



4, Songju-ro 236beon-gil, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do,
17159, Korea

Tel: +82-31-323-6008 Fax: +82-31-323-6010

<http://www.ltalab.com>

EMC TEST REPORT

Dates of Tests: July 01 - 04, 2022
Test Report S/N: LR500122302AB
Test Site : LTA Co., Ltd.

Model No.

PRN-3210B2

APPLICANT

Hanwha Vision Co., Ltd

Equipment Name : NVR
Manufacturer : Hanwha Vision Co., Ltd
Model Name : PRN-3210B2
Additional Model Name : PRN-1610B2, PRN-3200B2, PRN-3205B2,
PRN-1600B2, PRN-1605B2
Test Device Serial No.: : Identification
Rule Part(s) : AS/NZS CISPR 32:2015
CISPR 32 Ed2.0

Date of issue : February 21, 2023

This test report is issued under the authority of:

Young Kyu Shin, Technical Manager

The test was supervised by:

Hyun Young Ahn, 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.

NVLAP[®]
TESTING NVLAP LAB CODE 200723-0

Revision history

Revision	Date of issue	Test report No.	Description
0	11.01.2021	LR500122101H	Initial
1	26.05.2021	LR500122105Y	Add Additional Models (PRN-3200B2, PRN-3205B2, PRN-1600B2, PRN-1605B2)
2	16.12.2021	LR500122112S	Change the PCB. (using with the PCB that has not changed)
3	11.07.2022	LR500122207H	change the PCB. (using with the PCB that has not changed)
4	21.02.2023	LR500122302AB	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
 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
NVLAP	U.S.A	200723-0	2022-09-30	ECT accredited Lab.
RRA	KOREA	KR0049	-	RRA accredited Lab.
	U.S.A		2023-04-08	
	CANADA		2022-10-18	
VCCI	JAPAN	C-14948	2023-09-10	VCCI registration
		T-12416	2023-09-10	
		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-3210B2
 Additional Model Name : PRN-1610B2, PRN-3200B2, PRN-3205B2, PRN-1600B2, PRN-1605B2
 Additional Models are different number of channels.
 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, ALARM IN, ALARM OUT, NETWORK #1 ~ #3, GND
 Console Port is unused port.
 Power rating : AC 240 V, 50 Hz

2-3 Modification

- Insert Aluminum Tape at Internal Signal line.

2-4 Test conditions

Temp. / Humid. / Pressure : (22 – 23) °C / (47 – 49) % R.H.
 Tested Model : PRN-3210B2
 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-3210B2	N/A	HANWHA VISION VIETNAM COMPANY LIMITED D-TECH CO.,LTD.	-
MOUSE	MOKJUO	N/A	Primax Electronics Ltd.	-
ACCESSORY				
Equipment Name	Model Name	Serial No.	Manufacturer	Remarks
KEY BOARD	Y-U0009	N/A	Logitech Co.,Ltd	-
NOTEBOOK	ELITEBOOK219	N/A	HP	-
POE INJECTOR	IpTIME PoE408	N/A	IpTIME	-
POE INJECTOR ADAPTER	ANY480A5C-NI	N/A	Wendent Any Electronics Co.,Ltd	-
USB MEMORY STICK	SDCZ50-016G	N/A	Sandisk	2 EA
HEAD PHONE	SHS-150V/W	N/A	SAMSUNG	-
NETWORK CAMERA #1	QND-6070RNC	N/A	HANHWA TECHWIN CO., LTD.	-
NETWORK CAMERA #2	LND-6032R	N/A	HANHWA TECHWIN CO., LTD.	-
ALARM ZIG #1	DS-360	N/A	Daemyung Electronics Co., Ltd	-
ALARM ZIG #2	N/A	N/A	N/A	-
MOBILE PHONE	SM930K	N/A	SAMSUNG	-
MONITOR #1	6230VP	73010478A2 20371	Lien Fong(Wujiang) Electronics Co.,Ltd	-
MONITOR #2	P2018H	N/A	DELL	-

2-6 Cable List

Cable List						
From		To		Length (m)	Shielding	
Type	I/O Port	Type	I/O Port		Cable	backshell
EUT	AC IN	AC POWER SOURCE	3 PIN AC LINE	1.0	NO	Plastic
	NETWORK #1	NOTEBOOK	LAN	3.0	NO	Plastic
	NETWORK #2	POE INJECTOR	LAN #1	3.0	NO	Plastic
	NETWORK #3	POE INJECTOR	LAN #2	3.0	NO	Plastic
	AUDIO OUT	HEAD PHONE	AUDIO IN	1.0	NO	Plastic
	ALARM IN	ALARM ZIG #2	ALARM OUT	3.0	NO	Plastic
	ALARM OUT	ALARM ZIG #1	ALARM IN	3.0	NO	Plastic
	HDMI #1	MONITOR #1	HDMI	1.0	YES	Plastic
	HDMI #2	MONITOR #2	HDMI	1.0	YES	Plastic
	USB #1	MOUSE	USB	1.0	NO	Plastic
	USB #2	KEY BOARD	USB	1.0	NO	Plastic
	USB #3	USB MEMORY STICK #1	-	-	-	-
	USB #4	USB MEMORY STICK #2	-	-	-	-
	GND	GND	-	1.0	NO	Plastic
POE INJECTOR	DC IN	POE INJECTOR ADAPTER	DC OUT	1.0	NO	Plastic
	LAN #3	NETWORK CAMERA #1	LAN	3.0	NO	Plastic
	LAN #4	NETWORK CAMERA #2	LAN	3.0	NO	Plastic
POE INJECTOR ADAPTER	AC IN	AC POWER SOURCE	2 PIN AC LINE	0.8	NO	Plastic
MONITOR #1	AC IN	AC POWER SOURCE	3 PIN AC LINE	1.0	NO	Plastic
MONITOR #2	AC IN	AC POWER SOURCE	3 PIN AC LINE	1.0	NO	Plastic
MOBILE PHONE	-	-	-	-	-	-

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)



4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No. : PRN-3210B2

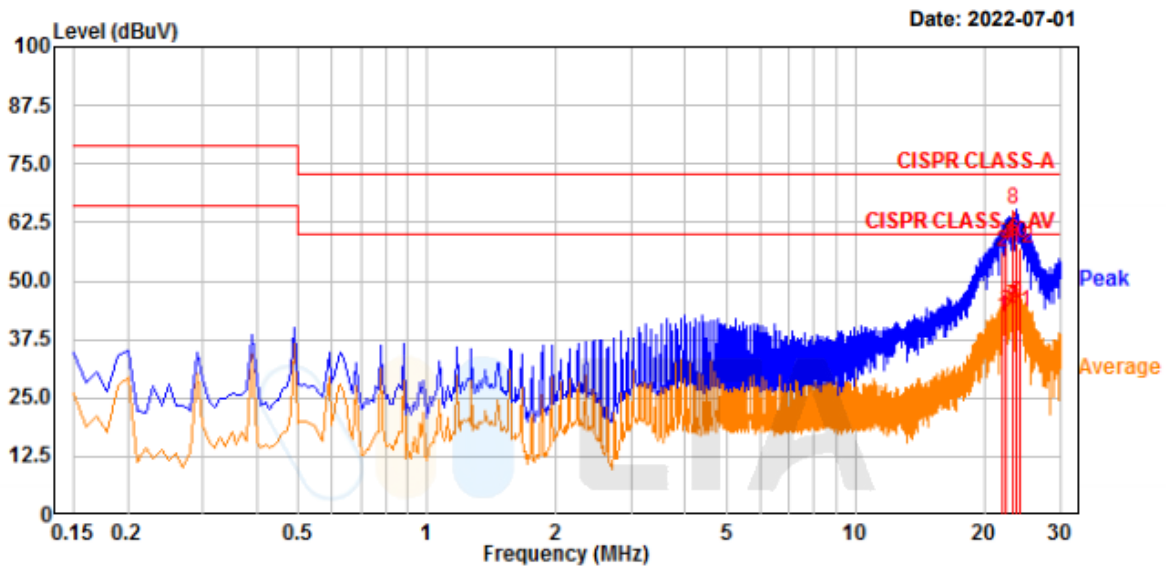
Phase : LINE

Test Mode : Operating mode

Test Power : 240 V / 50 Hz

Temp./ Humi. : 23 'C / 49 % R.H

Test Engineer : AHN H Y



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.	22.014	36.25	22.40	20.04	56.29	42.44	73.00	60.00	16.71	17.56	Line
4.	22.411	37.37	23.29	20.05	57.42	43.34	73.00	60.00	15.58	16.66	Line
6.	23.209	38.48	24.10	20.05	58.53	44.15	73.00	60.00	14.47	15.85	Line
8.	23.339	45.14	24.60	20.05	65.19	44.65	73.00	60.00	7.81	15.35	Line
10.	23.605	38.06	25.21	20.06	58.12	45.27	73.00	60.00	14.88	14.73	Line
12.	24.187	36.91	23.32	20.07	56.98	43.39	73.00	60.00	16.02	16.61	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
449-822 Korea
Tel: +82-31-3236008,9
Fax: +82-31-3236010

EUT /Model No. : PRN-3210B2

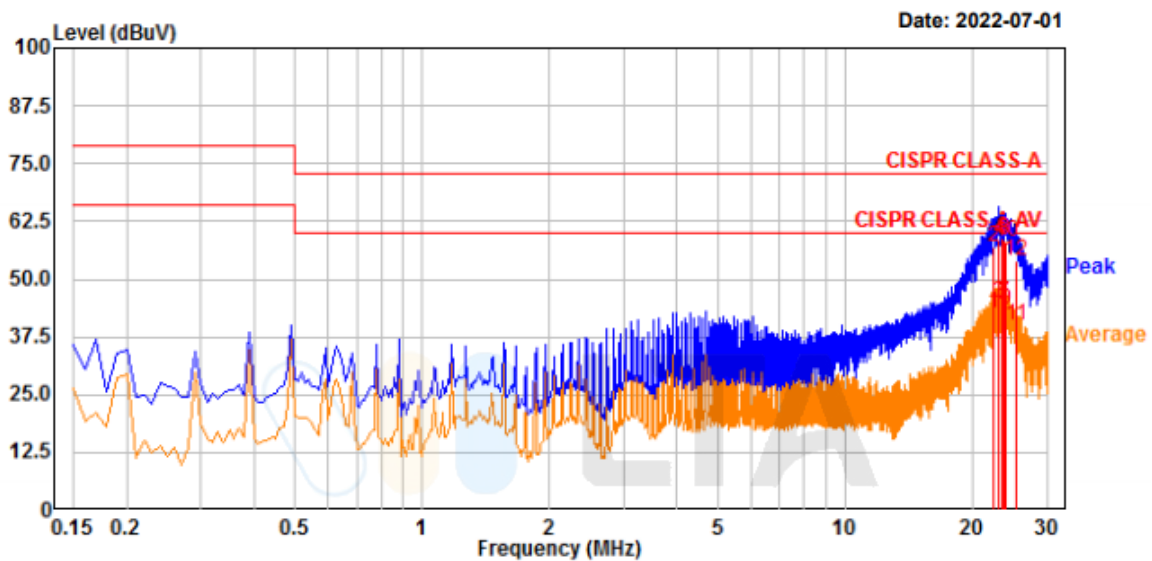
Phase : NEUTRAL

Test Mode : Operating mode

Test Power : 240 V / 50 Hz

Temp./ Humi. : 23 'C / 49 % R.H

Test Engineer : AHN H Y



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.	22.308	36.96	22.36	20.13	57.09	42.49	73.00	60.00	15.91	17.51	neutral
4.	22.984	38.50	24.61	20.14	58.64	44.75	73.00	60.00	14.36	15.25	neutral
6.	23.494	38.68	24.52	20.15	58.83	44.67	73.00	60.00	14.17	15.33	neutral
8.	23.797	38.16	24.62	20.17	58.33	44.79	73.00	60.00	14.67	15.21	neutral
10.	23.873	37.91	23.34	20.17	58.08	43.51	73.00	60.00	14.92	16.49	neutral
12.	25.230	33.86	19.63	20.18	54.04	39.81	73.00	60.00	18.96	20.19	neutral

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

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



4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No. : PRN-3210B2

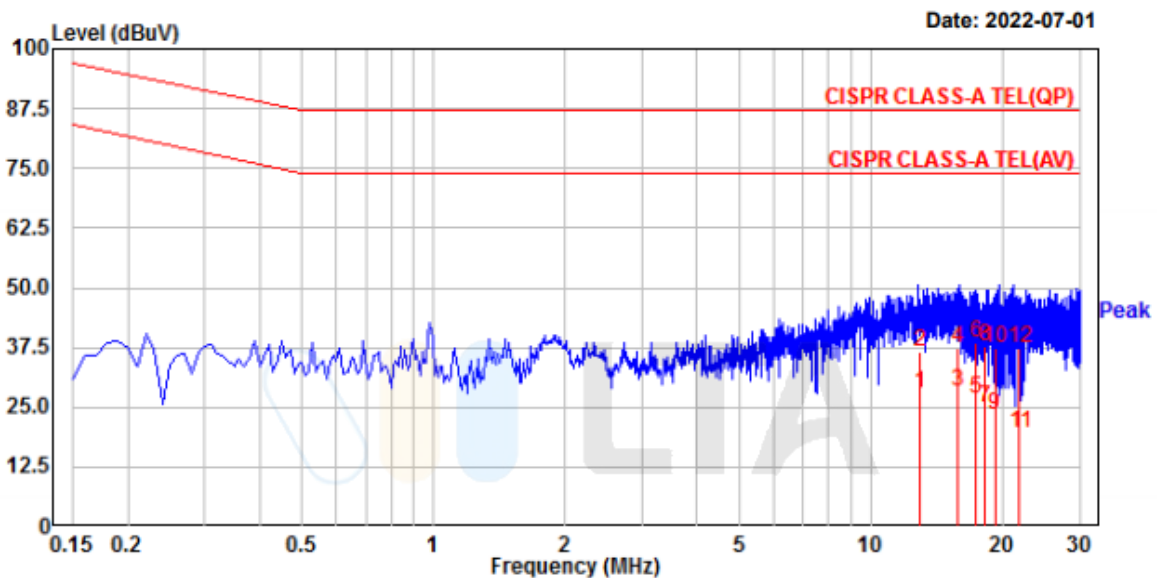
Phase : TEL_10M (NETWORK #1)

Test Mode : Operating mode

Test Power : 240 V / 50 Hz

Temp./ Humi. : 23 'C / 49 % R.H

Test Engineer : AHN H Y



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.	12.946	16.82	8.17	19.73	36.55	27.90	87.00	74.00	50.45	46.10	Line
4.	15.707	17.61	8.59	19.80	37.41	28.39	87.00	74.00	49.59	45.61	Line
6.	17.344	18.70	6.97	19.88	38.58	26.85	87.00	74.00	48.42	47.15	Line
8.	18.159	18.01	5.13	19.90	37.91	25.03	87.00	74.00	49.09	48.97	Line
10.	19.151	17.60	3.33	19.94	37.54	23.27	87.00	74.00	49.46	50.73	Line
12.	21.808	17.25	-0.32	20.05	37.30	19.73	87.00	74.00	49.70	54.27	Line

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

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



4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No. : PRN-3210B2

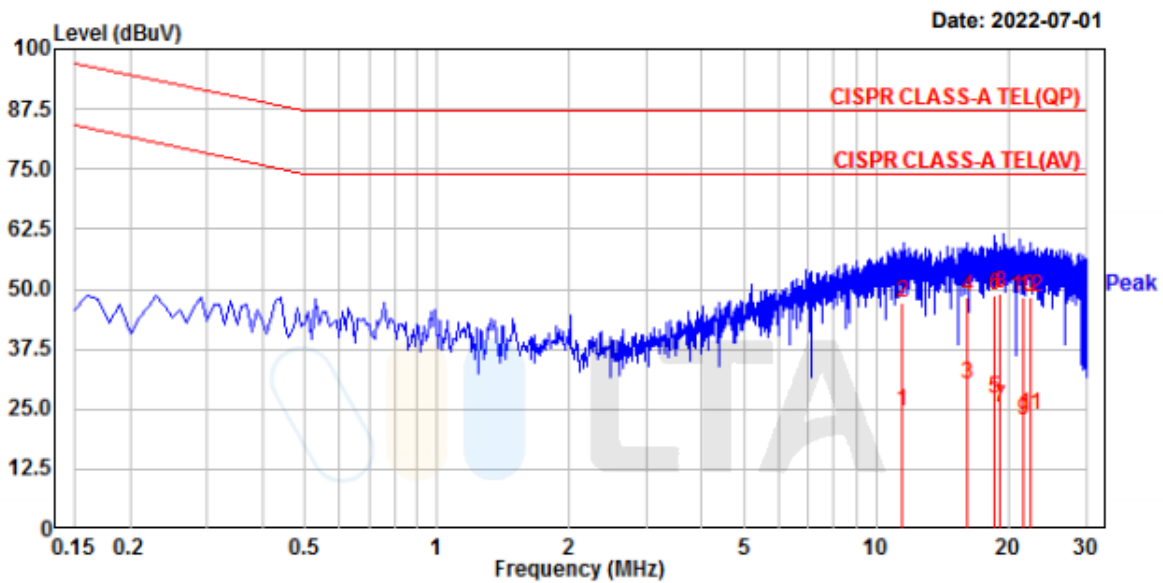
Phase : TEL_1000M (NETWORK #1)

Test Mode : Operating mode

Test Power : 240 V / 50 Hz

Temp./ Humi. : 23 'C / 49 % R.H

Test Engineer : AHN H Y



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.	11.383	27.79	5.14	19.46	47.25	24.60	87.00	74.00	39.75	49.40	Line
4.	16.001	28.62	10.52	19.56	48.18	30.08	87.00	74.00	38.82	43.92	Line
6.	18.592	28.98	7.41	19.61	48.59	27.02	87.00	74.00	38.41	46.98	Line
8.	19.032	29.60	5.55	19.61	49.21	25.16	87.00	74.00	37.79	48.84	Line
10.	21.469	28.62	2.80	19.67	48.29	22.47	87.00	74.00	38.71	51.53	Line
12.	22.298	28.65	3.97	19.67	48.32	23.64	87.00	74.00	38.68	50.36	Line

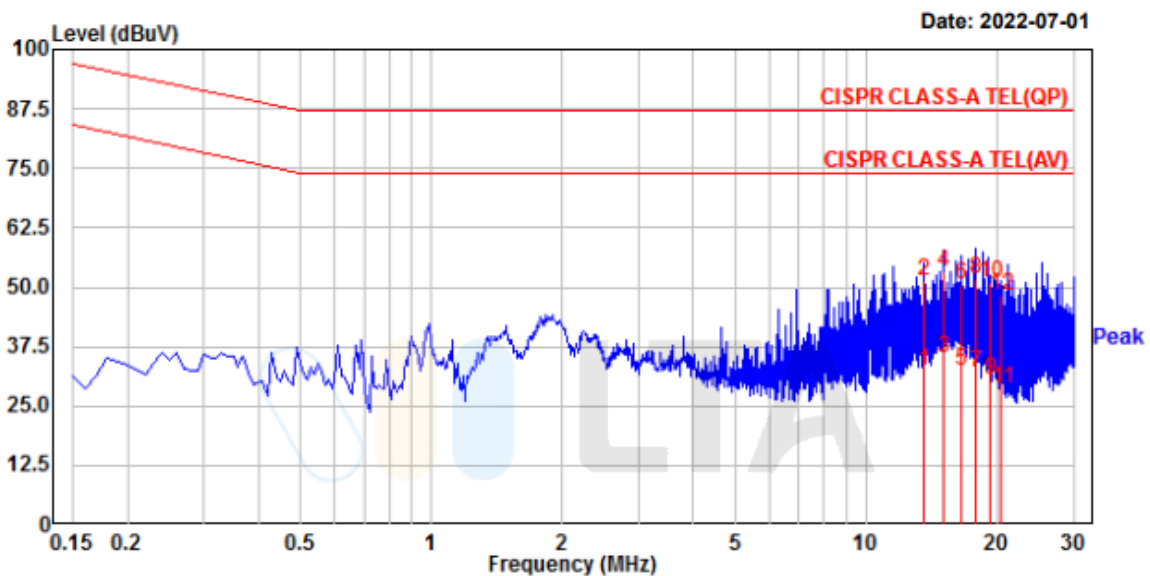
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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



4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No. : PRN-3210B2	Phase : TEL_10M (NETWORK #2)
Test Mode : Operating mode	Test Power : 240 V / 50 Hz
Temp./ Humi. : 23 'C / 49 % R.H	Test Engineer : AHN H Y



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.	13.556	31.43	12.61	19.76	51.19	32.37	87.00	74.00	35.81	41.63	Line
4.	15.024	33.45	15.18	19.79	53.24	34.97	87.00	74.00	33.76	39.03	Line
6.	16.547	30.63	12.79	19.84	50.47	32.63	87.00	74.00	36.53	41.37	Line
8.	17.890	31.79	12.06	19.90	51.69	31.96	87.00	74.00	35.31	42.04	Line
10.	19.296	30.91	10.48	19.95	50.86	30.43	87.00	74.00	36.14	43.57	Line
12.	20.454	28.29	8.72	19.98	48.27	28.70	87.00	74.00	38.73	45.30	Line

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

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



4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No. : PRN-3210B2

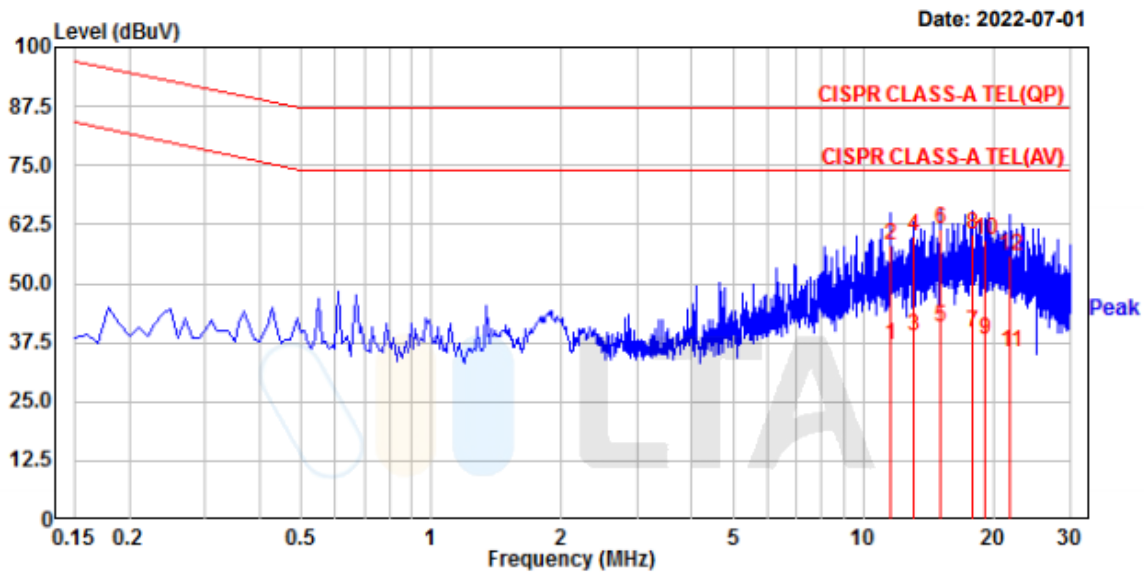
Phase : TEL_1000M (NETWORK #2)

Test Mode : Operating mode

Test Power : 240 V / 50 Hz

Temp./ Humi. : 23 'C / 49 % R.H

Test Engineer : AHN H Y



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.	11.541	38.83	17.66	19.47	58.30	37.13	87.00	74.00	28.70	36.87	Line
4.	13.007	40.39	19.39	19.49	59.88	38.88	87.00	74.00	27.12	35.12	Line
6.	15.022	42.11	21.32	19.54	61.65	40.86	87.00	74.00	25.35	33.14	Line
8.	17.831	40.91	20.13	19.59	60.50	39.72	87.00	74.00	26.50	34.28	Line
10.	19.050	39.64	18.60	19.61	59.25	38.21	87.00	74.00	27.75	35.79	Line
12.	21.857	36.19	15.81	19.67	55.86	35.48	87.00	74.00	31.14	38.52	Line

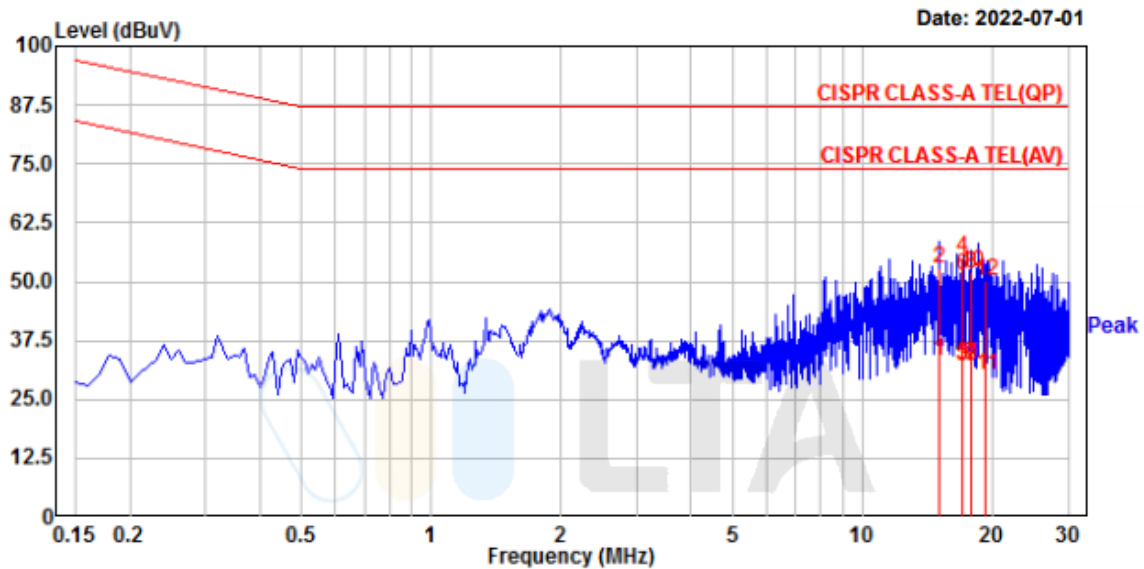
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

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



4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No. : PRN-3210B2	Phase : TEL_10M (NETWORK #3)
Test Mode : Operating mode	Test Power : 240 V / 50 Hz
Temp./ Humi. : 23 'C / 49 % R.H	Test Engineer : AHN H Y



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.	15.025	32.98	13.55	19.79	52.77	33.34	87.00	74.00	34.23	40.66	Line
4.	17.036	35.17	12.36	19.86	55.03	32.22	87.00	74.00	31.97	41.78	Line
6.	17.038	31.38	12.59	19.86	51.24	32.45	87.00	74.00	35.76	41.55	Line
8.	17.770	31.78	12.56	19.90	51.68	32.46	87.00	74.00	35.32	41.54	Line
10.	17.893	32.03	12.23	19.90	51.93	32.13	87.00	74.00	35.07	41.87	Line
12.	19.294	30.09	10.32	19.95	50.04	30.27	87.00	74.00	36.96	43.73	Line

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

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



4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No. : PRN-3210B2

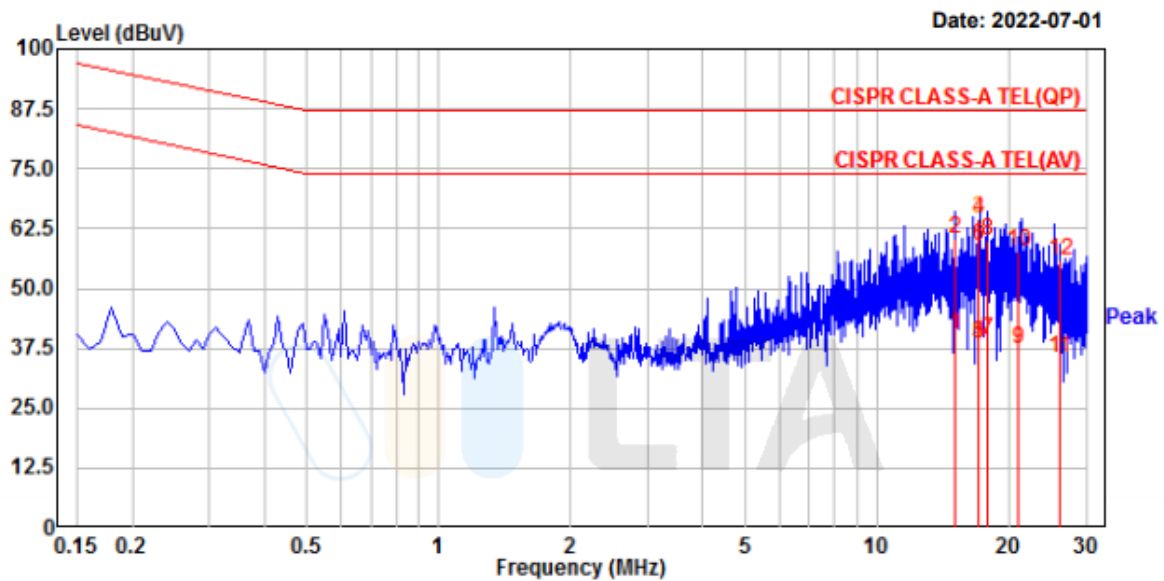
Phase : TEL_1000M (NETWORK #3)

Test Mode : Operating mode

Test Power : 240 V / 50 Hz

Temp./ Humi. : 23 'C / 49 % R.H

Test Engineer : AHN H Y



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.	15.024	40.99	20.95	19.54	60.53	40.49	87.00	74.00	26.47	33.51	Line
4.	16.975	45.12	18.87	19.57	64.69	38.44	87.00	74.00	22.31	35.56	Line
6.	17.038	39.23	18.96	19.57	58.80	38.53	87.00	74.00	28.20	35.47	Line
8.	17.832	40.35	19.71	19.59	59.94	39.30	87.00	74.00	27.06	34.70	Line
10.	21.003	38.24	17.85	19.65	57.89	37.50	87.00	74.00	29.11	36.50	Line
12.	26.016	36.15	15.54	19.76	55.91	35.30	87.00	74.00	31.09	38.70	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 : 4.1 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



4, Songjuro 236Beon-gil, yanggi-myeon,
Yongin-si, Gyeonggi-do, Korea
Tel : +82-31-3236008,9
Fax : +82-31-3236010
www.ltalab.com

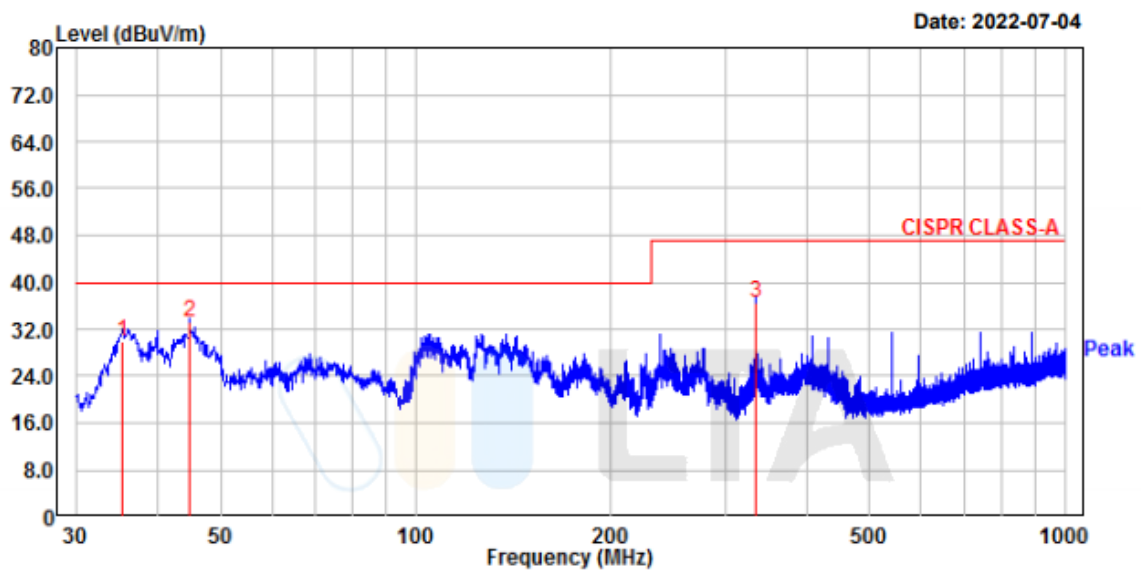
EUT/Model No.: PRN-3210B2

Temp/Humi: 22 'C / 47 % R.H.

Test Mode : Operating mode

Tested by: AHN H Y

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.	35.34	42.50	-12.76	29.74	40.00	10.26	120	225	vertical
2.	44.79	44.60	-11.36	33.24	40.00	6.76	206	128	vertical
3.	334.10	44.20	-7.75	36.45	47.00	10.55	280	51	vertical

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

Radiated Emissions (Below 1 GHz) / H



4, Songjuro 236Beon-gil, yanggi-myeon,
Yongin-si, Gyeonggi-do, Korea
Tel : +82-31-3236008,9
Fax : +82-31-3236010
www.ltalab.com

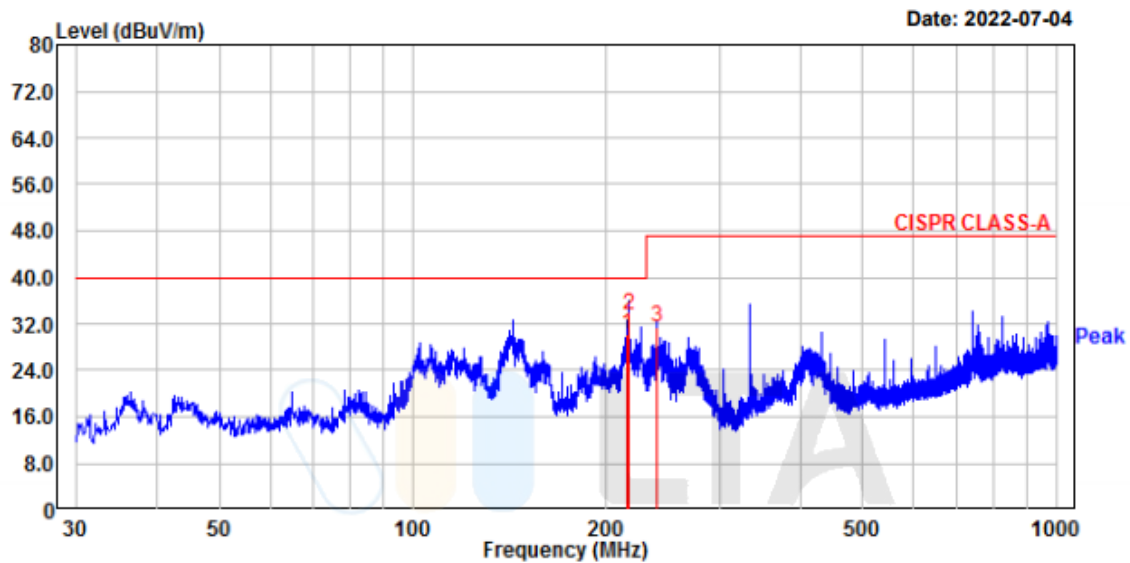
EUT/Model No.: PRN-3210B2

Temp/Humi: 22 'C / 47 % R.H.

Test Mode : Operating mode

Tested by: AHN H Y

Power : 240 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.	215.27	43.21	-13.13	30.08	40.00	9.92	400	286	horizontal
2.	216.85	46.70	-13.14	33.56	40.00	6.44	200	50	horizontal
3.	239.28	42.90	-11.40	31.50	47.00	15.50	260	10	horizontal

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

Radiated Emissions

(Above 1 GHz) / V

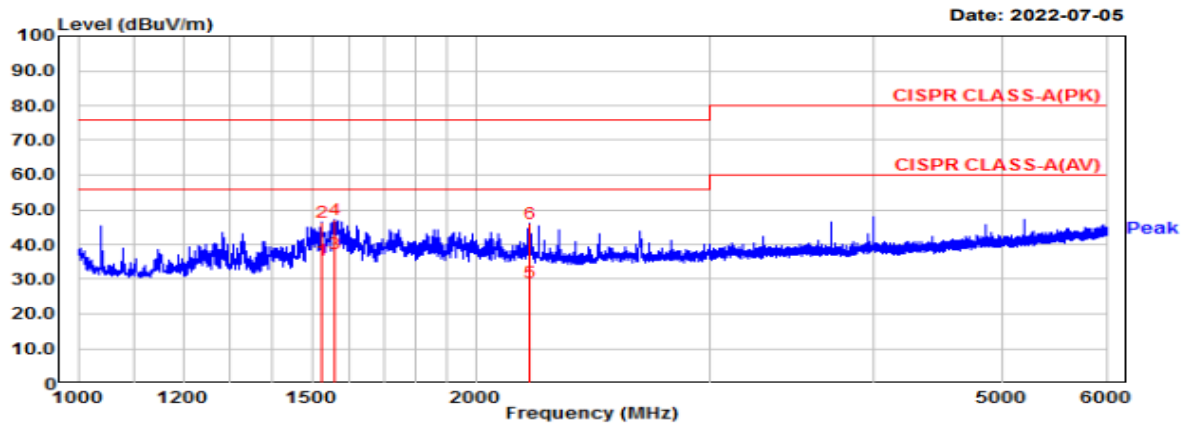
EUT/Model No.: PRN-3210B2

Temp/Humi: 22 °C / 47 % R.H.

Test Mode : Operating mode

Tested by: AHN H Y

Power : 240 V / 50 Hz



(Above 1 GHz) / H

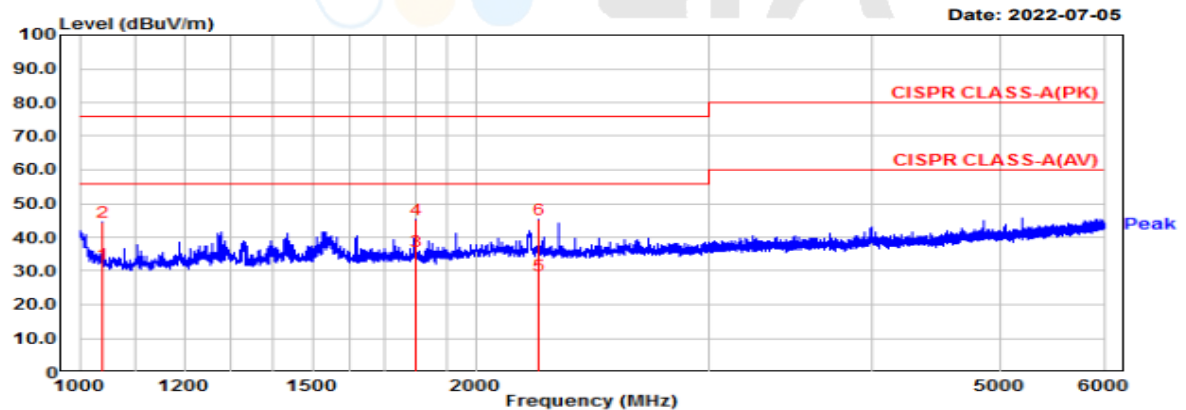
EUT/Model No.: PRN-3210B2

Temp/Humi: 22 °C / 47 % R.H.

Test Mode : Operating mode

Tested by: AHN H Y

Power : 240 V / 50 Hz



Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.

Test Date

Temp.:
[°C]Humidity:
[%]Distance
(m)

Model : PRN-3210B2

2022.07.05

22.00

47.00

3.6

TEST mode : Operating mode

Frequency	Reading(PK)	Reading(AV)	C.F	Result(PK)	Result(AV)	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)	Height	Angle	Polarity
MHz	dBuV	dBuV	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	cm	deg	H/V
1039.38	53.98	41.67	-7.87	46.11	33.80	76.00	56.00	29.89	22.20	100	147	H
1796.25	49.86	40.18	-2.87	46.99	37.31	76.00	56.00	29.01	18.69	100	0	H
2227.50	46.24	29.77	0.49	46.73	30.26	76.00	56.00	29.27	25.74	100	147	H
1524.38	51.99	41.09	-3.92	48.07	37.17	76.00	56.00	27.93	18.83	100	314	V
1562.50	52.60	42.77	-3.93	48.67	38.84	76.00	56.00	27.33	17.16	100	262	V
2193.75	47.07	30.08	0.71	47.78	30.79	76.00	56.00	28.22	25.21	100	277	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
<input checked="" type="checkbox"/>	EMI TEST Receiver	ESR	Rohde & Schwarz	101499	2023.03.14	1 year
<input checked="" type="checkbox"/>	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	2023.03.14	1 year
<input checked="" type="checkbox"/>	ISN	ISN T800	TESEQ	27109	2022.09.06	1 year
<input checked="" type="checkbox"/>	ISN	ENY81-CA6	Rohde & Schwarz	101565	2022.09.06	1 year
<input type="checkbox"/>	ISN	ISN S8	Schwarzbeck	79	2022.09.02	1 year
<input type="checkbox"/>	CURRENT PROBE	EZ-17	Rohde & Schwarz	100508	2022.09.02	1 year
<input type="checkbox"/>	CDN	TSCDN-C1-BNC-75	F.C.C	07004	2023.03.14	1 year
<input type="checkbox"/>	LISN	ESH3-Z6	Rohde & Schwarz	100378	2022.09.02	1 year
<input type="checkbox"/>	LISN	ESH3-Z6	Rohde & Schwarz	101468	2022.09.02	1 year
<input checked="" type="checkbox"/>	LISN(main)	ENV216	Rohde & Schwarz	100408	2022.09.02	1 year
<input checked="" type="checkbox"/>	LISN(sub)	LT32C/10	AFJ	32031518210	2022.09.02	1 year
<input checked="" type="checkbox"/>	TEST PROGRAM	e3_ce 20181212a (V9)	AUDIX	-	-	-

Radiated Emissions – Below 1 GHz

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
<input checked="" type="checkbox"/>	EMI TEST Receiver	ESCI7	Rohde & Schwarz	100772	2022.09.02	1 year
<input checked="" type="checkbox"/>	Amplifier	8447D	HP	1937A03453	2022.11.30	1 year
<input checked="" type="checkbox"/>	BILOG Antenna	VULB 9168	SCHWARZBECK	775	2023.03.22	2 year
<input checked="" type="checkbox"/>	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

Radiated Emissions – Above 1 GHz

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
<input checked="" type="checkbox"/>	EMI TEST Receiver	ESCI7	Rohde & Schwarz	100772	2022.09.02	1 year
<input type="checkbox"/>	EMI TEST Receiver	ESU	Rohde & Schwarz	100092	2022.09.02	1 year
<input checked="" type="checkbox"/>	Amplifier	8449B	Agilent	3008A02126	2023.03.14	1 year
<input type="checkbox"/>	Amplifier	PAM-840A	COM-POWER	461314	2023.03.17	1 year
<input type="checkbox"/>	HORN ANTENNA	3116B	ETS	133350	2024.03.22	2 year
<input type="checkbox"/>	HORN ANTENNA	3116B	ETS	81109	2024.04.25	2 year
<input checked="" type="checkbox"/>	HORN ANTENNA	3115	ETS	114105	2023.05.12	2 year
<input checked="" type="checkbox"/>	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

APPENDIX B

PHOTOGRAPHS



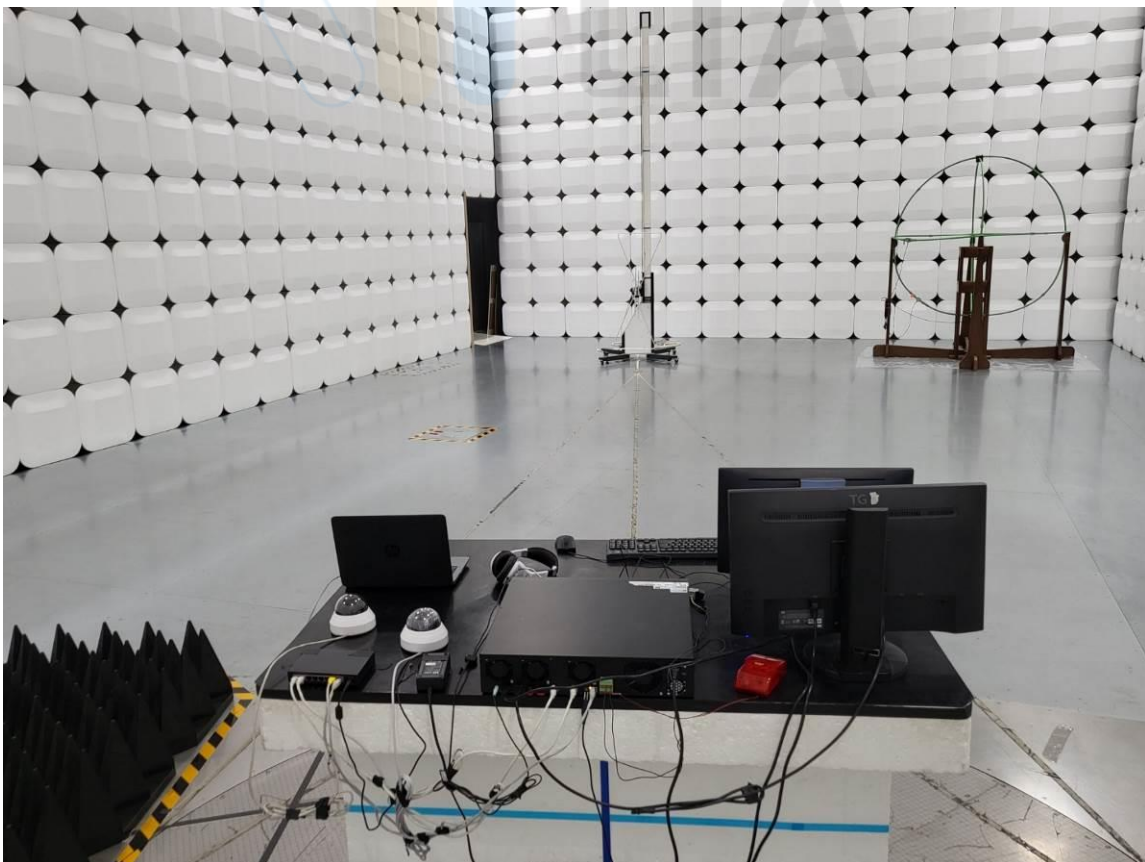
Conducted Emissions



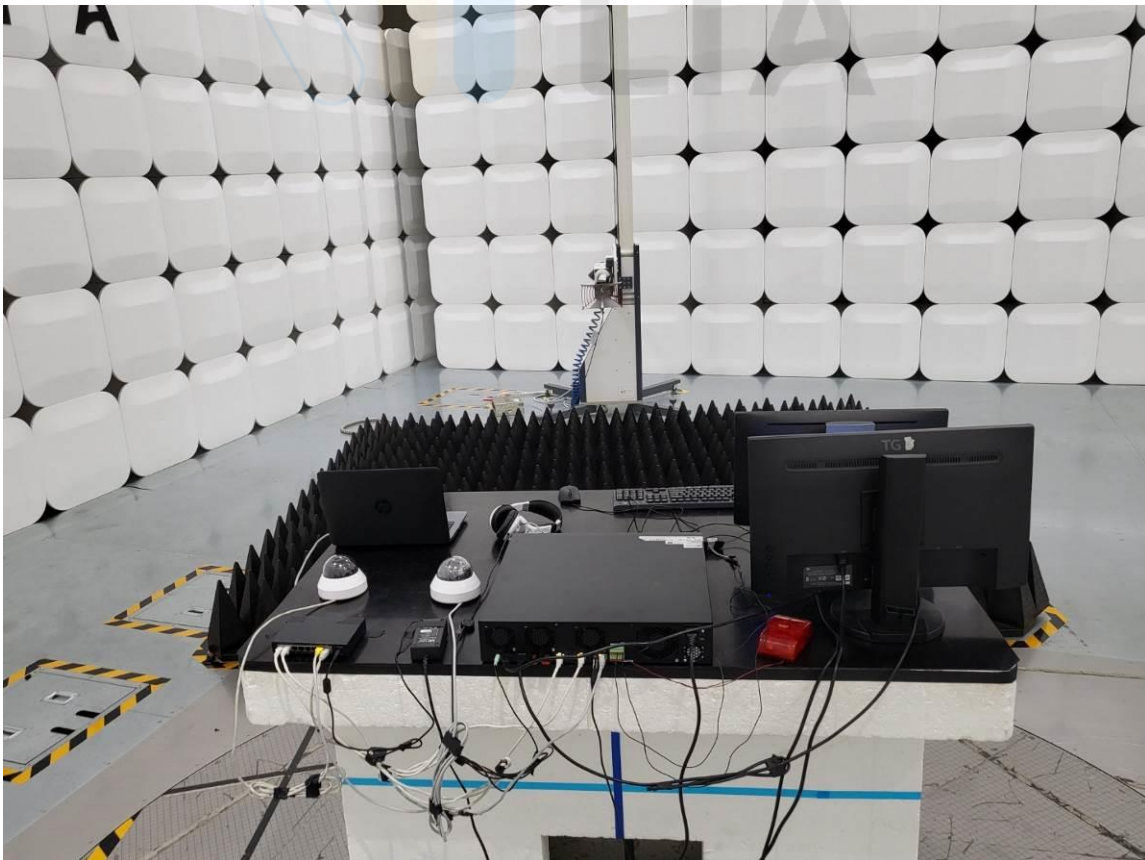
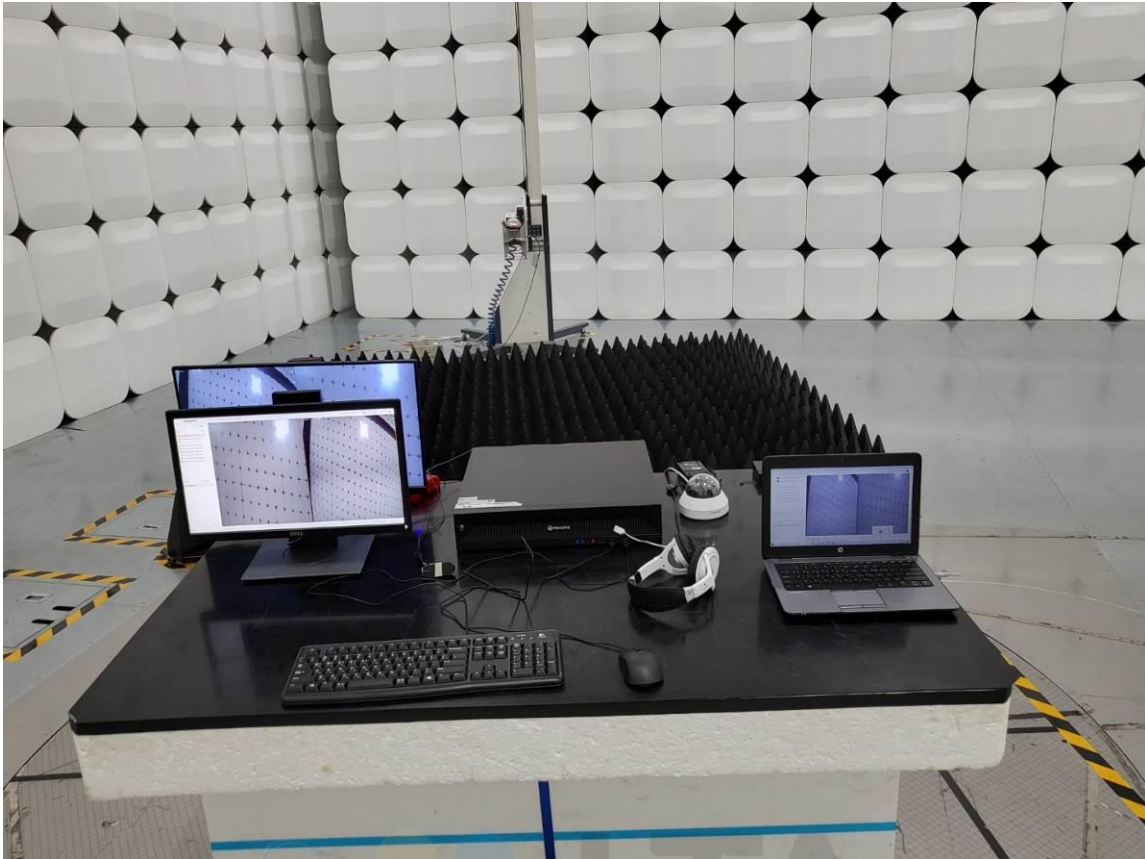
Conducted Emissions (TEL)



Radiated Emissions - Below 1 GHz



Radiated Emissions - Above 1 GHz



EUT



EUT



EUT Modification

