

**KES Co., Ltd.**

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www.kes.co.kr

Report No.:

KES-E1-19T0658-R4

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EMC TEST REPORT

Test Report No. : KES-E1-19T0658-R4

Date of Issue : Feb. 24, 2023

Product name : Network Camera

Model/Type No. : PNV-A9081R

Variant Mode : PNV-A9081RLP, PNV-A9081ROP

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 : **Supplier's Declaration of Conformity**

Date of Receipt : Sep. 30, 2019

Test date : Oct. 07, 2019

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

Tested by

Seong Min, Choi
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
Oct. 21, 2019	KES-E1-19T0658	Issued
Dec. 10, 2020	KES-E1-19T0658-R1	Reissuance due to the addition of a derivative
Jul. 29, 2021	KES-E1-19T0658-R2	Specification update, reissue due to manufacturer deletion
Nov. 15, 2021	KES-E1-19T0658-R3	- 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-E1-19T0658-R4	Change the Applicant and manufacturer at the request of the customer

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/1.8" CMOS
Resolution	3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800 x 600, 800 x 448, 720 x 576, 720x480, 640x480, 640x360
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec), 0Lux(IR LED on)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	4.5~10mm(2.2x) motorized varifocal
Max. Aperture Ratio	F1.6(Wide)~F2.65(Tele)
Angular Field of View	H:101.4°(Wide)~45.5°(Tele) / V:53.6°(Wide)~25.5°(Tele) / D:120.7°(Wide)~52.3°(Tele)
Min. Object Distance	0.5m(1.64ft)
Focus Control	Simple focus
Lens Type	DC auto iris, P iris
Mount Type	None
Optional Lens	None
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	0°~360° / -45°~85° / 0°~355°
Pan Range	None
Pan Speed	None

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Tilt Range	None
Tilt Speed	None
Rotate Range	None
Sequence	None
Preset Accuracy	None
Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto(ICR)
Backlight Compensation	BLC, WDR, SDR
Wide Dynamic Range	None
Digital Noise Reduction	SSNR V, WiseNR II(using AI engine)
Digital Image Stabilization	Stabilization Support(built-in gyro sensor)
Defog	None
Motion Detection	8ea, polygonal zones
Privacy Masking	6ea, rectangle zones - Color: GrayBlack/White
Gain Control	Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC	Support
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/12,000sec) Auto prefer shutter control based on AI engine
Digital PTZ	None
Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Analytics	- Classified object type : Person/Face/Vehicle/License plate with attributes, BestShot per object - Analytics events based on AI engine : Object detection, Face mask detection , Directional detection, Digital auto tracking, Enter/Exit, Loitering, Virtual line, Social distancing detection - Analytics events : Defocus detection, Motion detection, Appear/Disappear, Tampering, Audio detection, Sound classification, Shock detection

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Business Intelligence	People counting, Queue management, Heatmap based on AI engine
Serial Interface	None
Alarm I/O	Input 1ea / Output 1ea / DC 12V Power(Max. 50mA) 1ea
Alarm Triggers	Analytics, Network disconnect, Alarm input
Alarm Events	File upload via FTP and 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: 2K Ohm
Audio Out	Line out, Max.output level: 1Vrms
IR Viewable Length	30m(98.42ft)
IR Illuminator (Optional)	None
Water Removal	None
Auto Tracking	None
Coaxial Protocol	None
Color Palettes	None
Radiometry	
Temperature detect range	None
Temperature accuracy	None
Temperature detection	None
Additional	None
Network	
Ethernet	Metal shielded RJ-45(10/100/1000 BASE-T)
Video Compression	H.265/H.264: Main/High, MJPEG
Audio Compression	G.711 u-law /G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC: 48Kbps at 16KHz

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Smart Codec	Manual(5ea area), WiseStreamⅡ, WiseStreamⅢ(using AI engine)
Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP) Device Certificate(Hanwha Techwin Root CA) Secure boot
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
General	
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB
Memory	4096MB RAM, 512MB Flash
Environmental & Electrical	
Operating Temperature / Humidity	-50°C ~ +55°C(-58°F ~ +131°F) / Less than 90% RH * Start up should be done at above -30°C

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Storage Temperature / Humidity	-50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH
Certification	IP66/IP67/IP6K9K, IK10+, NEMA4X
Input Voltage	PoE+(IEEE802.3at), 12VDC
Power Consumption	PoE+: Max 20.00W, typical 17.00W 12VDC: Max 18.70W, typical 15.00W
Mechanical	
Color / Material	White / Aluminum
RAL Code	RAL9003
Product dimensions / weight	Ø180x125mm(7.09x4.92"), Weight : 1.90Kg (4.19lb)
Compatible Conduit hole / Gangbox	3/4"(M25) Single, Double, 4"Octagon, Square
Hanging mount(Dome)	SBP-187HMW
Skin cover(Dome)	SBC-180B
Weather cap(Dome)	None
Power module	None
Backbox	None
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	Wide: 62.9m(206.34ft) / Tele: 183m(600.33ft)
Observe (63PPM/ 19PPF)	Wide: 25.1m(82.34ft) / Tele: 73.3m(240.46ft)
Recognize (125PPM/ 38PPF)	Wide: 12.6m(41.33ft) / Tele: 36.6m(120.07ft)
Identify (250PPM/ 76PPF)	Wide: 6.3m(20.67ft) / Tele: 18.3m(60.03ft)

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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

Addition of derivative model for distribution route classification

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
Network Camera	PNV-A9081R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Adaptor	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
PoE Adaptor	PT-PSE109GBRO-AH	EP06-003756A	Dongguan PROCET Network Technology Co.,Ltd	-
Notebook	LG15N54	410NZGK015231	LG	-
Notebook Adaptor	ADP-90WH B	84ZW19F1663	DELTA ELECTRONICS (JIANGSU) LTD.	-
Alarm In	-	-	-	-
Alarm Out	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
Smart Phone	SHV-E210L	R33D713KA3F	SAMSUNG	
Speaker	BR1000A Cuve Black 2	-	DONGGUAN EDIFIER TECHNOLOGY Co., Ltd	
Micro SD Card	-	-	SAMSUNG	32 GB

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1.6 External I/O Cabling

■ DC 12 V Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camera (EUT)	RJ - 45	Notebook	RJ - 45	3.0	U
	2 Pin	Alarm In	2 Pin	3.0	U
	2 Pin	Alarm Out	2 Pin	3.0	U
	3.5 m	Smart Phone	3.5 m	0.3	U
	3.5 m	Speaker	3.5 m	1.4	U
	Micro SD Card Slot	Micro SD Card	-	-	-

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camer (EUT)	RJ - 45	POE Adaptor	RJ - 45	3.0	U
	2 Pin	Alarm 1	2 Pin	3.0	U
	2 Pin	Alarm 2	2 Pin	3.0	U
	3.5 m	Smart Phone	3.5 m	0.3	U
	3.5 m	Speaker	3.5 m	1.4	U
	Micro SD Card Slot	Micro SD Card	-	-	-
	RJ - 45	POE Adaptor	RJ - 45	3.0	U

* Unshielded=U, Shielded=S

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1.7 EUT Operating Mode(s)

Test mode	operating
DC	EUT Monitoring, Ping test
POE	EUT Monitoring, Ping test

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

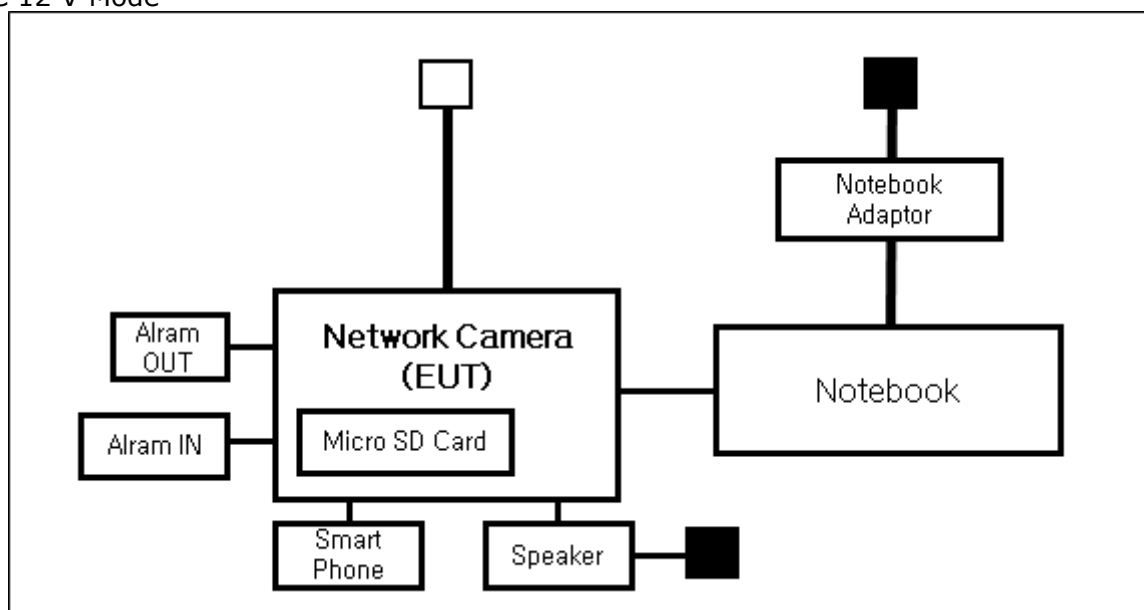
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1.8 Configuration

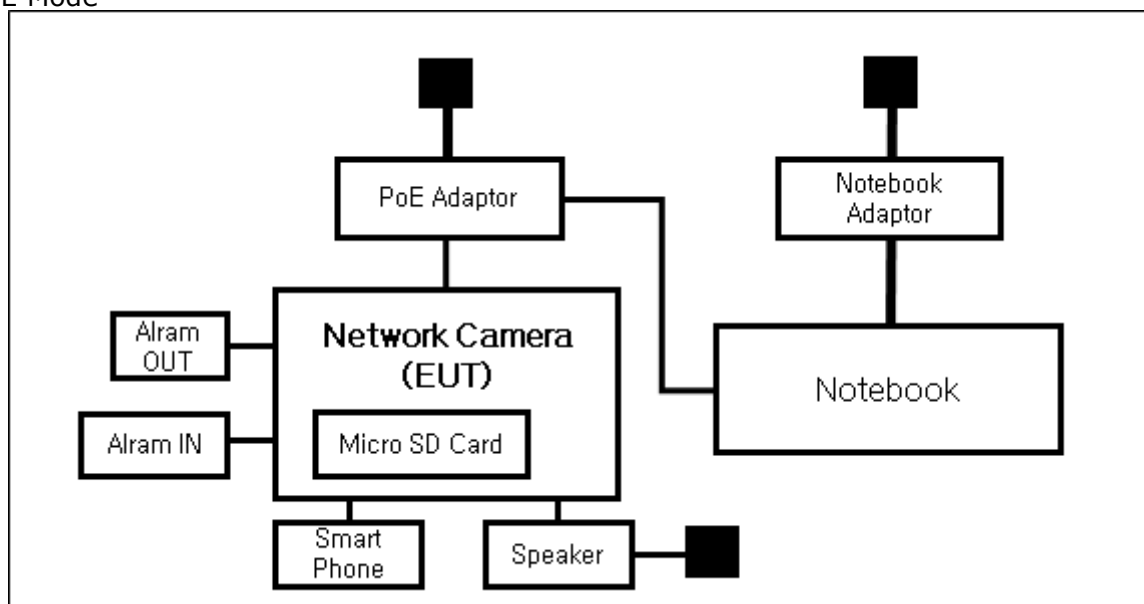
■ AC Main

□ DC Main

■ DC 12 V Mode



■ PoE Mode



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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

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Oct. 07, 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, 22, 2020
☒	LISN	ENV216	R & S	101787	01, 04, 2020
☒	LISN	ESH2-Z5	R & S	100450	04, 22, 2020
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 26, 2019

Test Conditions

Temperature: 23,9 °C
Relative Humidity: 54,9 % 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.

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2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Oct. 07, 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, 09, 2020
☒	AMPLIFIER	SCU 01	R & S	100603	11, 26, 2019
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 29, 2020
☒	ATTENUATOR	8491A	HP	32173	03, 11, 2020

Test Conditions

Temperature: 24,0 °C
Relative Humidity: 53,4 % 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

RemarksSee Appendix A for test data.

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2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Oct. 07, 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, 09, 2020
☒	PREAMPLIFIER	8449B	AGILENT	3008A01742	01, 08, 2020
☐	ATTENUATOR	8491A	HP	35496	03, 11, 2020
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 12, 2021

Test Conditions

Temperature: 24,0 °C
Relative Humidity: 53,4 % 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.

APPENDIX A – TEST DATA

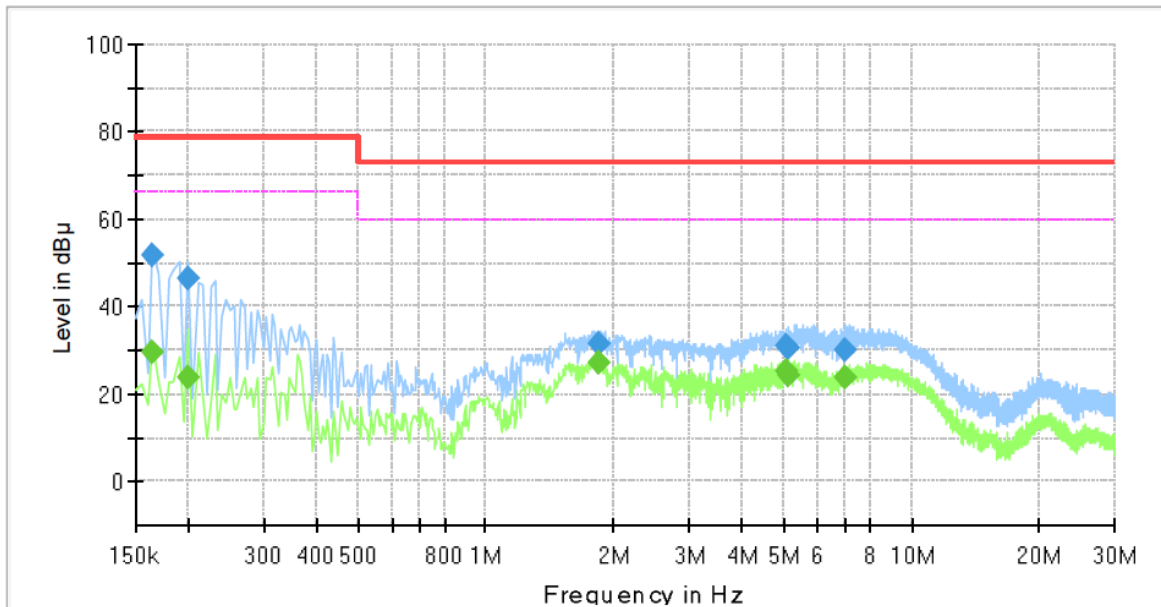
Conducted Emissions at Mains Power Ports

■ DC 12 V Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNV-A9081R
Phase:	N
Mode:	DC 12 V
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	29.61	66.00	36.39	1000.0	9.000	L1	19.5
0.165000	51.73	---	79.00	27.27	1000.0	9.000	L1	19.5
0.200000	---	23.84	66.00	42.16	1000.0	9.000	L1	19.5
0.200000	46.29	---	79.00	32.71	1000.0	9.000	L1	19.5
1.830000	---	27.13	60.00	32.87	1000.0	9.000	L1	20.4
1.830000	31.58	---	73.00	41.42	1000.0	9.000	L1	20.4
5.060000	---	25.05	60.00	34.95	1000.0	9.000	L1	19.6
5.060000	31.07	---	73.00	41.93	1000.0	9.000	L1	19.6
5.145000	---	24.23	60.00	35.77	1000.0	9.000	L1	19.7
5.145000	30.61	---	73.00	42.39	1000.0	9.000	L1	19.7
6.975000	---	23.94	60.00	36.06	1000.0	9.000	L1	19.9
6.975000	30.15	---	73.00	42.85	1000.0	9.000	L1	19.9

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Report No.:

KES-E1-19T0658-R4

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NEUTRAL LINE

Common Information

Test Description:

Model No.:

Phase:

Mode:

Operator Name:

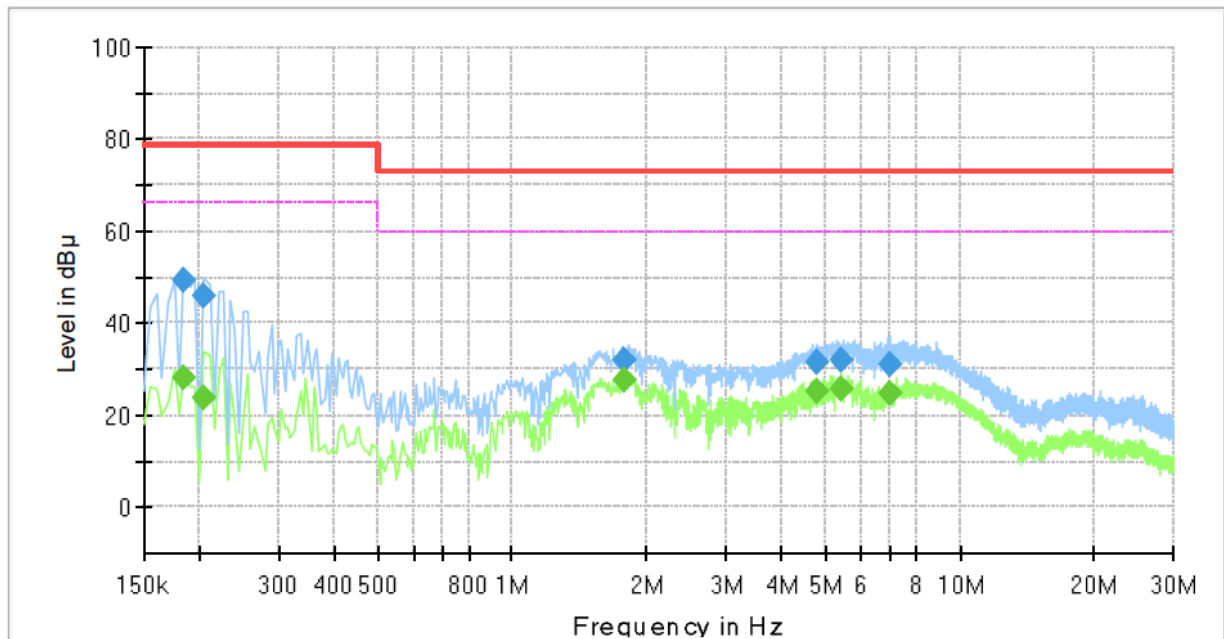
Conducted Emission

PNV-A9081R

N

DC 12 V

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.185000	---	28.10	66.00	37.90	1000.0	9.000	N	19.5
0.185000	49.31	---	79.00	29.69	1000.0	9.000	N	19.5
0.205000	---	23.97	66.00	42.03	1000.0	9.000	N	19.5
0.205000	45.89	---	79.00	33.11	1000.0	9.000	N	19.5
1.780000	---	27.62	60.00	32.38	1000.0	9.000	N	20.4
1.780000	32.16	---	73.00	40.84	1000.0	9.000	N	20.4
4.765000	---	25.24	60.00	34.76	1000.0	9.000	N	19.7
4.765000	31.43	---	73.00	41.57	1000.0	9.000	N	19.7
5.405000	---	25.60	60.00	34.40	1000.0	9.000	N	19.7
5.405000	32.03	---	73.00	40.97	1000.0	9.000	N	19.7
6.955000	---	24.76	60.00	35.24	1000.0	9.000	N	20.0
6.955000	31.10	---	73.00	41.90	1000.0	9.000	N	20.0

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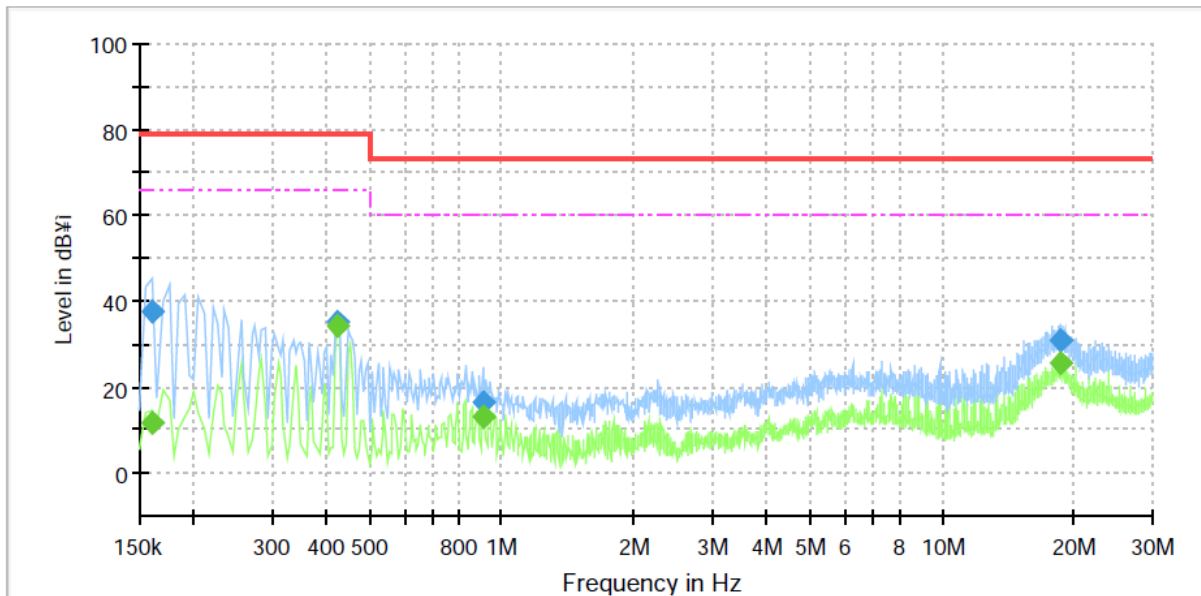
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■ PoE Mode

HOT LINE

Common Information

Test Description: Conducted Emission
Model No.: PNV-A9081R
Phase:
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	---	11.75	66.00	54.25	1000.0	9.000	L1	19.5
0.160000	37.76	---	79.00	41.24	1000.0	9.000	L1	19.5
0.425000	---	34.04	66.00	31.96	1000.0	9.000	L1	19.6
0.425000	35.28	---	79.00	43.72	1000.0	9.000	L1	19.6
0.905000	---	13.02	60.00	46.98	1000.0	9.000	L1	19.7
0.905000	16.40	---	73.00	56.60	1000.0	9.000	L1	19.7
18.600000	---	25.58	60.00	34.42	1000.0	9.000	L1	20.1
18.600000	30.85	---	73.00	42.15	1000.0	9.000	L1	20.1

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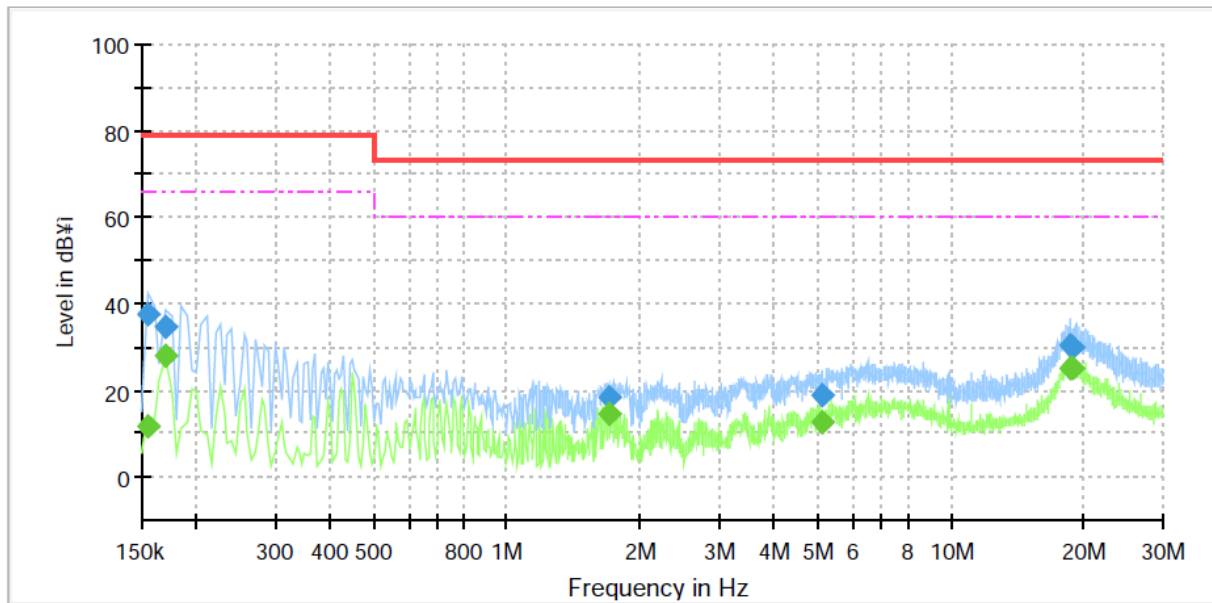
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NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Model No.: PNV-A9081R
Phase:
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)
0.155000	---	11.48	66.00	54.52	1000.0	9.000	N	19.6
0.155000	37.42	---	79.00	41.58	1000.0	9.000	N	19.6
0.170000	---	27.98	66.00	38.02	1000.0	9.000	N	19.6
0.170000	34.59	---	79.00	44.41	1000.0	9.000	N	19.6
1.690000	---	14.73	60.00	45.27	1000.0	9.000	N	19.7
1.690000	18.44	---	73.00	54.56	1000.0	9.000	N	19.7
5.105000	---	12.59	60.00	47.41	1000.0	9.000	N	19.8
5.105000	18.87	---	73.00	54.13	1000.0	9.000	N	19.8
18.690000	---	25.20	60.00	34.80	1000.0	9.000	N	20.3
18.690000	30.22	---	73.00	42.78	1000.0	9.000	N	20.3
18.810000	---	25.02	60.00	34.98	1000.0	9.000	N	20.3
18.810000	29.99	---	73.00	43.01	1000.0	9.000	N	20.3

◆ 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))

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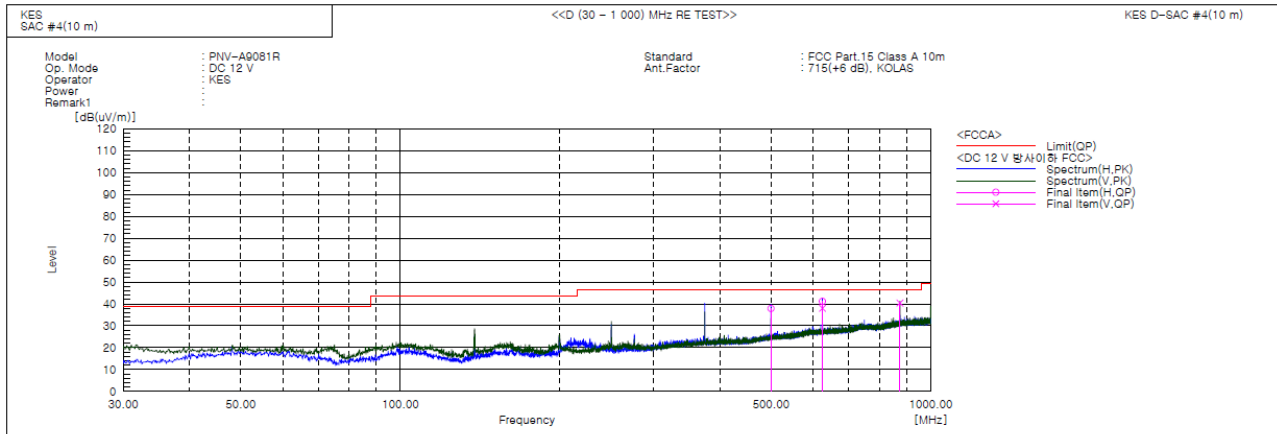
Report No.:

KES-E1-19T0658-R4

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Radiated Electric Field Emissions(Below 1 GHz)

■ DC 12 V Mode



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	499.965	H	50.6	-12.7	37.9	46.5	8.6	185.0	106.0	
2	624.974	H	50.7	-9.5	41.2	46.5	5.3	100.0	141.0	
3	624.974	V	47.5	-9.5	38.0	46.5	8.5	400.0	246.0	
4	874.991	V	46.4	-6.0	40.4	46.5	6.1	181.0	222.0	

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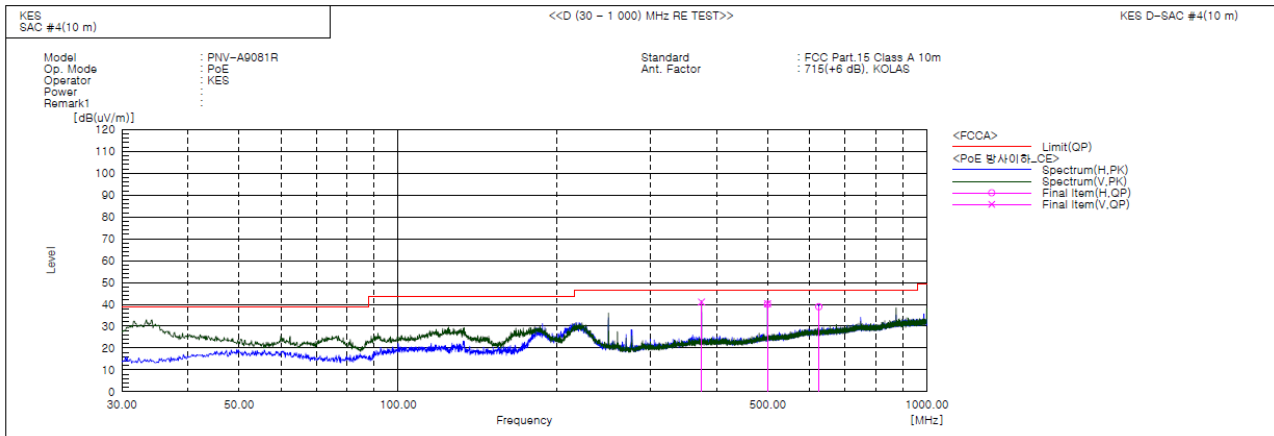
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■ PoE Mode



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	374.956	V	56.8	-15.7	41.1	46.5	5.4	100.0	137.0	
2	499.965	V	53.0	-12.7	40.3	46.5	6.2	345.0	63.0	
3	499.965	H	52.8	-12.7	40.1	46.5	6.4	197.0	296.0	
4	624.974	H	48.4	-9.5	38.9	46.5	7.6	246.0	58.0	

◆ 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 - Preamplifier Factor), Margin: Margin value

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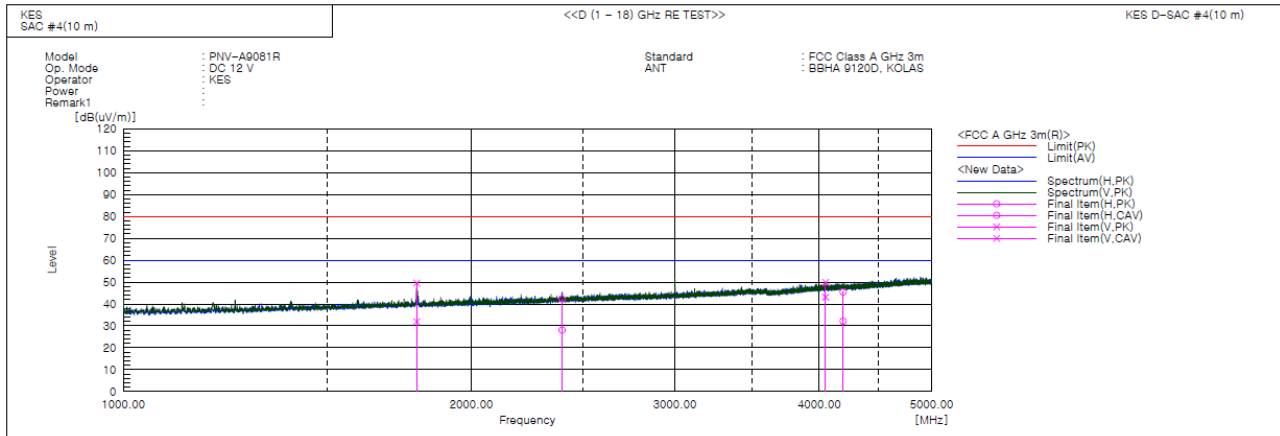
Report No.:

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Radiated Electric Field Emissions(Above 1 GHz)

■ DC 12 V Mode



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	1794.300	V	51.0	33.3	-1.4	49.6	31.9	80.0	60.0	30.4	28.1	103.0	183.0	
2	2396.545	H	41.0	26.7	1.4	42.4	28.1	80.0	60.0	37.6	31.9	213.0	260.0	
3	4049.900	V	41.9	35.3	7.9	49.8	43.2	80.0	60.0	30.2	16.8	100.0	235.0	
4	4194.220	H	37.2	23.9	8.3	45.5	32.2	80.0	60.0	34.5	27.8	269.0	136.0	

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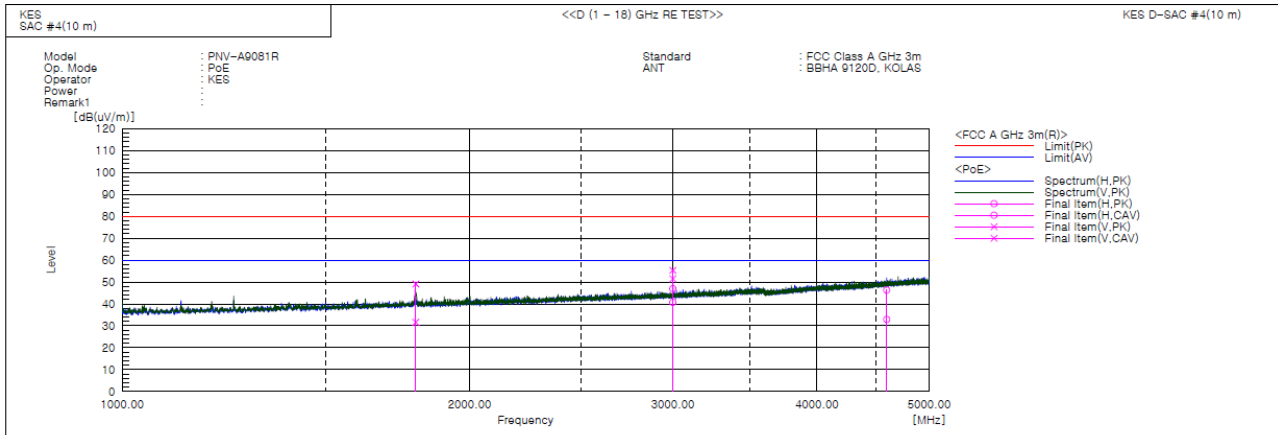
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PoE Mode



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	1796.685	V	50.5	33.1	-1.4	49.1	31.7	80.0	60.0	30.9	28.3	101.0	164.0	
2	3000.000	H	43.3	37.0	3.7	47.0	40.7	80.0	60.0	33.0	19.3	391.0	144.0	
3	3000.050	V	51.7	47.8	3.7	55.4	51.5	80.0	60.0	24.6	8.5	241.0	155.0	
4	4596.065	H	36.4	23.0	9.9	46.3	32.9	80.0	60.0	33.7	27.1	168.0	120.0	

Calculation

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

Margin(PK/CAV)[dB] = Limit[dB(uV/m)] - Result(PK/CAV) [dB(uV/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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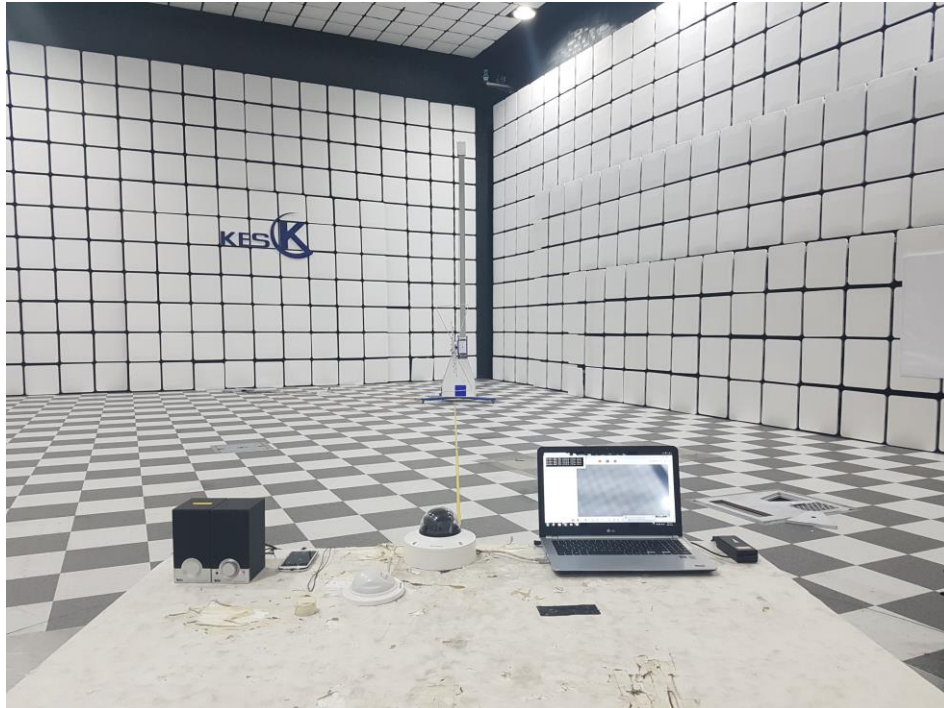
Test Setup Photos and Configuration

Conducted Voltage Emissions



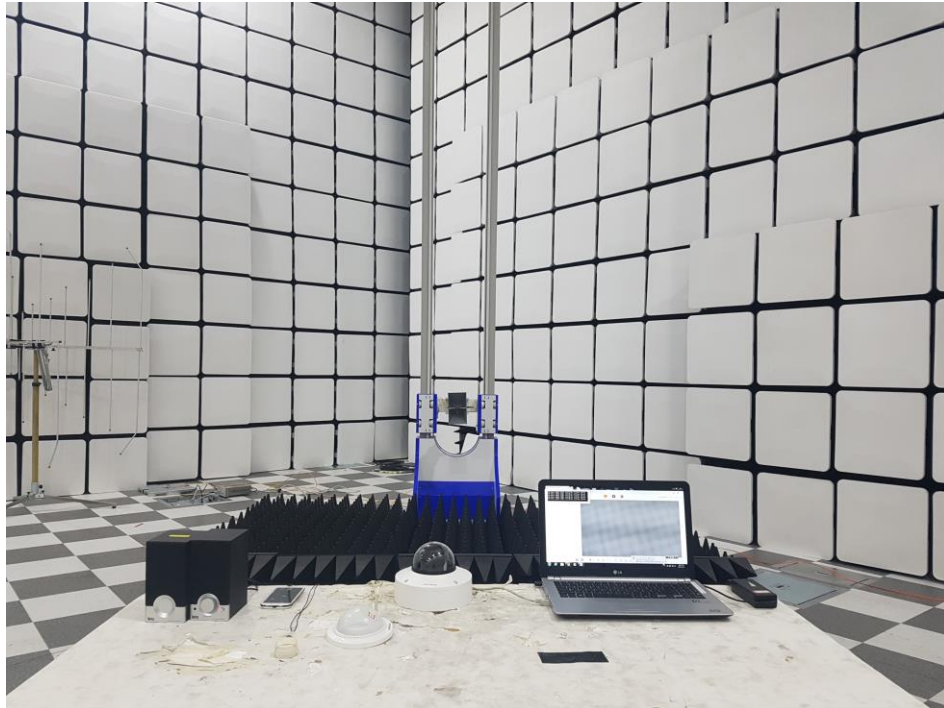
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



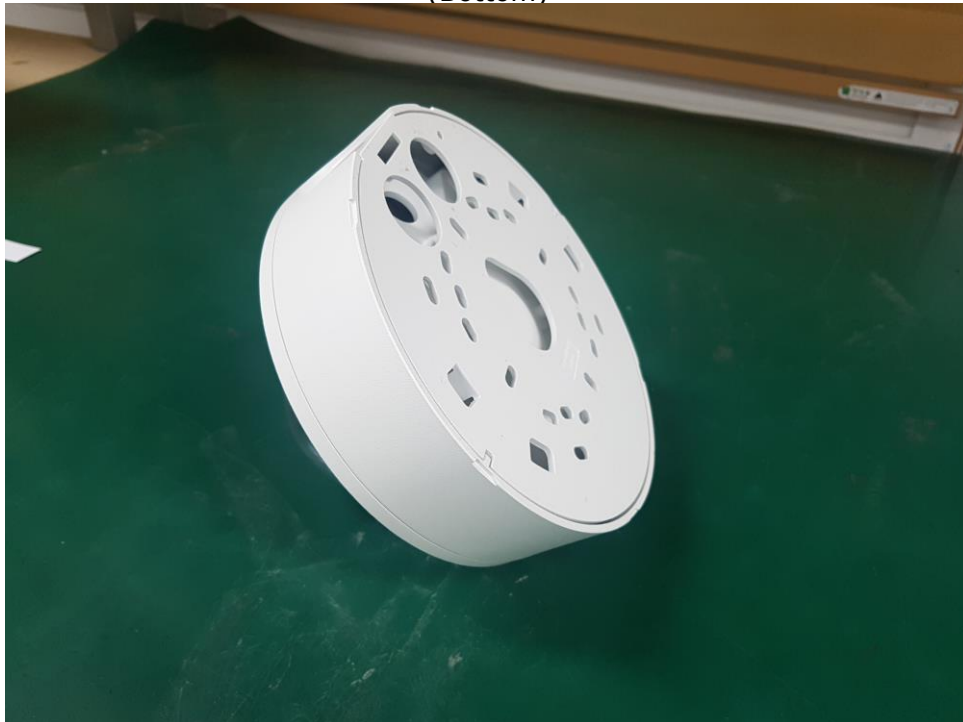
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EUT External Photographs

(Top)



(Bottom)



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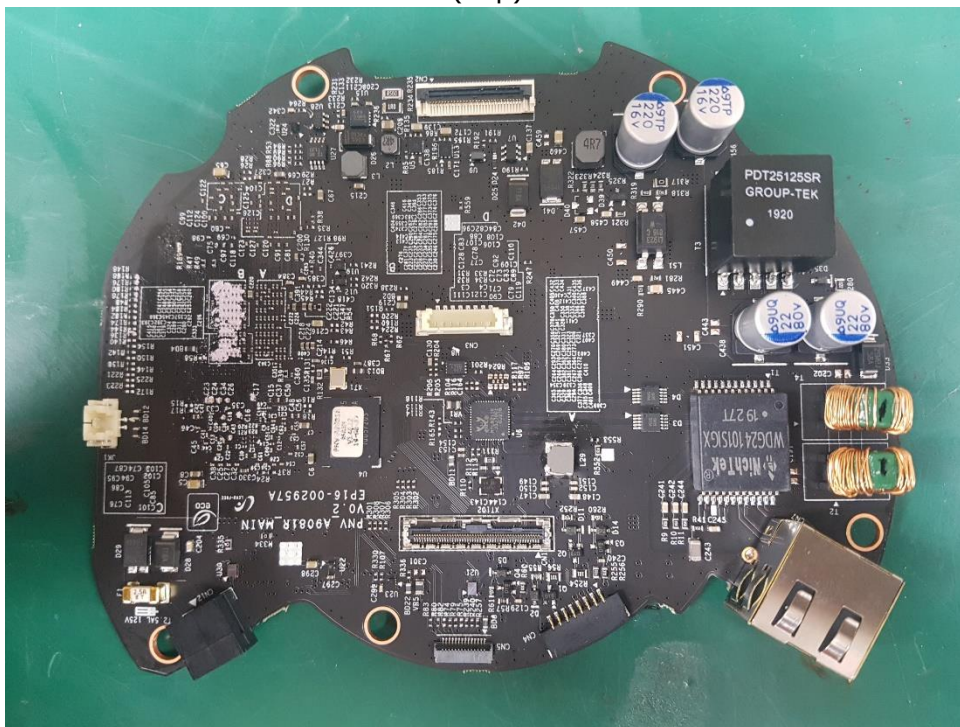
EUT Internal Photographs

(Internal View)

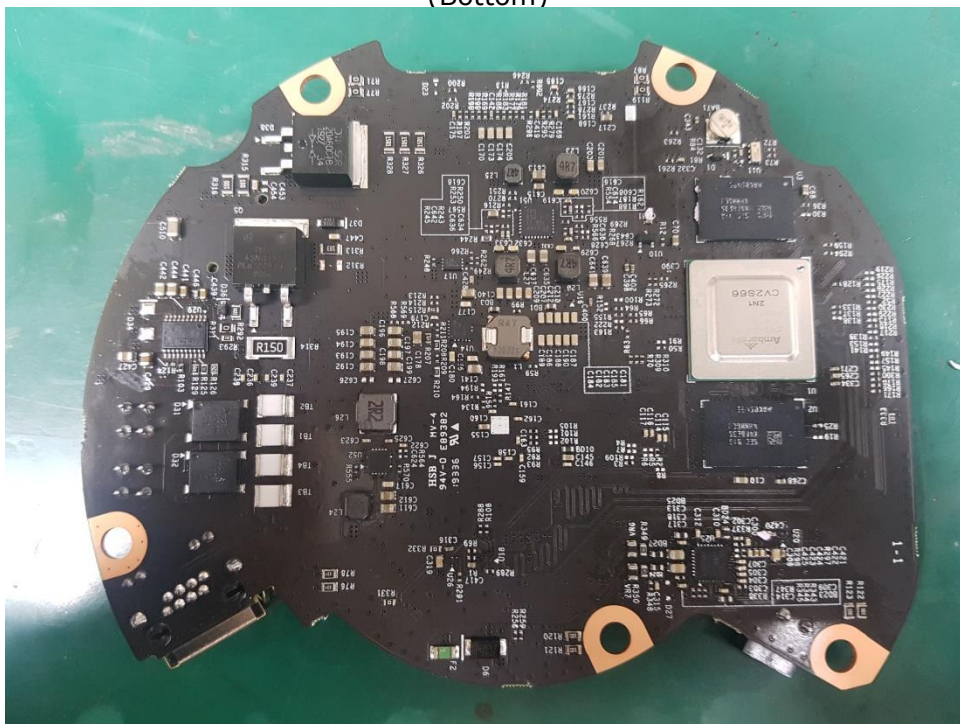


EUT Internal View – Board 1

(Top)



(Bottom)



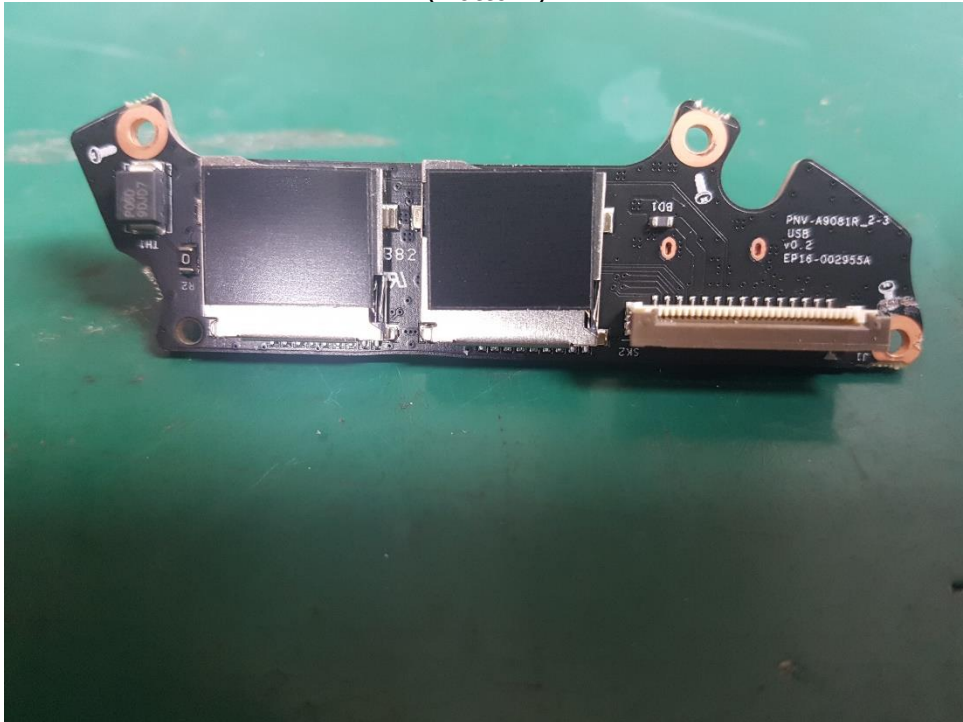
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EUT Internal View – Board 2

(Top)



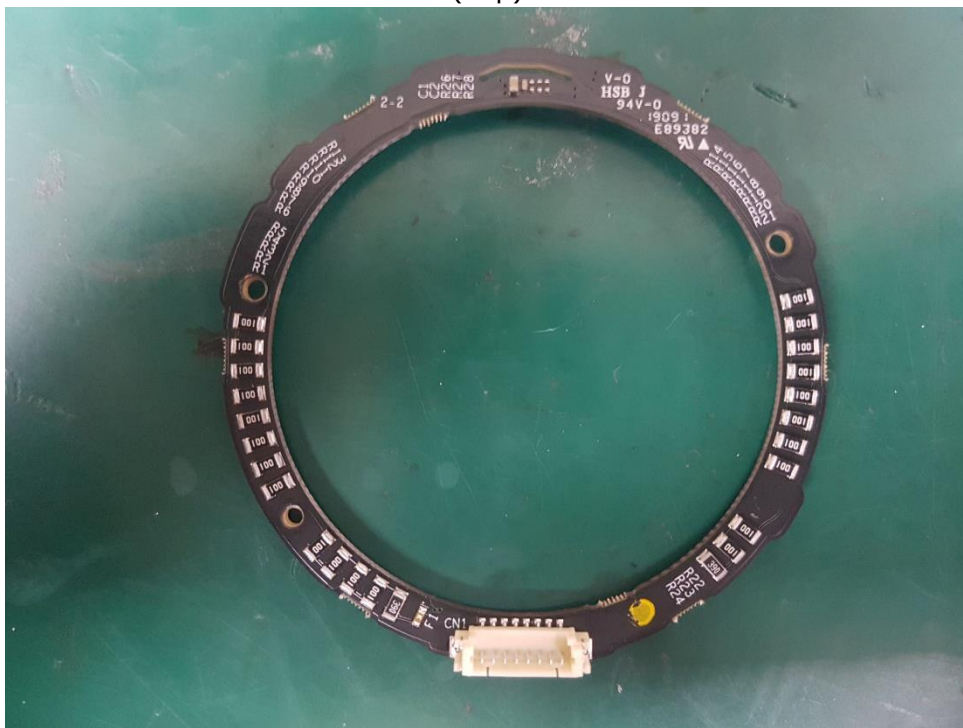
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EUT Internal View – sensor Board

(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.