TEST REPORT

This laboratory is accredited by National Radio Research Agency Laboratory and National Voluntary Laboratory Accreditation Program.
The tests reported herein have been performed in accordance with its terms of accreditation.

Test Report No.	**:**	**LR500112008E**
Issue Date	**:**	**August 05, 2020**
Applied Standard	**:**	**FCC Part 15, Subpart B and ICES-003**
Trade Name	**:**	**Hanwha Techwin Co., Ltd.**
Equipment Name	**:**	**NVR**
Model Name	**:**	**XRP-4310DB4**
Serial Number	**:**	**Identification**

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.

TESTING NVLAP LAB CODE 200723-0

Revision history

Revision	Date of issue	Test report No.	Description
0	05.08.2020	LR500112008E	Initial

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LTA Certification

Applicant / Manufacturer

Company name	:	Hanwha Techwin 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 TECHWIN SECURITY VIETNAM CO.,LTD.
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)

Equipment Under Test (EUT)

Equipment Name	:	NVR
Model name	:	XRP-4310DB4
Serial number	:	Identification
Intended environment	:	Residential area
Date of receipt	:	July 15, 2020
EUT condition	:	Pre-production, not damaged
Interface ports	:	AC IN, LAN, HDMI, USB 3.0, USB 2.0, HDD, AUDIO OUT, HDD
Power rating	:	AC 120 V, 60 Hz
Test Mode	:	REC mode
Test Voltage	:	AC 120 V, 60 Hz

Model Description

- NONE

Model Specification

- NONE

*** To be continued next page ***

LTA Certification –cont.-

Test Performed

Test started & completed	:	July 21 - 22, 2020
Location	:	LTA Co., Ltd.

Test Specification

Purpose of the test	:	Compliance test to the following standard
Applied standard	:	FCC Part 15, Subpart B and ICES-003
Classification	:	Class A
Deviations from Standard Test Method	:	N/A

Test Results

Measurement	Results*	Test method
Conducted Emissions	Complies	ANSI C 63.4-2014
Radiated Emissions	Complies	ANSI C 63.4-2014

* : The compliance statement is based on nominal value only.

Modification performed by the lab.;

- N.A

Laboratory's Certificate

Report number	:	LR500112008E
Issue date	:	August 05, 2020

This test report is issued under the authority of:

Gi Won Lee, Technical Manager

The test was supervised by:

Jun Hwan Park, Test Engineer

The results in this report apply only to the sample(s) tested.

It is not allowed to copy this report even partly without the allowance of the test laboratory.

General information's

Purpose

This document is based on the Electromagnetic Interference (EMI) tests performed on the **"XRP-4310DB4"**. The measurements were performed according to the measurement procedure described in ANSI C 63.4-2014.The tests were carried out in order to confirm whether the electromagnetic emissions from the EUT(Equipment Under Test), are within the Class A limits defined in FCC Part 15, Subpart B- "Section 15.107- Conducted limits" and "Section 15.109-Radiated emission limits".

Test Performed

Company name	:	**LTA Co., Ltd**
Address	:	4, Songju-ro 236beon-gil, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, 17159, Korea
Telephone	:	+82-31-323-6008
Facsimile		+82-31-323-6010

Measurement uncertainty

Conducted Emissions	(0.15 to 30 MHz) :	±2.80 [dB] (k=2)	
Radiated Emissions	(30 to 1,000 MHz) :	H : ±4.84 [dB] (k=2)	V : ±4.92 [dB] (k=2)
	(1 GHz to 6 GHz) :	H : ±5.97 [dB] (k=2)	V : ±5.96 [dB] (k=2)
	(6 GHz to 18 GHz) :	H : ±6.20 [dB] (k=2)	V : ±6.20 [dB] (k=2)

The coverage factor k=2 yields approx. a 95% level of confidence for near-normal distribution typical of most measurement results.

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	2020-09-30	ECT accredited Lab.
RRA	KOREA	KR0049	-	RRA accredited Lab.
	U.S.A		2021-04-11	
	CANADA		2021-06-16	
	VIETNAM		2021-04-12	
VCCI	JAPAN	C-14948	2023-09-10	VCCI registration
		T-12416	2023-09-10	
		R-14483	2023-10-15	
		G-10847	2021-12-13	
KOLAS	KOREA	KT551	2021-08-20	KOLAS accredited Lab.

1- Brief Information

1-1 Test Summary

Parameter	Applied Standard	Status (note 1)
I. Emission		
Conducted Emissions	FCC Part 15.107 / ICES-003 Clause 6.1	C
Radiated Emissions	FCC Part 15.109 / ICES-003 Clause 6.2	C
Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable * The data in this test report are traceable to the national or international standards.		

Frequency range to be scanned:

0.15 MHz - 30 MHz as conducted measurement

30 MHz to 5th harmonic of the highest frequency or 40 GHz, whichever is lower as radiated measurement.

Bandwidth:

Measured by the CISPR quasi-peak function Bandwidth is 9 kHz in the frequency 0.15 MHz to 30 MHz and 120 kHz in the frequency 30 MHz to 1,000 MHz.

Measured by the Peak function Bandwidth is 1 MHz in the frequency 1 GHz to 40 GHz.

A sample calculation:

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

Emission Level= meter reading + COR.F

1-2 Test mode of the EUT

The tests have been conducted with the following operational mode(s) of the EUT.

REC mode

1-3 Modification

- NONE

1-4 List of EUT and ACCESSORY

EUT				
Equipment Name	**Model Name**	**Serial No.**	**Manufacturer**	**Remarks**
NVR	**XRP-4310DB4**	**N/A**	**HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. D-TECH CO.,LTD.**	-
Keyboard	**PKB-650U**	**N/A**	**SHENZHEN TYCHO TECHNOLOGY CO., LIMITED**	-
Mouse	**MOKJUO**	**N/A**	**PRIMAX ELECTRONICS LTD**	-
ACCESSORY				
Equipment Name	**Model Name**	**Serial No.**	**Manufacturer**	**Remarks**
Monitor #1	P2018H	N/A	DELL	-
Monitor #2	24MA53D	N/A	LG	-
Monitor #2 Adapter	A11-120P1A	N/A	Chicony	-
Speaker	MINI-X3	N/A	Shenzhen Music Technology Co., Ltd	-
Notebook	TFG13	N/A	HANSUNG	-
Switch Hub	H608	N/A	ipTIME	-
Switch Hub Adapter	DCP015A050600K	N/A	Zioncom Electronics	-
Network Camera	QNV-6082R	N/A	HANWHA TECHWIN CO.,LTD.	-
PoE Injector	SFC501G	N/A	SOLTECH INFONET INC.	-
USB Memory Stick #1	Ultra Flair CZ73 32GB	N/A	SanDIsk	64 GB
USB Memory Stick #2	Ultra Z48USB 3.0 32GB	N/A	SanDIsk	64 GB
HDD	WD40PURX-64N96Y0	N/A	Western Digital	4 TB

1-5 Cable List

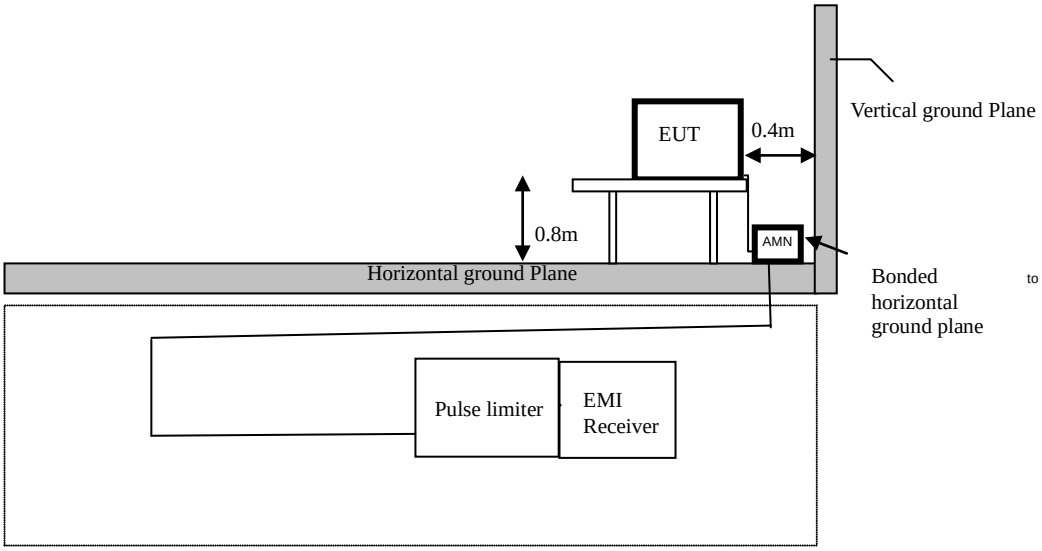
Cable List						
From		To		Length	Shielding	
Type	I/O Port	Type	I/O Port	(m)	Cable	backshell
EUT	AC IN #1	AC Power Source	3 Pin AC Line	1.5	NO	Plastic
	AC IN #2	AC Power Source	3 Pin AC Line	1.5	NO	Plastic
	LAN #1	Poe Injector	LAN	3.0	NO	Plastic
	LAN #2	Switch Hub	LAN	3.0	NO	Plastic
	LAN #3	Switch Hub	LAN	3.0	NO	Plastic
	USB 2.0 #1	Keyboard	-	1.5	NO	Plastic
	USB 2.0 #2	Mouse	-	1.5	NO	Plastic
	USB 3.0 #1	USB Memory Stick #1	-	-	-	Metal
	USB 3.0 #2	USB Memory Stick #2	-	-	-	Plastic
	AUDIO OUT	Speaker	AUDIO IN	1.0	NO	Plastic
	HDMI #1	Monitor #1	HDMI	1.5	YES	Plastic
	HDMI #2	Monitor #2	HDMI	1.5	YES	Plastic
	HDD	HDD	-	-	-	-
Switch Hub	LAN	Notebook	LAN	2.0	NO	Plastic
	DC IN	Switch Hub Adapter	DC OUT	1.5	NO	Plastic
Switch Hub Adapter	AC IN	AC Power Source	2 Pin AC Line	-	-	-
Monitor #2	DC IN	Monitor #2 Adapter	DC OUT	1.3	NO	Plastic
Monitor #2 Adapter	AC IN	AC Power Source	3 Pin AC Line	1.5	NO	Plastic
PoE Injector	PoE	Network Camera	PoE	2.0	NO	Plastic
	AC IN	AC Power Source	3 Pin AC Line	1.5	NO	Plastic
Notebook	-	-	-	-	-	-

2- Test Site Description

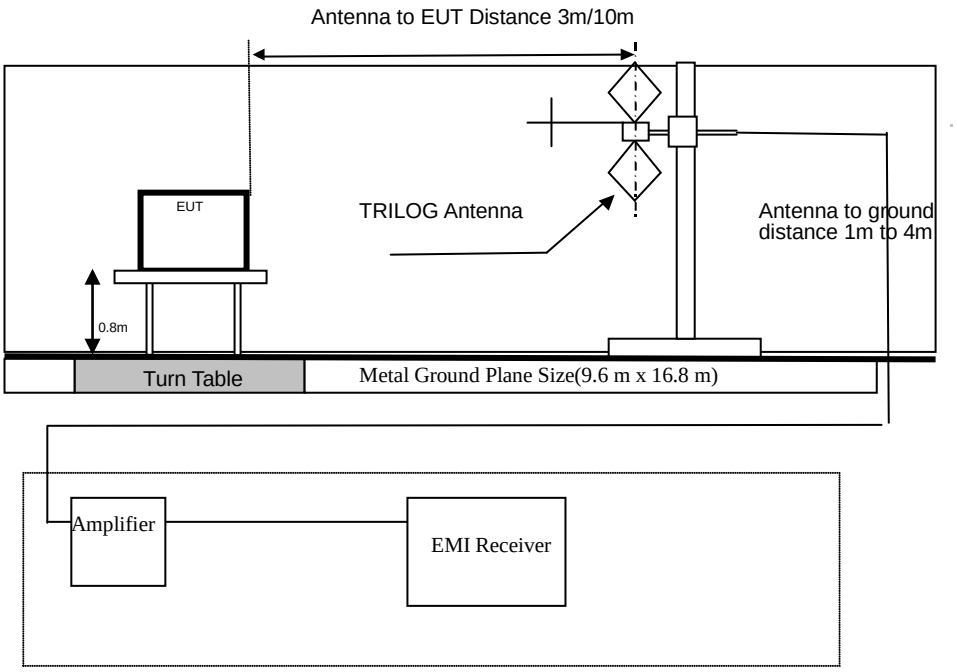
1-Facility

All the testing facilities are periodically serviced as a daily check for equipment and cables systems, an every 6 months facility check for the facilities and a monthly check and annual calibration for testing equipment according to ISO/IEC 17025. All the testing facilities are used as the same specifications shown below. There are descriptions both for radiated disturbance measurement and conducted disturbance measurement conformed by ANSI C 63.4-2014.
The NSA measurement of the 10 m chamber was performed on January 18, 2020 according to ANSI C 63.4:2014
The SVSWR measurement of the 10 m chamber was performed on January 18, 2020 according to ANSI C 63.4:2014

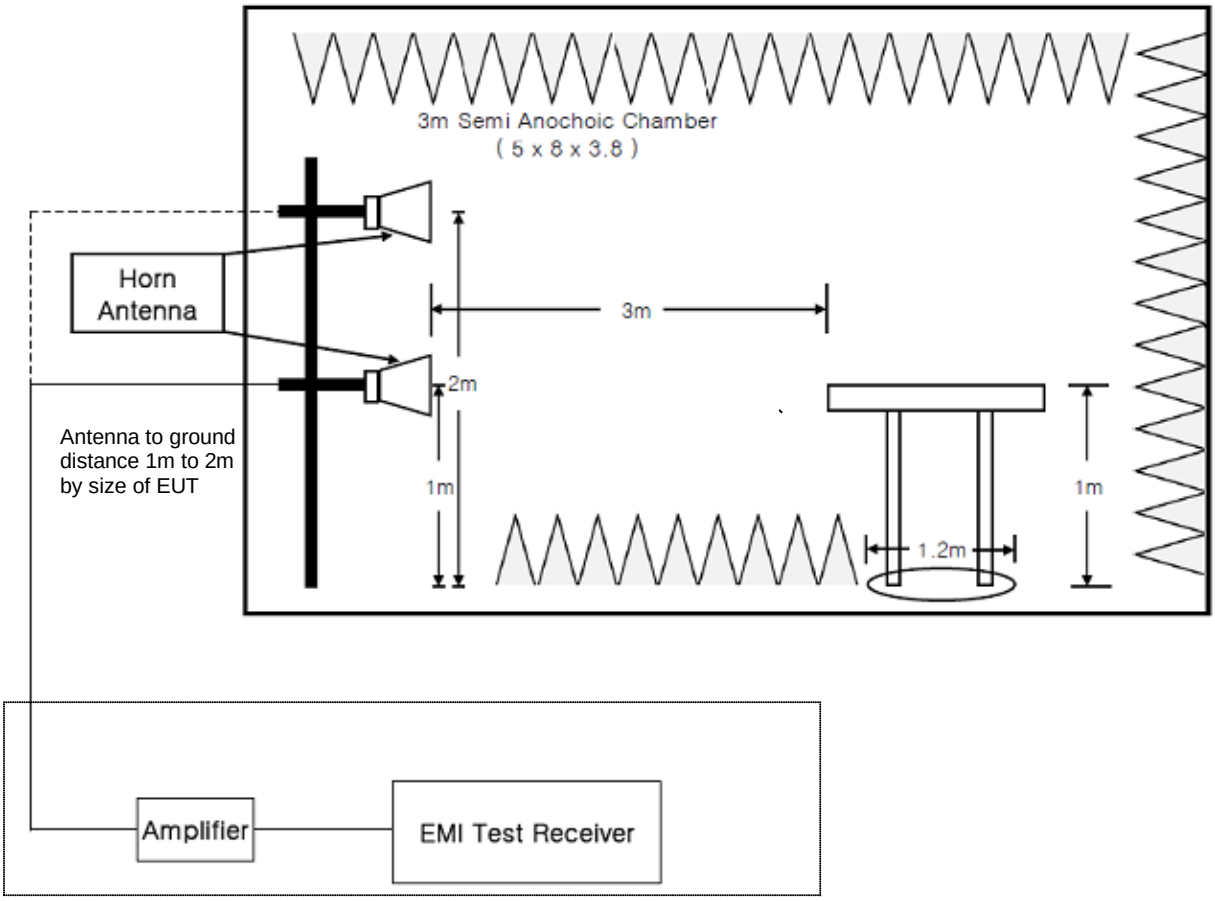
2-1 Conducted Emissions



2-2 Radiated Emissions – Below 1 GHz



2-3 Radiated Emissions – Above 1 GHz



3- Test Procedure

3-1 Conducted Emissions

- The measurement is carried out on an open site with horizontal and metallic ground plane.
- An AMN(Artificial Mains Network) with a nominal impedance (50 Ω / 50 μH) as defined in ANSI C 63.4-2014., shall be utilized.
- The AMN is grounded on a horizontal metal ground plane.
- Measurement is carried out using an EMI receiver with quasi-peak detectors and average detector. (Refer to the List of test equipment used for the test.)
- The shortest distance between the EUT and the AMN is 0.8 m.
- The EUT is placed on the non-conducting table with 0.8 m height.
- Refer to "Brief Information"(page 7-9) about details of the EUT and configuration of the cables.
- Measurement is carried out as manual operation.

–searching the maximum frequency point of the disturbance wave in each frequency range.

–reading the disturbance level of quasi-peak, average and Line (L) and Neutral (N) in 9 kHz bandwidth by the EMI receiver.

–calculating the measurement result with the following formula or equation.

(Result = Reading + Cor.F.(LISN Factor + Cable Loss + Pulse Limiter)

(ex) = 13.23 dBμV + (9.63 dB + 0.01 dB + 9.86 dB)

= 32.73 dBμV

3-2 Radiated Emissions – Below 1 GHz

- Test site is met the requirements of ANSI C 63.4-2014 and the distance between the EUT and the antenna is adjusted 3 m or 10 m.
- The turntable can be rotated 360 degrees.
- The antenna can be adjusted between 1 m and 4 m in height above the ground.
- The EUT is placed on the non-conducting table with 0.8 m height on the turntable.
- Measurements are carried out using an EMI receiver with quasi-peak detectors (120 kHz bandwidth).
- Refer to the list of test equipment used for the test.
- The TRILOG antenna are used as wideband antenna.
- The TRILOG antenna is used in the frequency range of 30 MHz to 1 000 MHz.
- A variable attenuator is used for verifying amplifier's linearity.
- Rotating the turntable and adjusting the height of the antenna are carried out by control buttons on the console.
- Refer to "Brief Information"(page 7-9) about details of the EUT and configuration of the cables.
- Measurement is carried out by a LTA operator as manual operation.

–searching the worst direction with the maximum level of the disturbance wave in rotating the turntable 360 degrees at each searched frequency point.

–setting the height of the antenna with the maximum level of the disturbance wave from 1 m to 4 m.

–reading the disturbance level by the EMI receiver with quasi-peak detectors (120 kHz bandwidth) according to ANSI C 63.4-2014.

–measuring to vertical and horizontal polarization.

–calculating the measurement result with the following formula or equation:

(Result = Reading + Cor.F (antenna factor + cable loss – PreAmp Gain)

(ex) = 50.6 dBμV/m + (11.08 dB(1/m) + 1.31 dB - 27.32 dB)

= 35.67 dBμV/m

3-3 Radiated Emissions – Above 1 GHz

・Test site is met the requirements of ANSI C 63.4-2014 and the distance between the EUT and the antenna is adjusted 3 m.

・The turntable can be rotated 360 degrees.

・The antenna can be adjusted between 1 m and 4 m in height above the ground.

・The EUT is placed on the non-conducting table with 1 m height on the turntable.

・Measurements are carried out using an EMI receiver with peak and average detectors(1 MHz bandwidth).

・Refer to the list of test equipment used for the test.

・The HORN antenna are used as wideband antenna.

・The HORN antenna is used in the frequency range of 1 GHz to 18 GHz.

・A variable attenuator is used for verifying amplifier's linearity.

・Rotating the turntable and adjusting the height of the antenna are carried out by control buttons on the console.

・Refer to "Brief Information"(page 7-9) about details of the EUT and configuration of the cables.

・Measurement is carried out by a LTA operator as manual operation.

–searching the worst direction with the maximum level of the disturbance wave in rotating the turntable 360 degrees at each searched frequency point.

–setting the height of the antenna with the maximum level of the disturbance wave from 1 m to 4 m

–reading the disturbance level by the EMI receiver with peak and average detectors (1 MHz bandwidth) according to ANSI C 63.4-2014.

–measuring to vertical and horizontal polarization.

–calculating the measurement result with the following formula or equation:

(Result = Reading + Cor.F (antenna factor + cable loss – PreAmp Gain)

(ex) = 35.9 dBμV/m + (23.92 dB(1/m) + 7.01 dB - 38.33 dB)

= 28.5 dBμV/m

4- List of Equipment Used For the Tests

Conducted Emissions

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESR	Rohde & Schwarz	101499	2021.07.02	1 year
☒	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	2021.03.16	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	100378	2020.09.05	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	101468	2020.09.05	1 year
☒	LISN(main)	ENV216	Rohde & Schwarz	101222	2020.09.06	1 year
☒	LISN(sub)	LT32C/10	AFJ	32031518210	2020.09.05	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	ESU	Rohde & Schwarz	100092	2020.09.05	1 year
☒	Amplifier (25 ㏈)	8447D	HP	2944A07684	2021.03.16	1 year
☐	BILOG Antenna	VULB 9168	SCHWARZBECK	775	2021.03.26 (KOLAS)	2 year
☒	BILOG Antenna	VULB 9168	SCHWARZBECK	775	2021.11.12 (RRA)	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	ESU	Rohde & Schwarz	100092	2020.09.05	1 year
☒	Amplifier	8449B	Agilent	3008A02126	2021.03.17	1 year
☒	Amplifier	PAM-840A	COM-POWER	461314	2021.03.16	1 year
☒	HORN ANTENNA	3116B	ETS	133350	2022.05.12	1 year
☐	HORN ANTENNA	3116B	ETS	81109	2022.05.12	1 year
☐	HORN ANTENNA	3115	ETS	114105	2021.09.17 (KOLAS)	2 year
☒	HORN ANTENNA	3115	ETS	114105	2021.11.11 (RRA)	2 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

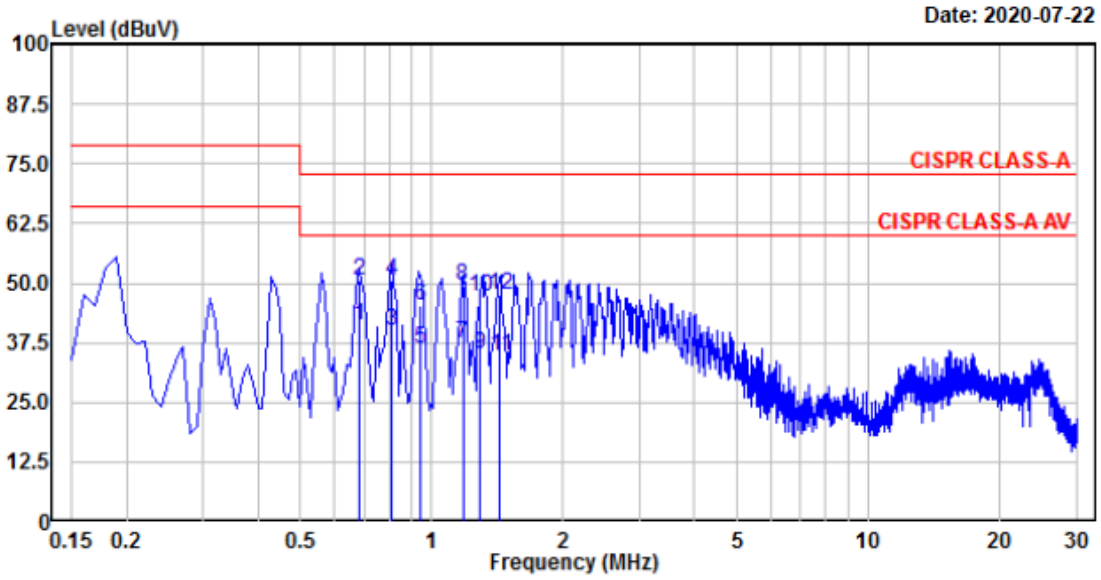
5- EMISSION

5-1 Conducted Emissions

(LINE) / AC #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.	: XRP-4310DB4	Phase	: Line(AC #1)
Test Mode	: REC mode	Test Power	: 120 V / 60 Hz
Temp./ Humi.	: 23 'C / 51 % R.H.	Test Engineer	: PARK J H



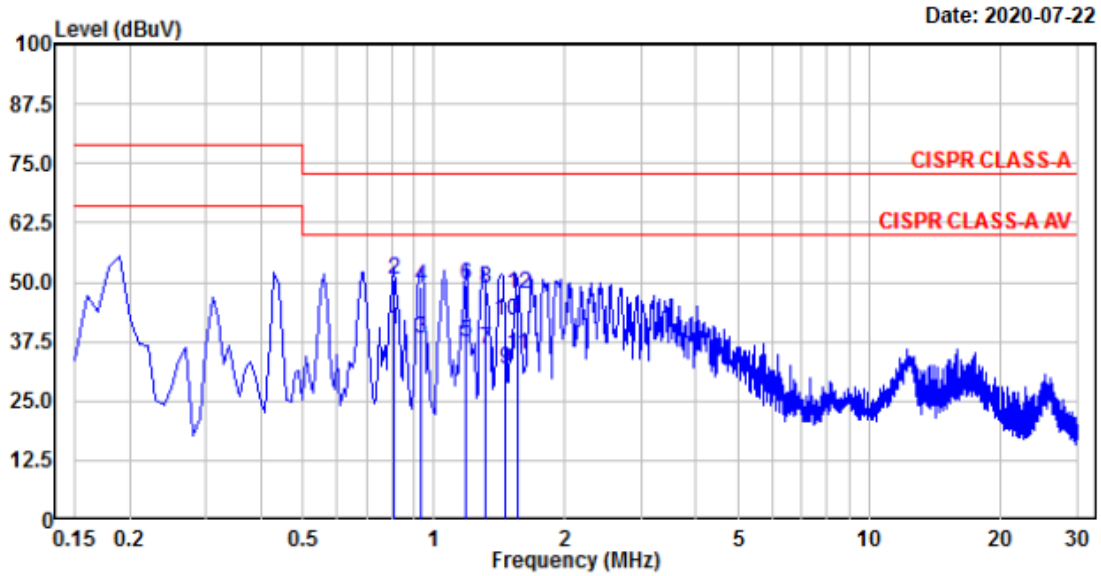
No.	Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Phase
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	
2.	0.684	30.93	21.60	19.51	50.44	41.11	73.00	60.00	22.56	18.89	Line
4.	0.807	31.08	20.34	19.52	50.60	39.86	73.00	60.00	22.40	20.14	Line
6.	0.943	25.78	16.64	19.54	45.32	36.18	73.00	60.00	27.68	23.82	Line
8.	1.178	29.91	17.66	19.55	49.46	37.21	73.00	60.00	23.54	22.79	Line
10.	1.294	27.73	15.42	19.55	47.28	34.97	73.00	60.00	25.72	25.03	Line
12.	1.437	27.96	14.97	19.56	47.52	34.53	73.00	60.00	25.48	25.47	Line

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

(NEUTRAL) / AC #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.	: XRP-4310DB4	Phase	: Neutral(AC #1)
Test Mode	: REC mode	Test Power	: 120 V / 60 Hz
Temp./ Humi.	: 23 'C / 51 % R.H.	Test Engineer	: PARK J H



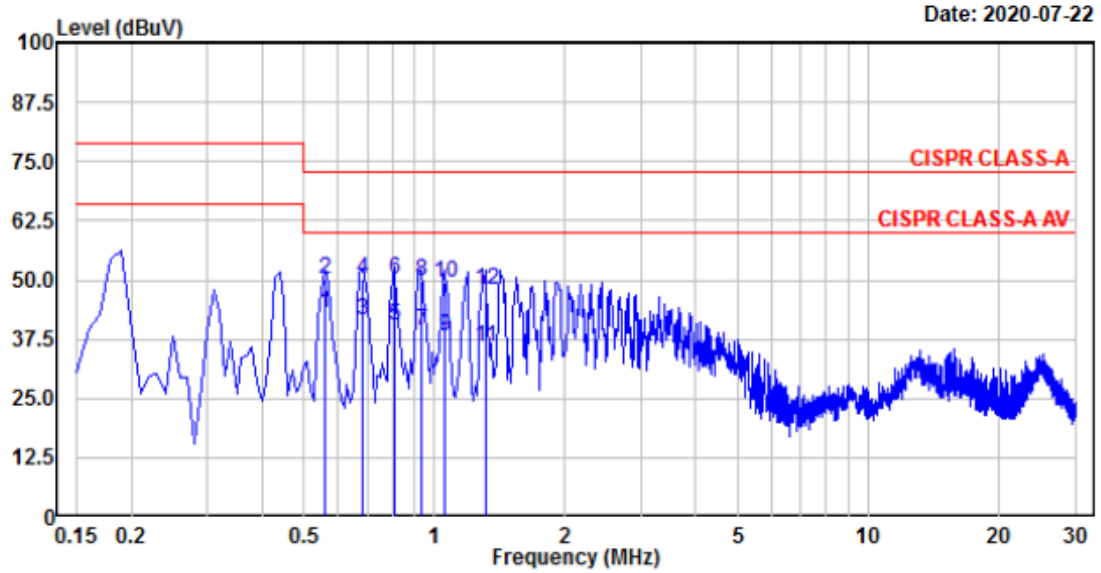
No.	Freq MHz	RD QP dBµV	RD AV dBµV	C.F dB	Result QP dBµV	Result AV dBµV	Limit QP dBµV	Limit AV dBµV	Margin QP dB	Margin AV dB	Phase
2.	0.808	31.14	20.38	19.56	50.70	39.94	73.00	60.00	22.30	20.06	neutral
4.	0.936	29.36	18.64	19.58	48.94	38.22	73.00	60.00	24.06	21.78	neutral
6.	1.183	29.81	17.65	19.60	49.41	37.25	73.00	60.00	23.59	22.75	neutral
8.	1.309	29.16	16.33	19.61	48.77	35.94	73.00	60.00	24.23	24.06	neutral
10.	1.454	22.44	12.07	19.60	42.04	31.67	73.00	60.00	30.96	28.33	neutral
12.	1.559	28.01	15.02	19.61	47.62	34.63	73.00	60.00	25.38	25.37	neutral

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

(LINE) / AC #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.	: XRP-4310DB4	Phase	: Line(AC #2)
Test Mode	: REC mode	Test Power	: 120 V / 60 Hz
Temp./ Humi.	: 23 'C / 51 % R.H.	Test Engineer	: PARK J H



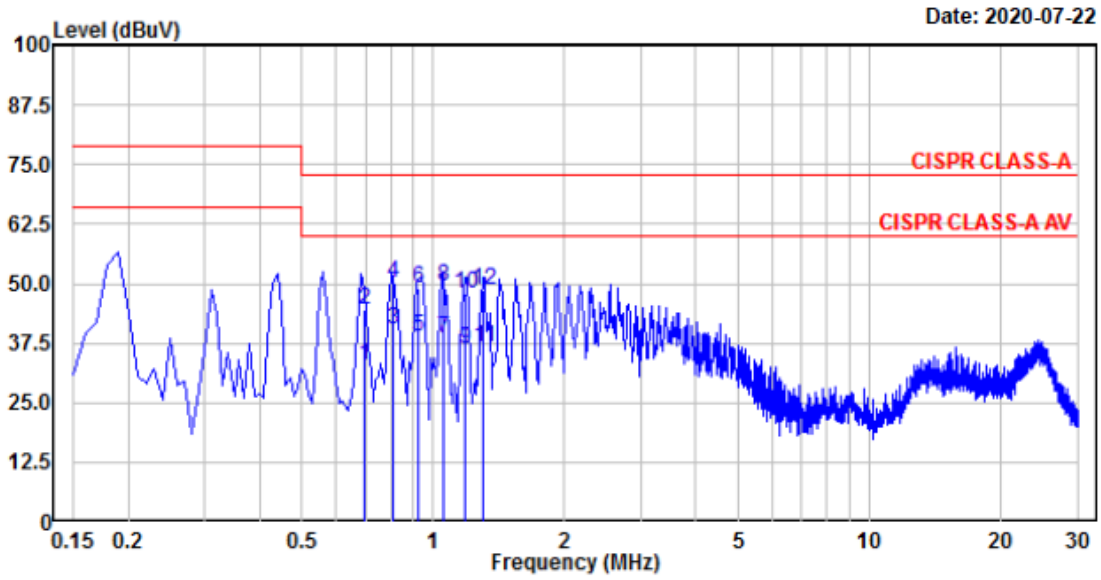
No.	Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Phase
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	
2.	0.559	30.67	23.43	19.51	50.18	42.94	73.00	60.00	22.82	17.06	Line
4.	0.684	30.66	21.86	19.51	50.17	41.37	73.00	60.00	22.83	18.63	Line
6.	0.810	30.48	20.71	19.52	50.00	40.23	73.00	60.00	23.00	19.77	Line
8.	0.931	30.21	19.55	19.54	49.75	39.09	73.00	60.00	23.25	20.91	Line
10.	1.057	29.96	18.76	19.54	49.50	38.30	73.00	60.00	23.50	21.70	Line
12.	1.310	28.37	16.40	19.56	47.93	35.96	73.00	60.00	25.07	24.04	Line

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

(NEUTRAL) / AC #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.	: XRP-4310DB4	Phase	: Neutral(AC #2)
Test Mode	: REC mode	Test Power	: 120 V / 60 Hz
Temp./ Humi.	: 23 'C / 51 % R.H.	Test Engineer	: PARK J H



No.	Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Phase
	MHz	dBµV	dBµV	dB	dBµV	dBµV	dBµV	dBµV	dB	dB	
2.	0.696	24.96	13.35	19.55	44.51	32.90	73.00	60.00	28.49	27.10	neutral
4.	0.809	30.61	20.78	19.56	50.17	40.34	73.00	60.00	22.83	19.66	neutral
6.	0.927	29.39	19.26	19.58	48.97	38.84	73.00	60.00	24.03	21.16	neutral
8.	1.058	29.98	18.95	19.58	49.56	38.53	73.00	60.00	23.44	21.47	neutral
10.	1.188	28.42	16.81	19.60	48.02	36.41	73.00	60.00	24.98	23.59	neutral
12.	1.307	29.02	17.08	19.61	48.63	36.69	73.00	60.00	24.37	23.31	neutral

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

5-2 Radiated Emissions

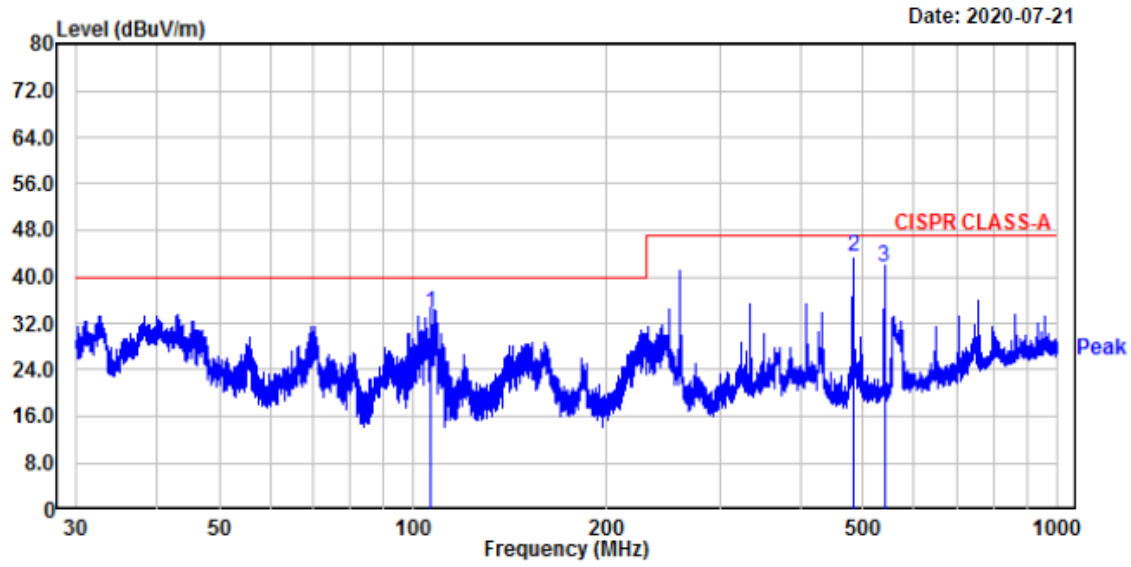
(Below 1GHz) / V

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.: XRP-4310DB4 Temp/Humi: 23 'C / 55 % R.H.

Test Mode : REC mode Tested by: PARK J H

Power : 120 V / 60 Hz



No.	Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	cm	deg	
1.	106.71	50.36	-16.51	33.85	40.00	6.15	107	301	vertical
2.	482.64	50.64	-7.17	43.47	47.00	3.53	112	257	vertical
3.	539.48	47.55	-5.96	41.59	47.00	5.41	103	334	vertical

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

(Below 1 GHz) / H

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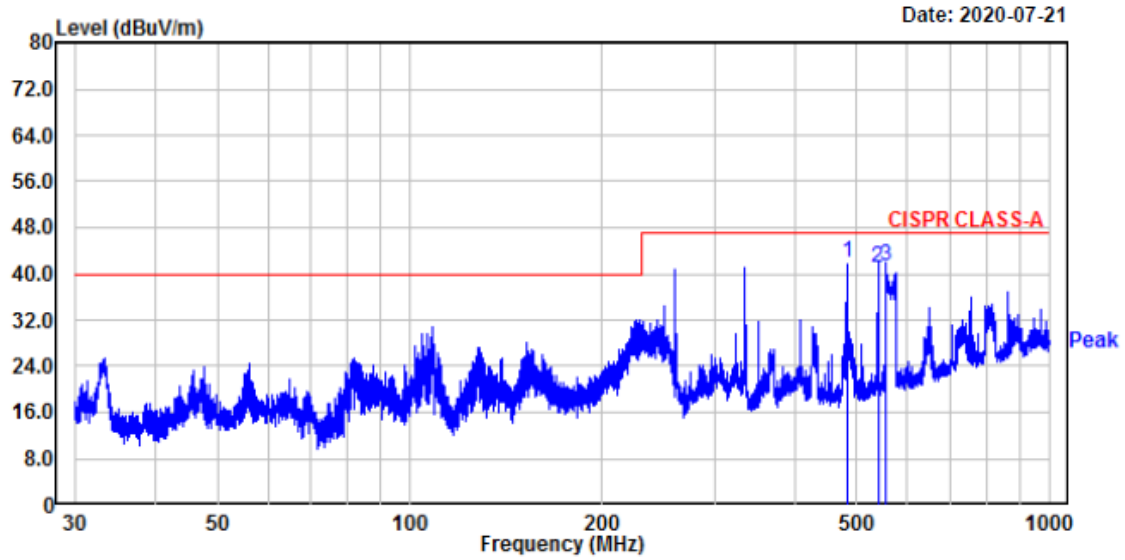
Test Mode : REC mode Tested by: PARK J H
Power : 120 V / 60 Hz

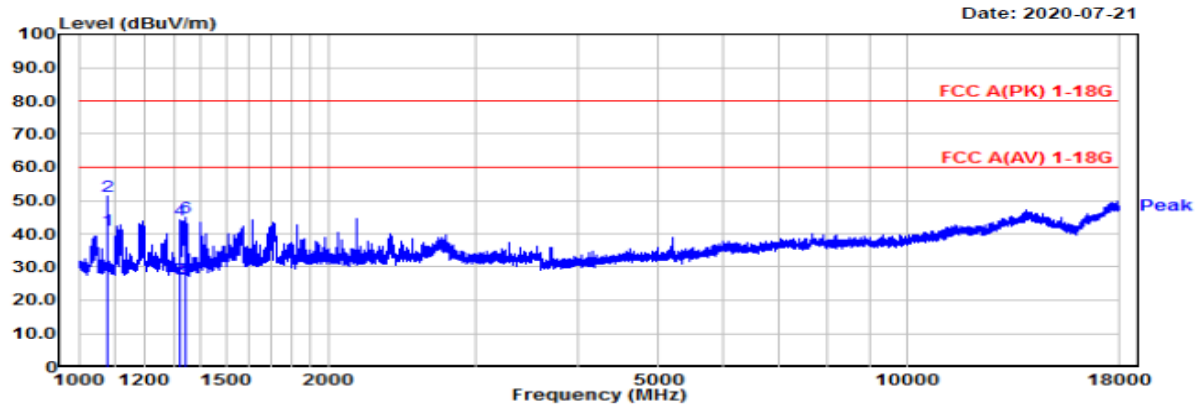


No.	Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	cm	deg	
1.	482.64	49.25	-7.17	42.08	47.00	4.92	385	261	horizontal
2.	539.48	46.96	-5.96	41.00	47.00	6.00	393	202	horizontal
3.	554.83	46.82	-5.59	41.23	47.00	5.77	347	129	horizontal

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

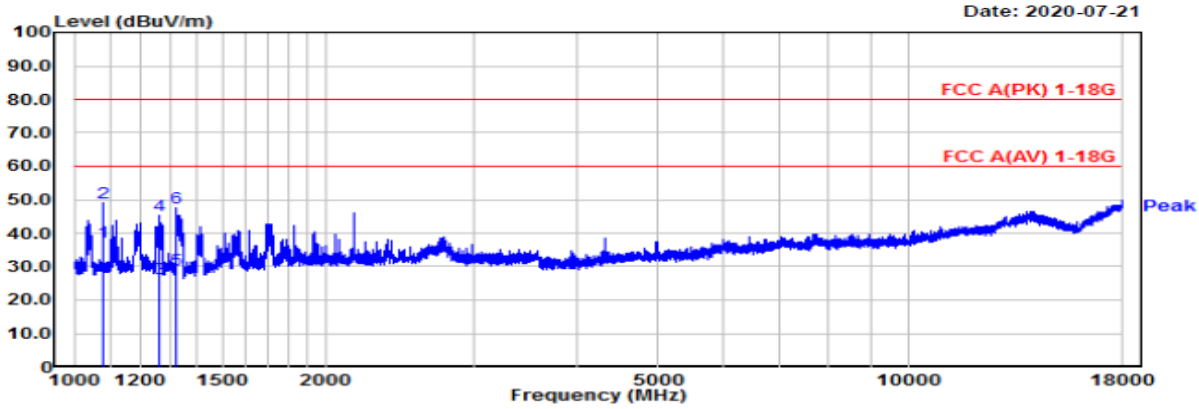
(Above 1 GHz) / V _ 1 GHz ~ 18 GHz

EUT/Model No.: XRP-4310DB4 Temp/Humi: 21 'C / 54 % R.H.
Test Mode : REC mode Tested by: PARK J H
Power : 120 V / 60 Hz



(Above 1 GHz) / H _ 1 GHz ~ 18 GHz

EUT/Model No.: XRP-4310DB4 Temp/Humi: 21 'C / 54 % R.H.
Test Mode : REC mode Tested by: PARK J H
Power : 120 V / 60 Hz



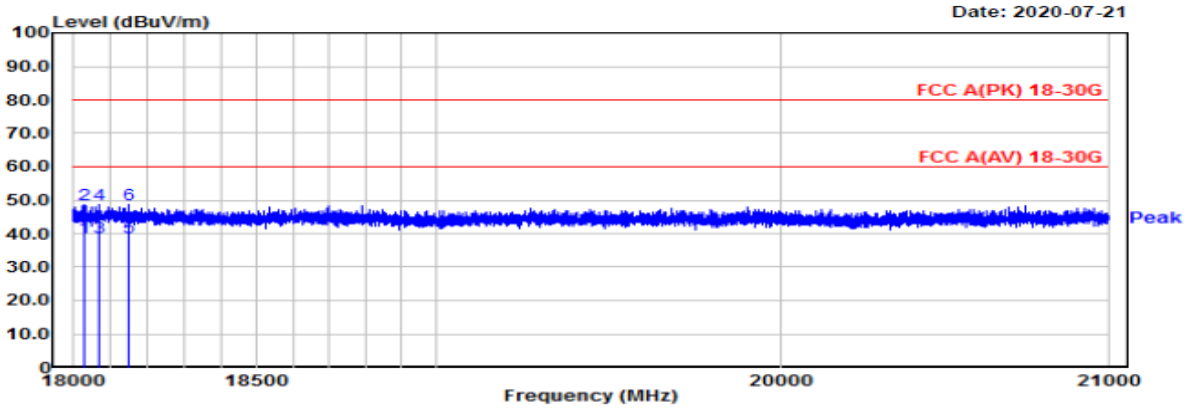
Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
Model : XRP-4310DB4
TEST mode : REC mode

Test Date	Temp.: [℃]	Humidity: [%]	Distance (m)
2020-07-21	21.00	54.00	3.85

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
1078.83	62.29	50.68	-11.15	51.14	39.53	80.00	60.00	28.86	20.47	344	52	H
1261.06	57.98	39.04	-10.49	47.49	28.55	80.00	60.00	32.51	31.45	256	6	H
1324.09	59.97	41.58	-10.25	49.72	31.33	80.00	60.00	30.28	28.67	121	65	H
1078.44	64.48	54.31	-11.15	53.33	43.16	80.00	60.00	26.67	16.84	284	107	V
1323.61	56.41	39.02	-10.25	46.16	28.77	80.00	60.00	33.84	31.23	341	61	V
1342.88	57.25	38.87	-10.17	47.08	28.70	80.00	60.00	32.92	31.30	125	61	V

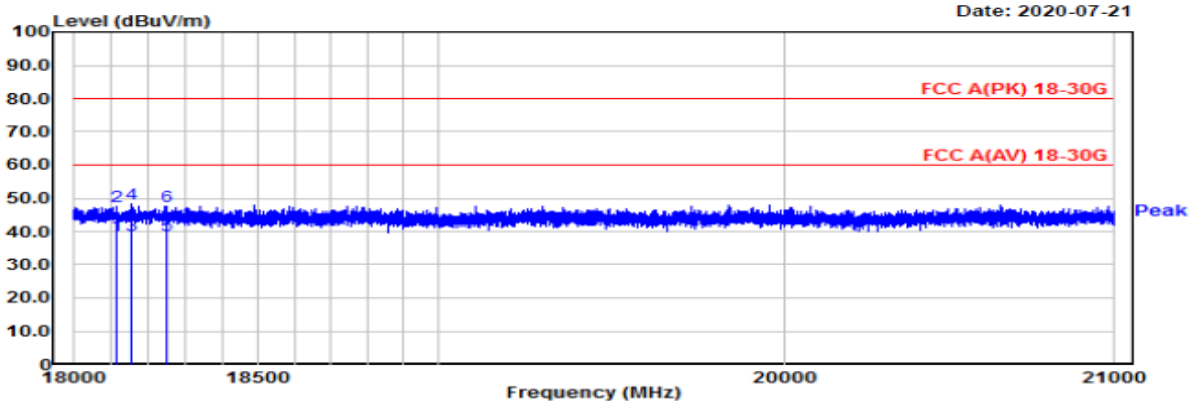
(Above 1 GHz) / V _ 18 GHz ~ 21 GHz

EUT/Model No.: XRP-4310DB4 Temp/Humi: 21 'C / 54 % R.H.
Test Mode : REC mode Tested by: PARK J H
Power : 120 V / 60 Hz



(Above 1 GHz) / H _ 18 GHz ~ 21 GHz

EUT/Model No.: XRP-4310DB4 Temp/Humi: 21 'C / 54 % R.H.
Test Mode : REC mode Tested by: PARK J H
Power : 120 V / 60 Hz



Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
Model : XRP-4310DB4
TEST mode : REC mode

Test Date	Temp.: [℃]	Humidity: [%]	Distance (m)
2020-07-21	21.00	54.00	3.85

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
18112.50	34.14	25.21	15.69	49.83	40.90	80.00	60.00	30.17	19.10	126	0	H
18154.88	34.69	25.25	15.66	50.35	40.91	80.00	60.00	29.65	19.09	214	269	H
18247.13	34.03	25.28	15.60	49.63	40.88	80.00	60.00	30.37	19.12	156	167	H
18028.50	34.95	25.30	15.75	50.70	41.05	80.00	60.00	29.30	18.95	259	15	V
18068.63	35.29	25.31	15.72	51.01	41.03	80.00	60.00	28.99	18.97	294	0	V
15150.00	35.11	25.30	15.66	50.77	40.96	80.00	60.00	29.23	19.04	0	294	V

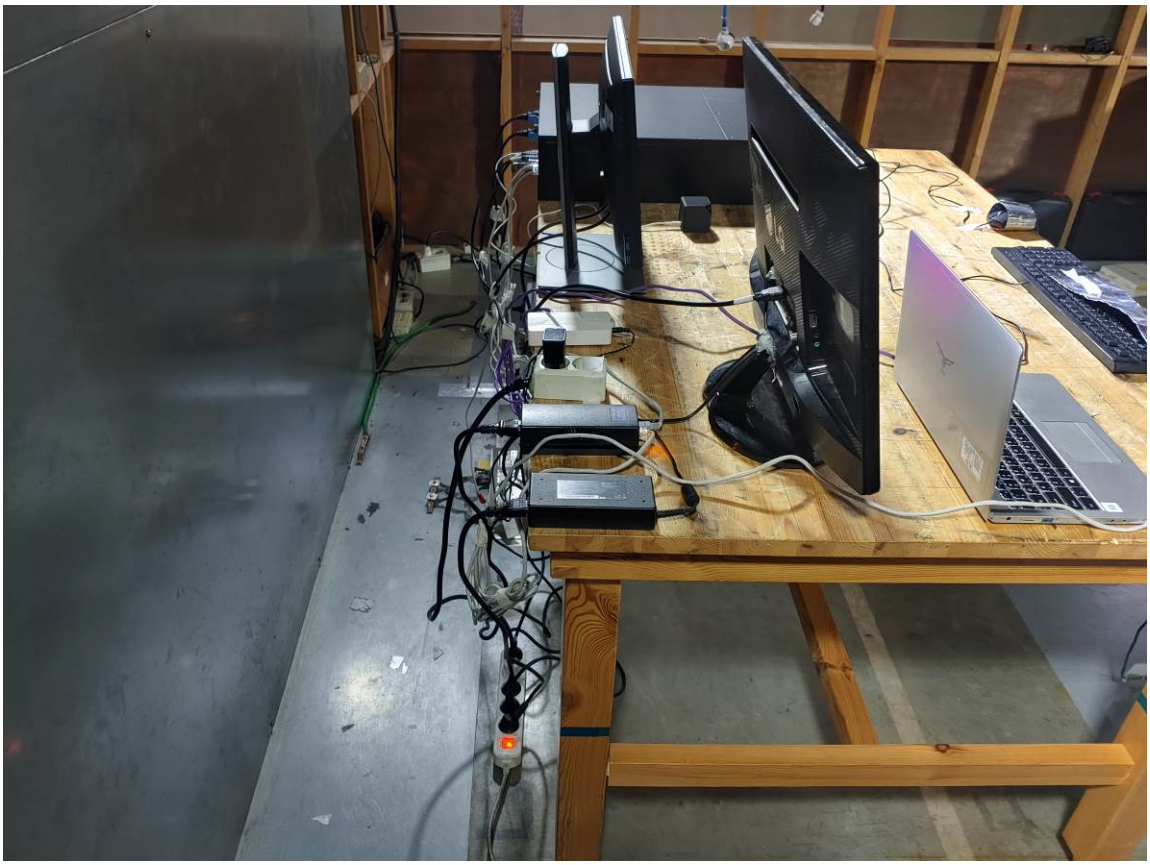
Conclusions

Product models **"XRP-4310DB4"** meets all of the Class A requirements of the FCC Part 15, Subpart B. Limits of radio disturbance characteristics of ITE).
(Refer to Test Specification and Test Results in the "LTA certification", page 4 and 5)

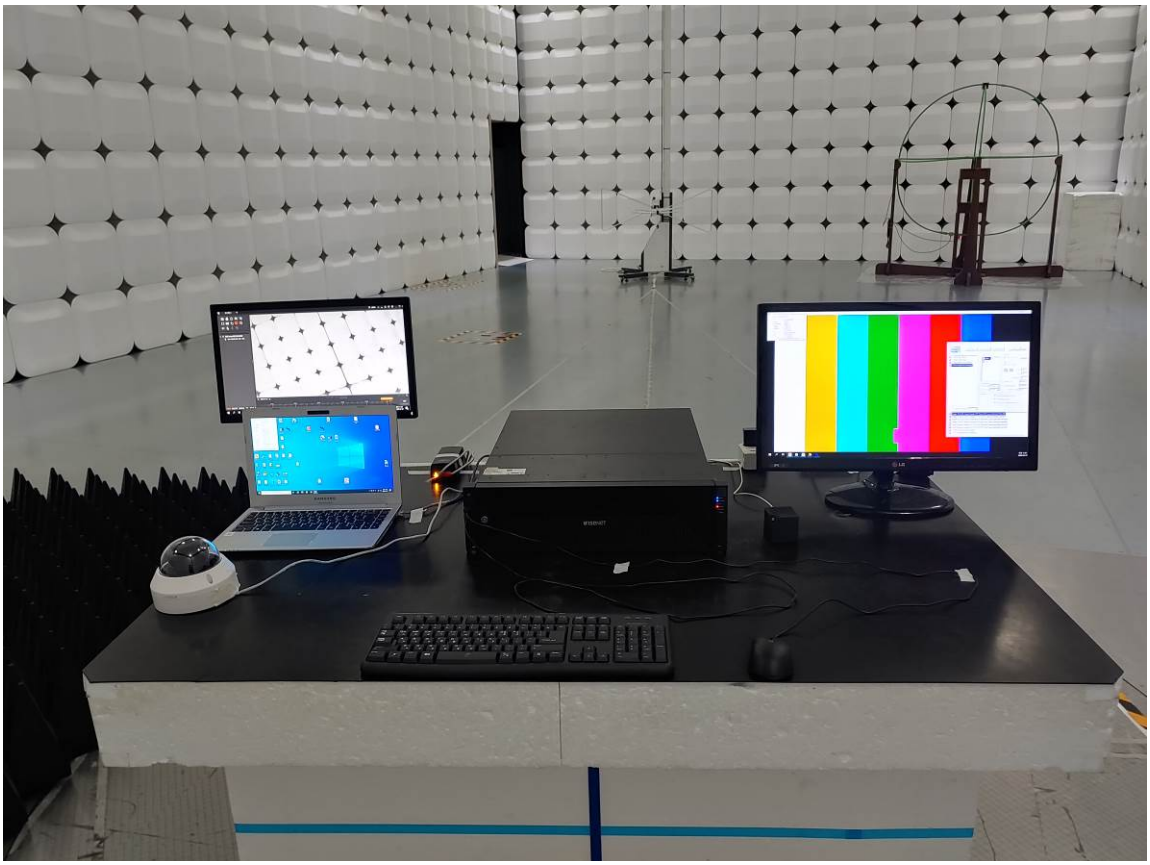
- The highest internal source of an EUT is higher than 108 MHz, the measurement shall be made up to 21 GHz.
(The highest internal source of an EUT : 4 GHz)

Photograph of the measurements

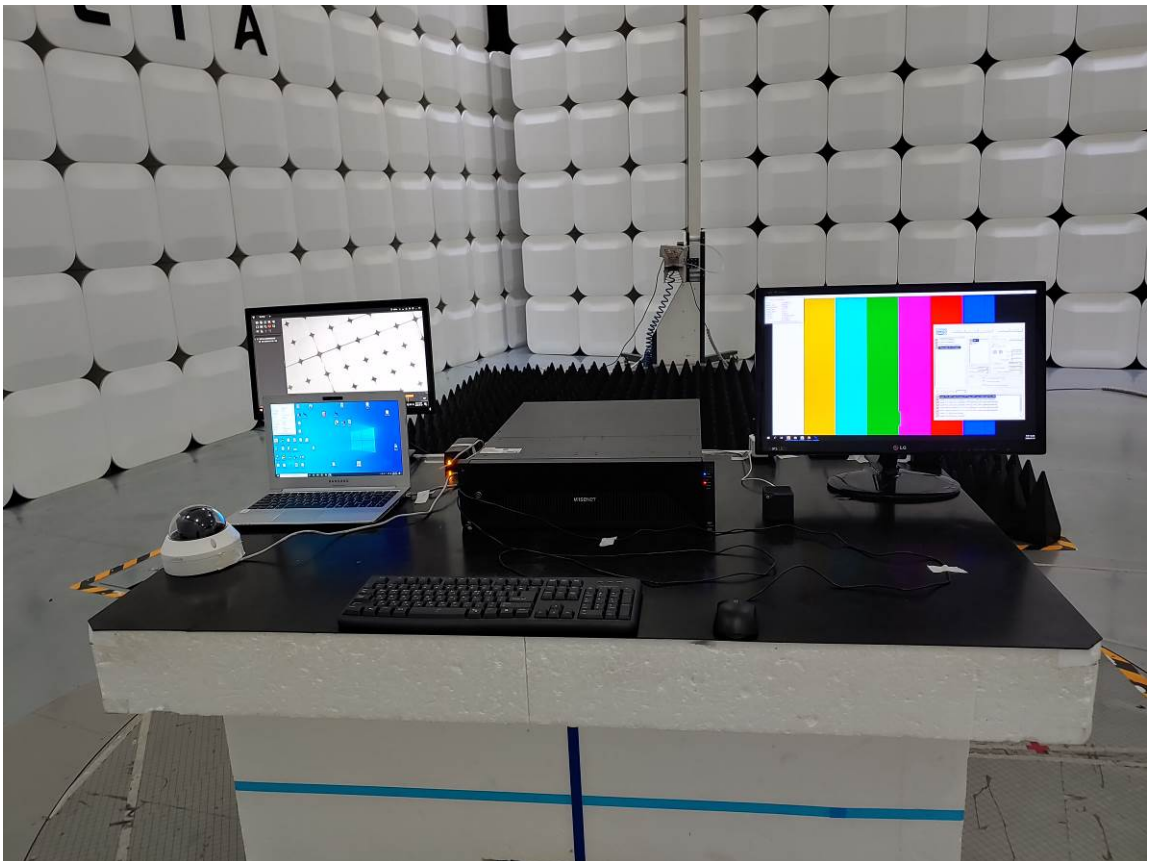
Conducted Emissions

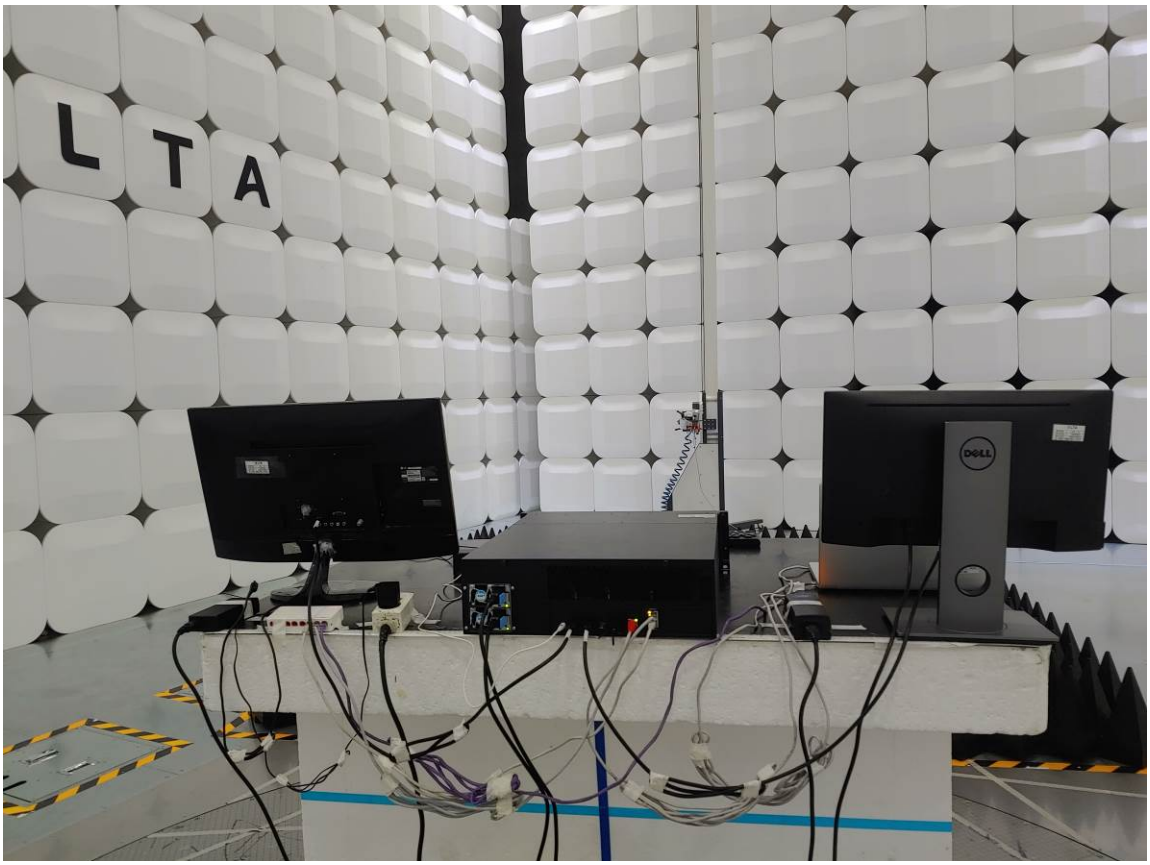


Radiated Emissions (Below 1 GHz)

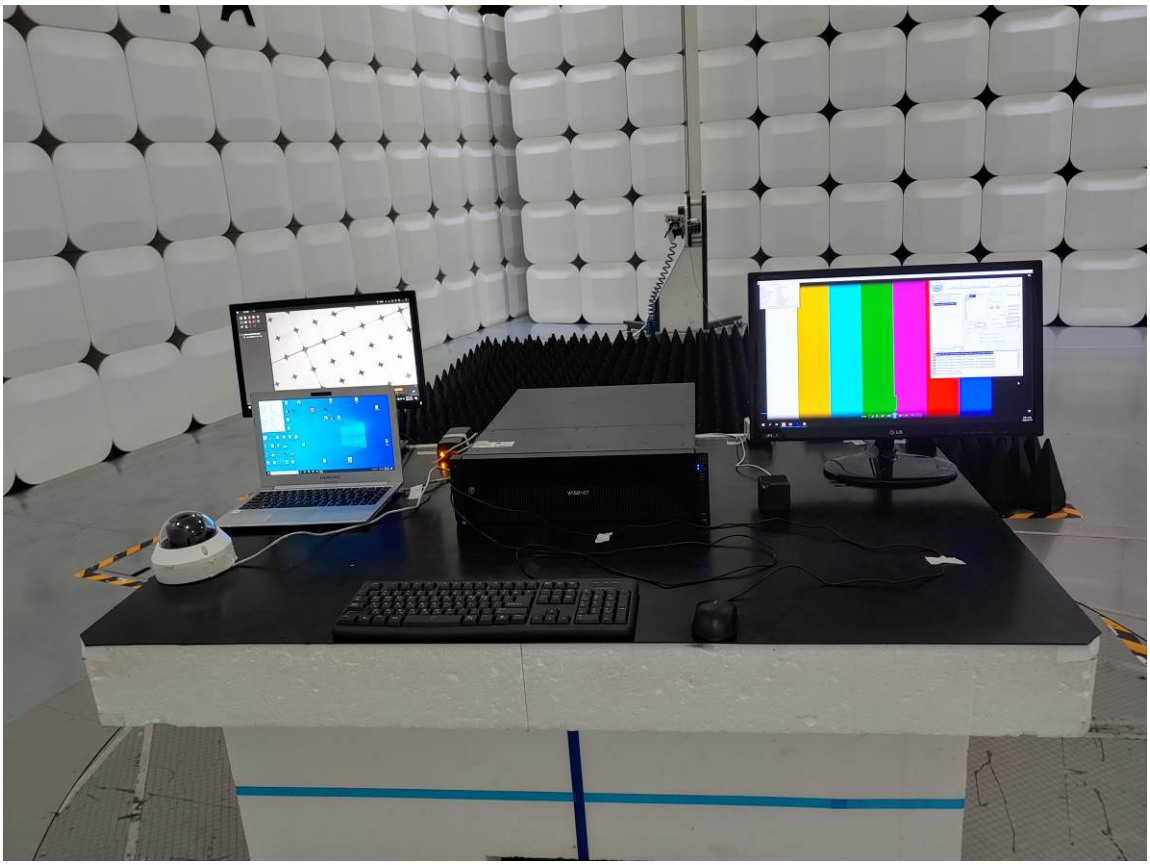


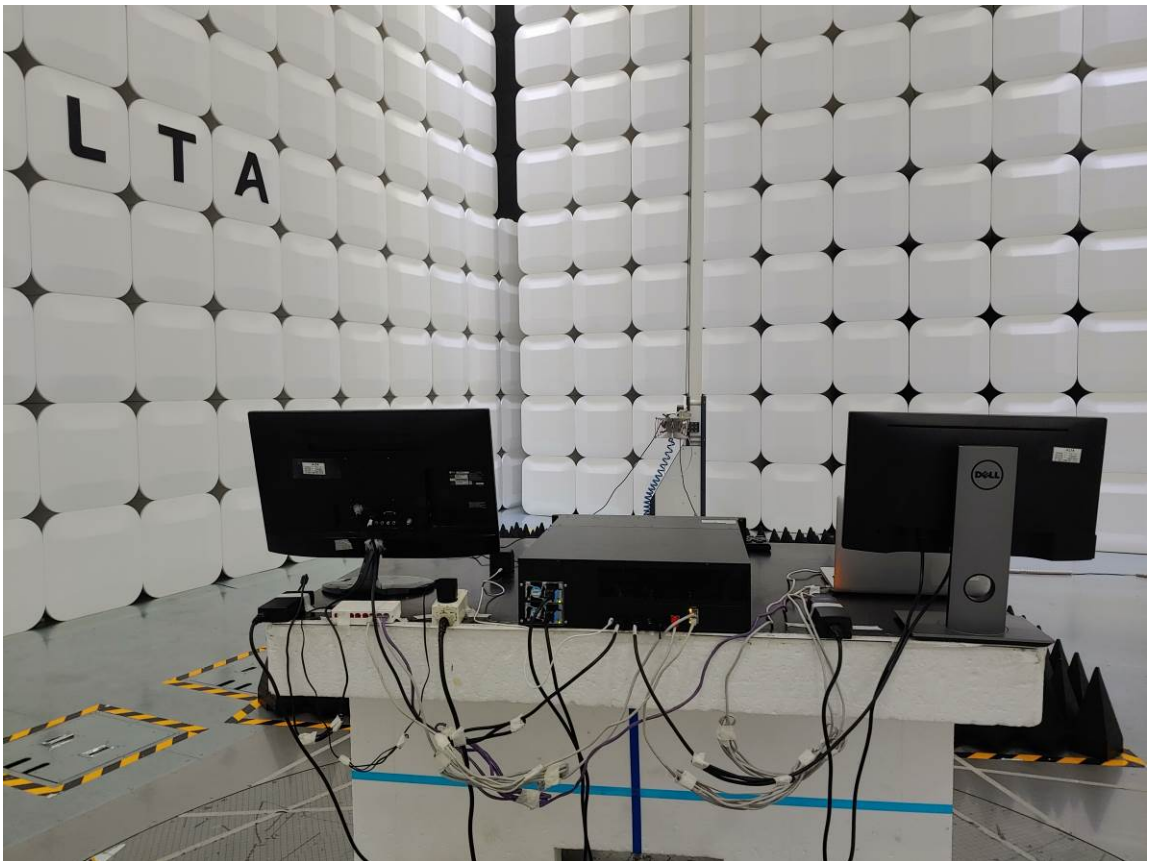
Radiated Emissions (Above 1 GHz) (1 GHz ~ 18 GHz)





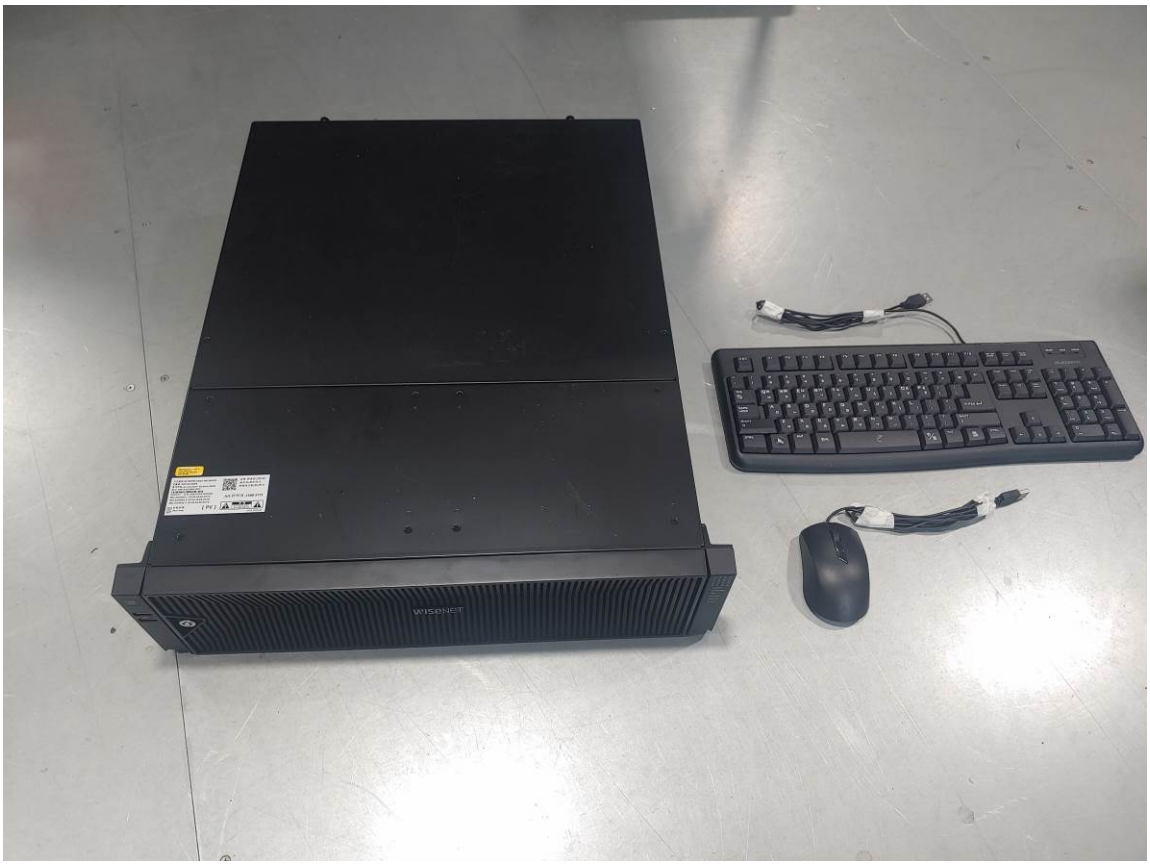
Radiated Emissions (Above 1 GHz) (18 GHz ~ 21 GHz)





Photograph of the EUT

EUT



EUT