

**KES Co., Ltd.**

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Report No.:

KES-EM-23T0149

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EMC TEST REPORT

Test Report No. : KES-EM-23T0149

Date of Issue : Feb. 23, 2023

Product name : Network Video Recorder

Model/Type No. : XRN-420S

Variant Model : -

Applicant : Hanwha Vision Co., Ltd

Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea

Manufacturer : 1. HANWHA VISION VIETNAM COMPANY LIMITED
2. D-TECH CO.,LTD.

Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended area,
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,
Korea (Suwon Industrial Complex)

Date of Receipt : Feb. 08, 2023

Test date : Feb. 16, 2023 ~ Feb. 17, 2023

Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

Dong Hyun, Won
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Feb. 23, 2023	KES-EM-23T0149	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Display		
Video	Inputs	Max. 4CH
	Resolution	CIF ~ 8MP
	Protocols	sunapi, ONVIF
Live	Local Display	HDMI, VGA
	Multi Screen Display	[Dual Monitor] 1/ 2V/ 2H/ 3V/ 4/ Sequence [Web] 1/ 2V/ 2H/ 3V/ 4
	Resolution	[Local Monitor] 8M(30fps), 1080p(120fps), 720P(120fps), D1(120fps)
Intelligent Analysis		
Search	Object image	AI Search support
Comparison	Event Trigger	N/A
Attribute (AI)	Person	N/A
	Face	N/A
	Vehicle	N/A
Performance		
System	Operating System	Linux
Record	Compression	H.265, H.264, MJPEG, WiseStream(H.265, H.264)
	Recording Bandwidth	50Mbps
	Resolution	CIF ~ 8MP
	Mode	Normal, Dual Stream, Schedule(Continuous/Event), Event (Pre/Post), Bookmark
	Event Trigger	Alarm Input, Video Loss, Camera Event(Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event
	Event Action	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out
Search & Play	Playback Bandwidth	Max 32Mbps
	User	Max. 4 Users (Local 1, Remote 3)
	Mode	Time, Event, Text, Export, ARB, Bookmark Person, Face Vehicle, LP
	Simultaneous playback	Max 16CH - Set : 4CH - Remote : 4CH Per User
	Resolution	CIF ~ 8MP
	Fisheye Dewarping	N/A
	Playback Control	Fast/Slow Forward / Backward, Move one step Up / Down
Storage	Built-In	2TB ~ 6TB
	Internal HDD	1ea (Max 8TB)
	External	N/A
	RAID	N/A
Backup	File backup	BU/Exe(GUI), JPG/AVI(Web)
	Function	Multi channel(Upto 4 CH) Play, Date-Time/Title display
Sensor	I/O	4/2 (NO/NC Selectable)
Audio	Input/Output	4CH (network)/output (Set)
	Compression	G.711, G.726, AAC(16/48KHz)
	Audio Communication	2-Way

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Network		
Interface		4 Port PoE, RJ-45(1 Gbps)
Protocol		TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTSP, NTP, HTTP, DHCP (Server, Client), SMTP, ICMP, IGMP, ARP, DNS, DDNS, uPnP, HTTPS, SNMP, ONVIF (Profile-S), SUNAPI(Server, Client)
DDNS		Hanwha DDNS
Transmission Bandwidth		64Mbps
Max Remote Users		Search (3), Live Unicast (10), Multicast (20)
IP Version		IPv4/v6
Security		IP address filtering, User access Log, 802.1x, Encryption
Language		English, French, German, Italian, Spanish, Russian, Turkish, Polish, Dutch, Swedish, Czech, Portuguese, Danish, Rumanian, Serbian, Croatian, Hungarian, Greek, Norwegian, Finnish, Korean, Chinese, Japanese, Thai, Vietnam
OS		Window 10, Mac OS X(10.13)
Web Browser		Google Chrome, Mac Safari, Firefox, Edge
Viewer Software	Type	WAVE(Sunapi 연동), SSM, Webviewer, Smart Viewer, Wisenet Mobile
	CMS Support	Support SDK/CGI(SUNAPI) for integration to 3rd party VMS
Functions		
Camera Setup	Register	Auto, Manual
	Setup Items	IP address, Add profile edit, Bitrate, Camera MD setup (8 point polygon) Camera video setup (Simple focus, Brightness/Contrast, Flip/Mirror, IRIS, WDR, D&N, SSNR, Shutter, SSDR, DIS), Fisheye Dewarping Mode, Hallway View Setup, Camera Webpage
PTZ	Control	Via GUI, Webviewer
	Preset	300 Presets
Smart phone	Support Model	iOS, Android
	Protocol Support	RTP, RTSP, HTTP, CGI(SUNAPI)
	Control	Live(4ch) : Multi-Profile Support Playback(4ch)
	Max. Remote Users	Search (3), Live Unicast (10)
Redundancy	Failover	N+1
	ARB	Yes
Easy configuration		P2P(QR code)
System Control		Mouse, Web

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Indicator/Interface		
Front	Indicator	LED(Status indicator) : - Power(1), Record(1), Network(1)
Connectors	HDMI	3840x2160 30Hz
	VGA	1920x1080 30Hz
	Audio	Out(1EA) : RCA output
	Ethernet	PoE RJ-45(LAN, 10/100) 4 ea ,RJ-45 1ea (WAN, 1Gbps)
	Alarm	(1) In(4EA, Terminal Block) (2) Out(2EA, Terminal Block) - Relay Out1(NO/NC/COM) - Relay Out2(NO/COM)
	USB	2EA(Front 1 x USB 2.0, Rear 1 x USB 2.0)
	Storage	N/A
	Serial	N/A
	Reset	Switch(1EA, PW clear)
	Power Cord	DC Adaptor
	POE Budget	Max. 50W
System		
Log	Log List	Max. 100,000 (System, Event each log)
Environmental		
Operating Temperature / Humidity		+0°C to +40°C(+32°F to +104°F)
Humidity		20% ~ 85% RH
Noise		47 db
Electrical		
Power		100 ~ 240 VAC ±10%; 50/60 Hz
Power Consumption		최대 75W(1HDDs, PoE on)
Mechanical		
Color / Material		Black
Dimension (WxHxD)		W370.0 x H44.0 x D320mm (1U)

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1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

☒ AC 120 V, 60 Hz

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
Network Video Recorder	XRN-420S	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
Adapter	FSP090-AWAN3	-	Zhonghan Electronics (Shenzhen) Co., Ltd.	-
Mouse	MOKJUO	-	Primax Electronics Ltd.	-
HDD	ST4000VX000	-	SEAGATE	4 TB



1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook	LG15N54	503NZWY038929	LG Electronics Inc.	-
Notebook Adapter	PA-1900-14	OF2R263348701 7764	LITE-ON TECHNOLOGY COPORATION	-
Monitor 1	-	-	DELL INC.	-
Monitor 2	HSTND-7041-L	6CM6020YQQ	HP Inc.	-
Camera 1	QNV-6023R	-	HANWHA VISION VIETNAM COMPANY LIMITED	-
Camera 2	QNV-6023R	-	HANWHA VISION VIETNAM COMPANY LIMITED	-
Camera 3	QNV-6024RM	-	HANWHA VISION VIETNAM COMPANY LIMITED	-
Camera 4	LVN-6030R	-	HANWHA VISION VIETNAM COMPANY LIMITED	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI- TECH GROUP.	-
Alarm 1	PRO-SL	-	SENSOR PRO	-
Alarm 2	PRO-SL	-	SENSOR PRO	-
Button Alarm 1	-	-	-	-
Button Alarm 2	-	-	-	-
Button Alarm 3	-	-	-	-
Button Alarm 4	-	-	-	-
Smartphone	SM-G991N	-	Samsung Electronics Inc.	-
USB Memory	-	-	SanDisk	32 GB

1.6 External I / O Cabling

Start		END		Cable Spec.	
Description	I / O Port	Description	I / O Port	Length	Shield
Network Video Recorder (EUT)	DC Jack	Adapter (EUT)	DC Jack	1.5	U
	USB	Mouse (EUT)	USB	1.8	U
	SATA	HDD (EUT)	SATA	0.2	U
	RJ-45 (LAN)	Notebook	RJ-45	3.0	U
	HDMI	Monitor 1	HDMI	2.0	S
	D-SUB	Monitor 2	D-SUB	2.2	S
	RJ-45 (PoE)	Camera 1	RJ-45	10.0	U
	RJ-45 (PoE)	Camera 2	RJ-45	10.0	U
	RJ-45 (PoE)	Camera 3	RJ-45	0.6	U
	RJ-45 (PoE)	Camera 4	RJ-45	3.0	U
	RCA	Speaker	Line	1.8	U
	3 Pin	Alarm 1	3 Pin	3.0	U
	3 Pin	Alarm 2	3 Pin	3.0	U
	2 Pin	Button Alarm 1	2 Pin	3.0	U
	2 Pin	Button Alarm 2	2 Pin	4.0	U
	2 Pin	Button Alarm 3	2 Pin	3.0	U
	2 Pin	Button Alarm 4	2 Pin	3.0	U
	USB	USB Memory	USB	-	-
	Ground	External Ground	Ground	2.2	U
Notebook	DC Jack	Notebook Adapter	DC Jack	2.0	S
	3.5 mm	Smartphone	USB Type C	1.2	U

* Unshielded=U, Shielded=S

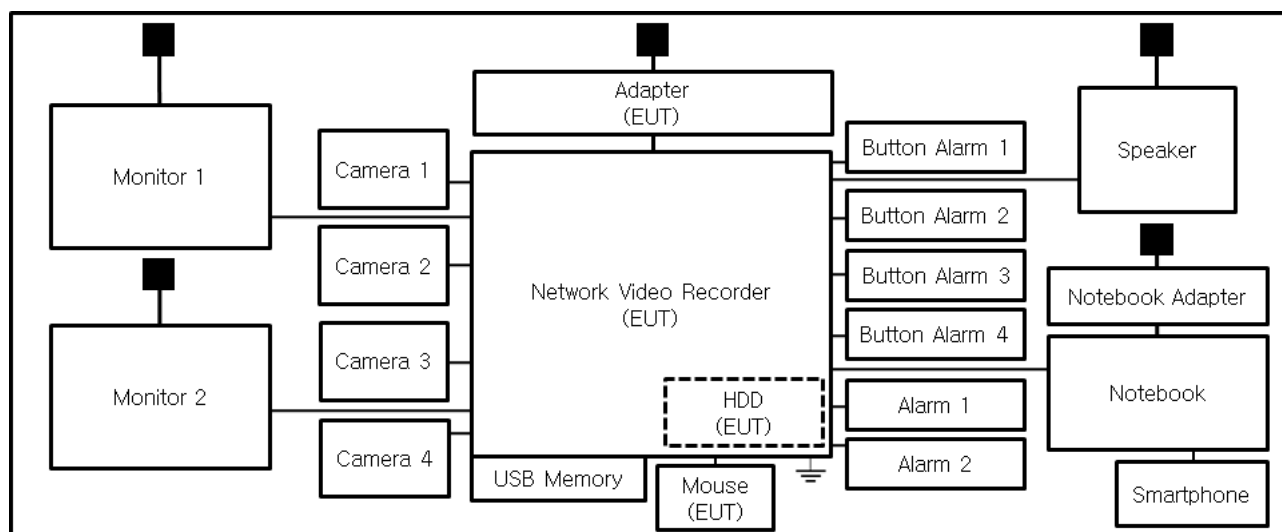
1.7 EUT Operating Mode(s)

Test Mode	operating
Operating	EUT Monitoring, Ping Test after testing, check if the recording is normally done on the HDD

EUT Test operating S / W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd

1.8 Configuration

■ AC Main
 □ DC Main



1.9 Remarks when standards applied

N/A

1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

1.11 Test Facility

The measurement facility is located at 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea, Republic of. The sites are constructed in conformance with the requirements of ANSI C63.4a-2017 and CISPR 16-1-4:2019

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	KOLAS	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	FCC	3 m & 10 m Semi-Anechoic Chamber Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298
JAPAN	VCCI	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)	 C-20136, T-20137, R-20181, G-20176
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 001633 0004

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **47 CFR Part 15, Subpart B**

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B

☒ **IC Regulation ICES-003 Issue 7**

☐ CAN/CSA-CISPR 32:17

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B

2.1 Conducted Emissions at Mains Power Ports

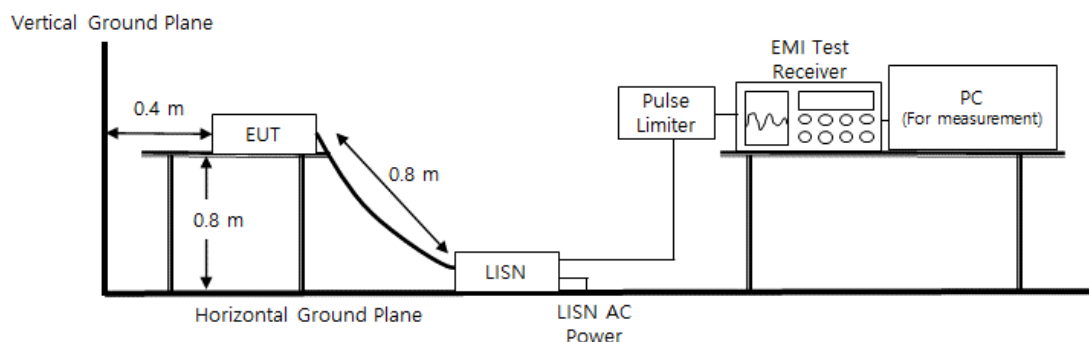
Test Date
Feb. 16, 2023

Test Location
Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	11, 11, 2023
☒	LISN	ENV216	R & S	101787	11, 10, 2023
☒	LISN	ESH2-Z5	R & S	100450	11, 10, 2023
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 10, 2023

Diagram of test setup



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Test Conditions

Temperature: (22,9 ± 0,1) °C
Relative Humidity: (45,7 ± 0,1) % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Feb. 17, 2023

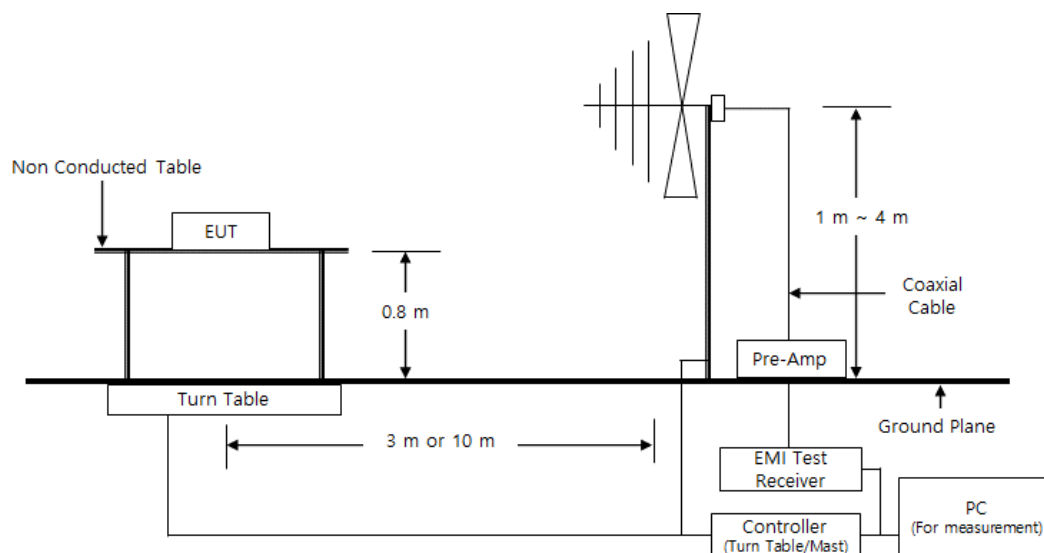
Test Location

☐ OPEN AREA TEST SITE #2 ☒ SEMI ANECHOIC CHAMBER #4(10m)

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	03, 31, 2023
☒	AMPLIFIER	SCU 01	R & S	100603	11, 10, 2023
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 17, 2024
☒	ATTENUATOR	8491A	HP	32173	03, 08, 2023

Diagram of test setup





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Test Conditions

Temperature: (23,6 ± 0,1) °C
Relative Humidity: (45,2 ± 0,1) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.3 Radiated Electric Field Emissions(Above 1 GHz)

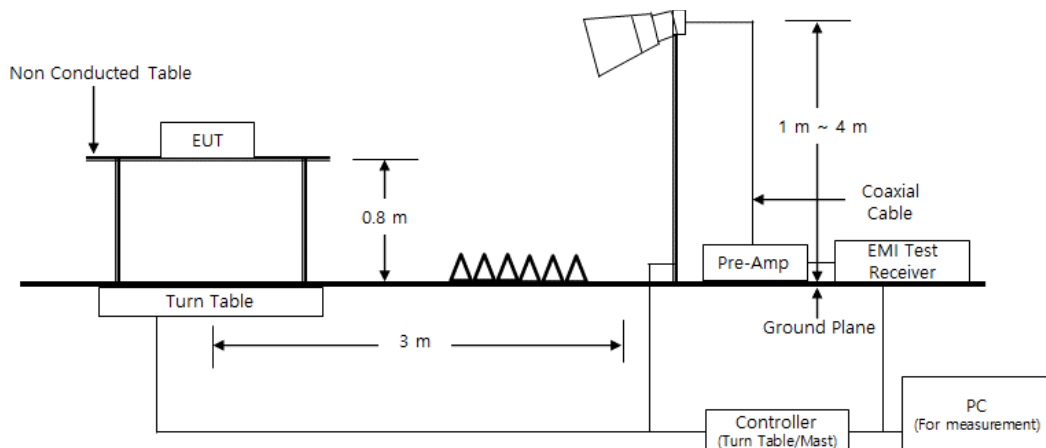
Test Date
Feb. 17, 2023

Test Location
SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	ES10/RE	TOYO Corporation	2022.01.000	-
☒	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	03, 31, 2023
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 08, 2023
☒	PREAMPLIFIER	8449B	HP	3008A00538	06, 02, 2023
☒	ATTENUATOR	8491B	HP	23094	04, 21, 2023

Diagram of test setup





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Test Conditions

Temperature: (23,1 ± 0,1) °C
Relative Humidity: (43,3 ± 0,1) % R.H.

Frequency Range of Measurement

1 GHz to 5 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

- See Appendix A for test data.
- The Average of the test data is the cispr average result.

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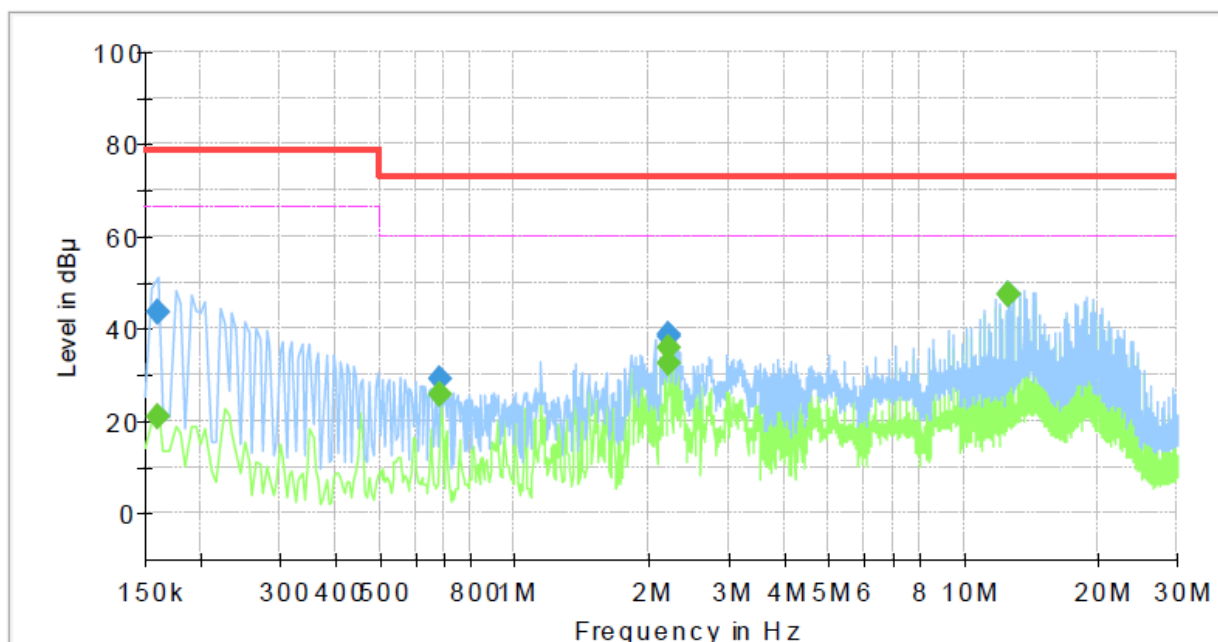
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
Model No.: XRN-420S
Phase:
Mode: H
Operator Name: KES



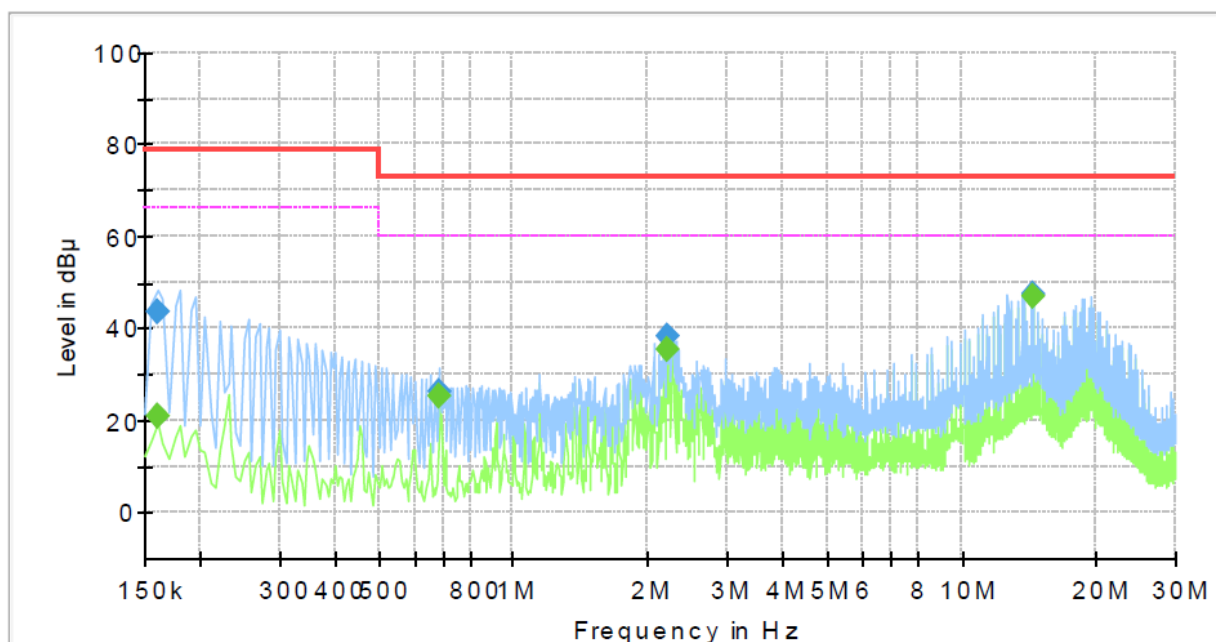
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	20.85	66.00	45.15	1000.0	9.000	L1	19.5
0.160000	43.65	---	79.00	35.35	1000.0	9.000	L1	19.5
0.685000	---	25.56	60.00	34.44	1000.0	9.000	L1	19.9
0.685000	29.02	---	73.00	43.98	1000.0	9.000	L1	19.9
2.210000	---	32.55	60.00	27.45	1000.0	9.000	L1	20.3
2.210000	38.35	---	73.00	34.65	1000.0	9.000	L1	20.3
2.215000	---	35.79	60.00	24.21	1000.0	9.000	L1	20.3
2.215000	38.50	---	73.00	34.50	1000.0	9.000	L1	20.3
12.690000	---	47.19	60.00	12.81	1000.0	9.000	L1	20.0
12.690000	47.60	---	73.00	25.40	1000.0	9.000	L1	20.0

NEUTRAL LINE

Common Information

Test Description: Conducted Emission
 Model No.: XRN-420S
 Phase:
 Mode: N
 Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	20.64	66.00	45.36	1000.0	9.000	N	19.4
0.160000	43.32	---	79.00	35.68	1000.0	9.000	N	19.4
0.685000	---	25.32	60.00	34.68	1000.0	9.000	N	19.9
0.685000	26.04	---	73.00	46.96	1000.0	9.000	N	19.9
2.215000	---	35.38	60.00	24.62	1000.0	9.000	N	20.3
2.215000	38.46	---	73.00	34.54	1000.0	9.000	N	20.3
14.505000	---	46.70	60.00	13.30	1000.0	9.000	N	19.9
14.505000	47.56	---	73.00	25.44	1000.0	9.000	N	19.9

◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

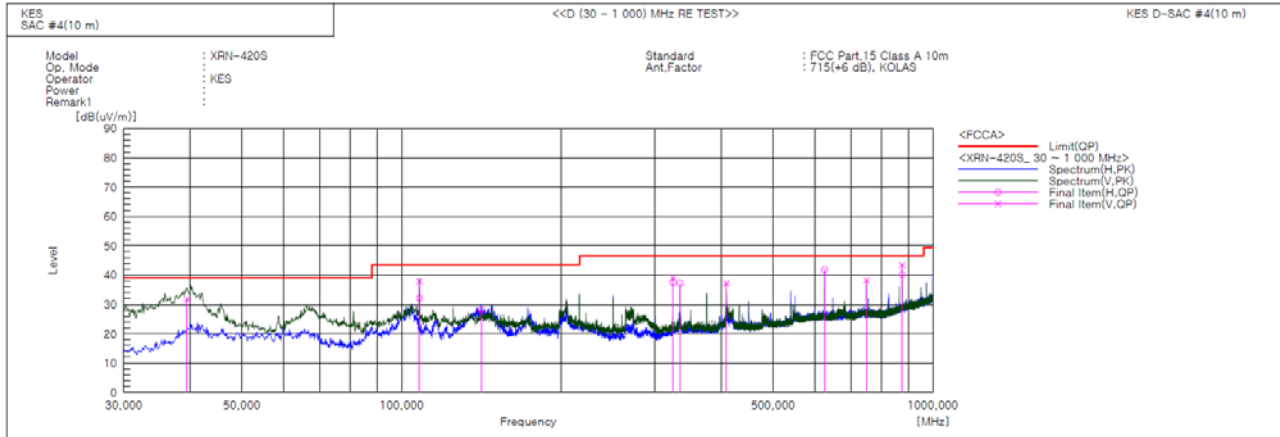
QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

Radiated Electric Field Emissions(Below 1 GHz)

- 47 CFR Part 15, Subpart B

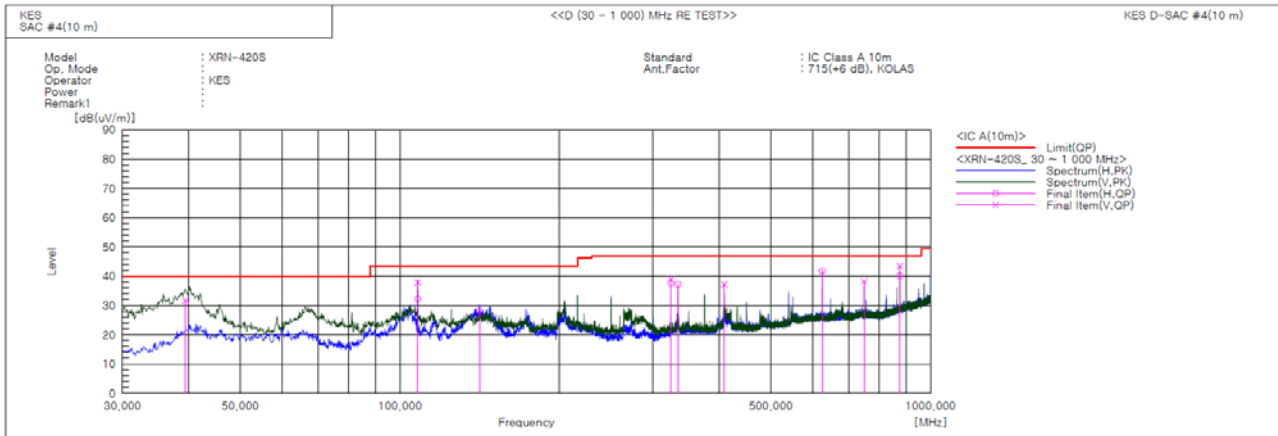


Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	39.443	V	54.3	-22.6	31.7	39.0	7.3	236.0	168.0	
2	108.001	V	60.6	-22.7	37.9	43.5	5.6	100.0	14.0	
3	108.017	H	54.9	-22.7	32.2	43.5	11.3	399.0	211.0	
4	141.158	H	53.7	-25.4	28.3	43.5	15.2	344.0	73.0	
5	323.997	H	54.2	-16.6	37.6	46.5	8.9	309.0	229.0	
6	324.000	V	55.5	-16.6	38.9	46.5	7.6	101.0	10.0	
7	334.123	H	53.2	-16.0	37.2	46.5	9.3	359.0	209.0	
8	408.374	V	50.9	-13.7	37.2	46.5	9.3	100.0	265.0	
9	625.002	H	49.8	-8.0	41.8	46.5	4.7	159.0	292.0	
10	750.013	V	44.9	-6.7	38.2	46.5	8.3	222.0	6.0	
11	874.986	V	48.6	-5.1	43.5	46.5	3.0	209.0	217.0	
12	875.011	H	45.3	-5.1	40.2	46.5	6.3	137.0	19.0	

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- IC Regulation ICES-003 Issue 7



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	39.443	V	54.3	-22.6	31.7	40.0	8.3	236.0	168.0	
2	108.001	V	60.6	-22.7	37.9	43.5	5.6	100.0	14.0	
3	108.017	H	54.9	-22.7	32.2	43.5	11.3	399.0	211.0	
4	141.158	H	53.7	-25.4	28.3	43.5	15.2	344.0	73.0	
5	323.997	H	54.2	-16.6	37.6	47.0	9.4	309.0	229.0	
6	324.000	V	55.5	-16.6	38.9	47.0	8.1	101.0	10.0	
7	334.123	H	53.2	-16.0	37.2	47.0	9.8	359.0	209.0	
8	408.374	V	50.9	-13.7	37.2	47.0	9.8	100.0	265.0	
9	625.002	H	49.8	-8.0	41.8	47.0	5.2	159.0	292.0	
10	750.013	V	44.9	-6.7	38.2	47.0	8.8	222.0	6.0	
11	874.986	V	48.6	-5.1	43.5	47.0	3.5	209.0	217.0	
12	875.011	H	45.3	-5.1	40.2	47.0	6.8	137.0	19.0	

◆ Calculation – SAC #4(10 m)

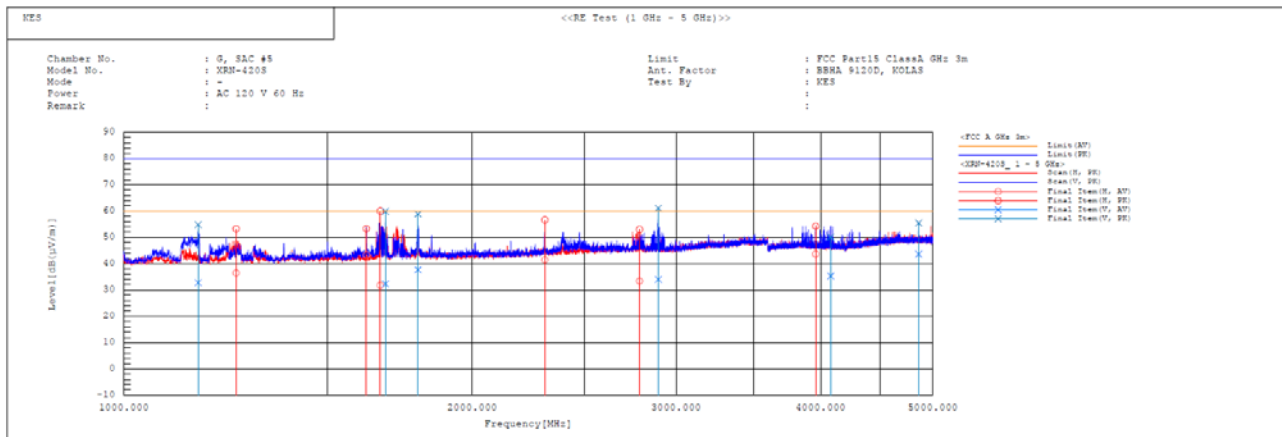
Result(QP) [dB(μV/m)] = (Reading(QP)[dB(μV)] + c.f[dB(1/m)])

Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamplifier Factor), Margin: Margin value

Radiated Electric Field Emissions(Above 1 GHz)



Final Result

No.	Frequency [MHz]	Pol	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]	Remark
1	1159.130	V	34.2	56.2	-1.4	32.8	54.8	60.0	80.0	27.2	25.2	144.0	4.4	
2	1249.996	H	37.3	54.0	-0.8	36.5	53.2	60.0	80.0	23.5	26.8	298.0	23.1	
3	1619.990	H	42.8	52.8	0.5	43.3	53.3	60.0	80.0	16.7	26.7	395.0	35.5	
4	1665.253	H	30.9	59.1	0.9	31.8	60.0	60.0	80.0	28.2	20.0	199.0	23.7	
5	1692.802	V	31.3	58.9	1.0	32.3	59.9	60.0	80.0	27.7	20.1	150.0	200.1	
6	1795.497	V	35.9	57.1	1.8	37.7	58.9	60.0	80.0	22.3	21.1	152.0	178.8	
7	2310.104	H	38.6	53.7	2.9	41.5	56.6	60.0	80.0	18.5	23.4	400.0	184.9	
8	2789.467	H	28.7	48.3	4.7	33.4	53.0	60.0	80.0	26.6	27.0	386.0	214.6	
9	2895.704	V	29.1	56.2	4.9	34.0	61.1	60.0	80.0	26.0	18.9	125.0	217.4	
10	3959.875	H	36.7	47.3	7.0	43.7	54.3	60.0	80.0	16.3	25.7	354.0	226.7	
11	4080.303	V	27.9	42.7	7.4	35.3	50.1	60.0	80.0	24.7	29.9	109.0	54.2	
12	4859.701	V	33.3	45.2	10.3	43.6	55.5	60.0	80.0	16.4	24.5	112.0	27.0	

◆ Calculation

$$\text{Result(PK/CAV)} [\text{dB}(\mu\text{V/m})] = (\text{Reading(PK/CAV)}[\text{dB}(\mu\text{V})] + \text{c.f}[\text{dB}(1/\text{m})])$$
$$\text{Margin(PK/CAV)}[\text{dB}] = \text{Limit}[\text{dB}(\mu\text{V/m})] - \text{Result(PK/CAV)} [\text{dB}(\mu\text{V/m})]$$

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports



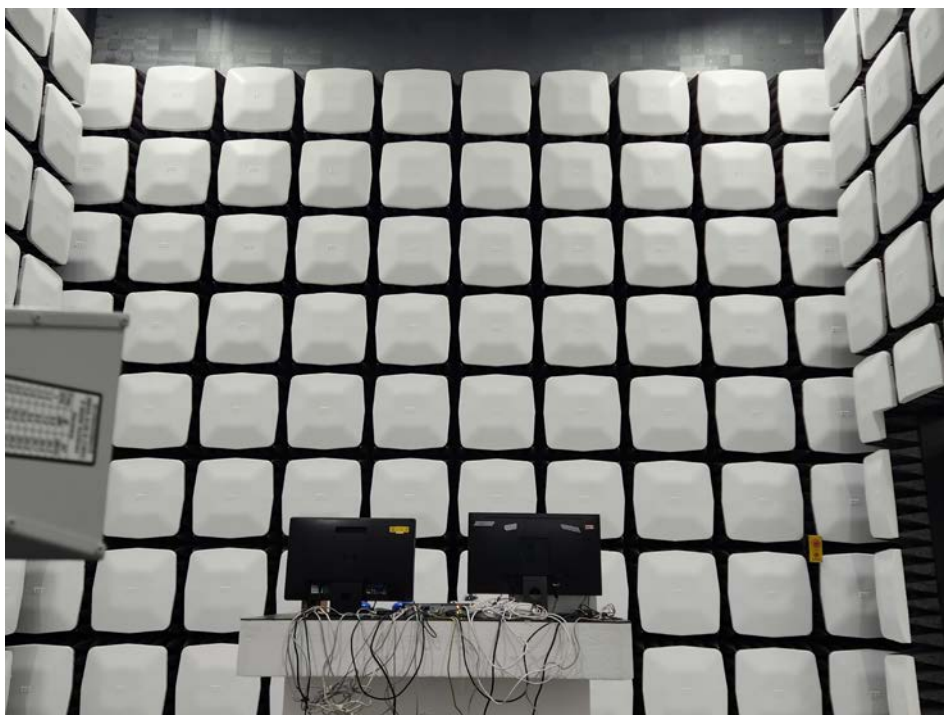
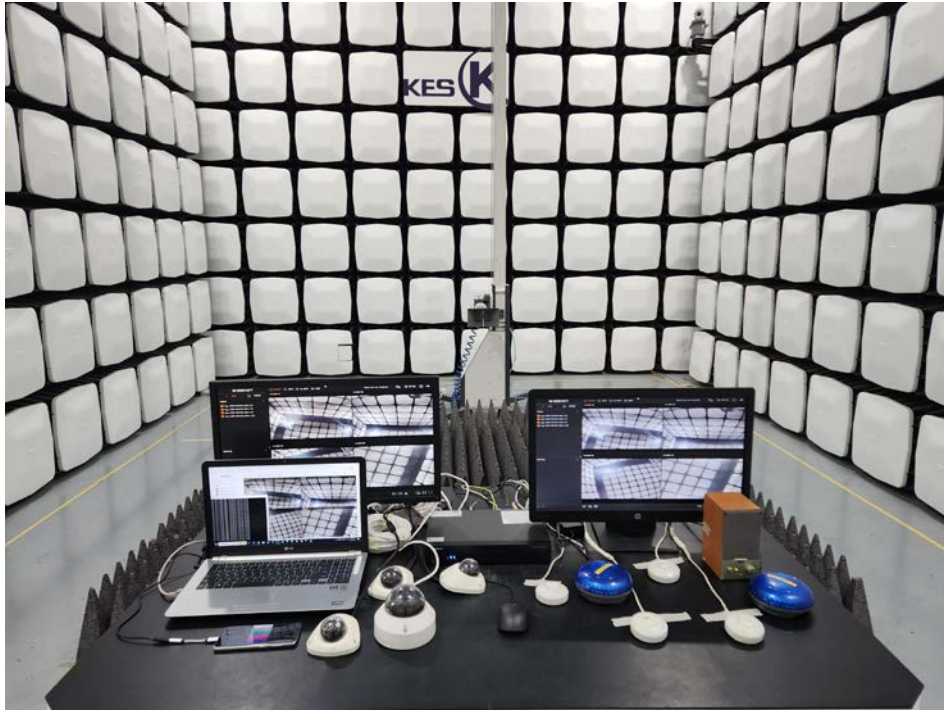
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

(Internal View)



EUT Internal View – Main Board

(Top)



(Bottom)



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EUT Internal View – Board

(Top)



(Bottom)



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EUT Internal View – HDD

(Top)



(Bottom)



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EUT Internal View – Mouse

(Top)



(Bottom)



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EUT Internal View – Adapter

(Top)



(Bottom)



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Label Photographs

FCC Label



Hanwha Vision Co., Ltd

XRN-420S

IC Label

CAN ICES-003(A) / NMB-003(A)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:
(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.