



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Report No.:

KES-E1-19T0097-R2

Page (1) of (40)

EMC TEST REPORT

Test Report No. : KES-E1-19T0097-R2

Date of Issue : Feb. 24, 2023

Product name : Network Camera

Model/Type No. : XNV-8081R

Variant Mode : -

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)

Equipment authorization : **Supply's Declaration of Conformity**

Date of Receipt : Jan. 21, 2019

Test date : Feb. 12, 2019 ~ Feb. 14, 2019

Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Jun Soo, Jung
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 No.:

KES-E1-19T0097-R2

Page (2) of (40)

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Feb. 18, 2019	KES-E1-19T0097	Issued
Nov. 15, 2021	KES-E1-19T0097-R1	- Delete Manufacturer on Customer Request - IC Regulation ICES-003 Issue 7 Update ANSI C63.4-2014 or ANSI C63.4-2014 amended as per ANSI C63.4a-2017
Feb. 24, 2023	KES-E1-19T0097-R2	Change the Applicant and manufacturer at the request of the customer

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Report No.:

KES-E1-19T0097-R2

Page (3) of (40)

TABLE OF CONTENTS

1.0	General Product Description.....	4
1.1	Test Voltage & Frequency	6
1.2	Variant Model Differences	6
1.3	Device Modifications	6
1.4	Equipment Under Test.....	6
1.5	Support Equipments	6
1.6	External I/O Cabling	7
1.7	EUT Operating Mode(s)	8
1.8	Configuration.....	8
1.9	Remarks when standards applied	10
1.10	Calibration Details of Equipment Used for Measurement	10
1.11	Test Facility	10
1.12	Laboratory Accreditations and Listings	10
2.0	Test Regulations.....	10
2.1	Conducted Emissions at Mains Power Ports	13
2.2	Radiated Electric Field Emissions(Below 1 GHz)	14
2.3	Radiated Electric Field Emissions(Above 1 GHz)	15
APPENDIX A – TEST DATA.....		16
Conducted Emissions at Mains Power Ports.....		16
Radiated Electric Field Emissions(Below 1 GHz)		22
Radiated Electric Field Emissions(Above 1 GHz).....		25
Test Setup Photos and Configuration		28
Conducted Voltage Emissions		28
Radiated Electric Field Emissions(Below 1 GHz)		29
Radiated Electric Field Emissions(Above 1 GHz).....		30
EUT External Photographs		31
EUT Internal Photographs		32

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Report No.:
KES-E1-19T0097-R2
Page (4) of (40)

1.0 General Product Description

Main Specifications of EUT are:

Items	Description		
	XNV-8081R	XND-8081RV	XND-8081RF
Video	Imaging Device	1/1.8" GMP CMOS	
	Effective Pixels	2616(6) x 1976(4)	
	NETD	None	
	Pixel Size	None	
	Min. Illumination	Color : 0.07 Lux(F1.2, 1/30sec) BW : 0 Lux(IR LED on)	
	Video Out	CVBS: 1.0 Vp-p / 750 composite, 720x480(4), 720x576(4) for installation USB : Micro USB type B, 1280x720 for installation	
Lens	Focal Length (Zoom Ratio)	3.6 ~ 9.4mm(2.6x) motorized varifocal	
	Max. Aperture Ratio	F1.2(Wide) ~ F2.4(Tele)	
	Angular Field of View	H : 102.5°(Wide) ~ 38.7°(Tele) V : 74.2°(Wide) ~ 29.0°(Tele) D : 135.5°(Wide) ~ 48.6°(Tele)	
	Min. Object Distance	0.5m (1.64ft)	
	Focus Control	Simple focus	
	Lens Type	DC Auto I/Is, P-iris	
	Mount Type	None	
Pan / Tilt / Rotate	Optional Lens	None	
	Pan / Tilt / Rotate range	0°~360° / -45°~85° / 0°~355°	
	Pan Range	Remote adjustment (Max. 200 cycles)	
	Pan Speed	None	
	Tilt Range	None	
	Tilt Speed	None	
	Rotate Range	None	
	Sequence	None	
	Preset Accuracy	None	
	Altimuth	None	
	Auto Tracking	None	

Items	Description		
	XNV-8081R	XND-8081RV	XND-8081RF
Operational	IR Viewable Length	50m(164.04ft)	
	Camera Title	Displayed up to 86 characters	
	Day & Night	Auto (ICR)	
	Backlight Compensation	BLC, HLC, WDR, SSOR	
	Wide Dynamic Range	150dB	
	Digital Noise Reduction	SSNR_V	
	Digital Image Stabilization	Support (built-in Gyro Sensor)	
	DeIog	Support	
	Motion Detection	Box, Spoint Polygonal zones	
	Privacy Masking	32box, polygonal zones - Color : Gray, Green, Red, Blue, Black, White - Mosaic	
	Gain Control	Low / Middle / High	
	White Balance	ATW / AWC / Manual / Indoor / Outdoor	
	LDC	Support	
	Electronic Shutter Speed	Minimum / Maximum / Anti Flicker (2 ~ 1/12,000sec)	
	Video Rotation	Flip, Mirror, Halfway view(90°/270°)	
	Analytics	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Digital auto tracking, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Sound classification, Shock detection	
	Business Intelligence	People counting, Queue management, Heatmap	
	Serial Interface	None	
	Alarm I/O	Input 1es / Output 1es	
	Alarm Triggers	Analytics, Network disconnect, Alarm input	

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Report No.:

KES-E1-19T0097-R2

Page (5) of (40)

Items	Description		
	XNV-8061R	XND-8061RV	XND-8061RF
Operational	Alarm events	• File upload via FTP, E-Mail • Notification via E-Mail • SD/SDHC/SDXC or NAS recording at event triggers • Alarm output • Handover • Audio playback	
	Audio In	Selectable (Mic IN/Line IN) Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm	Selectable (Mic IN/Line IN/Built-in mic) Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
	Audio out	Line out, Max output level: 1 Vrms	
	Wiper	None	
	Coastal Protocol	None	
	Video Transmission Distance	None	
Radiometry	Temperature detect range	None	
	Temperature accuracy	None	
	Temperature detection	None	
	Additional	None	
Network	Ethernet	RJ-45 (10/100BASE-T)	
	Video Compression	H.265/H.264: Main/Baseline/High, MJPEG	
	Resolution	2560x1920, 2560x1440, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x480, 720x576, 720x480, 640x480, 640x360, 320x240	
	Max. Frame rate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)	

Items	Description		
	XNV-8061R	XND-8061RV	XND-8061RF
Network	Smart Codec	Manual(See area), WiseStream II	
	Bitrate Control	H.264/H.265 : CBR or VBR MJPEG : VBR	
	Streaming	Unicast(20 users) / Multicast Multiple streaming(up to 10 profiles)	
	Audio Compression	G.711 μ-law / G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 16KHz	
	Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP/UDP, RTP/CP, RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, LLDP	
	Security	HTTPS(SSL) Login Authentication	
		Digest Login Authentication	
		IP Address Filtering	
	Edge Storage	User access Log	
		802.1x Authentication (EAP-TLS, EAP-LEAP)	
	Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet Open Platform	
	Web Viewer	Supported OS : Windows 7 / 8.1 / 10, MAC OS X 10.10, 10.11, 10.12 Recommended Browser : Google Chrome Supported web browsers : MS Explorer(1, MS Edge, Mozilla Firefox (Window 64bit only), Apple Safari (Mac OS X only))	
	Memory	1024MB RAM, 256MB Flash	

Items	Description		
	XNV-8061R	XND-8061RV	XND-8061RF
Environmental	Operating Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH * Start up should be done at above -35°C	
	Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH	
	Certification	IP66/IP67, IK10+, NEMA4X	IP52, IK10
Electrical	Input Voltage	PoE(IEEE802.3af, Class3), 24VAC, 12VDC	PoE(IEEE802.3af, Class3), 12VDC
	Power Consumption	PoE: Max 12.95W, typical 10.90W 12VDC: Max 11.7W, typical 8.90W 24VAC: Max 14.9W, typical 11.30W	PoE: Max 12.95W, typical 10.10W 12VDC: Max 11.7W, typical 7.90W
	Color / Material	White / Aluminum	
Mechanical	RAL Code	RAL9003	
	Product dimensions / weight	Ø180x125mm(7.09x4.92"), 1.75kg(3.86 lb)	Ø160x125mm(6.30x4.92"), 1.45kg(3.20 lb)

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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.

Voltage ☐ 230 Vac ☐ 120 Vac ☒ 24 Vac ☒ 12 Vdc ☒ PoE

Frequency ☐ 50 Hz ☐ 60 Hz ☐ 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 Camera	XNV-8081R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
AC module	SPC-100AC	-	-	AC 24 V

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
POE Adapter	PD-9501GR/AC	-	CHANGZHOU WUJIN HONGGUANG RADIO CO., LTD.	-
Notebook	X56K	HN11N5151FJ0045W	HANSUNG	-
Notebook Adapter	A12-120P1A	F180271552011758	CHICONY POWER TECHNOLOGY CO.,LTD.	-
Speaker	BR1000A Cuve Black 2	-	DONGGUAN EDIFIER TECHNOLOGY Co., Ltd	-
Mike	MP1000	-	-	-
Gpad	LG-V480	-	LG	-
Alarm button	-	-	-	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-

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1.6 External I/O Cabling

■ AC 24 V, DC 12 V

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camera (EUT)	RJ-45	Notebook	RJ-45	4.0	U
	3.5 mm	Speaker	3.5 mm	1.4	U
	3.5 mm	Mike	3.5 mm	1.7	U
	2Pin	Alarm IN	2Pin	3.0	U
	2Pin	Alarm Out	2Pin	3.0	U
Notebook	3.5 mm	Gpad	3.5 mm	1.6	U

* Unshielded=U, Shielded=S

■ PoE

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camera (EUT)	RJ-45	POE Adapter	RJ-45	4.0	U
	3.5 mm	Speaker	3.5 mm	1.4	U
	3.5 mm	Mike	3.5 mm	1.7	U
	2Pin	Alarm IN	2Pin	3.0	U
	2Pin	Alarm Out	2Pin	3.0	U
Notebook	3.5 mm	Gpad	3.5 mm	1.6	U
	RJ-45	POE Adapter	RJ-45	4.0	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

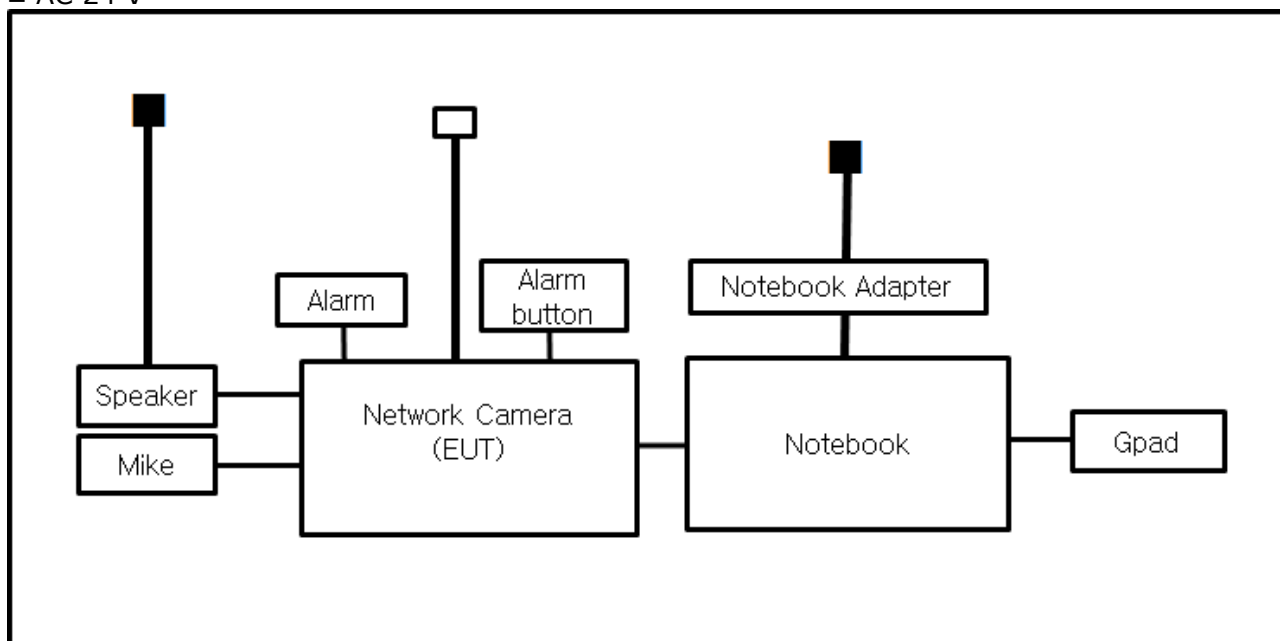
Test mode	operating
AC 24 V, DC 12 V, POE	EUT Monitoring, Ping Test

EUT Test operating S/W		
Name	Version	Manufacture Company
-	-	-

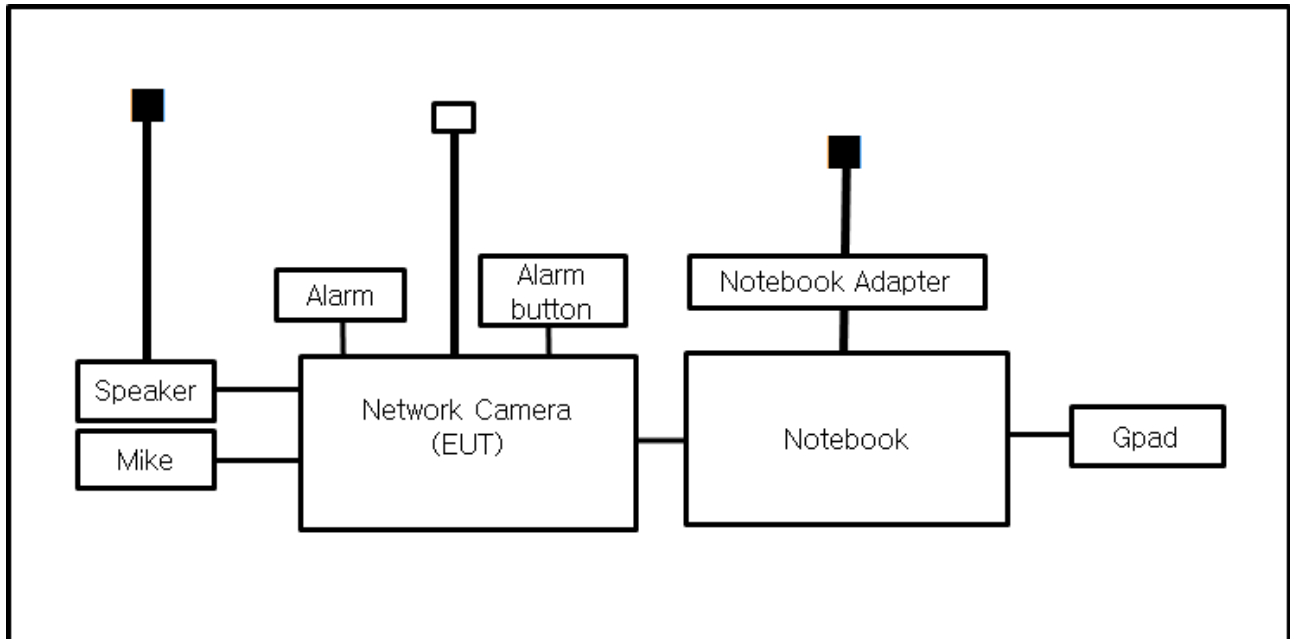
1.8 Configuration

■ AC Main
 □ DC Main

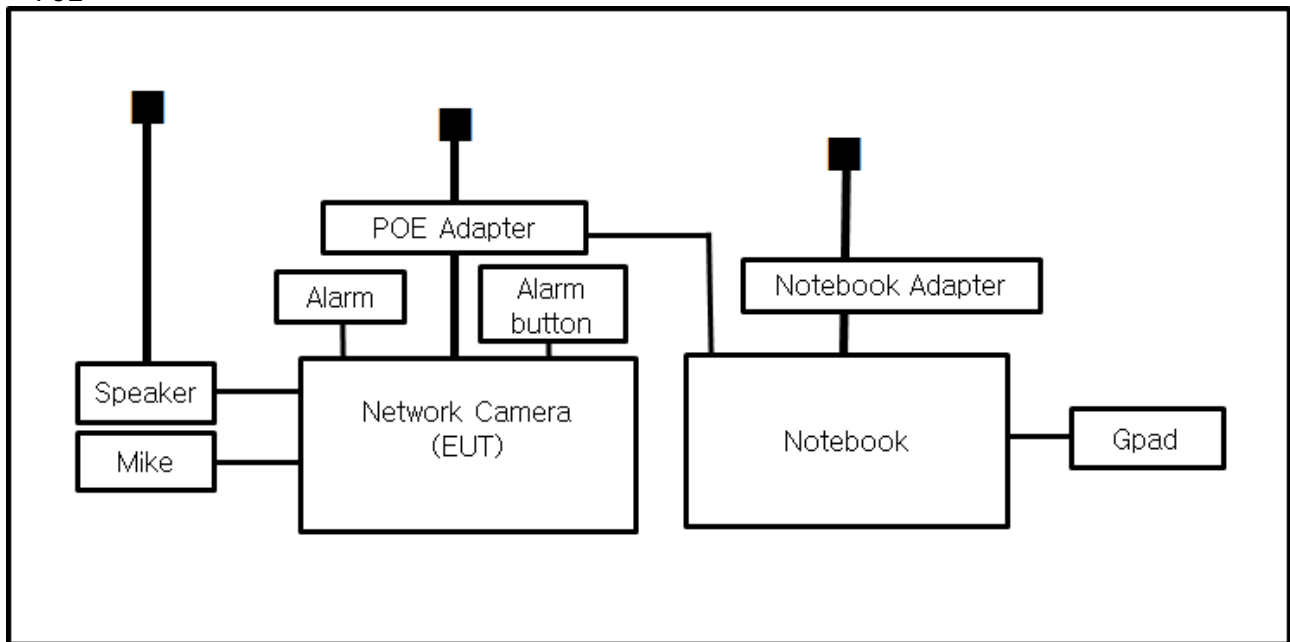
■ AC 24 V



■ DC 12 V



■ PoE



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:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



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Report No.:

KES-E1-19T0097-R2

Page (12) of (40)

- | | | |
|---|---|----------------------------------|
| ☐ VCCI-CISPR 32:2016 | ☐ Class A | ☐ Class B |
| ☐ AS/NZS CISPR32:2015 | ☐ Class A | ☐ Class B |
| ☒ 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 |
| ☐ RE- Directive 2014/53/EU | | |
| ☐ EN 301 489-1 V1.9.2 | | |
| ☐ Equipment for fixed use | | |
| ☐ Equipment for vehicular use | | |
| ☐ Equipment for portable use | | |
| ☐ EN 301 489-3 V1.6.1 | | |
| ☐ EN 301 489-17 V2.2.1 | | |
| ☐ EN 60945:2002 | | |

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Feb. 12, 2019

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	101781	04, 25, 2019
☒	LISN	ENV216	R & S	101787	01, 04, 2020
☒	LISN	ESH2-Z5	R & S	100450	04, 25, 2019
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 26, 2019

Test ConditionsTemperature: 22,1 °C
Relative Humidity: 43,9 % 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

RemarksSee Appendix A for test data.



2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Feb. 12, 2019

Test Location

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

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	04, 11, 2019
☒	AMPLIFIER	SCU 01	R & S	100603	11, 26, 2019
☒	ATTENUATOR	8491A	HP	32173	03, 21, 2019
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 29, 2020

Test Conditions

Temperature: 21,4 °C
Relative Humidity: 42,0 % 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.



2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Feb. 14, 2019

Test Location

SEMI ANECHOIC CHAMBER #4(10 m)

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	04, 11, 2019
☒	PREAMPLIFIER	8449B	AGILENT	3008A01742	01, 08, 2020
☐	ATTENUATOR	8491A	HP	35496	03, 21, 2019
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	09, 04, 2019

Test Conditions

Temperature: 22,4 °C
Relative Humidity: 41,8 % 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.



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Report No.:

KES-E1-19T0097-R2

Page (16) of (40)

APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

■ AC 24 V

HOT LINE

Common Information

Test Description:

Model No.:

Mode

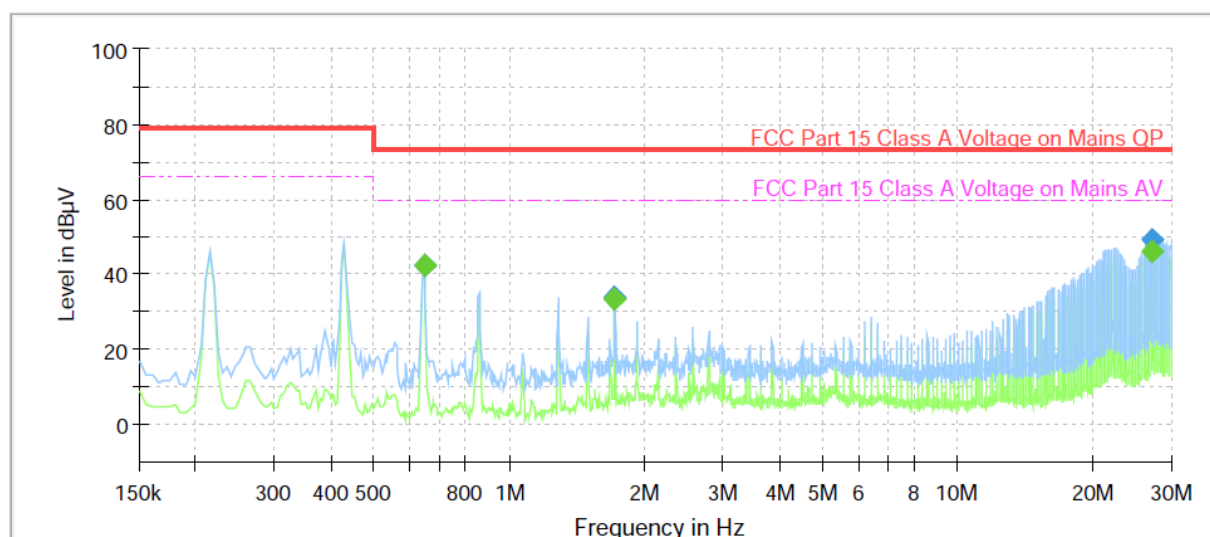
Operator Name:

Conducted Emission

XNV-8081R

AC 24 V_H

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.645000	---	42.26	60.00	17.74	1000.0	9.000	L1	19.6
0.645000	42.46	---	73.00	30.54	1000.0	9.000	L1	19.6
1.715000	---	33.17	60.00	26.83	1000.0	9.000	L1	19.7
1.715000	33.93	---	73.00	39.07	1000.0	9.000	L1	19.7
27.050000	---	46.15	60.00	13.85	1000.0	9.000	L1	20.3
27.050000	48.98	---	73.00	24.02	1000.0	9.000	L1	20.3

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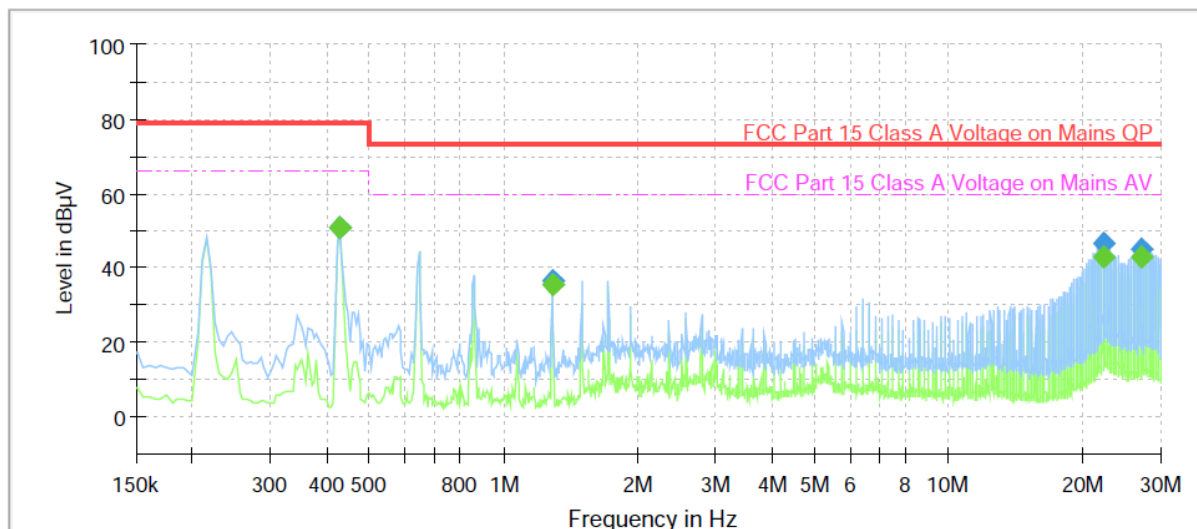
KES-E1-19T0097-R2

Page (17) of (40)

NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Model No.: XNV-8081R
Mode: AC 24 V_N
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.430000	---	50.98	66.00	15.02	1000.0	9.000	N	19.6
0.430000	51.03	---	79.00	27.97	1000.0	9.000	N	19.6
1.290000	---	35.24	60.00	24.76	1000.0	9.000	N	19.7
1.290000	36.59	---	73.00	36.41	1000.0	9.000	N	19.7
22.325000	---	42.88	60.00	17.12	1000.0	9.000	N	20.3
22.325000	46.33	---	73.00	26.67	1000.0	9.000	N	20.3
27.050000	---	42.79	60.00	17.21	1000.0	9.000	N	20.4
27.050000	45.25	---	73.00	27.75	1000.0	9.000	N	20.4

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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
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Report No.:

KES-E1-19T0097-R2

Page (18) of (40)

■ DC 12 V

HOT LINE

Common Information

Test Description:

Model No.:

Mode

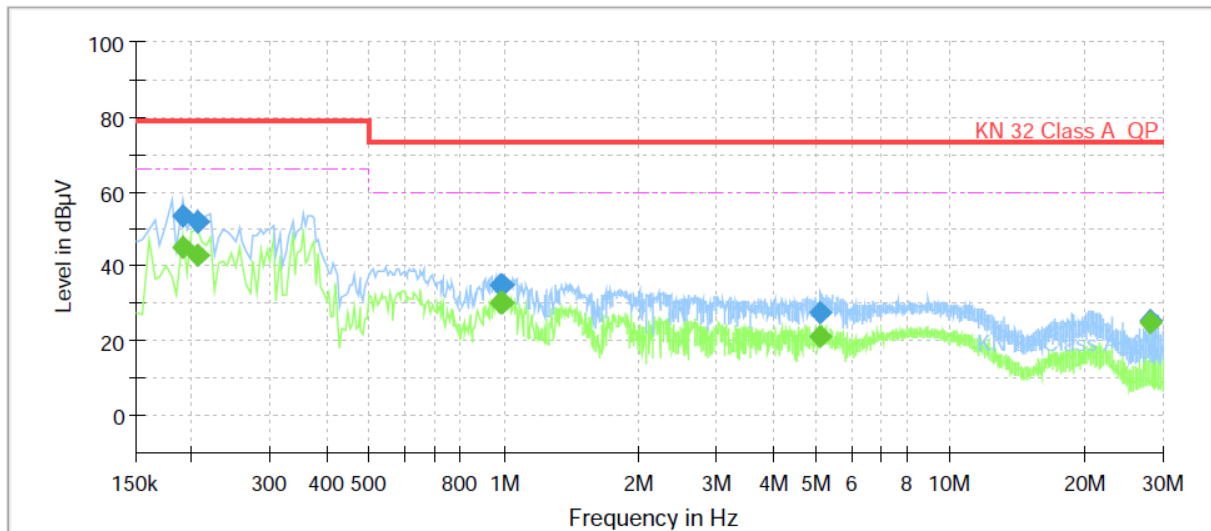
Operator Name:

Conducted Emission

XNV-8081R

DC 12 V_H

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.190000	---	44.95	66.00	21.05	1000.0	9.000	L1	19.5
0.190000	53.57	---	79.00	25.43	1000.0	9.000	L1	19.5
0.205000	---	42.83	66.00	23.17	1000.0	9.000	L1	19.5
0.205000	51.68	---	79.00	27.32	1000.0	9.000	L1	19.5
0.985000	---	30.24	60.00	29.76	1000.0	9.000	L1	19.7
0.985000	34.71	---	73.00	38.29	1000.0	9.000	L1	19.7
0.990000	---	30.20	60.00	29.80	1000.0	9.000	L1	19.7
0.990000	34.79	---	73.00	38.21	1000.0	9.000	L1	19.7
5.135000	---	21.35	60.00	38.65	1000.0	9.000	L1	19.8
5.135000	27.57	---	73.00	45.43	1000.0	9.000	L1	19.8
28.225000	---	24.69	60.00	35.31	1000.0	9.000	L1	20.3
28.225000	25.22	---	73.00	47.78	1000.0	9.000	L1	20.3

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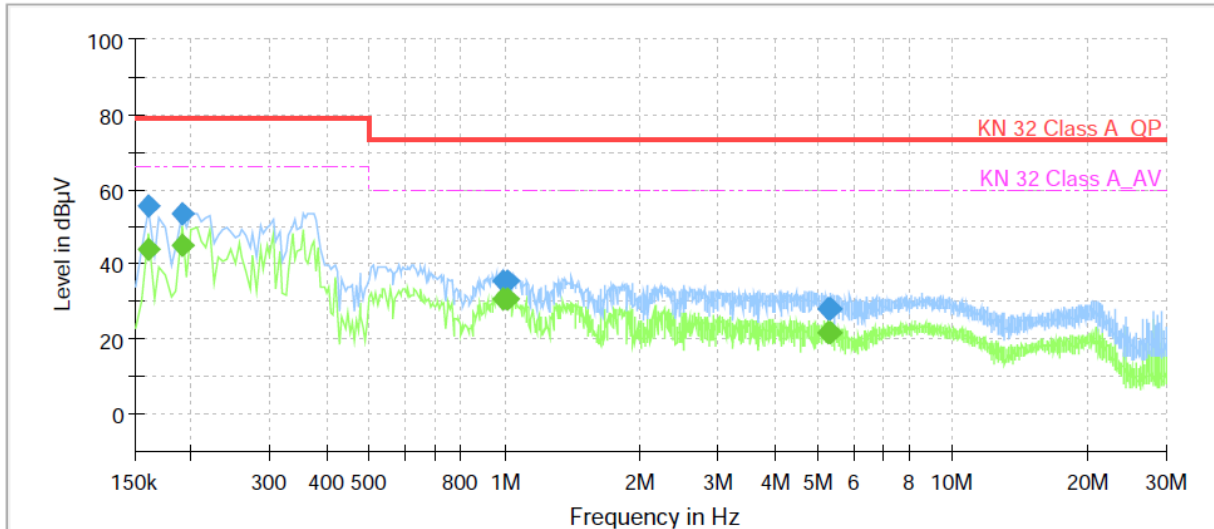
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KES-E1-19T0097-R2
Page (19) of (40)

NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Model No.: XNV-8081R
Mode: DC 12 V_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	---	43.72	66.00	22.28	1000.0	9.000	N	19.5
0.160000	55.77	---	79.00	23.23	1000.0	9.000	N	19.5
0.190000	---	45.03	66.00	20.97	1000.0	9.000	N	19.5
0.190000	53.60	---	79.00	25.40	1000.0	9.000	N	19.5
0.990000	---	30.73	60.00	29.27	1000.0	9.000	N	19.7
0.990000	35.31	---	73.00	37.69	1000.0	9.000	N	19.7
1.015000	---	30.84	60.00	29.16	1000.0	9.000	N	19.7
1.015000	35.49	---	73.00	37.51	1000.0	9.000	N	19.7
5.270000	---	21.95	60.00	38.05	1000.0	9.000	N	19.8
5.270000	28.16	---	73.00	44.84	1000.0	9.000	N	19.8
5.335000	---	21.58	60.00	38.42	1000.0	9.000	N	19.8
5.335000	27.98	---	73.00	45.02	1000.0	9.000	N	19.8

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Page (20) of (40)

■ PoE

HOT LINE

Common Information

Test Description:

Conducted Emission

Model No.:

XNV-8081R

Phase:

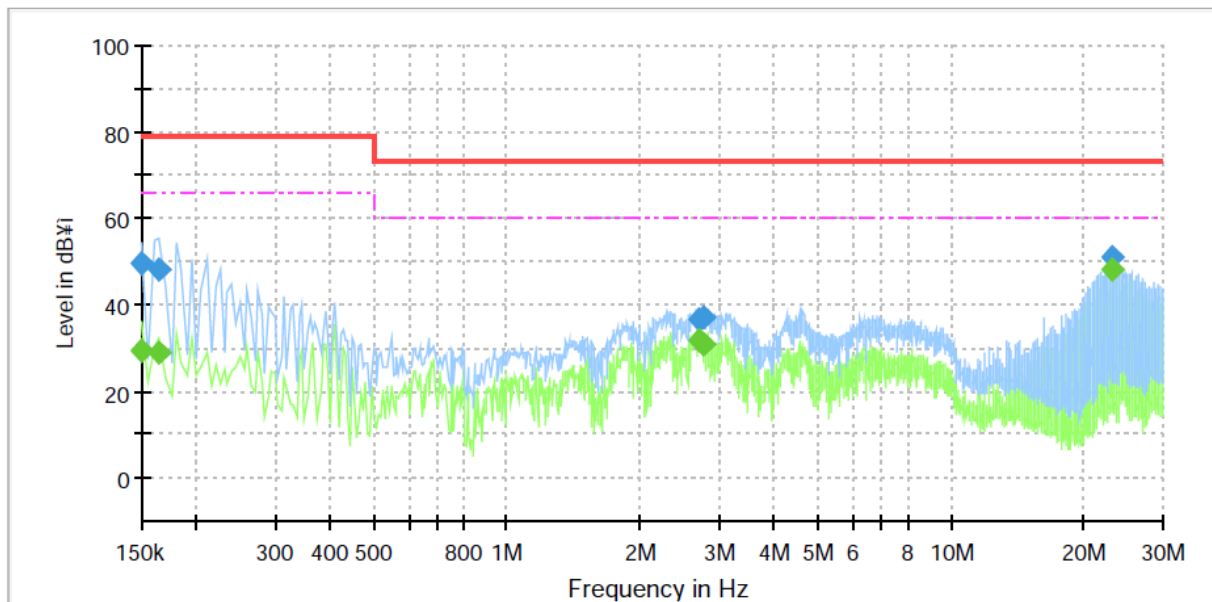
L1

Mode:

PoE

Operator Name:

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	29.43	66.00	36.57	1000.0	9.000	L1	19.6
0.150000	49.34	---	79.00	29.66	1000.0	9.000	L1	19.6
0.165000	---	28.69	66.00	37.31	1000.0	9.000	L1	19.5
0.165000	48.08	---	79.00	30.92	1000.0	9.000	L1	19.5
2.715000	---	31.95	60.00	28.05	1000.0	9.000	L1	19.7
2.715000	36.68	---	73.00	36.32	1000.0	9.000	L1	19.7
2.785000	---	30.64	60.00	29.36	1000.0	9.000	L1	19.7
2.785000	36.86	---	73.00	36.14	1000.0	9.000	L1	19.7
23.130000	---	48.00	60.00	12.00	1000.0	9.000	L1	20.2
23.130000	51.07	---	73.00	21.93	1000.0	9.000	L1	20.2

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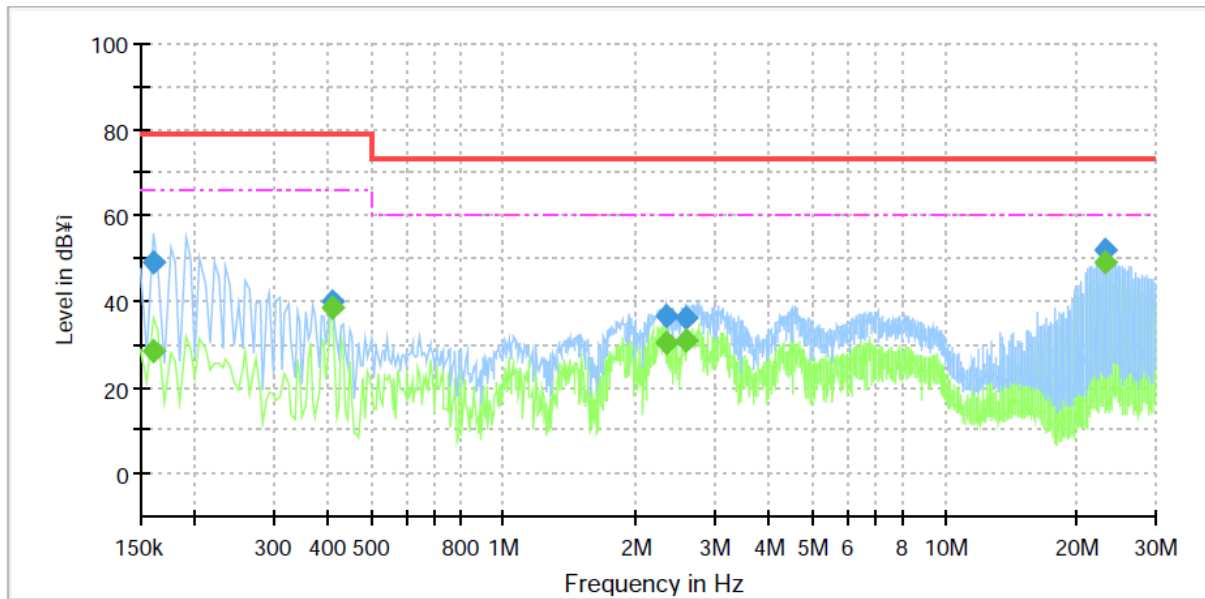
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNV-8081R
Phase:	N
Mode:	PoE
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	---	28.55	66.00	37.45	1000.0	9.000	N	19.6
0.160000	48.89	---	79.00	30.11	1000.0	9.000	N	19.6
0.410000	---	38.40	66.00	27.60	1000.0	9.000	N	19.7
0.410000	40.11	---	79.00	38.89	1000.0	9.000	N	19.7
2.350000	---	30.53	60.00	29.47	1000.0	9.000	N	19.8
2.350000	36.69	---	73.00	36.31	1000.0	9.000	N	19.8
2.595000	---	30.69	60.00	29.31	1000.0	9.000	N	19.8
2.595000	36.25	---	73.00	36.75	1000.0	9.000	N	19.8
23.130000	---	48.98	60.00	11.02	1000.0	9.000	N	20.4
23.130000	52.05	---	73.00	20.95	1000.0	9.000	N	20.4

◆ Calculation

$$\text{QuasiPeak [dBuV]} / \text{CAverage [dBuV]} = \text{Reading Value [dBuV]} + \text{Corr. [dB]}$$

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

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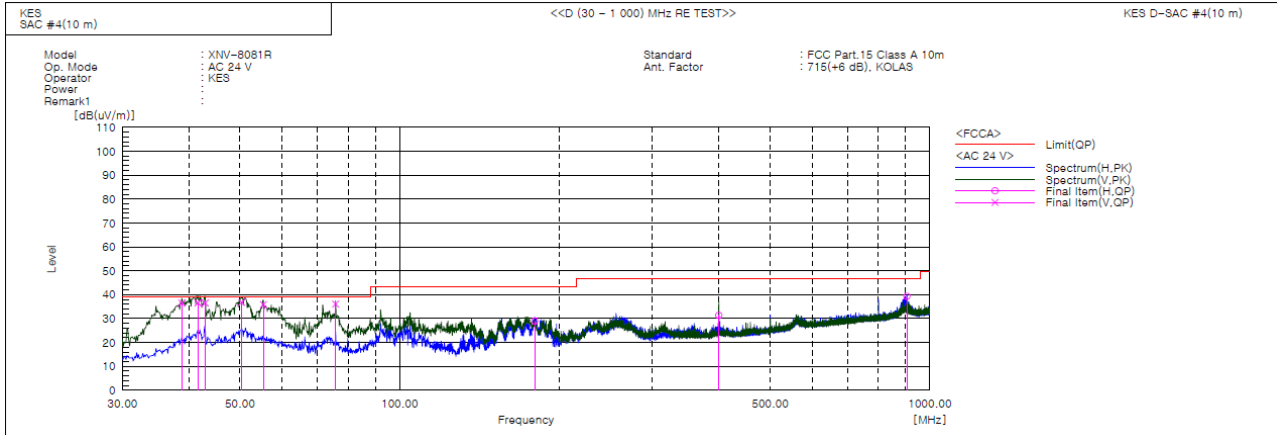
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Page (22) of (40)

Radiated Electric Field Emissions(Below 1 GHz)

■ AC 24 V



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	38.851	V	60.1	-23.6	36.5	39.0	2.5	100.0	179.0	
2	41.645	V	59.1	-22.5	36.6	39.0	2.4	100.0	110.0	
3	42.974	V	58.8	-22.3	36.5	39.0	2.5	153.0	43.0	
4	50.377	V	58.3	-21.5	36.8	39.0	2.2	108.0	345.0	
5	55.355	V	57.8	-21.9	35.9	39.0	3.1	166.0	285.0	
6	75.711	V	63.2	-27.1	36.1	39.0	2.9	164.0	154.0	
7	179.865	H	52.9	-23.9	29.0	43.5	14.5	400.0	50.0	
8	400.045	H	46.7	-15.3	31.4	46.5	15.1	395.0	129.0	
9	905.309	H	45.0	-5.7	39.3	46.5	7.2	185.0	48.0	

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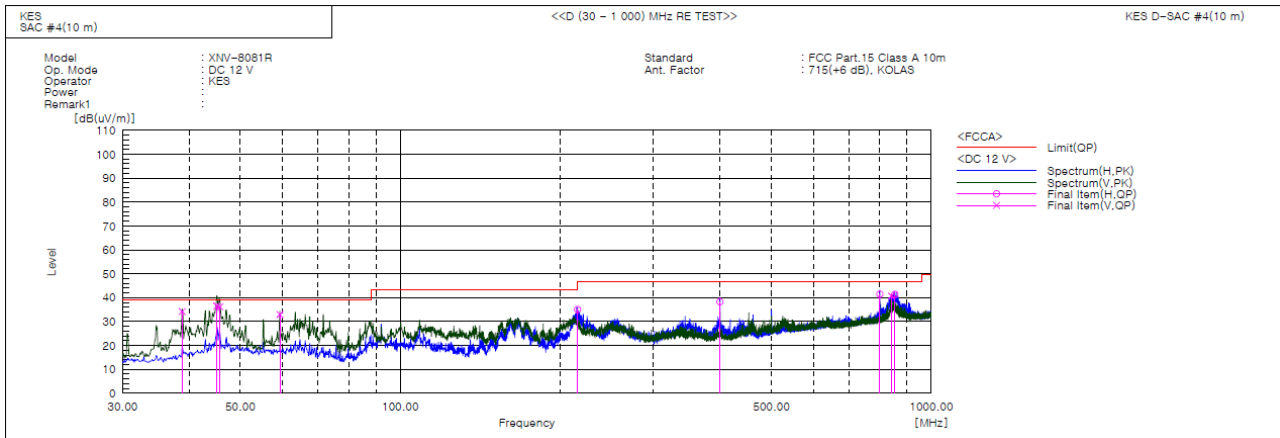
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KES-E1-19T0097-R2

Page (23) of (40)

■ DC 12 V



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	38.851	V	57.8	-23.6	34.2	39.0	4.8	105.0	254.0	
2	45.156	V	58.5	-22.0	36.5	39.0	2.5	100.0	297.0	
3	45.763	V	58.1	-21.9	36.2	39.0	2.8	153.0	254.0	
4	59.343	V	55.5	-22.5	33.0	39.0	6.0	108.0	294.0	
5	215.755	H	56.0	-20.9	35.1	43.5	8.4	400.0	93.0	
6	400.055	H	53.6	-15.3	38.3	46.5	8.2	195.0	318.0	
7	800.059	H	49.2	-7.7	41.5	46.5	5.0	204.0	21.0	
8	841.041	V	47.5	-6.8	40.7	46.5	5.8	101.0	23.0	
9	853.773	H	47.8	-6.4	41.4	46.5	5.1	206.0	1.0	

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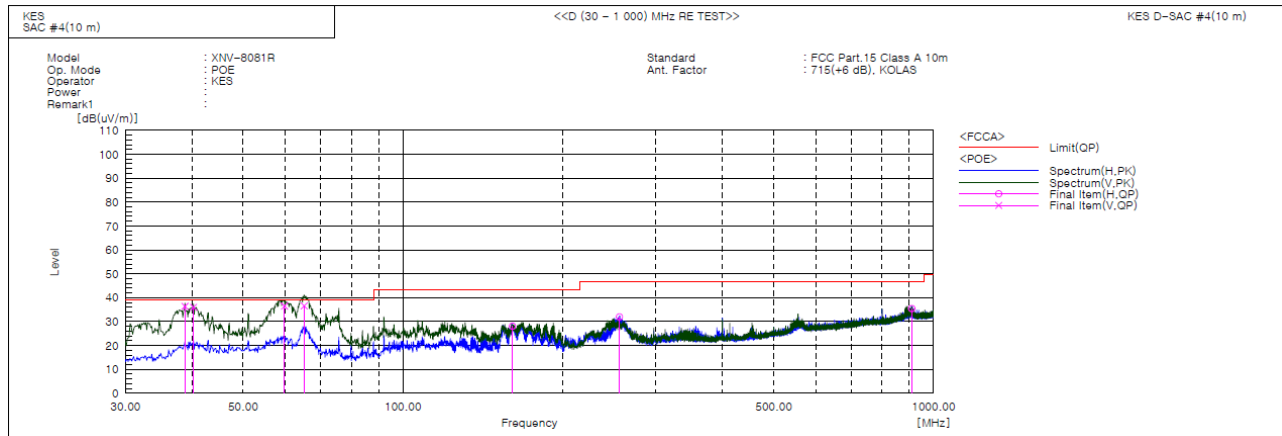
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Page (24) of (40)

■ PoE



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	38.851	V	60.0	-23.6	36.4	39.0	2.6	107.0	259.0	
2	40.306	V	58.9	-22.9	36.0	39.0	3.0	100.0	64.0	
3	59.828	V	59.1	-22.6	36.5	39.0	2.5	100.0	251.0	
4	65.163	V	60.3	-23.7	36.6	39.0	2.4	137.0	154.0	
5	160.829	H	53.1	-25.0	28.1	43.5	15.4	400.0	62.0	
6	255.889	H	52.0	-20.0	32.0	46.5	14.5	388.0	221.0	
7	910.033	H	41.2	-5.7	35.5	46.5	11.0	105.0	277.0	

◆ Calculation - SAC #4(10 m)

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

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

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

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

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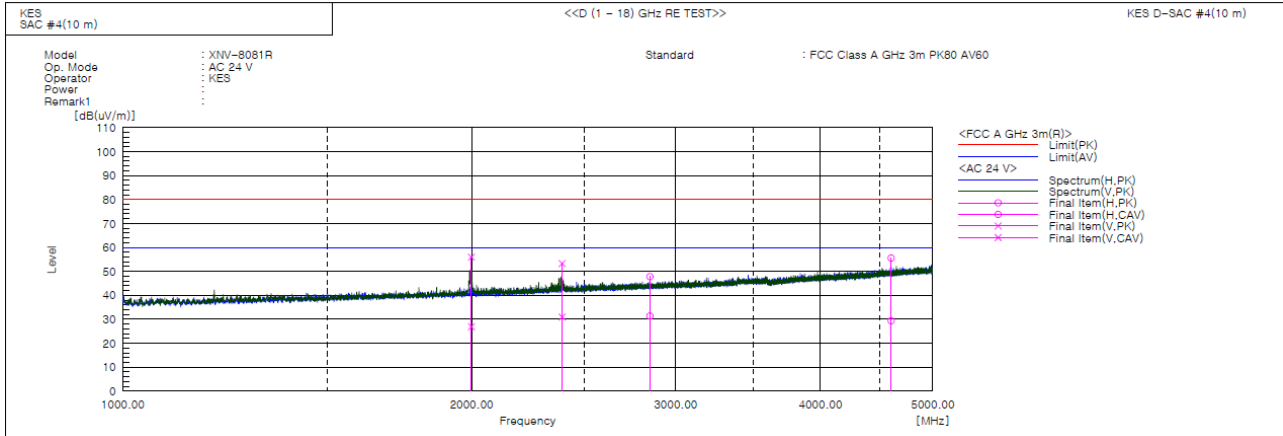
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Page (25) of (40)

Radiated Electric Field Emissions(Above 1 GHz)

■ AC 24 V



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1999.365	V	56.4	27.3	-0.4	56.0	26.9	80.0	60.0	24.0	33.1	102.0	350.0	
2	2394.181	V	51.9	29.6	1.4	53.3	31.0	80.0	60.0	26.7	29.0	105.0	10.0	
3	2850.695	H	44.6	28.2	3.2	47.8	31.4	80.0	60.0	32.2	28.6	399.0	42.0	
4	4602.705	H	45.7	19.5	9.9	55.6	29.4	80.0	60.0	24.4	30.6	384.0	246.0	

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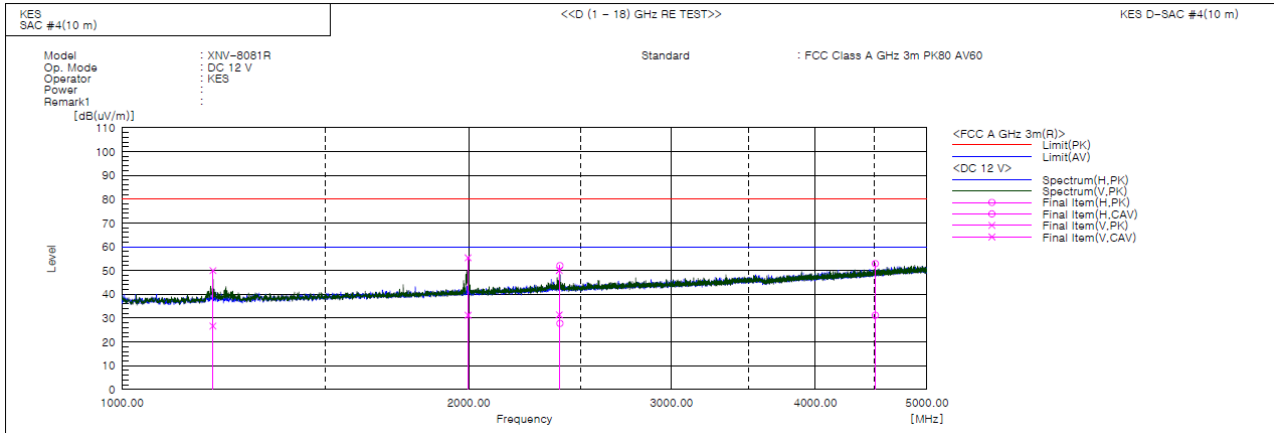


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Page (26) of (40)

■ DC 12 V



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1199.477	V	54.8	31.5	-4.8	50.0	26.7	80.0	60.0	30.0	33.3	101.0	19.0	
2	1997.495	V	55.8	31.6	-0.4	55.4	31.2	80.0	60.0	24.6	28.8	103.0	347.0	
3	2397.533	V	48.5	29.9	1.5	50.0	31.4	80.0	60.0	30.0	28.6	109.0	31.0	
4	2400.693	H	50.6	26.3	1.5	52.1	27.8	80.0	60.0	27.9	32.2	361.0	337.0	
5	4509.154	H	43.4	21.7	9.5	52.9	31.2	80.0	60.0	27.1	28.8	288.0	242.0	

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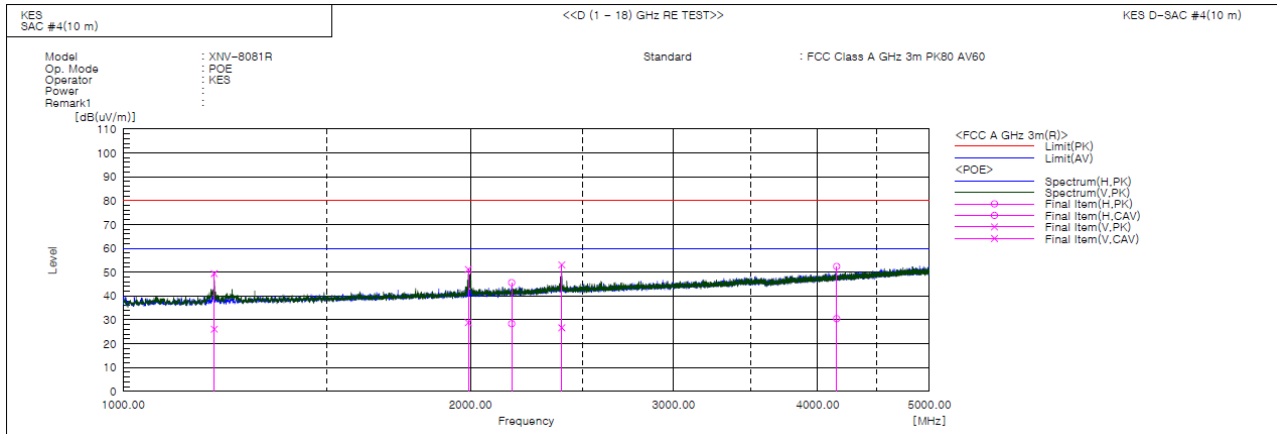


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Report No.:
KES-E1-19T0097-R2
Page (27) of (40)

■ PoE



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1199.532	V	54.2	30.9	-4.8	49.4	26.1	80.0	60.0	30.6	33.9	105.0	29.0	
2	1992.106	V	51.6	29.3	-0.4	51.2	28.9	80.0	60.0	28.8	31.1	100.0	229.0	
3	2172.000	H	45.2	28.0	0.4	45.6	28.4	80.0	60.0	34.4	31.6	395.0	122.0	
4	2400.115	V	51.6	25.2	1.5	53.1	26.7	80.0	60.0	26.9	33.3	103.0	305.0	
5	4154.514	H	44.3	22.4	8.1	52.4	30.5	80.0	60.0	27.6	29.5	344.0	126.0	

◆ Calculation

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

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

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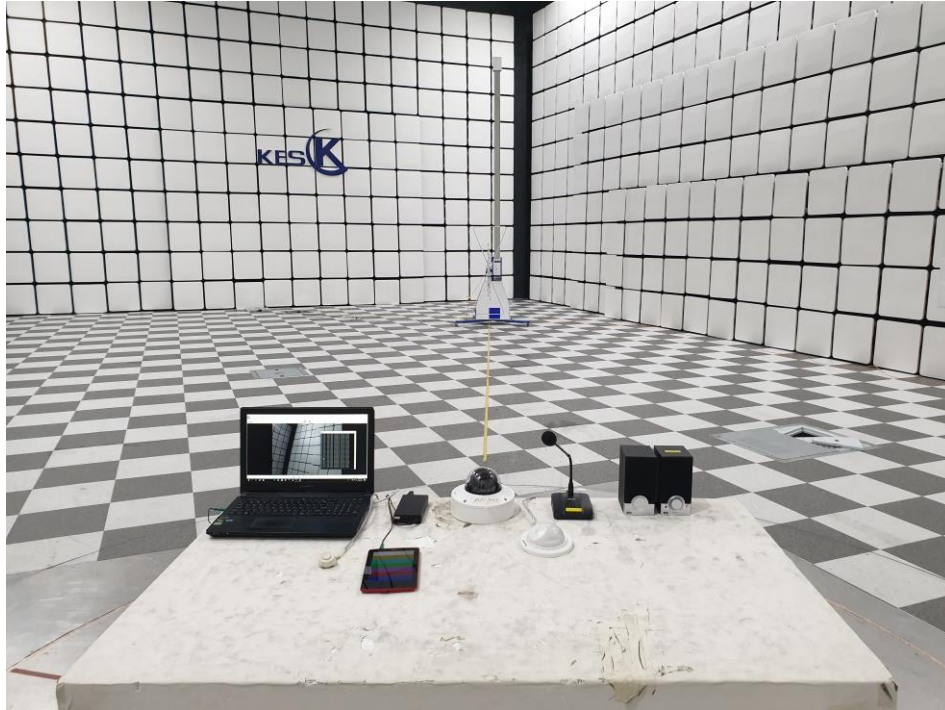
Test Setup Photos and Configuration

Conducted Voltage Emissions



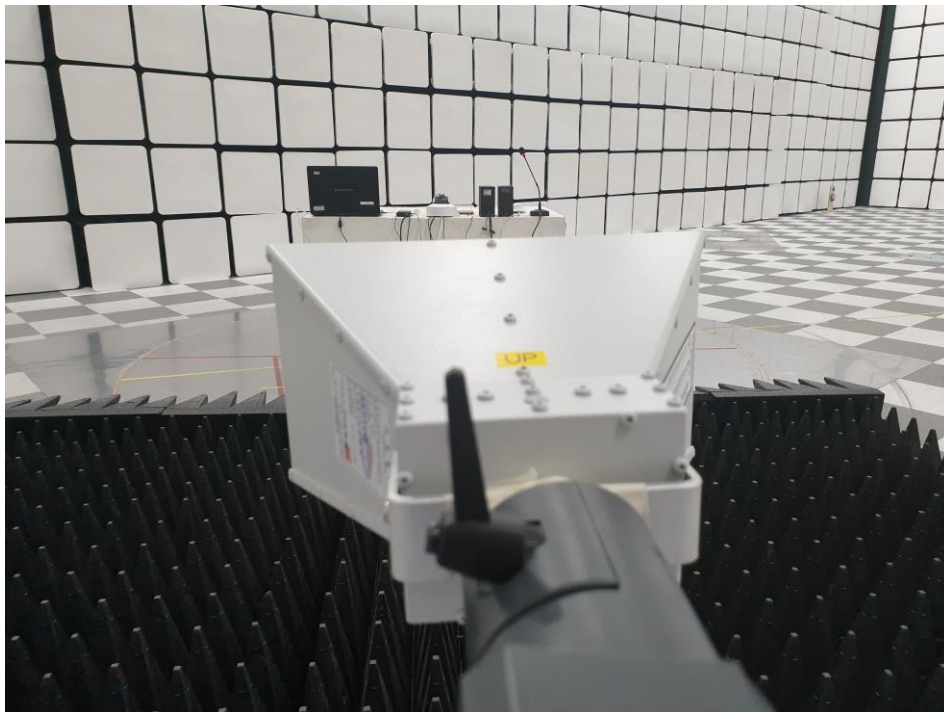
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



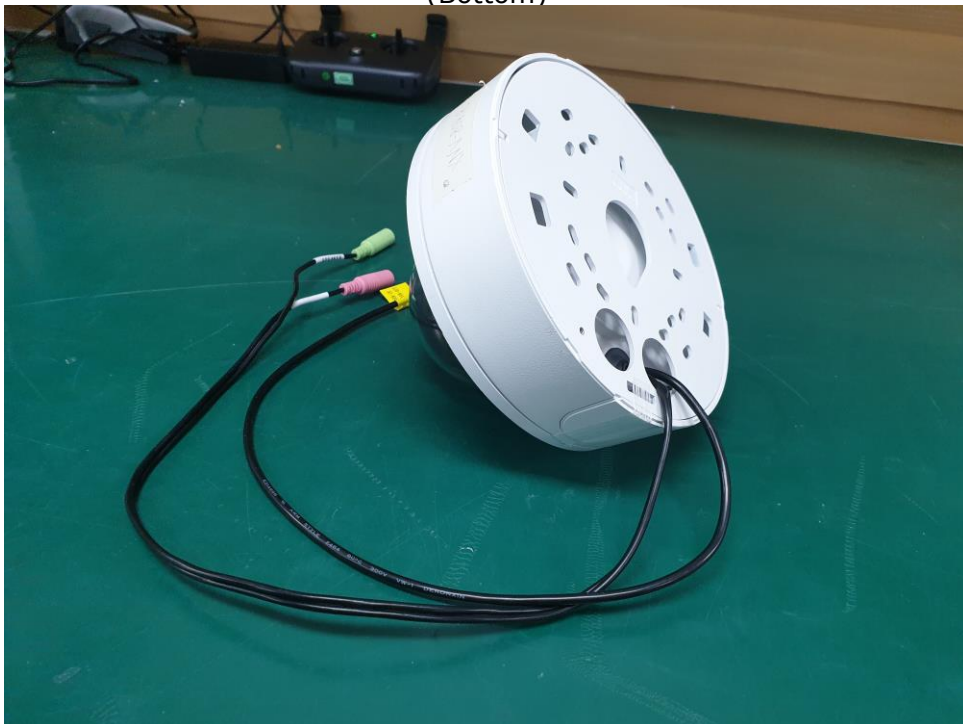
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EUT External Photographs

(Top)



(Bottom)



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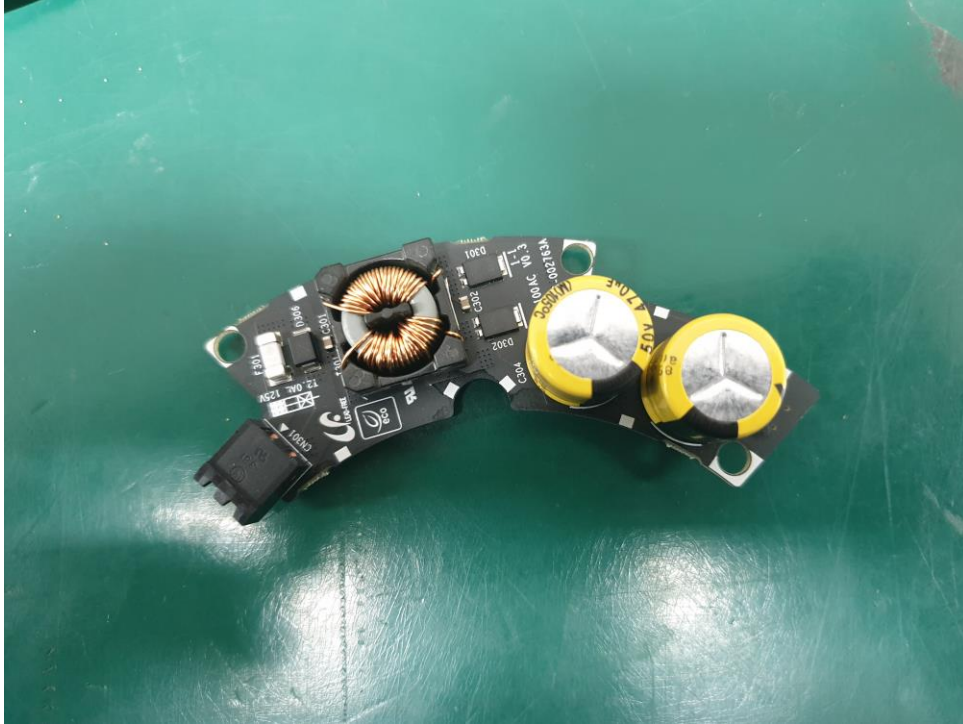
EUT Internal Photographs

(Internal View)



EUT Internal View – AC Module Board

(Top)



(Bottom)



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EUT Internal View – AC Module

(Top)



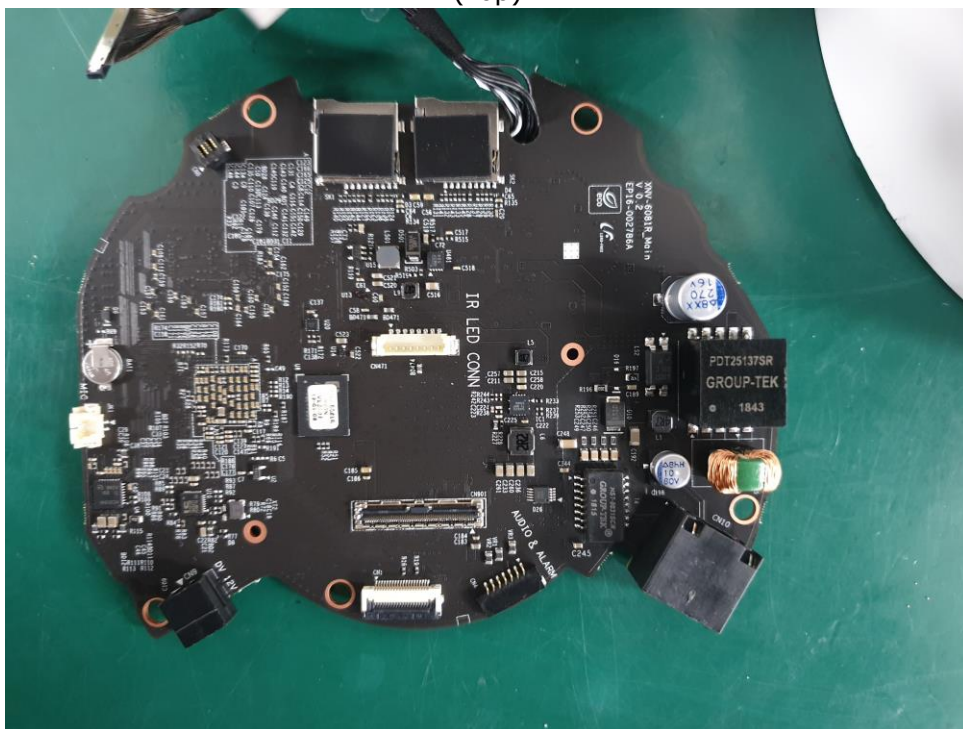
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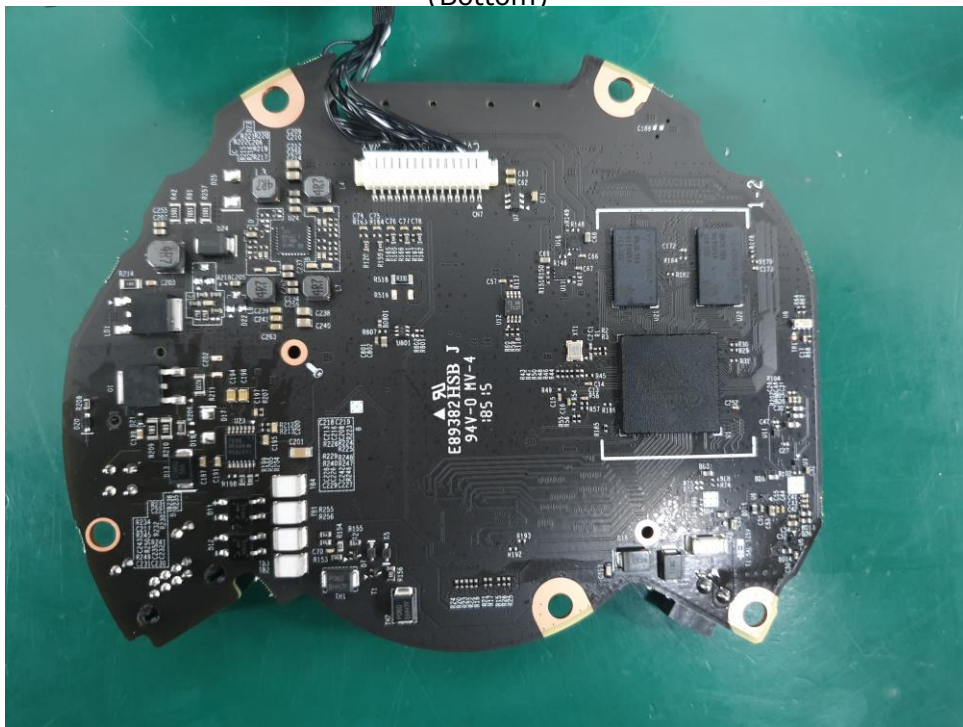
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EUT Internal View – Board 1

(Top)



(Bottom)



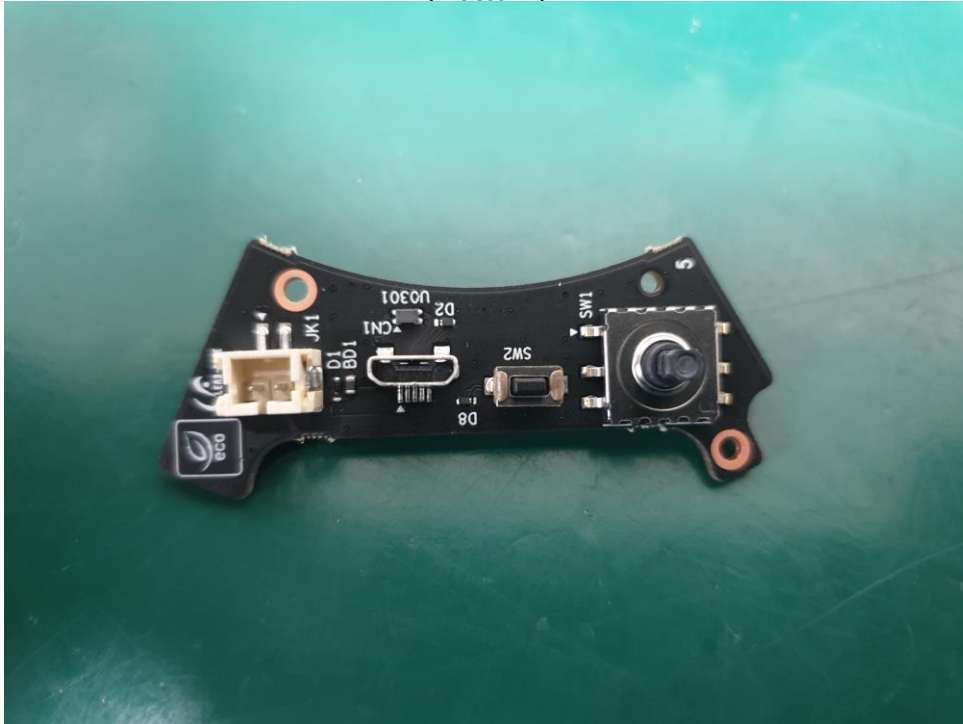
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EUT Internal View – Board 2

(Top)



(Bottom)



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EUT Internal View – Board 3

(Top)



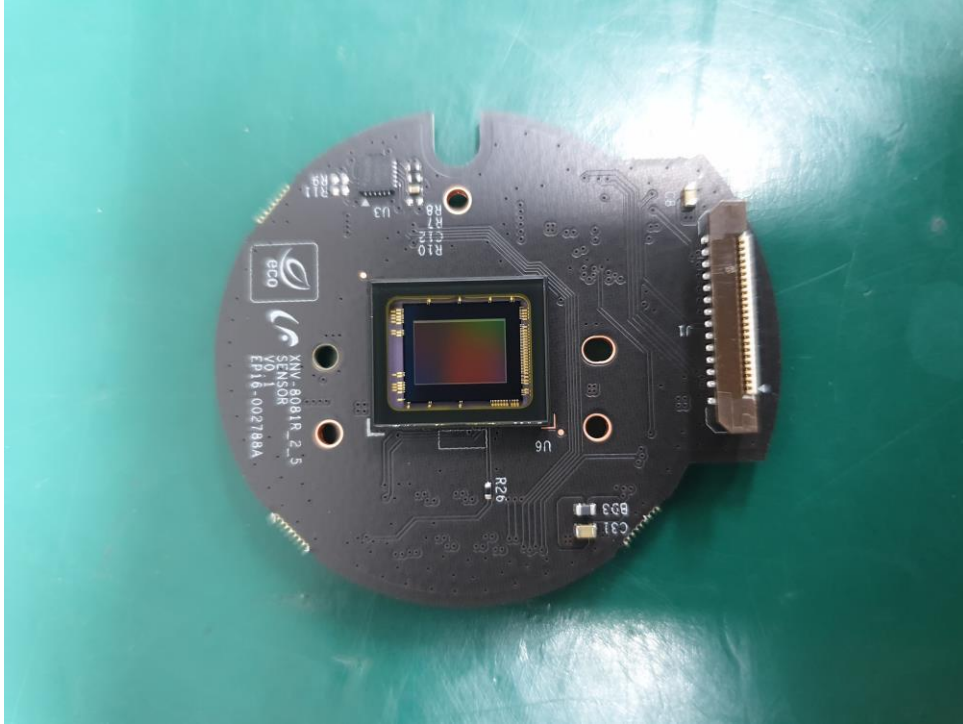
(Bottom)



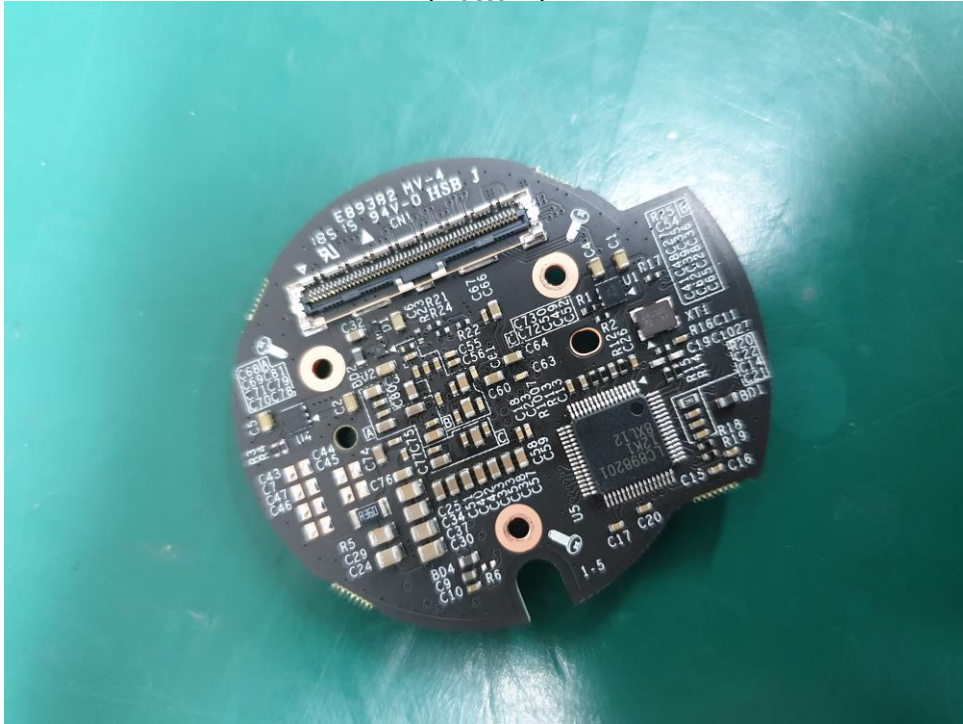
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EUT Internal View – Board 4

(Top)



(Bottom)



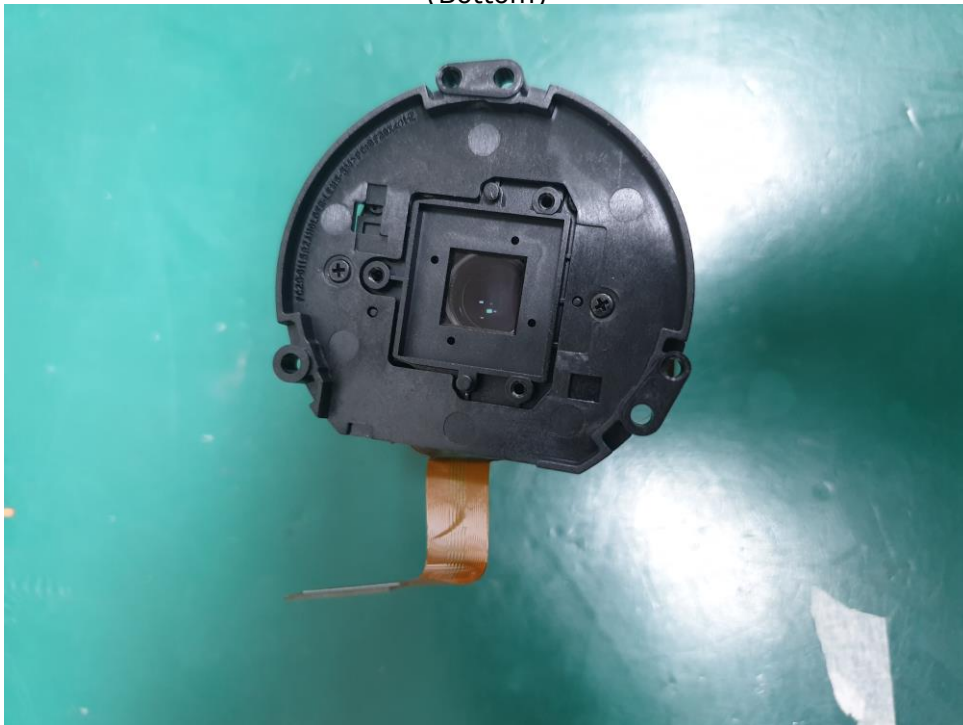
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EUT Internal View – Camera Lens

(Top)

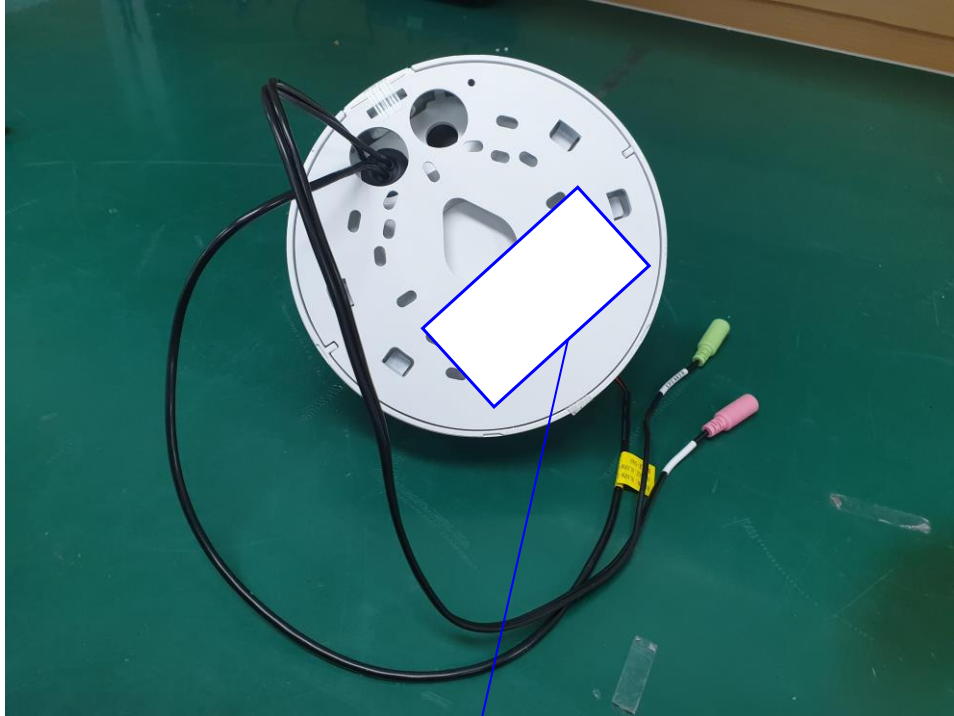


(Bottom)



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Label Photographs



CAN ICES-3(A) / NMB-3(A)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

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.