



TEST REPORT



Report No. : KES-EM250775

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KES Co., Ltd.

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1. Client

Applicant : Hanwha Vision Co., Ltd

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

2. Sample Description

Product name : NETWORK CAMERA

Model/Type No. : PNM-C19183RVTP

Variant Model : -

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 Ward, Bac Ninh City, Bac Ninh Province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)

3. Date of Receipt : Mar. 04, 2025

4. Test date : Mar. 12, 2025 ~ Mar. 13, 2025

5. Date of Issue : Apr. 09, 2025

6. Test Results : In Compliance

Tested by

Reviewed by

Dong Hyun, Won
EMC Test Engineer

Dong Hun, Jang
EMC Technical Manager

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

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
Apr. 09, 2025	KES-EM250775	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Spec Display Name	3CH camera	PTZ
Video		
Imaging Device	1/2.8" CMOS: each CH	1/2.8"
Resolution	2592x1944, 2560x1440, 1920x1080, 1280x960, 1280x720, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240	2592x1520, 2560x1440, 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: Max. 30fps/25fps (60Hz/50Hz) MJPEG: Max. 30fps/25fps (60Hz/50Hz) (@5MP Max. 5fps)	H.265/H.264: Max. 30fps/25fps (60Hz/50Hz) MJPEG: Max. 30fps/25fps (60Hz/50Hz) (@4MP Max. 5fps)
NETD	None	None
Pixel Size	None	None
Min. Illumination	Color: 0.08Lux (F2.0, 1/30sec) BW: 0.007Lux (F2.0, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.05Lux(F2.0, 1/30sec, 30IRE) BW: 0.005Lux(F2.0, 1/30sec, 30IRE)
Video Out	USB: Micro USB Type C, 1280x720 for installation	None
Video Transmission Distance	None	
Lens		
Focal Length (Zoom Ratio)	2.4mm	5.42~98.29mm(18x) zoom
Max. Aperture Ratio	F2.0	F2.0(Wide)~F3.27(Tele)
Angular Field of View	[5M] H: 123°/ V: 91°/ D: 159°	H: 53.1°(Wide)~3.39°(Tele) V: 31.75°(Wide)~1.98°(Tele) D: 60.8°(Wide)~3.92°(Tele)
Min. Object Distance	0.5m(1.64ft)	5.0m(16.40ft)
Focus Control	Fixed Focal	Oneshot AF, Focus save
Lens Type	Fixed Iris	auto iris(DC with hall sensor)
Mount Type	M12	None
Optional Lens	None	None
Pan / Tilt / Rotate		
Pan / Tilt / Rotate Range	None	-
Pan Range	None	360° Endless
Pan Speed	None	600°/sec, Manual: 0.024°/sec~250°/sec
Tilt Range	None	0°~90°
Tilt Speed	None	Max: 500°/sec, Manual: 0.024°/sec~250°/sec
Rotate Range	None	None
Sequence	None	Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule
Preset Accuracy	None	Up to ±0.2°
Operational		
Camera Title	Displayed up to 85 characters	
Direction Indicator	None	Support
Day & Night	Auto(ICR)	
Backlight Compensation	BLC, WDR, SSDR	BLC, HLC, WDR, SSDR
Wide Dynamic Range	extremeWDR(120dB)	
Digital Noise Reduction	WiseNR II (Based on AI engine), SSNRV	
Digital Image Stabilization	None	Support
Defog	Support	Support
Motion Detection	8ea, 8point Polygonal zones	
Privacy Masking	12ea(4 per ch), 4point quadrangle zones - Color: Grey/Green/Red/Blue/Black/White	12ea, 4point quadrangle zones - Color: Grey/Green/Red/Blue/Black/White
Gain Control	Low / Middle / High	Off / Max Gain / Manual
White Balance	ATW / AWC / Manual / Indoor / Outdoor	ATW / Narrow ATW / AWC / Manual / Indoor / Outdoor / Mercury / Sodium
LDC	Support	None
Electronic Shutter Speed	Minimum / Maximum / Anti flicker(1/5~1/12,000sec) Auto Prefer shutter control(Based on AI engine)	
Digital PTZ	None	None
Video Rotation	None	Flip, Mirror



Analytics	Classified object type: Person/Face/Vehicle/License plate Attributes: Vehicle (Color and Type: Car/Bus/Truck/Motorcycle/Bicycle), Person (upper and bottom clothing color) Support BestShot per object Analytics events based on AI engine - Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Motion detection AI Analytics events - Motion detection(W/O WiseAI), Tampering, Virtual area(Appear/Disappear) * Audio detection(via optional I/O box)	Classified object type: Person/Face/Vehicle/License plate Attributes: Vehicle (Color and Type: Car/Bus/Truck/Motorcycle/Bicycle), Person (upper and bottom clothing color) Support Detection Shot per object Analytics events based on AI engine - Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) Analytics events - Motion detection, Tampering, Virtual area(Appear/Disappear) * Audio detection (via optional I/O box)
Business Intelligence	Based on AI engine: People counting, Vehicle counting, Queue management, Heatmap	None
Serial Interface	None	None
Alarm I/O	via optional I/O box	via optional I/O box
Alarm Triggers	Analytics, Network disconnect, Alarm input(Via optional I/O box SPM-4210), App event, Schedule, MQTT subscription	
Alarm Events	When alarm trigger occurred - File upload(image): e-mail/FTP - Notification: e-mail - Recording: SD/SDHC/SDXC or NAS recording at event triggers - Alarm output(with NW I/O box SPM-4210) - Handover: PTZ preset, Send message by HTTP/HTTPS/TCP - MQTT: publication	
Audio In	via optional I/O box	via optional I/O box
Audio Out	via optional I/O box	via optional I/O box
IR Viewable Length	15m(49.21ft) 10m(32.8ft) under 3m height installation	None
IR Illuminator (Optional)	None	None
Water Removal	None	None
Auto Tracking	None	Object auto tracking(Person/Vehicle), Target lock tracking
Coaxial Protocol	None	None
Color Palettes	None	None
Radiometry		
Temperature Detect Range	None	
Temperature Accuracy	None	
Temperature Detection	None	
Additional	None	
Network		
Ethernet	Metal shielded RJ-45(10/100/1000BASE-T)	
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG	
Audio Compression	None	
Smart Codec	Manual(Sea area), WiseStream (Option: AI engine)	Manual(Sea area), WiseStreamII
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(5 users per profile) / Multicast Multiple streaming(Up to 4 profiles per channel)	Unicast(5 users per profile) / 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/StartTLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast), MQTT	
Security	FIPS 140-3 HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Device Certificate(Hanwha Private Root CA, pre-installed)	
SIP support (VoIP, Peer-to-peer, SIP/P	None	None
Application Programming Interface	ONVIF Profile S/T/G/M SUNAPI(HTTP API) Wisenet open platform	



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Security	
OS / Firmware Protect	Secure boot, Verify firmware forgery, Firmware encryption
User authentication	Digest Authentication, Privent brute-force attack
Network authentication	802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2)
Secure Communication	HTTPS, SRTP, WSS(Websocket secure)
Access Control	IP address filtering
Data Protect	Authentication information encryption, ZIP compression encryption
Audit	User Access/System/Event log
Device ID	Device Certificate(Hanwha Techwin Root CA, pre-installed)
Secure Storage	FIPS 140-3
Security Certificate	Secure by default
General	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Greek, Hungarian
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 2slot Max. 2TB(1TBx2)
Memory	8GB RAM, 8GB eMMC4GB RAM, 512MB Flash
Environmental & Electrical	
Operating Temperature / Humidity	-40°C~-+55°C(-40°F~-+131°F) * Start up should be done at above -35°C 0~95% RH(non-condensing), Humidity control /w AIR vent
Storage Temperature / Humidity	-50°C~-+60°C(-58°F~-+140°F) / 0~90% RH
Certification	IP66, NEMA4X, IK10
Input Voltage	PoE++(IEEE802.3bt type 3, Class6)
Power Consumption	PoE++: Max 42W, typical 32W
Mechanical	
Color / Material	White / Aluminum Hard-coated dome bubble
RAL Code	RAL9003
Product Dimensions / Weight	Ø251.4x212, weight 4.8kg
Compatible Conduit hole / Gangbox	3/4" (M25)/ single, double, 4" octagon, 4" square
Hanging Mount (Dome)	SBP-250HMMW
Skin Cover (Dome)	None
Weather Cap (Dome)	None
Power Module	None
Backbox	None
Certifications & Standards	
Network	None
EMC	FCC 47 CFR 15 Subpart B Class A ICES-3(A)/NMB-3(A) CE/UKCA - EN 55032 Class A, EN 50130-4 VCCI CISPR 32 Class A RCM AS/NZS CISPR 32 Class A KS C 9832 Class A , KS C 9835
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1 IEC 62471
Environment	EN IEC 63000 IEC 60529 IP66, IEC 62262 IK10 NEMA 250 type 4X
Video	None
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	28.1m(92.35ft)Wide: 103.7m(340.4ft) / Tele: 1751.8m(5474.5ft)
Observe (63PPM/ 19PPF)	11.3m(36.94ft)Wide: 41.5m(136.2ft) / Tele: 700.7m(2299.0ft)
Recognize (125PPM/ 38PPF)	5.6m(18.47ft)Wide: 20.7m(68.1ft) / Tele: 350.4m(1149.5ft)
Identify (250PPM/ 76PPF)	2.8m(9.23ft)Wide: 10.4m(34.0ft) / Tele: 175.2m(574.8ft)



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 240 V, 50 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	PNM-C19183RVTP	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
Fiber PoE Injector	PT-PSE109GBRO-AH-S	-	Dongguan PROCET Network Technology Co.,Ltd	R-R-LJ9-PSE109GB RO-A02

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook1	P95G001	9JM8HT2	DELL INC.	-
Notebook1 Adapter	HA65NM130	-	Chicony Power Technology (Suzhou)Co.,Ltd.	-
Notebook2	LG15N54	506NZGK000615	엘지전자주	-
Notebook2 Adapter	PA-1650-43(65W)	OF58U63849302Y609	엘지전자주	-
PoE Adapter	PT-PSE106GBR-AH-S	-	Dongguan PROCET Network Technology Co.,Ltd	-
Micro SD Card1	-	-	TKR	8 GB
Micro SD Card2	-	-	Transcend	32 GB



1.6 External I/O Cabling

■ mode 1

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45 (PoE)	Fiber PoE Injector (EUT)	RJ-45 (PoE)	1.8	U
	Micro SD Slot	Micro SD Card1	Micro SD Slot	-	-
	Micro SD Slot	Micro SD Card2	Micro SD Slot	-	-
Fiber PoE Injector (EUT)	RJ-45 (LAN)	Notebook1	RJ-45 (LAN)	3.1	U
	SFP (Optical)	PoE Adapter	SFP (Optical)	5.2	U
	Ground	Enclosure ground	Ground	1.6	-
PoE Adapter	RJ-45 (LAN)	Notebook2	RJ-45 (LAN)	1.6	U
Notebook1	DC Jack	Notebook1 Adapter	Line	2.0	U
Notebook2	DC Jack	Notebook2 Adapter	Line	1.8	U

* Unshielded=U, Shielded=S

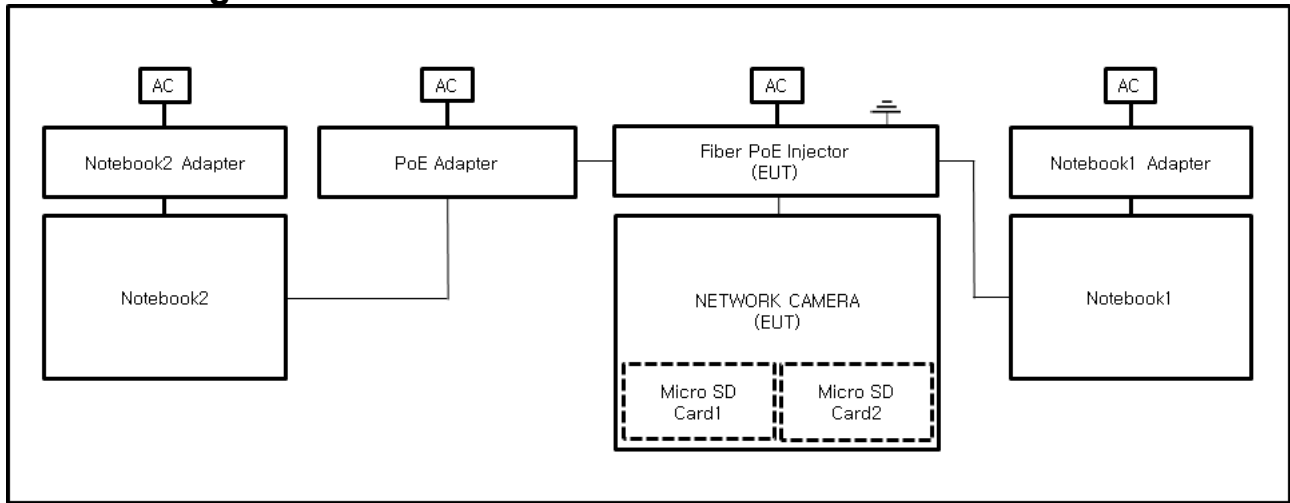
1.7 EUT Operating Mode(s)

Test mode	Normal operating
Operating	<ul style="list-style-type: none">- Check the network behavior of the EUT with the Notebook1's Ping Test.- View images of the camera through the Web Viewer.- Check the operation of the SFP port through of the PoE Adapter with the Notebook2's Ping Test.- After testing, check the recording with Micro SD Card.

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



1.8 Configuration



**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 0008



2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **AS/NZS CISPR 32:2015 AMD 1:2020**

☒ Class A

☐ Class B





2.1 Conducted Emissions at Mains Power Ports

Test Date

Mar. 13, 2025

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	11, 06, 2025
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101786	01, 09, 2026
<input checked="" type="checkbox"/>	ARTIFICIAL MAINS NETWORK	ESH2-Z5	R & S	100450	11, 06, 2025
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025

Test Conditions

Temperature: (23,3 ± 0,1) °C

Relative Humidity: (46,0 ± 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

RemarksSee Appendix A for test data.



2.2 Conducted Emissions at Telecommunication Ports

Test Date

Mar. 13, 2025

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	11, 06, 2025
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101786	01, 09, 2026
<input checked="" type="checkbox"/>	ARTIFICIAL MAINS NETWORK	ESH2-Z5	R & S	100450	11, 06, 2025
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025
<input checked="" type="checkbox"/>	8-WIRE ISN CAT6	NTFM 8158	SCHWARZBECK	8158-0029	01, 09, 2026

Test Conditions

Temperature: (23,3 ± 0,1) °C
Relative Humidity: (46,0 ± 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

RemarksSee Appendix A for test data.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Mar. 12, 2025

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	02, 13, 2026
<input checked="" type="checkbox"/>	AMPLIFIER	SCU 01	R & S	100603	11, 06, 2025
<input checked="" type="checkbox"/>	BILOG ANTENNA	VULB 9168	SCHWARZBECK	9168-461	05, 09, 2026
<input checked="" type="checkbox"/>	ATTENUATOR	6806.17.A	HUBER+SUHNER	-	02, 13, 2026

Test Conditions

Temperature: (23,2 ± 0,1) °C

Relative Humidity: (46,1 ± 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

RemarksSee Appendix A for test data.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Mar. 12, 2025

Test Location

SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	ES10/RE	TOYO Corporation	2022.01.000	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	02, 13, 2026
<input checked="" type="checkbox"/>	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 04, 2025
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	HP	3008A00538	04, 30, 2025
<input checked="" type="checkbox"/>	ATTENUATOR	8491B	HP	23094	02, 13, 2026

Test Conditions

Temperature: (23,3 ± 0,1) °C

Relative Humidity: (46,2 ± 0,1) % R.H.

Frequency Range of Measurement

1 GHz to 6 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.



APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Test Description:

Conducted Emission

Job No.:

KES-EM250775

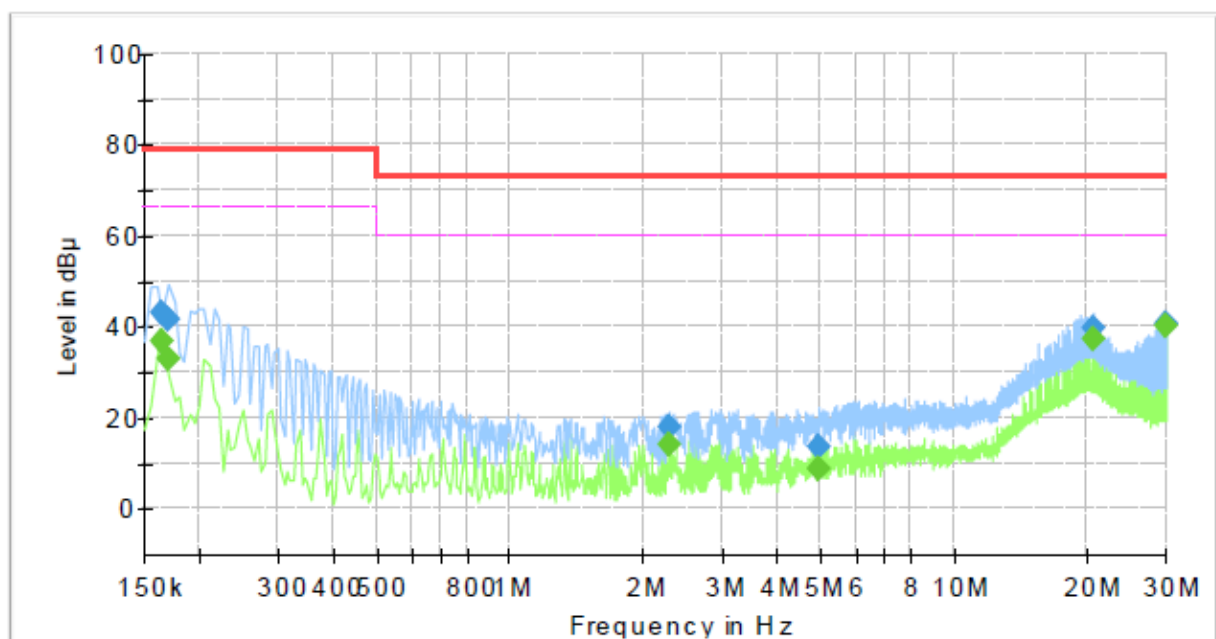
Phase:

L

Mode:

Operator Name:

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	—	36.62	66.00	29.38	1000.0	9.000	L1	19.5
0.165000	42.98	—	79.00	36.02	1000.0	9.000	L1	19.5
0.170000	—	32.83	66.00	33.17	1000.0	9.000	L1	19.5
0.170000	41.57	—	79.00	37.43	1000.0	9.000	L1	19.5
2.285000	—	13.93	60.00	46.07	1000.0	9.000	L1	19.7
2.285000	17.93	—	73.00	55.07	1000.0	9.000	L1	19.7
4.945000	—	8.81	60.00	51.19	1000.0	9.000	L1	19.9
4.945000	13.55	—	73.00	59.45	1000.0	9.000	L1	19.9
20.485000	—	37.49	60.00	22.51	1000.0	9.000	L1	20.4
20.485000	39.91	—	73.00	33.09	1000.0	9.000	L1	20.4
29.980000	—	40.03	60.00	19.97	1000.0	9.000	L1	20.7
29.980000	40.77	—	73.00	32.23	1000.0	9.000	L1	20.7



NEUTRAL LINE

Test Description:

Conducted Emission

Job No.:

KES-EM250775

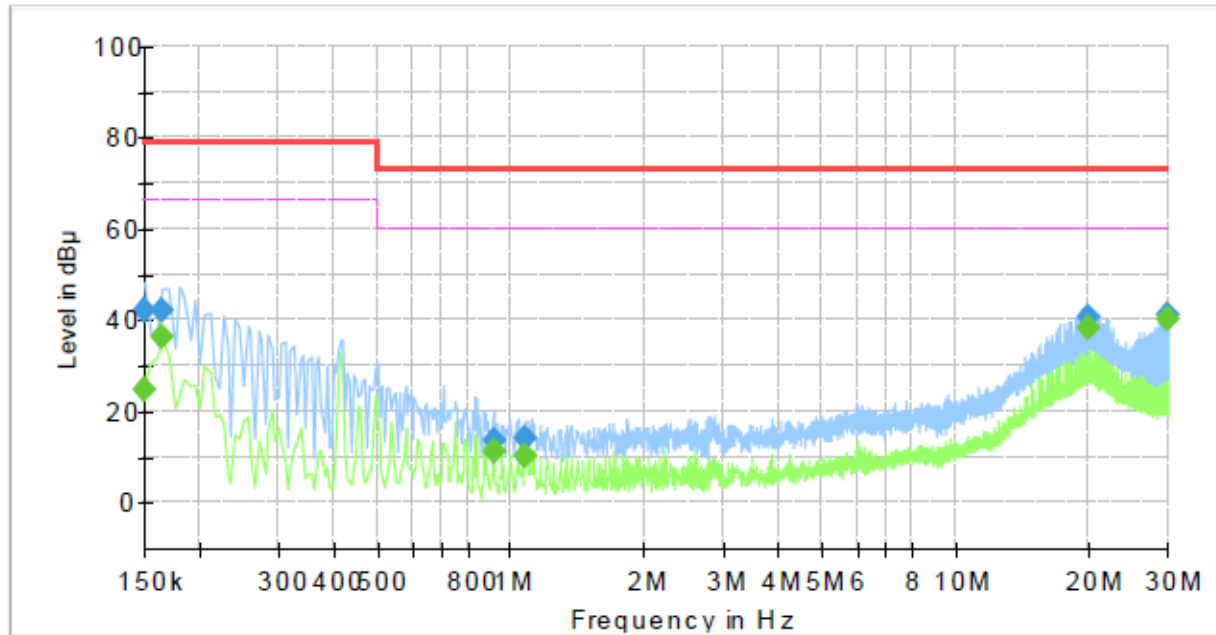
Phase:

N

Mode:

Operator Name:

KES



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	—	24.73	66.00	41.27	1000.0	9.000	N	19.5
0.150000	41.92	—	79.00	37.08	1000.0	9.000	N	19.5
0.165000	—	36.33	66.00	29.67	1000.0	9.000	N	19.5
0.165000	42.04	—	79.00	36.96	1000.0	9.000	N	19.5
0.915000	—	11.10	60.00	48.90	1000.0	9.000	N	19.6
0.915000	13.82	—	73.00	59.18	1000.0	9.000	N	19.6
1.075000	—	10.07	60.00	49.93	1000.0	9.000	N	19.6
1.075000	14.03	—	73.00	58.97	1000.0	9.000	N	19.6
19.985000	—	38.28	60.00	21.72	1000.0	9.000	N	20.3
19.985000	40.55	—	73.00	32.45	1000.0	9.000	N	20.3
29.980000	—	40.33	60.00	19.67	1000.0	9.000	N	20.6
29.980000	40.99	—	73.00	32.01	1000.0	9.000	N	20.6

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

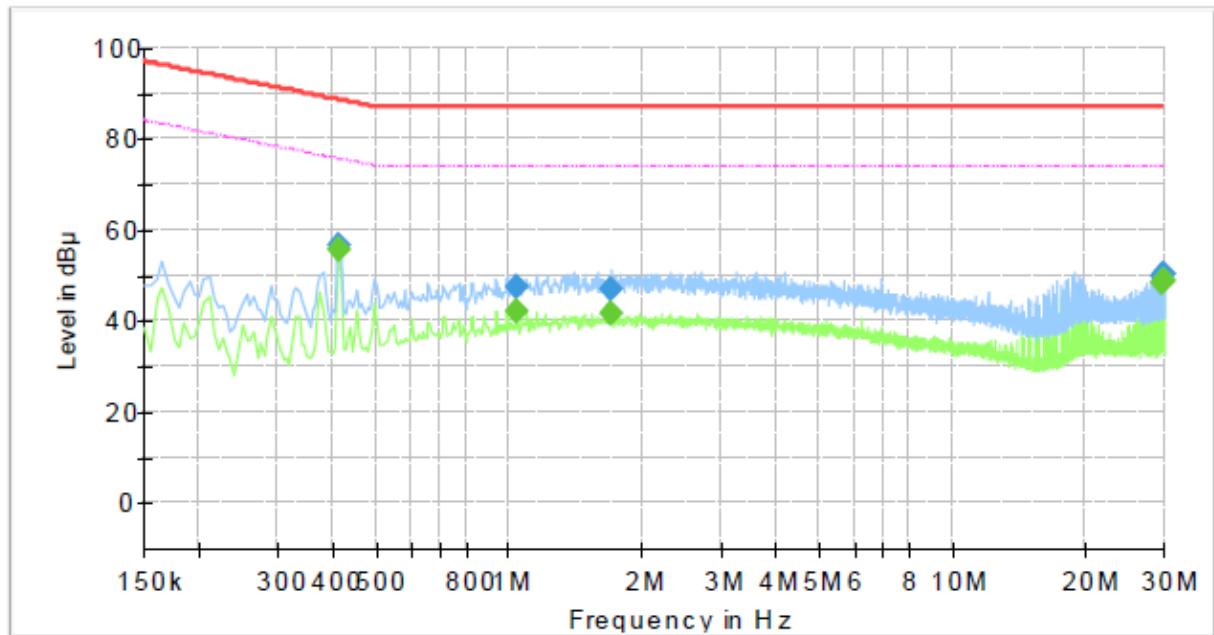
Reading Value : Not shown in the table.

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

**Conducted Emissions at Telecommunication Ports**

Test Description: Telecommunication Emission
Job No.: KES-EM250775
Mode :
Speed : 1 000 Mbps
Operator Name: KES

[1 000 Mbps]

**Final Result**

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.415000	—	55.62	75.55	19.93	1000.0	9.000	Single Line	19.4
0.415000	56.40	—	88.55	32.15	1000.0	9.000	Single Line	19.4
1.040000	—	42.31	74.00	31.69	1000.0	9.000	Single Line	19.3
1.040000	47.24	—	87.00	39.76	1000.0	9.000	Single Line	19.3
1.700000	—	41.44	74.00	32.56	1000.0	9.000	Single Line	19.3
1.700000	46.98	—	87.00	40.02	1000.0	9.000	Single Line	19.3
29.730000	—	48.21	74.00	25.79	1000.0	9.000	Single Line	20.1
29.730000	49.82	—	87.00	37.18	1000.0	9.000	Single Line	20.1
29.980000	—	48.96	74.00	25.04	1000.0	9.000	Single Line	20.1
29.980000	50.43	—	87.00	36.57	1000.0	9.000	Single Line	20.1

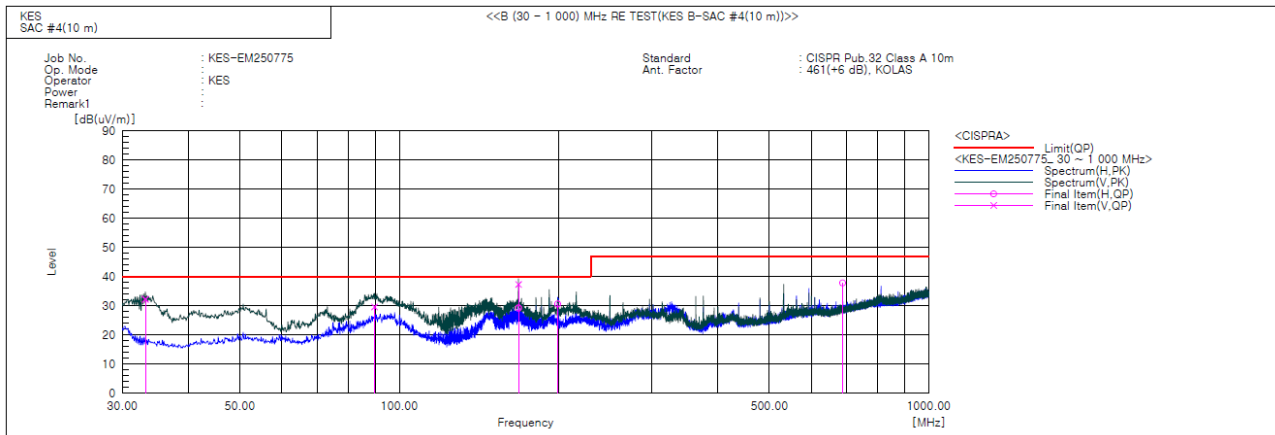
◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

**Radiated Electric Field Emissions(Below 1 GHz)****Final Result**

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	33.153	V	54.6	-22.4	32.2	40.0	7.8	124.0	230.0	
2	89.776	V	55.7	-26.1	29.6	40.0	10.4	148.0	239.0	
3	167.983	V	57.2	-19.9	37.3	40.0	2.7	100.0	21.0	
4	168.002	H	49.1	-19.9	29.2	40.0	10.8	199.0	180.0	
5	199.144	H	52.5	-21.9	30.6	40.0	9.4	398.0	300.0	
6	687.660	H	43.2	-5.4	37.8	47.0	9.2	400.0	337.0	

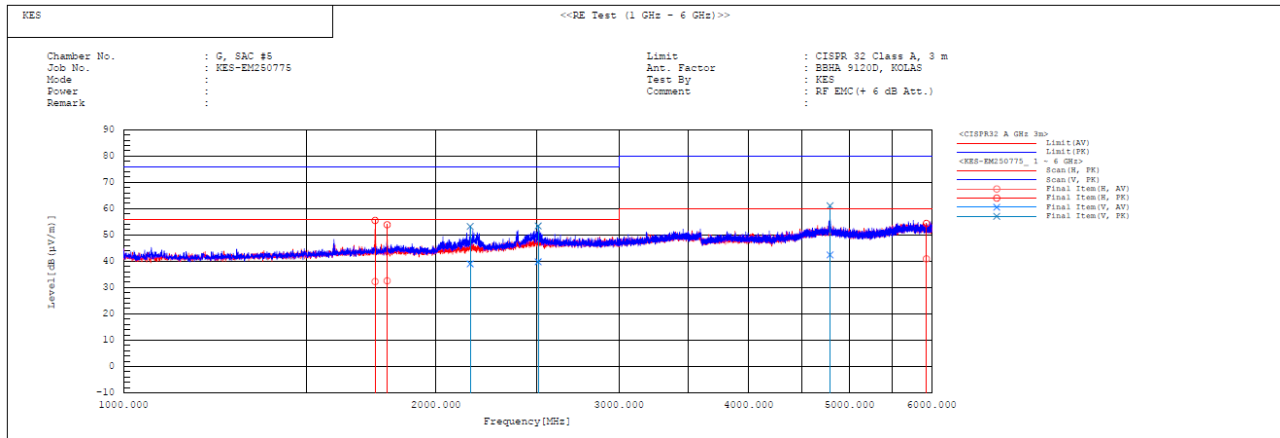
◆ Calculation

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 - Preamp Factor), Margin: Margin value

**Radiated Electric Field Emissions(Above 1 GHz)****Final Result**

No.	Frequency	Pol	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
	[MHz]		AV	PK		AV	PK	AV	PK	AV	PK			
			[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[deg]	
1	1747.037	H	30.2	53.4	2.1	32.3	55.5	56.0	76.0	23.7	20.5	100.0	170.4	
2	1784.525	H	30.4	51.7	2.2	32.6	53.9	56.0	76.0	23.4	22.1	100.0	155.6	
3	2157.566	V	35.3	49.5	3.7	39.0	53.2	56.0	76.0	17.0	22.8	100.0	101.6	
4	2508.502	V	34.7	48.3	5.1	39.8	53.4	56.0	76.0	16.2	22.6	100.0	247.6	
5	4750.038	V	30.7	49.4	11.7	42.4	61.1	60.0	80.0	17.6	18.9	100.0	158.2	
6	5928.992	H	26.6	40.1	14.3	40.9	54.4	60.0	80.0	19.1	25.6	100.0	117.2	

◆ 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)]

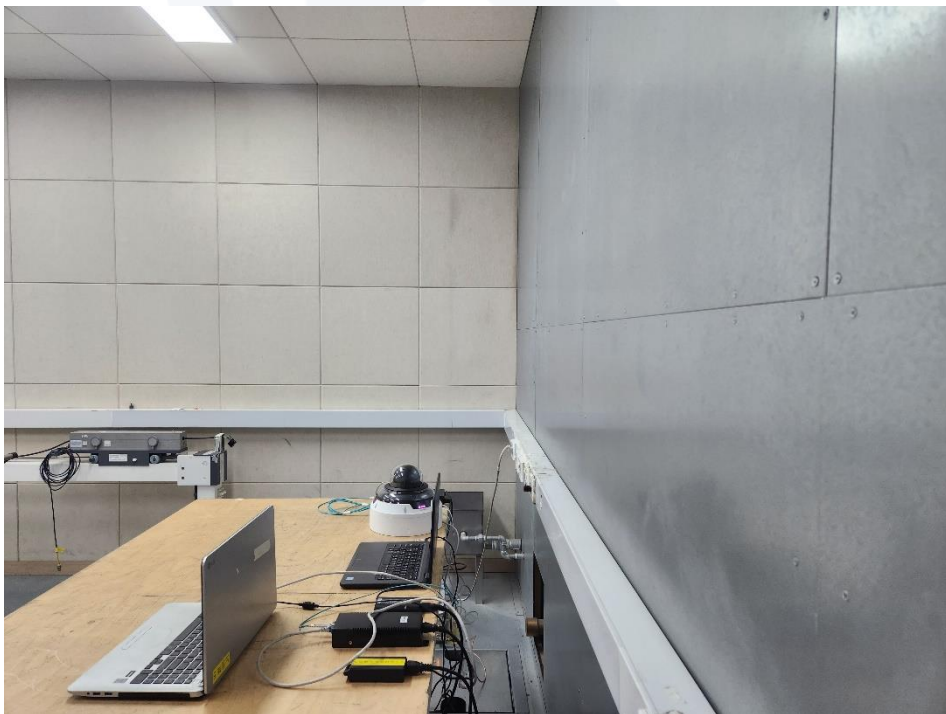
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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



Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports



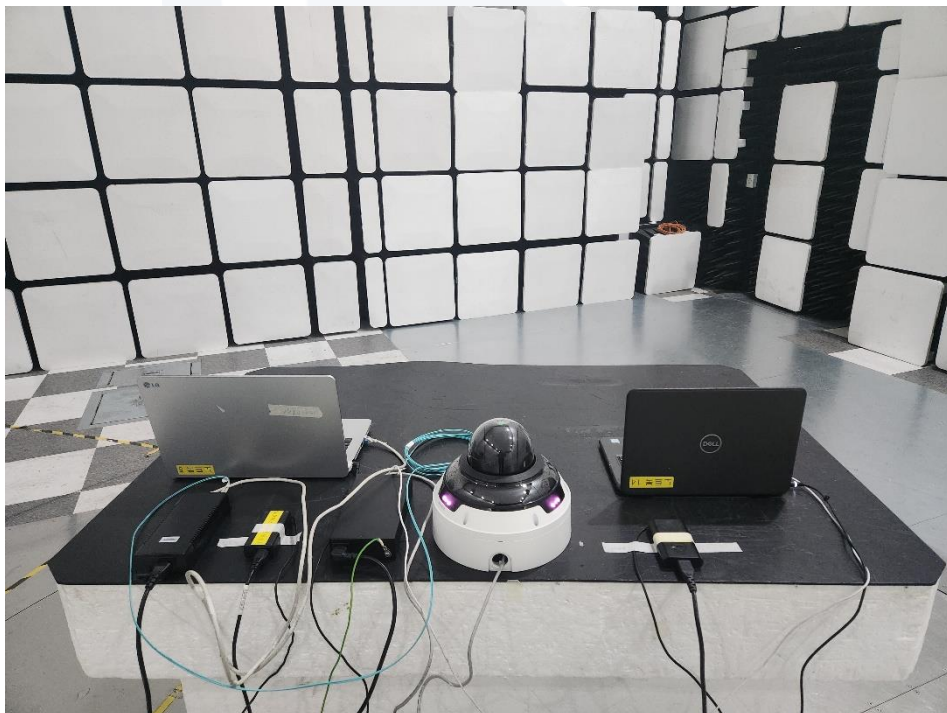


Conducted Emissions at Telecommunication Ports



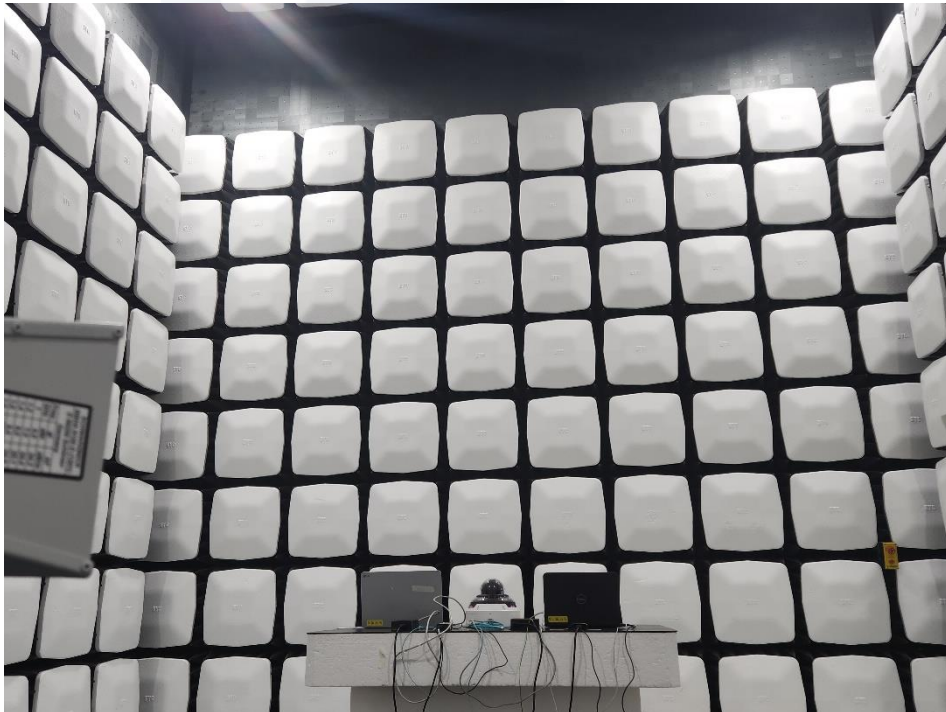


Radiated Electric Field Emissions(Below 1 GHz)





Radiated Electric Field Emissions(Above 1 GHz)





EUT External Photographs

(Top)



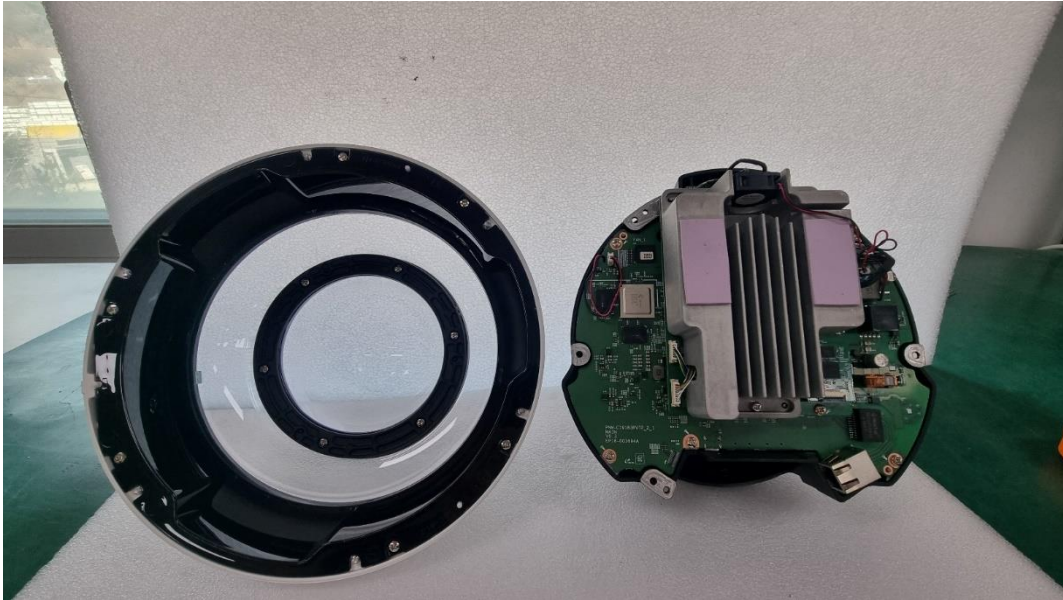
(Bottom)





EUT Internal Photographs

(Internal View)





EUT Internal View – Main Board 1

(Top)



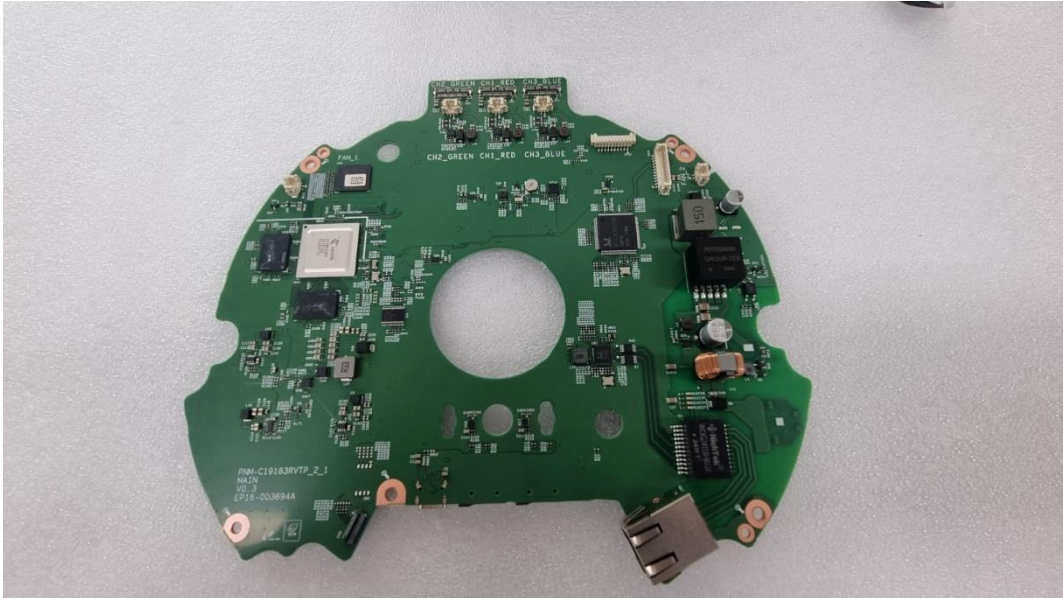
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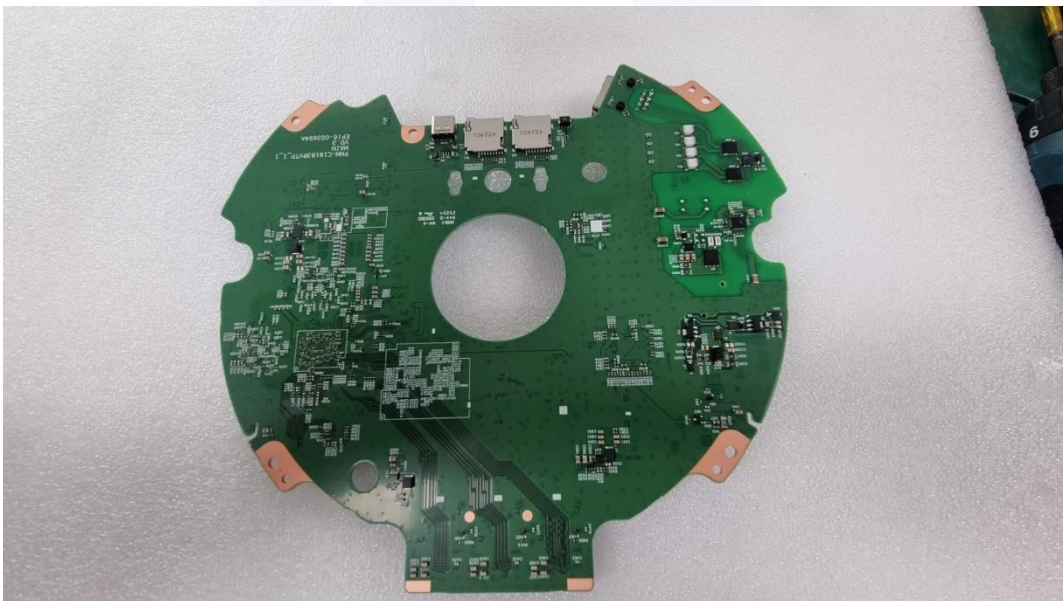


EUT Internal View – Main Board 2

(Top)



(Bottom)





EUT Internal View – Board 1

(Top)



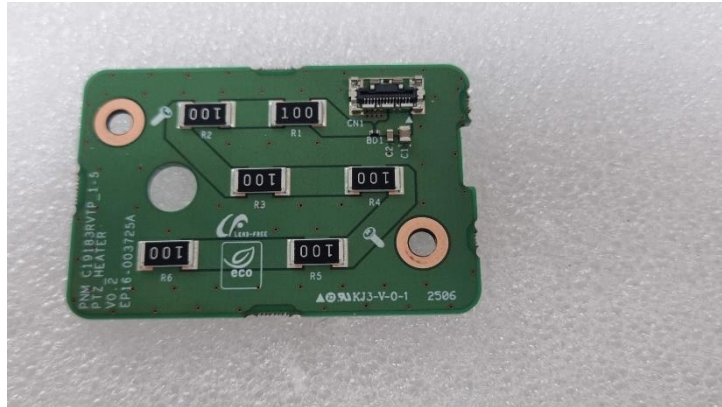
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EUT Internal View – Board 2

(Top)



(Bottom)



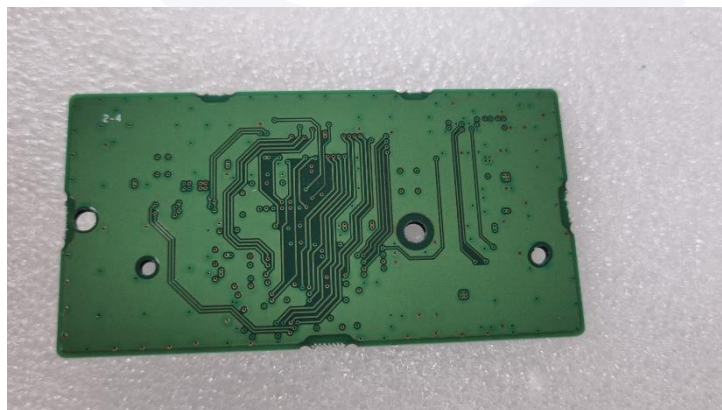


EUT Internal View – Board 3

(Top)



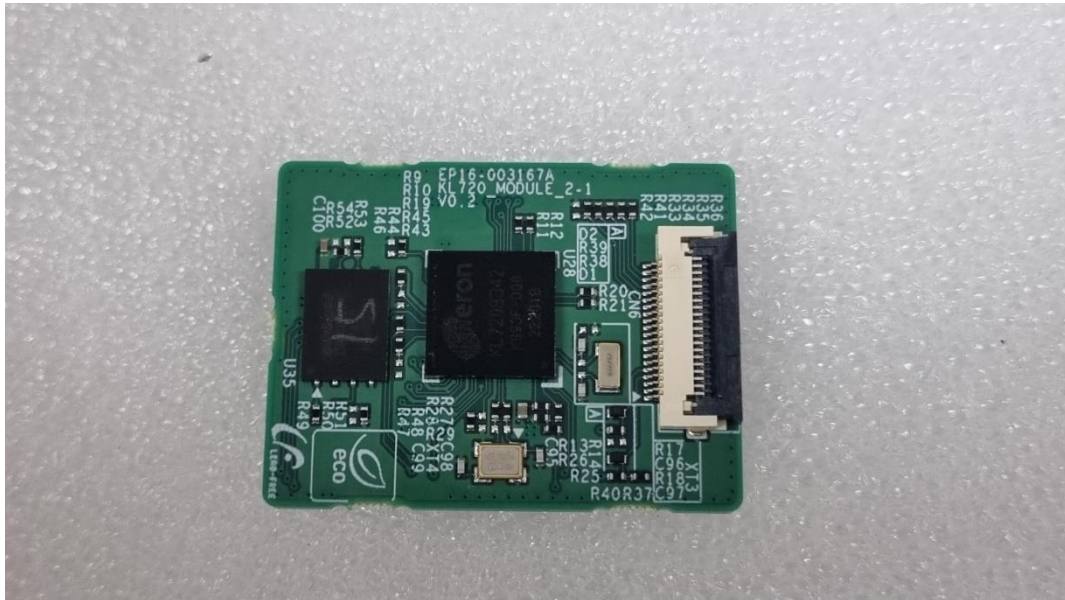
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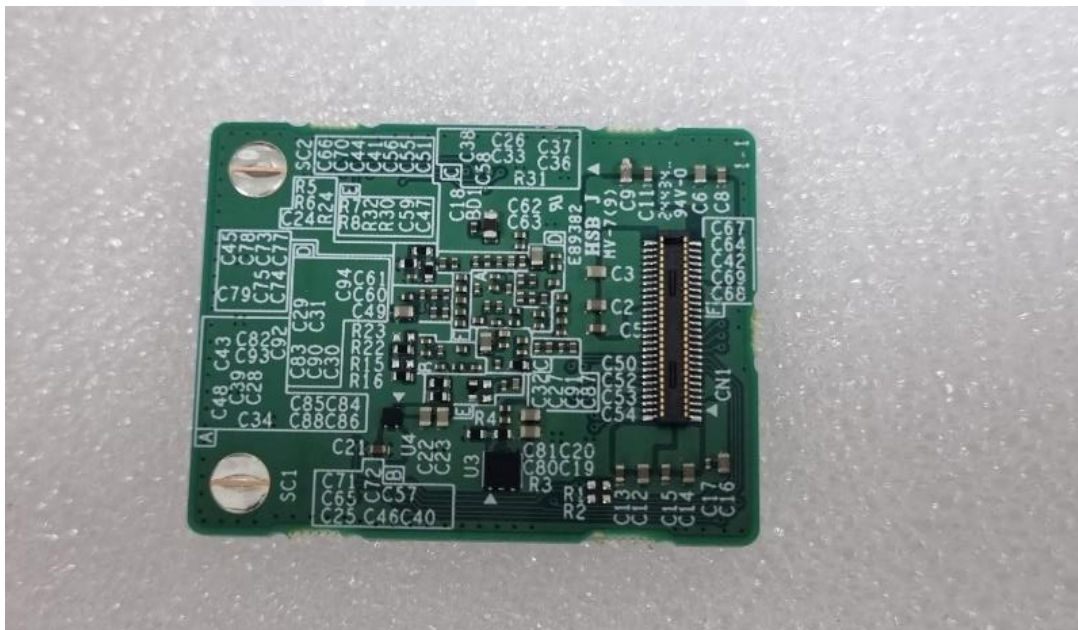


EUT Internal View – Module Board

(Top)



(Bottom)



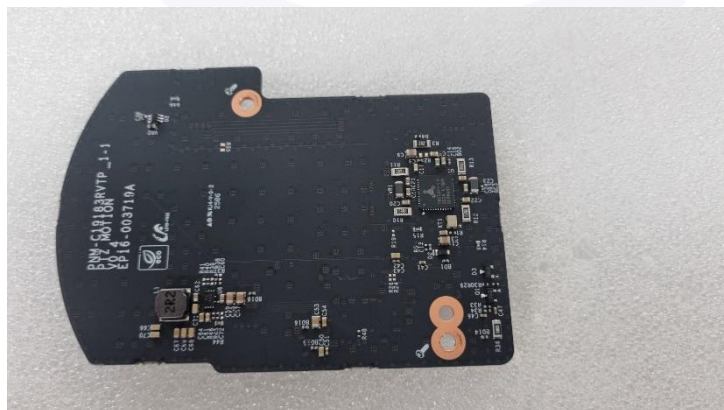


EUT Internal View – Motion Board

(Top)



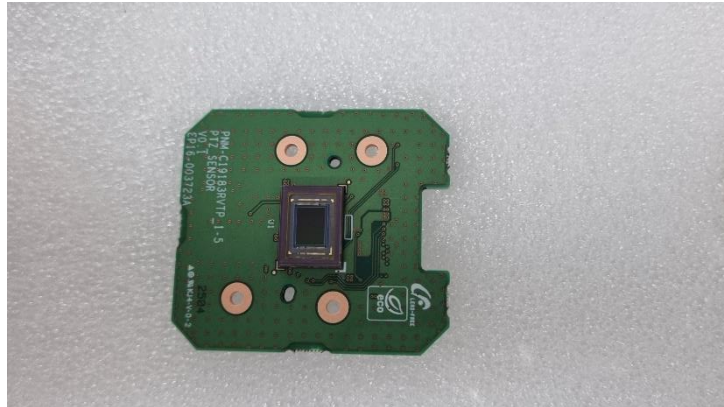
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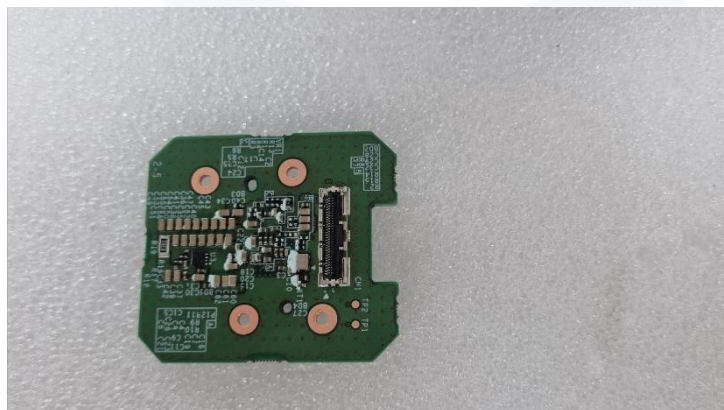


EUT Internal View – Sensor Board

(Top)



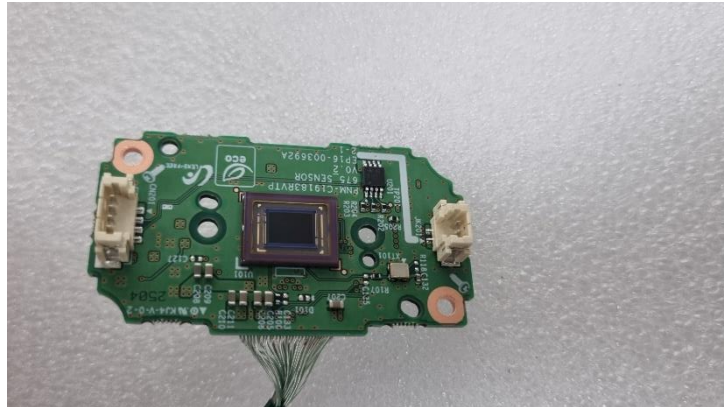
(Bottom)





EUT Internal View – Lens board

(Top)



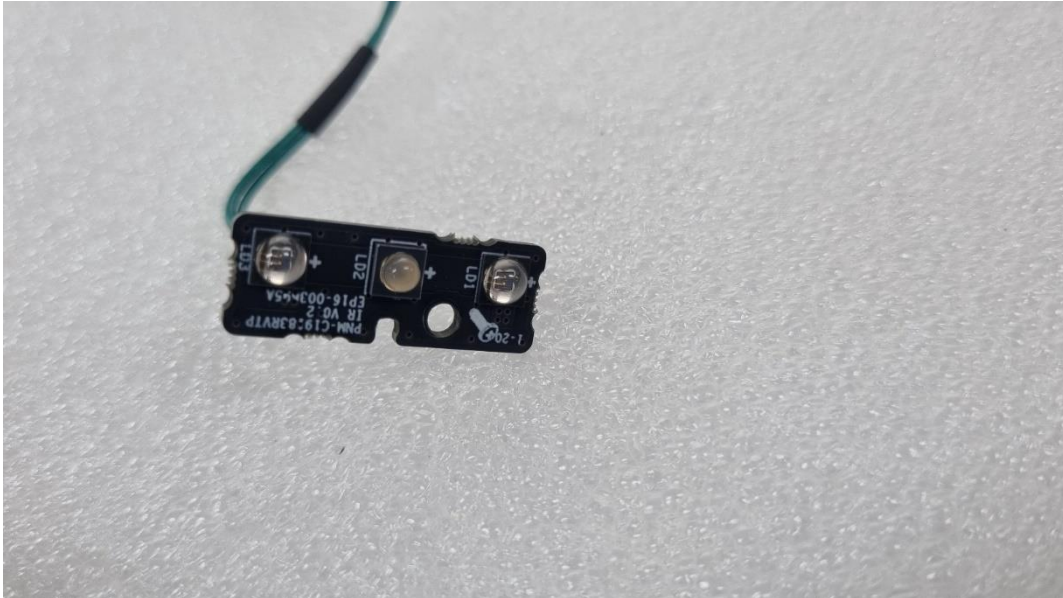
(Bottom)





EUT Internal View – LED board

(Top)



(Bottom)



The End.