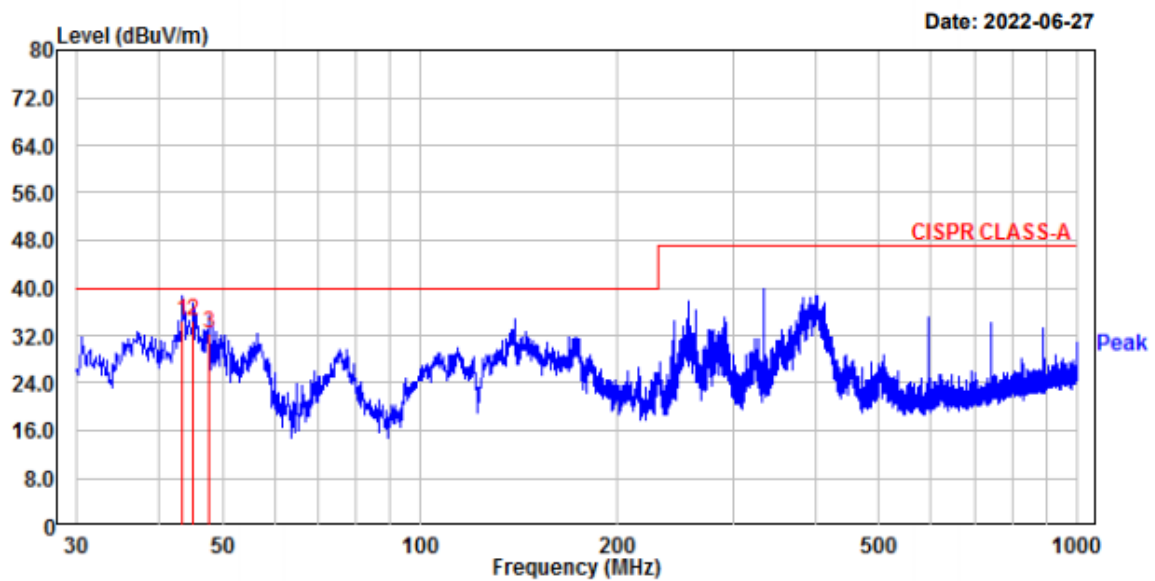
EUT/Model No.: PRN-3210B4

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

Test Mode : Operating mode

Tested by: NAM Y H

Power : 240 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.	43.46	46.06	-11.55	34.51	40.00	5.49	154	331	vertical
2.	45.16	45.61	-11.31	34.30	40.00	5.70	164	254	vertical
3.	47.70	43.56	-11.14	32.42	40.00	7.58	197	238	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-3210B4

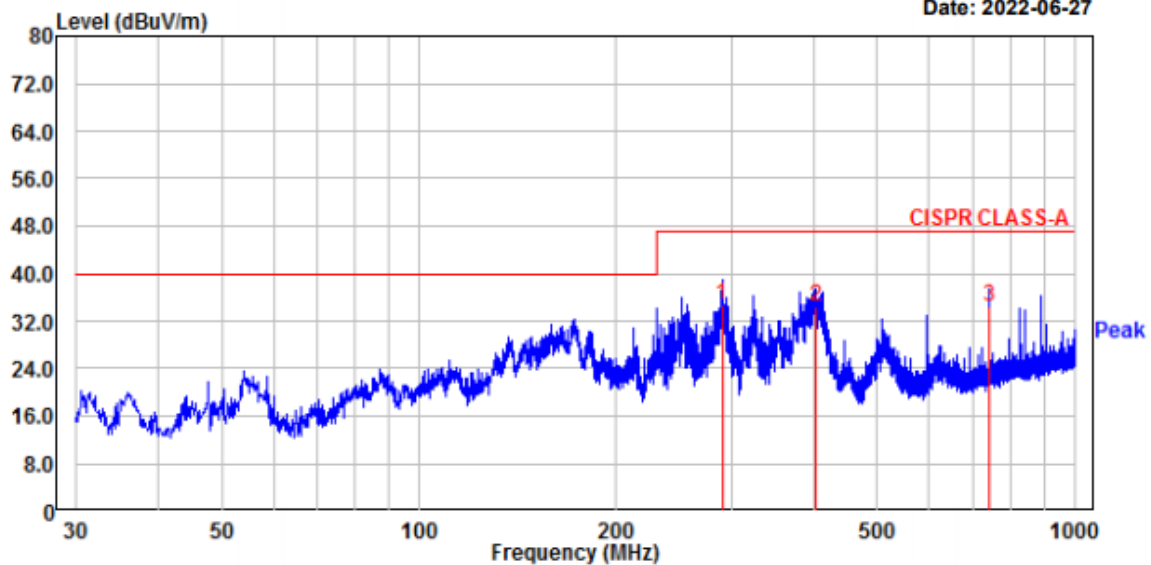
Temp/Humi: 23 'C / 48 % R.H.

Test Mode : Operating mode

Tested by: NAM Y H

Power : 240 V / 50 Hz

Date: 2022-06-27



No.	Freq MHz	Reading dBμV	C.F dB	Result QP dBμV/m	Limit dBμV/m	Margin dB	Height cm	Angle deg	Polarity
1.	289.84	44.17	-9.33	34.84	47.00	12.16	325	344	horizontal
2.	402.97	40.13	-5.60	34.53	47.00	12.47	379	344	horizontal
3.	742.59	31.65	2.68	34.33	47.00	12.67	385	204	horizontal

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

Radiated Emissions

(Above 1 GHz) / V

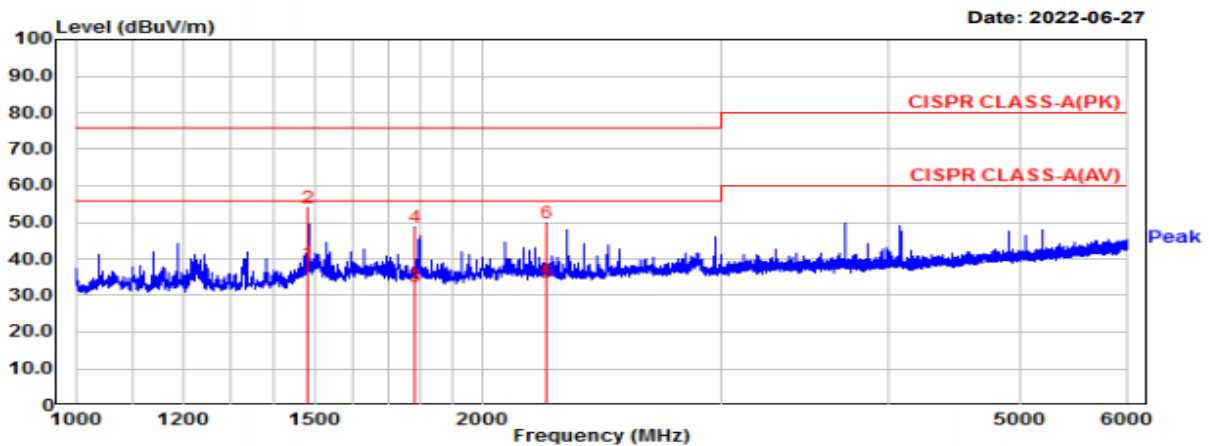
EUT/Model No.: PRN-3210B4

Temp/Humi: 23 °C / 48 % R.H.

Test Mode : Operating mode

Tested by: NAM Y H

Power : 240 V / 50 Hz



(Above 1 GHz) / H

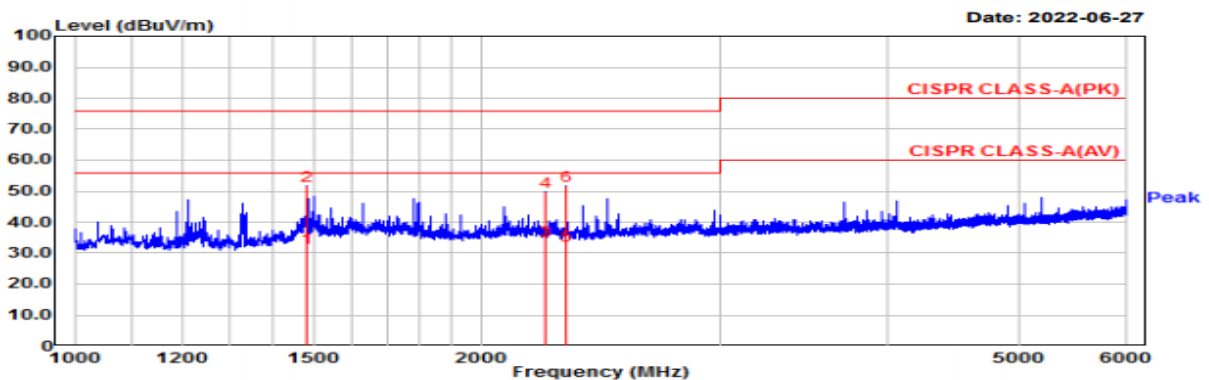
EUT/Model No.: PRN-3210B4

Temp/Humi: 23 °C / 48 % R.H.

Test Mode : Operating mode

Tested by: NAM Y H

Power : 240 V / 50 Hz



Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.

Test Date

Temp.:
[°C]Humidity:
[%]Distance
(m)

Model : PRN-3210B4

2022.06.27

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
1485.00	57.88	37.88	-4.02	53.86	33.86	76.00	56.00	22.14	22.14	100	248	H
2227.50	51.40	35.40	0.49	51.89	35.89	76.00	56.00	24.11	20.11	100	38	H
2310.00	53.25	34.25	0.40	53.65	34.65	76.00	56.00	22.35	21.35	100	149	H
1485.00	60.00	45.00	-4.02	55.98	40.98	76.00	56.00	20.02	15.02	100	262	V
1781.88	53.57	37.57	-2.94	50.63	34.63	76.00	56.00	25.37	21.37	100	315	V
2227.50	51.21	35.21	0.49	51.70	35.70	76.00	56.00	24.30	20.30	100	334	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	-	-	-

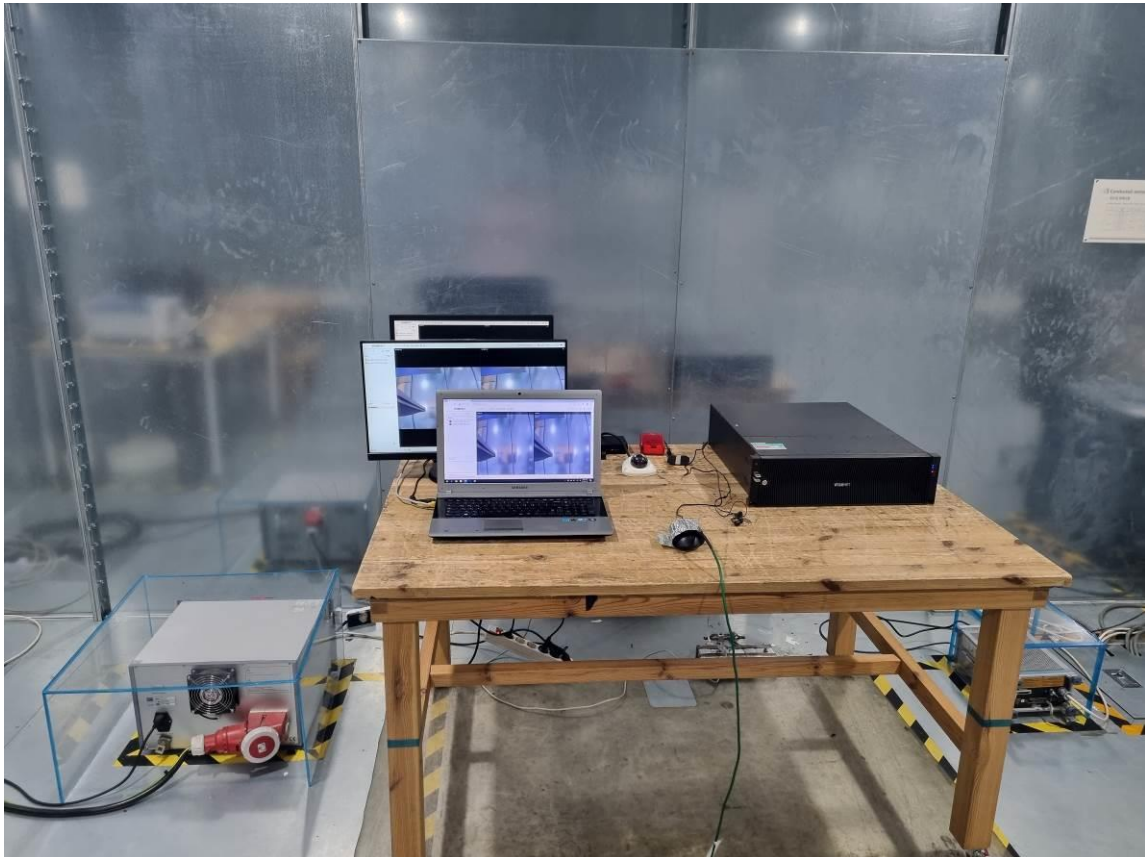
Radiated Emissions – Above 1 GHz

	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

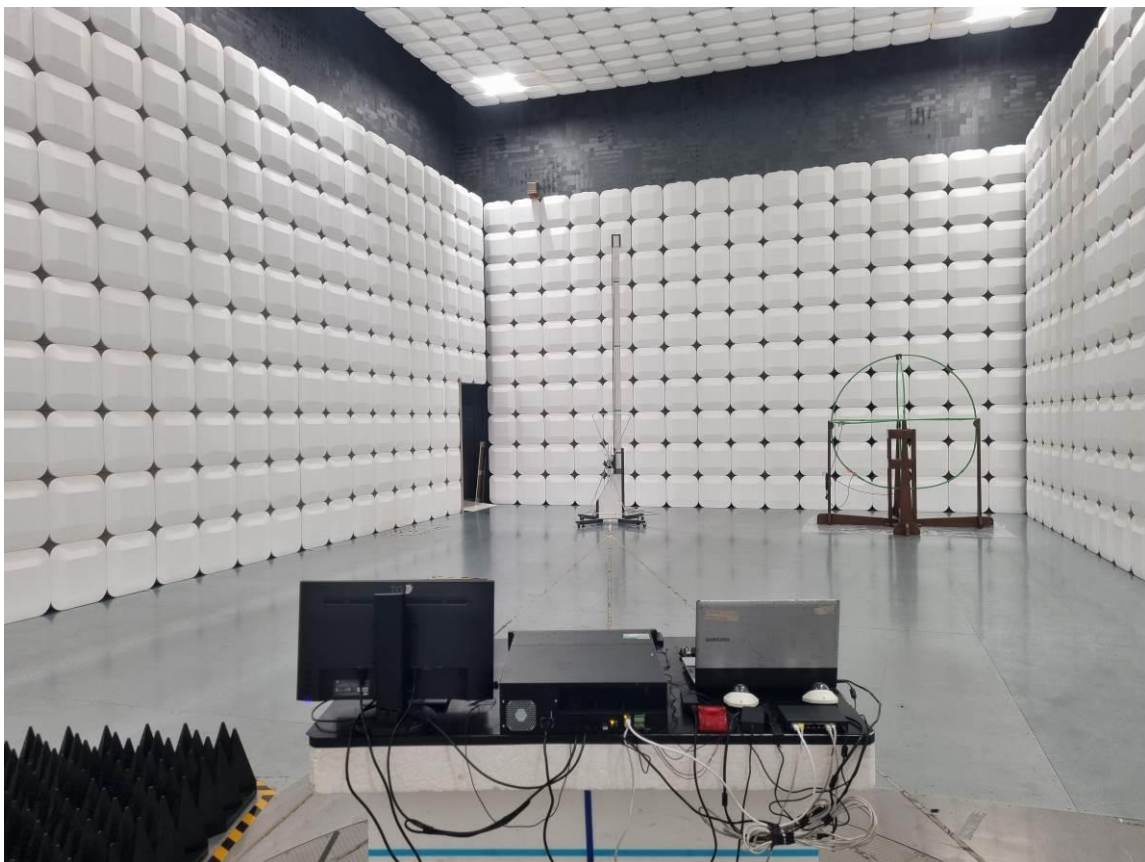
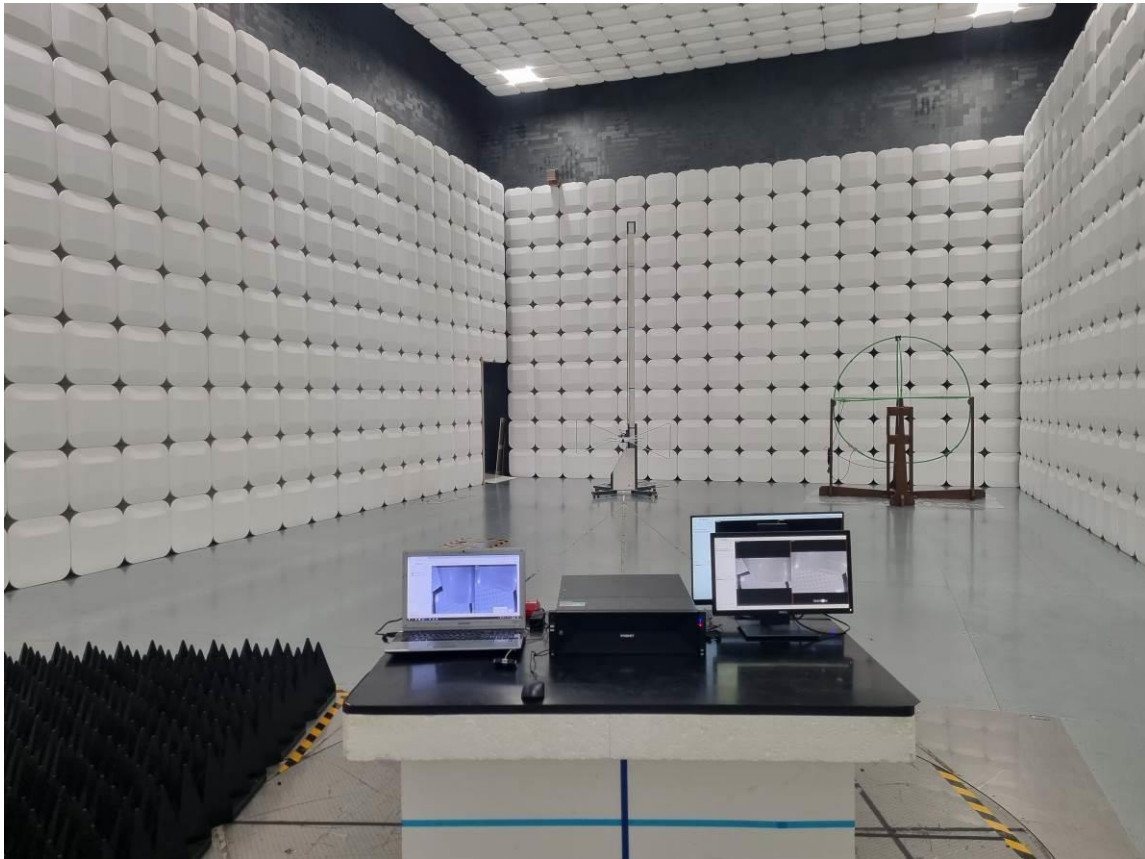
Conducted Emissions



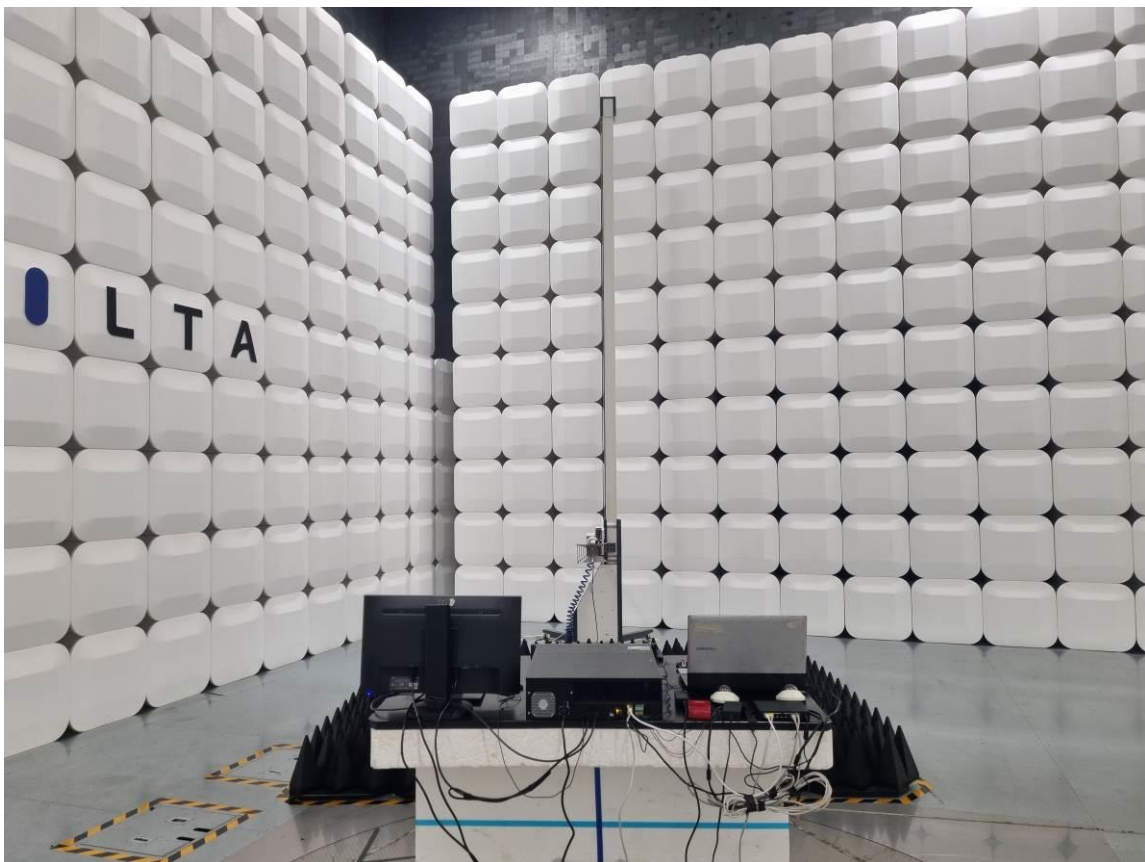
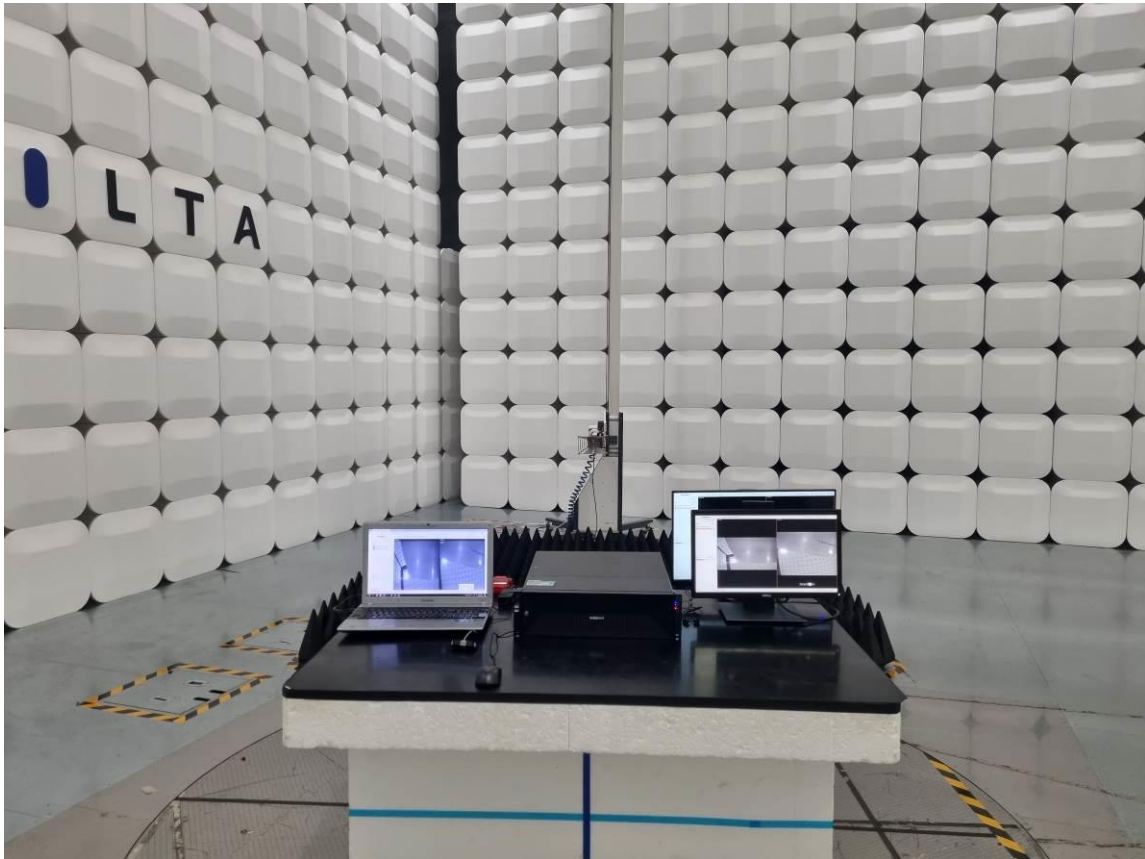
Conducted Emissions (TEL)



Radiated Emissions - Below 1 GHz



Radiated Emissions - Above 1 GHz



EUT



EUT

