



EMC TEST REPORT For C-TICK

Test Report No. : KES-E1-17T0481-R1
Date of Issue : Feb. 24, 2023
Product name : NETWORK CAMERA
Model/Type No. : XNV-6085
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)
Date of Receipt : Jul. 10, 2017
Test date : Jul. 16, 2017 ~ Jul. 18, 2017
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Seong Min, Choi
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

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

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jul. 24, 2017	KES-E1-17T0481	Issued
Feb. 24, 2023	KES-E1-17T0481-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	1/1.9" 2.42M CMOS
Total Pixels	1952(H) X 1241(V) approx 2.42M pixels
Effective Pixels	1937(H) X 1097(V) approx 2.12M pixels
Scanning System	Progressive Scan
Min. Illumination	Color : 0.005 Lux(1/30sec, F0.94)
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)	4.1~16.4mm(Optical 4X)
Max. Aperture Ratio	F0.94(Wide) ~ F2.4(Tele)
Angular Field of View	H : 100°(W) ~ 26.2°(T)
Min. Object Distance	0.7m
Focus Control	Auto / Manual / One Push
Lens Type	DC Auto Iris
Mount Type	Board-in type
LDC	On/Off (5 levels with Min/Max)
Pan / Tilt / Rotate	
Pan Range	±185 °
Tilt Range	±73 °
Rotate Range	±110 °
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(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 (Built-in Gyro sensor)
Digital PTZ	24X, Digital PTZ(Preset, Group)
Defog	Auto/Manual/Off
Motion Detection	Auto / Manual / Off
Privacy Masking	Off/ On(8ea, 8point Polygonal zones), Handover
Gain Control	Off / On (32ea, polygonal zones) - Color : Grey/Green/Red/Blue/Black/White - Mosaic
White Balance	ATW / AWC / Manual / Indoor / Outdoor (included Mercury & Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)

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Rotate Image	Flip : On/Off Mirror : On/Off Hallway : 90° /270°
Video&Audio Analytics	Tampering, Loitering, Directional Detection, Fog Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection, Motion Detection, Sound Classification
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 DPTZ preset
Audio In	Selectable (Mic IN/Line IN/Built-in Mic), Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out (3.5mm mono jack), Max output level: 1 Vrms
Pixel Counter	support
Pan/Tilt/Rotate	Remote adjustment (Max. 200 cycle)
Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	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 Adjustment	Target Bitrate Level Control
Bitrate Control Method	H.264/H.265 : CBR or VBR, Motion JPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10 Profiles)
Audio Compression Format	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
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)

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Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast Mode
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 2.0(HTTP API) Wisenet Open Platform
Webpage Language	English, French, German, Spanish, Italian, Chinese, Russian, Japanese, Swedish, Portuguese, Turkish, Polish, Czech, Dutch, Hungary, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Plug-in Free Webviewer Supported Browser : Google Chrome, MS Edge, Mozilla Firefox(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
Environmental	
Operating Temperature / Humidity	-30°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -10°C
Storage Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP51
Vandal Resistance	IK08
Electrical	
Input Voltage / Current	DC12V,PoE(IEEE802.3af,Class3)
Power Consumption	TBD
Mechanical	
Color / Material	Ivory / Plastic (R), Aluminum (RV)
Dimension (WxHxD)	TBD
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 ☐ 240 Vac ☐ 100 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-6085P	-	HANWHA VISION VIETNAM COMPANY LIMITED	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook	NT630Z5J	JK9091EF400142M	SAMSUNG	-
Notebook Adapter	A13-040N2A	CN60BA4400313AD0 N843KO2OO	Chicony Power Technology (suzhou)Co., Ltd.	-
MIC	CMK-303	-	CAMAC	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI- TECH GROUP.	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
Micro SD Card	-	-	SanDisk	-
POE Adapter	POE36U-1AT-R	-	I.T.E. POWER SUPPLY	-

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 (E.U.T)	RJ-45	Notebook	RJ-45	3.2	U
	2PIN	Alarm	2PIN	3.0	U
	Speaker	Speaker	-	1.7	U
	MIC	MIC	-	1.6	U
	Micro SD Card Slot	Micro SD Card	-	-	-

- 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	3.2	U
	2PIN	Alarm	2PIN	3.0	U
	Speaker	Speaker	-	1.7	U
	MIC	MIC	-	1.6	U
	Micro SD Card Slot	Micro SD Card	-	-	-



- PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45	POE Adapter	OUT	3.2	U
	2PIN	Alarm	2PIN	3.0	U
	Speaker	Speaker	-	1.7	U
	MIC	MIC	-	1.6	U
	Micro SD Card Slot	Micro SD Card	-	-	-
Notebook	RJ-45	POE Adapter	IN	1.6	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

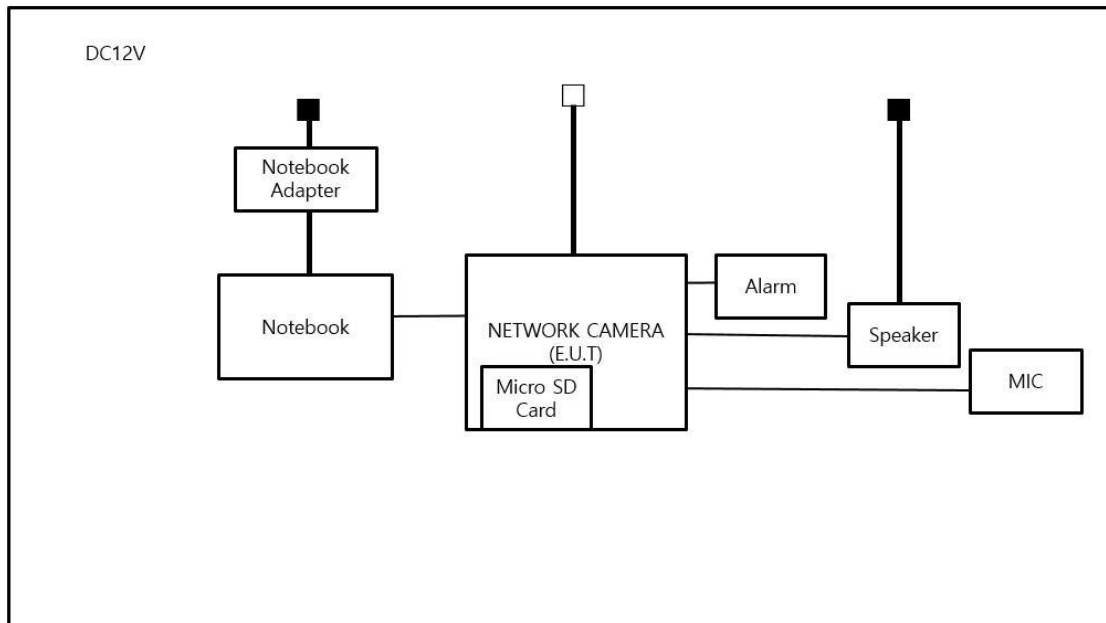
Test mode	operating
Operating mode	E.U.T Monitoring, Ping Test

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

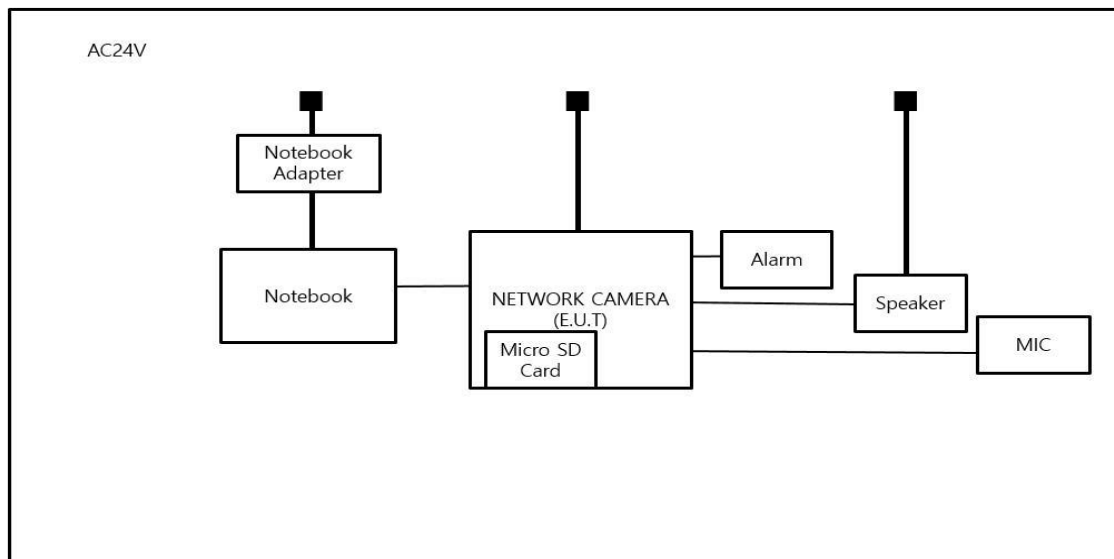
1.8 Configuration

■ AC Main
 □ DC Main

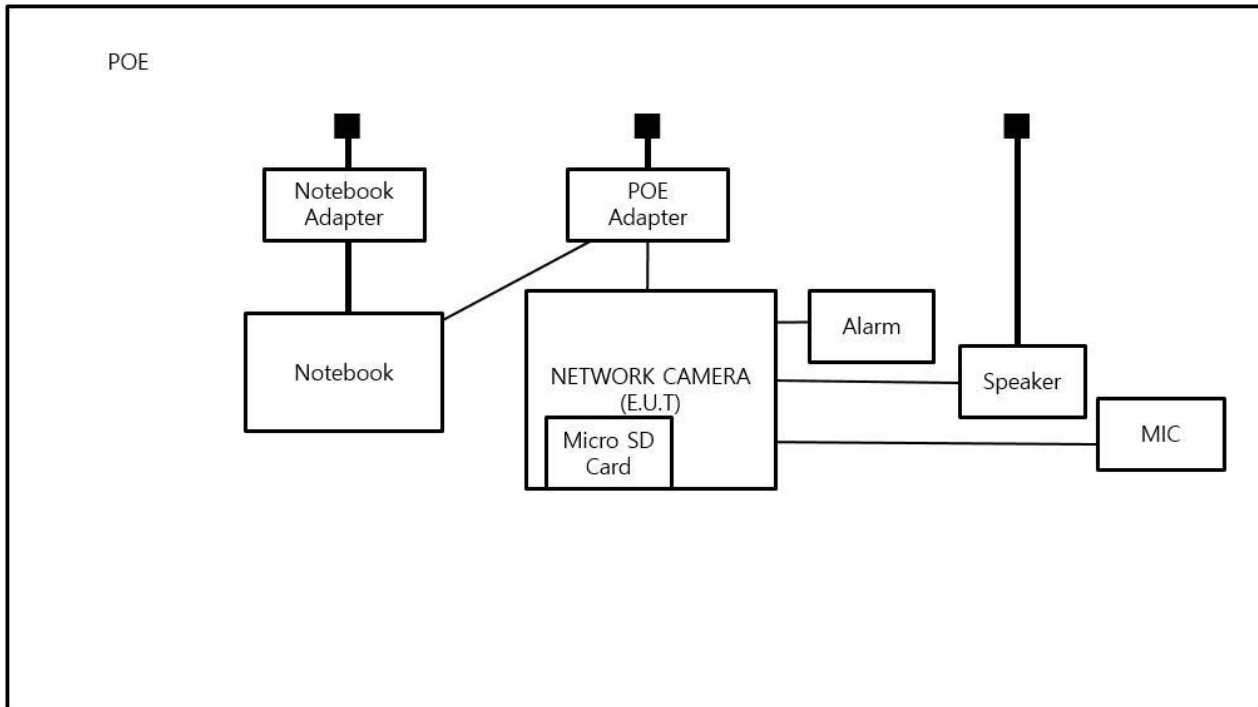
- DC 12 V Mode



- AC 24 V Mode



- PoE mode



1.9 Remarks when standards applied

- The adaptor is not included by the manufacturer

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
☐ 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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☐ **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 C63.4-2009

☐ **IC Regulation ICES-003 : 2016**

☐ CAN/CSA CISPR 22-10

☐ Class A

☐ Class B

☐ ANSI C63.4-2014

☐ **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

Jul. 18, 2017

Test Location

Electro wave Shieldroom

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, 27, 2018
☒	LISN	ENV216	R & S	101137	02, 03, 2018
☒	LISN	ENV216	R & S	101786	04, 27, 2018
☒	PULSE LIMITER	ESH3-Z2	R & S	101914	12, 13, 2017

Test Conditions

Temperature: 22,9 °C
Relative Humidity: 51,9 %

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 Conducted Emissions at Telecommunication Ports

Test Date

Jul. 18, 2017

Test Location

Electro wave Shieldroom

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, 27, 2018
☒	LISN	ENV216	R & S	101137	02, 03, 2018
☒	LISN	ENV216	R & S	101786	04, 27, 2018
☒	PULSE LIMITER	ESH3-Z2	R & S	101914	12, 13, 2017
☒	8-WIRE ISN CAT3	CAT3 8158	SCHWARZBECK	8158-0019	03, 29, 2018
☒	8-WIRE ISN CAT5	CAT5 8158	SCHWARZBECK	8158-0030	03, 29, 2018
☒	8-WIRE ISN CAT6	NTFM 8158	SCHWARZBECK	8158-0029	08, 11, 2017

Test Conditions

Temperature: 22,9 °C

Relative Humidity: 51,9 %

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.

2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Jul. 16, 2017

Test Location☐ OPEN AREA TEST SITE #1 ☒ SAC #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, 18, 2018
☒	AMPLIFIER	SCU 01	R & S	100603	12, 13, 2017
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	716	11, 28, 2018

Test Conditions

Temperature: 24,0 °C

Relative Humidity: 51,1 %

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

Jul. 17, 2017

Test Location

SEMI ANECHOIC CHAMBER #3

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	ESR7	R & S	101190	08, 08, 2017
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	05, 31, 2018
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 02, 2019

Test Conditions

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

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.

APPENDIX A – TEST DATA

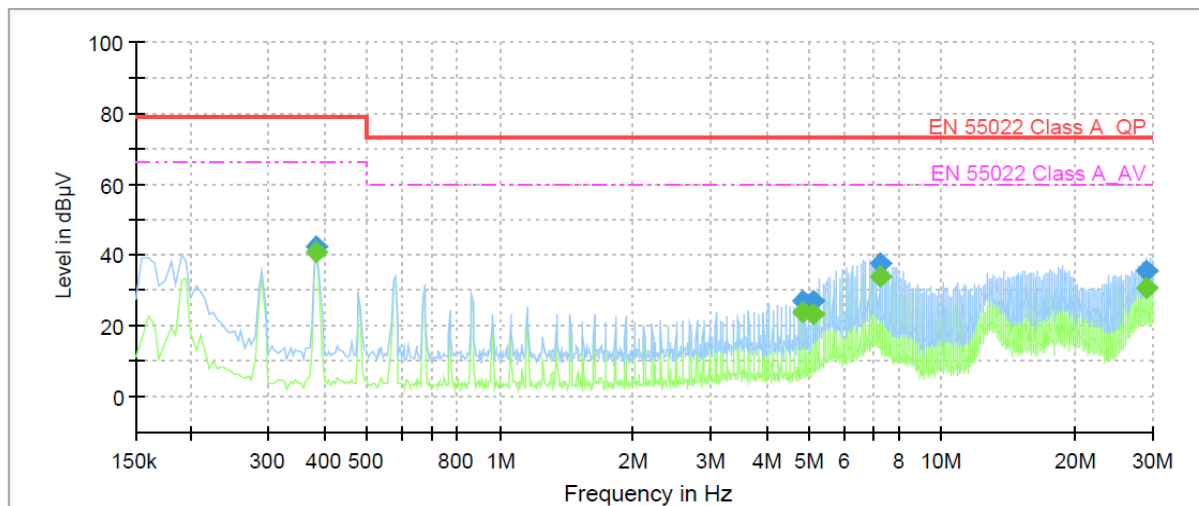
Conducted Emissions at Mains Power Ports

- AC 24 V Mode

[HOT]

Common Information

Test Description: Conducted Emission
Model No.: XNV-6085P
Mode: AC24V
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.385000	---	40.92	66.00	25.08	1000.0	9.000	L1	20.7
0.385000	42.41	---	79.00	36.59	1000.0	9.000	L1	20.7
4.815000	---	24.10	60.00	35.90	1000.0	9.000	L1	19.7
4.815000	26.98	---	73.00	46.02	1000.0	9.000	L1	19.7
5.105000	---	23.27	60.00	36.73	1000.0	9.000	L1	19.8
5.105000	26.88	---	73.00	46.12	1000.0	9.000	L1	19.8
7.220000	---	33.93	60.00	26.07	1000.0	9.000	L1	19.8
7.220000	37.47	---	73.00	35.53	1000.0	9.000	L1	19.8
28.980000	---	30.79	60.00	29.21	1000.0	9.000	L1	20.3
28.980000	35.24	---	73.00	37.76	1000.0	9.000	L1	20.3

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

QuasiPeak / CAverage : The Final Value

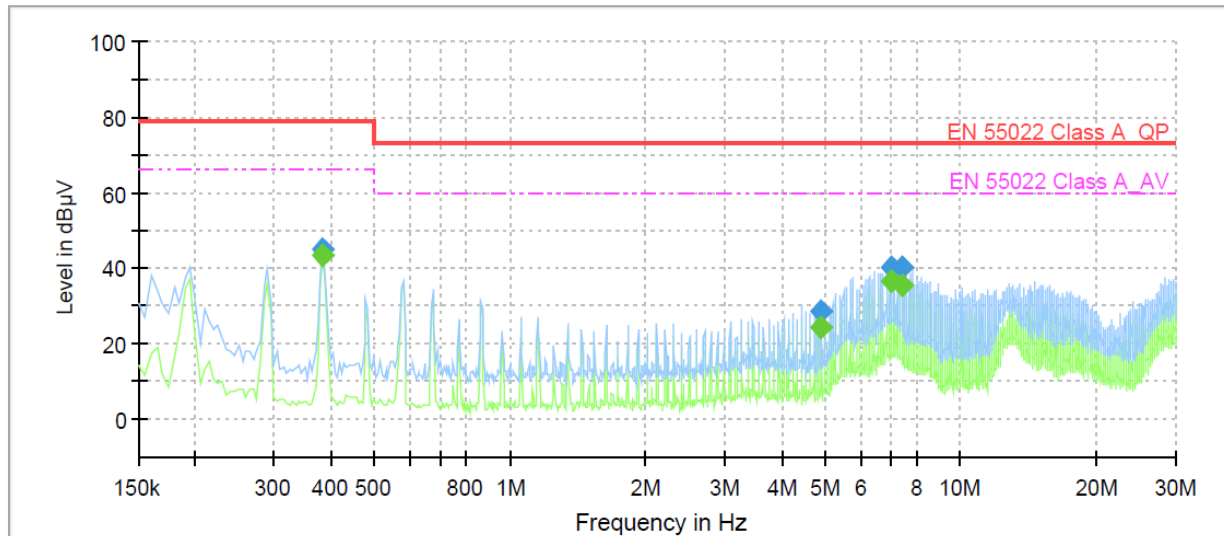
Reading Value : Not shown in the table.

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

[NEUTRAL]

Common Information

Test Description: Conducted Emission
Model No.: XNV-6085P
Mode: AC24V
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.385000	---	43.42	66.00	22.58	1000.0	9.000	N	20.7
0.385000	44.94	---	79.00	34.06	1000.0	9.000	N	20.7
4.910000	---	24.17	60.00	35.83	1000.0	9.000	N	19.7
4.910000	28.38	---	73.00	44.62	1000.0	9.000	N	19.7
7.030000	---	36.67	60.00	23.33	1000.0	9.000	N	19.8
7.030000	40.26	---	73.00	32.74	1000.0	9.000	N	19.8
7.415000	---	35.68	60.00	24.32	1000.0	9.000	N	19.8
7.415000	39.99	---	73.00	33.01	1000.0	9.000	N	19.8

◆ 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))

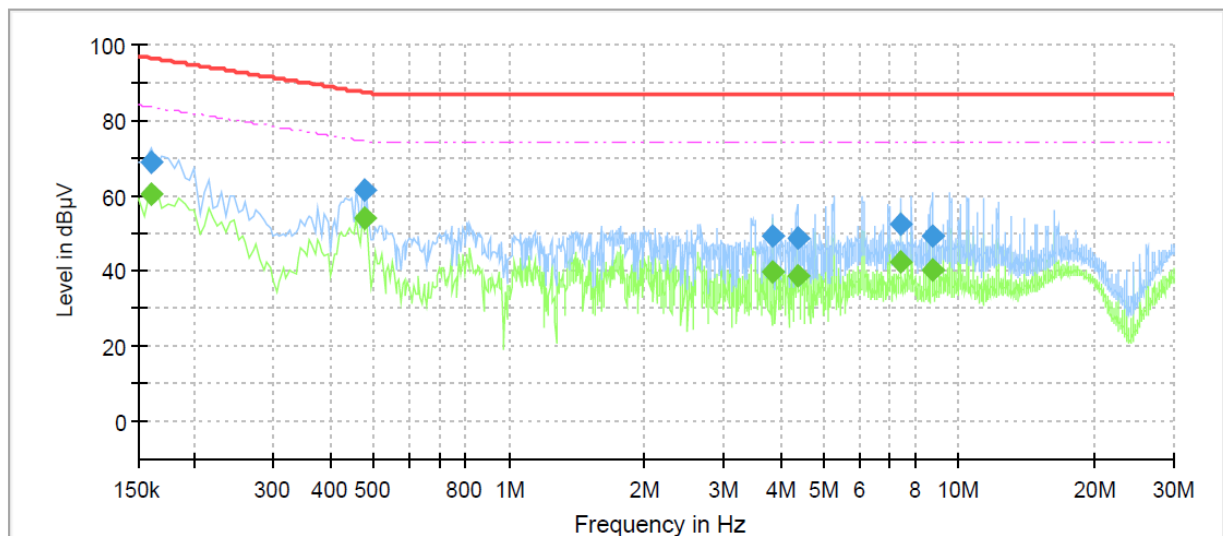
Conducted Emissions at Telecommunication Ports

- DC 12 V Mode

[10 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: DC12V_10M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	60.34	83.46	23.12	1000.0	9.000	Single Line	21.5
0.160000	68.93	---	96.46	27.53	1000.0	9.000	Single Line	21.5
0.475000	---	54.16	74.43	20.27	1000.0	9.000	Single Line	20.9
0.475000	61.55	---	87.43	25.88	1000.0	9.000	Single Line	20.9
3.860000	---	39.69	74.00	34.31	1000.0	9.000	Single Line	19.8
3.860000	49.40	---	87.00	37.60	1000.0	9.000	Single Line	19.8
4.365000	---	38.88	74.00	35.12	1000.0	9.000	Single Line	19.8
4.365000	48.45	---	87.00	38.55	1000.0	9.000	Single Line	19.8
7.390000	---	42.19	74.00	31.81	1000.0	9.000	Single Line	19.9
7.390000	52.60	---	87.00	34.40	1000.0	9.000	Single Line	19.9
8.730000	---	40.12	74.00	33.88	1000.0	9.000	Single Line	19.9
8.730000	49.09	---	87.00	37.91	1000.0	9.000	Single Line	19.9

◆ 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 (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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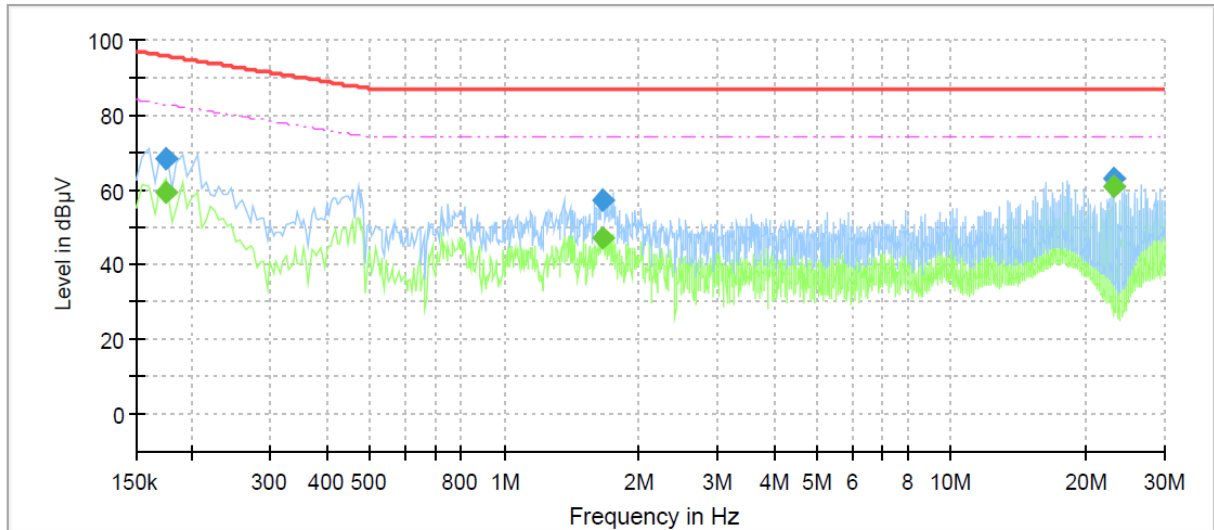
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

The authenticity of the test report, contact kes@kes.co.kr

[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: DC12V_100M
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	---	59.16	82.72	23.56	1000.0	9.000	Single Line	20.9
0.175000	68.31	---	95.72	27.41	1000.0	9.000	Single Line	20.9
1.660000	---	47.21	74.00	26.79	1000.0	9.000	Single Line	19.5
1.660000	57.40	---	87.00	29.60	1000.0	9.000	Single Line	19.5
23.130000	---	60.64	74.00	13.36	1000.0	9.000	Single Line	19.5
23.130000	63.03	---	87.00	23.97	1000.0	9.000	Single Line	19.5

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

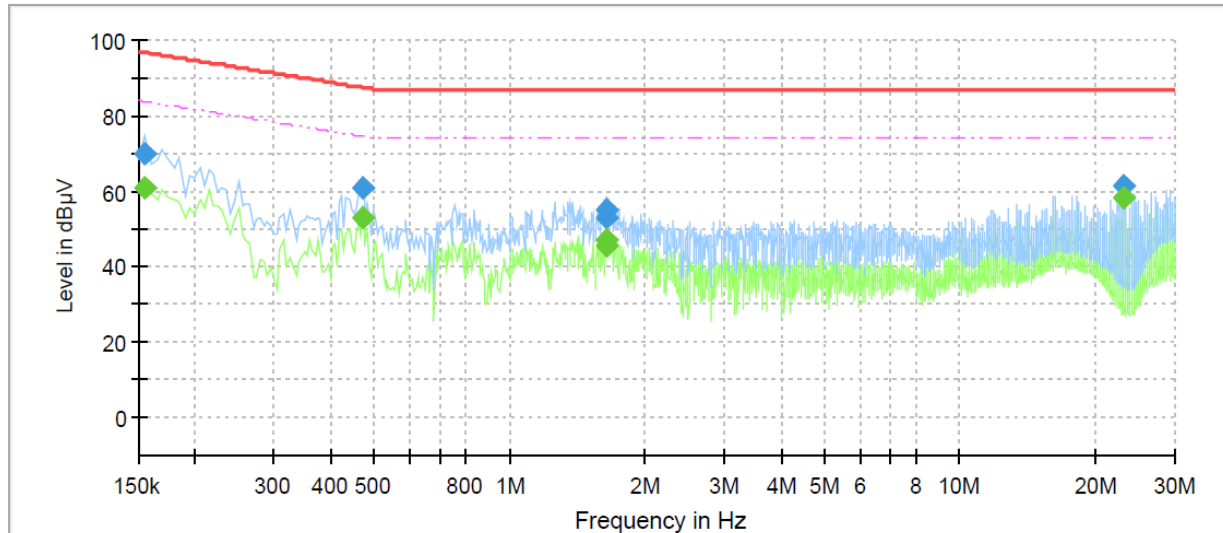
Reading Value : Not shown in the table.

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

[1 000 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: DC12V_1000M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	60.75	83.73	22.98	1000.0	9.000	Single Line	21.0
0.155000	69.98	---	96.73	26.75	1000.0	9.000	Single Line	21.0
0.470000	---	52.77	74.51	21.74	1000.0	9.000	Single Line	20.3
0.470000	60.92	---	87.51	26.59	1000.0	9.000	Single Line	20.3
1.640000	---	45.51	74.00	28.49	1000.0	9.000	Single Line	19.5
1.640000	52.92	---	87.00	34.08	1000.0	9.000	Single Line	19.5
1.645000	---	47.20	74.00	26.80	1000.0	9.000	Single Line	19.5
1.645000	55.27	---	87.00	31.73	1000.0	9.000	Single Line	19.5
23.130000	---	58.17	74.00	15.83	1000.0	9.000	Single Line	19.6
23.130000	61.54	---	87.00	25.46	1000.0	9.000	Single Line	19.6

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

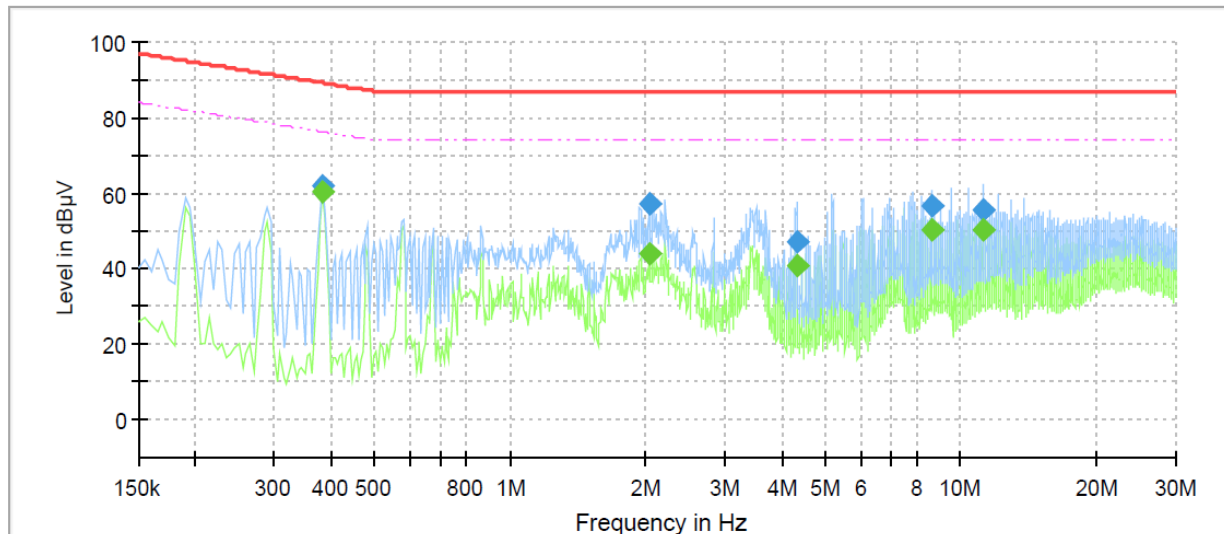
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

- AC 24 V Mode

[10 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: AC24V_10M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.385000	---	60.31	76.17	15.86	1000.0	9.000	Single Line	21.1
0.385000	61.78	---	89.17	27.39	1000.0	9.000	Single Line	21.1
2.040000	---	44.07	74.00	29.93	1000.0	9.000	Single Line	19.9
2.040000	56.91	---	87.00	30.09	1000.0	9.000	Single Line	19.9
4.335000	---	40.93	74.00	33.07	1000.0	9.000	Single Line	19.8
4.335000	47.05	---	87.00	39.95	1000.0	9.000	Single Line	19.8
8.665000	---	50.27	74.00	23.73	1000.0	9.000	Single Line	19.9
8.665000	56.48	---	87.00	30.52	1000.0	9.000	Single Line	19.9
11.265000	---	50.24	74.00	23.76	1000.0	9.000	Single Line	20.0
11.265000	55.84	---	87.00	31.16	1000.0	9.000	Single Line	20.0

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

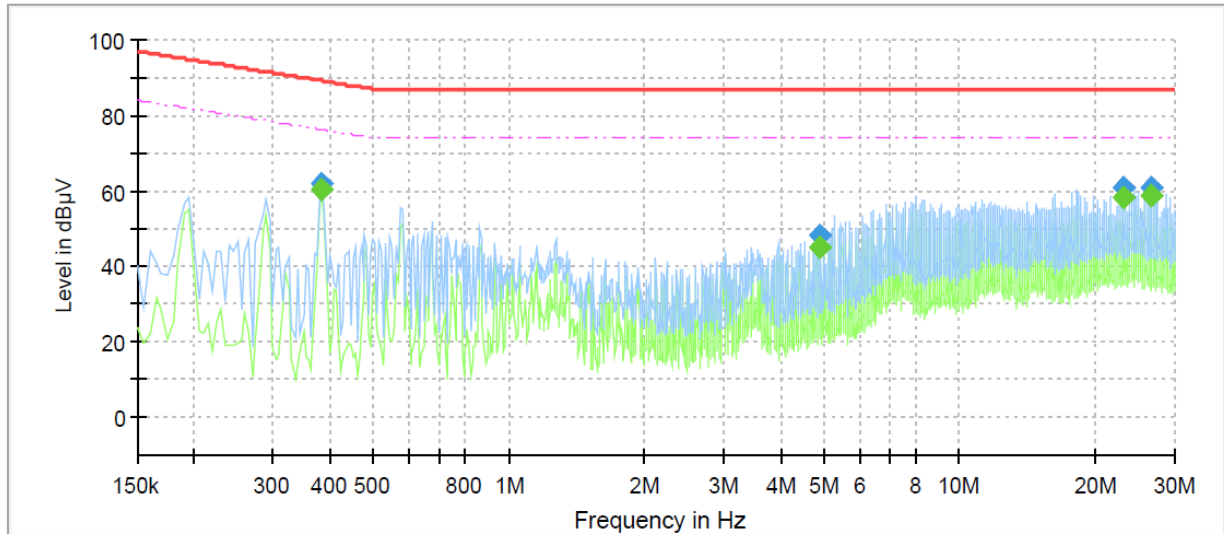
Reading Value : Not shown in the table.

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

[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: AC24V_100M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.385000	---	60.30	76.17	15.87	1000.0	9.000	Single Line	20.6
0.385000	61.72	---	89.17	27.45	1000.0	9.000	Single Line	20.6
4.910000	---	45.01	74.00	28.99	1000.0	9.000	Single Line	19.3
4.910000	48.40	---	87.00	38.60	1000.0	9.000	Single Line	19.3
23.130000	---	58.20	74.00	15.80	1000.0	9.000	Single Line	19.5
23.130000	60.73	---	87.00	26.27	1000.0	9.000	Single Line	19.5
26.610000	---	58.53	74.00	15.47	1000.0	9.000	Single Line	19.6
26.610000	60.95	---	87.00	26.05	1000.0	9.000	Single Line	19.6

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

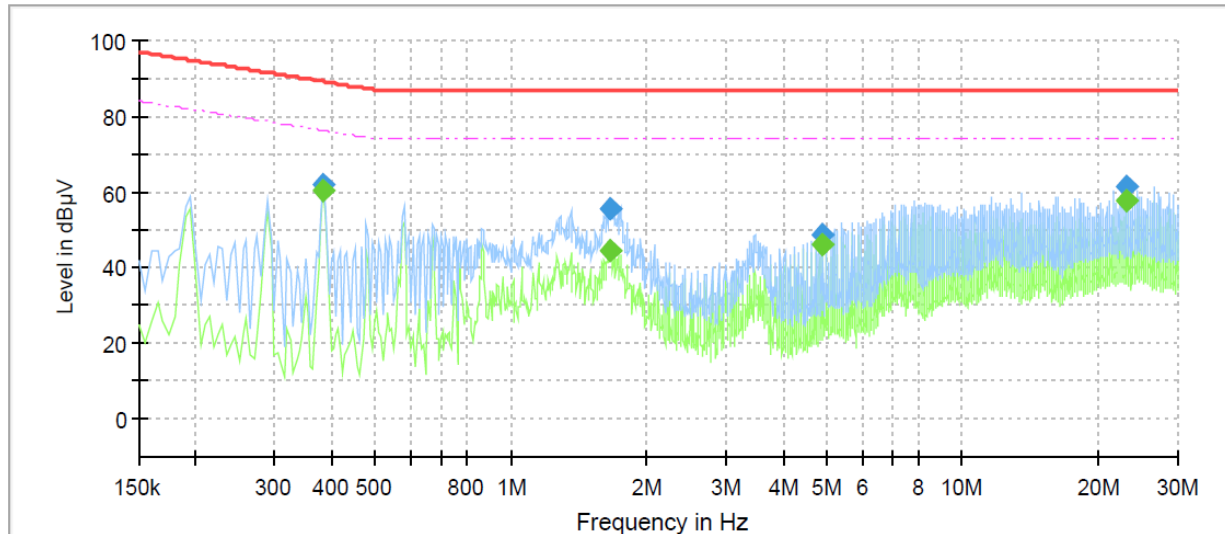
Reading Value : Not shown in the table.

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

[1 000 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: AC24V_1000M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.385000	---	60.46	76.17	15.71	1000.0	9.000	Single Line	20.5
0.385000	61.87	---	89.17	27.30	1000.0	9.000	Single Line	20.5
1.660000	---	44.38	74.00	29.62	1000.0	9.000	Single Line	19.5
1.660000	55.83	---	87.00	31.17	1000.0	9.000	Single Line	19.5
4.910000	---	45.83	74.00	28.17	1000.0	9.000	Single Line	19.3
4.910000	48.58	---	87.00	38.42	1000.0	9.000	Single Line	19.3
23.130000	---	57.91	74.00	16.09	1000.0	9.000	Single Line	19.6
23.130000	61.38	---	87.00	25.62	1000.0	9.000	Single Line	19.6

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

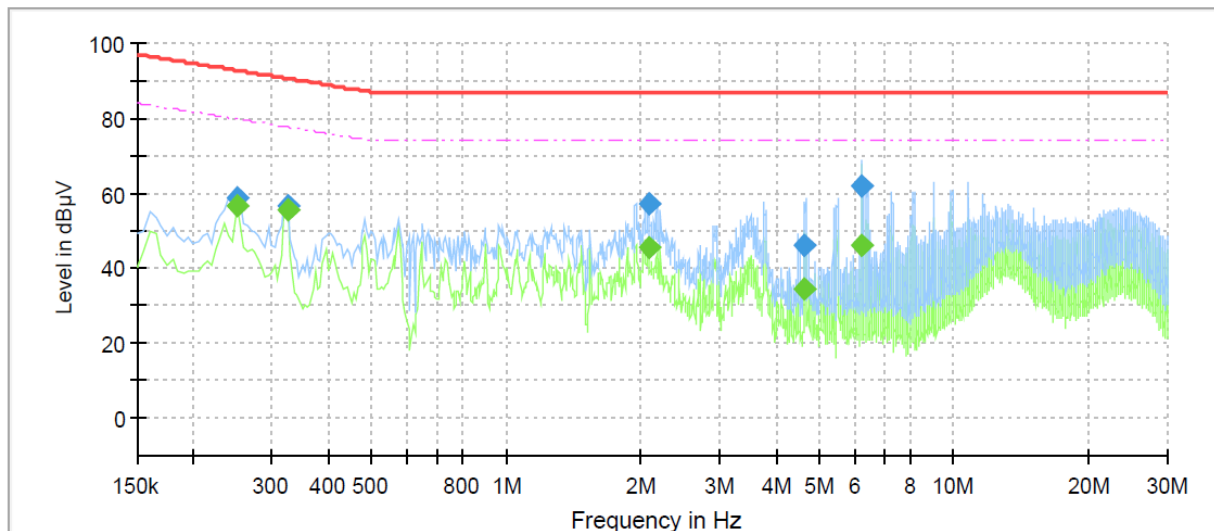
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

- PoE Mode

[10 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: POE_10M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.250000	---	56.64	79.76	23.12	1000.0	9.000	Single Line	21.2
0.250000	58.70	---	92.76	34.06	1000.0	9.000	Single Line	21.2
0.325000	---	55.66	77.58	21.92	1000.0	9.000	Single Line	21.1
0.325000	56.41	---	90.58	34.17	1000.0	9.000	Single Line	21.1
2.080000	---	45.61	74.00	28.39	1000.0	9.000	Single Line	19.9
2.080000	57.34	---	87.00	29.66	1000.0	9.000	Single Line	19.9
4.645000	---	34.25	74.00	39.75	1000.0	9.000	Single Line	19.8
4.645000	46.11	---	87.00	40.89	1000.0	9.000	Single Line	19.8
6.250000	---	46.31	74.00	27.69	1000.0	9.000	Single Line	19.9
6.250000	61.96	---	87.00	25.04	1000.0	9.000	Single Line	19.9

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

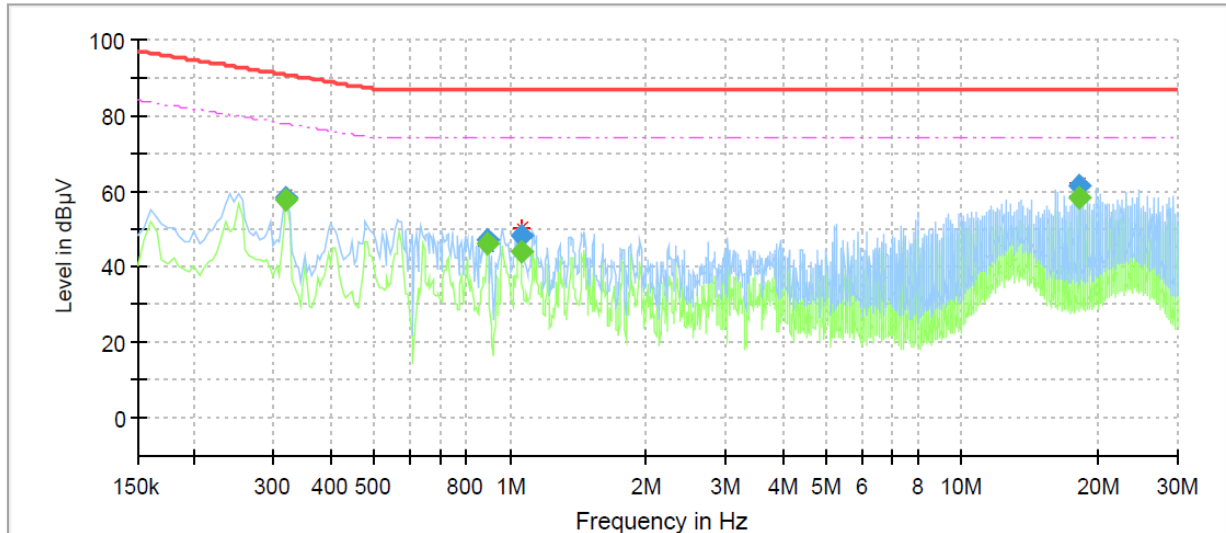
Reading Value : Not shown in the table.

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

[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: POE_100M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.320000	---	57.66	77.71	20.05	1000.0	9.000	Single Line	20.6
0.320000	58.23	---	90.71	32.48	1000.0	9.000	Single Line	20.6
0.890000	---	45.85	74.00	28.15	1000.0	9.000	Single Line	19.9
0.890000	47.19	---	87.00	39.81	1000.0	9.000	Single Line	19.9
1.055000	---	43.83	74.00	30.17	1000.0	9.000	Single Line	19.8
1.055000	47.95	---	87.00	39.05	1000.0	9.000	Single Line	19.8
18.245000	---	57.97	74.00	16.03	1000.0	9.000	Single Line	19.6
18.245000	61.18	---	87.00	25.82	1000.0	9.000	Single Line	19.6

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

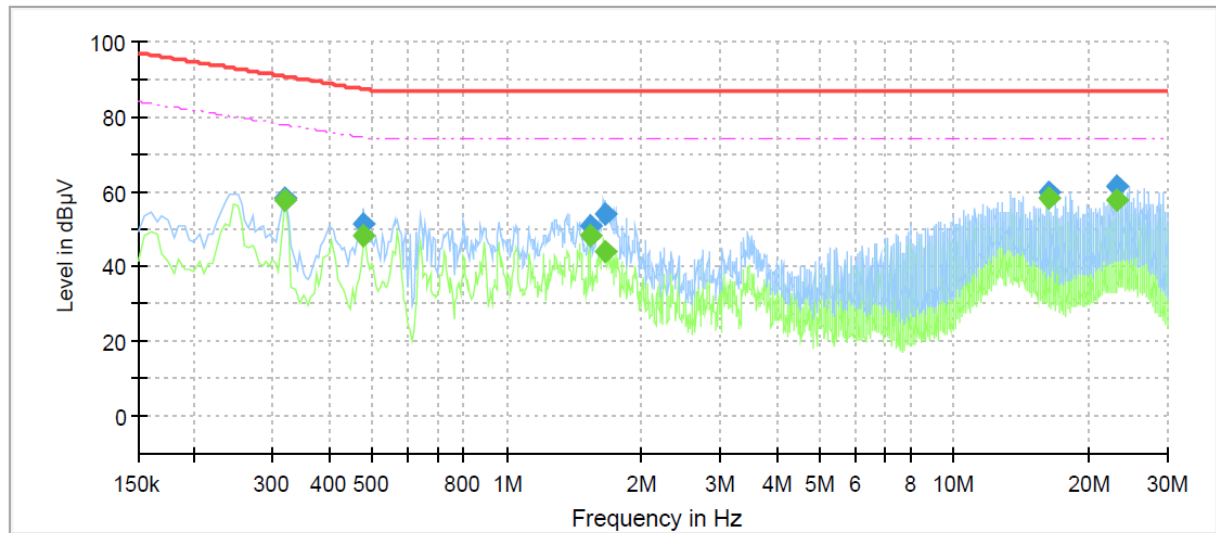
Reading Value : Not shown in the table.

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

[1 000 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6085P
Mode: POE_1000M
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.320000	---	57.93	77.71	19.78	1000.0	9.000	Single Line	20.6
0.320000	58.21	---	90.71	32.50	1000.0	9.000	Single Line	20.6
0.480000	---	47.98	74.34	26.36	1000.0	9.000	Single Line	20.3
0.480000	51.42	---	87.34	35.92	1000.0	9.000	Single Line	20.3
1.530000	---	48.21	74.00	25.79	1000.0	9.000	Single Line	19.5
1.530000	51.04	---	87.00	35.96	1000.0	9.000	Single Line	19.5
1.660000	---	44.04	74.00	29.96	1000.0	9.000	Single Line	19.5
1.660000	53.88	---	87.00	33.12	1000.0	9.000	Single Line	19.5
16.230000	---	58.23	74.00	15.77	1000.0	9.000	Single Line	19.6
16.230000	59.58	---	87.00	27.42	1000.0	9.000	Single Line	19.6
23.130000	---	57.59	74.00	16.41	1000.0	9.000	Single Line	19.6
23.130000	61.22	---	87.00	25.78	1000.0	9.000	Single Line	19.6

◆ Calculation

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

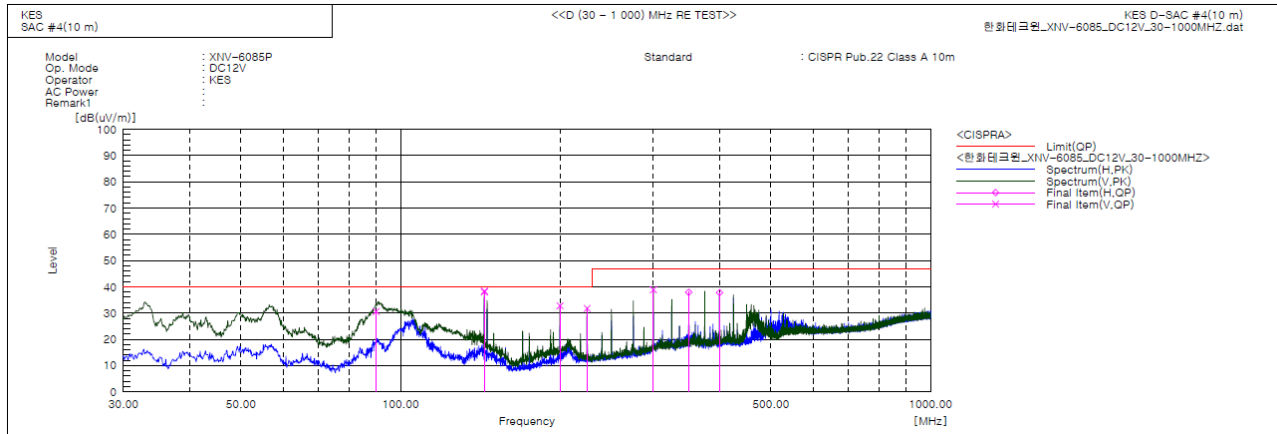
QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

Radiated Electric Field Emissions(Below 1 GHz)

- 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	89.967	V	61.1	-30.5	30.6	40.0	9.4	155.0	282.0	
2	143.990	V	70.1	-31.7	38.4	40.0	1.6	101.0	214.0	
3	143.992	V	69.7	-31.7	38.0	40.0	2.0	102.0	217.0	
4	199.996	V	59.5	-26.7	32.8	40.0	7.2	101.0	15.0	
5	225.006	V	57.9	-26.1	31.8	40.0	8.2	107.0	185.0	
6	300.024	V	62.7	-23.8	38.9	47.0	8.1	100.0	11.0	
7	349.979	H	59.9	-22.0	37.9	47.0	9.1	200.0	103.0	
8	400.055	H	58.0	-20.2	37.8	47.0	9.2	200.0	43.0	

◆ Calculation

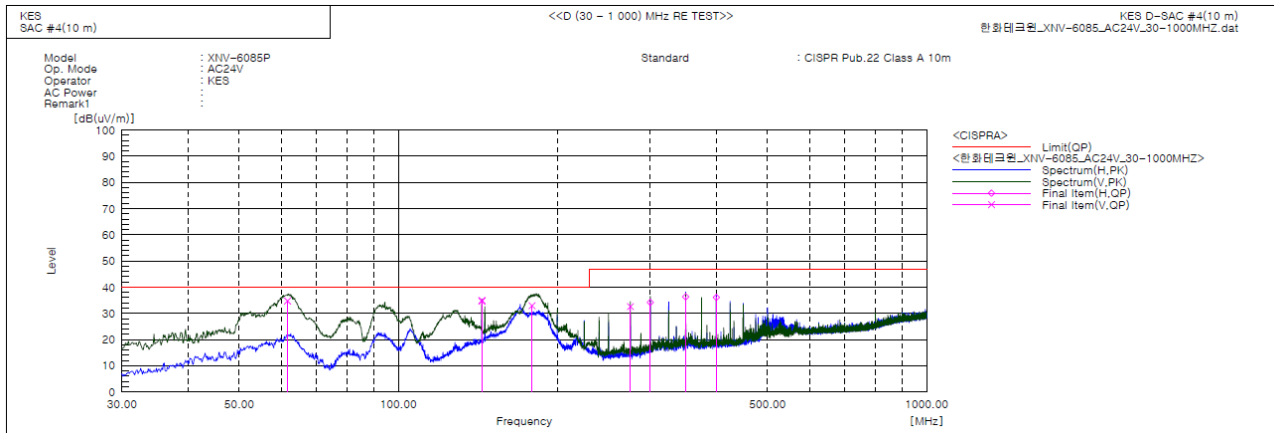
Result(QP) [dB(μV/m)] = (Reading(QP)[dB(μV)] + c.f[dB(1/m)])

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

- AC 24 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	61.698	V	64.2	-29.4	34.8	40.0	5.2	100.0	105.0	
2	143.991	V	66.3	-31.7	34.6	40.0	5.4	101.0	284.0	
3	143.999	V	66.7	-31.7	35.0	40.0	5.0	102.0	300.0	
4	179.164	V	62.5	-29.6	32.9	40.0	7.1	106.0	22.0	
5	275.046	V	57.2	-24.6	32.6	47.0	14.4	150.0	170.0	
6	300.024	H	58.0	-23.8	34.2	47.0	12.8	400.0	189.0	
7	349.979	H	58.3	-22.0	36.3	47.0	10.7	200.0	115.0	
8	400.055	H	56.3	-20.2	36.1	47.0	10.9	200.0	75.0	

◆ 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



KES Co., Ltd.

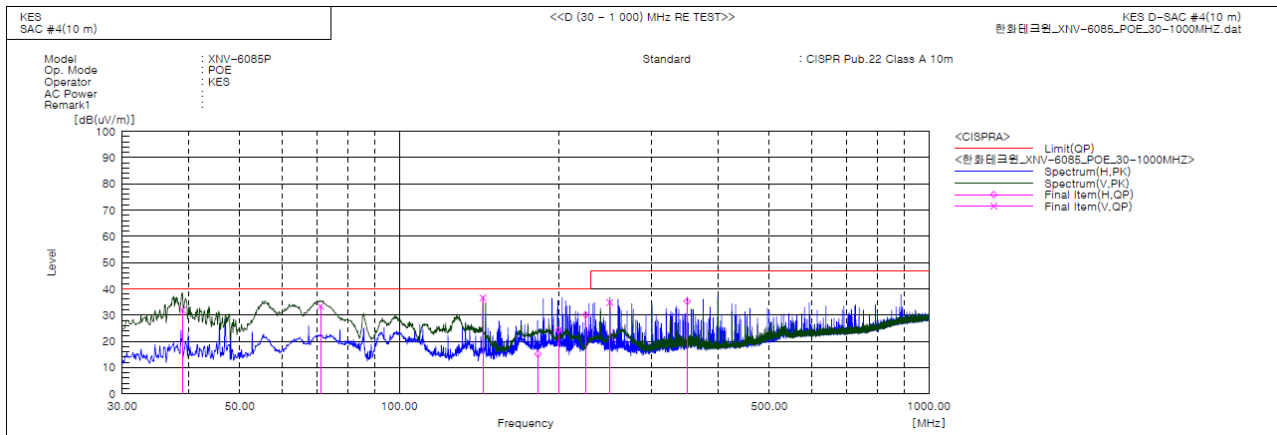
C-3701, Simin-daero 365-40,
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Report No.:

KES-E1-17T0481-R1

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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	38.981	V	61.7	-29.8	31.9	40.0	8.1	168.0	19.0	
2	71.056	V	65.4	-32.1	33.3	40.0	6.7	267.0	138.0	
3	143.991	V	68.2	-31.7	36.5	40.0	3.5	128.0	228.0	
4	182.838	H	44.2	-29.1	15.1	40.0	24.9	400.0	31.0	
5	200.011	H	50.9	-26.7	24.2	40.0	15.8	323.0	166.0	
6	224.970	H	56.2	-26.1	30.1	40.0	9.9	400.0	321.0	
7	249.948	V	60.1	-25.3	34.8	47.0	12.2	100.0	182.0	
8	349.979	H	57.2	-22.0	35.2	47.0	11.8	200.0	130.0	

◆ 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 - Preamplifier Factor), Margin: Margin value

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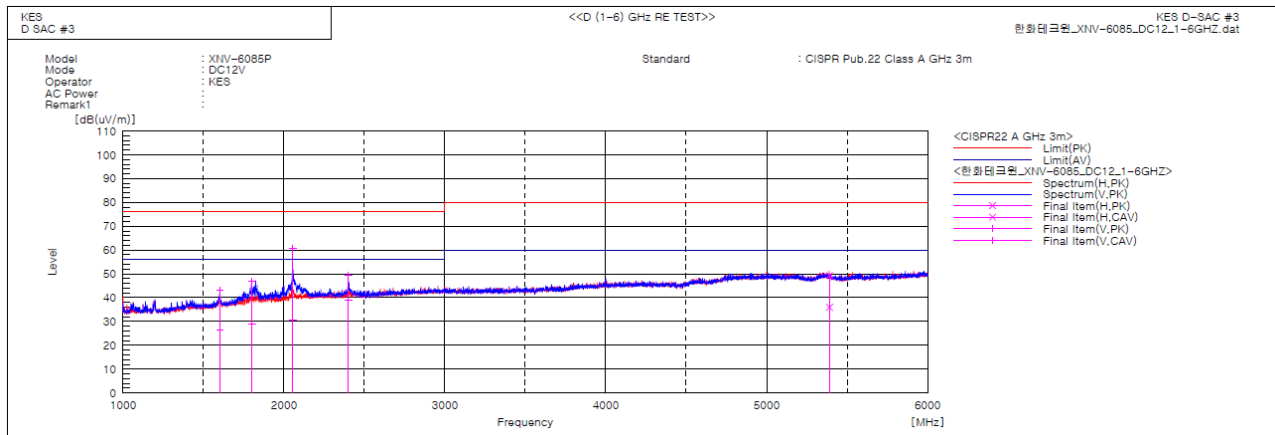
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

The authenticity of the test report, contact kes@kes.co.kr



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	1602.759	V	48.3	31.4	-5.1	43.2	26.3	76.0	56.0	32.8	29.7	101.0	17.0	
2	1802.425	V	50.0	32.2	-3.2	46.8	29.0	76.0	56.0	29.2	27.0	101.0	262.3	
3	2055.799	V	61.9	31.8	-1.3	60.6	30.5	76.0	56.0	15.4	25.5	101.0	142.4	
4	2400.120	V	49.1	38.7	0.2	49.3	38.9	76.0	56.0	26.7	17.1	101.0	155.9	
5	5390.450	H	39.1	25.8	10.2	49.3	36.0	80.0	60.0	30.7	24.0	101.0	224.9	

◆ Calculation

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

Margin(PK/CAV)[dB] = Limit[dB(μ V/m)] - Result(PK/CAV) [dB(μ V/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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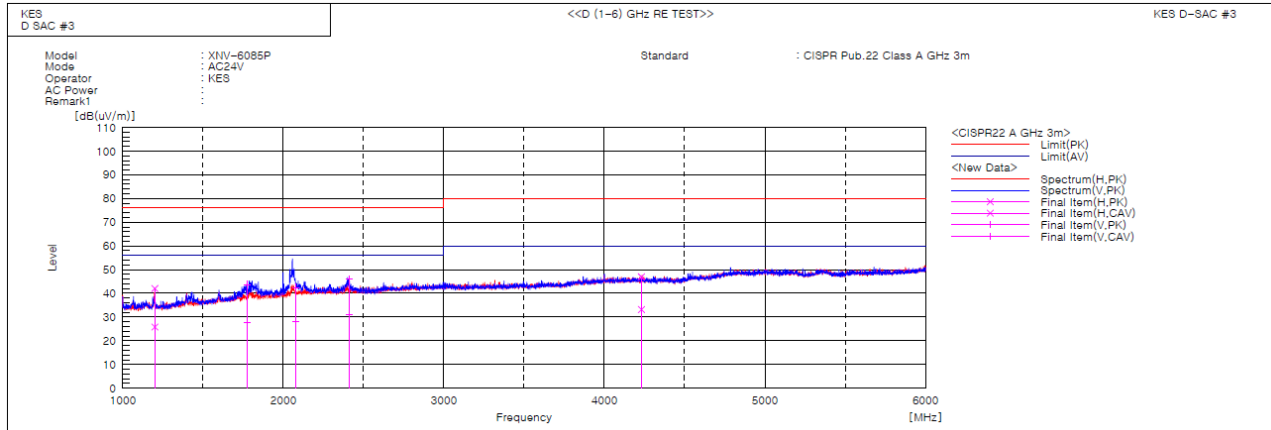
C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

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- AC 24 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	1199.759	H	50.5	34.3	-8.5	42.0	25.8	76.0	56.0	34.0	30.2	101.0	338.3	
2	1774.873	V	47.3	31.3	-3.5	43.8	27.8	76.0	56.0	32.2	28.2	101.0	194.5	
3	2078.846	V	43.7	29.2	-1.2	42.5	28.0	76.0	56.0	33.5	28.0	101.0	137.4	
4	2410.669	V	45.9	30.8	0.2	46.1	31.0	76.0	56.0	29.9	25.0	101.0	270.4	
5	4231.071	H	40.5	26.7	6.5	47.0	33.2	80.0	60.0	33.0	26.8	101.0	317.1	

◆ 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

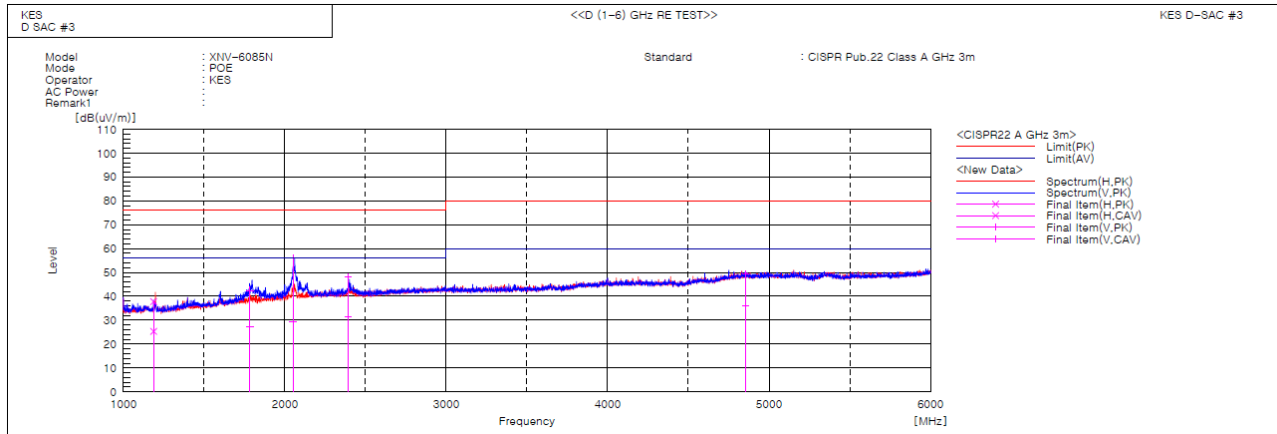
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

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- 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	1187.612	H	46.4	33.9	-8.6	37.8	25.3	76.0	56.0	38.2	30.7	101.0	37.0	
2	1784.823	V	45.9	30.6	-3.4	42.5	27.2	76.0	56.0	33.5	28.8	101.0	292.3	
3	2049.962	V	57.2	30.5	-1.3	55.9	29.2	76.0	56.0	20.1	26.8	101.0	42.1	
4	2391.822	V	47.9	31.3	0.2	48.1	31.5	76.0	56.0	27.9	24.5	101.0	190.7	
5	4854.235	V	39.3	26.0	10.0	49.3	36.0	80.0	60.0	30.7	24.0	101.0	315.9	

◆ Calculation

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

Margin(PK/CAV)[dB] = Limit[dB(μ V/m)] - Result(PK/CAV) [dB(μ V/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

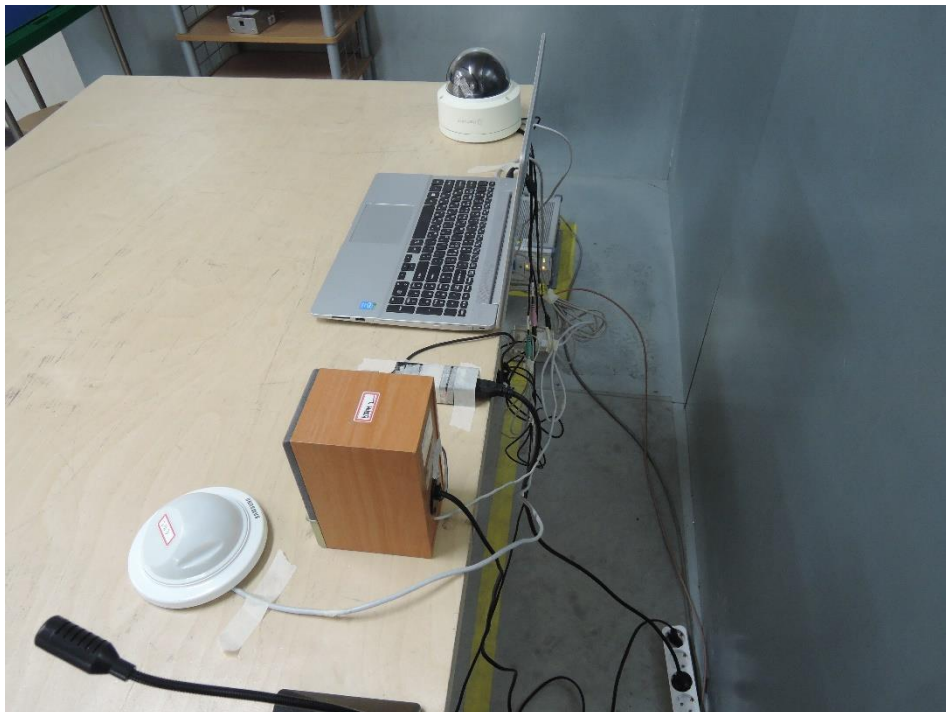
Test Setup Photos and Configuration

Conducted Voltage Emissions



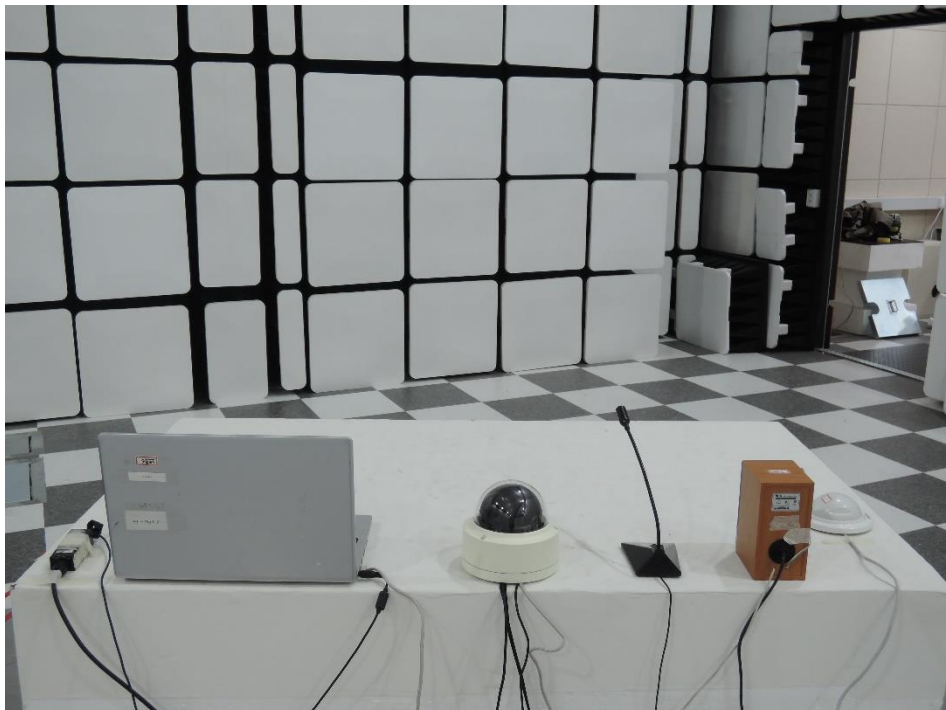
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Conducted Telecommunication Emissions



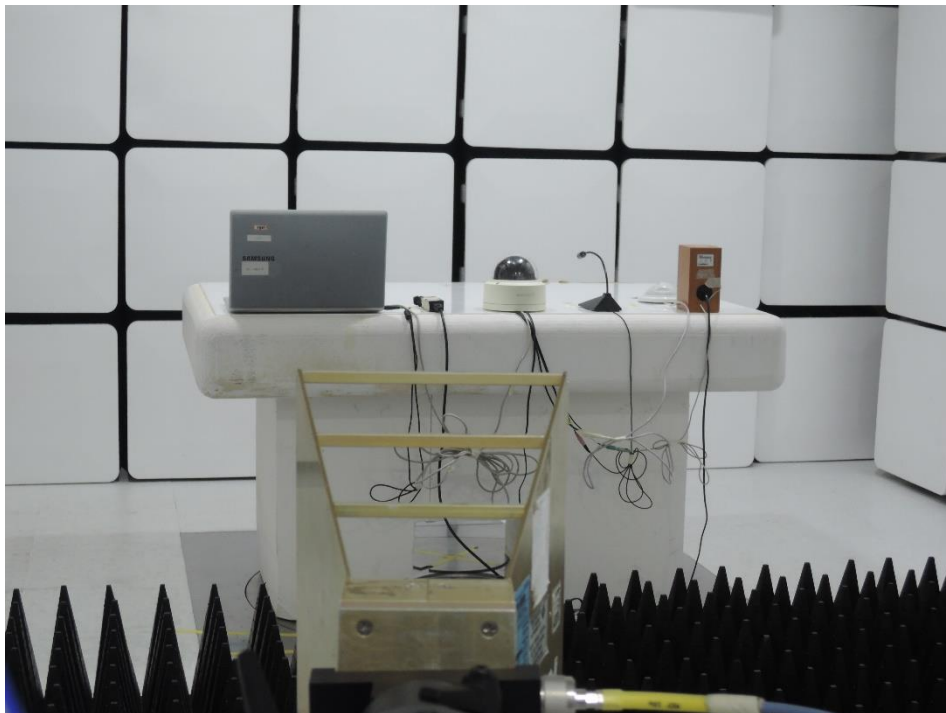
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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EUT External Photographs

(Top)



(Bottom)



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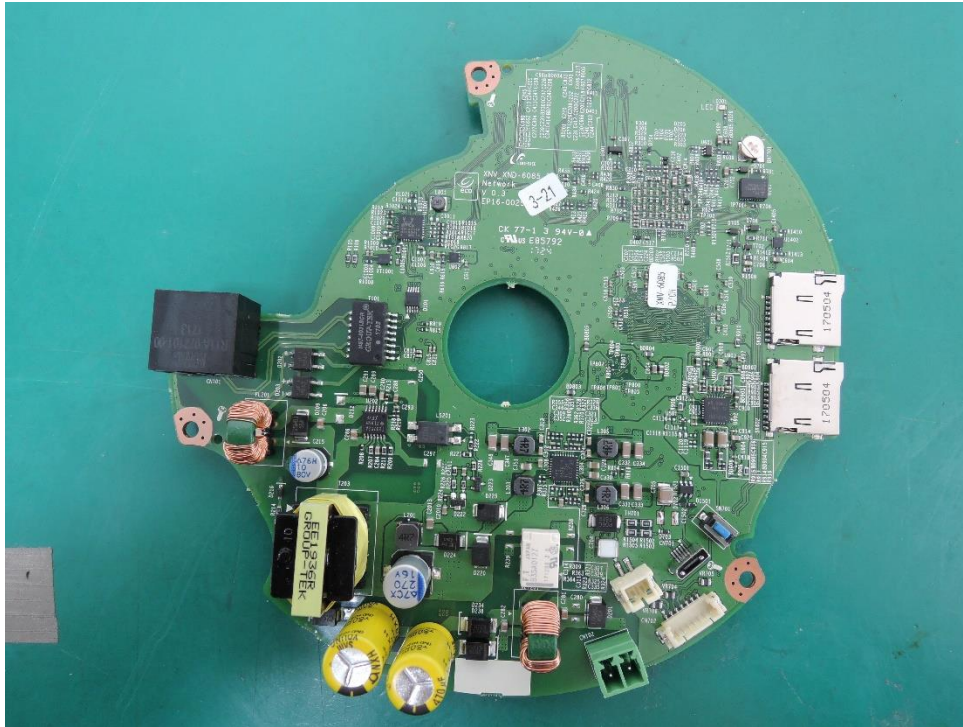
EUT Internal Photographs

(Internal View)

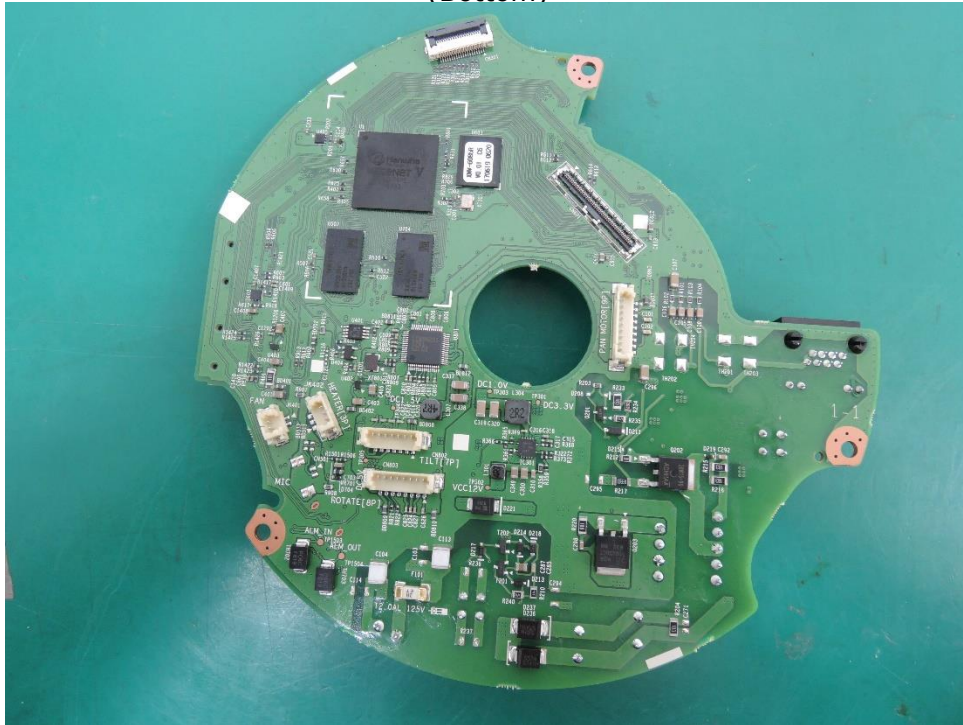


EUT Internal View – Main board

(Top)



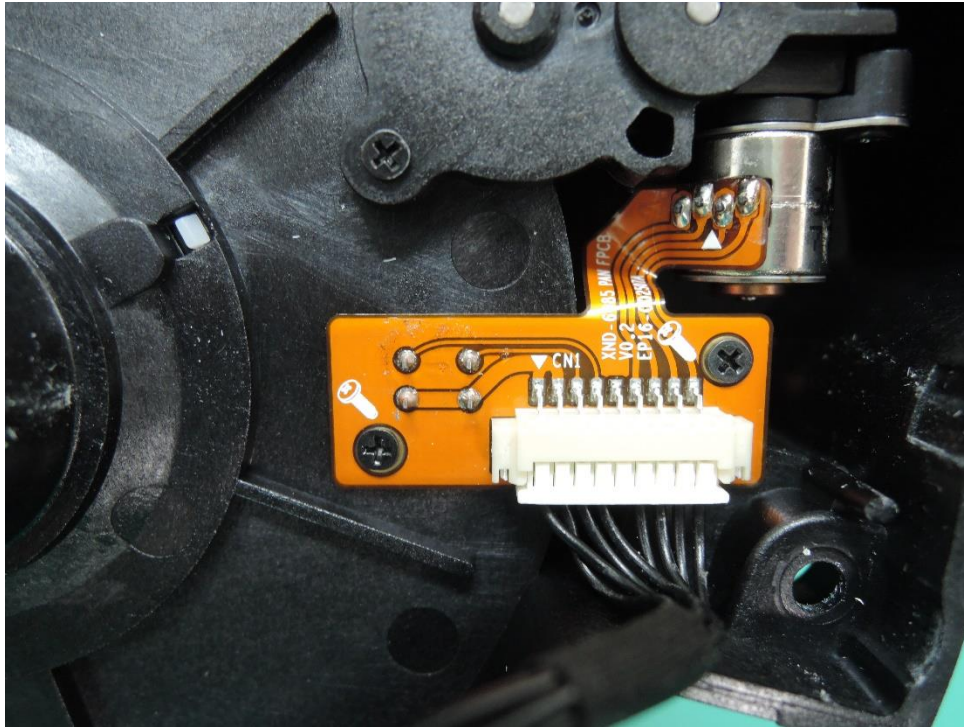
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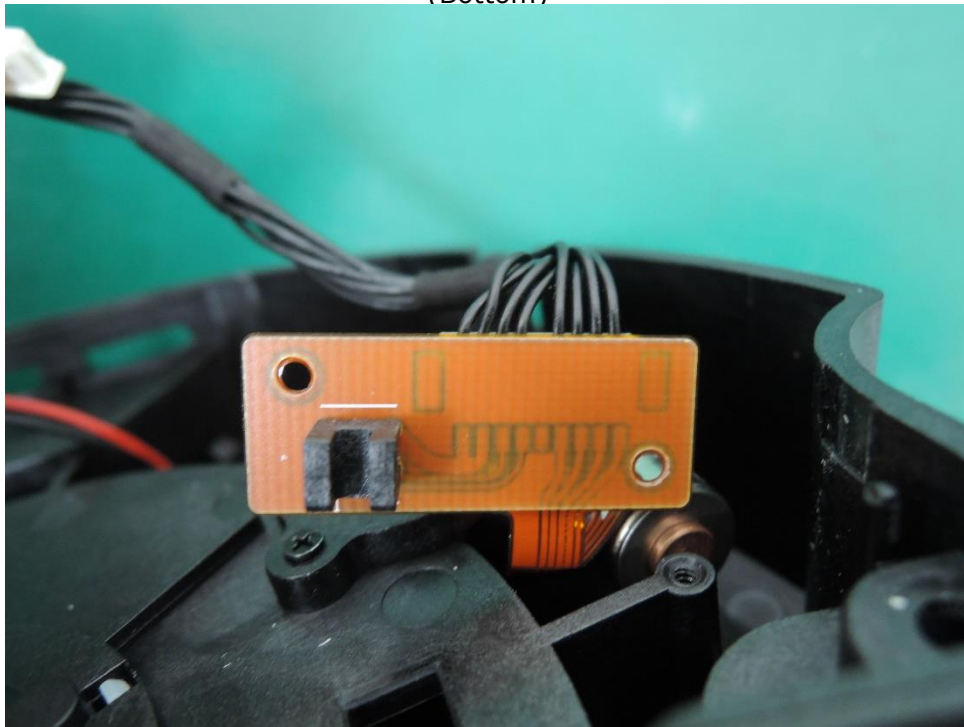
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EUT Internal View – PAN FPCB board

(Top)



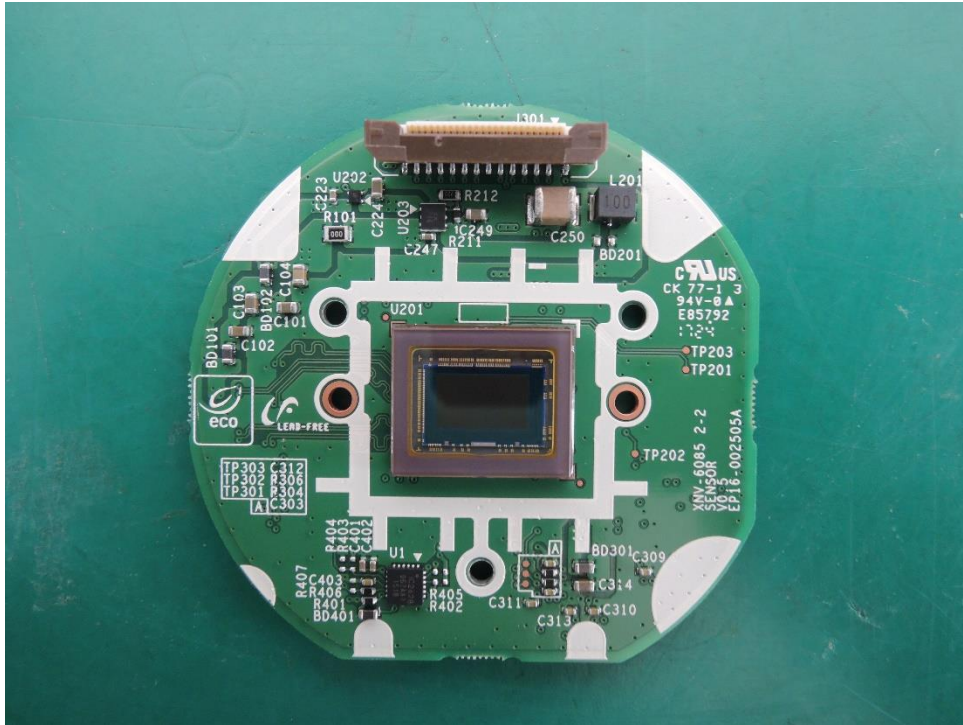
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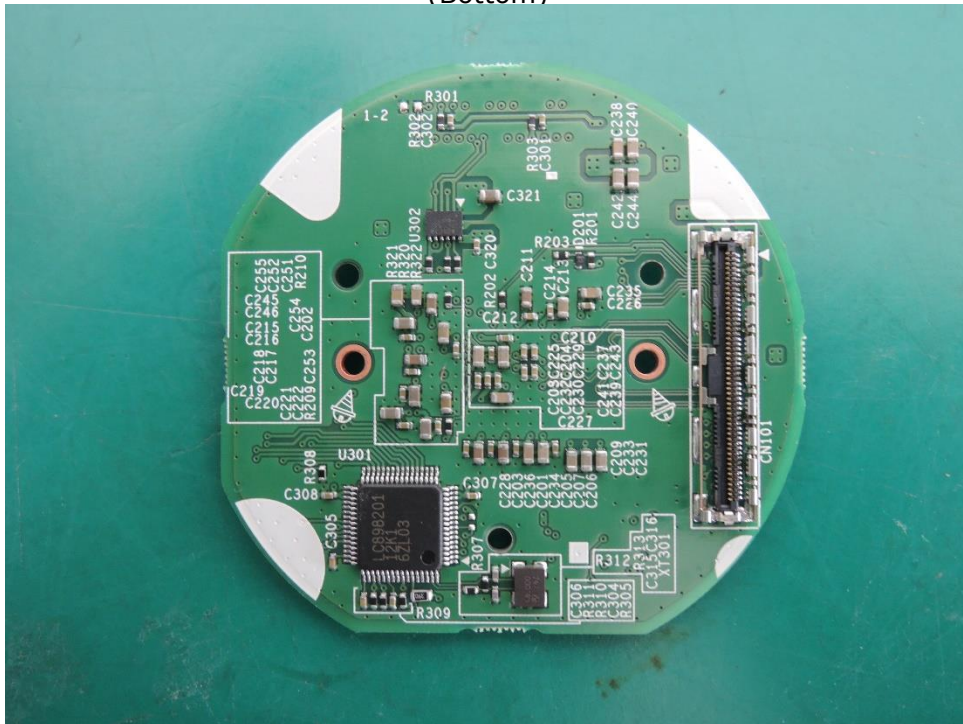
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EUT Internal View – Sensor board

[\(Top\)](#)



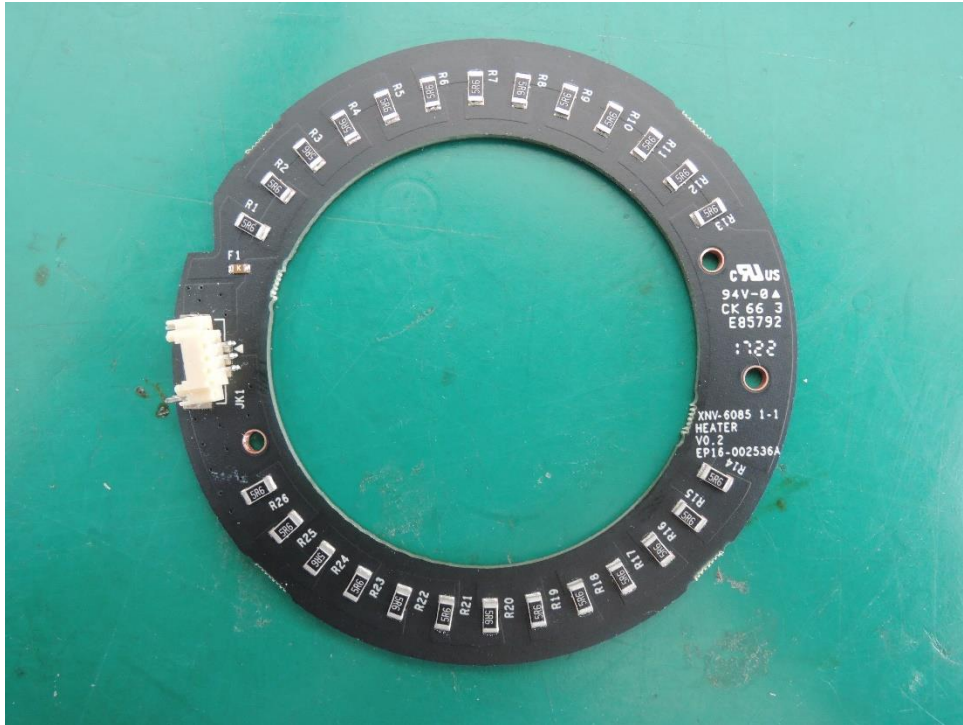
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EUT Internal View – Heater board

(Top)



(Bottom)



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EUT Internal View – Lens

(Top)



(Bottom)

