

**KES Co., Ltd.**

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www.kes.co.kr

Report No.:

KES-E1-18T0612-R2

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EMC TEST REPORT

Test Report No. : KES-E1-18T0612-R2

Date of Issue : Feb. 24, 2023

Product name : Network Camera

Model/Type No. : XND-6081FZ

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 : Nov. 02, 2018

Test date : Nov. 08, 2018

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

Tested by

Min Seong, 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
Nov. 12, 2018	KES-E1-18T0612	Issued
Nov. 15, 2021	KES-E1-18T0612-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-E1-18T0612-R2	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	1/2.8" 2M CMOS
Total Pixels	1945(H) x 1109(V) 2.16M
Effective Pixels	1945(H) x 1097(V) 2.13M
Scanning System	Progressive Scan
Min. Illumination	Color : 0.015 lux(F1.4, 1./30sec) B/W : 0.0015 Lux (F1.4, 1/30sec)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation USB : Micro USB type B, 1280x720, for installation
Lens	
Focal Length (Zoom Ratio)	2.8~12mm(4.3x) motorized varifocal
Max. Aperture Ratio	1.4(Wide) ~ 3.6(Tele)
Angular Field of View	H: 119.5°, V: 62.8°, D: 142.1° H: 27.9°, V: 15.7°, D: 32.0°
Min. Object Distance	0.5m (1.64ft)
Focus Control	Simple focus(Motorized V/F) / Manual, Remote control via network (Manual, Simple focus)
Lens Type	DC Auto Iris, P-iris
Mount Type	Board-in type
Pan / Tilt / Rotate	
Pan / Tilt / Rotate range	±175° / 0~85° / ±175°
PTR control	Remote adjustment (Max. 200 cycles)
Operational	
Camera Title	Off / On (Displayed up to 85 characters) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale by Resolution
Day & Night	Auto (ICR) / Color / B/W / External / Schedule
Backlight Compensation	Off / BLC / HLC, WDR
Wide Dynamic Range	150dB
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	SSNR5 (2D+3D Noise Filter) (Off / On)
Digital Image Stabilization	Off / On (built-in Gyro Sensor)
Defog	Auto / Manual / Off
Motion Detection	Off/ On(8ea, 8point Polygonal zones), Handover

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Privacy Masking	Off / On (32ea, polygonal zones) - Color : Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor((included Mercury & Sodium)
LDC	On/Off (5 levels with Min/Max)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
Digital PTZ	24X, Digital PTZ(Preset, Group)
Flip / Mirror	Flip : On/Off Mirror : On/Off Hallway view : 90°/270°
Analytics	Tampering, Loitering, Directional Detection, Defocus Detection, Fog Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection, Motion Detection, Digital Auto Tracking, Sound Classification, Audio Playback on event , Shock detection , Heatmap , People counting , Queue management
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio Analytics, Network Disconnect
Alarm events	File upload via FTP, E-Mail Notification via E-Mail local storage(SD/SDHC/SDXC) or NAS recording at Event Triggers External output
Audio In	Selectable (Mic IN/Line IN), Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out, Max output level: 1 Vrms
Pixel Counter	Support
Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Form	H.265/H.264 (MPEG-4 Part 10/AVC) : Main/Baseline/High , Motion JPEG
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264 : Max. 60fps at all resolutions Motion JPEG : Max. 30fps
Smart Codec	Manual Mode (area-based : 5EA)
WiseStreamII	Support
Video Quality Adjustmer	H.264/H.265 : Target Bitrate Level Control MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.264/H.265 : CBR or VBR MJPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10 Profiles)
Audio Compression Form	G.711 u-law /G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 8/16/32/48KHz

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Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast Mode
Edge Storage	Micro SD/SDHC/SDXC 2slot (up to 512 GB) - Continuous recording(1st slot to 2nd slot) - Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. - NAS(Network Attached Storage), Local PC for Instant Recording
Application Programming	ONVIF Profile S/G SUNAPI(HTTP API) Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer - Supported Browser : Google Chrome 56, MS Edge 39, Mozilla Firefox 61 (Window 64bit only), Apple Safari 10 (Mac OS X only) Plug-in Webviewer - Supported Browser : MS Explore 11, Apple Safari 10 (Mac OS X only)
Central Management Software	SmartViewer, SSM
Environmental	
Operating Temperature / Humidity	-10°C ~ +55°C (-14°F ~ +131°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP52, Plenum rate
Vandal Resistance	-
Electrical	
Input Voltage / Current	Power redundancy 12VDC $\pm$ 10%, PoE(IEEE802.3af, Class3)
Power Consumption	DC : Max 8.5W, PoE : Max 10W
Mechanical	
Color / Material	TBD / Aluminum
Dimension (ØxH)	Ø 180
Weight	TBD

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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	XND-6081FZ	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

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1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE Adaptor	GS728TPP	-	NETGEAR	-
Notebook	NT630Z5J	JK9091EF400142M	Samsung Electronics Co.,Ltd.	-
Notebook Adaptor	PA-1400-14	AA-PA2N40W	LITE-ON TECHNOLOGY CHANGZHOU CO.,LTD	-
Speaker	BR1000A Cuve Black 2	-	DONGGUAN EDIFIER TECHNOLOGY Co., Ltd	-
MIC	MP1000	-	-	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
Button Alarm	-	-	-	-
Phone	SHV-E210L	R33D713KA3F	Samsung Electronics Co.,Ltd.	-
Micro SD Card	-	-	SanDisk	8 GB
PoE Adaptor	PSE156G	-	-	Conducted Emissions
Notebook	P98F004	21599158359	DELL INC.	Conducted Emissions
Notebook Adaptor	LA240PM190	-	LITE-ON TECHNOLOGY (CHANGZHOU)CO.,LTD.	Conducted Emissions
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	Conducted Emissions

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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
	3.5 mm	Speaker	3.5 mm	1.4	U
	3.5 mm	MIC	3.5 mm	1.4	U
	2 Pin	Alarm	2 Pin	3.0	U
	2 Pin	Button Alarm	2 Pin	3.0	U
	SLOT	Micro SD Card	SLOT	-	-
Notebook	3.5 mm	Phone	3.5 mm	0.8	U

■ PoE MODE

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camera (EUT)	RJ-45 (PoE)	PoE Adaptor	RJ-45 (PoE)	3.0	U
	3.5 mm	Speaker	3.5 mm	1.4	U
	3.5 mm	MIC	3.5 mm	1.4	U
	2 Pin	Alarm	2 Pin	3.0	U
	2 Pin	Button Alarm	2 Pin	3.0	U
	SLOT	Micro SD Card	SLOT	-	-
Notebook	RJ-45 (DATA)	PoE Adaptor	RJ-45 (DATA)	1.5	U
	3.5 mm	Phone	3.5 mm	0.8	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

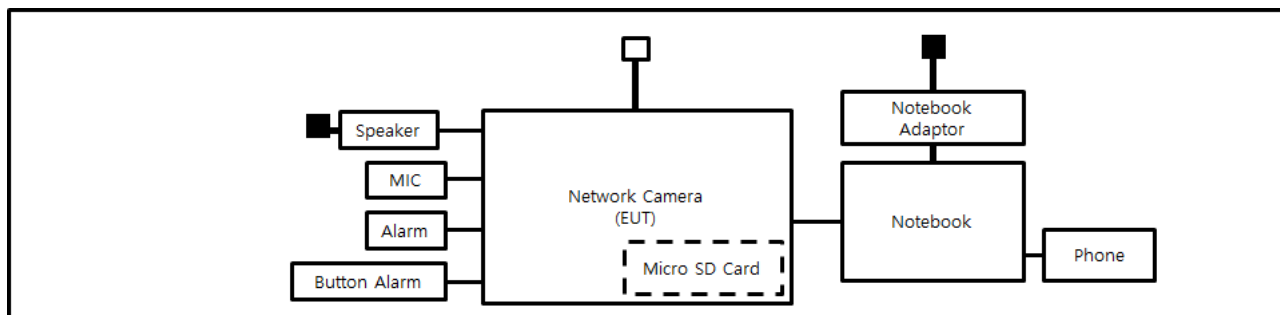
Test mode	operating
DC 12 V PoE	EUT Monitoring, Ping Test

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

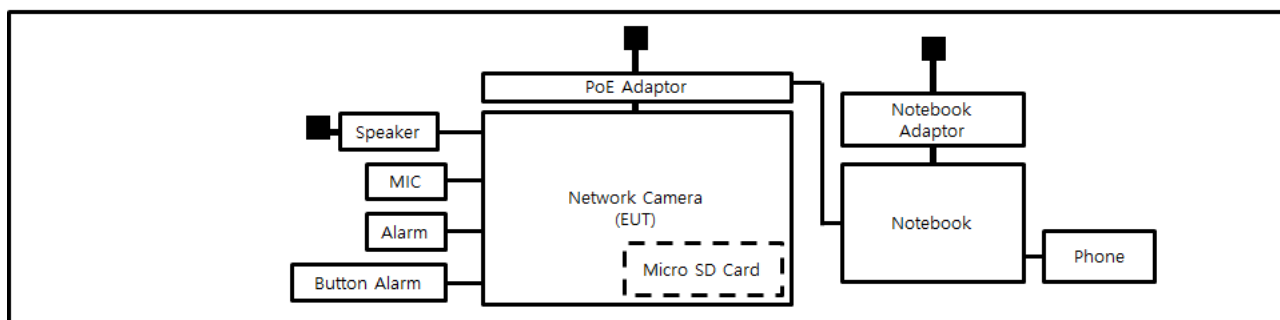
1.8 Configuration

■ AC Main
 □ DC Main

■ DC 12 V MODE



■ PoE MODE



1.9 Remarks when standards applied

- During the DC 12 V mode test in the Conducted Emissions at Mains Power Ports test was conducted using an adapter.
- During the PoE mode test in the Conducted Emissions at Mains Power Ports test, PoE Adaptor, Notebook, Speaker, and Phone were changed and tested.

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

☐ Group 2

☐ Class A

☐ 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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☐ **VCCI V-3 / 2015.04**☐ Class A☐ Class B☐ **AS/NZS:2013**☐ 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

Nov. 08, 2018

Test Location

Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	04, 25, 2019
☒	LISN	ENV216	R & S	101137	01, 31, 2019
☒	LISN	ENV216	R & S	101786	04, 25, 2019

Test Conditions

Temperature: 22,4 °C
Relative Humidity: 54,1 % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Nov. 08, 2018

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, 27, 2018
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	714	11, 28, 2018

Test Conditions

Temperature: 21,4 °C

Relative Humidity: 54,7 % 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

Nov. 08, 2018

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, 11, 2019
☐	ATTENUATOR	8491A	HP	35496	03, 21, 2019
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	09, 04, 2019

Test Conditions

Temperature: 21,4 °C
Relative Humidity: 54,7 % 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

Remarks

See Appendix A for test data.



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APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

■ DC 12 V MODE

HOT LINE

Common Information

Test Description:

Conducted Emission

Model No.:

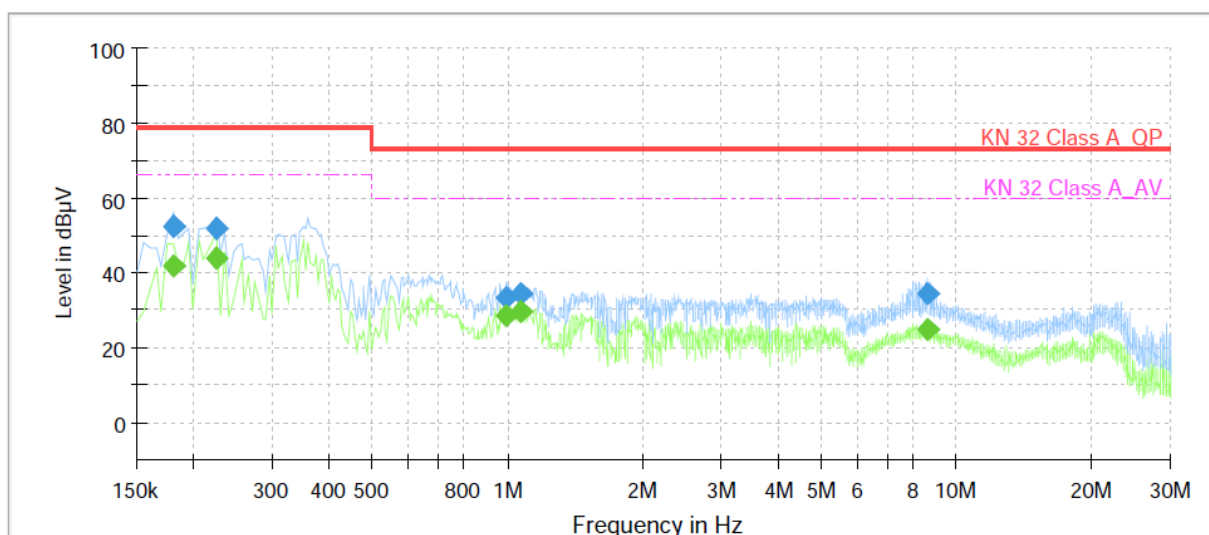
XND-6081FZ

Mode

DC_H

Operator Name:

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.180000	---	41.73	66.00	24.27	1000.0	9.000	L1	9.7
0.180000	52.26	---	79.00	26.74	1000.0	9.000	L1	9.7
0.225000	---	44.17	66.00	21.83	1000.0	9.000	L1	9.7
0.225000	51.66	---	79.00	27.34	1000.0	9.000	L1	9.7
0.995000	---	28.78	60.00	31.22	1000.0	9.000	L1	10.0
0.995000	33.29	---	73.00	39.71	1000.0	9.000	L1	10.0
1.070000	---	29.85	60.00	30.15	1000.0	9.000	L1	10.0
1.070000	34.17	---	73.00	38.83	1000.0	9.000	L1	10.0
8.655000	---	24.87	60.00	35.13	1000.0	9.000	L1	9.8
8.655000	34.46	---	73.00	38.54	1000.0	9.000	L1	9.8

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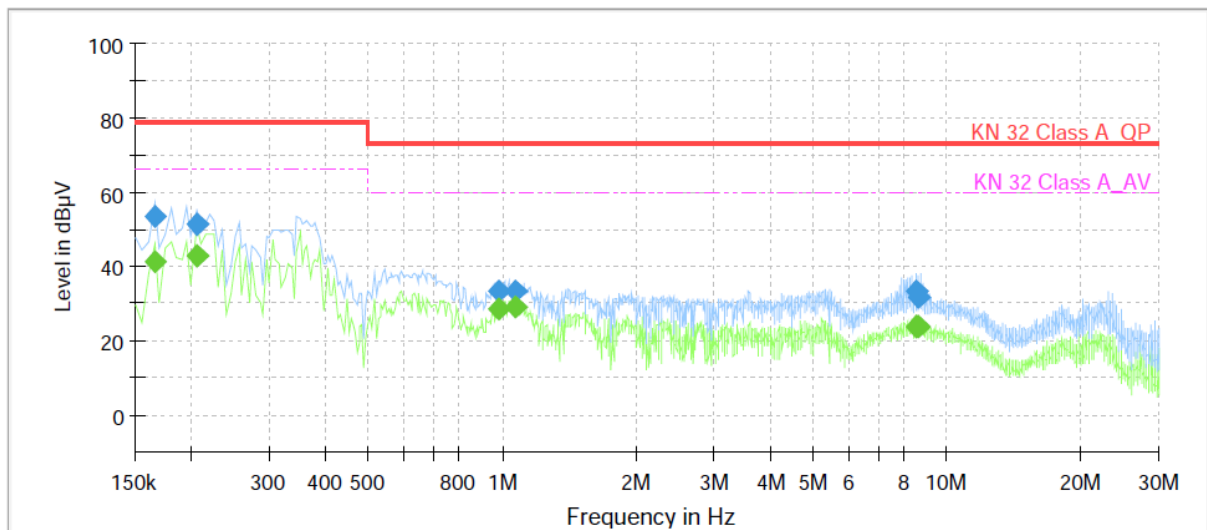
KES-E1-18T0612-R2

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NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Model No.: XND-6081FZ
Mode: DC_N
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	41.17	66.00	24.83	1000.0	9.000	N	9.7
0.165000	53.72	---	79.00	25.28	1000.0	9.000	N	9.7
0.205000	---	42.76	66.00	23.24	1000.0	9.000	N	9.7
0.205000	51.57	---	79.00	27.43	1000.0	9.000	N	9.7
0.980000	---	28.39	60.00	31.61	1000.0	9.000	N	10.0
0.980000	33.30	---	73.00	39.70	1000.0	9.000	N	10.0
1.070000	---	29.21	60.00	30.79	1000.0	9.000	N	10.0
1.070000	33.61	---	73.00	39.39	1000.0	9.000	N	10.0
8.565000	---	23.95	60.00	36.05	1000.0	9.000	N	9.8
8.565000	33.11	---	73.00	39.89	1000.0	9.000	N	9.8
8.675000	---	23.76	60.00	36.24	1000.0	9.000	N	9.8
8.675000	31.91	---	73.00	41.09	1000.0	9.000	N	9.8

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Report No.:

KES-E1-18T0612-R2

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■ PoE MODE

HOT LINE

Common Information

Test Description:

Conducted Emission

Model No.:

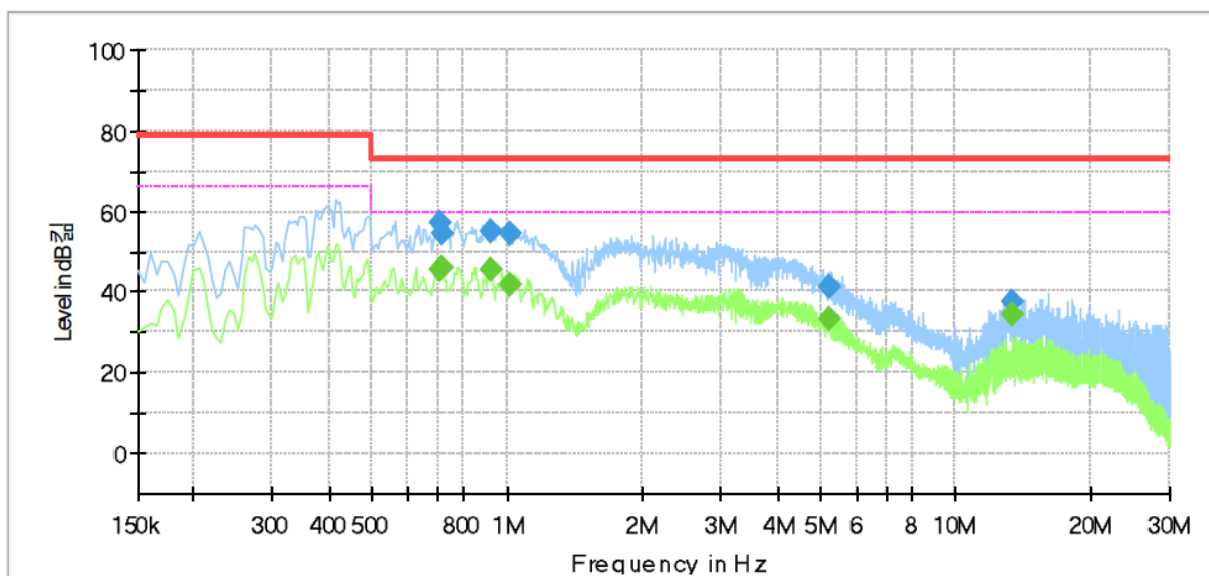
XND-6081FZ

Mode

PoE_H

Operator Name:

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.705000	---	45.28	60.00	14.72	1000.0	9.000	L1	9.9
0.705000	56.91	---	73.00	16.09	1000.0	9.000	L1	9.9
0.715000	---	46.22	60.00	13.78	1000.0	9.000	L1	9.9
0.715000	54.54	---	73.00	18.46	1000.0	9.000	L1	9.9
0.915000	---	45.78	60.00	14.22	1000.0	9.000	L1	10.0
0.915000	54.86	---	73.00	18.14	1000.0	9.000	L1	10.0
1.020000	---	41.75	60.00	18.25	1000.0	9.000	L1	10.0
1.020000	54.57	---	73.00	18.43	1000.0	9.000	L1	10.0
5.200000	---	33.40	60.00	26.60	1000.0	9.000	L1	10.0
5.200000	41.17	---	73.00	31.83	1000.0	9.000	L1	10.0
13.420000	---	34.50	60.00	25.50	1000.0	9.000	L1	9.9
13.420000	37.62	---	73.00	35.38	1000.0	9.000	L1	9.9

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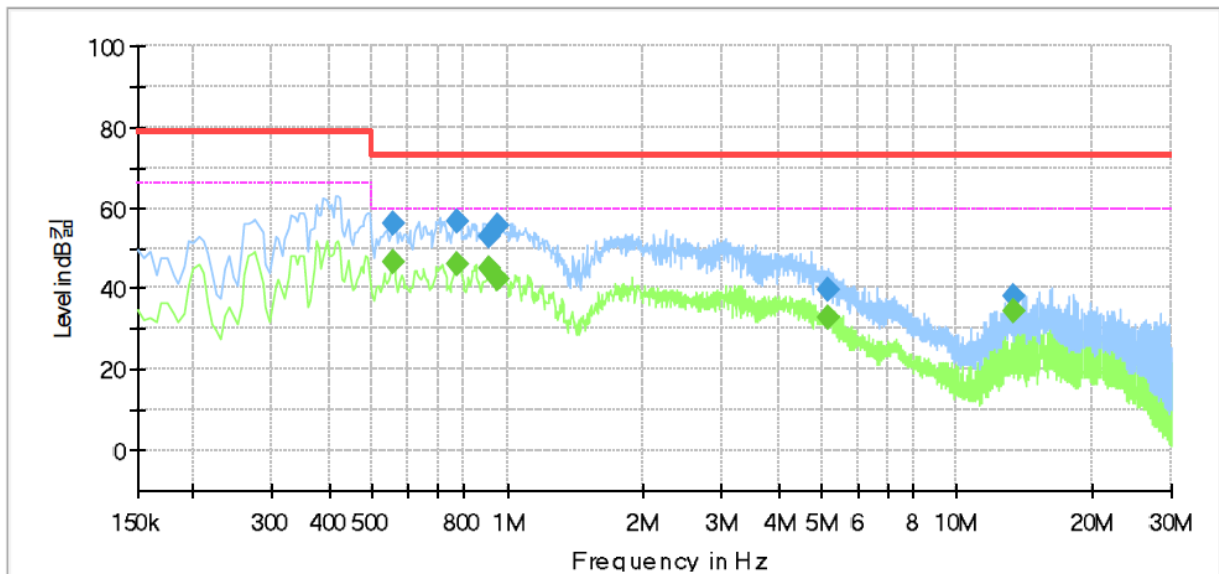
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XND-6081FZ
Mode	PoE_N
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.555000	---	46.76	60.00	13.24	1000.0	9.000	N	9.8
0.555000	55.86	---	73.00	17.14	1000.0	9.000	N	9.8
0.775000	---	45.98	60.00	14.02	1000.0	9.000	N	9.9
0.775000	56.75	---	73.00	16.25	1000.0	9.000	N	9.9
0.910000	---	44.99	60.00	15.01	1000.0	9.000	N	10.0
0.910000	52.80	---	73.00	20.20	1000.0	9.000	N	10.0
0.955000	---	42.52	60.00	17.48	1000.0	9.000	N	10.0
0.955000	55.68	---	73.00	17.32	1000.0	9.000	N	10.0
5.170000	---	32.58	60.00	27.42	1000.0	9.000	N	10.0
5.170000	39.72	---	73.00	33.28	1000.0	9.000	N	10.0
13.420000	---	34.67	60.00	25.33	1000.0	9.000	N	10.0
13.420000	37.95	---	73.00	35.05	1000.0	9.000	N	10.0

◆ 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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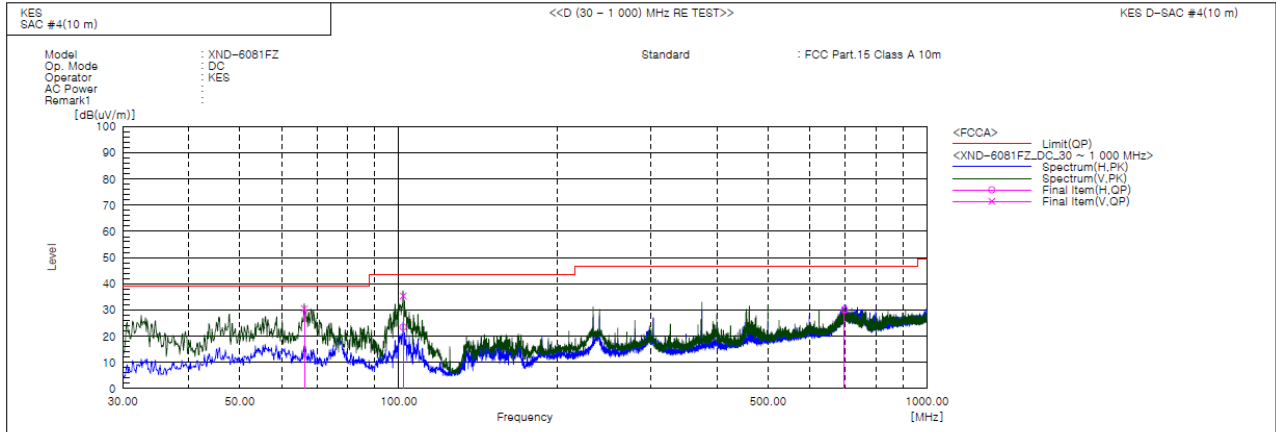
Report No.:

KES-E1-18T0612-R2

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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	66.254	V	61.8	-31.3	30.5	39.0	8.5	100.0	189.0	
2	101.901	H	52.5	-29.0	23.5	43.5	20.0	400.0	346.0	
3	101.901	V	64.3	-29.0	35.3	43.5	8.2	100.0	69.0	
4	698.088	H	45.1	-15.0	30.1	46.5	16.4	364.0	338.0	

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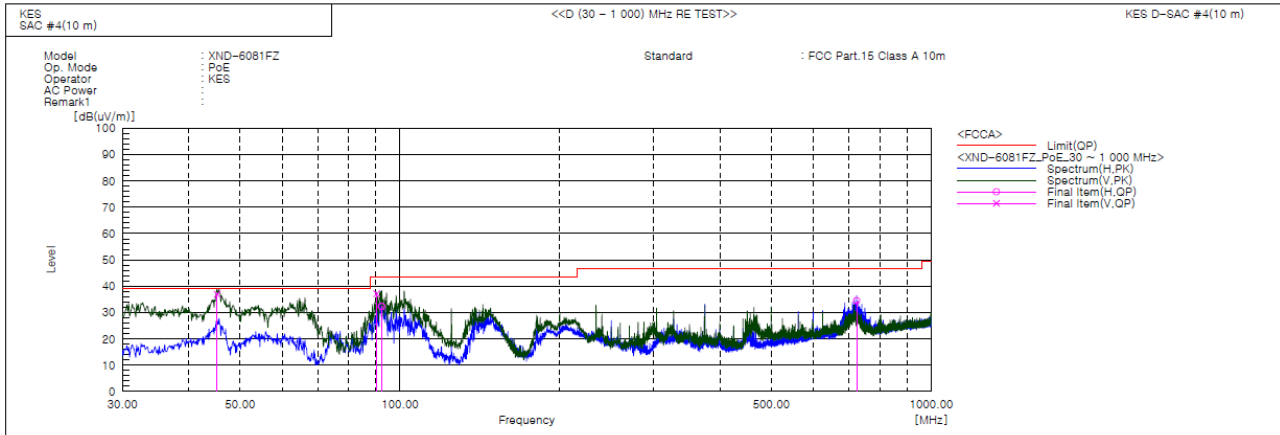
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KES-E1-18T0612-R2

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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	45.278	V	65.5	-28.6	36.9	39.0	2.1	100.0	61.0	
2	90.369	V	68.0	-30.9	37.1	43.5	6.4	100.0	188.0	
3	92.323	H	62.5	-30.2	32.3	43.5	11.2	372.0	60.0	
4	724.156	H	49.3	-14.8	34.5	46.5	12.0	400.0	227.0	

◆ 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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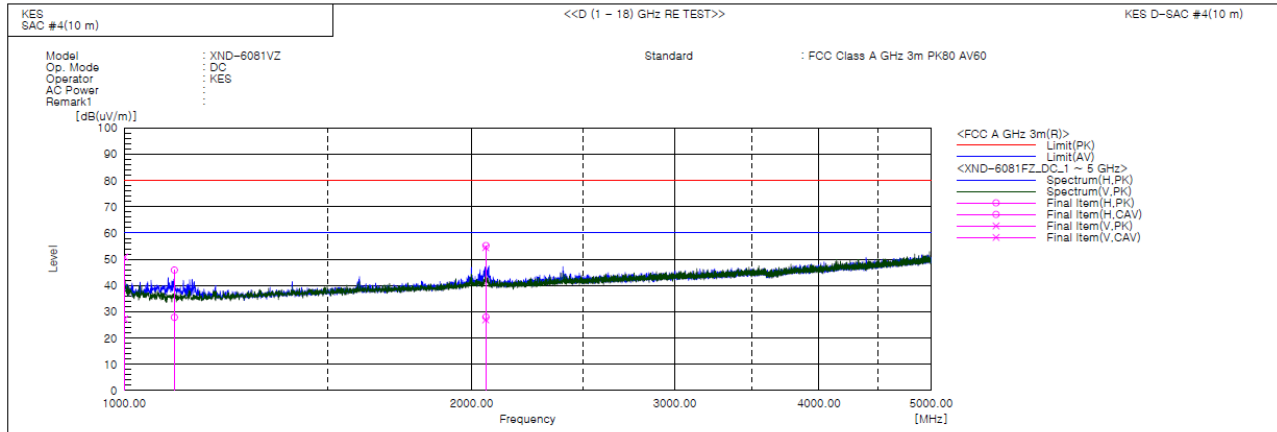
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Radiated Electric Field Emissions(Above 1 GHz)

■ 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	1001.185	V	58.8	35.1	-7.9	50.9	27.2	80.0	60.0	29.1	32.8	164.0	19.0	
2	1105.585	H	52.8	34.8	-6.9	45.9	27.9	80.0	60.0	34.1	32.1	276.0	130.0	
3	2057.170	V	54.8	27.3	-0.4	54.4	26.9	80.0	60.0	25.6	33.1	100.0	157.0	
4	2058.325	H	55.6	28.4	-0.4	55.2	28.0	80.0	60.0	24.8	32.0	281.0	6.0	

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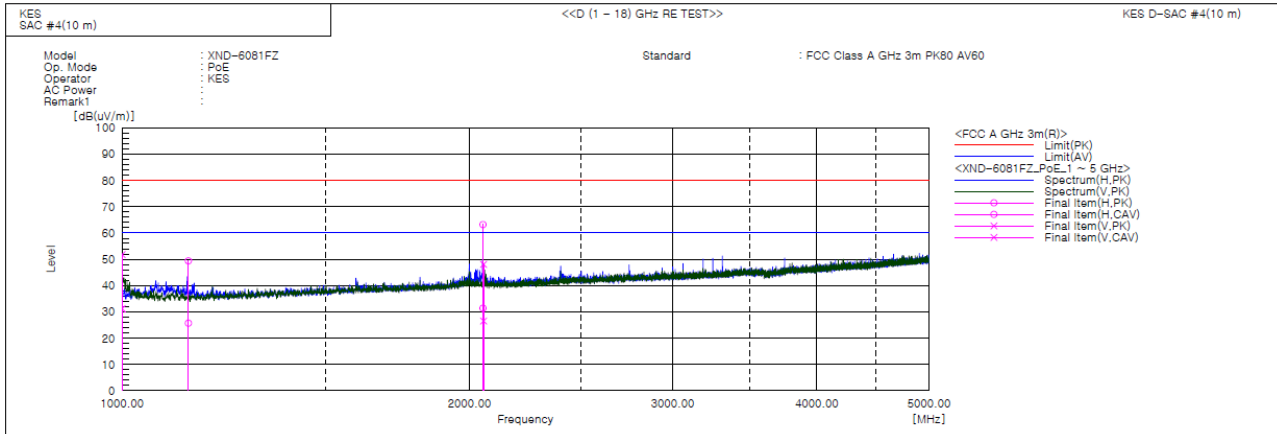
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■ PoE MODE



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	1000.110	V	59.7	39.1	-7.9	51.8	31.2	80.0	60.0	28.2	28.8	143.0	30.0	
2	1141.790	H	55.9	32.2	-6.5	49.4	25.7	80.0	60.0	30.6	34.3	276.0	179.0	
3	2054.935	H	63.6	31.8	-0.4	63.2	31.4	80.0	60.0	16.8	28.6	247.0	46.0	
4	2057.215	V	48.5	26.9	-0.4	48.1	26.5	80.0	60.0	31.9	33.5	129.0	5.0	

◆ 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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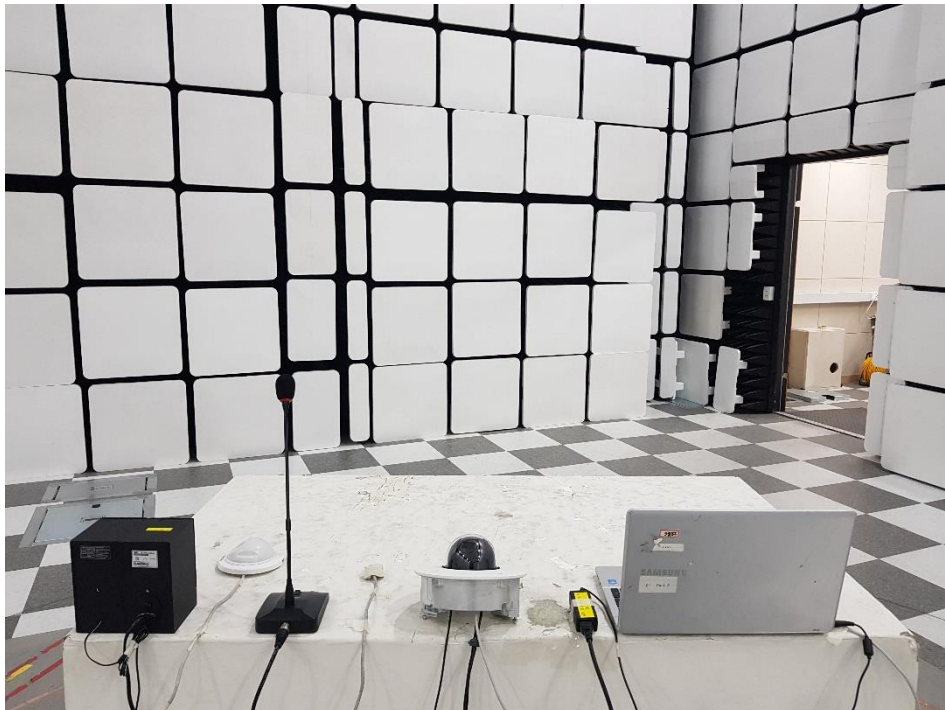
Test Setup Photos and Configuration

Conducted Voltage Emissions



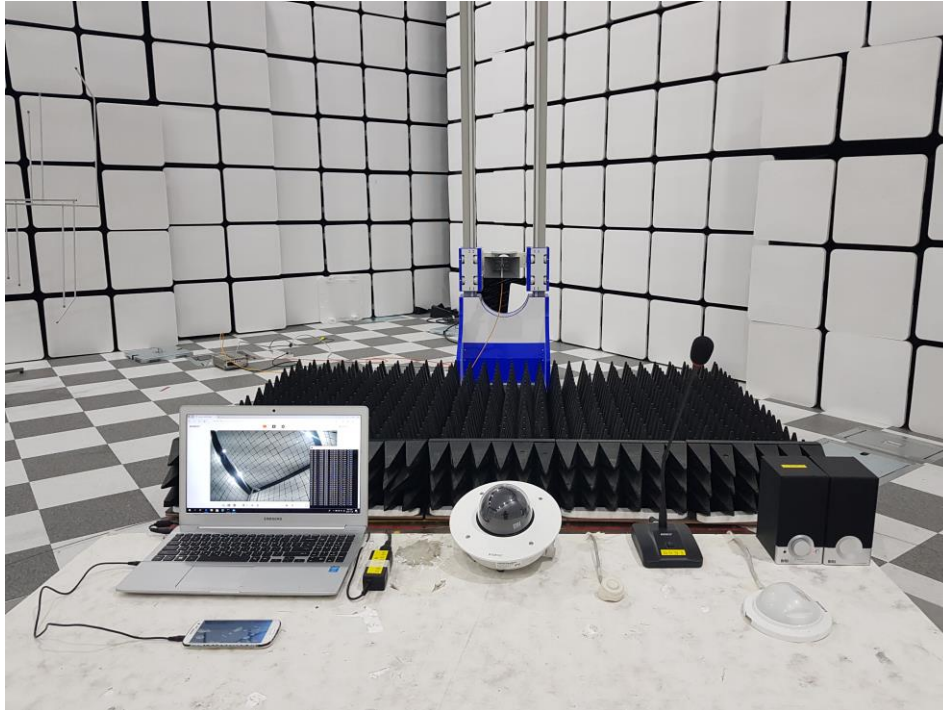
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



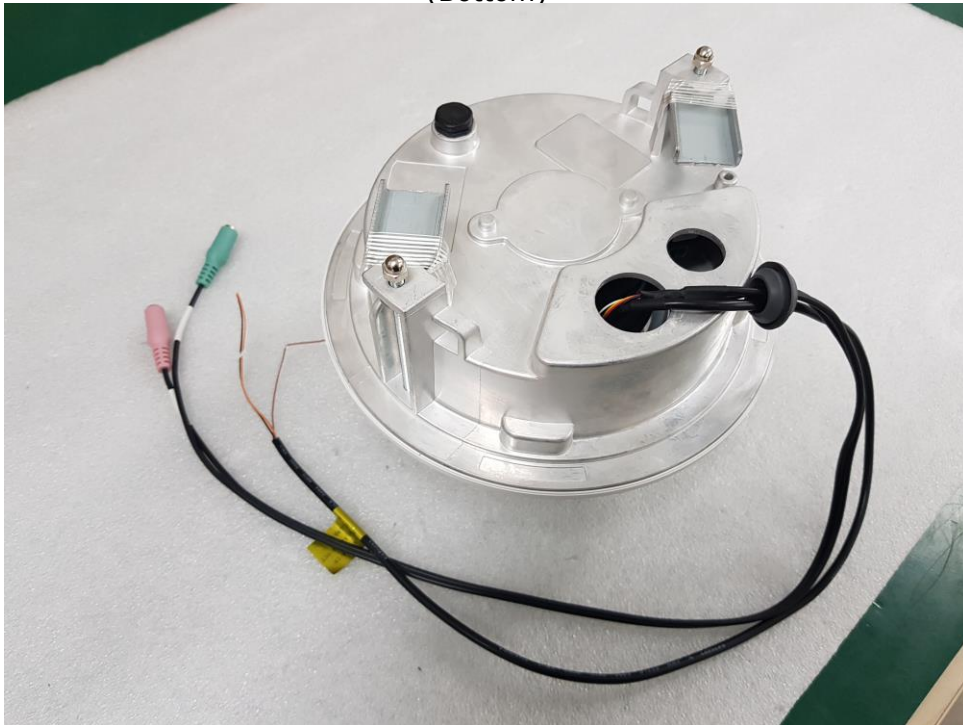
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EUT External Photographs

(Top)



(Bottom)



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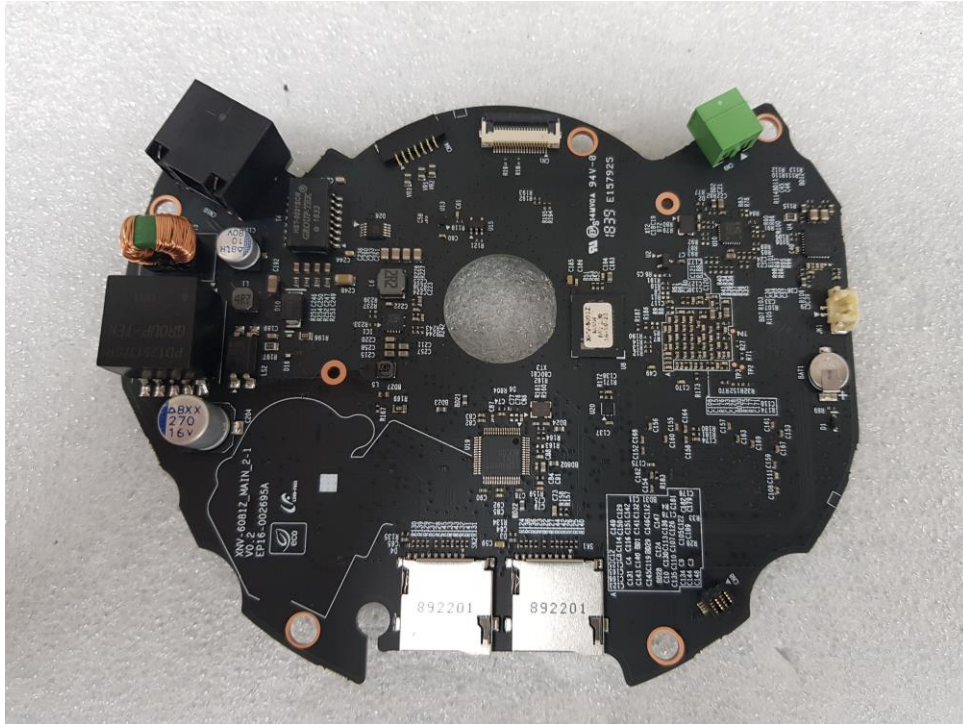
EUT Internal Photographs

(Internal View)

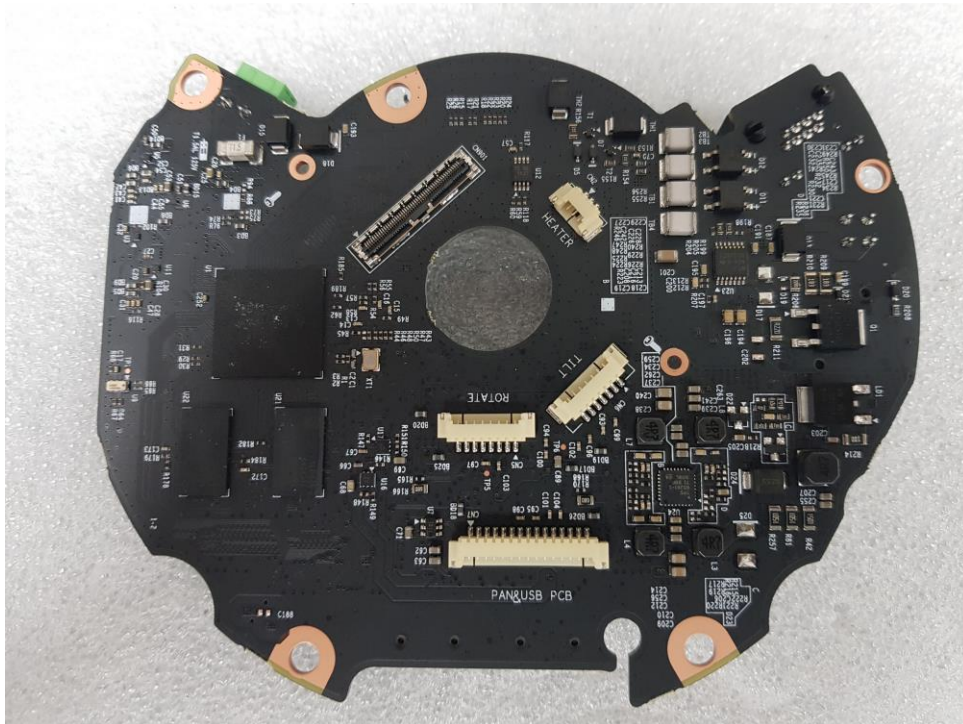


EUT Internal View – Main Board

(Top)



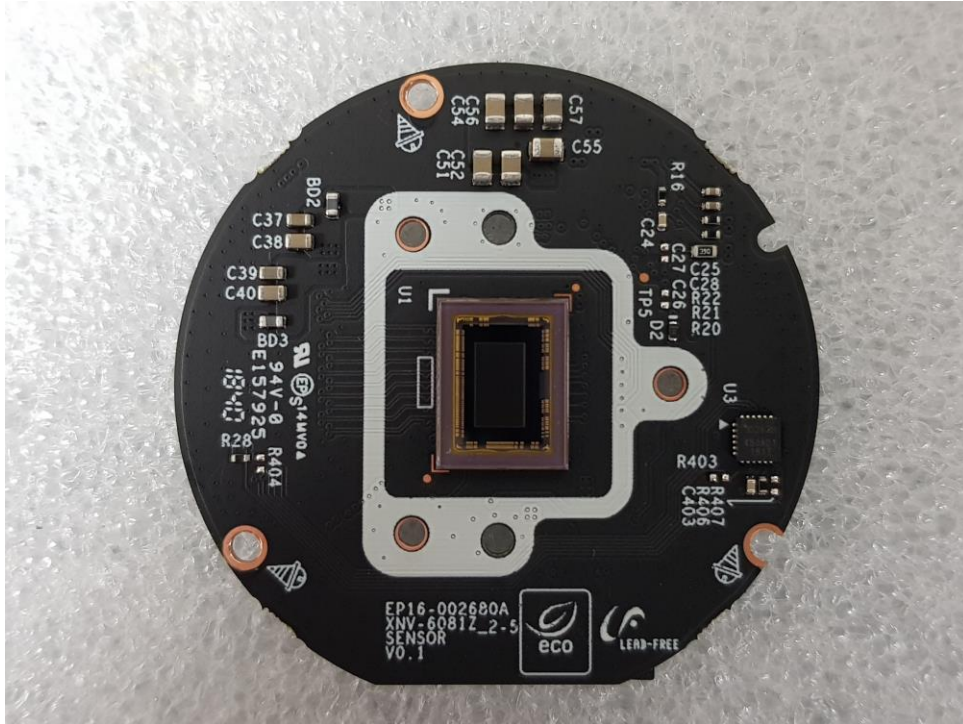
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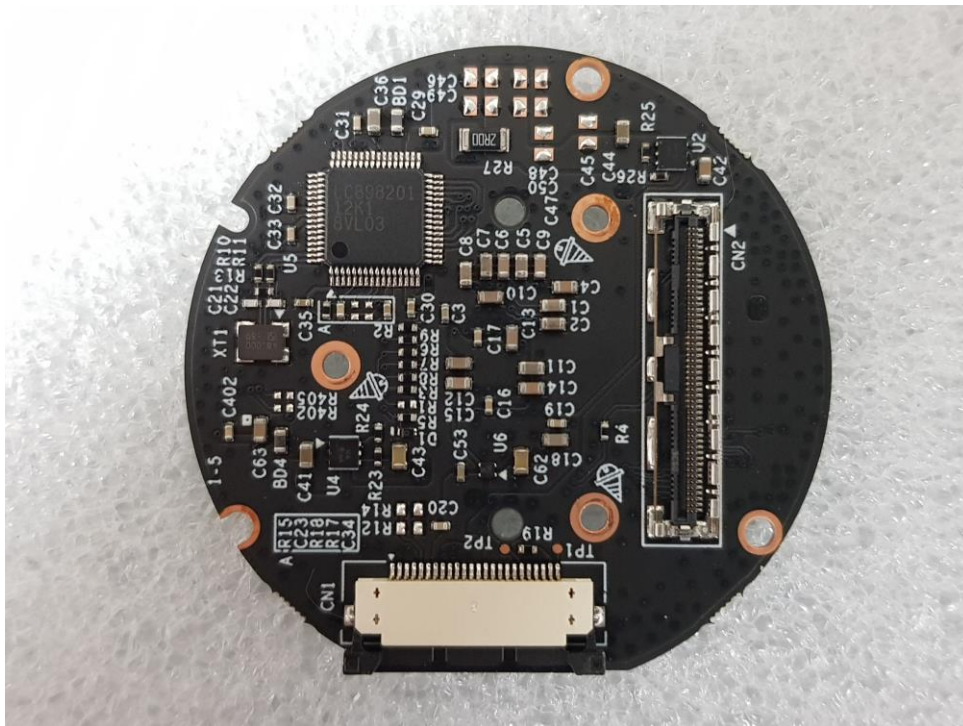
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EUT Internal View – SENSOR Board

(Top)



(Bottom)



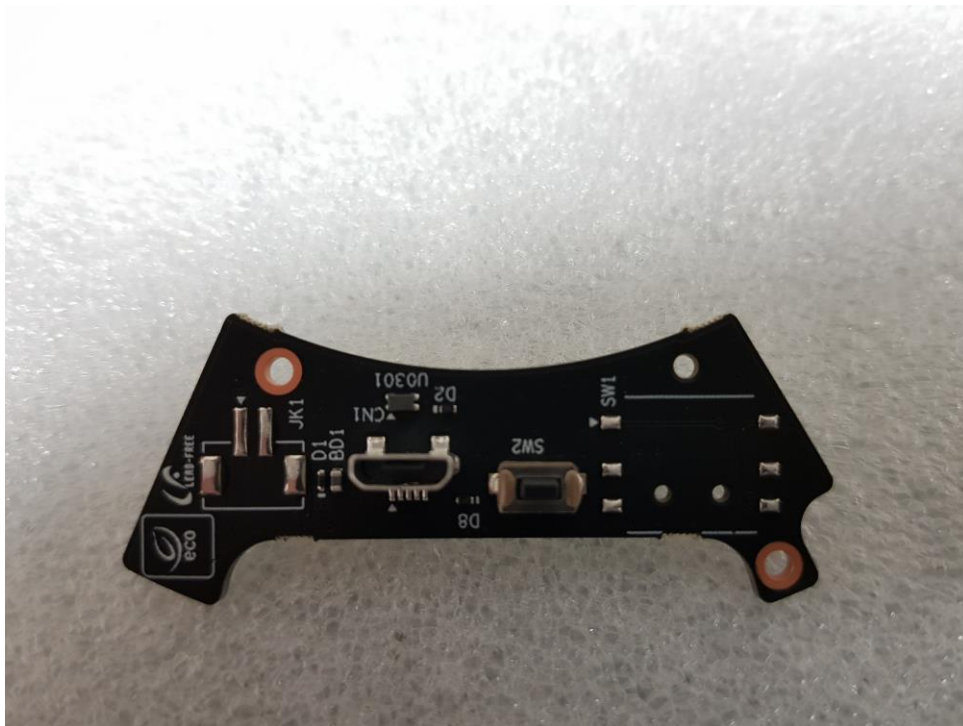
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EUT Internal View – USB Board

(Top)



(Bottom)



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EUT Internal View – LENS

(Top)



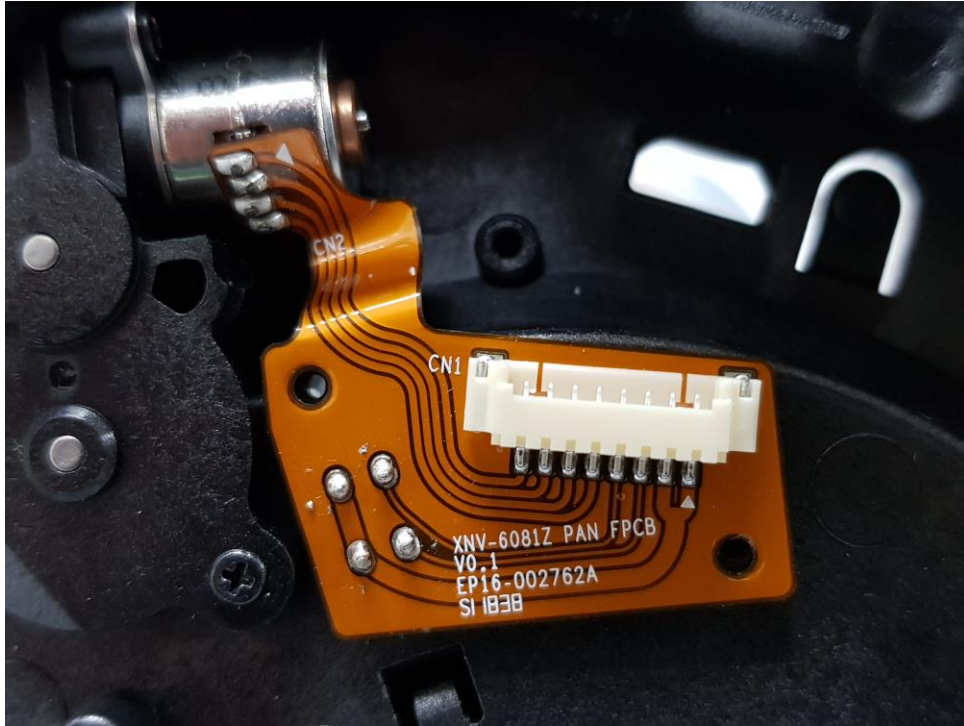
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EUT Internal View – PAN Board

(Top)



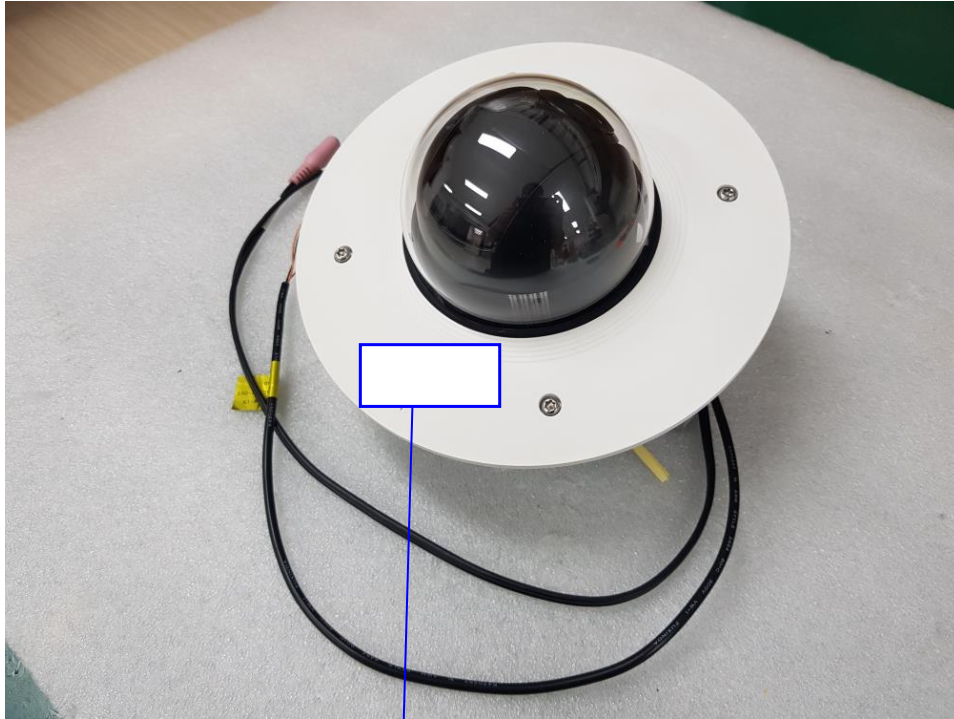
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EUT Internal View – TILT Board

(Top)



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.