



EMC TEST REPORT For FCC

Test Report No. : KES-E1-16T0683-R1

Date of Issue : Feb. 24, 2023

Product name : NETWORK CAMERA

Model/Type No. : XNV-6080

Variant Model : -

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 : ☐ Declaration of Conformity
☒ Verification
☐ Certification

Date of Receipt : Nov, 23, 2016

Test date : Dec. 16, 2016

Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by Reviewed by

김 세 현

Se Heon, Kim
EMC Test Engineer

Dong-Hun, Jang
EMC Technical Manager

Tested by Young Suk, Song
(Retries person)
Proxy signature : Se Heon, Kim

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
Dec. 27, 2016	KES-E1-16T0683	Issued
Feb. 24, 2023	KES-E1-16T0683-R1	Change the Model/Type No., Applicant, Applicant Address, Manufacturer and Manufacturer Address 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 : 0.03 lux(F1.4, 1./30sec) B/W : 0.003 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, 1920 x 1080 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
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	0° ~ 354° / 0° ~ 85°(TBD) / 0° ~ 355°
Operational	
IR LED	-
Viewable Length	-
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(Masking/Dimming), 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
Defog	Auto(input from fog detection) / Manual / Off
Motion Detection	Off/ On(8ea, 8point Polygonal zones), Hand over
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)
Contrast	level adjustment
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°

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Video & Audio Analytics	Tampering, Loitering, Directional Detection, Defocus Detection, Fog Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Motion Detection, Digital Auto Tracking, Sound Classification
Alarm I/O	Input 1ea / Output 1ea
Remote Control Interface	-
RS-485 Protocol	-
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 DPTZ preset
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
Fan / Heater	N/A
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, 800x450, 720x576, 640x480, 640x360, 320x240, 320x180
Max. Framerate	H.265/H.264 : Max. 60fps at all resolutions Motion JPEG : Max. 30fps
Smart Codec	Manual Mode (area-based : 5EA)
WiseStream	Support
Video Quality Adjustment	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
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

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Edge Storage	SD/SDHC/SDXC 2slot (up to 512 GB) - Continuous recording(1'st slot to 2'nd 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, Danish, Portuguese, Czech, Polish, Turkish, Rumanian, Serbian, Dutch, Croatia, Hungary, Greek, Norsk, Finnish
Web Viewer	Supported OS: Windows 7, 8, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer Supported Browser: Google Chrome 54, MS Edge 38, Mozilla Firefox 49, Apple Safari 9 (Mac OS X only) Plug-in Webviewer Supported Browser : MS Explore 11, Apple Safari 9 (Mac OS X only)
Central Management Soft	SmartViewer, SSM
Environmental	
Operating Temperature / Humidity	-40°C ~ +55°C (-40°F ~ +131°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP67, IP66, NEMA 4X
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	24VAC ± 10%, 12VDC ± 10%, PoE(IEEE802.3af)
Power Consumption	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 ☐ 100 Vac ☐ 120 Vac ☒ 24 Vac ☒ 12 Vdc ☒ PoE
Frequency ☒ 50 Hz ☐ 60 Hz ☐ Hz

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNV-6080	-	HANWHA VISION VIETNAM COMPANY LIMITED	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
POE Adapter	PD-3001GC/AC	RD9356082016964200	Power Dsine	-
Notebook	X56K	HN11N5151FJ0045W	HANSUNG	RE
Notebook Adapter	A12-120P1A	F180271552011758	CHICONY POWER TECHNOLOGY CO.,LTD.	RE
Notebook	LG15N54	506NZGK000615	LG	CE
Notebook Adapter	PA-1650-43(65W)	OF58U63849302Y609	LG	CE
Phone	A1530	-	APPLE	-
MIC	CMK-303	-	CAMAC	1.7 m
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	1.6 m
Alarm	-	-	-	-



1.6 External I/O Cabling

- AC 24 V Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45	Notebook	RJ-45	3.0	U
	7 Pin	MIC	3.5 mm	1.7	U
		Speaker	3.5 mm	1.6	U
		Alarm	3 pin	3.0	U
Notebook	Audio in	Phone	Audio out	1.7	U

- DC 12 V Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45	Notebook	RJ-45	3.0	U
	7 Pin	MIC	3.5 mm	1.7	U
		Speaker	3.5 mm	1.6	U
		Alarm	3 pin	3.0	U
Notebook	Audio in	Phone	Audio out	1.7	U

- PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45 (POE)	POE Adapter	RJ-45 (POE)	3.0	U
	7 Pin	MIC	3.5 mm	1.7	U
		Speaker	3.5 mm	1.6	U
		Alarm	3 pin	3.0	U
Notebook	Audio in	Phone	Audio out	1.7	U
	RJ-45 (DATA)	POE Adapter	RJ-45 (DATA)	3.0	U

* Unshielded = U, Shielded = S

1.7 EUT Operating Mode(s)

operating
E.U.T Monitoring , Ping test, 1 kHz

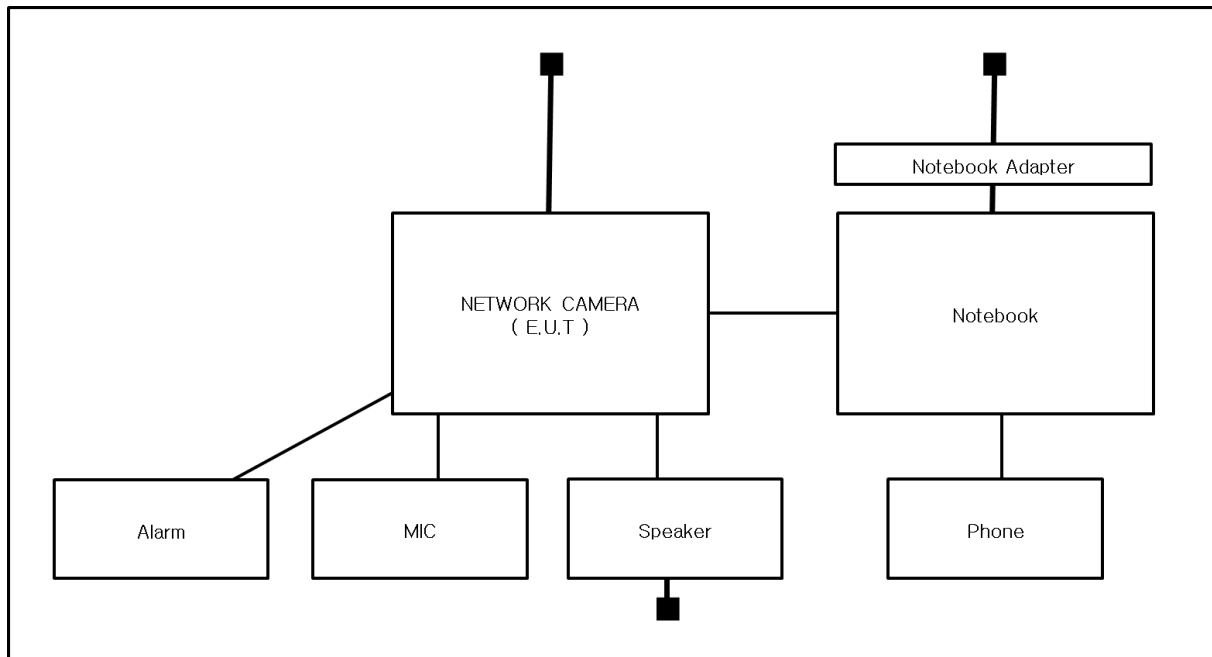
E.U.T Test operating S/W		
Name	Version	Manufacture Company
SmartViewer	-	Hanwha Vision Co., Ltd

- Input power condition during the measurements was 24 v (ac) , 12 v (dc) , PoE.

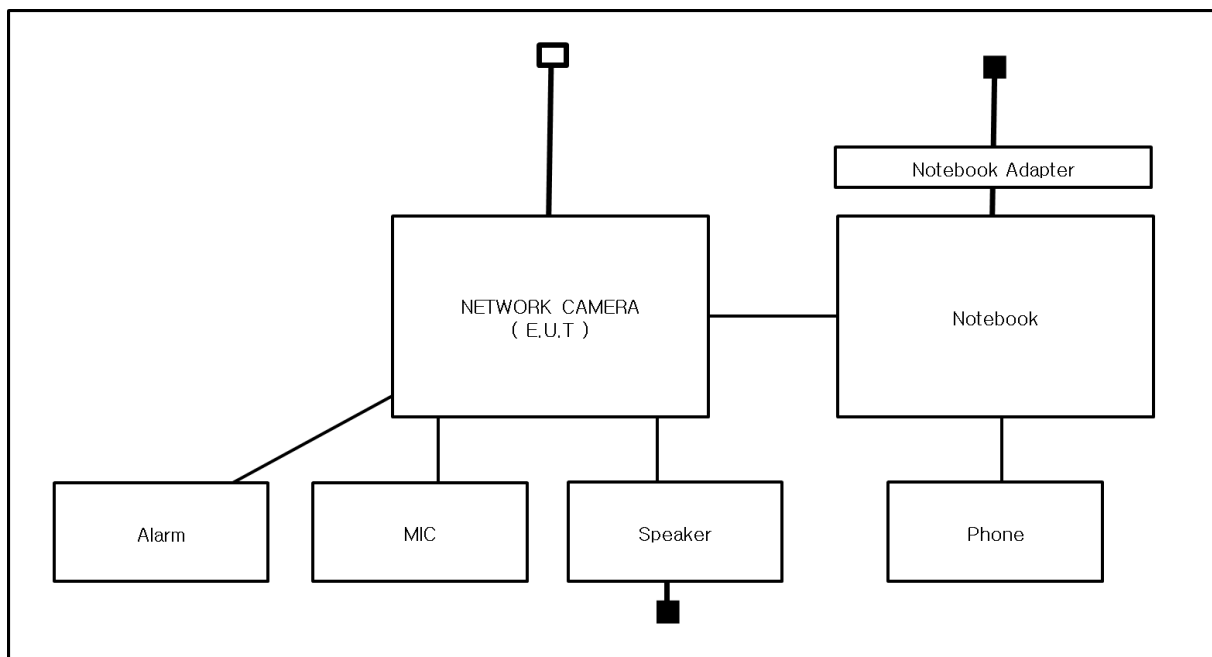
1.8 Configuration

☒ AC Main
☐ DC Main

- AC 24 V Mode

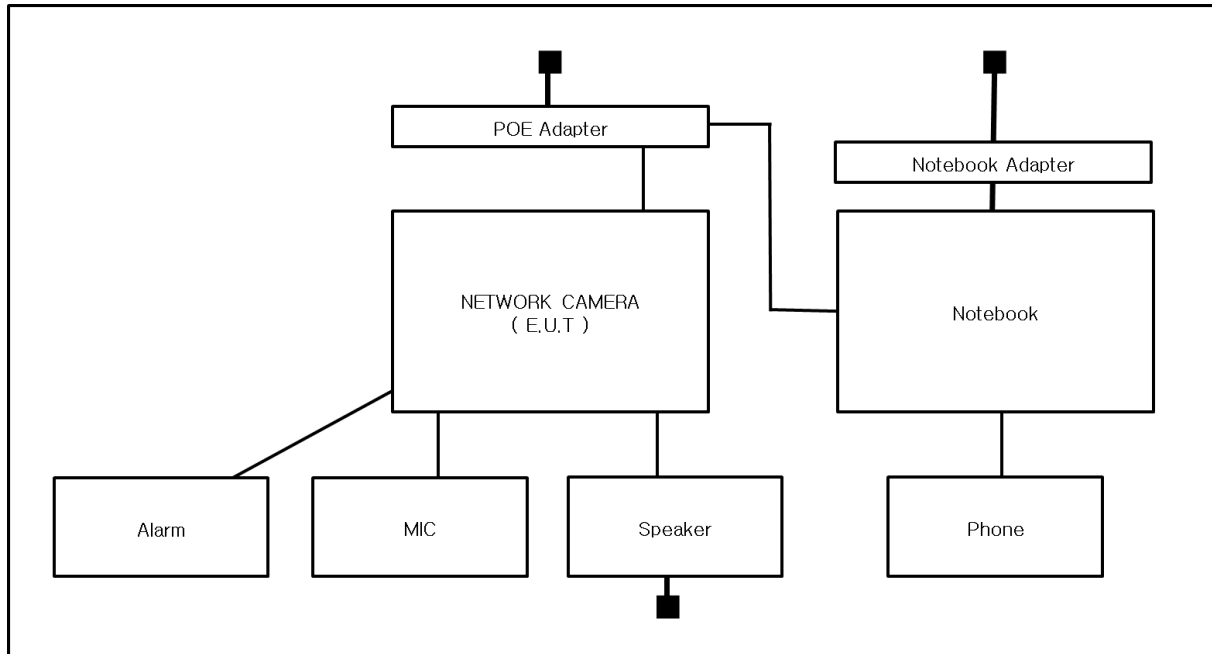


- DC 12 V Mode



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- PoE Mode



1.9 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.

1.10 Test Facility

The measurement facility is located at 473-21, Gayeo-ro, Yeoju-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

1.11 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	KOLAS	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	FCC	3 m & 10 m Semi-Anechoic Chamber Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298
JAPAN	VCCI	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)	 C-20136, T-20137, R-20181, G-20176
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 001633 0004



2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 55022:2010

☐ 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 CISPR22:2009 +A1:2010 | ☐ Class A | ☐ Class B |
| ☒ 47 CFR Part 15, Subpart B | | |
| ☐ CISPR 22:2009 +A1:2010 | ☐ Class A | ☐ Class B |
| ☒ ANSI C63.4-2014 | ☒ Class A | ☐ Class B |
| ☐ IC Regulation ICES-003 : 2016 | | |
| ☐ CAN/CSA CISPR 22-10 | ☐ Class A | ☐ Class B |
| ☐ ANSI C63.4-2014 | | |
| ☐ MEDICAL – Directive 93/42/EEC | | |
| ☐ EN 60601-1-2 :2007 | | |
| ☐ 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

Dec, 16, 2016

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESR3	R & S	101783	05, 03, 2017
☒	LISN	ENV216	R & S	101137	02, 04, 2017
☒	LISN	ENV216	R & S	101786	05, 02, 2017
☒	Electro wave Shieldroom	-	SEMITEC	-	-
☒	EMI Test S/W	EMC32	R & S	9.12.00	-

Test Conditions

Temperature: 19,5 °C
Relative Humidity: 36,5 %

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.



2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Dec, 16, 2016

Test Location

☐ Open Area Test Site #1 ☒ Open Area Test Site #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI TEST Receiver	ESR3	R&S	101781	05, 03, 2017
☒	Trilog-Broadband ANT	VULB 9163	Schwarzbeck	9163-713	05, 15, 2017
☒	OATS	-	KES	-	-
☒	Antenna Mast	-	DAEIL EMC	-	-
☒	Turn Table	-	DAEIL EMC	-	-
☒	EMI Test S/W	-	-	-	-

Test Conditions

Temperature: -1,0 °C
Relative Humidity: 38,0 %

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Dec, 16, 2016

Test Location

Semi Anechoic Chamber #1

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	Log-Periodic Antenna	STLP 9149	SCHWARZBECK	9149-255	05, 17, 2018
☒	EMI TEST Receiver	ESU26	R&S	100551	04, 18, 2017
☒	Preamplifier	EMI TEST Receiver	R&S	102232	06, 29, 2017
☒	Semi Anechoic Chamber #1	-	KES	-	-
☒	Tilt Antenna Mast	TAM 4.0-E	maturro	18100116	-
☒	Turn Table	DT 2000-1,5T	INN-CO	-	-
☒	EMI Test S/W	-	-	-	-

Test Conditions

Temperature: 20,0 °C

Relative Humidity: 46,9 %

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

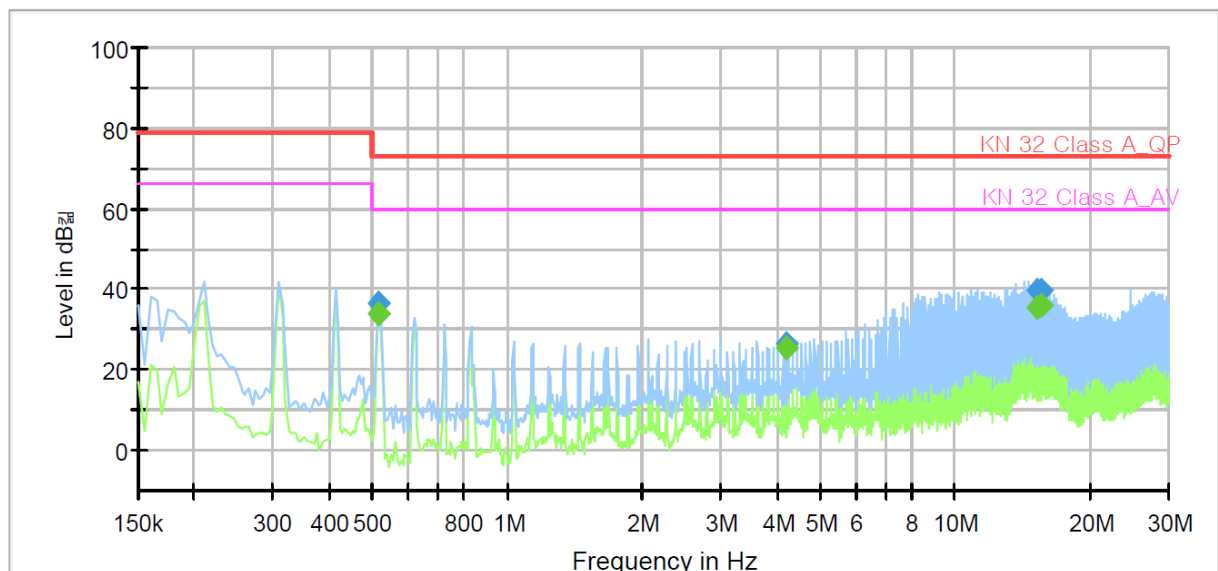
Conducted Emissions at Mains Power Ports

- AC 24 V Mode

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	XNV-6080N
Mode	AC 24V
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.515000	---	33.74	60.00	26.26	1000.0	9.000	L1	9.8
0.515000	36.67	---	73.00	36.33	1000.0	9.000	L1	9.8
4.200000	---	25.52	60.00	34.48	1000.0	9.000	L1	10.1
4.200000	26.63	---	73.00	46.37	1000.0	9.000	L1	10.1
15.205000	---	35.54	60.00	24.46	1000.0	9.000	L1	10.1
15.205000	39.46	---	73.00	33.54	1000.0	9.000	L1	10.1
15.615000	---	35.95	60.00	24.05	1000.0	9.000	L1	10.1
15.615000	39.75	---	73.00	33.25	1000.0	9.000	L1	10.1

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

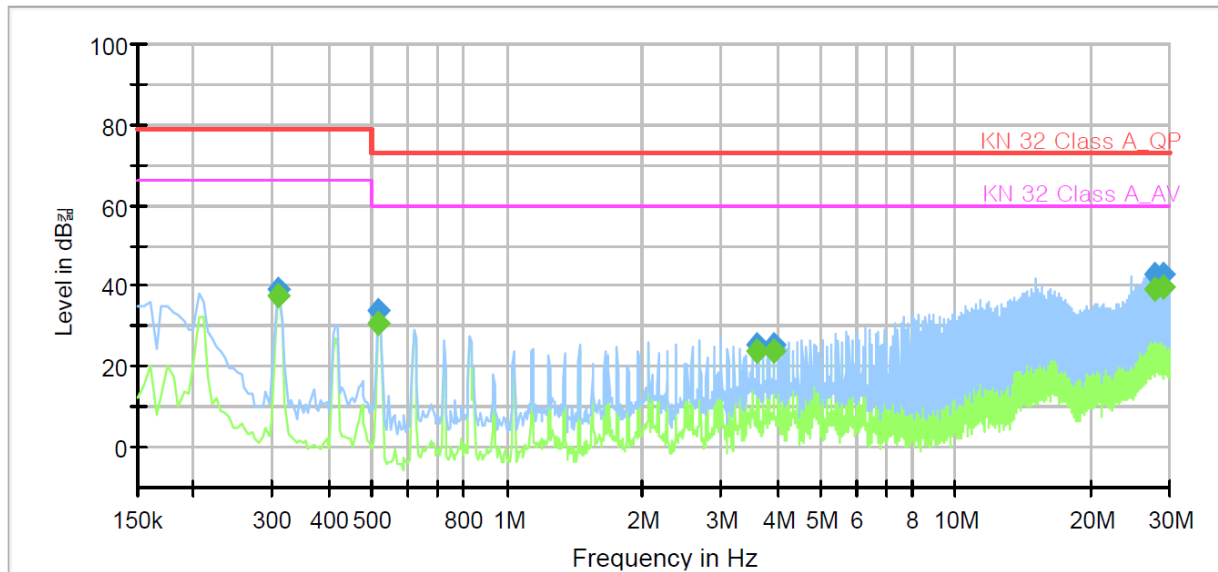
Corr. : Correction values (LISN FACTOR+ Cable Loss)

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[NEUTRAL]

Common Information

Test Description: Conducted Emission
Model No.: XNV-6080N
Mode: AC 24V
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.310000	---	37.79	66.00	28.21	1000.0	9.000	N	9.7
0.310000	39.05	---	79.00	39.95	1000.0	9.000	N	9.7
0.515000	---	30.78	60.00	29.22	1000.0	9.000	N	9.8
0.515000	33.66	---	73.00	39.34	1000.0	9.000	N	9.8
3.620000	---	24.06	60.00	35.94	1000.0	9.000	N	10.1
3.620000	25.41	---	73.00	47.59	1000.0	9.000	N	10.1
3.930000	---	23.89	60.00	36.11	1000.0	9.000	N	10.1
3.930000	25.60	---	73.00	47.40	1000.0	9.000	N	10.1
27.725000	---	39.42	60.00	20.58	1000.0	9.000	N	10.4
27.725000	42.70	---	73.00	30.30	1000.0	9.000	N	10.4
29.070000	---	39.85	60.00	20.15	1000.0	9.000	N	10.5
29.070000	42.77	---	73.00	30.23	1000.0	9.000	N	10.5

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

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- DC 12 V Mode

[HOT]

Common Information

Test Description:

Model No.:

Mode

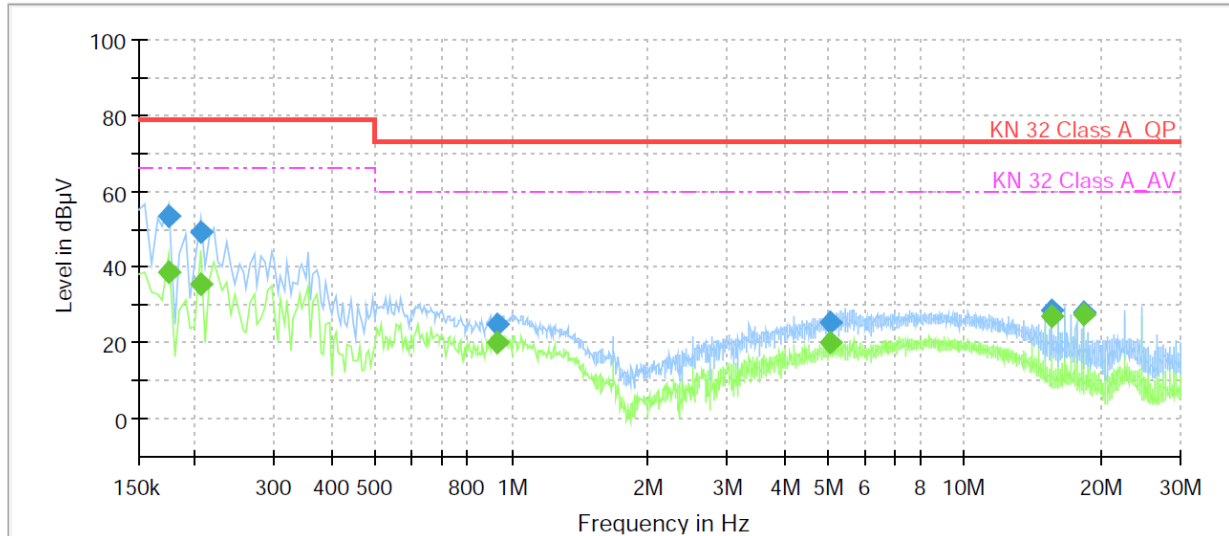
Operator Name:

Conducted Emission

XNV-6080

DC 12V

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.175000	---	38.73	66.00	27.27	1000.0	9.000	L1	9.7
0.175000	53.54	---	79.00	25.46	1000.0	9.000	L1	9.7
0.205000	---	35.40	66.00	30.60	1000.0	9.000	L1	9.7
0.205000	49.40	---	79.00	29.60	1000.0	9.000	L1	9.7
0.925000	---	19.95	60.00	40.05	1000.0	9.000	L1	10.0
0.925000	24.90	---	73.00	48.10	1000.0	9.000	L1	10.0
5.040000	---	19.91	60.00	40.09	1000.0	9.000	L1	10.1
5.040000	25.36	---	73.00	47.64	1000.0	9.000	L1	10.1
15.615000	---	26.76	60.00	33.24	1000.0	9.000	L1	10.1
15.615000	28.41	---	73.00	44.59	1000.0	9.000	L1	10.1
18.430000	---	27.38	60.00	32.62	1000.0	9.000	L1	10.3
18.430000	28.29	---	73.00	44.71	1000.0	9.000	L1	10.3

◆ 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)

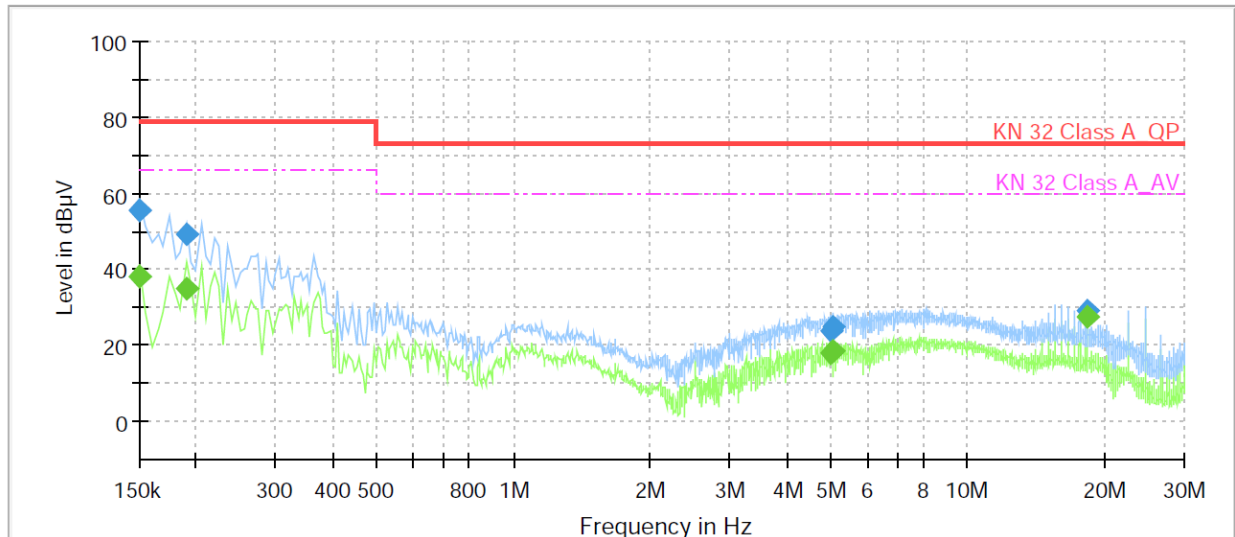
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[NEUTRAL] Common Information

Test Description: Conducted Emission
Model No.: XNV-6080
Mode: DC 12V
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	---	38.07	66.00	27.93	1000.0	9.000	N	9.6
0.150000	55.77	---	79.00	23.23	1000.0	9.000	N	9.6
0.190000	---	35.21	66.00	30.79	1000.0	9.000	N	9.7
0.190000	49.19	---	79.00	29.81	1000.0	9.000	N	9.7
4.975000	---	18.00	60.00	42.00	1000.0	9.000	N	10.0
4.975000	24.10	---	73.00	48.90	1000.0	9.000	N	10.0
5.045000	---	18.71	60.00	41.29	1000.0	9.000	N	10.0
5.045000	24.84	---	73.00	48.16	1000.0	9.000	N	10.0
18.430000	---	27.55	60.00	32.45	1000.0	9.000	N	10.2
18.430000	29.34	---	73.00	43.66	1000.0	9.000	N	10.2

◆ 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)

- PoE Mode

[HOT]

Common Information

Test Description:

Model No.:

Mode

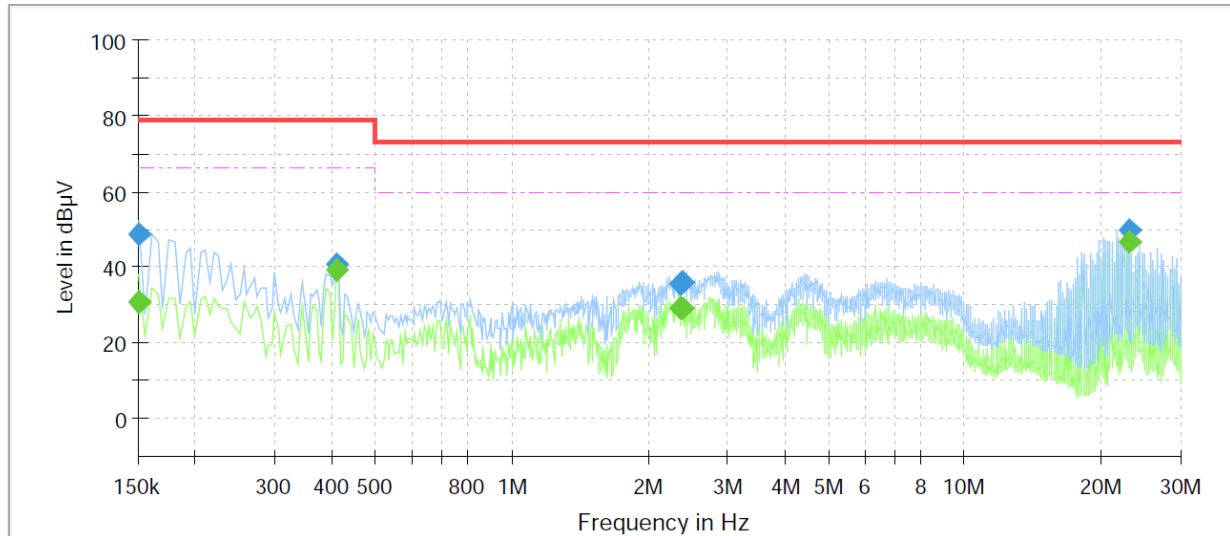
Operator Name:

Conducted Emission

XNV-6080N

PoE L1

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	30.82	66.00	35.18	1000.0	9.000	L1	21.1
0.150000	48.87	---	79.00	30.13	1000.0	9.000	L1	21.1
0.410000	---	38.99	66.00	27.01	1000.0	9.000	L1	20.6
0.410000	40.84	---	79.00	38.16	1000.0	9.000	L1	20.6
2.350000	---	29.36	60.00	30.64	1000.0	9.000	L1	19.8
2.350000	35.34	---	73.00	37.66	1000.0	9.000	L1	19.8
2.390000	---	28.99	60.00	31.01	1000.0	9.000	L1	19.8
2.390000	36.05	---	73.00	36.95	1000.0	9.000	L1	19.8
23.130000	---	46.43	60.00	13.57	1000.0	9.000	L1	20.4
23.130000	49.65	---	73.00	23.35	1000.0	9.000	L1	20.4

◆ Calculation

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

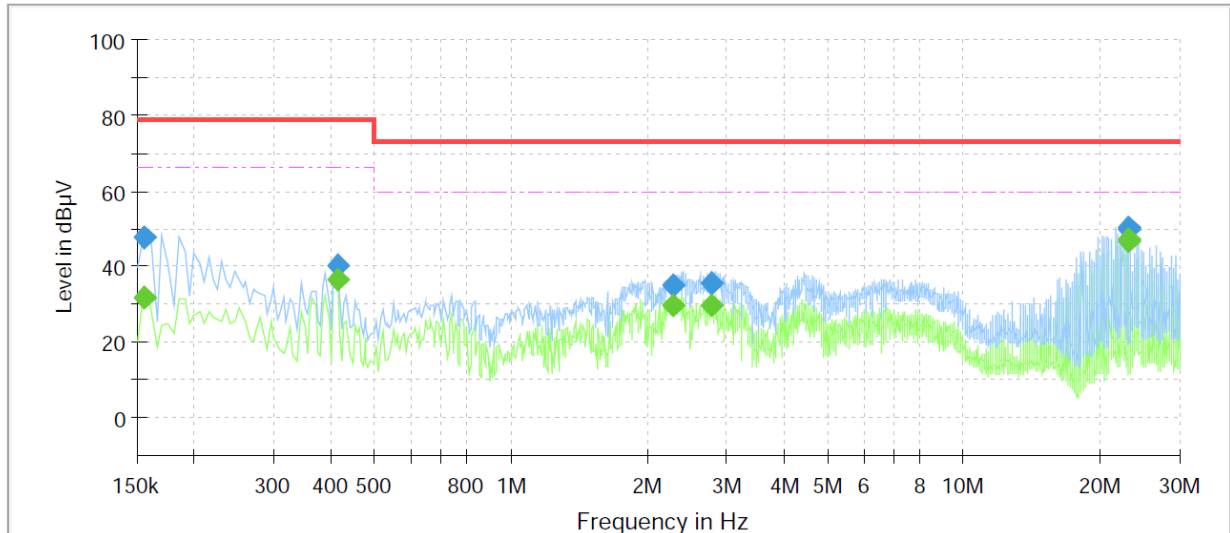
QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

[NEUTRAL] Common Information

Test Description: Conducted Emission
Model No.: XNV-6080N
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)
0.155000	---	32.01	66.00	33.99	1000.0	9.000	N	21.0
0.155000	47.90	---	79.00	31.10	1000.0	9.000	N	21.0
0.415000	---	36.69	66.00	29.31	1000.0	9.000	N	20.6
0.415000	40.10	---	79.00	38.90	1000.0	9.000	N	20.6
2.280000	---	29.89	60.00	30.11	1000.0	9.000	N	19.8
2.280000	34.86	---	73.00	38.14	1000.0	9.000	N	19.8
2.785000	---	29.91	60.00	30.09	1000.0	9.000	N	19.8
2.785000	35.74	---	73.00	37.26	1000.0	9.000	N	19.8
23.125000	---	46.41	60.00	13.59	1000.0	9.000	N	20.2
23.125000	49.71	---	73.00	23.29	1000.0	9.000	N	20.2
23.130000	---	47.13	60.00	12.87	1000.0	9.000	N	20.2
23.130000	50.31	---	73.00	22.69	1000.0	9.000	N	20.2

◆ 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)



Radiated Electric Field Emissions(Below 1 GHz)

- AC 24 V Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
121.95	18.79	H	1.06	9.49	3.19	31.47	43.50	12.03
148.28	12.22	V	2.36	8.14	3.55	23.91	43.50	19.59
172.50	13.58	H	1.25	9.09	3.83	26.50	43.50	17.00
221.96	13.95	V	2.01	11.79	4.38	30.12	46.40	16.28
334.45	15.37	V	3.05	14.18	5.49	35.04	46.40	11.36
334.50	11.58	H	1.58	14.18	5.49	31.25	46.40	15.15
425.63	12.30	H	1.09	16.06	6.49	34.85	46.40	11.55
425.70	13.28	V	2.60	16.06	6.49	35.83	46.40	10.57

* H : Horizontal, V : Vertical

◆ Calculation

Corrected Amplitude [dB μ V] = Amplitude[dBuV] + Correction Factor [dB]

Corrected Amplitude : The Final Value, Amplitude : Reading Value,

Correction Factor : ANT FACTOR + Cable loss

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- DC 12 V Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dBμV]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	[dB]
172.42	10.20	H	1.25	9.09	3.83	23.12	43.50	20.38
172.51	11.24	V	2.30	9.09	3.83	24.16	43.50	19.34
270.41	11.63	V	3.01	12.81	4.90	29.34	46.40	17.06
270.53	11.36	H	1.58	12.81	4.90	29.07	46.40	17.33
334.13	14.77	V	2.00	14.17	5.48	34.42	46.40	11.98
360.69	10.34	V	1.95	14.79	5.75	30.88	46.40	15.52
375.33	12.05	H	1.33	15.13	5.91	33.09	46.40	13.31
450.86	10.36	H	2.01	16.41	6.80	33.57	46.40	12.83

* H : Horizontal, V : Vertical

◆ Calculation

Corrected Amplitude [dBμV] = Amplitude[dBμV] + Correction Factor [dB]

Corrected Amplitude : The Final Value, Amplitude : Reading Value,

Correction Factor : ANT FACTOR + Cable loss

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- PoE Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dBμV]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	[dB]
172.46	10.39	H	2.31	9.09	3.83	23.31	43.50	20.19
172.50	10.20	V	1.58	9.09	3.83	23.12	43.50	20.38
222.04	9.37	V	2.33	11.79	4.38	25.54	46.40	20.86
225.92	8.95	H	1.95	11.88	4.43	25.26	46.40	21.14
359.99	12.10	V	3.01	14.77	5.75	32.62	46.40	13.78
375.33	9.30	H	2.57	15.13	5.91	30.34	46.40	16.06
454.81	8.21	V	1.66	16.47	6.82	31.50	46.40	14.90
455.77	8.38	H	1.97	16.48	6.82	31.68	46.40	14.72

* H : Horizontal, V : Vertical

◆ Calculation

Corrected Amplitude [dBμV] = Amplitude[dBμV] + Correction Factor [dB]

Corrected Amplitude : The Final Value, Amplitude : Reading Value,

Correction Factor : ANT FACTOR + Cable loss

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Radiated Electric Field Emissions(Above 1 GHz)

- AC 24 V Mode

- PK

Frequency	Amplitude	ANT Polar.	ANT. Height	Correction Factor			Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	(H/V)	[m]	ANT. [dB /m]	Cable [dB]	AMP [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
1 000.000	61.000	H	1.000	20.490	3.110	43.640	40.960	80.000	39.040
1 000.000	56.980	V	1.000	20.490	3.110	43.640	36.940	80.000	43.060
1 596.000	56.320	H	1.000	23.540	3.860	43.660	40.060	80.000	39.940
1 993.000	63.820	H	1.000	25.560	4.400	43.780	50.000	80.000	30.000
2 044.000	61.390	H	1.000	25.780	4.490	43.800	47.860	80.000	32.140
2 057.000	64.060	V	1.000	25.840	4.510	43.810	50.600	80.000	29.400
2 397.000	60.180	H	1.000	27.260	4.900	43.960	48.380	80.000	31.620
2 743.000	56.400	V	1.000	28.710	5.250	44.100	46.260	80.000	33.740
4 884.000	49.120	V	1.000	33.020	7.000	44.310	44.830	80.000	35.170

- AV

Frequency	Amplitude	ANT Polar.	ANT. Height	Correction Factor			Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	(H/V)	[m]	ANT. [dB /m]	Cable [dB]	AMP [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
1 000.000	47.080	H	1.000	20.490	3.110	43.640	27.040	60.000	32.960
1 000.000	44.420	V	1.000	20.490	3.110	43.640	24.380	60.000	35.620
1 596.000	43.560	H	1.000	23.540	3.860	43.660	27.300	60.000	32.700
1 596.000	40.870	V	1.000	23.540	3.860	43.660	24.610	60.000	35.390
1 993.000	50.490	H	1.000	25.560	4.400	43.780	36.670	60.000	23.330
2 057.000	49.650	V	1.000	25.840	4.510	43.810	36.190	60.000	23.810
2 064.000	52.610	H	1.000	25.870	4.520	43.810	39.190	60.000	20.810
2 666.000	46.220	H	1.000	28.390	5.220	44.070	35.760	60.000	24.240
4 903.000	38.140	H	1.000	33.050	6.990	44.320	33.860	60.000	26.140
4 903.000	38.180	V	1.000	33.050	6.990	44.320	33.900	60.000	26.100

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,

Cable Loss : Cable loss, Preamp Factor : Preamp Factor

- DC 12 V Mode

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- PK

Frequency	Amplitude	ANT Polar.	ANT. Height	Correction Factor			Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dBμV]	(H/V)	[m]	ANT. [dB /m]	Cable [dB]	AMP [dB]	[dBμV/m]	[dBμV/m]	[dB]
1 000.000	60.540	H	1.000	20.490	3.110	43.640	40.500	80.000	39.500
1 000.000	57.040	V	1.000	20.490	3.110	43.640	37.000	80.000	43.000
1 596.000	54.380	H	1.000	23.540	3.860	43.660	38.120	80.000	41.880
1 993.000	53.400	V	1.000	25.560	4.400	43.780	39.580	80.000	40.420
2 000.000	63.660	H	1.000	25.600	4.400	43.780	49.880	80.000	30.120
2 057.000	60.720	H	1.000	25.840	4.510	43.810	47.260	80.000	32.740
2 282.000	56.720	V	1.000	26.780	4.840	43.910	44.430	80.000	35.570
2 397.000	58.660	H	1.000	27.260	4.900	43.960	46.860	80.000	33.140
2 750.000	57.040	H	1.000	28.740	5.250	44.110	46.920	80.000	33.080
4 910.000	49.630	V	1.000	33.060	6.990	44.320	45.360	80.000	34.640

- AV

Frequency	Amplitude	ANT Polar.	ANT. Height	Correction Factor			Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dBμV]	(H/V)	[m]	ANT. [dB /m]	Cable [dB]	AMP [dB]	[dBμV/m]	[dBμV/m]	[dB]
1 000.000	47.750	H	1.000	20.490	3.110	43.640	27.710	60.000	32.290
1 000.000	43.160	V	1.000	20.490	3.110	43.640	23.120	60.000	36.880
1 933.000	50.640	H	1.000	25.260	4.370	43.760	36.510	60.000	23.490
2 057.000	48.290	H	1.000	25.840	4.510	43.810	34.830	60.000	25.170
2 064.000	44.640	V	1.000	25.870	4.520	43.810	31.220	60.000	28.780
2 282.000	44.320	V	1.000	26.780	4.840	43.910	32.030	60.000	27.970
2 288.000	46.990	H	1.000	26.810	4.840	43.910	34.730	60.000	25.270
2 397.000	47.870	H	1.000	27.260	4.900	43.960	36.070	60.000	23.930
2 397.000	42.280	V	1.000	27.260	4.900	43.960	30.480	60.000	29.520
4 891.000	38.190	V	1.000	33.030	7.000	44.310	33.910	60.000	26.090
4 897.000	38.260	H	1.000	33.040	7.000	44.320	33.980	60.000	26.020

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

- PoE Mode
- PK

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Frequency	Amplitude	ANT Polar.	ANT. Height	Correction Factor			Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dBμV]	(H/V)	[m]	ANT. [dB /m]	Cable [dB]	AMP [dB]	[dBμV/m]	[dBμV/m]	[dB]
1 000.000	60.320	H	1.000	20.490	3.110	43.640	40.280	80.000	39.720
1 993.000	63.850	H	1.000	25.560	4.400	43.780	50.030	80.000	29.970
1 993.000	55.890	V	1.000	25.560	4.400	43.780	42.070	80.000	37.930
2 057.000	64.450	H	1.000	25.840	4.510	43.810	50.990	80.000	29.010
2 282.000	67.670	H	1.000	26.780	4.840	43.910	55.380	80.000	24.620
2 288.000	56.860	V	1.000	26.810	4.840	43.910	44.600	80.000	35.400
2 397.000	63.200	H	1.000	27.260	4.900	43.960	51.400	80.000	28.600
2 397.000	56.980	V	1.000	27.260	4.900	43.960	45.180	80.000	34.820
2 743.000	58.100	H	1.000	28.710	5.250	44.100	47.960	80.000	32.040
2 743.000	53.790	V	1.000	28.710	5.250	44.100	43.650	80.000	36.350
4 942.000	48.970	V	1.000	33.120	6.990	44.320	44.760	80.000	35.240

- AV

Frequency	Amplitude	ANT Polar.	ANT. Height	Correction Factor			Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dBμV]	(H/V)	[m]	ANT. [dB /m]	Cable [dB]	AMP [dB]	[dBμV/m]	[dBμV/m]	[dB]
1 000.000	46.720	H	1.000	20.490	3.110	43.640	26.680	60.000	33.320
1 000.000	42.330	V	1.000	20.490	3.110	43.640	22.290	60.000	37.710
2 064.000	49.660	H	1.000	25.870	4.520	43.810	36.240	60.000	23.760
2 288.000	51.510	H	1.000	26.810	4.840	43.910	39.250	60.000	20.750
2 397.000	44.080	V	1.000	27.260	4.900	43.960	32.280	60.000	27.720
2 750.000	48.140	H	1.000	28.740	5.250	44.110	38.020	60.000	21.980
3 198.000	40.530	V	1.000	30.110	5.680	44.220	32.100	60.000	27.900
4 897.000	38.220	V	1.000	33.040	7.000	44.320	33.940	60.000	26.060

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

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Test Setup Photos and Configuration

Conducted Voltage Emissions

- AC 24 V Mode



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- DC 12V Mode



- PoE Mode



Radiated Electric Field Emissions(Below 1 GHz)

- AC 24 V Mode



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- DC 12 V Mode



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- PoE Mode



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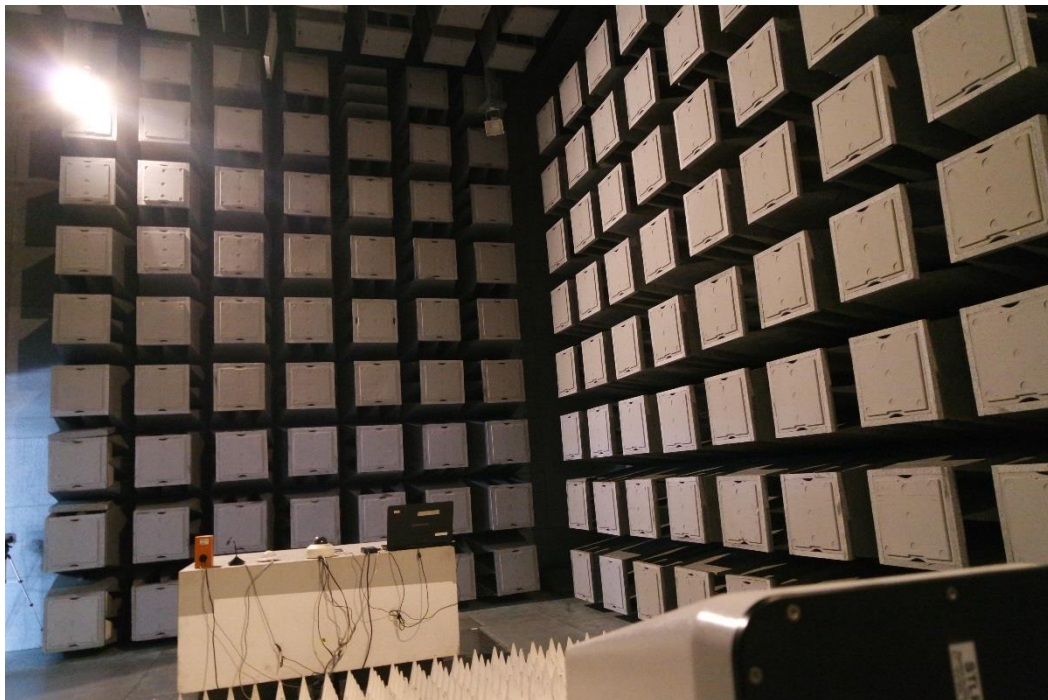
Radiated Electric Field Emissions(Above 1 GHz)

- AC 24 V Mode



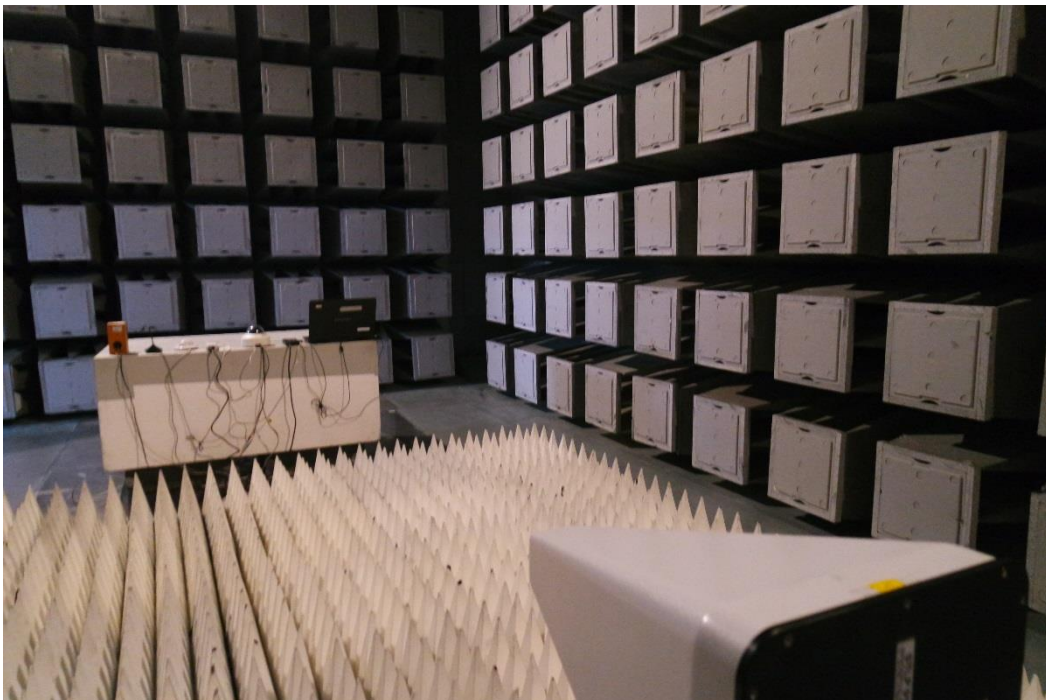
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- DC 12 V Mode



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- PoE Mode



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EUT External Photographs

(Top)



(Bottom)



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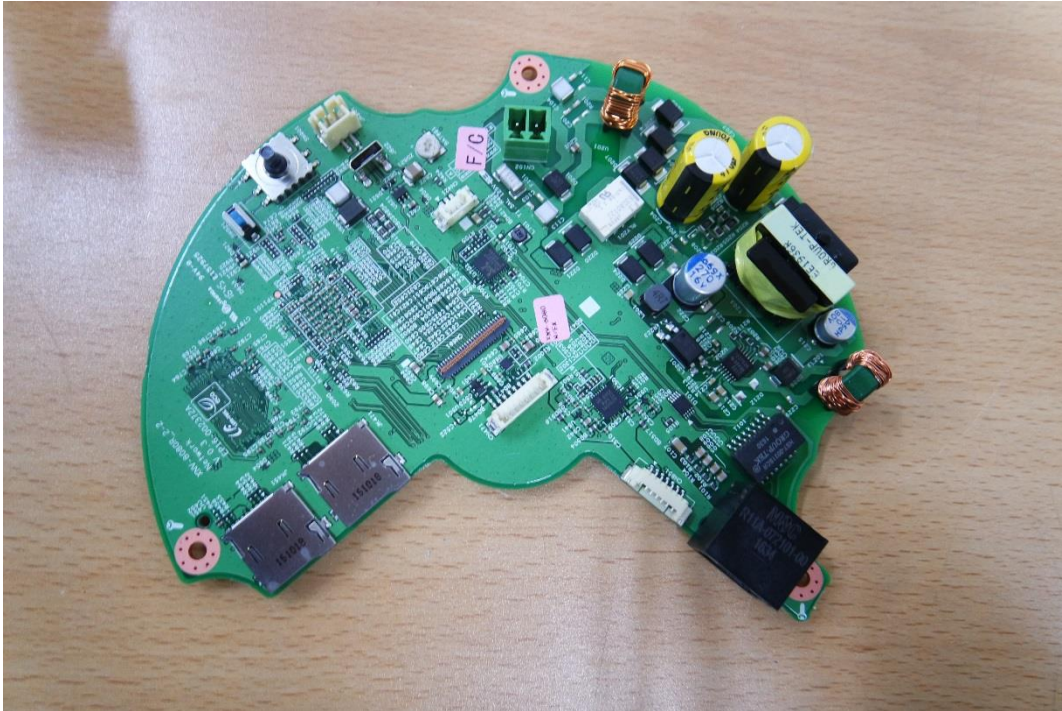
EUT Internal Photographs

(Internal View)



EUT Internal View – Main board

(Top)



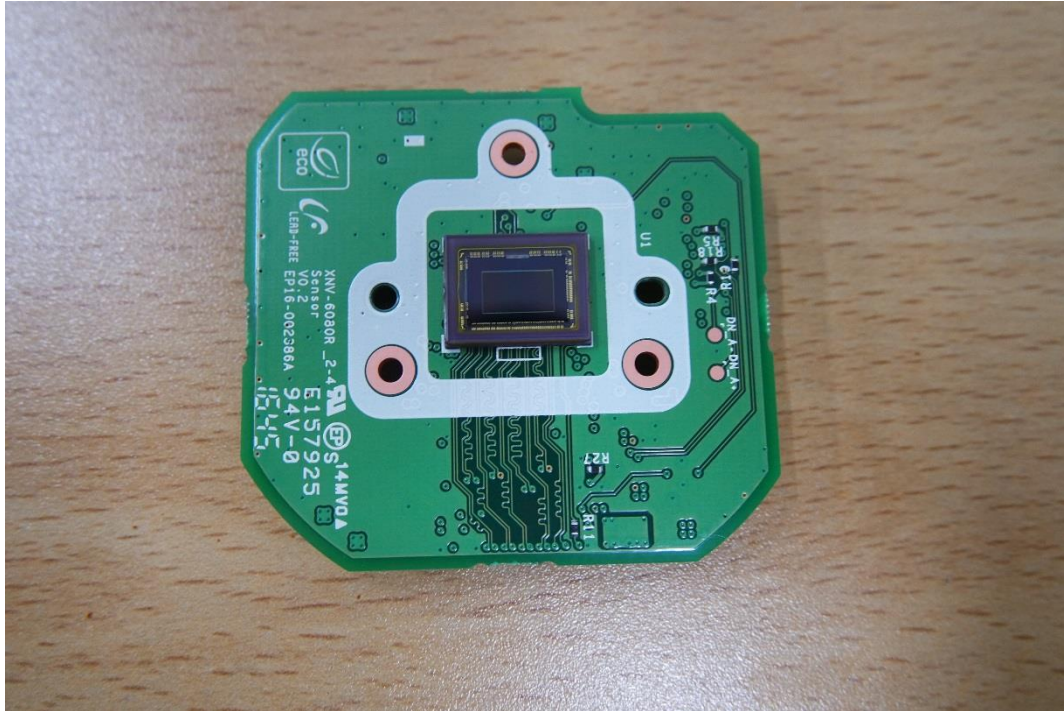
(Bottom)



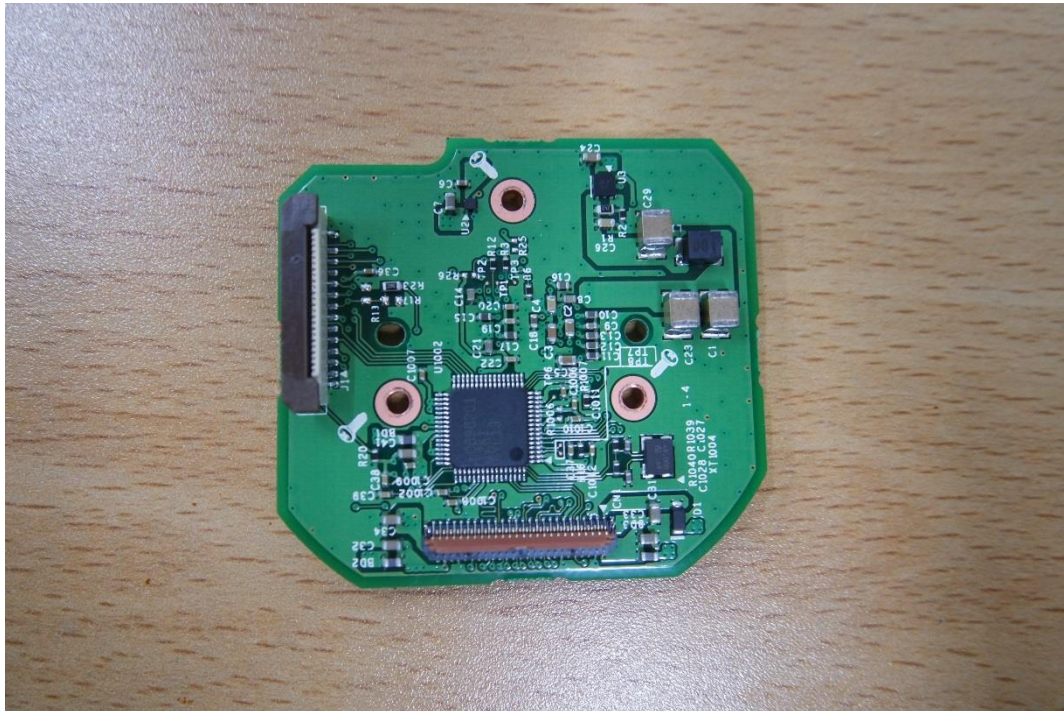
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EUT Internal View – Lens Board

(Top)



(Bottom)



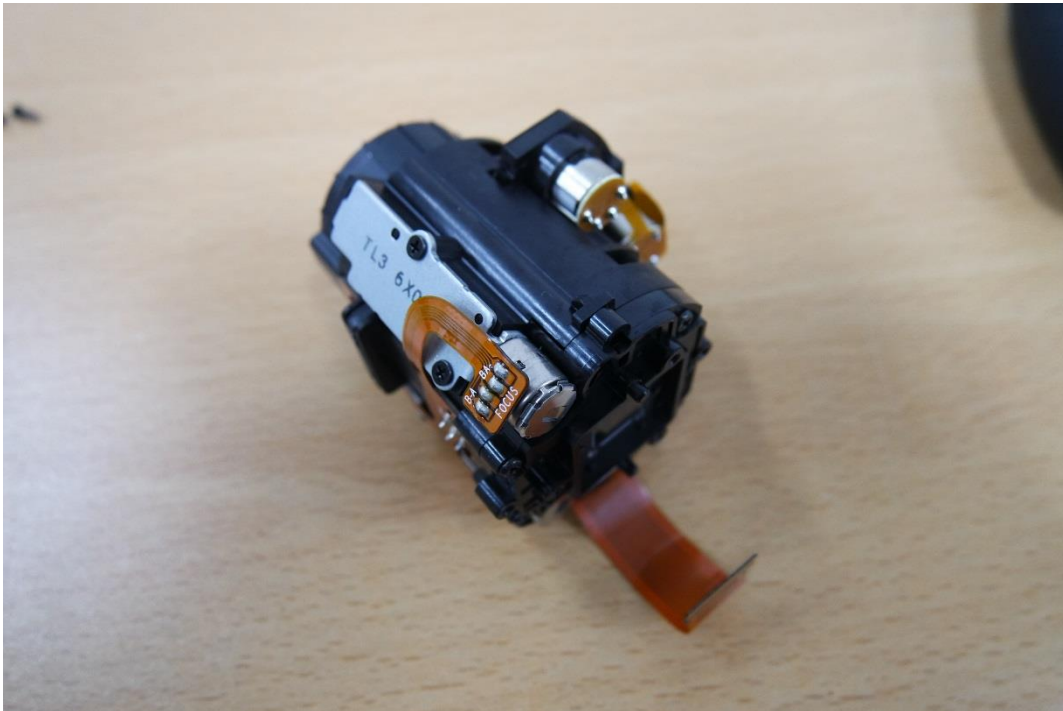
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EUT Internal View – Lens

(Top)



(Bottom)

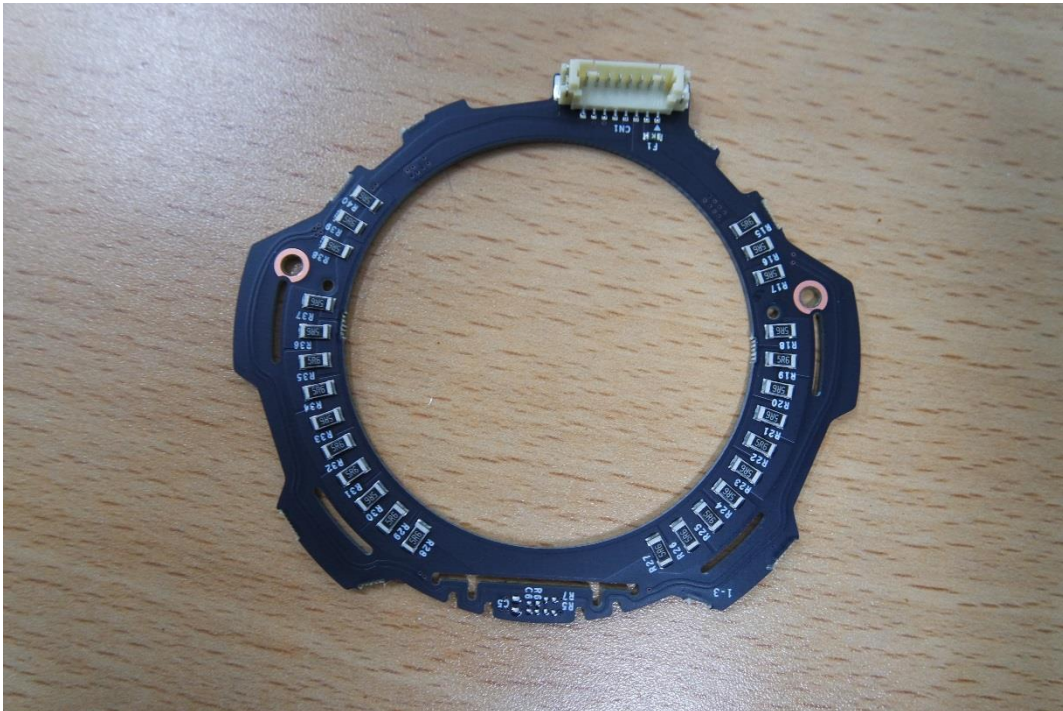


EUT Internal View – LED

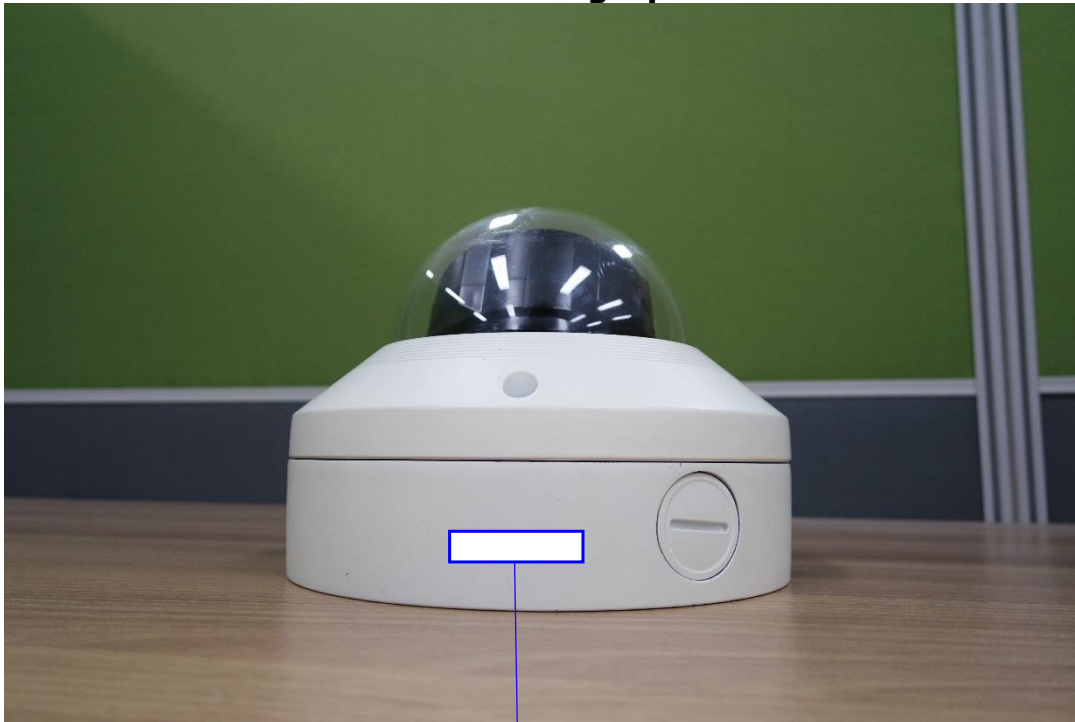
(Top)



(Bottom)



Label Photographs



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