



EMC TEST REPORT

Test Report No. : KES-EM-21T0101
Date of Issue : Feb. 19, 2021
Product name : NETWORK CAMERA
Model/Type No. : PNV-A6081R
Variant Model : -
Applicant : Hanwha Techwin Co., Ltd.
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea
Manufacturer : 1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
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 : Jan. 28, 2021
Test date : Feb. 05, 2021
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dae Soo, Kim
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. 19, 2021	KES-EM-21T0101	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video		Wide Dynamic Range	120dB
Imaging Device	1/2" CMOS	Digital Noise Reduction	SSNRV
Resolution	1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	Digital Image Stabilization	Stabilization Support(built-in gyro sensor)
Max. Framerate	H.265/H.264: Max. 120fps/100fps(60Hz/50Hz) MJPEG: Max. 15fps/12fps(60Hz/50Hz)	Defog	None
NETD	None	Motion Detection	8ea, polygonal zones 6ea, rectangle zones
Pixel Size	None	Privacy Masking	- Color: Gray/Green/Red/Blue/Black/White
Min. Illumination	Color: 0.008Lux(F1.3, 1/30sec, 30IRE) B/W: 0.0008Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps Color: 0.016Lux(F1.3, 1/60sec, 30IRE) B/W: 0.0016Lux(F1.3, 1/60sec, 30IRE), 0Lux(IR LED on), 60/50fps Color: 0.032Lux(F1.3, 1/120sec, 30IRE) B/W: 0.0032Lux(F1.3, 1/120sec, 30IRE), 0Lux(IR LED on), 120/100fps	Gain Control	Low / Middle / High
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	White Balance	ATW / AWC / Manual / Indoor / Outdoor
Video Transmission Distance	None	LDC	Support
Lens		Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/12,000sec)
Focal Length (Zoom Ratio)	4.38~9.33mm(2.13x) motorized varifocal	Digital PTZ	None
Max. Aperture Ratio	F1.3(Wide)~F2.1(Tele)	Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Angular Field of View	H:103.1°(Wide)~44.5°(Tele) / V:54.2°(Wide)~24.9°(Tele) / D:124°(Wide)~51.1°(Tele)	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
Min. Object Distance	0.5m(1.64ft)	Business Intelligence	People counting, Queue management, Heatmap based on AI engine
Focus Control	Simple focus	Serial Interface	None
Lens Type	P iris	Alarm I/O	Input 1ea / Output 1ea / DC 12V Power(Max. 50mA) 1ea
Mount Type	None	Alarm Triggers	Analytics, Network disconnect, Alarm input
Optional Lens	None	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
Pan / Tilt / Rotate		Audio In	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm
Pan / Tilt / Rotate Range	0°~360° / 45°~85° / 0°~355°	Audio Out	Line out, Max.output level: 1Vrms
Pan Range	None	IR Viewable Length	30m(98.4ft), Wide IR
Pan Speed	None	IR Illuminator (Optional)	None
Tilt Range	None	Water Removal	None
Tilt Speed	None	Auto Tracking	None
Rotate Range	None	General	
Sequence	None	Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Preset Accuracy	None	Web Viewer	None
Operational		Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB
Camera Title	Displayed up to 85 characters	Memory	4096MB RAM, 512MB Flash
Direction Indicator	None	Environmental & Electrical	
Day & Night	Auto(ICR)	Operating Temperature / Humidity	-40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -30°C
Backlight Compensation	Blc, WDR, SSCR	Storage Temperature / Humidity	-50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH
Coaxial Protocol	None	Certification	IP66/IP67/IP68, IK10+, NEMA4X
Color Palettes	None	Input Voltage	PoE+ (IEEE802.3at), 12VDC
Radiometry		Power Consumption	PoE+ : Max 28.00W, typical 17.00W 12VDC: Max 18.70W, typical 15.00W
Temperature detect range	None	Mechanical	
Temperature accuracy	None	Color / Material	White / Aluminum, Hard-coatless dome housing
Temperature detection	None	RAL Code	RAL9003
Additional	None	Product dimensions / weight	Ø180x125mm(7.09x4.92") Weight: 1.50kg (4.19lb)
Network		Conduit hole	None
Ethernet	Metal shielded RJ-45(10/100/1000 BASE-T)	Hanging mount(Dome)	SBP-187MMW
Video Compression	H.265/H.264 Main/High, MJPEG	Skin cover(Dome)	SBC-180B
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	Weather cap(Dome)	None
Smart Codec	Manual(Sea area), WiseStreamII	Power module	None
Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control	Backbox	None
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR	DORI (EN62676-4 standard)	
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)	Detect (25PPM/ 8PPF)	Wide: 6.25m(20.51ft) / Tele: 18.3m(60.39ft)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP/UDP, RTSP/RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP: UDP Unicast)	Observe (63PPM/ 19PPF)	Wide: 25.1m(82.34ft) / Tele: 73.3m(240.44ft)
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) TPM with FIPS 140-2 level2 Secure boot, Verify firmware forgery	Recognize (125PPM/ 38PPF)	Wide: 12.6m(41.39ft) / Tele: 36.6m(120.07ft)
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisernet open platform	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

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	PNV-A6081R	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.	EUT

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1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Adapter	FSP060-DIBAN2	H00000669	Zhonghan Electronics (Shenzhen) Co., Ltd.	-
PoE INJECTOR	PSE156G	3115156G000013	UBIQNET	-
Notebook	CQ61-127TU	CNF91801TM	HP	-
Notebook Adapter	PPP09D	601W94D1CKU	HP	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
Alarm Adapter	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
Button alarm	-	-	-	-
Smartphone	A1303	-	APPLE .Inc	-
Speaker	BR1000A Cuve Black 2	-	DONGGUAN EDIFIER TECHNOLOGY Co., Ltd	-
MIC	MP1000	-	-	-
Micro SD Card	-	-	SanDisk	16 GB

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1.6 External I/O Cabling

■ DC Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45	Notebook	RJ-45	3.5	S
	Alarm OUT	Alarm	Alarm IN	3.0	U
	Alarm IN	Button alarm	Alarm OUT	3.0	U
	Audio OUT	Speaker	Audio OUT	1.4	U
	Audio IN	MIC	Audio IN	1.4	U
	SLOT	Micro SD Card	SLOT	-	-
Notebook	3.5 mm	Smartphone	3.5 mm	0.5	U

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45 (PoE)	PoE INJECTOR	RJ-45 (PoE)	3.5	S
	Alarm OUT	Alarm	Alarm IN	3.0	U
	Alarm IN	Button alarm	Alarm OUT	3.0	U
	Audio OUT	Speaker	Audio OUT	1.4	U
	Audio IN	MIC	Audio IN	1.4	U
	SLOT	Micro SD Card	SLOT	-	-
Notebook	RJ-45 (LAN)	PoE INJECTOR	RJ-45 (LAN)	1.5	S
	3.5 mm	Smartphone	3.5 mm	0.5	U

* Unshielded=U, Shielded=S



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1.7 EUT Operating Mode(s)

■ DC/PoE Mode

Test Mode	operating
OP	the test was conducted while checking the camera video output from the laptop and making sure that they operate normally while performing a ping test.

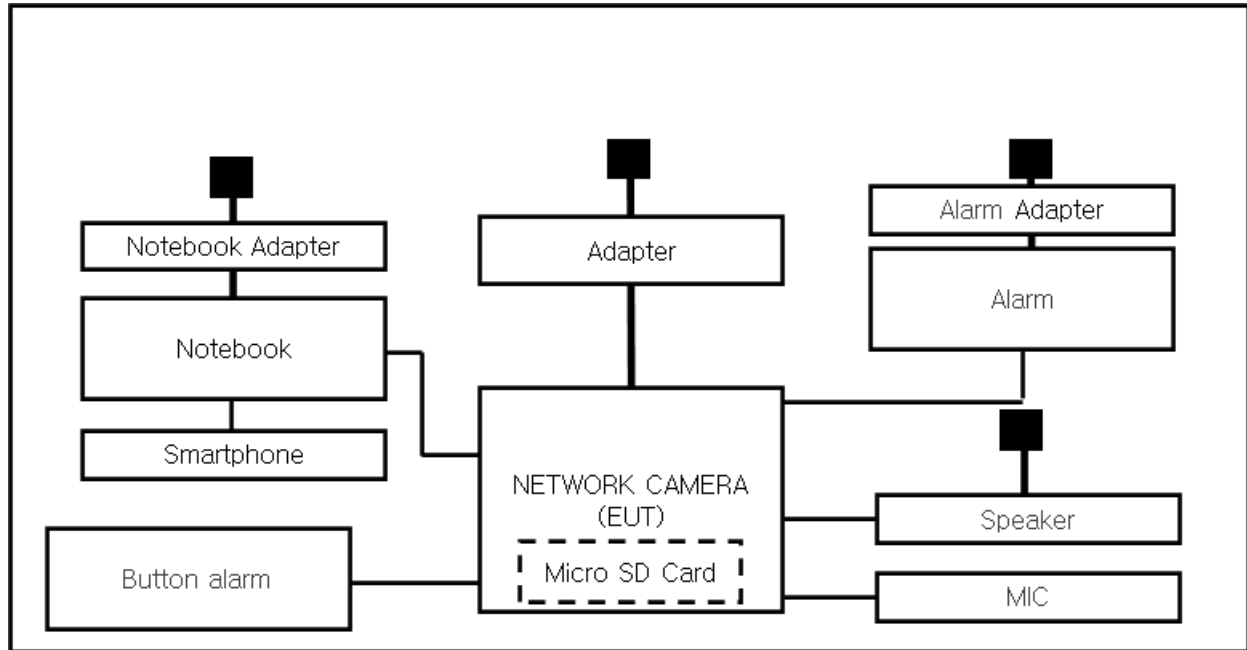
EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Techwin Co., Ltd.

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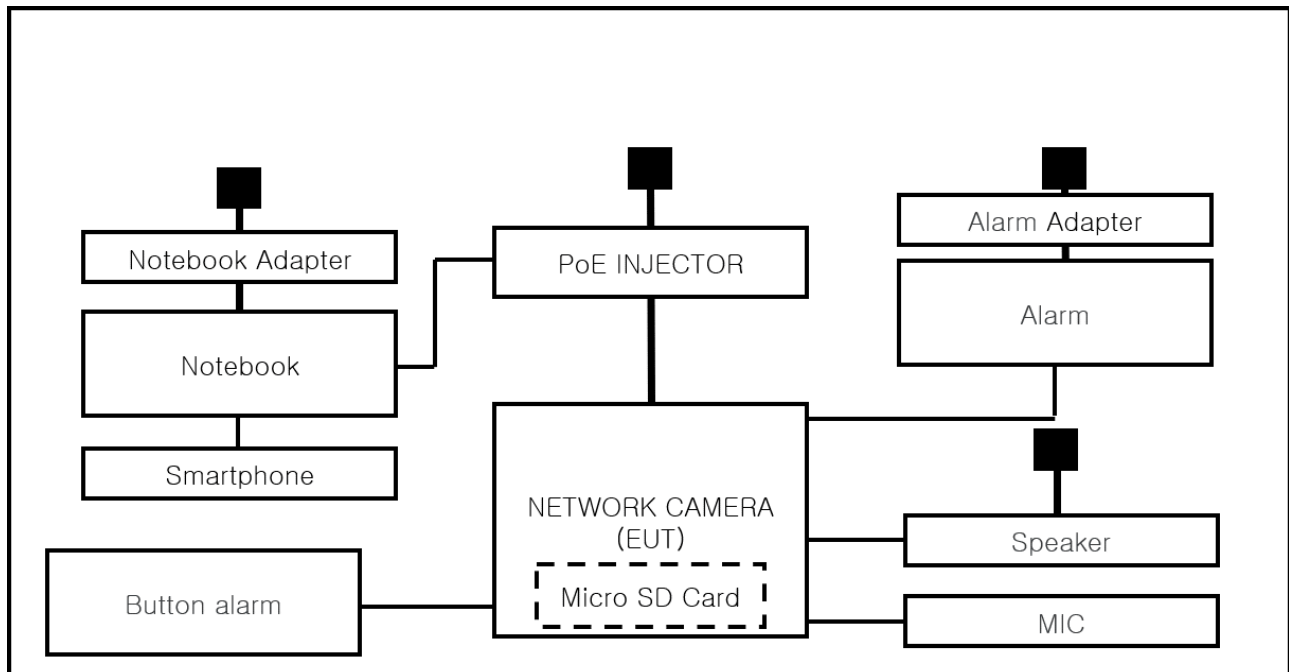
1.8 Configuration

■ AC Main
 □ DC Main

■ DC Mode



■ PoE Mode



1.9 Remarks when standards applied

USB port and VIDEO port are for administrator use and are excluded from testing.







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. The sites are constructed in conformance with the requirements of ANSI C63.4:2014 and CISPR 16-1-4:2012

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area 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, 10 m Open Area and Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298-1
JAPAN	VCCI	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	 R-20056, C-20036, T-20040, G-20057
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area 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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-
- | | | |
|--|---|----------------------------------|
| <input type="checkbox"/> VCCI-CISPR 32:2016 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> AS/NZS CISPR32:2015 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> 47 CFR Part 15, Subpart B | | |
| <input type="checkbox"/> CISPR 22:2009 +A1:2010 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> ANSI C63.4-2014 | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> IC Regulation ICES-003 : 2016 | | |
| <input type="checkbox"/> CAN/CSA CISPR 22-10 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> ANSI C63.4-2014 | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> RE- Directive 2014/53/EU | | |
| <input type="checkbox"/> EN 301 489-1 V1.9.2 | | |
| <input type="checkbox"/> Equipment for fixed use | | |
| <input type="checkbox"/> Equipment for vehicular use | | |
| <input type="checkbox"/> Equipment for portable use | | |
| <input type="checkbox"/> EN 301 489-3 V1.6.1 | | |
| <input type="checkbox"/> EN 301 489-17 V2.2.1 | | |
| <input type="checkbox"/> EN 60945:2002 | | |

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Feb. 05, 2021

Test Location

Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EMC32	R & S	9.12.00	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESR3	R & S	101783	01, 15, 2022
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	12, 29, 2021
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	12, 29, 2021
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 29, 2021

Test Conditions

Temperature: 23,3 °C
Relative Humidity: 45,7 % 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

Feb. 05, 2021

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

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESU26	R & S	100551	04, 01, 2021
<input checked="" type="checkbox"/>	AMPLIFIER	SCU 01	R & S	100603	11, 25, 2021
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
<input checked="" type="checkbox"/>	ATTENUATOR	8491A	HP	32173	03, 10, 2021

Test Conditions

Temperature: 22,0 °C

Relative Humidity: 46,7 % 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

Feb. 05, 2021

Test Location

SEMI ANECHOIC CHAMBER #4

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESU26	R & S	100551	04, 01, 2021
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	AGILENT	3008A01742	12, 29, 2021
<input type="checkbox"/>	ATTENUATOR	8491A	HP	35496	03, 10, 2021
<input checked="" type="checkbox"/>	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	12, 14, 2021

Test Conditions

Temperature: 22,0 °C
Relative Humidity: 46,7 % 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

RemarksSee Appendix A for test data.

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APPENDIX A – TEST DATA

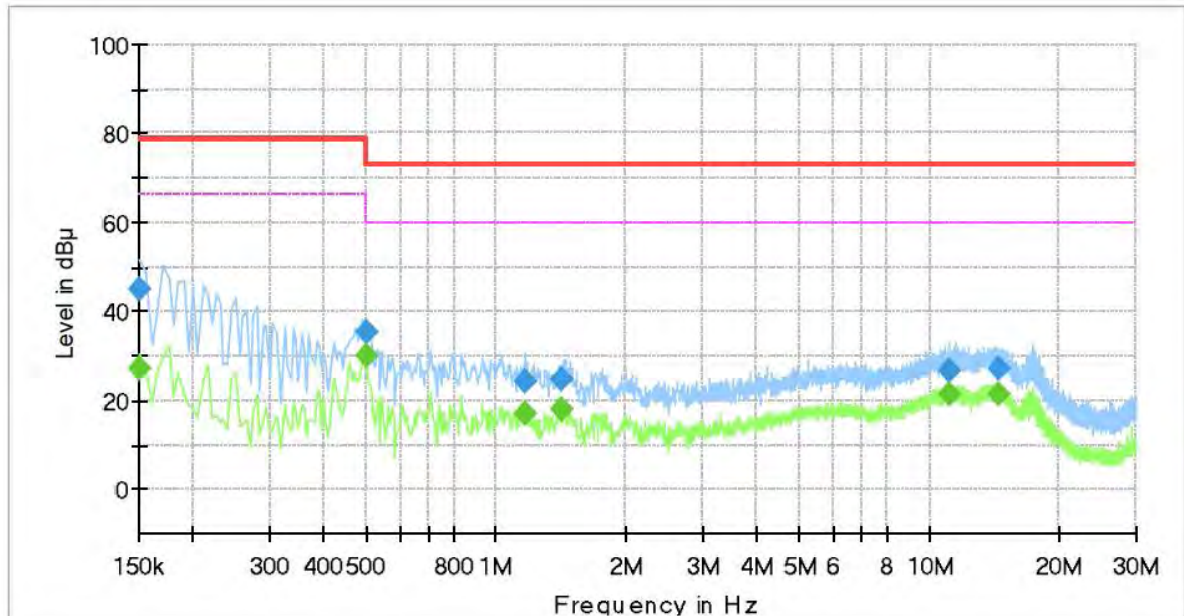
Conducted Emissions at Mains Power Ports

■ DC Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNV-A6081R
Phase:	H
Mode:	
Operator Name:	KES



Final Result

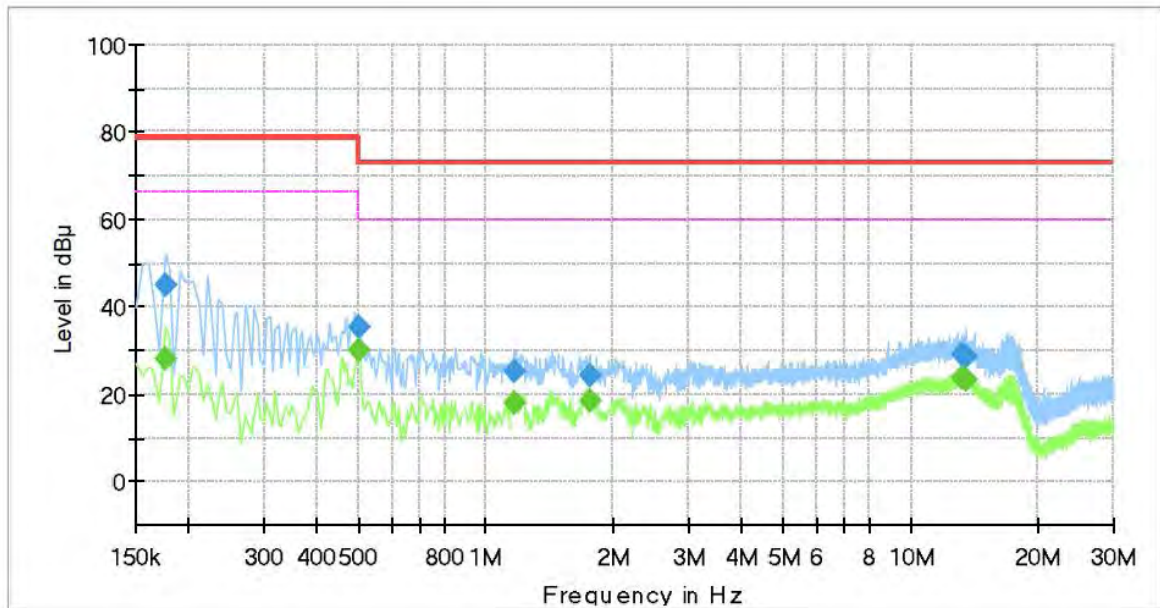
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	27.01	66.00	38.99	1000.0	9.000	L1	19.4
0.150000	45.03	---	79.00	33.97	1000.0	9.000	L1	19.4
0.500000	---	29.90	66.00	36.10	1000.0	9.000	L1	19.7
0.500000	35.29	---	73.00	37.71	1000.0	9.000	L1	19.7
1.165000	---	16.85	60.00	43.15	1000.0	9.000	L1	20.0
1.165000	24.35	---	73.00	48.65	1000.0	9.000	L1	20.0
1.410000	---	18.11	60.00	41.89	1000.0	9.000	L1	20.1
1.410000	24.53	---	73.00	48.47	1000.0	9.000	L1	20.1
11.155000	---	21.54	60.00	38.46	1000.0	9.000	L1	20.0
11.155000	26.84	---	73.00	46.16	1000.0	9.000	L1	20.0
14.515000	---	21.54	60.00	38.46	1000.0	9.000	L1	19.9
14.515000	26.98	---	73.00	46.02	1000.0	9.000	L1	19.9

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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNV-A6081R
Phase:	N
Mode:	
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.175000	---	28.11	66.00	37.89	1000.0	9.000	N	19.4
0.175000	44.83	---	79.00	34.17	1000.0	9.000	N	19.4
0.500000	---	29.95	66.00	36.05	1000.0	9.000	N	19.7
0.500000	35.20	---	73.00	37.80	1000.0	9.000	N	19.7
1.160000	---	18.08	60.00	41.92	1000.0	9.000	N	20.0
1.160000	25.40	---	73.00	47.60	1000.0	9.000	N	20.0
1.750000	---	18.69	60.00	41.31	1000.0	9.000	N	20.1
1.750000	24.47	---	73.00	48.53	1000.0	9.000	N	20.1
13.170000	---	23.69	60.00	36.31	1000.0	9.000	N	19.9
13.170000	28.95	---	73.00	44.05	1000.0	9.000	N	19.9
13.495000	---	23.51	60.00	36.49	1000.0	9.000	N	19.9
13.495000	28.73	---	73.00	44.27	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))

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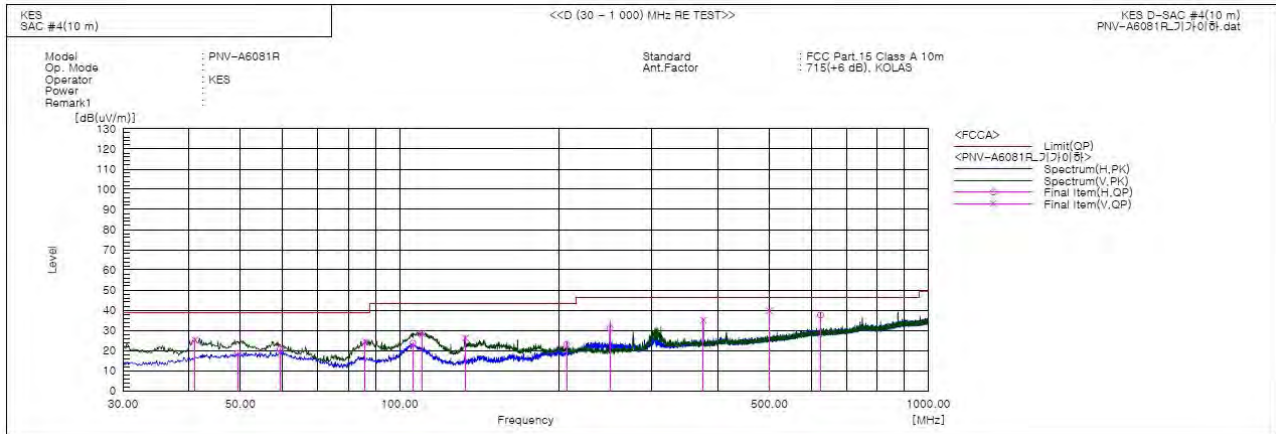
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Radiated Electric Field Emissions(Below 1 GHz)

■ DC 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	41.034	V	47.4	-22.2	25.2	39.0	13.8	107.0	64.0	
2	49.400	H	39.7	-21.1	18.6	39.0	20.4	392.0	144.0	
3	59.464	H	42.5	-21.9	20.6	39.0	18.4	314.0	352.0	
4	86.018	V	50.1	-25.7	24.4	39.0	14.6	124.0	309.0	
5	105.903	H	46.0	-22.4	23.6	43.5	19.9	293.0	341.0	
6	110.268	V	50.6	-22.3	28.3	43.5	15.2	116.0	134.0	
7	133.184	V	51.5	-25.3	26.2	43.5	17.3	122.0	359.0	
8	207.025	H	43.5	-20.6	22.9	43.5	20.6	335.0	258.0	
9	249.948	H	50.2	-19.1	31.1	46.5	15.4	289.0	110.0	
10	374.956	V	49.9	-14.8	35.1	46.5	11.4	108.0	176.0	
11	499.965	V	51.3	-11.6	39.7	46.5	6.8	121.0	180.0	
12	624.974	H	45.8	-8.2	37.6	46.5	8.9	373.0	352.0	

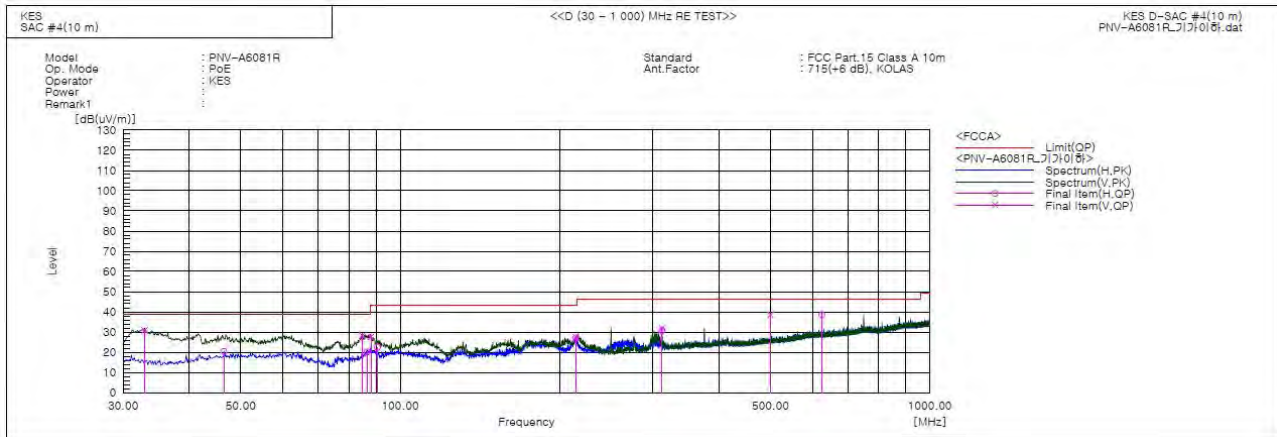


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Report No.:
KES-EM-21T0101
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■ PoE Mode



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	32.910	V	55.9	-25.0	30.9	39.0	8.1	102.0	151.0	
2	46.490	H	41.7	-21.3	20.4	39.0	18.6	357.0	136.0	
3	84.805	V	54.6	-26.3	28.3	39.0	10.7	174.0	289.0	
4	86.624	H	45.5	-25.4	20.1	39.0	18.9	323.0	238.0	
5	88.079	V	52.5	-24.8	27.7	43.5	15.8	165.0	68.0	
6	90.625	H	46.5	-24.1	22.4	43.5	21.1	306.0	211.0	
7	214.421	V	47.8	-20.4	27.4	43.5	16.1	142.0	210.0	
8	214.543	H	47.6	-20.4	27.2	43.5	16.3	389.0	44.0	
9	312.028	H	47.9	-17.2	30.7	46.5	15.8	321.0	9.0	
10	312.028	V	49.0	-17.2	31.8	46.5	14.7	116.0	359.0	
11	499.965	V	50.2	-11.6	38.6	46.5	7.9	118.0	147.0	
12	624.974	H	46.9	-8.2	38.7	46.5	7.8	210.0	57.0	

◆ Calculation - SAC #4(10 m)

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

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



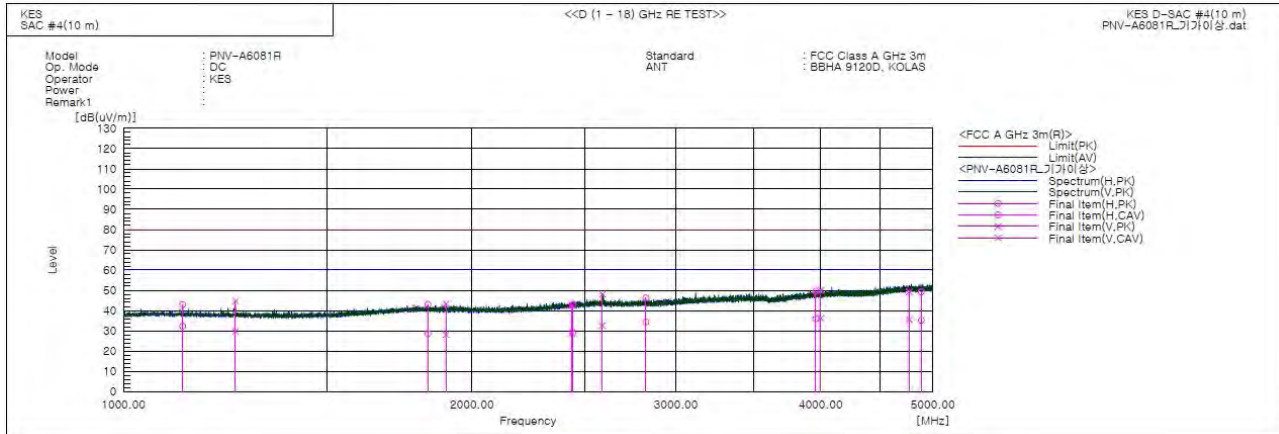
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Report No.:
KES-EM-21T0101
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Radiated Electric Field Emissions(Above 1 GHz)

■ DC 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	1124.895	H	47.6	37.0	-4.7	42.9	32.3	80.0	60.0	37.1	27.7	392.0	81.0	
2	1249.690	V	48.7	33.6	-3.9	44.8	29.7	80.0	60.0	35.2	30.3	108.0	301.0	
3	1832.000	H	43.9	29.6	-1.0	42.9	28.6	80.0	60.0	37.1	31.4	291.0	12.0	
4	1899.000	V	44.0	28.8	-0.7	43.3	28.1	80.0	60.0	36.7	31.9	127.0	85.0	
5	2438.805	V	40.6	26.9	2.0	42.6	28.9	80.0	60.0	37.4	31.1	132.0	113.0	
6	2443.310	H	40.7	27.0	2.1	42.8	29.1	80.0	60.0	37.2	30.9	326.0	7.0	
7	2591.000	V	45.4	29.8	2.7	48.1	32.5	80.0	60.0	31.9	27.5	102.0	23.0	
8	2826.500	H	42.5	30.6	3.7	46.2	34.3	80.0	60.0	33.8	25.7	359.0	189.0	
9	3962.500	H	41.3	27.6	8.3	49.6	35.9	80.0	60.0	30.4	24.1	377.0	310.0	
10	4000.000	V	41.7	27.7	8.5	50.2	36.2	80.0	60.0	29.8	23.8	105.0	222.0	
11	4771.000	V	37.7	24.0	11.5	49.2	35.5	80.0	60.0	30.8	24.5	122.0	265.0	
12	4885.810	H	37.3	23.3	11.9	49.2	35.2	80.0	60.0	30.8	24.8	291.0	146.0	

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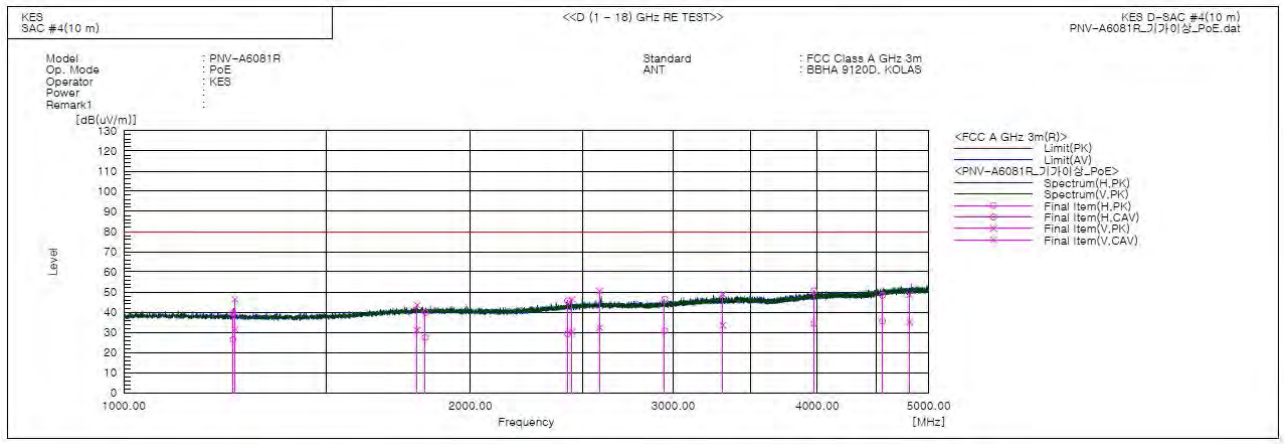
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Report No.:

KES-EM-21T0101

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PoE Mode



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	1243.855	H	43.4	30.3	-3.9	39.5	26.4	80.0	60.0	40.5	33.6	309.0	326.0	
2	1249.230	V	50.2	35.6	-3.9	46.3	31.7	80.0	60.0	33.7	28.3	117.0	309.0	
3	1797.500	V	44.6	32.2	-1.1	43.5	31.1	80.0	60.0	36.5	28.9	139.0	18.0	
4	1826.920	H	40.8	28.5	-1.0	39.8	27.5	80.0	60.0	40.2	32.5	291.0	173.0	
5	2428.000	H	43.6	27.2	2.0	45.6	29.2	80.0	60.0	34.4	30.8	279.0	140.0	
6	2450.000	V	44.3	28.2	2.1	46.4	30.3	80.0	60.0	33.6	29.7	199.0	9.0	
7	2589.225	V	47.8	29.6	2.7	50.5	32.3	80.0	60.0	29.5	27.7	145.0	314.0	
8	2947.500	H	42.1	26.5	4.3	46.4	30.8	80.0	60.0	33.6	29.2	312.0	128.0	
9	3312.500	V	43.4	28.1	5.4	48.8	33.5	80.0	60.0	31.2	26.5	104.0	289.0	
10	3974.500	H	42.2	25.9	8.4	50.6	34.3	80.0	60.0	29.4	25.7	333.0	23.0	
11	4557.395	H	37.7	25.0	10.6	48.3	35.6	80.0	60.0	31.7	24.4	312.0	331.0	
12	4811.600	V	37.0	23.5	11.6	48.6	35.1	80.0	60.0	31.4	24.9	108.0	178.0	

◆ 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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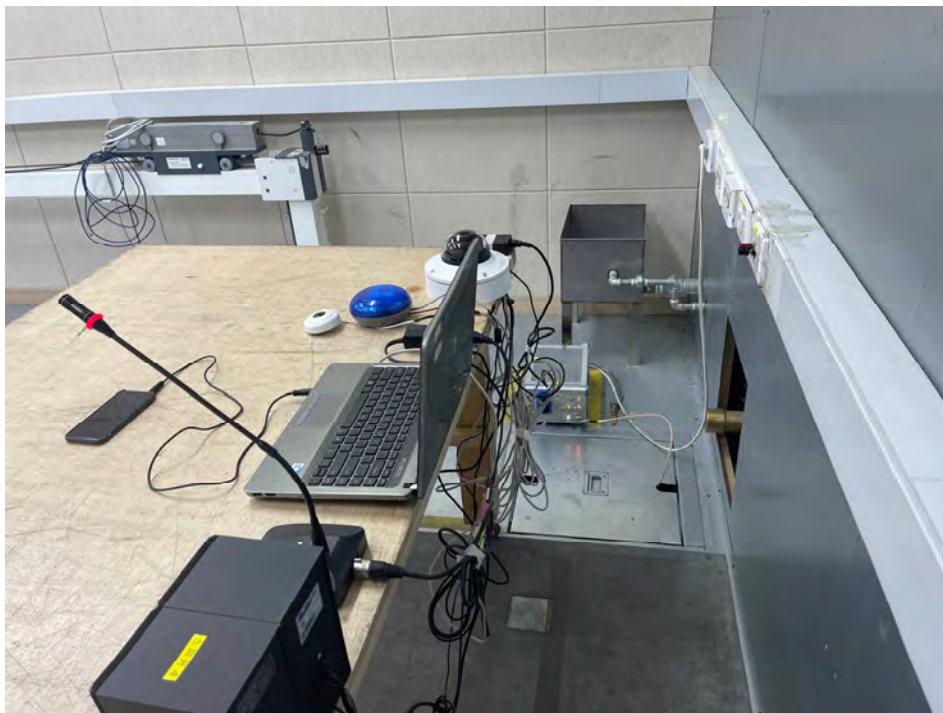
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Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

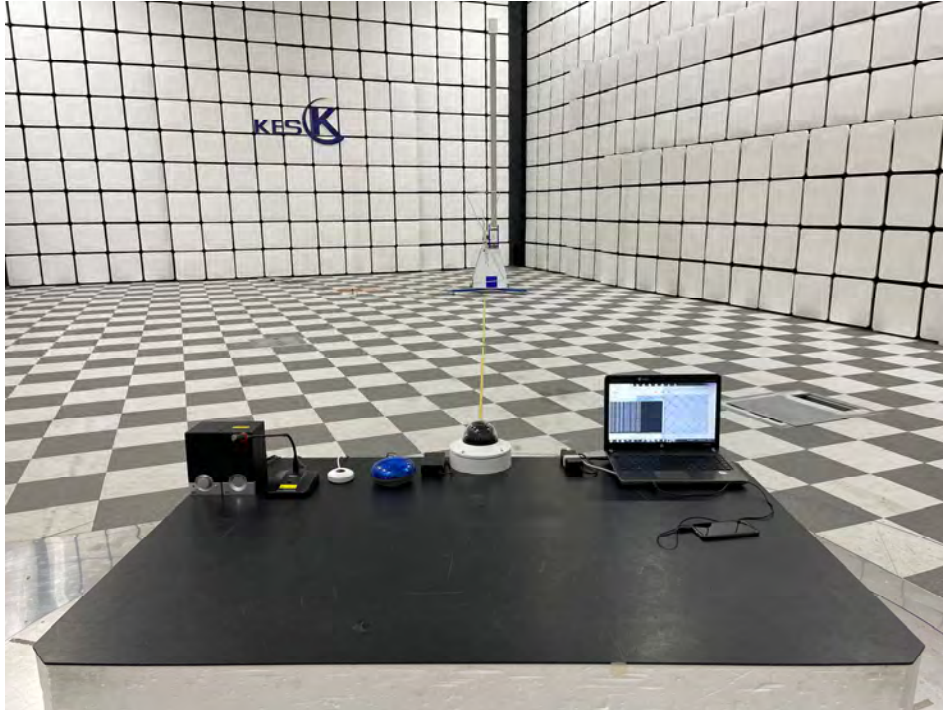
■ DC Mode



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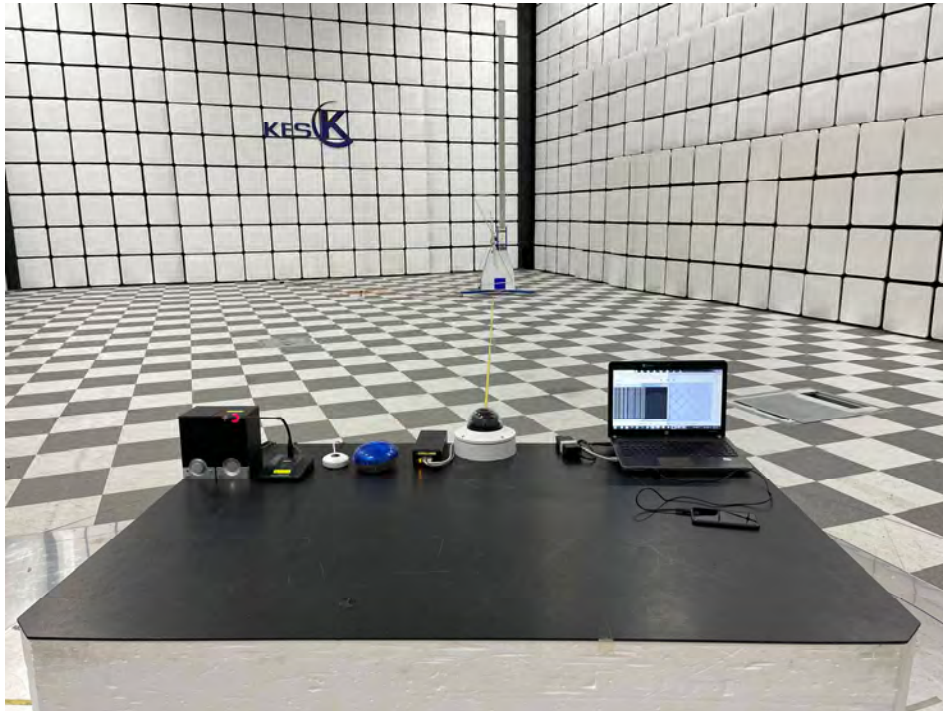
Radiated Electric Field Emissions(Below 1 GHz)

■ DC Mode



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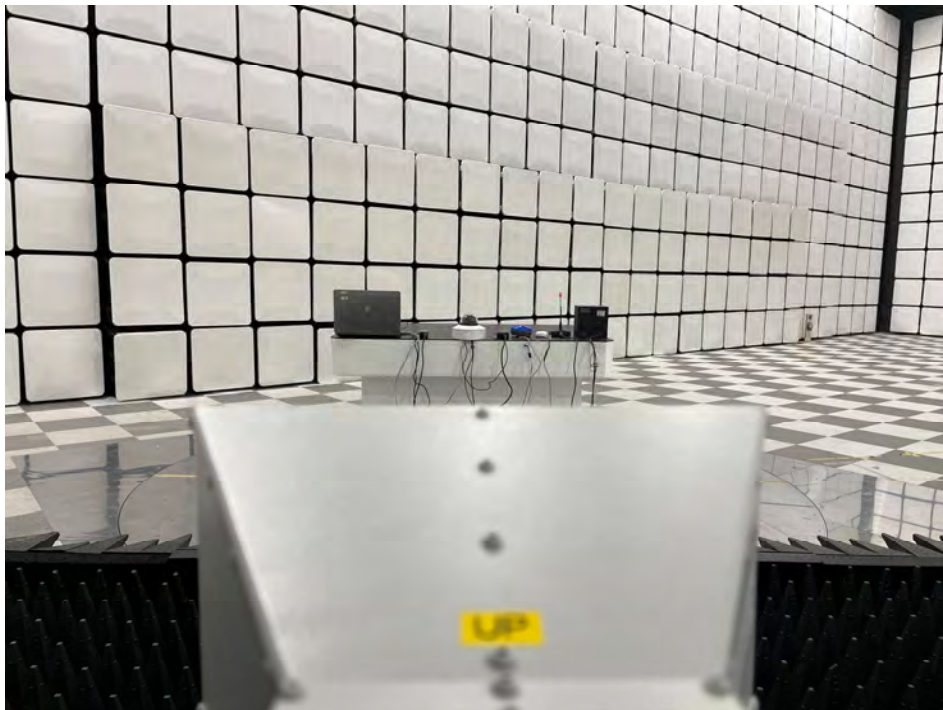
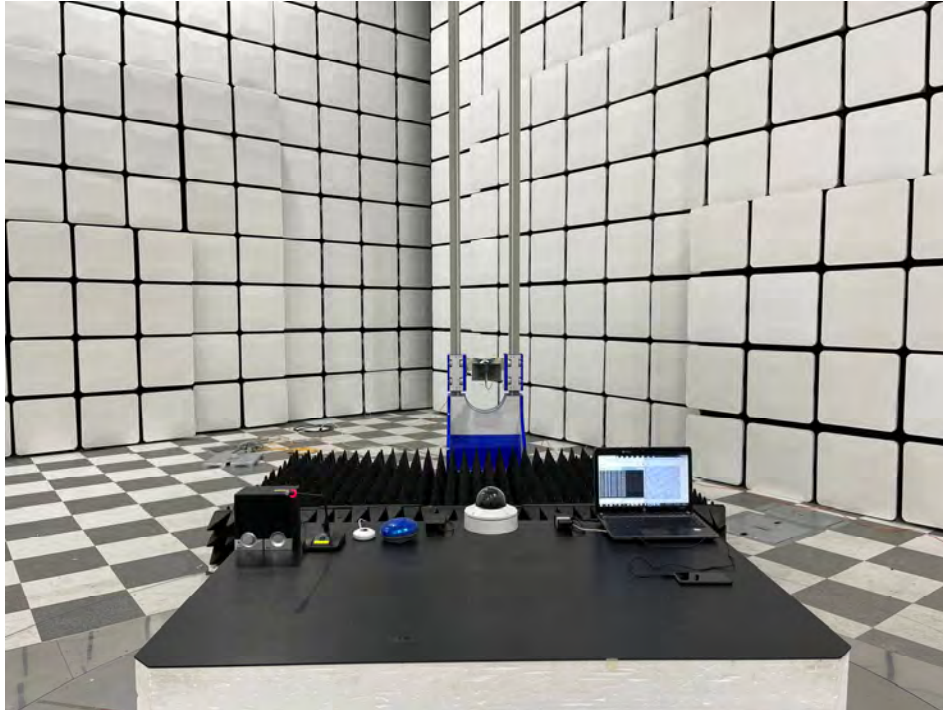
■ PoE Mode



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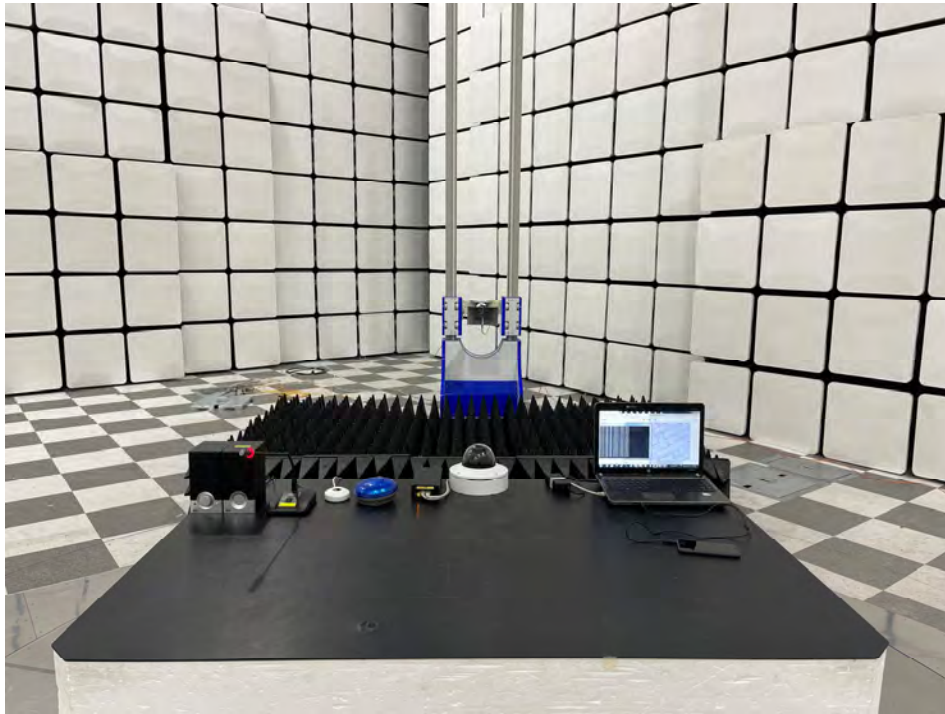
Radiated Electric Field Emissions(Above 1 GHz)

■ DC Mode



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■ PoE Mode



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EUT External Photographs

(Top)



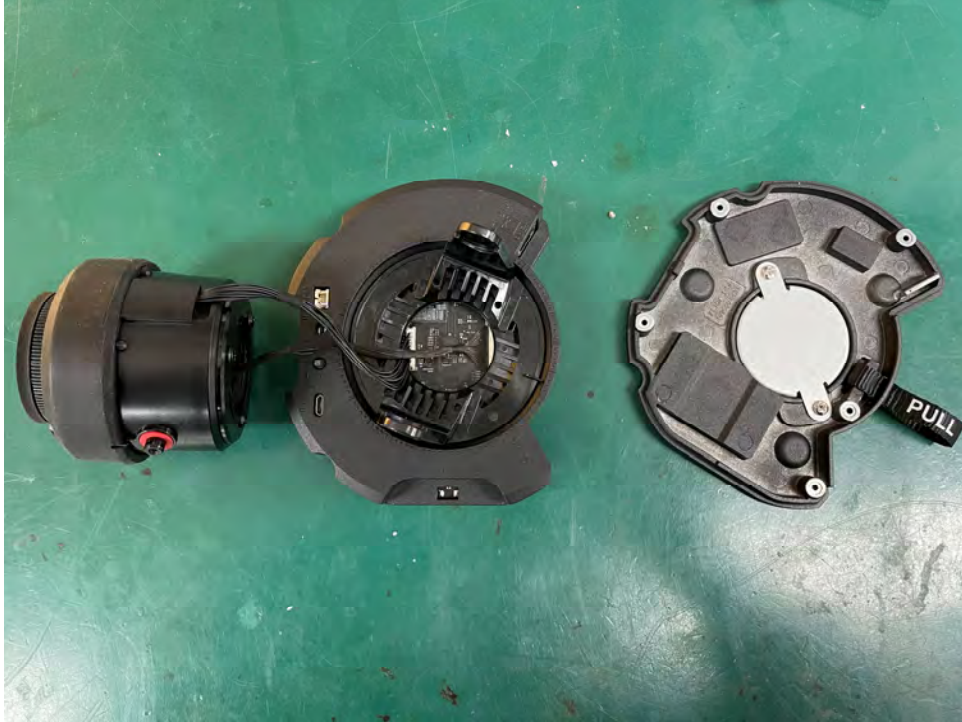
(Bottom)



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EUT Internal Photographs

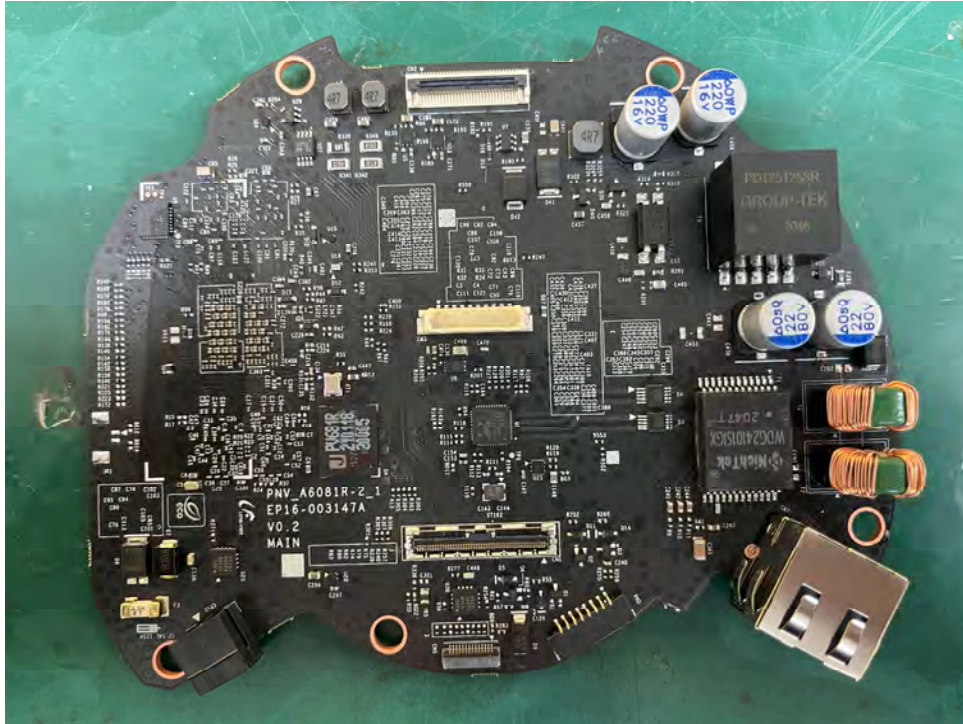
(Internal View)



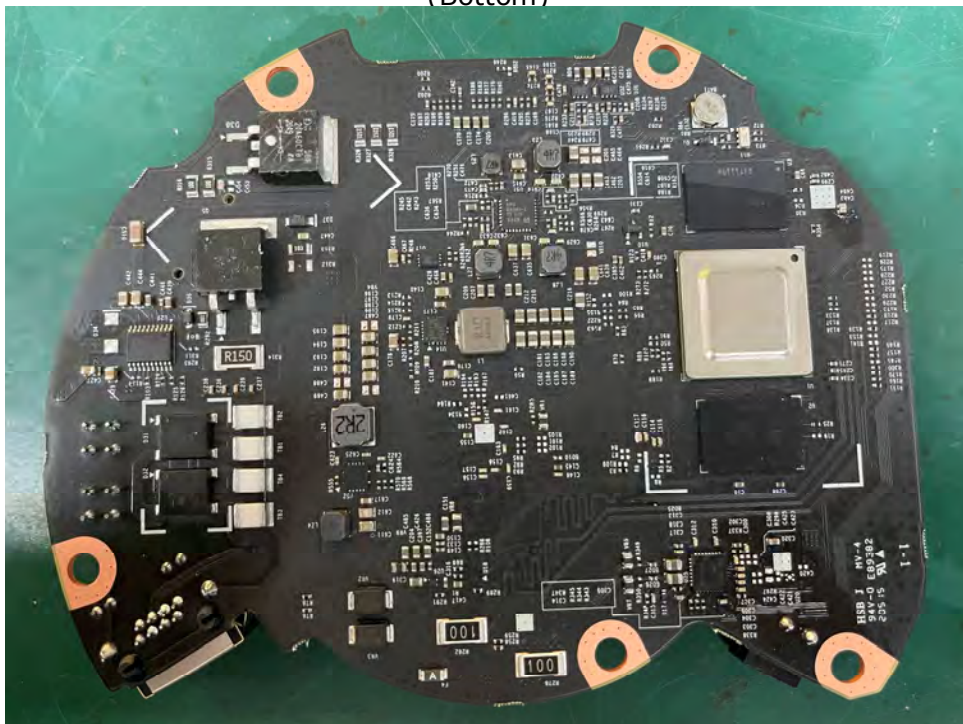
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EUT Internal View – Board 1

(Top)



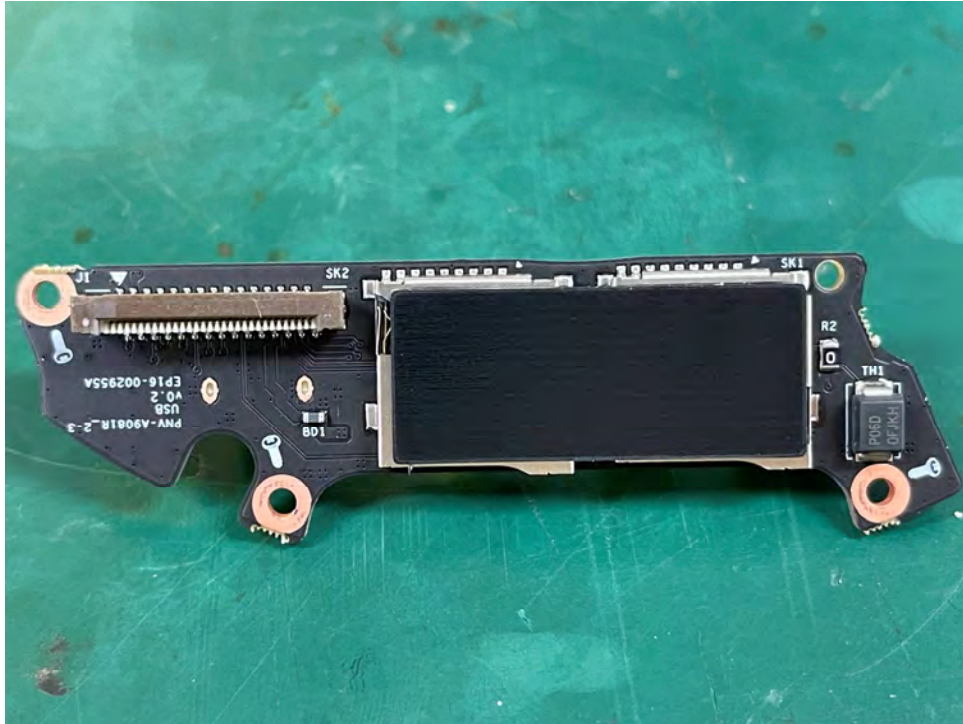
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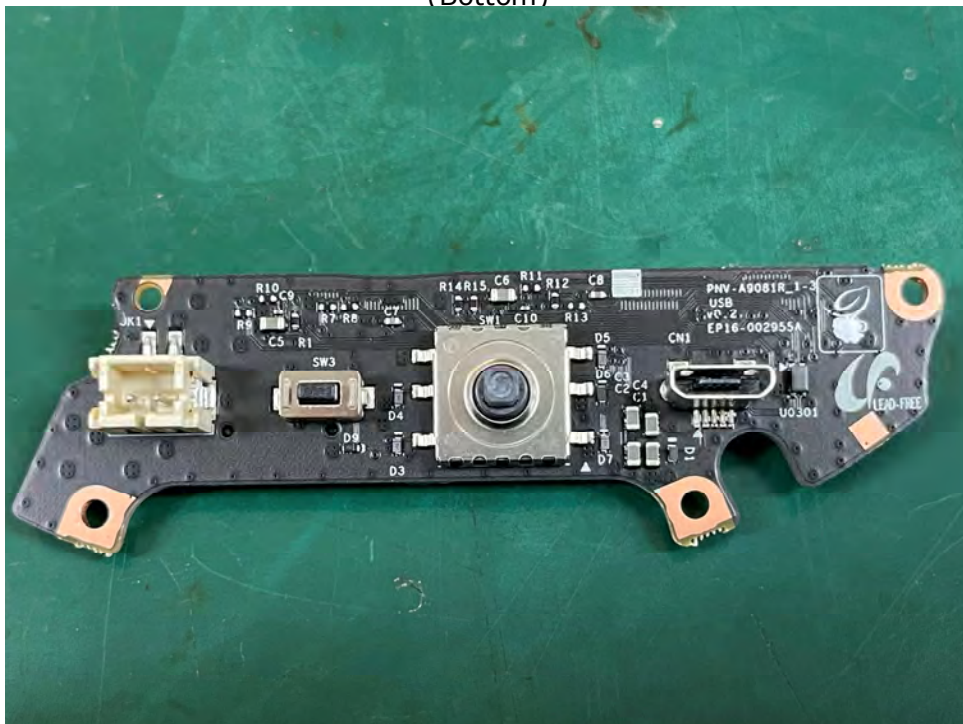
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EUT Internal View – Board 2

(Top)



(Bottom)



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EUT Internal View – Board 3

(Top)



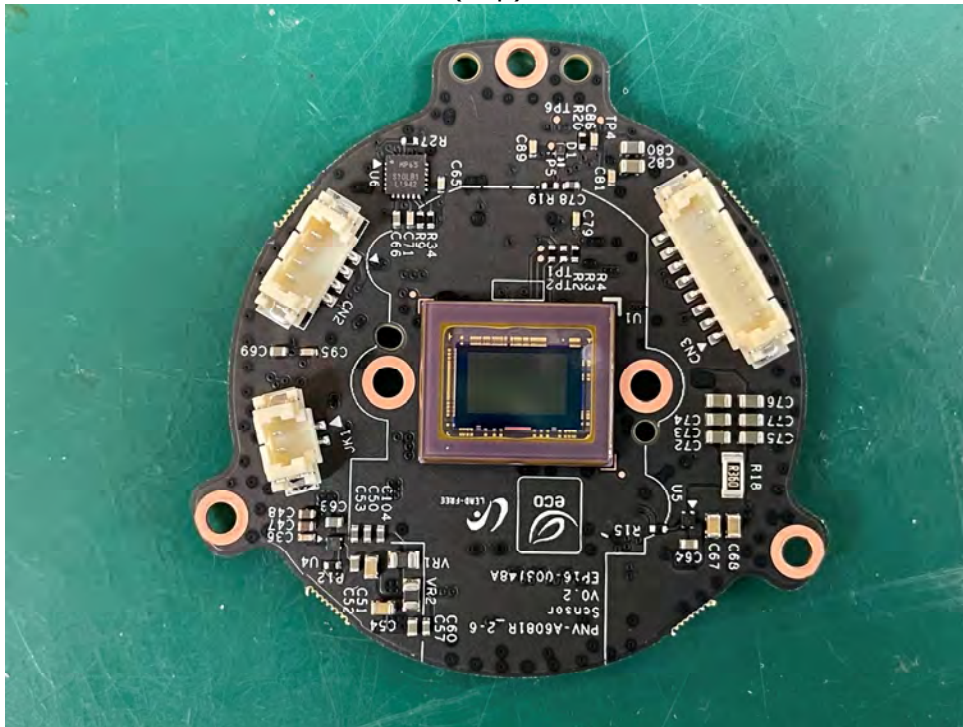
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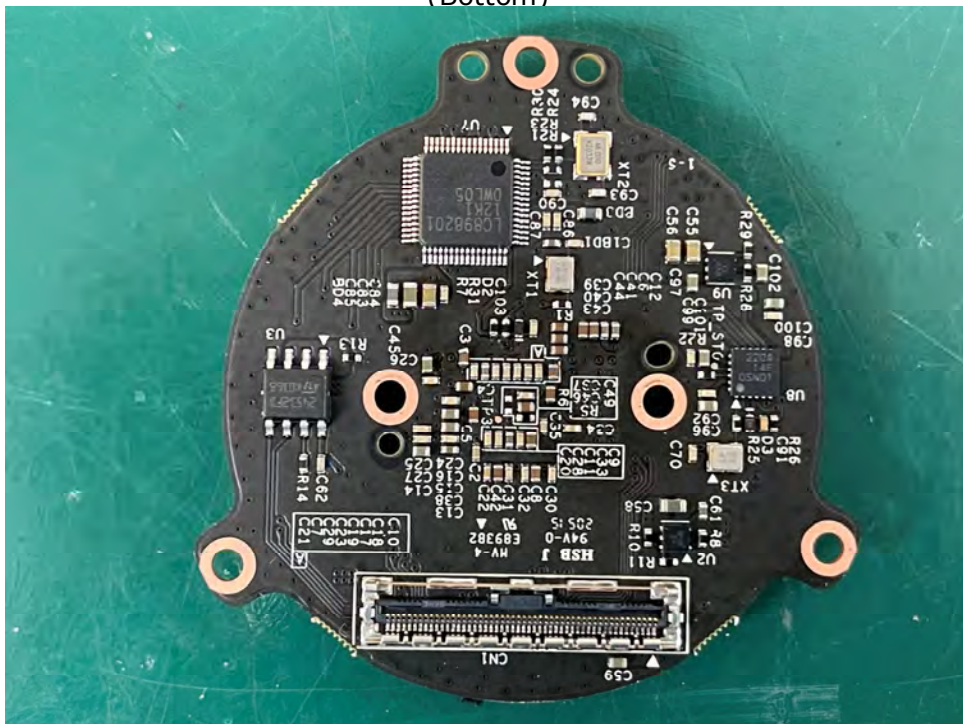
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EUT Internal View – Board 4

(Top)



(Bottom)



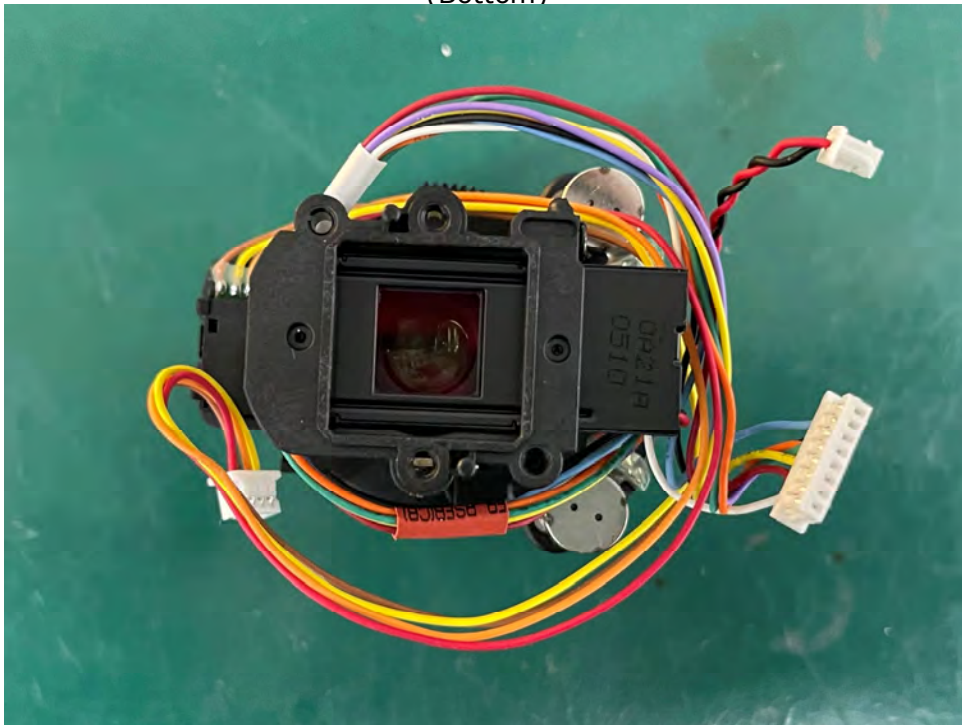
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EUT Internal View – Camera Lens

(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.