

TEST REPORT

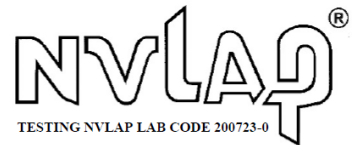
This laboratory is accredited by National Radio Research Agency Laboratory and National Voluntary Laboratory Accreditation Program.

The tests reported herein have been performed in accordance with its terms of accreditation.

Test Report No. : LR500112205B
Issue Date : May 12, 2022
Applied Standard : FCC Part 15, Subpart B & ICES-003 (Issue.7)
Trade Name : Hanwha Techwin Co., Ltd
Equipment Name : Network Video Encoder
Model Name : SPE-1630
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.

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	12.05.2022	LR500112205B	Initial

>>TABLE OF CONTENTS<<

LTA Certification	4
General information's	6
1- Brief Information.....	7
2- Test Site Description.....	10
3- Test Procedure	12
4- List of Equipment Used For the Tests	15
5- EMISSION	16
5-1 Conducted Emissions	16
5-2 Radiated Emissions (FCC)	18
Conclusions	23
Photograph of the measurements	24
Photograph of the EUT	28

LTA Certification

Applicant

Company name : Hanwha Techwin Co., Ltd
Address : 6, Pangyo-ro 319beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do
Telephone / Facsimile : +82-10-2667-4196 / +82-70-7147-8361

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 : Network Video Encoder
Model name : SPE-1630
Serial number : Identification
Intended environment : Residential area
Date of receipt : April 26, 2022
EUT condition : Pre-production, not damaged
Test Mode : Network Video Encoder mode
Interface ports : DC IN, GND, BNC #1 ~ #16, HDMI, LAN, AUDIO IN #1 ~ #2, AUDIO OUT, RS485, ALARM IN #1 ~ #16, ALARM OUT #1 ~ #8
Power rating : AC 120 V, 60 Hz
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 : May 02 – 10, 2022
Location : LTA Co., Ltd.

Test Specification

Purpose of the test : Compliance test to the following standard
Applied standard : FCC Part 15, Subpart B & ICES-003 (Issue.7)
Classification : Class A
Deviations from Standard Test Method : N/A

Test Results

Measurement	Results*	Test method
Conducted Emissions	Complies	ANSI C 63.4 ICES-003 (Issue.7)
Radiated Emissions	Complies	ANSI C 63.4 ICES-003 (Issue.7)

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

Modification performed by the lab.;

- N/A

Laboratory's Certificate

Report number : LR500112205B
Issue date : May 12, 2022

This test report is issued under the authority of:

The test was supervised by:



Young Kyu Shin, Technical Manager



Joo Hyung Cho, 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 “SPE-1630”. The measurements were performed according to the measurement procedure described in ICES-003 and ANSI C 63.4. 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 ICES-003 and FCC Part 15.

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 : ± 4.74 [dB] (k=2) V : ± 4.83 [dB] (k=2)
(1 GHz to 6 GHz) : H : ± 5.93 [dB] (k=2) V : ± 5.96 [dB] (k=2)
(6 GHz to 18 GHz) : H : ± 6.01 [dB] (k=2) V : ± 5.97 [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	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.

1- Brief Information

1-1 Test Summary

Parameter	Applied Standard	Status (note 1)
I. Emission		
Conducted Emissions	FCC Part 15.107 / ICES-003 Clause 3.2.1	C
Radiated Emissions	FCC Part 15.109 / ICES-003 Clause 3.2.2	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.

Network Video Encoder mode

1-3 Modification

- Insert Gasket Tape at Internal.

1-4 List of EUT and ACCESSORY

EUT				
Equipment Name	Model Name	Serial No.	Manufacturer	Remarks
Network Video Encoder	SPE-1630	N/A	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. D-TECH CO.,LTD.	-
Adapter	FSP060-DHAN3	N/A	Zhonghan Electronics (Shenzhen) Co., Ltd.	-
ACCESSORY				
Equipment Name	Model Name	Serial No.	Manufacturer	Remarks
Headset	SHS-150V/W	N/A	SAMSUNG	-
Mobile phone	SHW-M250K	N/A	SAMSUNG	-
ALARM JIG	N/A	N/A	N/A	-
Notebook	MS-16GB	N/A	MSI	-
Notebook Adapter	A10-090P3A	N/A	Chicony	-
Monitor	24MT58DF	N/A	LG	-
Monitor Adapter	ADS-40FSG-19	N/A	LG	-
Network Video Encoder #2	SPE-410	N/A	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. D-TECH CO.,LTD.	3 EA
Network Video Encoder #2 Adapter	2ACB022F	N/A	Channel Well Technology (Guangzhou) Co., Ltd.	3 EA
ANALOG CAMERA	HCD-7010RA	N/A	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. D-TECH CO.,LTD.	-
ANALOG CAMERA Adapter	DAD12050DKA	N/A	Dream Electronic Co.,Ltd	-
RS485 to USB Convertor	LCC-COMS-485usb	N/A	LIGHT COM	-

1-5 Cable List

Cable List						
From		To		Length (m)	Shielding	
Type	I/O Port	Type	I/O Port		Cable	backshell
EUT	DC IN	Adapter	DC OUT	1.3	NO	Plastic
	GND	GND	GND	1.5	NO	Plastic
	BNC #1 ~ #8	Network Video Encoder #2 1	BNC #1 ~ #8	3.0	YES	Metal
	BNC #9 ~ #16	Network Video Encoder #2 2	BNC #9 ~ #16	3.0	YES	Metal
	HDMI	Monitor	HDMI	1.5	YES	Plastic
	LAN	Notebook	LAN	3.0	NO	Plastic

From		To		Length (m)	Shielding	
Type	I/O Port	Type	I/O Port		Cable	backshell
EUT	AUDIO IN #1	Notebook	AUDIO OUT	3.0	NO	Plastic
	AUDIO IN #2	Mobile phone	AUDIO OUT	3.0	NO	Plastic
	AUDIO OUT	Headset	AUDIO IN	1.7	NO	Plastic
	RS485	RS485 to USB Convertor	RS485	3.0	NO	Plastic
	ALARM IN #1 ~ #16	ALARM JIG	ALARM OUT #1 ~ #16	3.0	NO	Plastic
	ALARM OUT #1 ~ #8	ALARM JIG	ALARM IN #1 ~ #8	3.0	NO	Plastic
Adapter	AC IN	AC Power Source	3 Pin AC Line	1.5	NO	Plastic
Monitor	DC IN	Monitor Adapter	DC OUT	1.3	NO	Plastic
Monitor Adapter	AC IN	AC Power Source	2 Pin AC Line	-	NO	Plastic
Notebook	DC IN	Notebook Adapter	DC OUT	1.4	NO	Plastic
	USB	RS485 to USB Convertor	USB	1.0	NO	Plastic
Notebook Adapter	AC IN	AC Power Source	3 Pin AC Line	1.5	NO	Plastic
Network Video Encoder #2 1	DC IN	Network Video Encoder #2 1 Adapter	DC OUT	1.2	NO	Plastic
	BNC #9	Network Video Encoder #2 3	BNC #1	1.5	YES	Metal
Network Video Encoder #2 1 Adapter	AC IN	AC Power Source	2 Pin AC Line	1.5	NO	Plastic
Network Video Encoder #2 2	DC IN	Network Video Encoder #2 2 Adapter	DC OUT	1.2	NO	Plastic
	BNC #9	Network Video Encoder #2 3	BNC #2	1.5	YES	Metal
Network Video Encoder #2 2 Adapter	AC IN	AC Power Source	2 Pin AC Line	1.5	NO	Plastic
Network Video Encoder #2 3	DC IN	Network Video Encoder #2 3 Adapter	DC OUT	1.2	NO	Plastic
	BNC #3	ANALOG CAMERA	BNC	1.5	YES	Metal
Network Video Encoder #2 3	DC IN	Network Video Encoder #2 3 Adapter	DC OUT	1.2	NO	Plastic
	BNC #3	ANALOG CAMERA	BNC	1.5	YES	Metal
Network Video Encoder #2 3 Adapter	AC IN	AC Power Source	2 Pin AC Line	1.5	NO	Plastic
ANALOG CAMERA	DC IN	ANALOG CAMERA Adapter	DC OUT	1.4	NO	Plastic
ANALOG CAMERA Adapter	AC IN	AC Power Source	2 Pin AC Line	1.5	NO	Plastic

2- Test Site Description

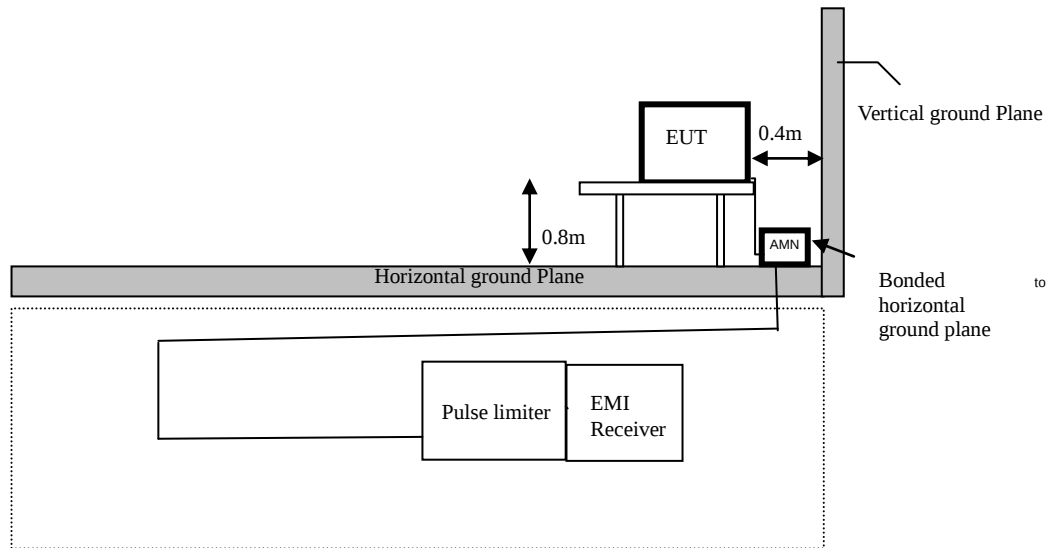
1-Facility

All the testing facilities are periodically serviced as a daily check for equipment and cables systems, an every 1 year facility check for the facilities 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.

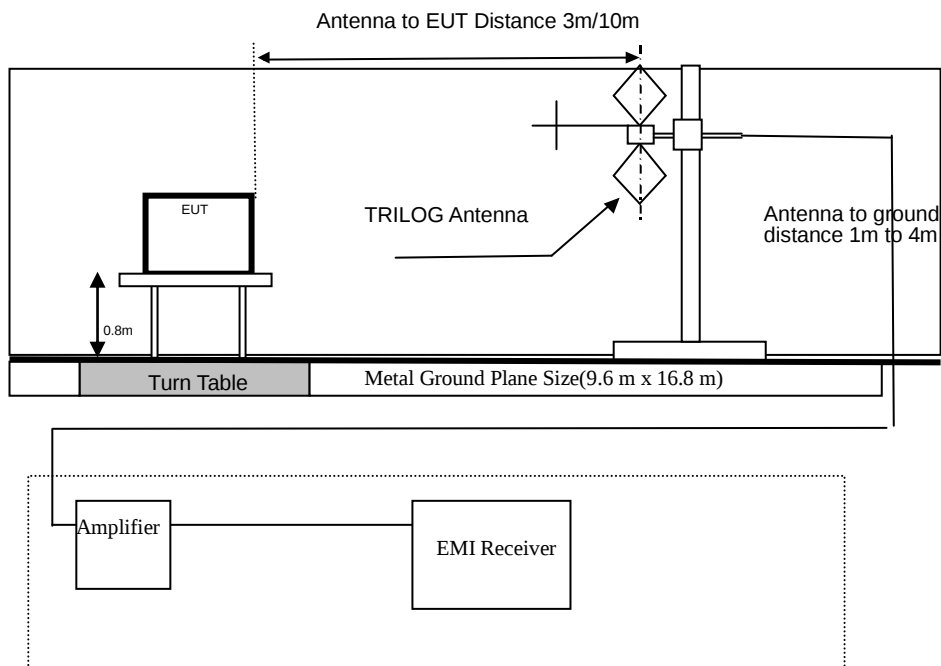
The NSA measurement of the 10 m chamber was performed on January 15, 2022 according to ANSI C 63.4.

The SVSWR measurement of the 10 m chamber was performed on October 15, 2021 according to ANSI C 63.4.

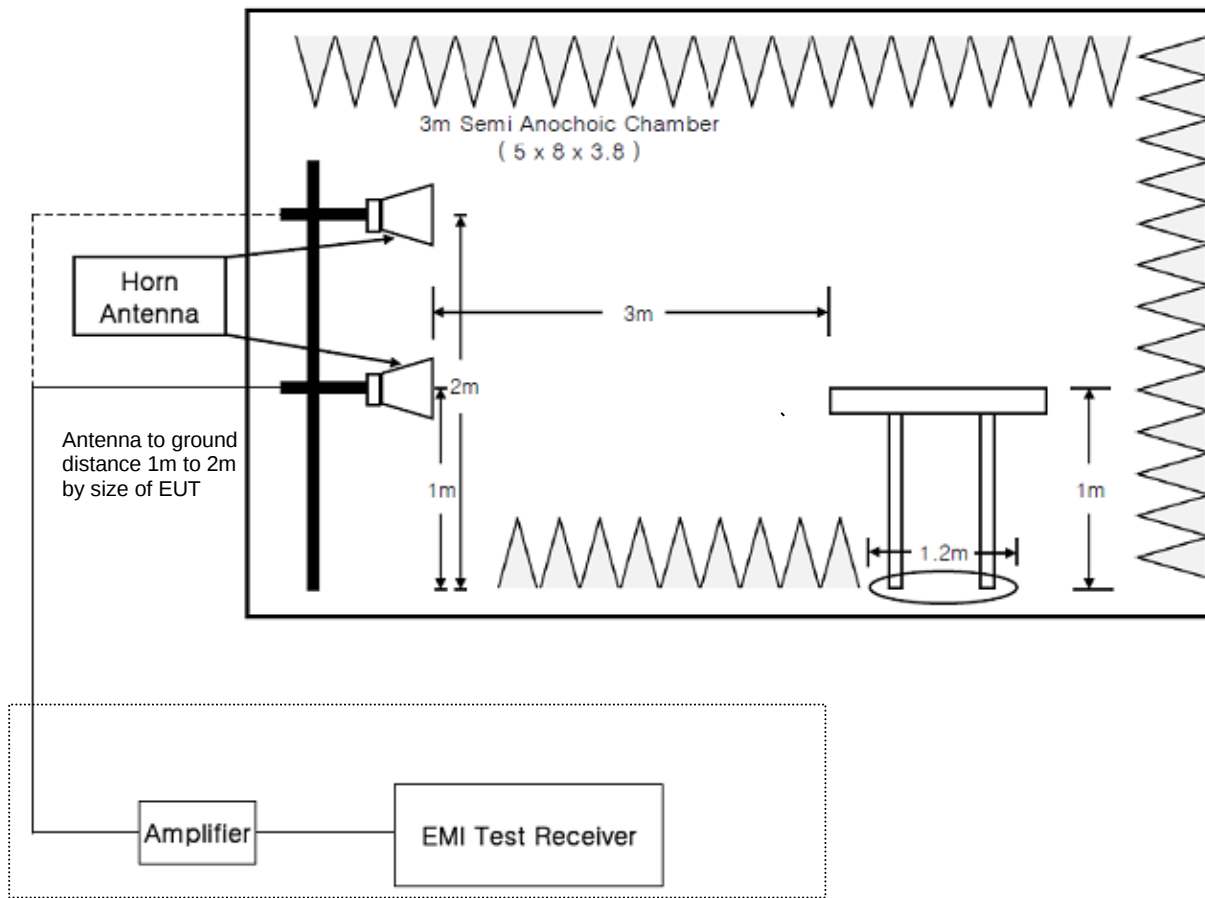
2-1 Conducted Emissions



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 ($50\ \Omega$ / $50\ \mu\text{H}$) as defined in ANSI C 63.4, 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) = $13.23\ \text{dB}\mu\text{V} + (9.63\ \text{dB} + 0.01\ \text{dB} + 9.86\ \text{dB})$
 = $32.73\ \text{dB}\mu\text{V}$

3-2 Radiated Emissions – Below 1 GHz

- Test site is met the requirements of ANSI C 63.4 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.
- 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 dB μ V/m + (11.08 dB(1/m) + 1.31 dB - 27.32 dB)
- = 35.67 dB μ V/m

3-3 Radiated Emissions – Above 1 GHz

- Test site is met the requirements of ANSI C 63.4 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.

–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)

$$\begin{aligned} \text{(ex)} \quad &= 35.9 \text{ dB}\mu\text{V/m} + (23.92 \text{ dB(1/m)} + 7.01 \text{ dB} - 38.33 \text{ dB}) \\ &= 28.5 \text{ dB}\mu\text{V/m} \end{aligned}$$

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	2023.03.14	1 year
☒	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	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	1 year
☐	HORN ANTENNA	3116B	ETS	81109	2024.04.25	1 year
☒	HORN ANTENNA	3115	ETS	114105	2023.05.12	2 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

5- EMISSION

5-1 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. : SPE-1630

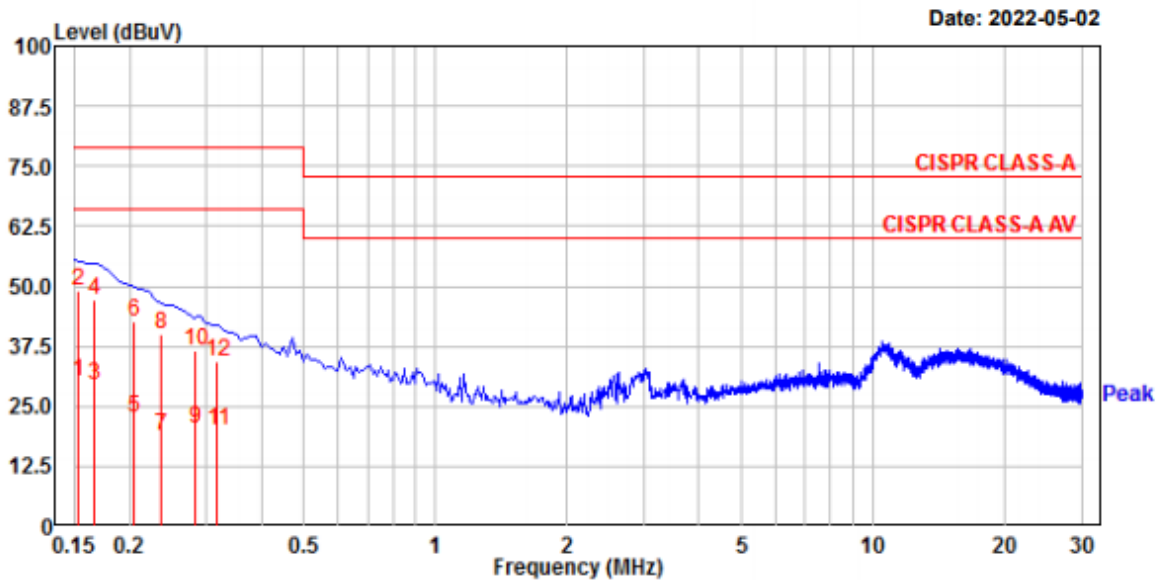
Phase : Line

Test Mode : Network Video Encoder mode

Test Power : 120 V / 60 Hz

Temp./ Humi. : 21 'C / 39 % R.H

Test Engineer : CHO J 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.	0.152	29.65	10.69	19.47	49.12	30.16	79.00	66.00	29.88	35.84	Line
4.	0.167	27.88	9.87	19.47	47.35	29.34	79.00	66.00	31.65	36.66	Line
6.	0.204	23.35	3.24	19.47	42.82	22.71	79.00	66.00	36.18	43.29	Line
8.	0.236	20.47	-0.52	19.47	39.94	18.95	79.00	66.00	39.06	47.05	Line
10.	0.283	17.20	0.88	19.48	36.68	20.36	79.00	66.00	42.32	45.64	Line
12.	0.317	15.00	0.43	19.48	34.48	19.91	79.00	66.00	44.52	46.09	Line

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

(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. : SPE-1630

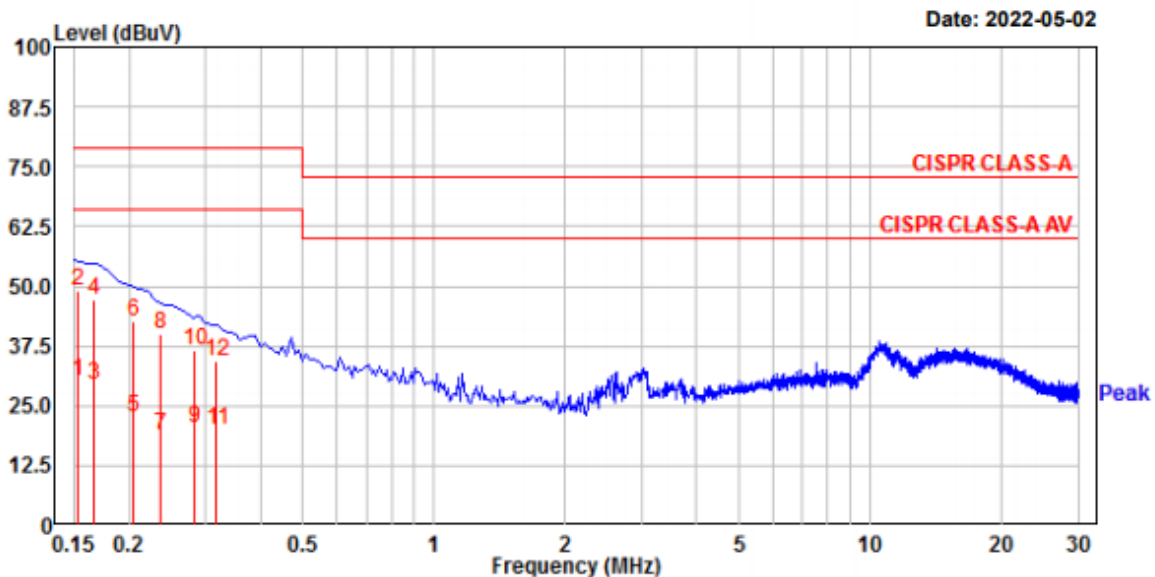
Phase : Line

Test Mode : Network Video Encoder mode

Test Power : 120 V / 60 Hz

Temp./ Humi. : 21 'C / 39 % R.H

Test Engineer : CHO J 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.	0.152	29.65	10.69	19.47	49.12	30.16	79.00	66.00	29.88	35.84	Line
4.	0.167	27.88	9.87	19.47	47.35	29.34	79.00	66.00	31.65	36.66	Line
6.	0.204	23.35	3.24	19.47	42.82	22.71	79.00	66.00	36.18	43.29	Line
8.	0.236	20.47	-0.52	19.47	39.94	18.95	79.00	66.00	39.06	47.05	Line
10.	0.283	17.20	0.88	19.48	36.68	20.36	79.00	66.00	42.32	45.64	Line
12.	0.317	15.00	0.43	19.48	34.48	19.91	79.00	66.00	44.52	46.09	Line

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

5-2 Radiated Emissions (FCC)

(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

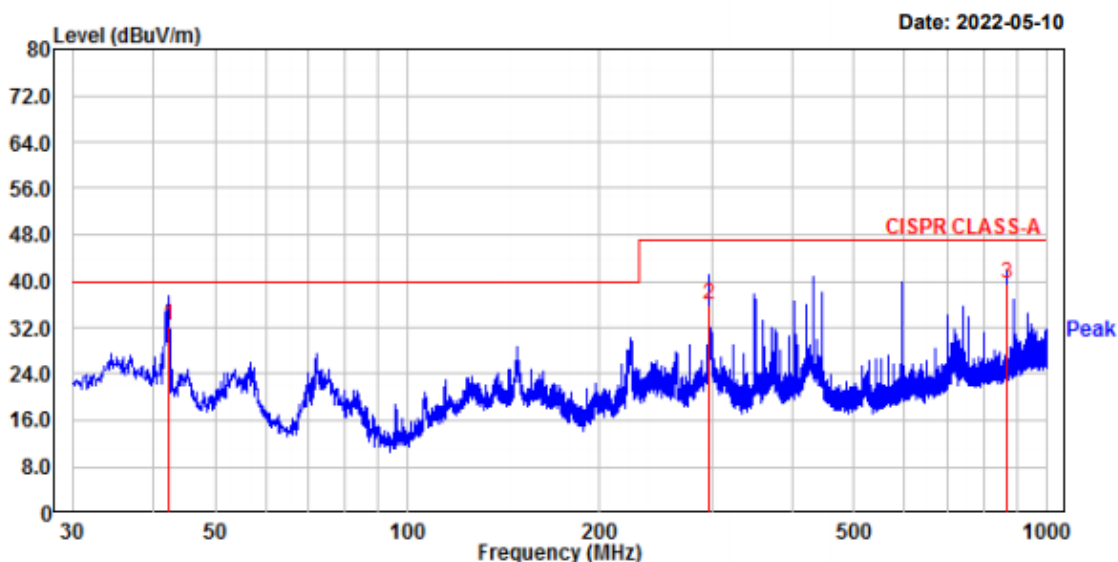
EUT/Model No.: SPE-1630

Temp/Humi: 20 'C / 43 % R.H.

Test Mode : Network Video Encoder mode

Tested by: CHO J H

Power : 120 V / 60 Hz



No.	Freq MHz	Reading dBμV	C.F dB	Result QP dBμV/m	Limit dBμV/m	Margin dB	Height cm	Angle deg	Polarity
1.	42.25	43.96	-11.66	32.30	40.00	7.70	262	136	vertical
2.	296.99	45.21	-9.16	36.05	47.00	10.95	121	14	vertical
3.	864.08	35.46	4.14	39.60	47.00	7.40	311	74	vertical

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

(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

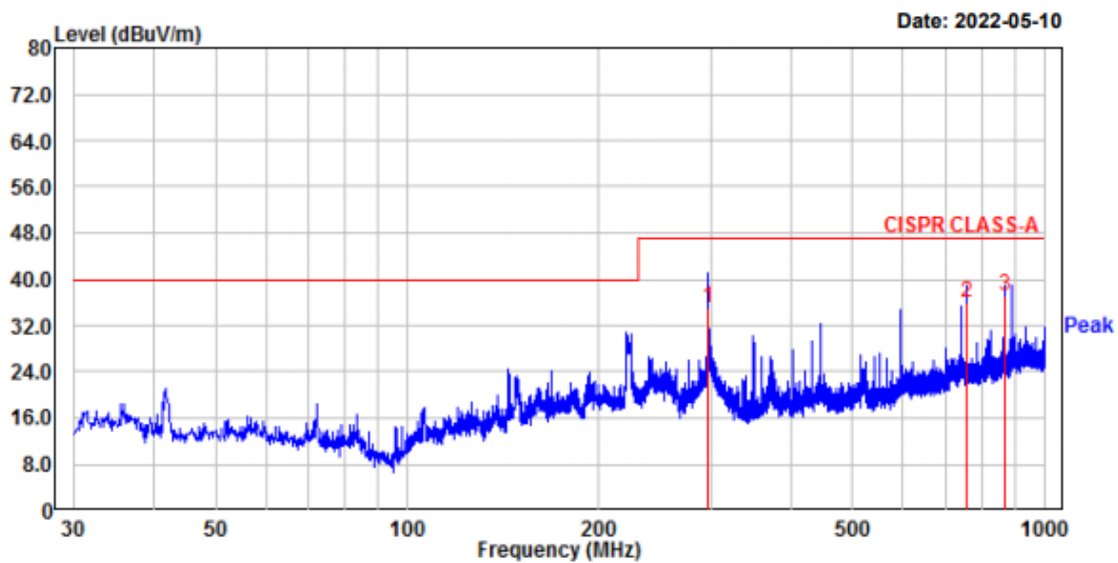
EUT/Model No.: SPE-1630

Temp/Humi: 20 'C / 43 % R.H.

Test Mode : Network Video Encoder mode

Tested by: CHO J H

Power : 120 V / 60 Hz



No.	Freq MHz	Reading dBuV	C.F dB	Result QP dBuV/m	Limit dBuV/m	Margin dB	Height cm	Angle deg	Polarity
1.	296.99	44.16	-9.16	35.00	47.00	12.00	387	160	horizontal
2.	756.05	33.15	2.82	35.97	47.00	11.03	121	165	horizontal
3.	864.08	32.92	4.14	37.06	47.00	9.94	139	341	horizontal

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

Radiated Emissions (IC)

(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

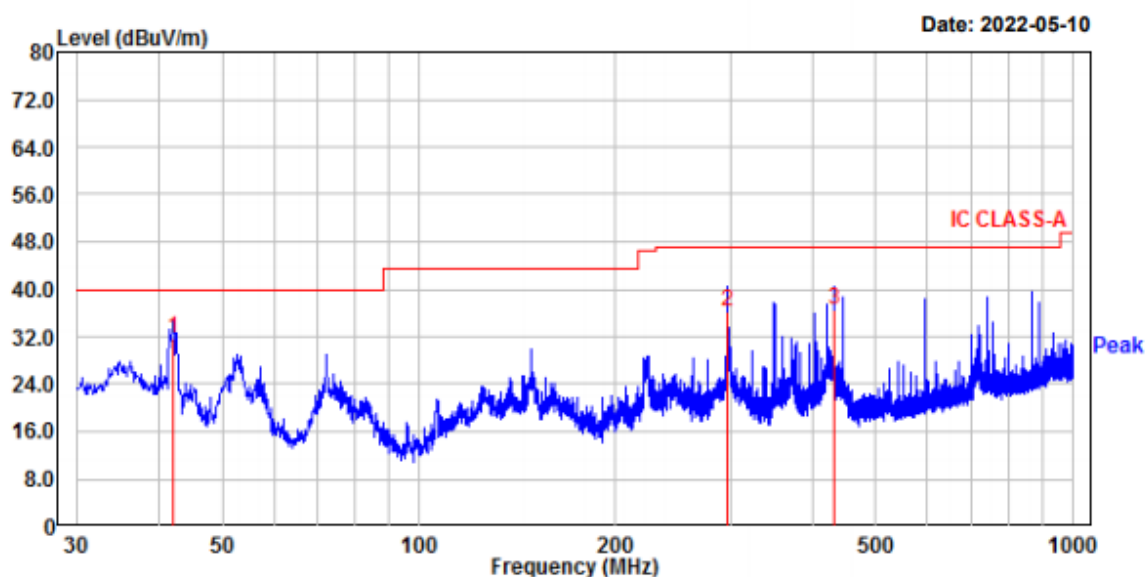
EUT/Model No.: SPE-1630

Temp/Humi: 20 'C / 43 % R.H.

Test Mode : Network Video Encoder mode

Tested by: CHO J H

Power : 120 V / 60 Hz



No.	Freq MHz	Reading dBμV	C.F dB	Result QP dBμV/m	Limit dBμV/m	Margin dB	Height cm	Angle deg	Polarity
1.	42.13	43.41	-11.66	31.75	40.00	8.25	314	26	vertical
2.	296.99	45.51	-9.16	36.35	47.00	10.65	131	48	vertical
3.	431.94	40.95	-4.44	36.51	47.00	10.49	117	164	vertical

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

(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

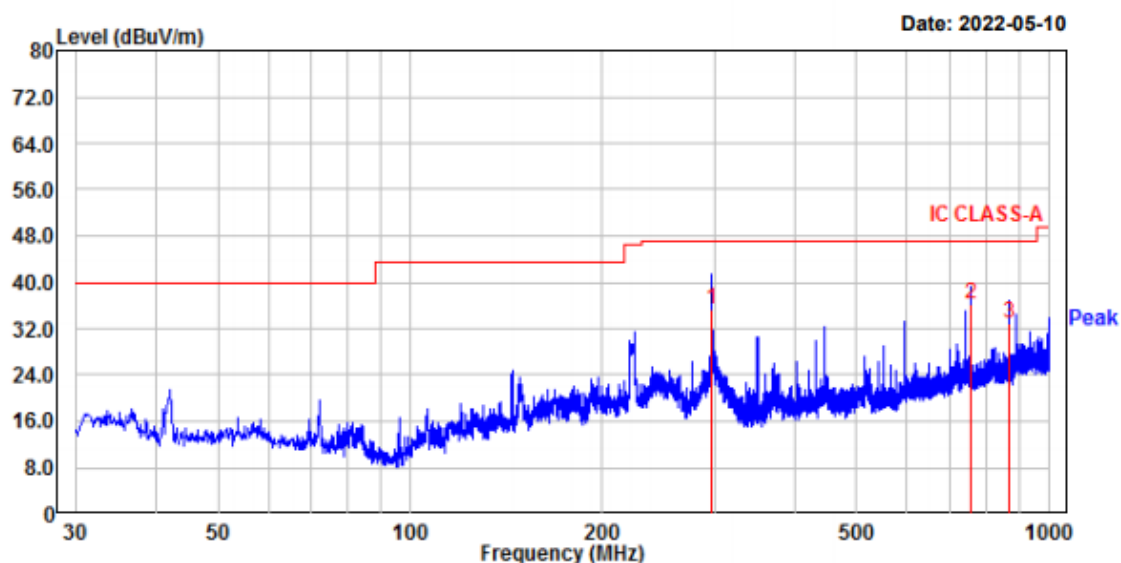
EUT/Model No. : SPE-1630

Temp/Humi: 20 'C / 43 % R.H.

Test Mode : Network Video Encoder mode

Tested by: CHO J H

Power : 120 V / 60 Hz



No.	Freq MHz	Reading dBμV	C.F dB	Result QP dBμV/m	Limit dBμV/m	Margin dB	Height cm	Angle deg	Polarity
1.	296.99	44.54	-9.16	35.38	47.00	11.62	394	160	horizontal
2.	756.05	33.55	2.82	36.37	47.00	10.63	121	211	horizontal
3.	864.08	28.81	4.14	32.95	47.00	14.05	132	174	horizontal

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

Radiated Emissions (FCC / IC)

(Above 1 GHz) / V

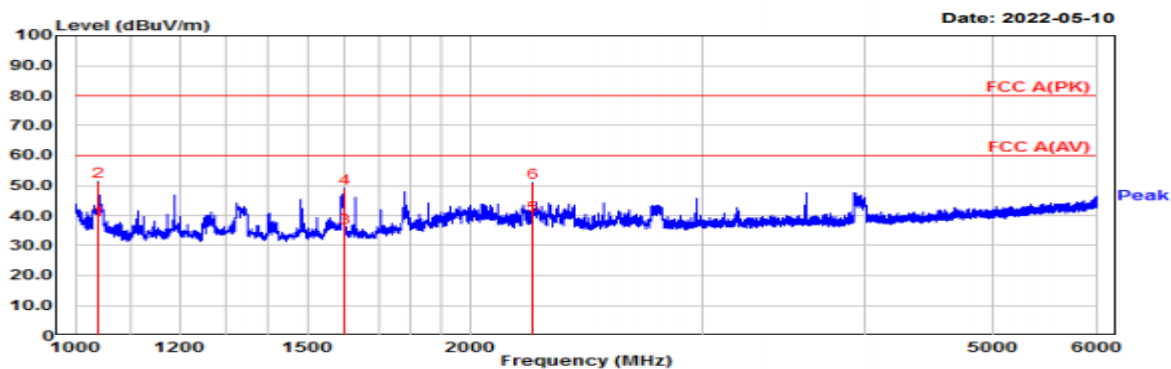
EUT/Model No. : SPE-1630

Temp/Humi: 20 °C / 43 % R.H.

Test Mode : Network Video Encoder mode

Tested by: CHO J H

Power : 120 V / 60 Hz



(Above 1 GHz) / H

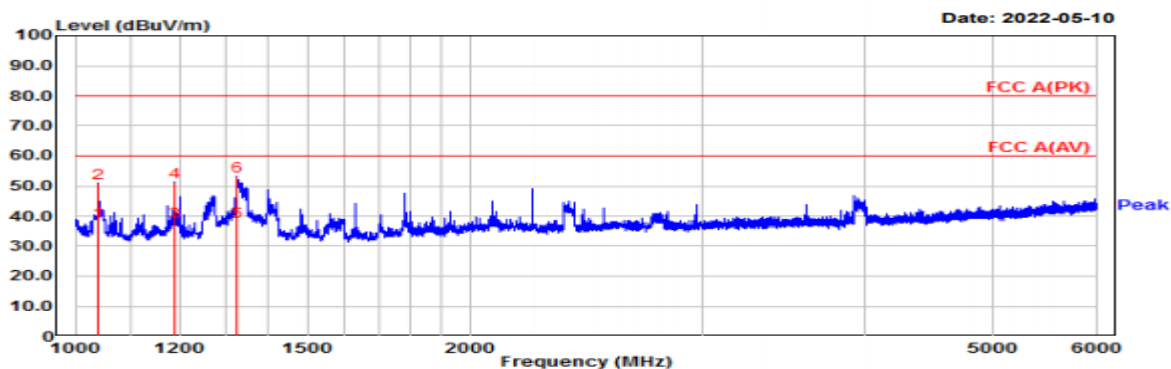
EUT/Model No. : SPE-1630

Temp/Humi: 20 °C / 43 % R.H.

Test Mode : Network Video Encoder mode

Tested by: CHO J H

Power : 120 V / 60 Hz



Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.

Test Date

Temp.:

Humidity:

Distance

Model : SPE-1630

2022-05-10

20.00

43.00

3.6

TEST mode : Network Video Encoder 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
1039.38	60.43	47.43	-7.87	52.56	39.56	80.00	60.00	27.44	20.44	100	116	H
1188.13	59.31	46.31	-6.53	52.78	39.78	80.00	60.00	27.22	20.22	100	42	H
1325.63	59.99	44.99	-5.23	54.76	39.76	80.00	60.00	25.24	20.24	100	116	H
1039.38	60.95	47.95	-7.87	53.08	40.08	80.00	60.00	26.92	19.92	100	210	V
1599.38	54.40	41.40	-3.90	50.50	37.50	80.00	60.00	29.50	22.50	100	259	V
2227.50	52.04	41.04	0.49	52.53	41.53	80.00	60.00	27.47	18.47	100	63	V

Conclusions

Product models "**SPE-1630**" meets all of the Class A requirements of the FCC Part 15, Subpart B. Limits of radio disturbance characteristics of ITE).

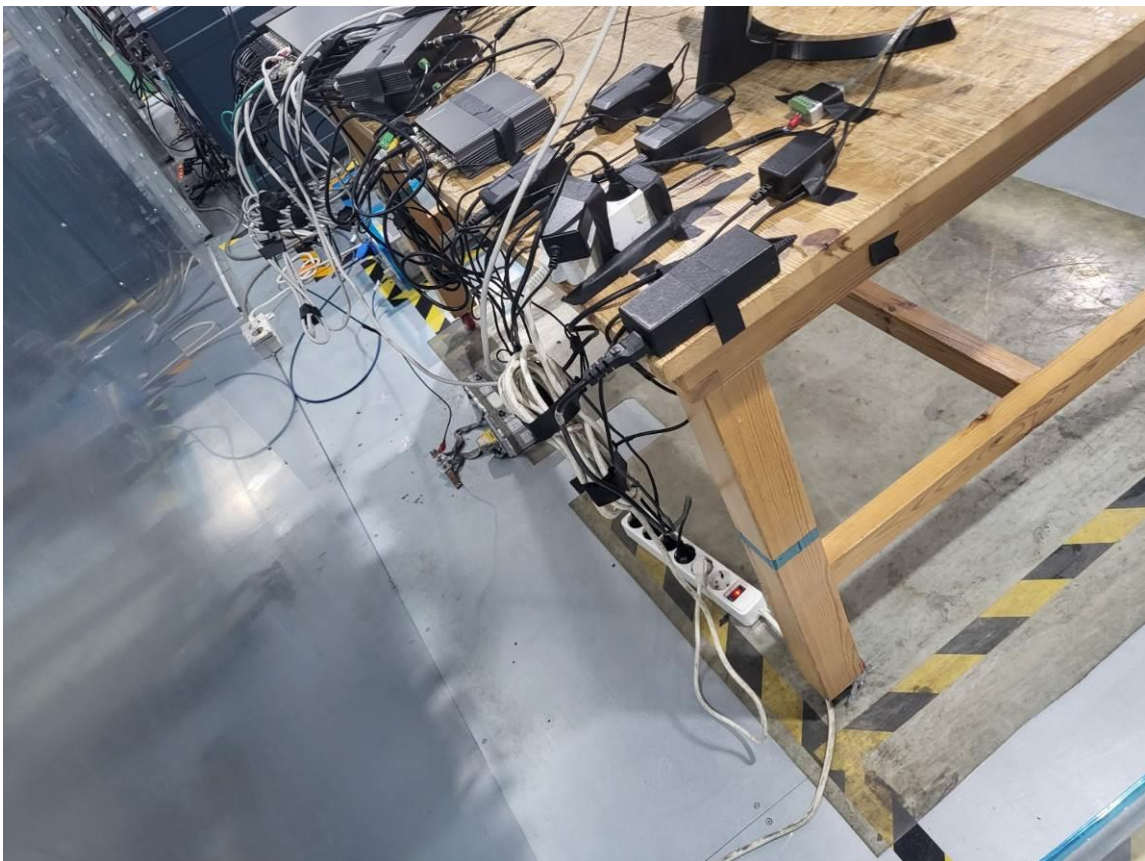
(Refer to Test Specification and Test Results in the "LTA certification", page 4 and 5)

- The highest internal source of an EUT is higher than 108 MHz, the measurement shall be made up to 6 GHz.

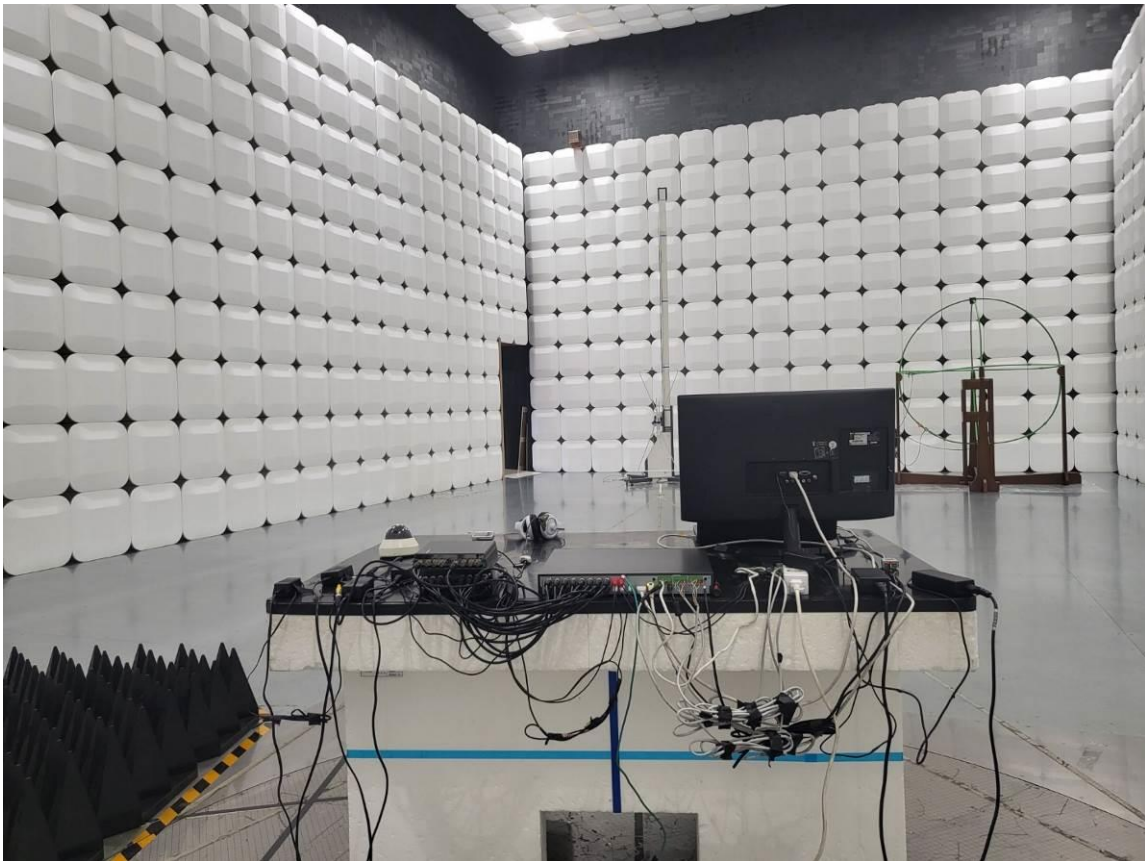
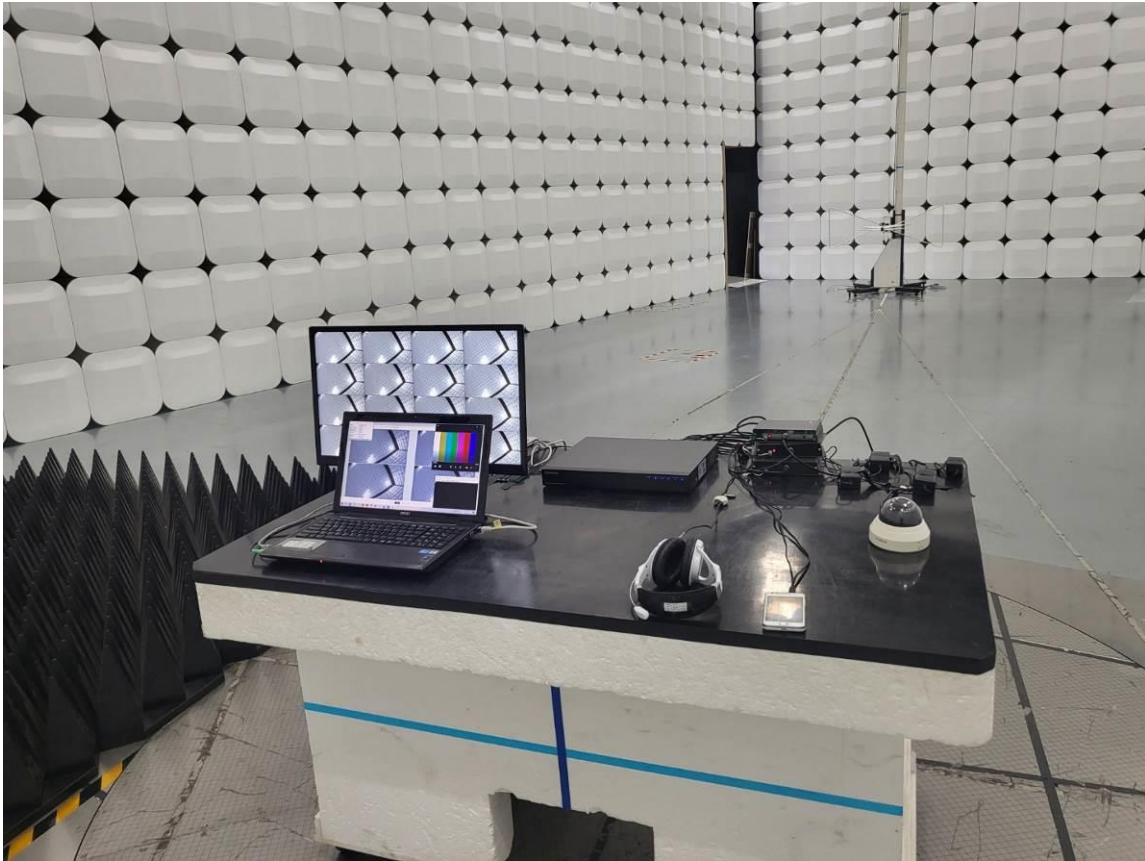
(The highest internal source of an EUT : 1.2 GHz)

Photograph of the measurements

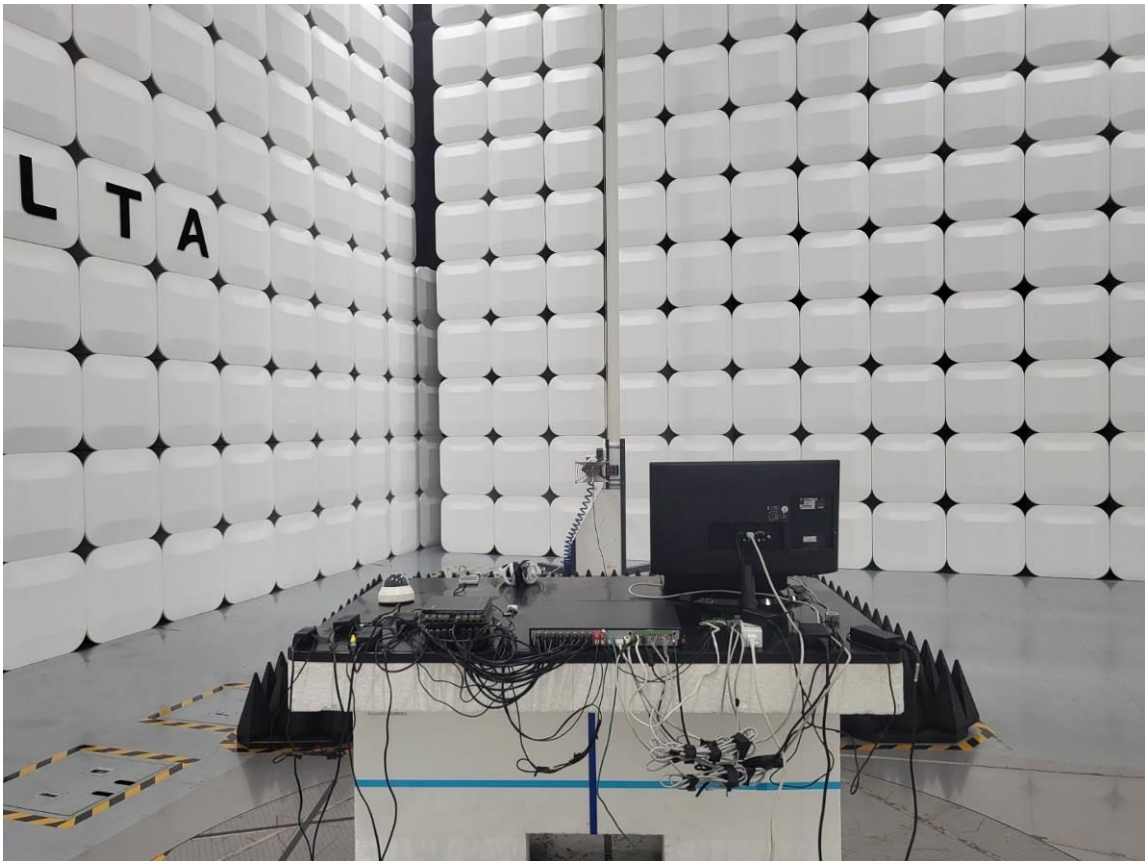
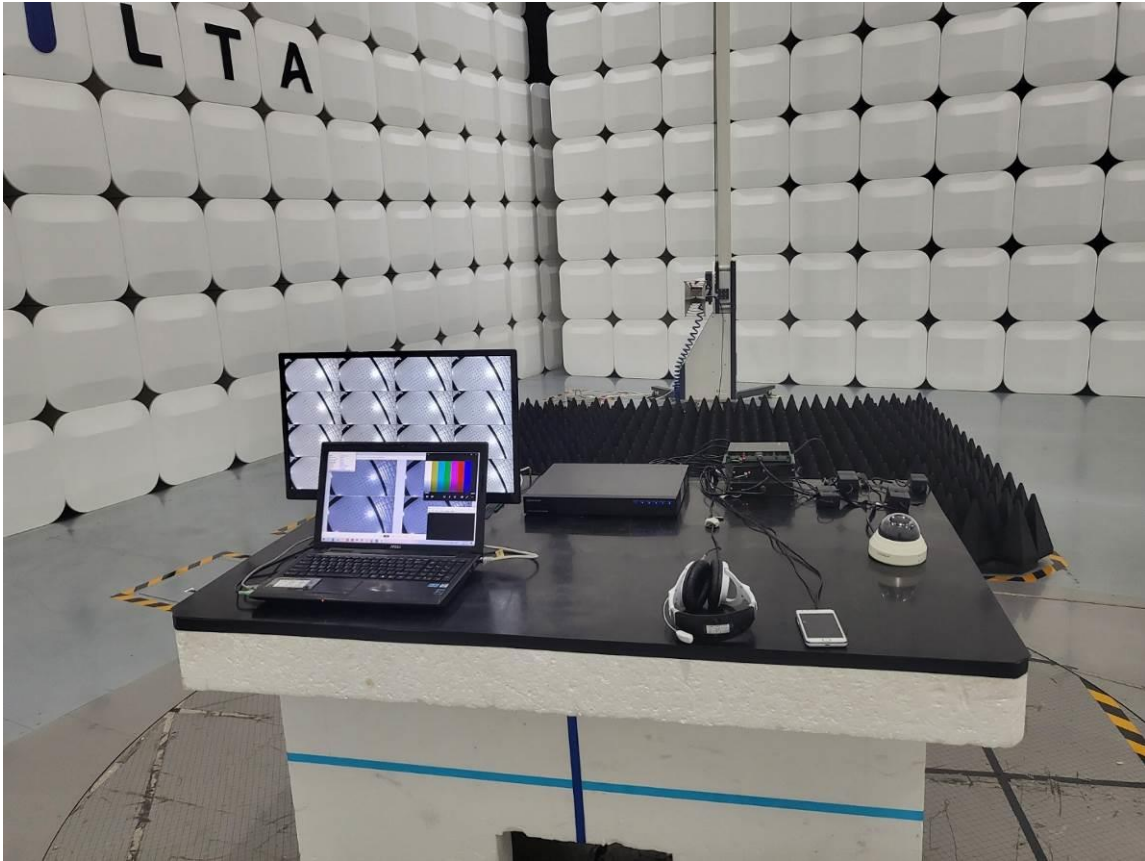
Conducted Emissions



Radiated Emissions - Below 1 GHz

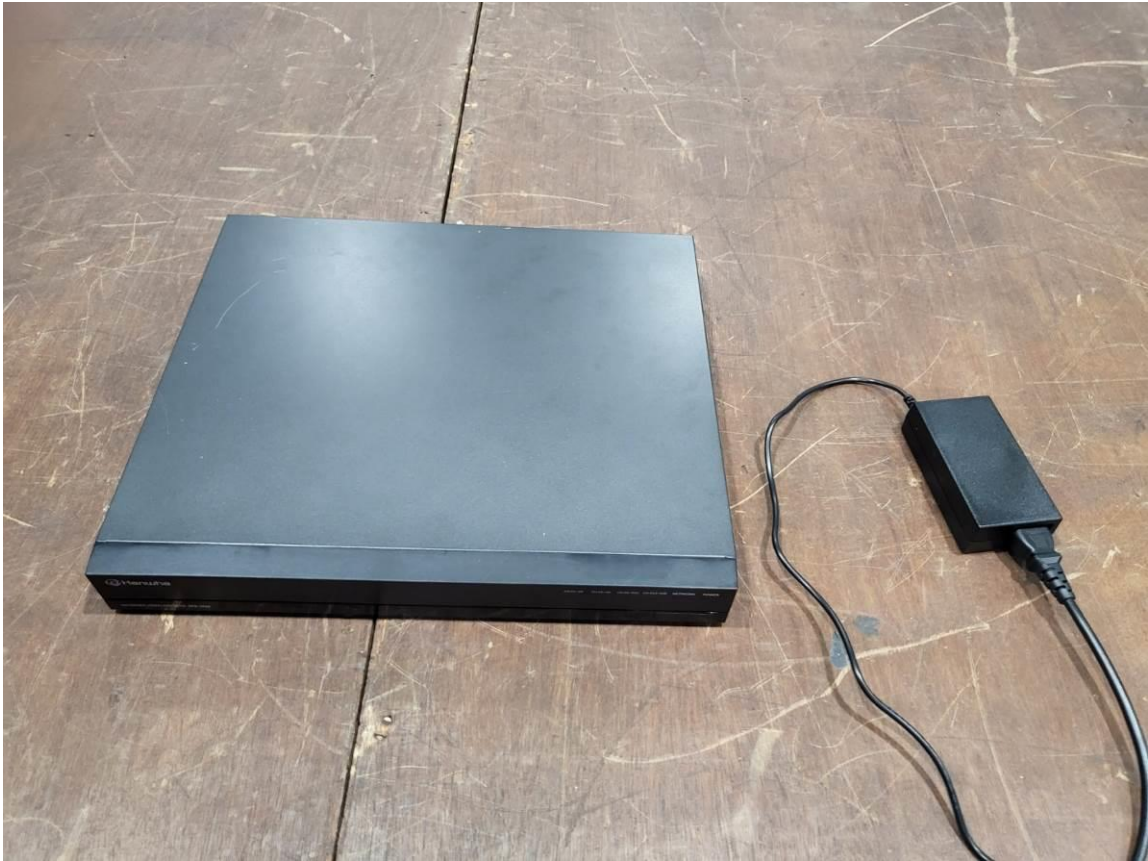


Radiated Emissions - Above 1 GHz

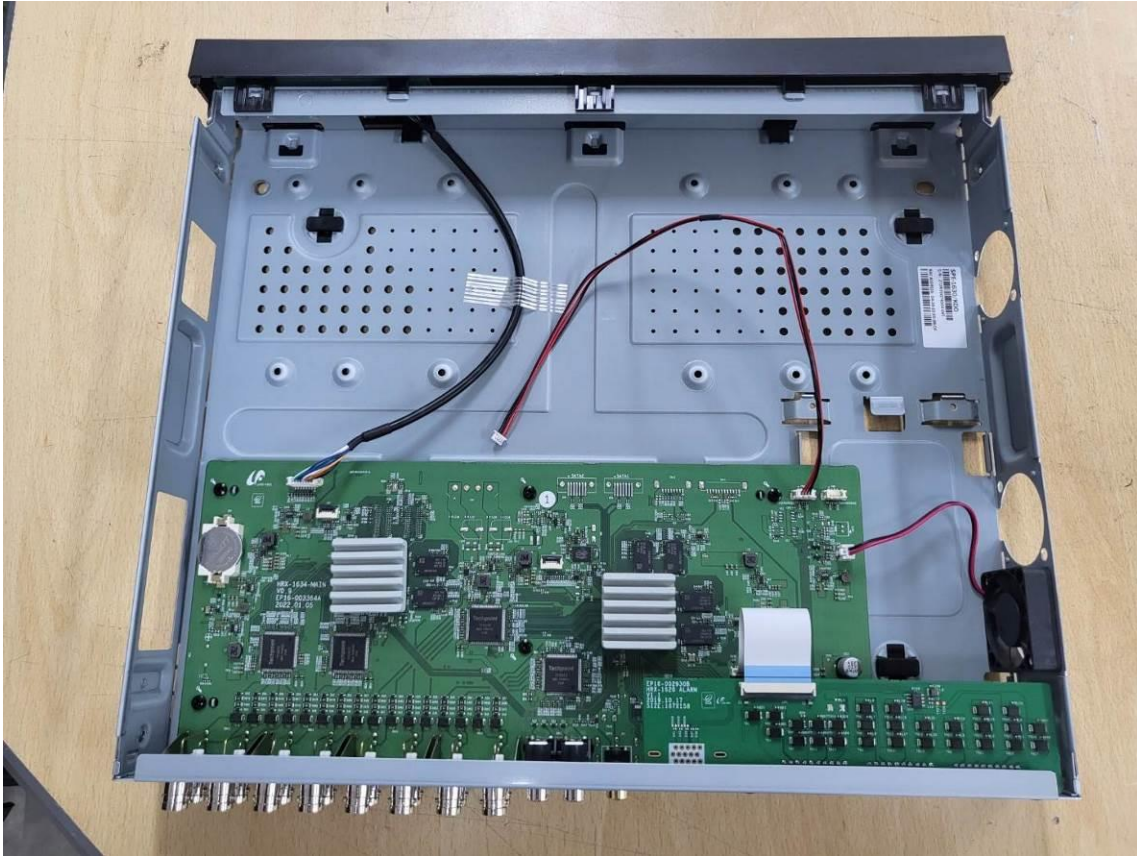


Photograph of the EUT

EUT



EUT



EUT _ Modification

