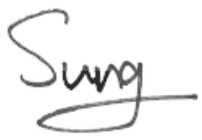
EMC TEST REPORT For VCCI

Test Report No.	:	KES-E1-17T0009-R1
Date of Issue	:	Feb. 24, 2023
Product name	:	NETWORK CAMERA
Model/Type No.	:	XNV-8080R
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	:	Nov, 23, 2016
Test date	:	Dec, 23, 2016
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by



Sung Keun, Park
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

Tested by Young Suk, Song
(Retired person)
Proxy signature : Sung Keun, Park

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

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jan. 05, 2017	KES-E1-17T0009	Issued
Feb. 24, 2023	KES-E1-17T0009-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	1/1.8" 6M CMOS
Total Pixels	3096(H) x 2094(V)
Effective Pixels	2616(H) x 1976(V)
Scanning System	Progressive Scan
Min. Illumination	Color : 0.1 lux(F1.3, 1/30sec) B/W : 0 Lux (F1.3, IR LED On)
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	3.9~9.4mm(2.4x) motorized varifocal
Max. Aperture Ratio	F1.3
Angular Field of View	TBD
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	0° ~ 354° / 0° ~ 85°(TBD) / 0° ~ 355°
Operational	
Viewable Length	(TBD)50m(164.04ft)
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	120dB
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(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 / Medle / High / Manual
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°
Intelligent Video & Audio A	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
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	2560 x 1920, 2560 x 1440, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960 1280 x 720, 1024 x 768, 800 x 600, 720 x 576, 720 x 480, 640 x 480, 320 x 240
Max. Framerate	H.265/H.264 : Max. 30fps 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, with WiseStream 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-dierctional (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	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, Denish, 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
Mechanical	
Color / Material	Ivory / Aluminum
Dimension (WxHxD)	TBD
Weight	TBD
스펙시트 미표기 요구사양	
Cable Connection	Plug-in
SD카드	듀얼슬롯
Bottom cover	Conduit Hole 1개소

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 ☐ 110 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-8080R	-	HANWHA VISION VIETNAM COMPANY LIMITED	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
POE Adapter	PD-3001GC/AC	RD935608201696420 0	Power Dsine	-
Notebook	X56K	HN11N5151FJ0045W	HANSUNG	-
Notebook Adapter	A12-120P1A	F180271552011758	CHICONY POWER TECHNOLOGY CO.,LTD.	-
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, 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 ㎜	1.7	U
		Speaker	3.5 ㎜	1.6	U
		Alarm	3 pin	3.0	U
Notebook	Audio in	Phone	Audio out	1.7	U

- AC 24 V, 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 ㎜	1.7	U
		Speaker	3.5 ㎜	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 ㎜	1.7	U
		Speaker	3.5 ㎜	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)

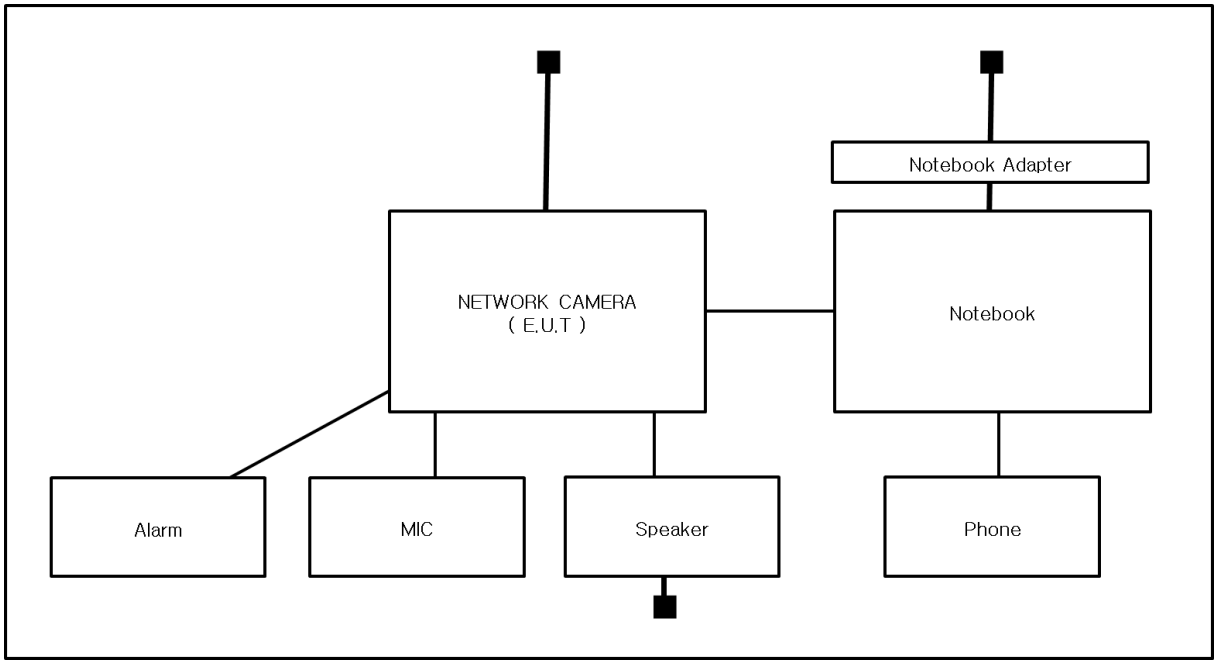
operating
E.U.T Monitoring , Ping test, 1 ㎑

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

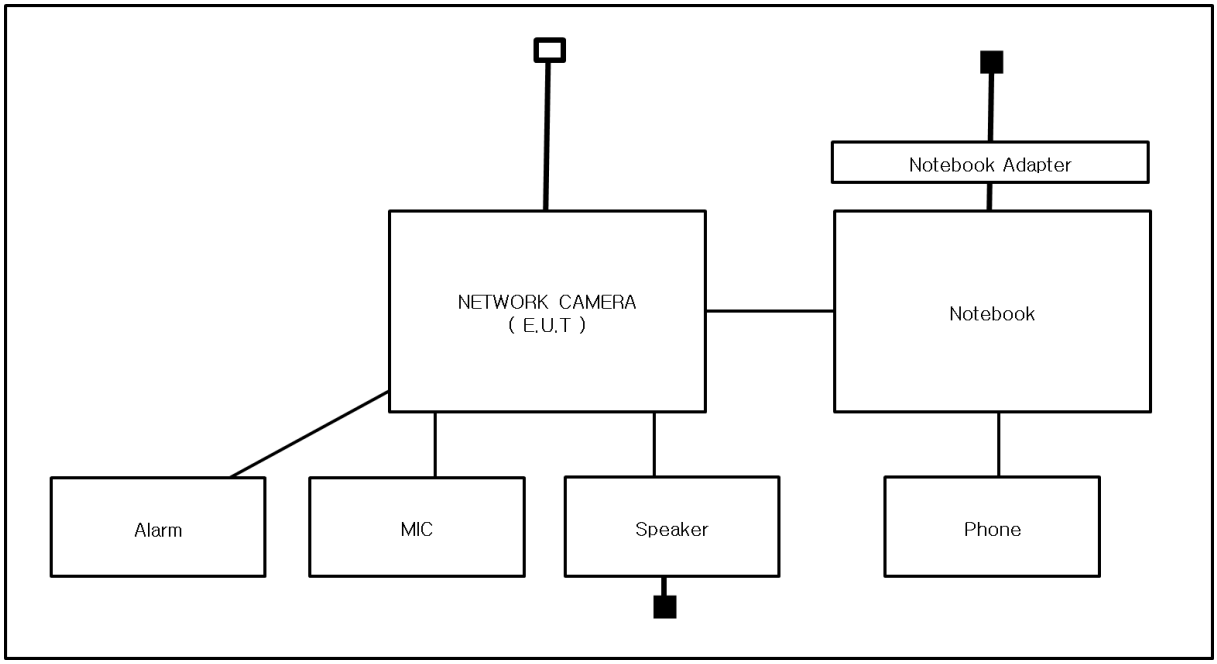
1.8 Configuration

■ AC 24 V Main
□ DC 12 V Main

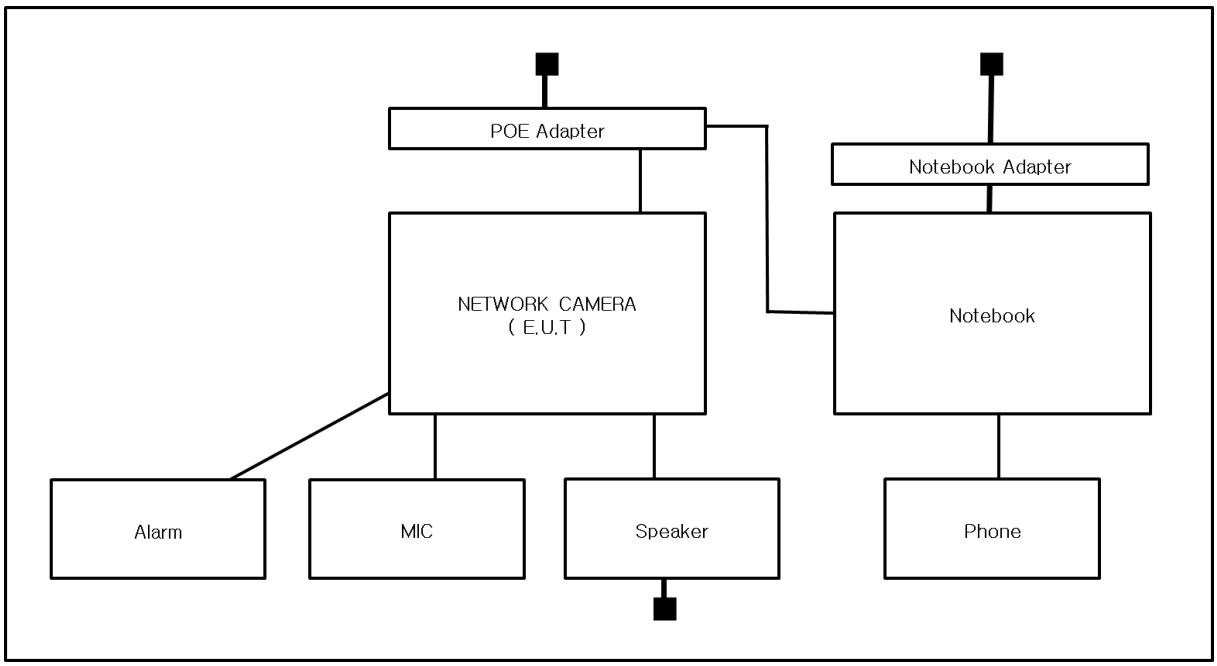
- AC 24 V Mode



- DC 12 V Mode



- 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 61547 :2009

☐ EN 55022:2010 ☐ Class A ☐ Class B

☐ EN 55024:2010 +A1:2015

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013

☒ **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

2.1 Conducted Emissions Mains Power Ports

Test Date
Dec, 23, 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: 17,9 ℃
Relative Humidity: 49,7 %

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

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
Dec, 23, 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
☒	8-Wire ISN CAT3	CAT3 8158	Schwarzbeck Mess	8158-0019	04, 01, 2017
☒	8-Wire ISN CAT5	CAT5 8158	Schwarzbeck Mess	8158-0030	04, 01, 2017
☐	8-Wire ISN CAT6	NTFM 8158	Schwarzbeck Mess	8158-0029	08, 11, 2017
☒	Electro wave Shieldroom	-	SEMITEC	-	-
☒	EMI Test S/W	EMC32	R & S	9.12.00	-

Test Conditions
Temperature: 17,9 ℃
Relative Humidity: 49,7 %

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

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 ㎓)

Test Date
Dec, 23, 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, 2018
☒	OATS	-	KES	-	-
☒	Antenna Mast	-	DAEIL EMC	-	-
☒	Turn Table	-	DAEIL EMC	-	-
☒	EMI Test S/W	N/A	N/A	N/A	N/A

Test Conditions
Temperature: -0,4 ℃
Relative Humidity: 66,0 %

Frequency Range of Measurement
30 ㎒ to 1 ㎓

Instrument Settings
IF Band Width: 120 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.4 Radiated Electric Field Emissions(Above 1 ㎓)

Test Date
Dec, 23, 2016

Test Location
Semi Anechoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESU26	R&S	100552	04, 24, 2017
☒	Broadband Coaxial Preamplifier	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10, 14, 2017
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 07, 2017
☒	Semi Anechoic Chamber #2	-	SEMITEC	-	-
☒	Antenna Mast	-	AUDIX	-	-
☒	Turn Table	-	AUDIX	-	-
☒	EMI Test S/W	e3	AUDIX	8.083b	-

Test Conditions
Temperature: 17,9 ℃
Relative Humidity: 49,7 %

Frequency Range of Measurement
1 ㎓ to 6 ㎓

Instrument Settings
IF Band Width: 1 ㎒

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

APPENDIX A – TEST DATA

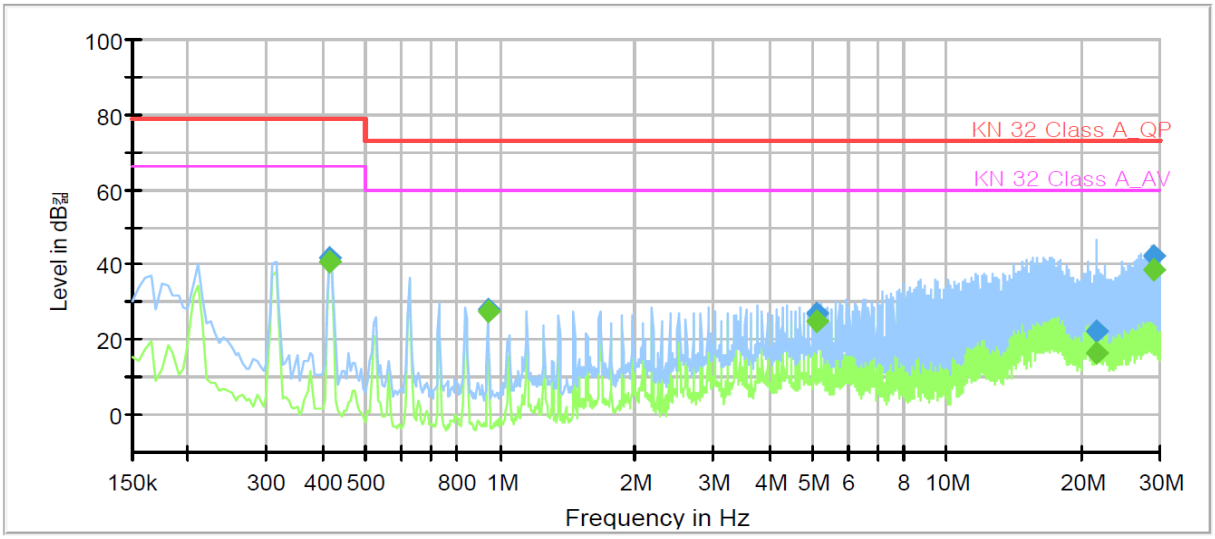
Conducted Emissions at Mains Power Ports

- AC 24 V Mode

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	XNV-8080RN
Mode	AC 24V
Operator Name:	KES



Final_Result

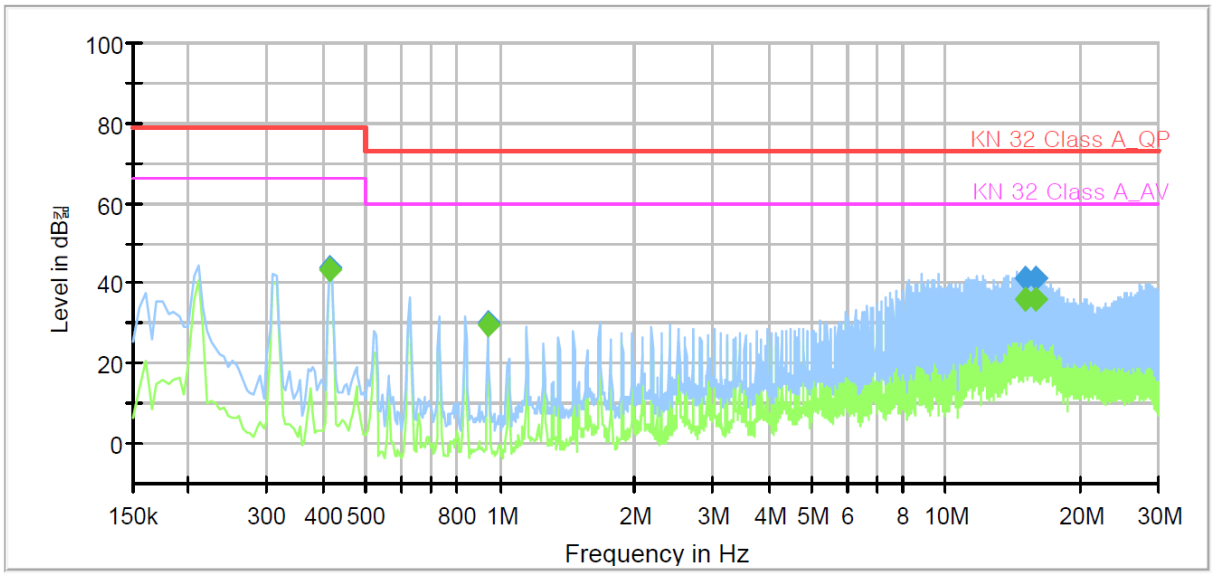
Frequency (MHz)	QuasiPeak (dBµ)	CAverage (dBµ)	Limit (dBµ)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.415000	---	40.94	66.00	25.06	1000.0	9.000	L1	9.8
0.415000	41.61	---	79.00	37.39	1000.0	9.000	L1	9.8
0.940000	---	27.48	60.00	32.52	1000.0	9.000	L1	10.0
0.940000	28.19	---	73.00	44.81	1000.0	9.000	L1	10.0
5.110000	---	24.83	60.00	35.17	1000.0	9.000	L1	10.0
5.110000	27.13	---	73.00	45.87	1000.0	9.000	L1	10.0
21.715000	---	16.35	60.00	43.65	1000.0	9.000	L1	10.3
21.715000	22.31	---	73.00	50.69	1000.0	9.000	L1	10.3
28.885000	---	38.50	60.00	21.50	1000.0	9.000	L1	10.4
28.885000	42.52	---	73.00	30.48	1000.0	9.000	L1	10.4

♦ 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)

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	XNV-8080RN
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)
0.415000	---	43.37	66.00	22.63	1000.0	9.000	N	9.8
0.415000	43.97	---	79.00	35.03	1000.0	9.000	N	9.8
0.940000	---	29.76	60.00	30.24	1000.0	9.000	N	10.0
0.940000	30.40	---	73.00	42.60	1000.0	9.000	N	10.0
15.125000	---	36.03	60.00	23.97	1000.0	9.000	N	10.1
15.125000	41.22	---	73.00	31.78	1000.0	9.000	N	10.1
15.855000	---	36.04	60.00	23.96	1000.0	9.000	N	10.2
15.855000	41.41	---	73.00	31.59	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)

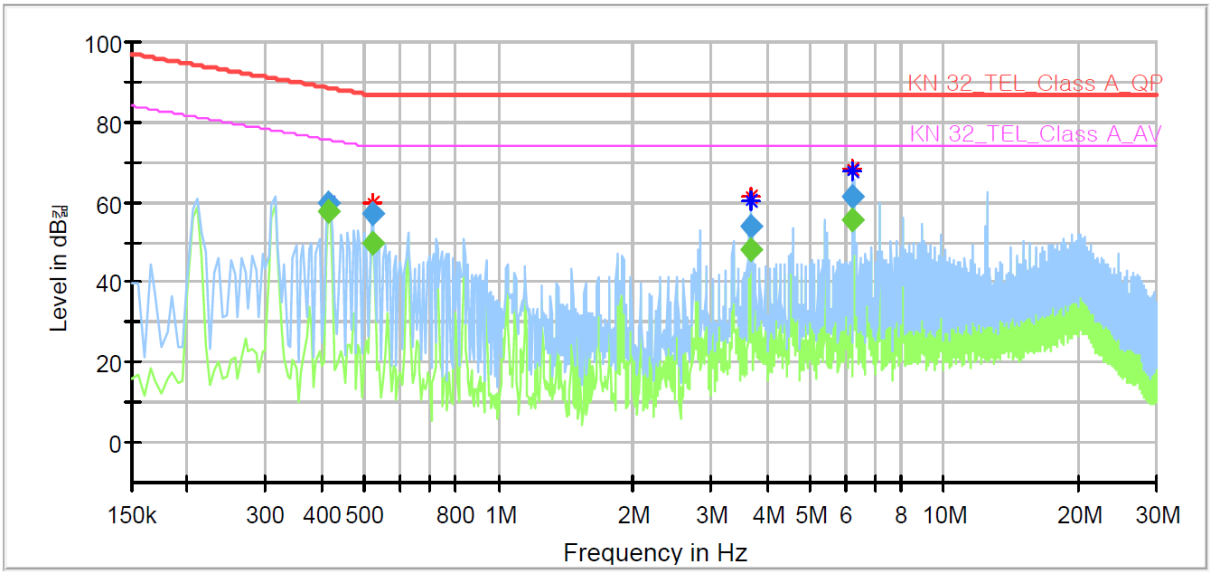
Conducted Emissions at Telecommunication Ports

- AC 24 V Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNV-8080RN
Mode	AC 24V_10M
Operator Name:	KES



Final_Result

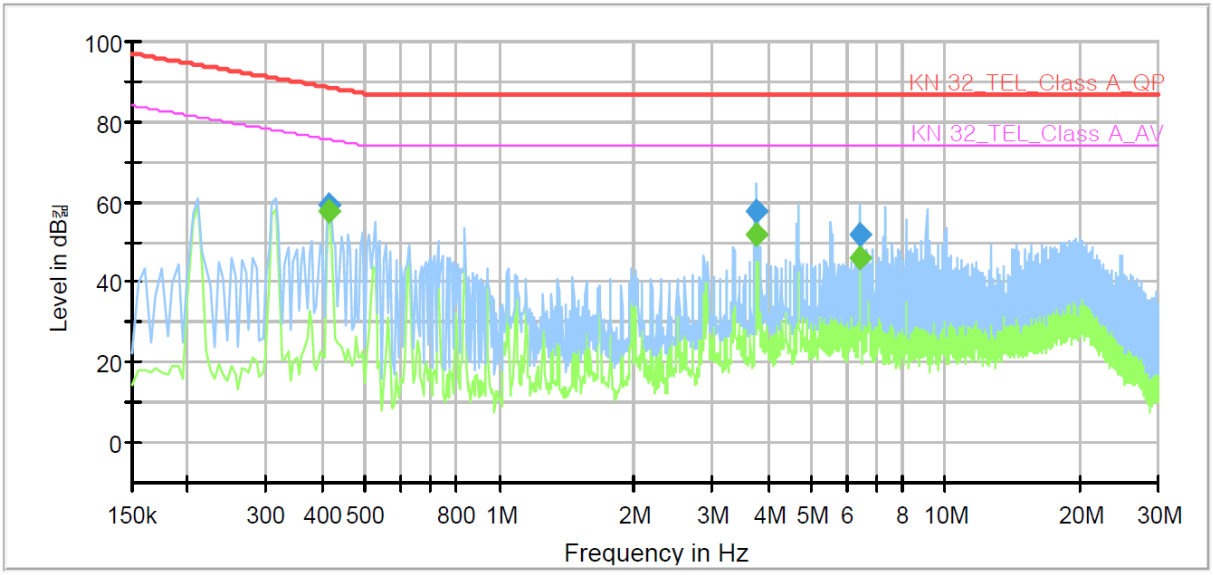
Frequency (MHz)	QuasiPeak (dBµ)	CAverage (dBµ)	Limit (dBµ)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.415000	---	57.88	75.55	17.67	1000.0	9.000	Single Line	10.1
0.415000	59.82	---	88.55	28.73	1000.0	9.000	Single Line	10.1
0.520000	---	49.89	74.00	24.11	1000.0	9.000	Single Line	10.1
0.520000	57.11	---	87.00	29.89	1000.0	9.000	Single Line	10.1
3.695000	---	47.96	74.00	26.04	1000.0	9.000	Single Line	10.2
3.695000	54.10	---	87.00	32.90	1000.0	9.000	Single Line	10.2
6.250000	---	55.46	74.00	18.54	1000.0	9.000	Single Line	10.1
6.250000	61.32	---	87.00	25.68	1000.0	9.000	Single Line	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 (ISN FACTOR+ Cable Loss)

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNV-8080RN
Mode	AC 24V_100M
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµ)	CAverage (dBµ)	Limit (dBµ)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.415000	---	57.43	75.55	18.12	1000.0	9.000	Single Line	9.6
0.415000	59.29	---	88.55	29.26	1000.0	9.000	Single Line	9.6
3.750000	---	52.00	74.00	22.00	1000.0	9.000	Single Line	9.7
3.750000	57.65	---	87.00	29.35	1000.0	9.000	Single Line	9.7
6.415000	---	45.84	74.00	28.16	1000.0	9.000	Single Line	9.5
6.415000	51.98	---	87.00	35.02	1000.0	9.000	Single Line	9.5

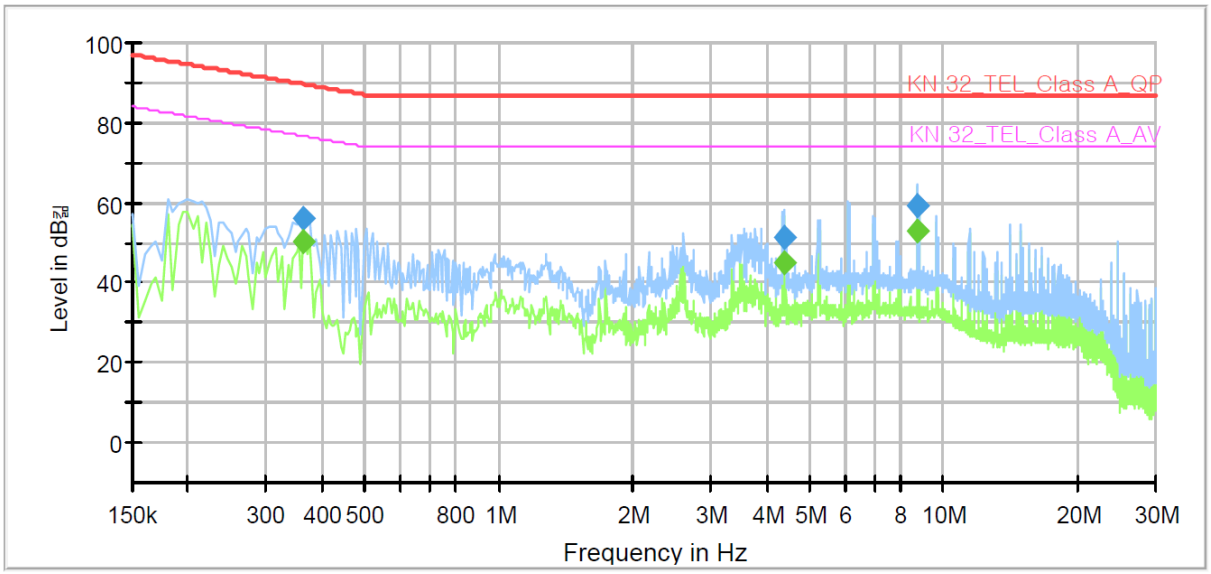
♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (ISN FACTOR+ Cable Loss)

- DC 12 V Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNV-8080RN
Mode	DC 12V_10M
Operator Name:	KES



Final_Result

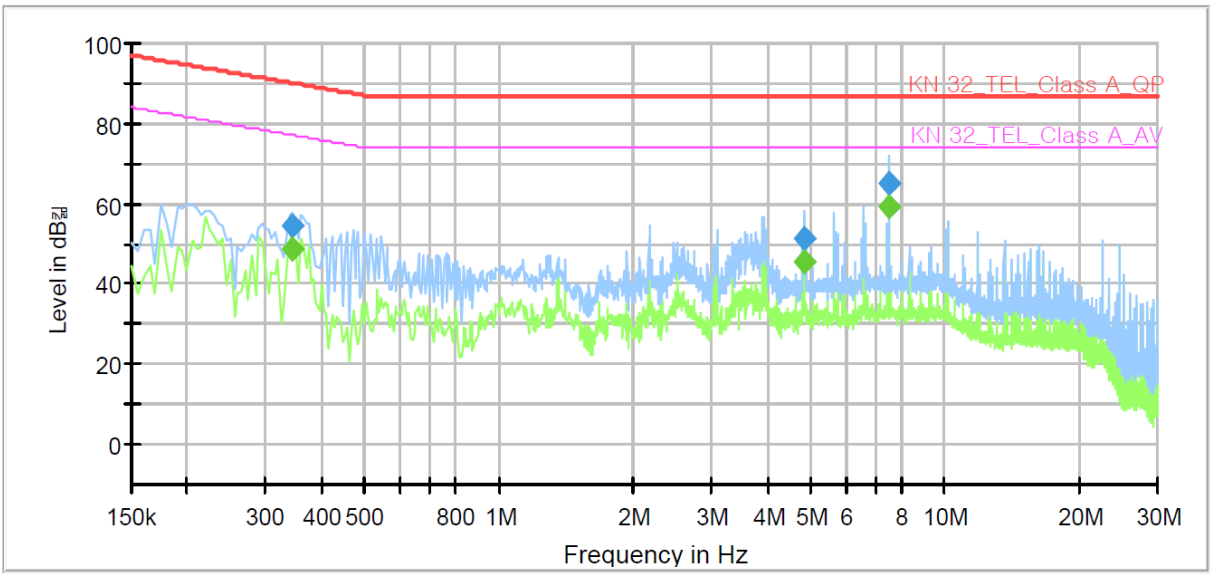
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.365000	---	50.24	76.61	26.37	1000.0	9.000	Single Line	10.1
0.365000	56.19	---	89.61	33.42	1000.0	9.000	Single Line	10.1
4.400000	---	44.94	74.00	29.06	1000.0	9.000	Single Line	10.1
4.400000	51.27	---	87.00	35.73	1000.0	9.000	Single Line	10.1
8.750000	---	53.11	74.00	20.89	1000.0	9.000	Single Line	10.0
8.750000	59.26	---	87.00	27.74	1000.0	9.000	Single Line	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 (ISN FACTOR+ Cable Loss)
[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNV-8080RN
Mode	DC 12V_100M
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.345000	---	48.83	77.08	28.25	1000.0	9.000	Single Line	9.6
0.345000	54.46	---	90.08	35.62	1000.0	9.000	Single Line	9.6
4.835000	---	45.65	74.00	28.35	1000.0	9.000	Single Line	9.6
4.835000	51.26	---	87.00	35.74	1000.0	9.000	Single Line	9.6
7.500000	---	59.23	74.00	14.77	1000.0	9.000	Single Line	9.5
7.500000	65.19	---	87.00	21.81	1000.0	9.000	Single Line	9.5

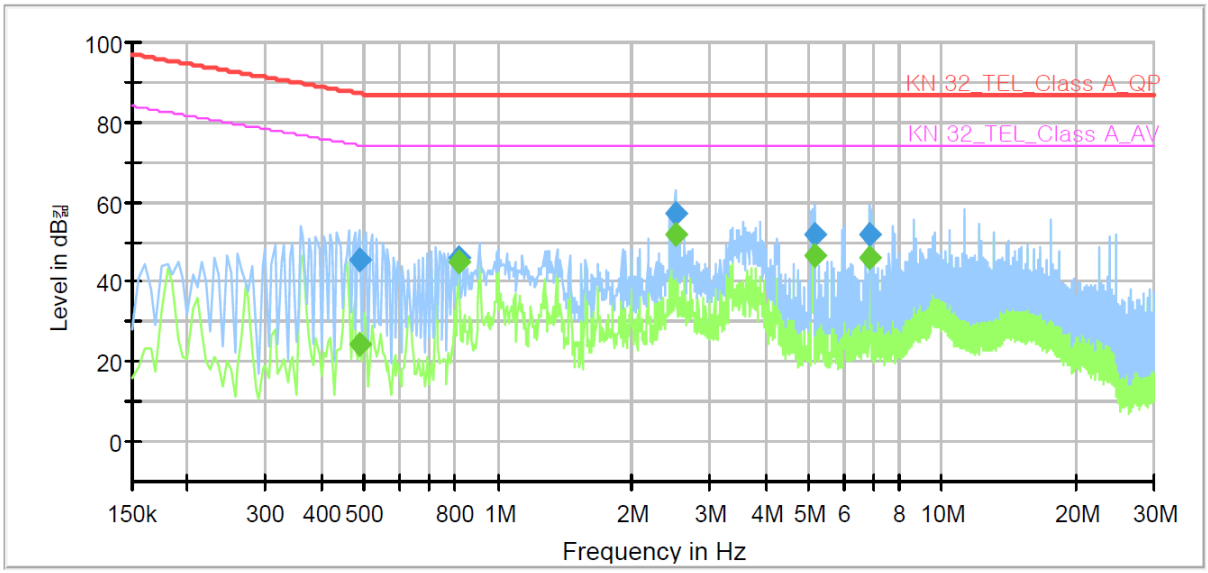
♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.

Corr. : Correction values (ISN FACTOR+ Cable Loss)
- PoE Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNV-8080RN
Mode	POE_10M
Operator Name:	KES



Final_Result

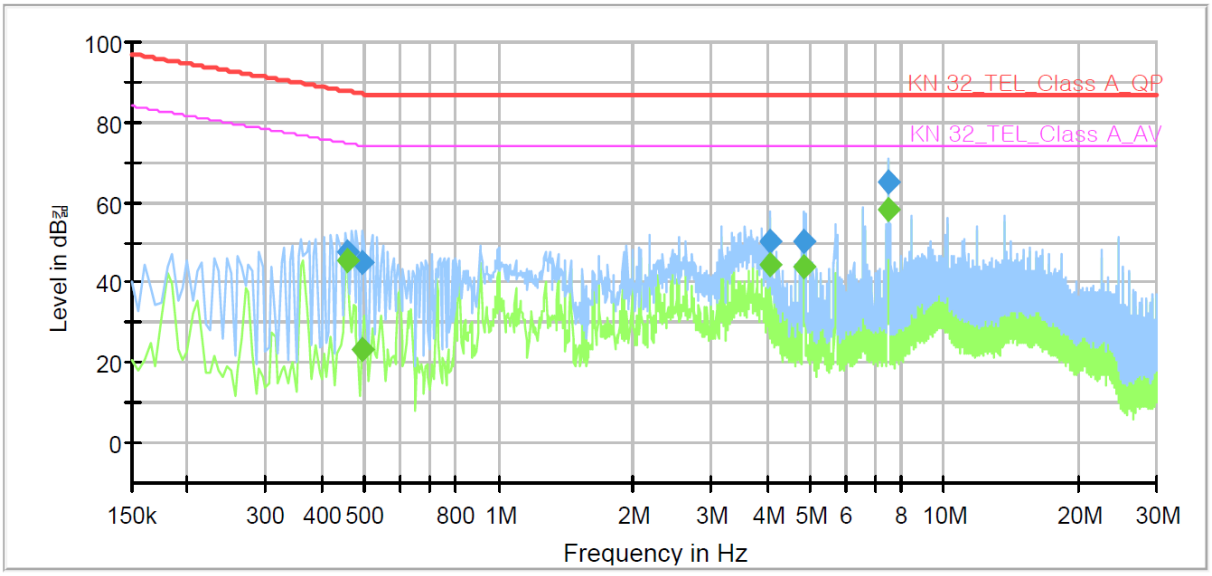
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.490000	---	24.62	74.17	49.55	1000.0	9.000	Single Line	10.1
0.490000	45.41	---	87.17	41.76	1000.0	9.000	Single Line	10.1
0.815000	---	45.19	74.00	28.81	1000.0	9.000	Single Line	10.2
0.815000	45.83	---	87.00	41.17	1000.0	9.000	Single Line	10.2
2.500000	---	51.70	74.00	22.30	1000.0	9.000	Single Line	10.2
2.500000	57.25	---	87.00	29.75	1000.0	9.000	Single Line	10.2
5.165000	---	46.85	74.00	27.15	1000.0	9.000	Single Line	10.1
5.165000	51.65	---	87.00	35.35	1000.0	9.000	Single Line	10.1
6.900000	---	46.09	74.00	27.91	1000.0	9.000	Single Line	10.0
6.900000	51.79	---	87.00	35.21	1000.0	9.000	Single Line	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 (ISN FACTOR+ Cable Loss)
[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNV-8080RN
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)
0.455000	---	45.76	74.78	29.02	1000.0	9.000	Single Line	9.6
0.455000	47.60	---	87.78	40.18	1000.0	9.000	Single Line	9.6
0.495000	---	23.21	74.08	50.87	1000.0	9.000	Single Line	9.6
0.495000	45.05	---	87.08	42.03	1000.0	9.000	Single Line	9.6
4.075000	---	44.54	74.00	29.46	1000.0	9.000	Single Line	9.6
4.075000	50.46	---	87.00	36.54	1000.0	9.000	Single Line	9.6
4.835000	---	44.13	74.00	29.87	1000.0	9.000	Single Line	9.6
4.835000	50.13	---	87.00	36.87	1000.0	9.000	Single Line	9.6
7.500000	---	58.26	74.00	15.74	1000.0	9.000	Single Line	9.5
7.500000	65.06	---	87.00	21.94	1000.0	9.000	Single Line	9.5

♦ 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)

Radiated Electric Field Emissions(Below 1 ㎓)

- AC 24 V Mode

Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[㎒]	[dB㎶]		[m]	ANT. [dB/m]	Cable [dB]	[dB㎶/m]	[dB㎶/m]	[dB]
122.87	14.87	H	1.02	9.41	3.20	27.48	40.00	12.52
148.26	11.25	V	1.33	8.14	3.55	22.94	40.00	17.06
172.49	13.25	H	3.02	9.09	3.83	26.17	40.00	13.83
196.80	10.90	V	1.54	11.00	4.08	25.98	40.00	14.02
230.73	14.55	H	2.96	11.98	4.49	31.02	47.00	15.98
230.76	11.31	V	3.01	11.98	4.49	27.78	47.00	19.22
350.96	10.69	H	1.28	14.56	5.65	30.90	47.00	16.10
350.97	12.25	V	2.00	14.56	5.65	32.46	47.00	14.54

* H : Horizontal, V : Vertical

♦ Calculation
Corrected Amplitude [㏈uV] = Amplitude[㏈uV] + Correction Factor [㏈]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

- DC 12 V Mode

Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[㎒]	[dBμV]		[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	[dB]
122.90	14.44	H	1.63	9.40	3.20	27.04	40.00	12.96
172.43	12.33	H	3.01	9.09	3.83	25.25	40.00	14.75
172.53	10.23	V	2.22	9.09	3.83	23.15	40.00	16.85
243.35	12.93	V	1.58	12.26	4.64	29.83	47.00	17.17
270.49	12.08	H	2.31	12.81	4.90	29.79	47.00	17.21
297.67	11.21	V	1.26	13.33	5.13	29.67	47.00	17.33
324.77	10.39	V	3.01	13.95	5.39	29.73	47.00	17.27
351.04	11.90	H	1.99	14.56	5.65	32.11	47.00	14.89

* H : Horizontal, V : Vertical

♦ Calculation
Corrected Amplitude [㏈uV] = Amplitude[㏈uV] + Correction Factor [㏈]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

- PoE Mode

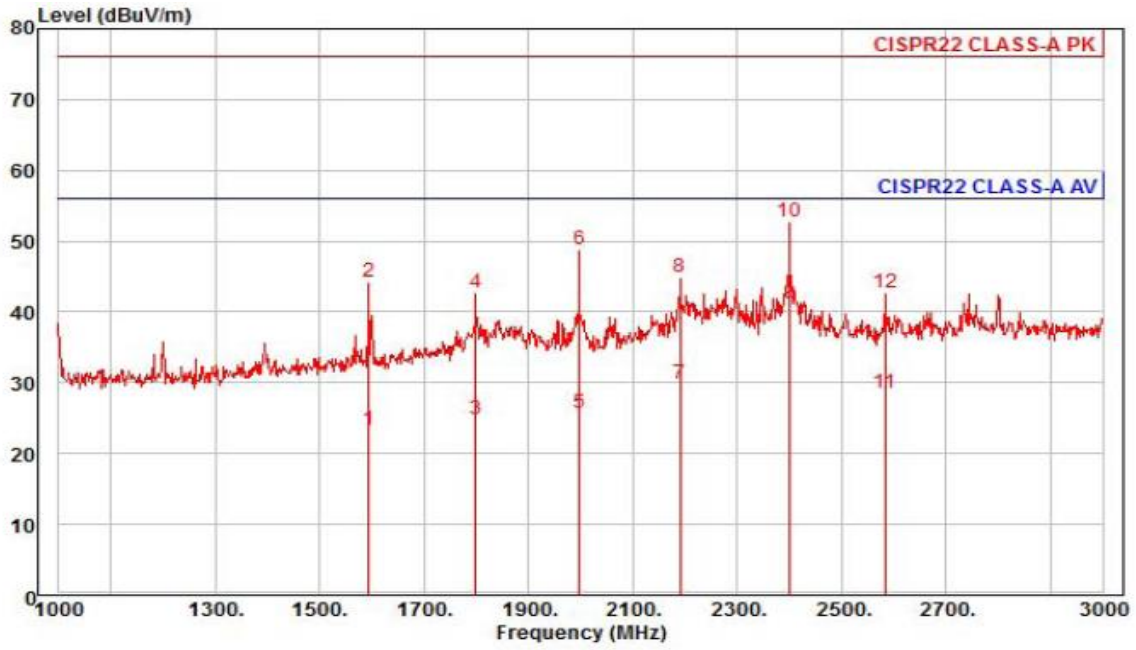
Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[㎒]	[dBμV]		[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	[dB]
122.88	15.06	V	1.09	9.41	3.20	27.67	40.00	12.33
172.53	11.36	V	2.97	9.09	3.83	24.28	40.00	15.72
172.53	10.97	H	2.01	9.09	3.83	23.89	40.00	16.11
221.93	10.31	V	1.90	11.79	4.38	26.48	40.00	13.52
270.47	10.33	H	3.00	12.81	4.90	28.04	47.00	18.96
320.02	11.96	H	2.35	13.84	5.35	31.15	47.00	15.85
350.94	10.06	V	3.01	14.56	5.65	30.27	47.00	16.73
400.47	12.36	H	1.28	15.71	6.18	34.25	47.00	12.75

* H : Horizontal, V : Vertical

♦ Calculation
Corrected Amplitude [㏈uV] = Amplitude[㏈uV] + Correction Factor [㏈]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

Radiated Electric Field Emissions(Above 1 ㎓)

- AC 24 V Mode



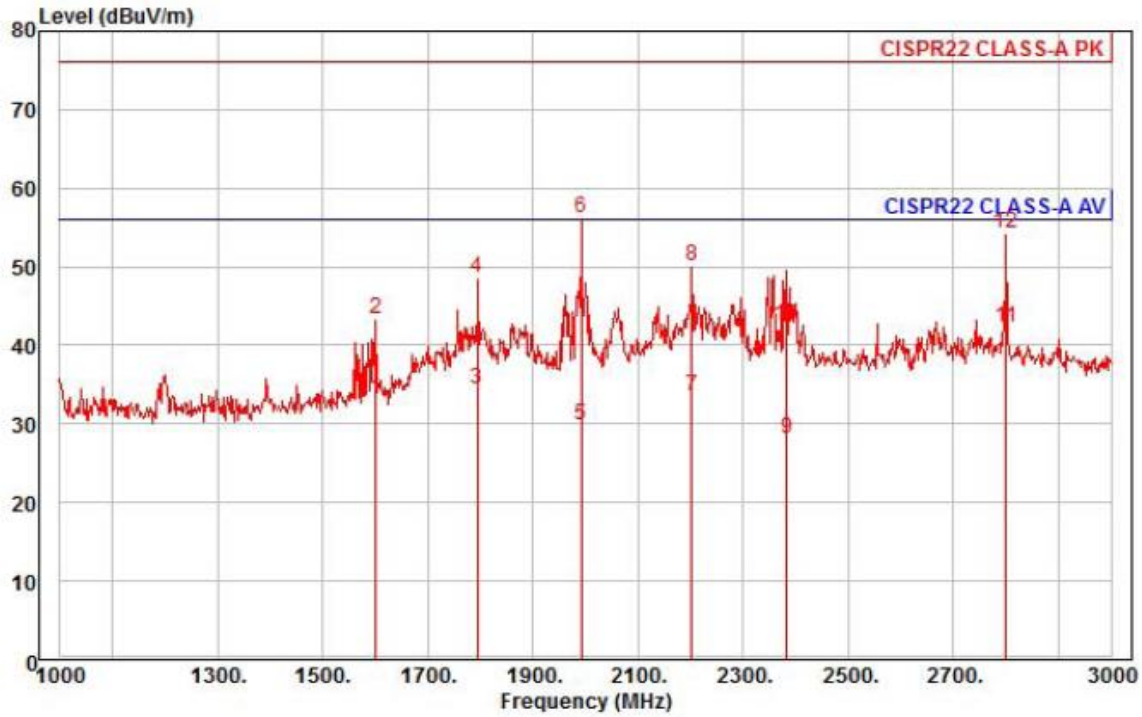
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : AC 24 V
Memo : 1 ~ 3 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1594.00	27.95	26.27	8.29	39.22	337	56.00	-32.71	horizontal	Average
2	1594.00	48.84	26.27	8.29	39.22	337	76.00	-31.82	horizontal	Peak
3	1800.00	28.21	27.09	8.83	39.32	242	56.00	-31.19	horizontal	Average
4	1800.00	46.23	27.09	8.83	39.32	242	76.00	-33.17	horizontal	Peak
5	1998.00	27.91	27.87	9.33	39.41	271	56.00	-30.30	horizontal	Average
6	1998.00	51.10	27.87	9.33	39.41	271	76.00	-27.11	horizontal	Peak
7	2190.00	31.08	28.35	9.78	39.41	29	56.00	-26.20	horizontal	Average
8	2190.00	46.19	28.35	9.78	39.41	29	76.00	-31.09	horizontal	Peak
9 pp	2400.00	41.51	28.86	10.32	39.42	49	56.00	-14.73	horizontal	Average
10 pk	2400.00	52.92	28.86	10.32	39.42	49	76.00	-23.32	horizontal	Peak
11	2584.00	28.16	29.31	10.71	39.63	308	56.00	-27.45	horizontal	Average
12	2584.00	42.35	29.31	10.71	39.63	308	76.00	-33.26	horizontal	Peak

♦ Calculation

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

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



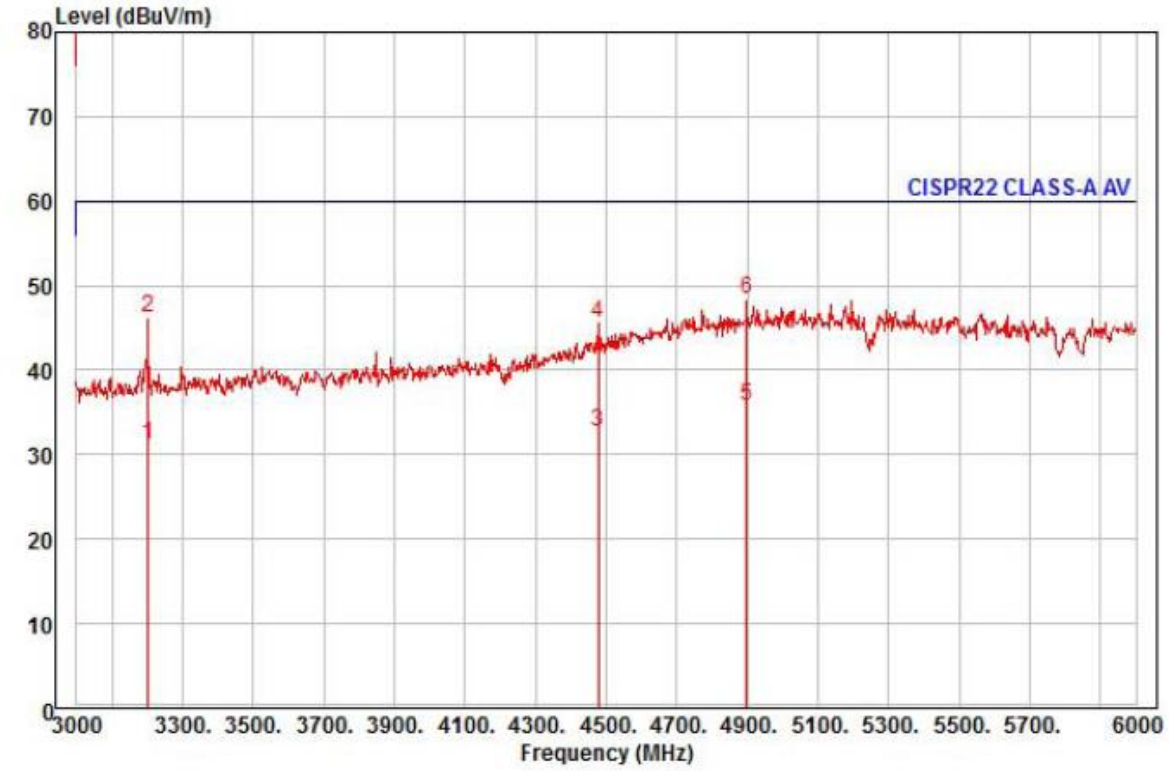
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : AC 24 V
Memo : 1 ~ 3 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1600.00	37.84	26.29	8.31	39.22	265	56.00	-22.78	vertical	Average
2	1600.00	48.09	26.29	8.31	39.22	265	76.00	-32.53	vertical	Peak
3	1794.00	37.95	27.06	8.81	39.31	122	56.00	-21.49	vertical	Average
4	1794.00	52.07	27.06	8.81	39.31	122	76.00	-27.37	vertical	Peak
5	1992.00	32.02	27.85	9.32	39.41	336	56.00	-26.22	vertical	Average
6 pk	1992.00	58.55	27.85	9.32	39.41	336	76.00	-19.69	vertical	Peak
7	2202.00	34.72	28.37	9.81	39.42	13	56.00	-22.52	vertical	Average
8	2202.00	51.40	28.37	9.81	39.42	13	76.00	-25.84	vertical	Peak
9	2384.00	28.40	28.82	10.28	39.42	102	56.00	-27.92	vertical	Average
10	2384.00	42.78	28.82	10.28	39.42	102	76.00	-33.54	vertical	Peak
11 pp	2800.00	41.17	29.84	11.23	39.88	311	56.00	-13.64	vertical	Average
12	2800.00	53.14	29.84	11.23	39.88	311	76.00	-21.67	vertical	Peak

♦ Calculation

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

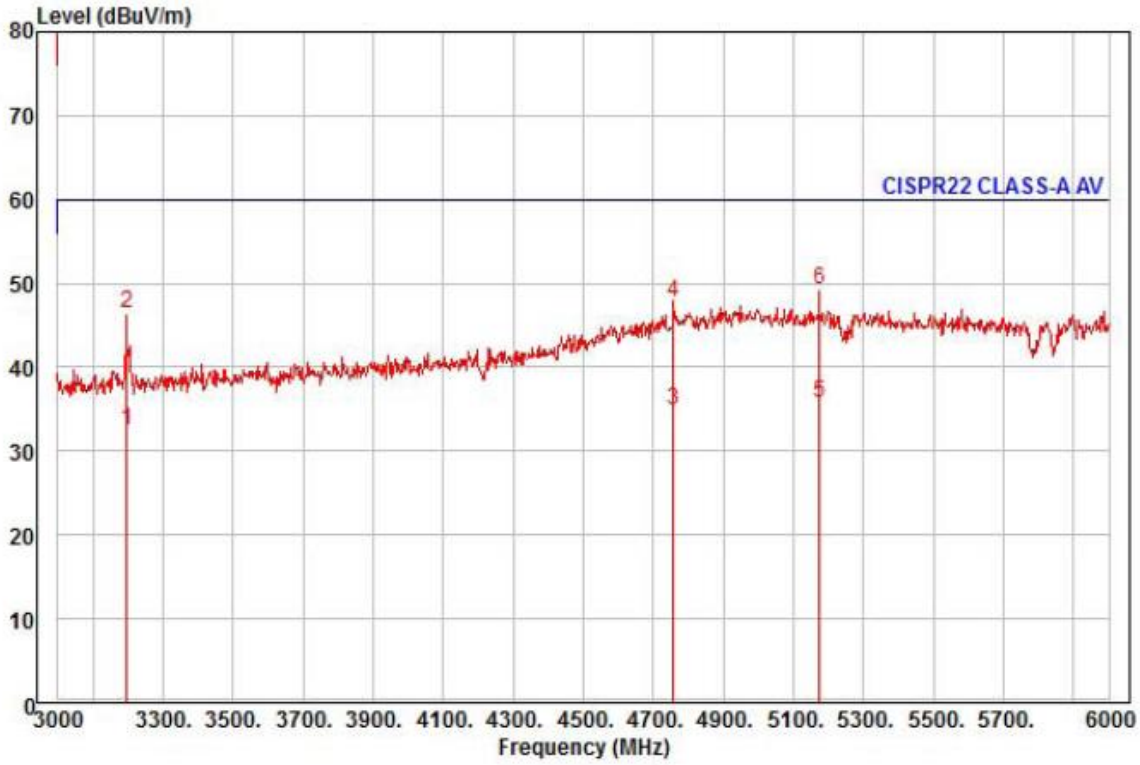
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : AC 24 V
Memo : 3 ~ 6 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3201.00	28.89	30.67	12.06	40.42	285	60.00	-28.80	horizontal	Average
2	3201.00	43.85	30.67	12.06	40.42	285	80.00	-33.84	horizontal	Peak
3	4479.00	24.20	34.75	14.42	40.77	190	60.00	-27.40	horizontal	Average
4	4479.00	37.21	34.75	14.42	40.77	190	80.00	-34.39	horizontal	Peak
5 pp	4899.00	23.68	37.14	15.21	40.37	33	60.00	-24.34	horizontal	Average
6 pk	4899.00	36.48	37.14	15.21	40.37	33	80.00	-31.54	horizontal	Peak

♦ Calculation
Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] − Preamp Factor [㏈]) − Limit Line[㏈uV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

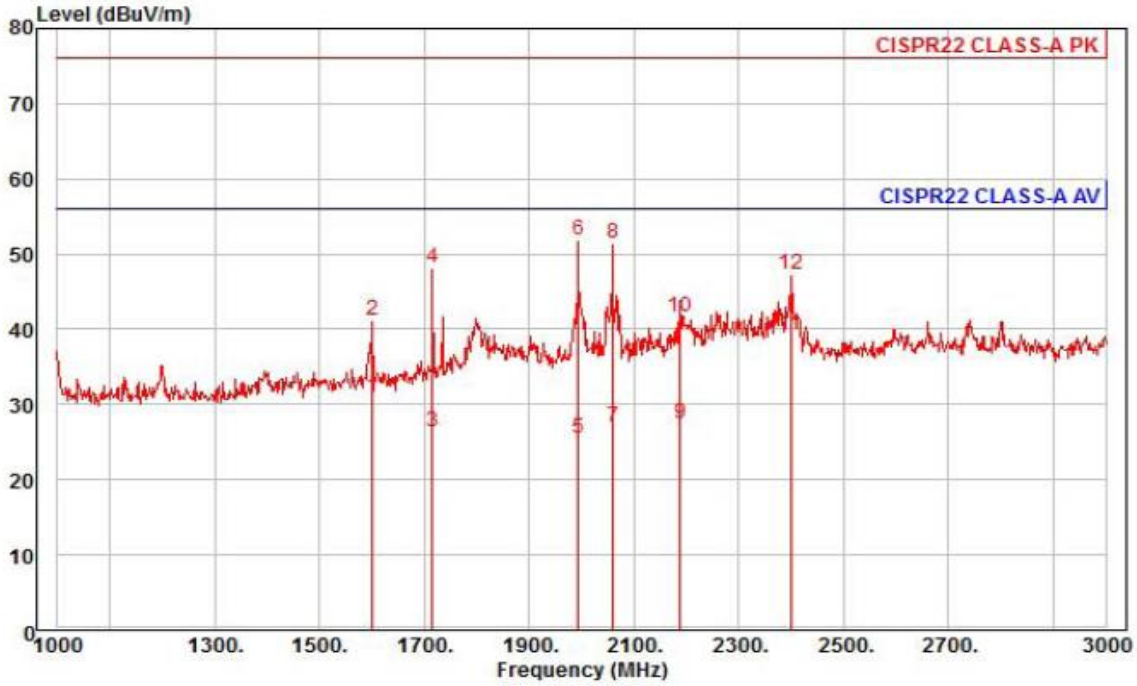


Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : AC 24 V
Memo : 3 ~ 6 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3198.00	30.10	30.66	12.05	40.41	9	60.00	-27.60	vertical	Average
2	3198.00	44.10	30.66	12.05	40.41	9	80.00	-33.60	vertical	Peak
3	4758.00	24.07	36.34	15.01	40.51	302	60.00	-25.09	vertical	Average
4	4758.00	36.82	36.34	15.01	40.51	302	80.00	-32.34	vertical	Peak
5 pp	5175.00	23.29	37.37	15.66	40.56	173	60.00	-24.24	vertical	Average
6 pk	5175.00	36.84	37.37	15.66	40.56	173	80.00	-30.69	vertical	Peak

♦ Calculation
Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] – Preamp Factor [㏈]) – Limit Line[㏈uV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

- DC 12 V Mode



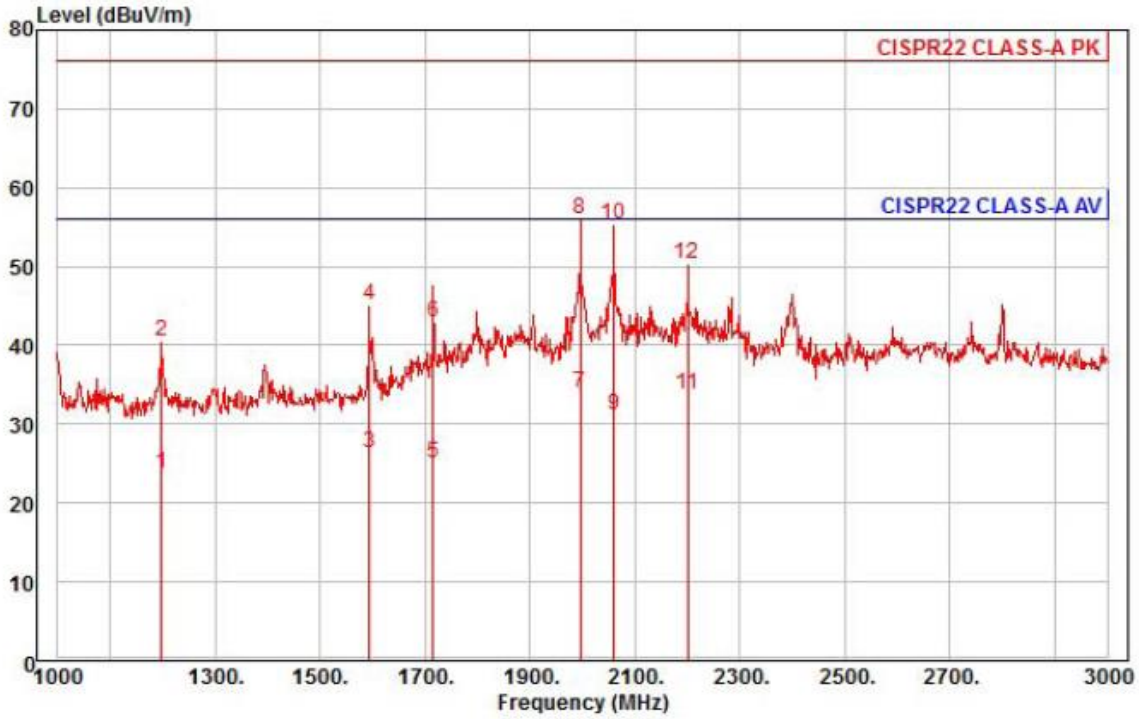
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : DC 12V
Memo : 1 ~ 3 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1600.00	35.58	26.29	8.31	39.22	15	56.00	-25.04	horizontal	Average
2	1600.00	45.91	26.29	8.31	39.22	15	76.00	-34.71	horizontal	Peak
3	1716.00	30.30	26.75	8.61	39.28	265	56.00	-29.62	horizontal	Average
4	1716.00	52.11	26.75	8.61	39.28	265	76.00	-27.81	horizontal	Peak
5	1994.00	27.76	27.86	9.32	39.41	176	56.00	-30.47	horizontal	Average
6 pk	1994.00	54.01	27.86	9.32	39.41	176	76.00	-24.22	horizontal	Peak
7	2060.00	28.89	28.03	9.48	39.41	329	56.00	-29.01	horizontal	Average
8	2060.00	53.42	28.03	9.48	39.41	329	76.00	-24.48	horizontal	Peak
9	2188.00	28.75	28.34	9.77	39.41	37	56.00	-28.55	horizontal	Average
10	2188.00	42.92	28.34	9.77	39.41	37	76.00	-34.38	horizontal	Peak
11 pp	2400.00	39.40	28.86	10.32	39.42	37	56.00	-16.84	horizontal	Average
12	2400.00	47.49	28.86	10.32	39.42	37	76.00	-28.75	horizontal	Peak

♦ 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



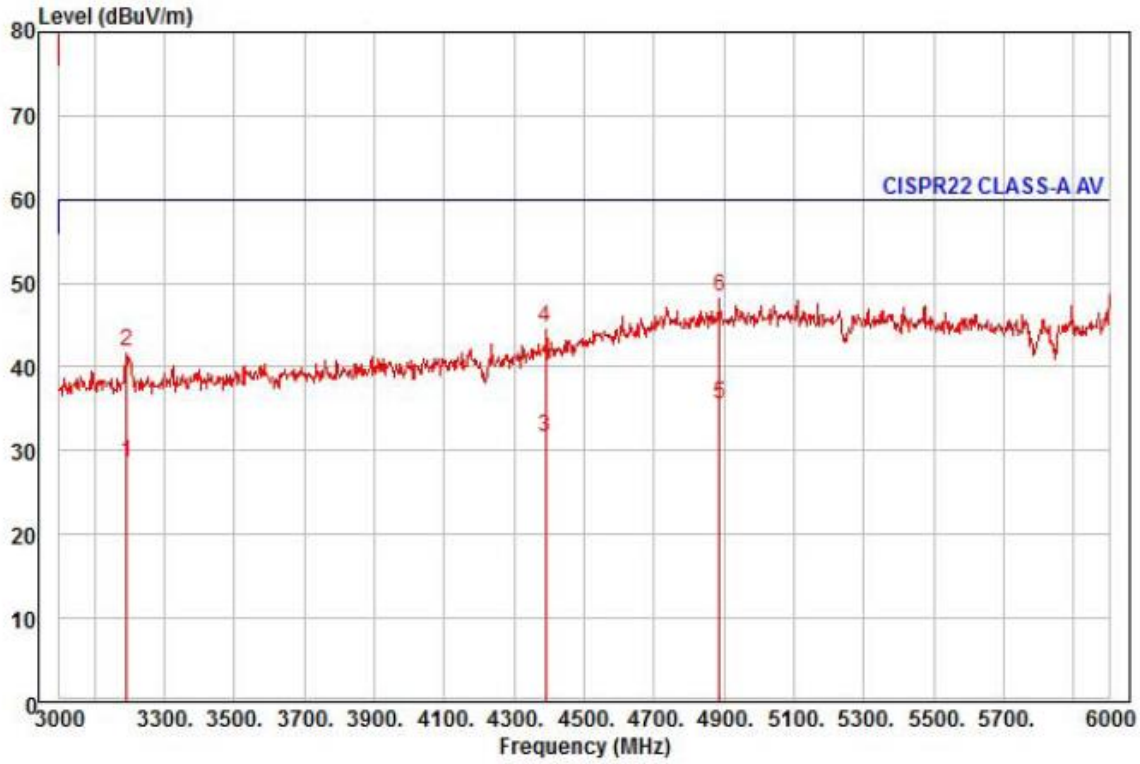
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : DC 12V
Memo : 1 ~ 3 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1198.00	31.51	24.70	7.13	39.61	130	56.00	-32.27	vertical	Average
2	1198.00	48.43	24.70	7.13	39.61	130	76.00	-35.35	vertical	Peak
3	1594.00	31.14	26.27	8.29	39.22	328	56.00	-29.52	vertical	Average
4	1594.00	49.69	26.27	8.29	39.22	328	76.00	-30.97	vertical	Peak
5	1716.00	28.99	26.75	8.61	39.28	234	56.00	-30.93	vertical	Average
6	1716.00	46.92	26.75	8.61	39.28	234	76.00	-33.00	vertical	Peak
7 av	1996.00	36.17	27.86	9.33	39.41	2	56.00	-22.05	vertical	Average
8 pp	1996.00	58.29	27.86	9.33	39.41	2	76.00	-19.93	vertical	Peak
9	2060.00	33.06	28.03	9.48	39.41	328	56.00	-24.84	vertical	Average
10	2060.00	57.30	28.03	9.48	39.41	328	76.00	-20.60	vertical	Peak
11	2200.00	35.14	28.37	9.80	39.42	165	56.00	-22.11	vertical	Average
12	2200.00	51.62	28.37	9.80	39.42	165	76.00	-25.63	vertical	Peak

♦ Calculation

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

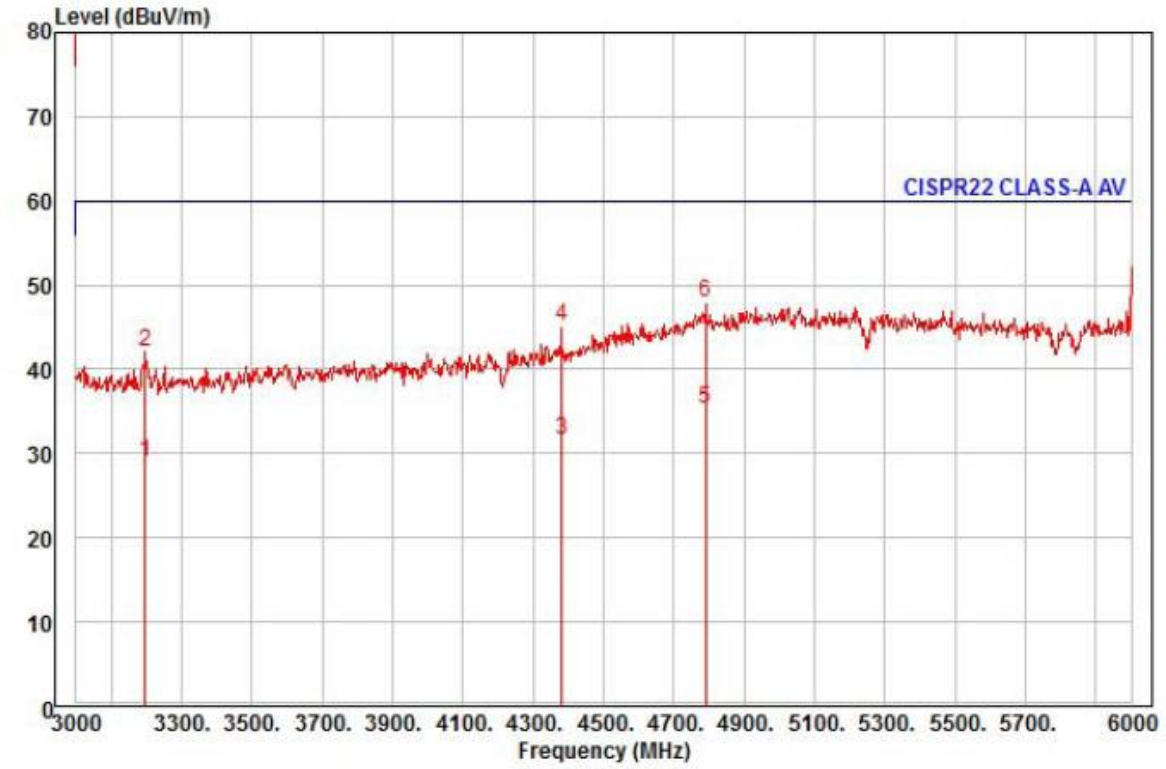
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : DC 12V
Memo : 3 ~ 6 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3192.00	26.26	30.65	12.04	40.41	149	60.00	-31.46	horizontal	Average
2	3192.00	39.64	30.65	12.04	40.41	149	80.00	-38.08	horizontal	Peak
3	4389.00	23.83	34.23	14.25	40.75	200	60.00	-28.44	horizontal	Average
4	4389.00	36.98	34.23	14.25	40.75	200	80.00	-35.29	horizontal	Peak
5 pp	4887.00	23.68	37.07	15.19	40.38	175	60.00	-24.44	horizontal	Average
6 pk	4887.00	36.62	37.07	15.19	40.38	175	80.00	-31.50	horizontal	Peak

♦ Calculation
Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] − Preamp Factor [㏈]) − Limit Line[㏈uV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor




```
Site      : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
         : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project   :
Model     : XNV-8080RN
Mode      : DC 12V
Memo      : 3 ~ 6 GHz
```

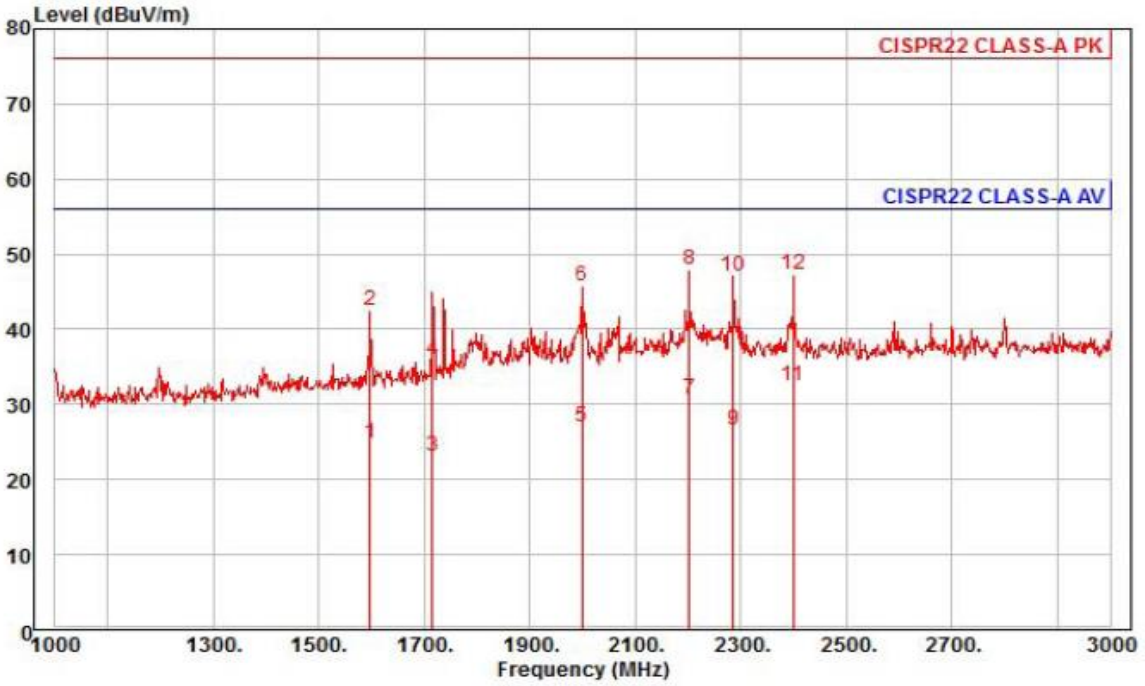
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3198.00	26.72	30.66	12.05	40.41	300	60.00	-30.98	vertical	Average
2	3198.00	39.74	30.66	12.05	40.41	300	80.00	-37.96	vertical	Peak
3	4380.00	23.95	34.18	14.24	40.75	81	60.00	-28.38	vertical	Average
4	4380.00	37.43	34.18	14.24	40.75	81	80.00	-34.90	vertical	Peak
5 pp	4791.00	24.16	36.53	15.08	40.48	334	60.00	-24.71	vertical	Average
6 pk	4791.00	36.90	36.53	15.08	40.48	334	80.00	-31.97	vertical	Peak

♦ 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



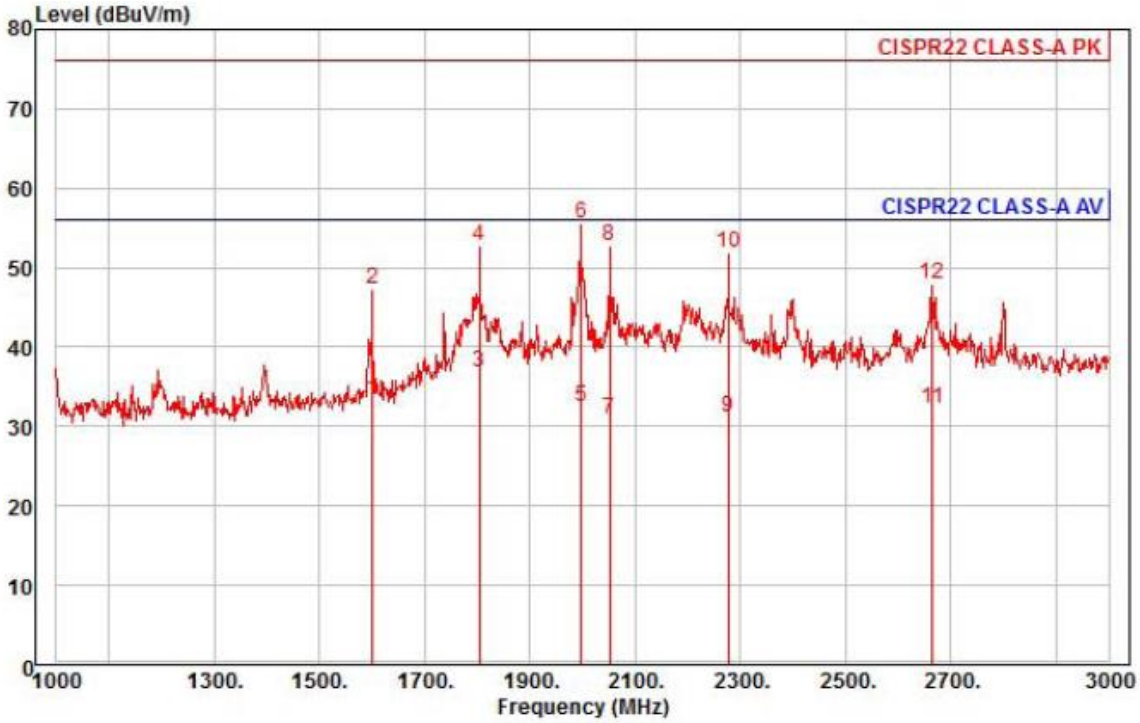

```
Site      : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
          : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project   :
Model     : XNV-8080RN
Mode      : POE
Memo      : 1 ~ 3 GHz
```

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1598.00	29.54	26.28	8.31	39.22	353	56.00	-31.09	horizontal	Average
2	1598.00	47.21	26.28	8.31	39.22	353	76.00	-33.42	horizontal	Peak
3	1716.00	27.13	26.75	8.61	39.28	228	56.00	-32.79	horizontal	Average
4	1716.00	39.90	26.75	8.61	39.28	228	76.00	-40.02	horizontal	Peak
5	2000.00	29.12	27.88	9.34	39.41	123	56.00	-29.07	horizontal	Average
6	2000.00	48.06	27.88	9.34	39.41	123	76.00	-30.13	horizontal	Peak
7	2202.00	32.05	28.37	9.81	39.42	40	56.00	-25.19	horizontal	Average
8 pk	2202.00	49.12	28.37	9.81	39.42	40	76.00	-28.12	horizontal	Peak
9	2286.00	27.49	28.58	10.03	39.42	347	56.00	-29.32	horizontal	Average
10	2286.00	47.99	28.58	10.03	39.42	347	76.00	-28.82	horizontal	Peak
11 pp	2400.00	32.78	28.86	10.32	39.42	299	56.00	-23.46	horizontal	Average
12	2400.00	47.49	28.86	10.32	39.42	299	76.00	-28.75	horizontal	Peak

♦ Calculation

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

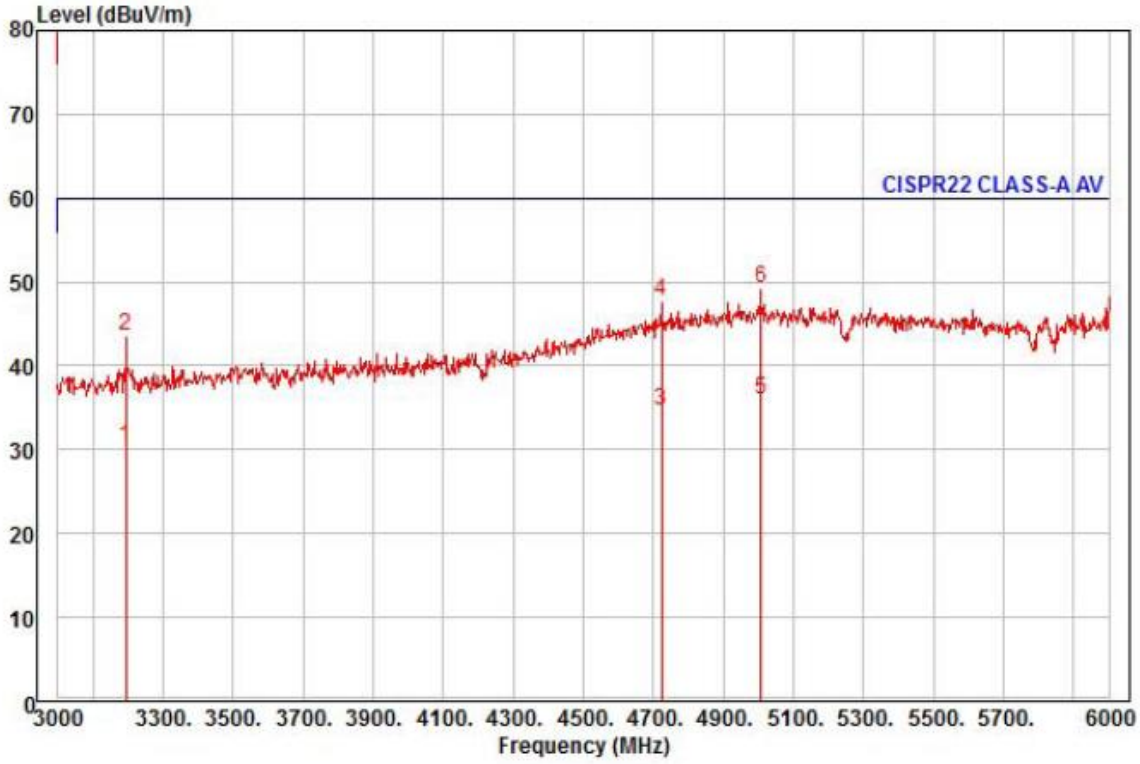
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : POE
Memo : 1 ~ 3 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1600.00	37.96	26.29	8.31	39.22	337	56.00	-22.66	vertical	Average
2	1600.00	51.91	26.29	8.31	39.22	337	76.00	-28.71	vertical	Peak
3 pp	1804.00	40.21	27.10	8.84	39.32	123	56.00	-19.17	vertical	Average
4	1804.00	56.09	27.10	8.84	39.32	123	76.00	-23.29	vertical	Peak
5	1998.00	34.66	27.87	9.33	39.41	9	56.00	-23.55	vertical	Average
6 pk	1998.00	57.88	27.87	9.33	39.41	9	76.00	-20.33	vertical	Peak
7	2052.00	33.00	28.01	9.46	39.41	146	56.00	-24.94	vertical	Average
8	2052.00	54.60	28.01	9.46	39.41	146	76.00	-23.34	vertical	Peak
9	2278.00	31.96	28.56	10.00	39.42	359	56.00	-24.90	vertical	Average
10	2278.00	52.71	28.56	10.00	39.42	359	76.00	-24.15	vertical	Peak
11	2666.00	31.69	29.51	10.90	39.73	320	56.00	-23.63	vertical	Average
12	2666.00	47.29	29.51	10.90	39.73	320	76.00	-28.03	vertical	Peak

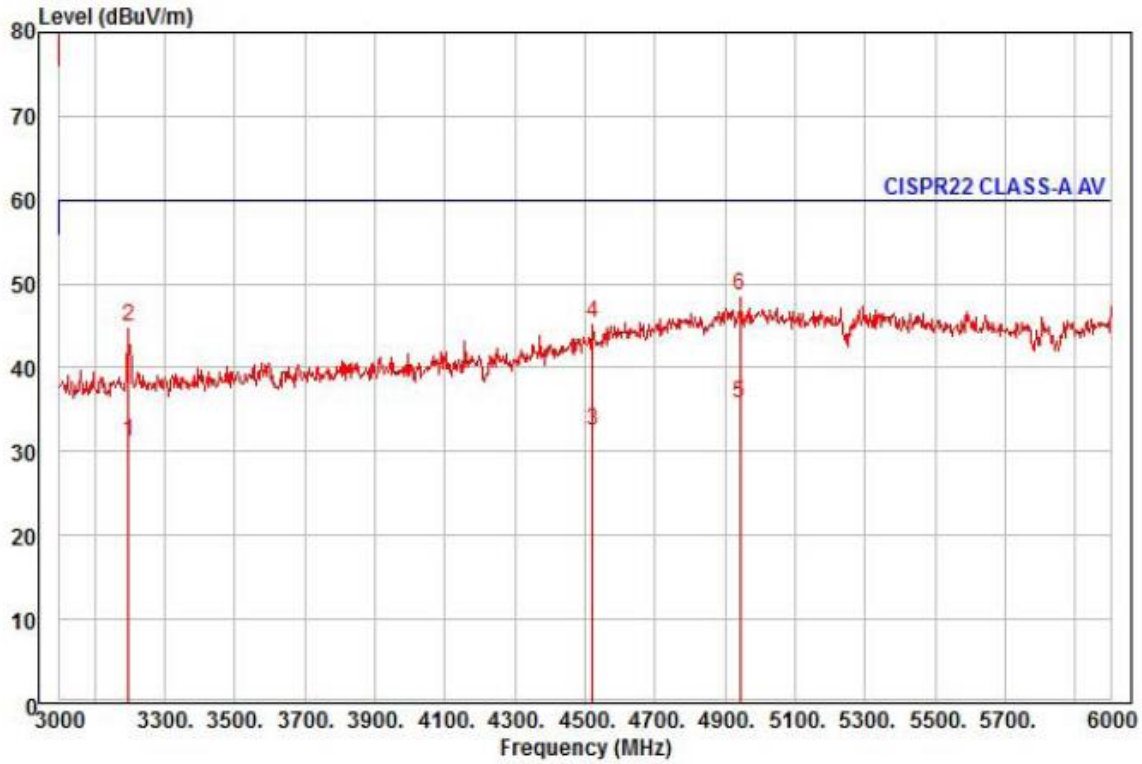
♦ Calculation
Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] – Preamp Factor [㏈]) – Limit Line[㏈uV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : POE
Memo : 3 ~ 6 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3195.00	28.07	30.66	12.05	40.41	0	60.00	-29.63	horizontal	Average
2	3195.00	41.30	30.66	12.05	40.41	0	80.00	-36.40	horizontal	Peak
3	4722.00	24.18	36.13	14.93	40.55	157	60.00	-25.31	horizontal	Average
4	4722.00	37.31	36.13	14.93	40.55	157	80.00	-32.18	horizontal	Peak
5 pp	5007.00	23.16	37.71	15.33	40.28	309	60.00	-24.08	horizontal	Average
6 pk	5007.00	36.52	37.71	15.33	40.28	309	80.00	-30.72	horizontal	Peak

♦ 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



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-8080RN
Mode : POE
Memo : 3 ~ 6 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3198.00	28.81	30.66	12.05	40.41	53	60.00	-28.89	vertical	Average
2	3198.00	42.61	30.66	12.05	40.41	53	80.00	-35.09	vertical	Peak
3	4521.00	23.82	34.98	14.50	40.75	292	60.00	-27.45	vertical	Average
4	4521.00	36.50	34.98	14.50	40.75	292	80.00	-34.77	vertical	Peak
5 pp	4941.00	23.36	37.38	15.25	40.33	139	60.00	-24.34	vertical	Average
6 pk	4941.00	36.41	37.38	15.25	40.33	139	80.00	-31.29	vertical	Peak

♦ Calculation
Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] – Preamp Factor [㏈]) – Limit Line[㏈uV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

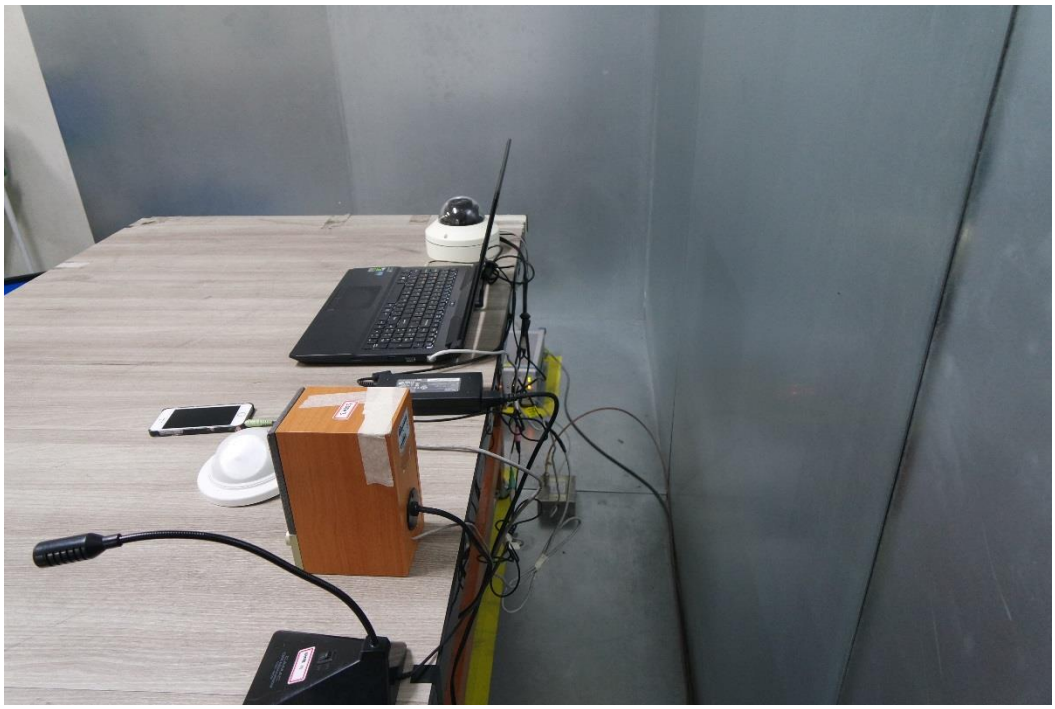
Test Setup Photos and Configuration

Conducted Voltage Emissions

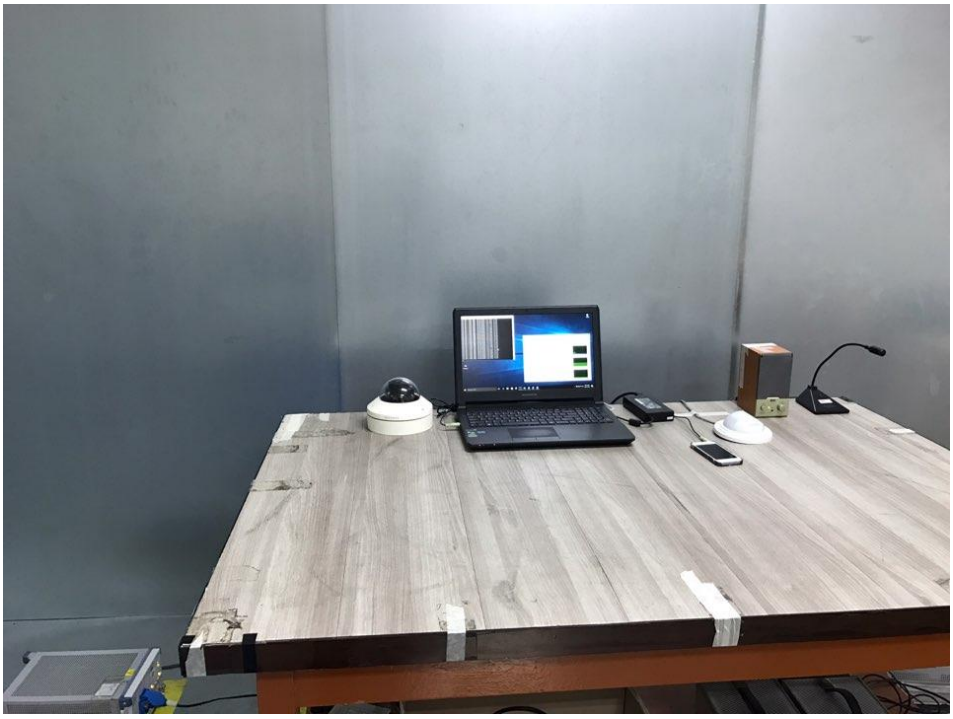
- AC 24 V Mode

Conducted Telecommunication Emissions

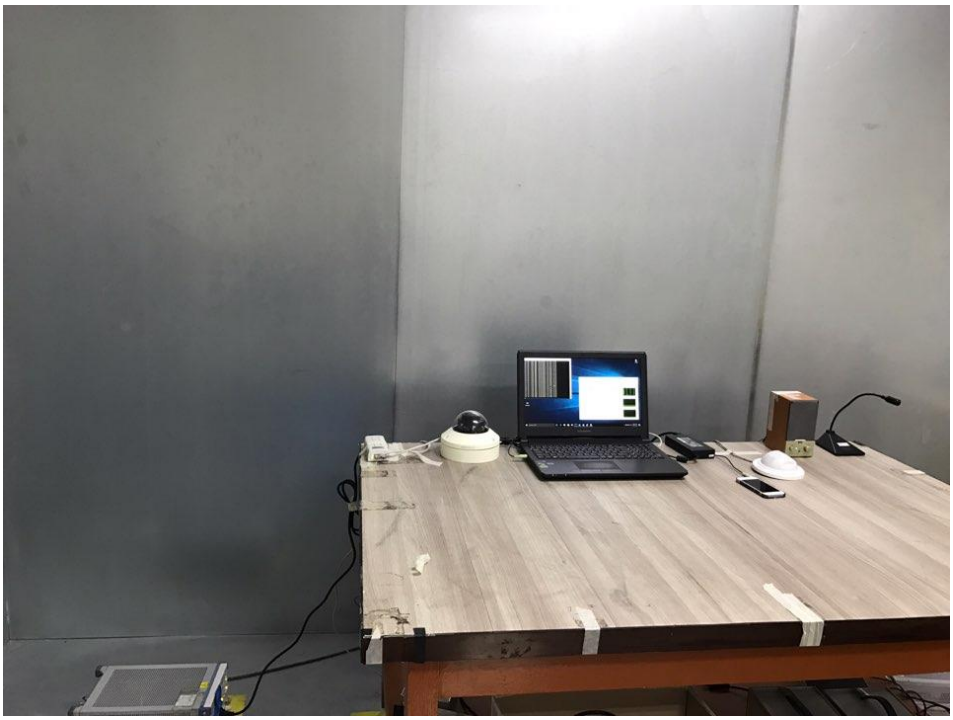
- AC 24 V Mode



- DC 12 V Mode



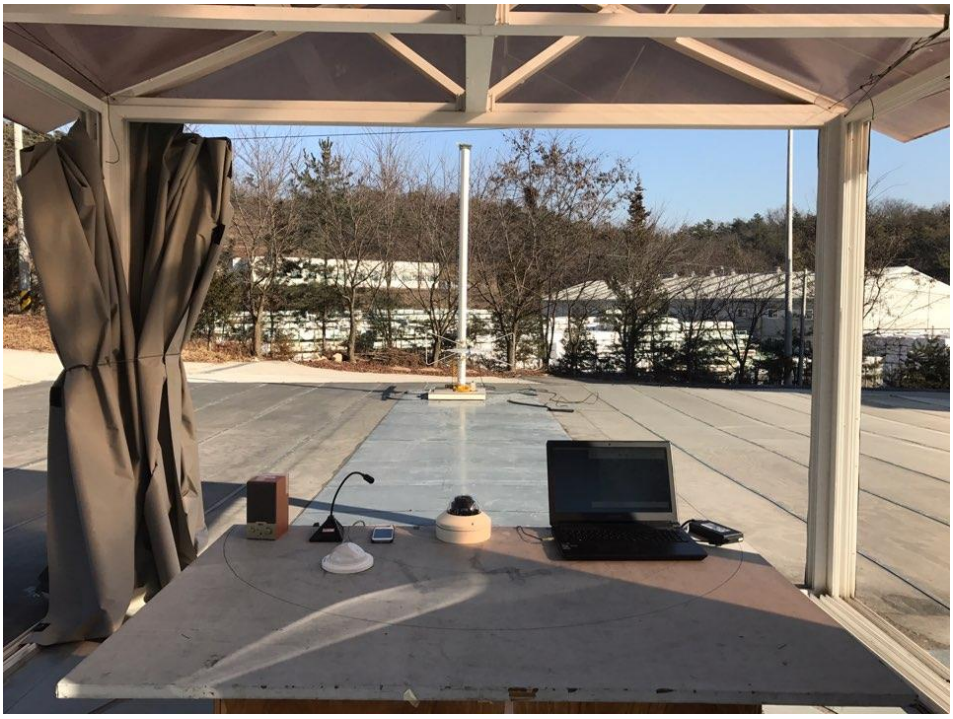
- PoE Mode



Radiated Electric Field Emissions(Below 1 ㎓)

- AC 24 V Mode

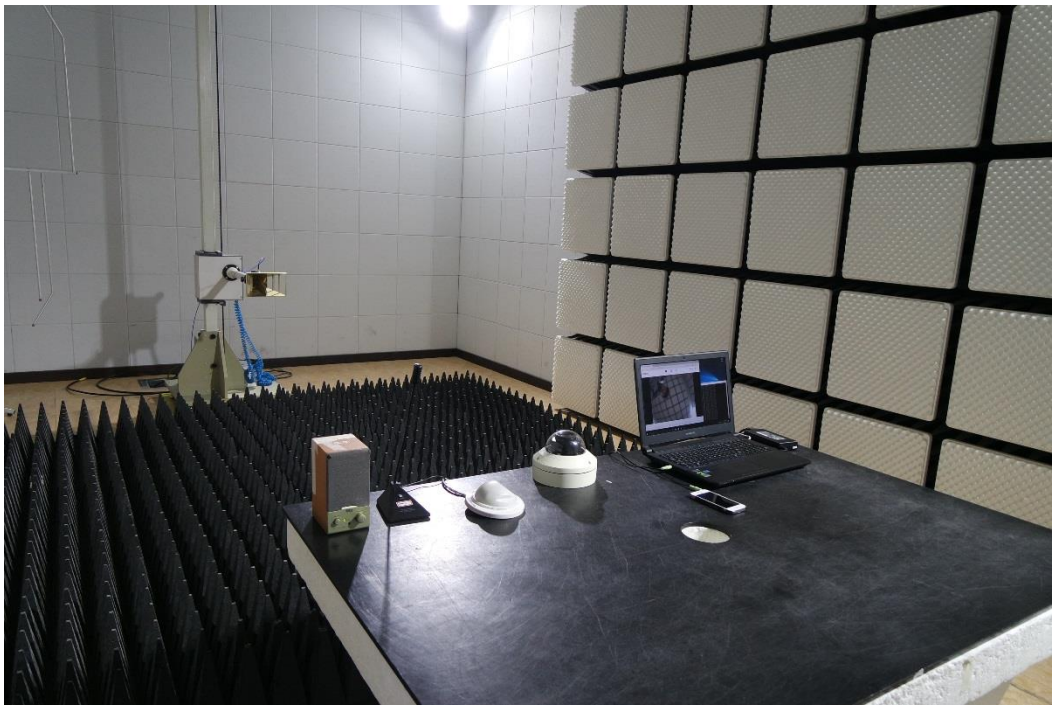
- DC 12 V Mode



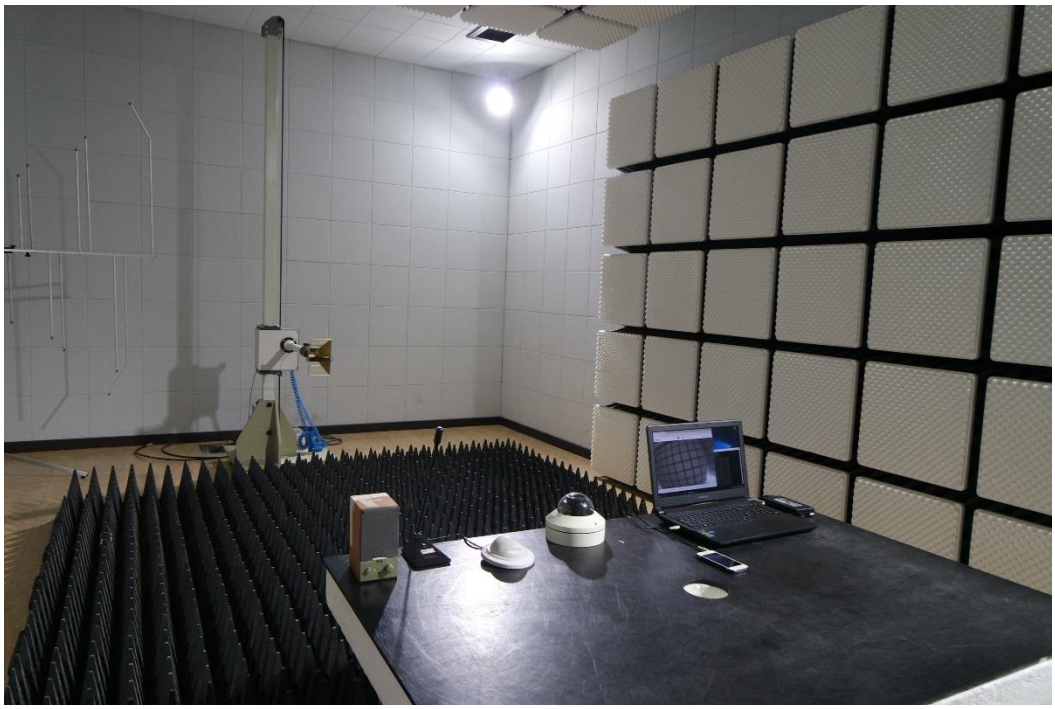
- PoE Mode

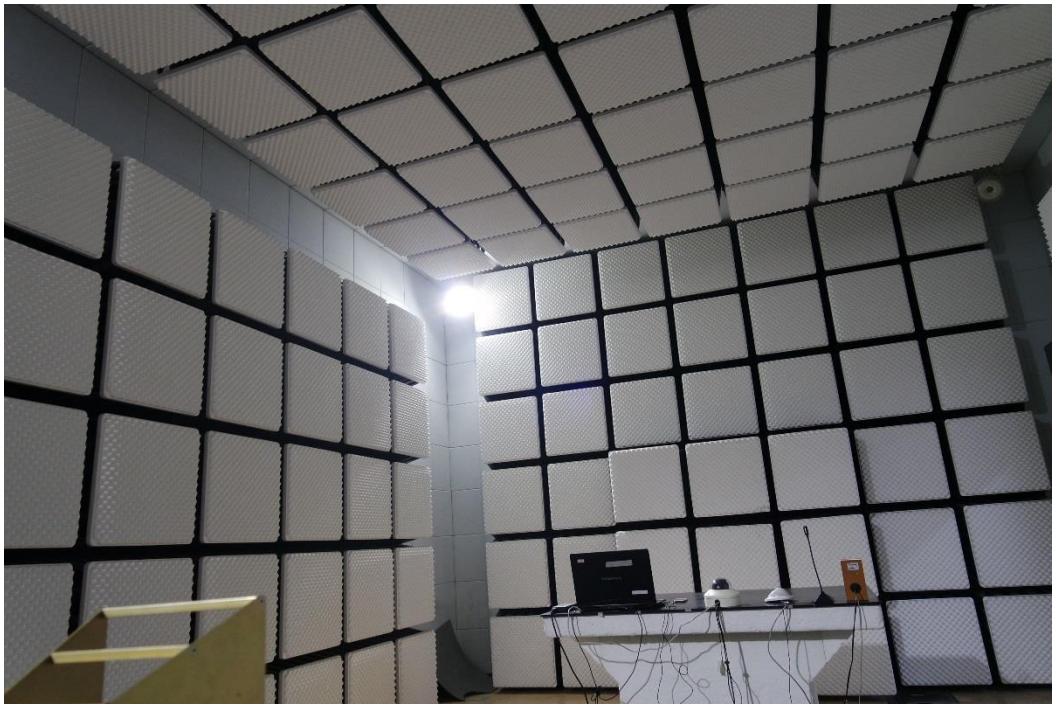
Radiated Electric Field Emissions(Above 1 ㎓)

- AC 24 V Mode

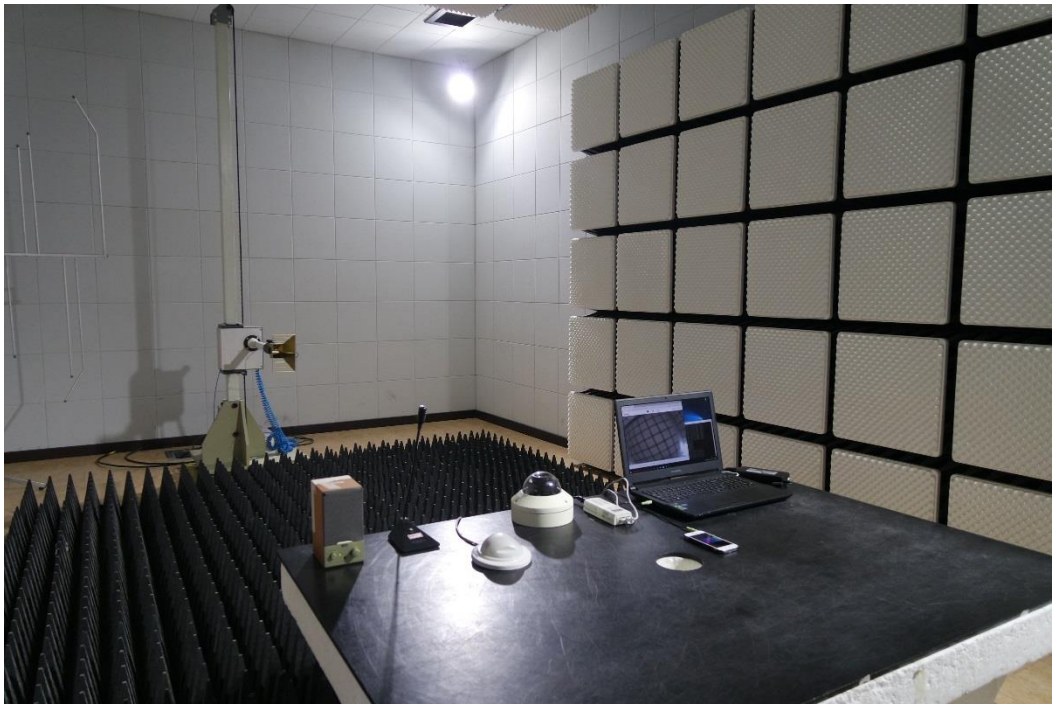


- DC 12 V Mode





- PoE Mode



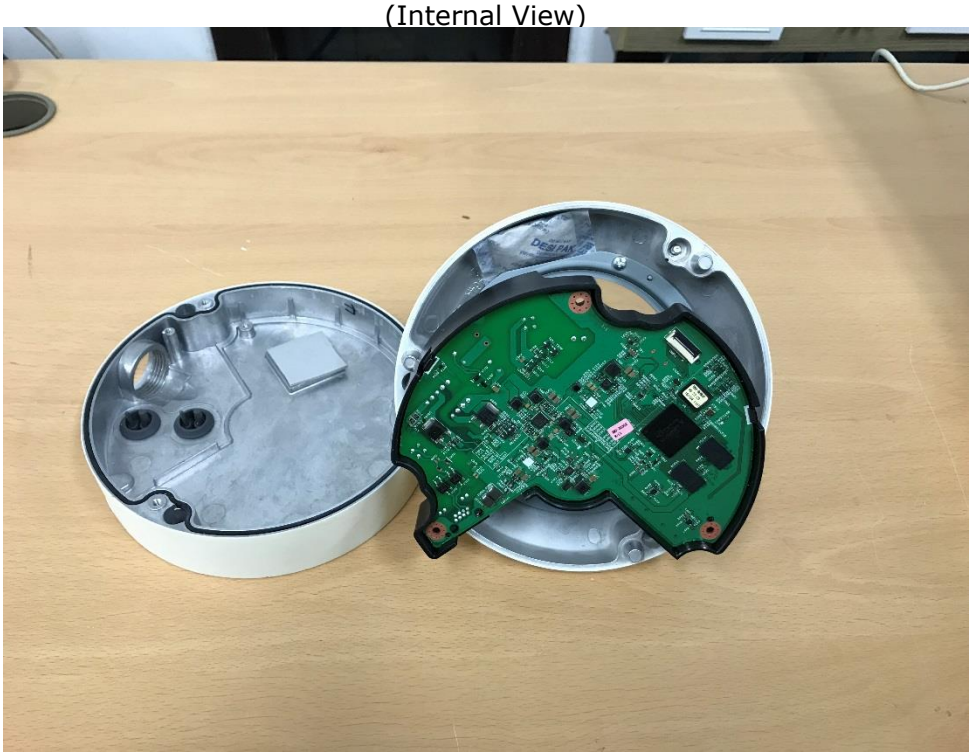
EUT External Photographs

(Top)

(Bottom)

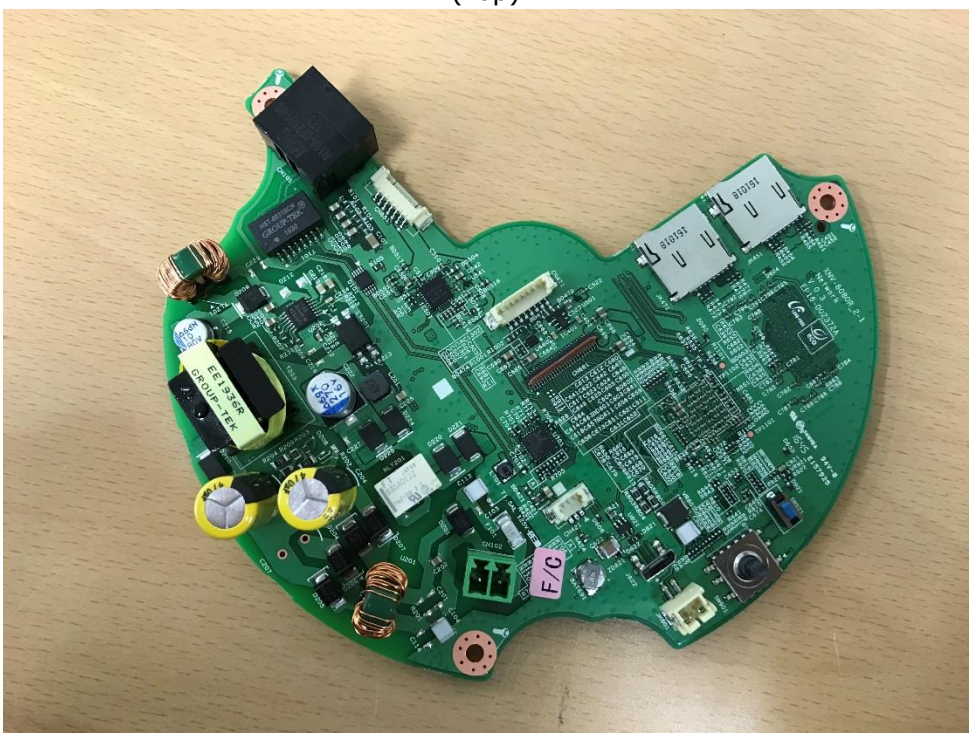
EUT Internal Photographs

(Internal View)

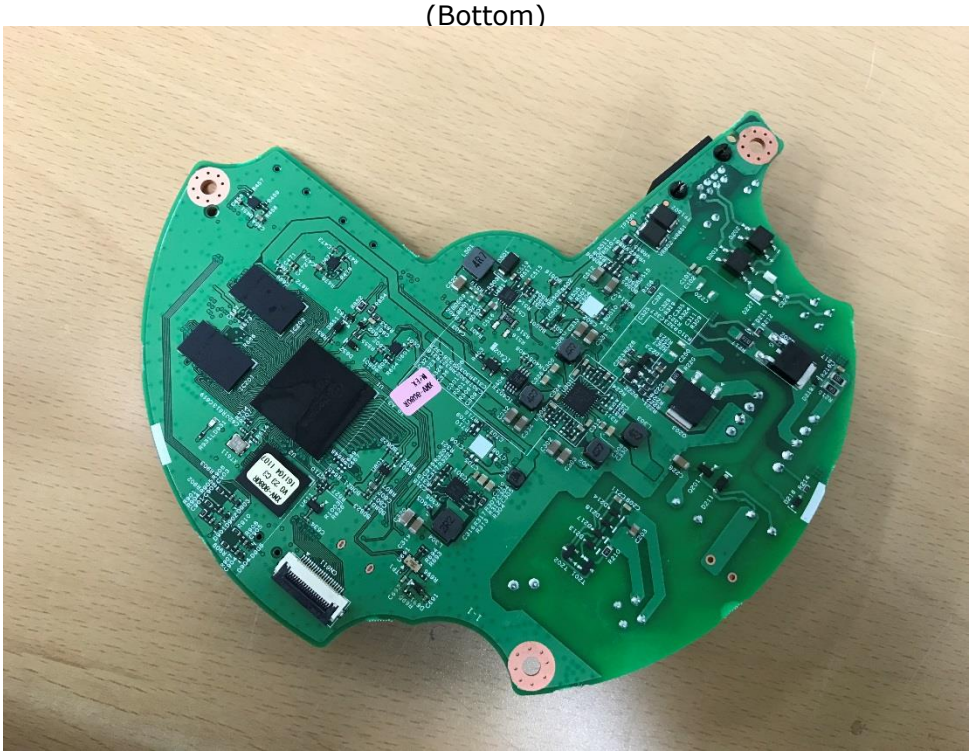


EUT Internal View – Main Board

(Top)

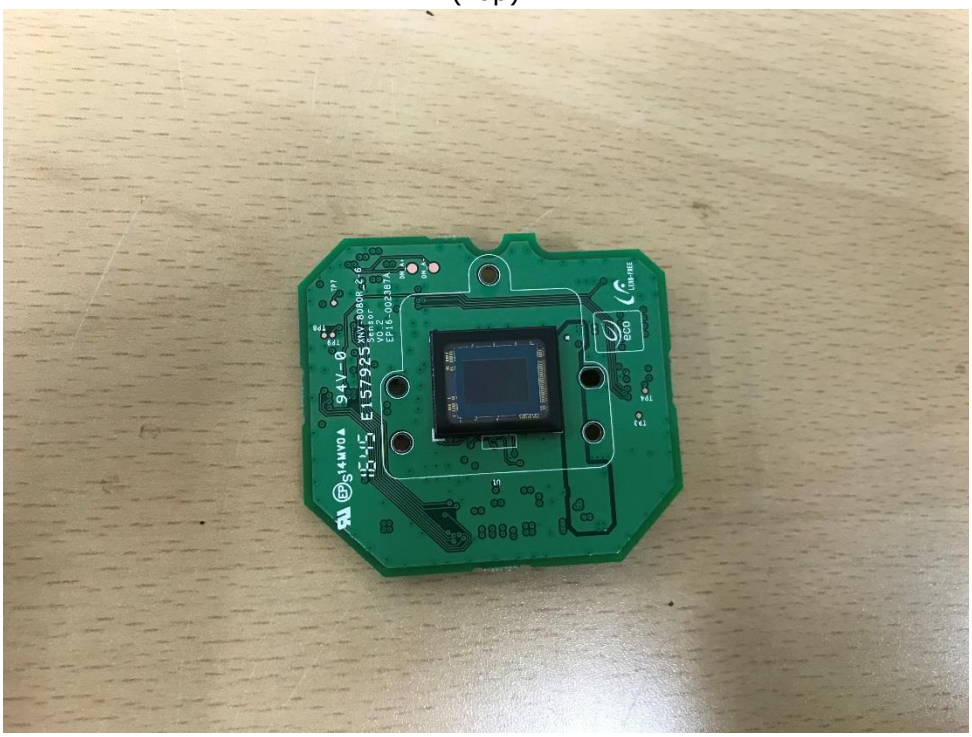


(Bottom)

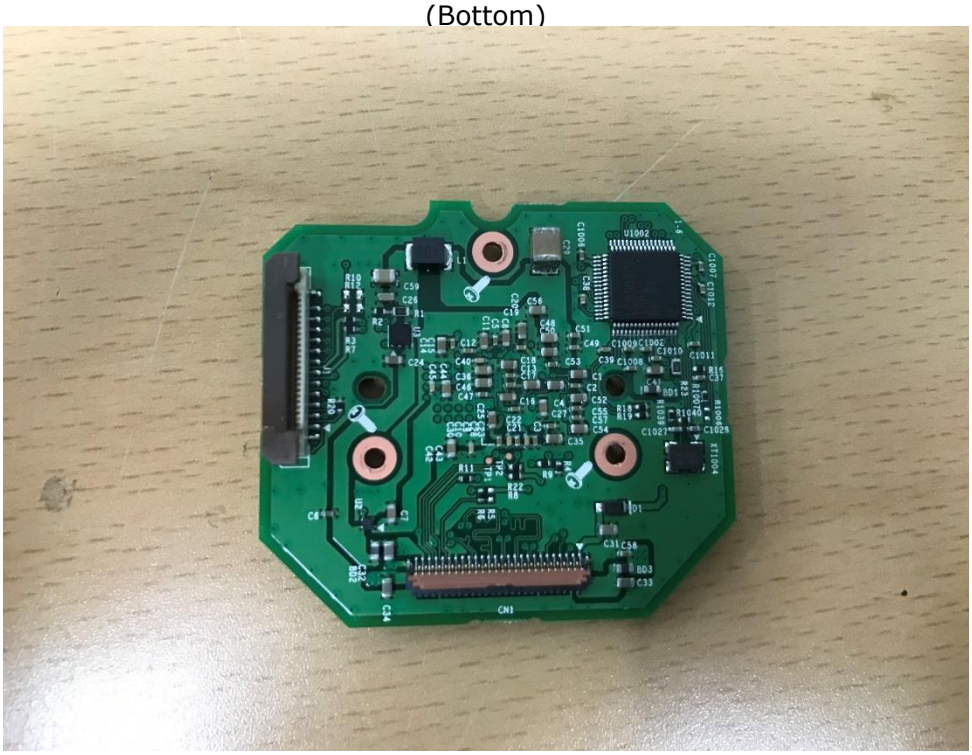


EUT Internal View – Lens Board

(Top)

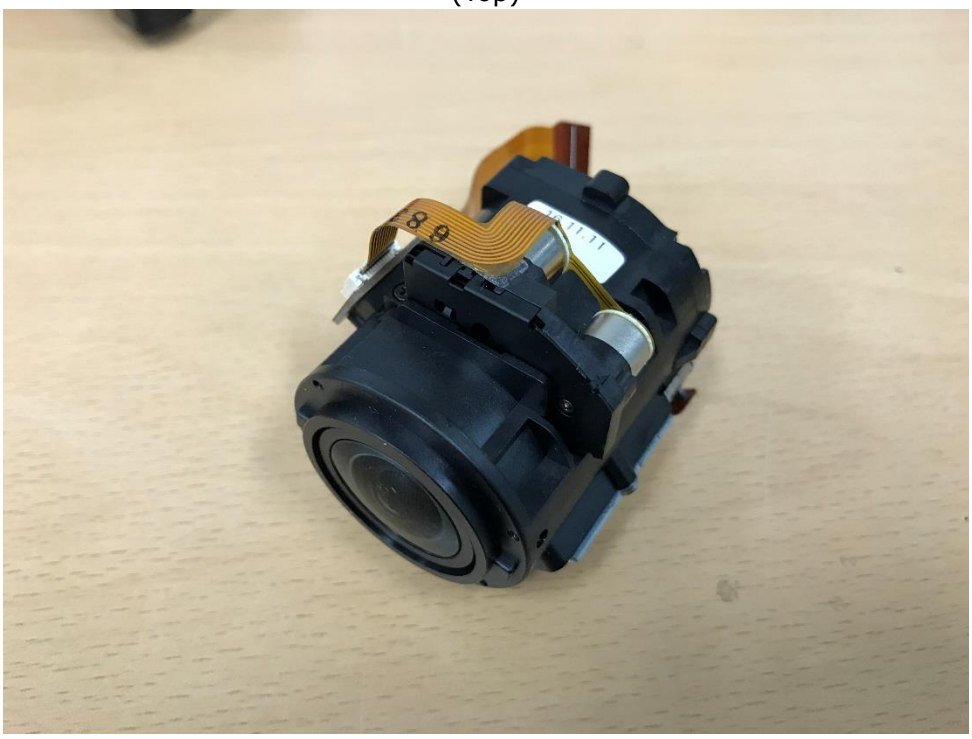


(Bottom)



EUT Internal View – Lens

(Top)



(Bottom)

EUT Internal View – LED

(Top)

(Bottom)