

EU Declaration of Conformity

SAMSUNG



We hereby declare that the product

Type of equipment : NETWORK CAMERA
Brand Name / Trade Mark : SAMSUNG
Model number : XNV-6120P
Variant Model : -

satisfies all the technical regulations applicable to the product within the scope of Council Directives 2014/30/EU

EN 55032:2015 : Limits and methods of measurement of radio disturbance characteristics of information technology equipment
EN 50581:2012 : Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
EN 50130-4:2011+A1:2014 : Product family standard: Immunity requirements for components of fire, intruder and social alarm systems
EN 61000-3-2:2014 : Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
EN 61000-3-3:2013 : Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
EN 61000-4-2:2009 : Electrostatic discharge immunity test
EN 61000-4-3:2006+A2:2010 : Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4:2012 : Electrical fast transient/burst immunity test
EN 61000-4-5:2014 : Surge immunity test
EN 61000-4-6:2014 : Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-11:2004 : Voltage dips, short interruptions and voltage variations immunity tests

All essential testing suites have been carried out.

Manufacturer : Tianjin Samsung Techwin Opto-Electronic Co., Ltd.
Manufacturer address : No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Telephone / Fax : 82-02-729-2900 / 82-02-729-2904 (www.hanwhatechwin.com)
Applicant : Hanwha Techwin Co., Ltd.
Applicant address : 1204, Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea

This declaration is issued under the sole responsibility of the manufacturer and his authorised representative.

Authorized signatory

Name / Title : Jei Soon, Kang / Principal Research Engineer
Date of issue : May. 02, 2017



EMC TEST REPORT For CE

Test Report No. : KES-E1-17T0303
Date of Issue : May. 02, 2017
Product name : NETWORK CAMERA
Model/Type No. : XNV-6120P
Variant Model : -
Applicant : Hanwha Techwin Co., Ltd.
Applicant Address : 1204, Changwon-daero, Seongsan-gu, Changwon-si,
Gyeongsangnam-do, Korea
Manufacturer : Hanwha Techwin (Tianjin) Co., Ltd.
Manufacturer Address : No.11 Weiliu Rd, Micro-Electronic Industrial
Park, TEDA, Tianjin, 300385, People's Republic of China.
Date of Receipt : Apr. 14, 2017
Test date : Apr. 27, 2017 – Apr. 29, 2017
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Young Suk, Song
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

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Test report No.:
KES-E1-17T0303
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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
May. 02, 2017	KES-E1-17T0303	Issued

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1.0 General Product Description

Main Specifications of E.U.T are:

	XNV-6120
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
Min. Illumination	Color : 0.03 Lux (1/30sec, F1.6) B/W : 0.003 Lux (1/30sec, F1.6)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720×480(N), 720×576(P), for installation USB : Micro USB type B, 1280×720, for installation
Lens	
Focal Length (Zoom Ratio)	5.2~62.4mm(Optical 12X)
Max. Aperture Ratio	F1.6 (Wide) ~ F3.0(Tele)
Angular Field of View	W : 54.58(H) X 32.19(V) X 61.40(D) T : 5.30(H) X 3.00(V) X 6.06(D)
Min. Object Distance	2.1m
Focus Control	Auto / Manual / One Push
Lens Type	DC Auto Iris
Mount Type	Board-in type
Pan / Tilt / Rotate	
Pan Range	0 ° ~ +354 °
Tilt Range	0 ° ~ +75 °
Rotate Range	0 ° ~ +355 °
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 Stabilizat	Off / On
Defog	Auto / Manual / Off
Motion Detection	Off/ On(8ea, 8point Polygonal zones)
Privacy Masking	Off / On (32ea, Rectangle zones) - Color : Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Off / Low / Meddle / 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 Zoom	24X
Preset	300 ea
Image Rotation	Flip : On/Off Mirror : On/Off Hallway : 90° / 270°
Video & Audio Analytics	Tampering, Loitering, Directional Detection, Defocus Detection, Fog Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection, Motion Detection Sound Classification
Alarm	Input 1ea / Output 1ea
Alarm events	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 preset
Audio out	Line out (3.5mm mono jack), Max output level: 1 Vrms
Pixel Counter	support

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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.264/H.265 : Max. 60fps at all resolutions Motion JPEG : Max. 30fps at all resolutions
Smart Codec	Manual Mode (area-based : 5EA)
WiseStream II	support
Video Quality Adjustment	H.264/H.265/MJPEG : 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)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast Mode
Edge Storage	SD/SDHC/SDXC 2slot (up to 512 GB) - Continuous recording(1st slot to 2nd slot) - Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS(Network Attached Storage) Local PC for Instant Recording
Application Programming	ONVIF Profile S/G SUNAPI 2.0(HTTP API) Wisenet Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS: Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer Supported Browser: Google Chrome 56, MS Edge 39, Mozilla Firefox 49(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	-40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -35°C
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP67, IP66, NEMA 4X
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	AC24V, DC12V, PoE(IEEE802.3af, Class3)
Power Consumption	24V AC : Max. 8.2W 12V DC : Max. 7W PoE : Max. 7.8W
Mechanical	
Color / Material	Ivory / Aluminum
Dimension (WxHxD)	Ø160 x H128.5mm
Weight	985g

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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 ☐ 230Vac ☐ 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-6120P	-	Hanwha Techwin (Tianjin) Co.,Ltd.	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
POE Adaptor	POE36U-1AT-R	-	PHIHONG	-
Notebook	RV518	HTK991NC600187E	Samsung Electronics Co., Ltd	-
Notebook Adaptor	ADP-60ZH	AD-6019R	DELTA ELECTRONICS, INC.	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-
MIC	CMK-303	-	CAMAC	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-



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
	3.5 mm	Speaker	3.5 mm	1.6	U
	3.5 mm	MIC	3.5 mm	1.7	U
	3 Pin	Alarm	3 Pin	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
	3.5 mm	Speaker	3.5 mm	1.6	U
	3.5 mm	MIC	3.5 mm	1.7	U
	3 Pin	Alarm	3 Pin	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 Adaptor	RJ-45 (POE)	3.0	U
	RJ-45	Notebook	RJ-45	3.0	U
	3.5 mm	Speaker	3.5 mm	1.6	U
	3.5 mm	MIC	3.5 mm	1.7	U
	3 Pin	Alarm	3 Pin	1.7	U
Notebook	RJ-45 (DATA)	POE Adaptor	RJ-45 (DATA)	3.0	U

* Unshielded=U, Shielded=S

1.7 E.U.T Operating Mode(s)

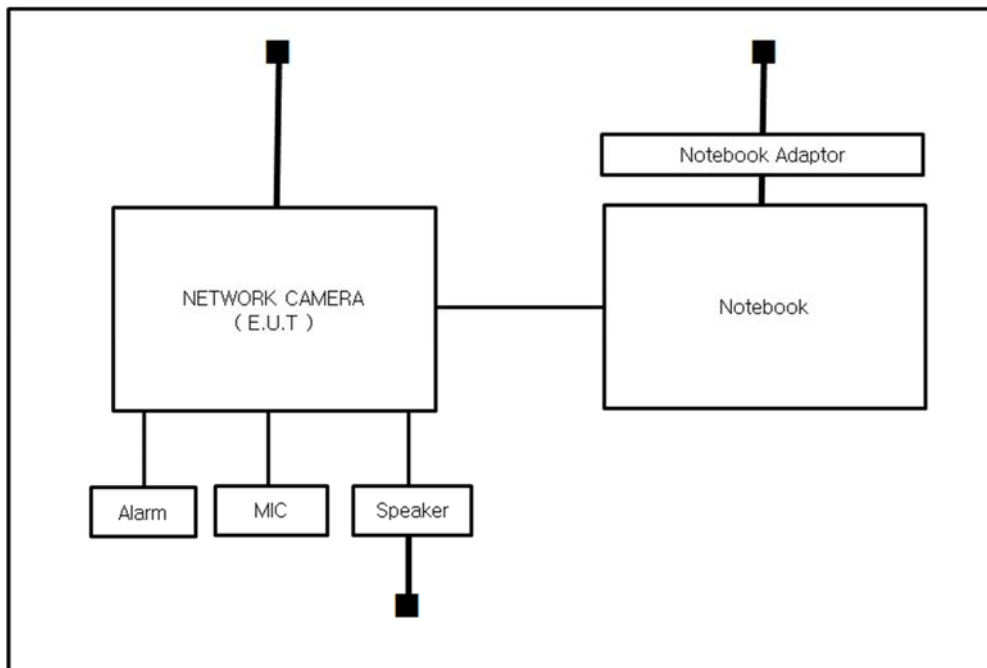
Test mode	operating
AC 24 V Mode	E.U.T Monitoring, Ping test, 1 kHz
DC 12 V Mode	E.U.T Monitoring, Ping test
POE Mode	E.U.T Monitoring, Ping test

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

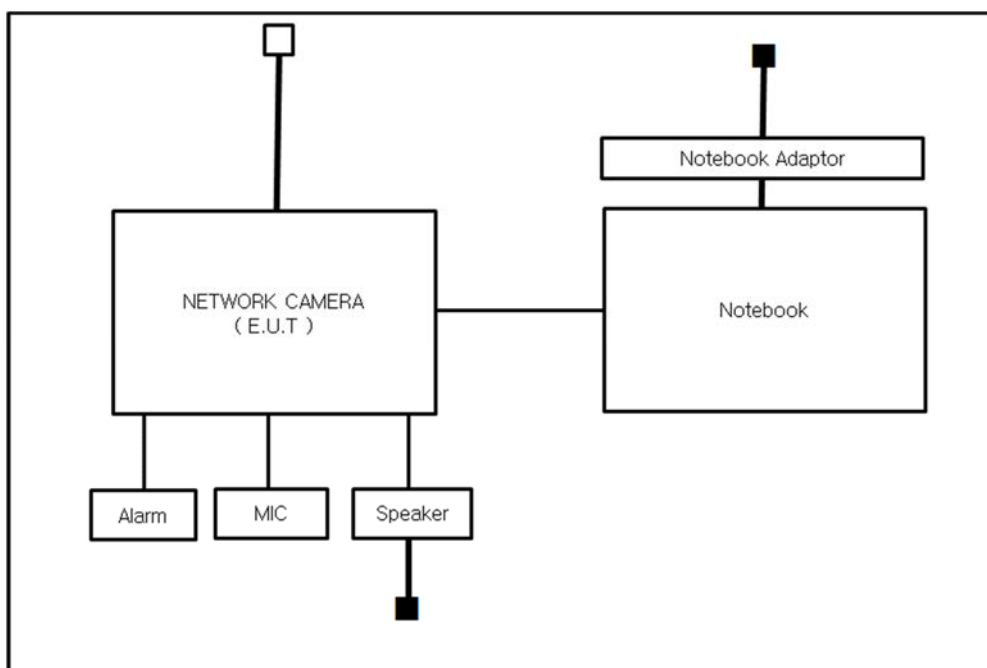
1.8 Configuration

■ AC Main
□ DC Main

- AC 24 V Mode

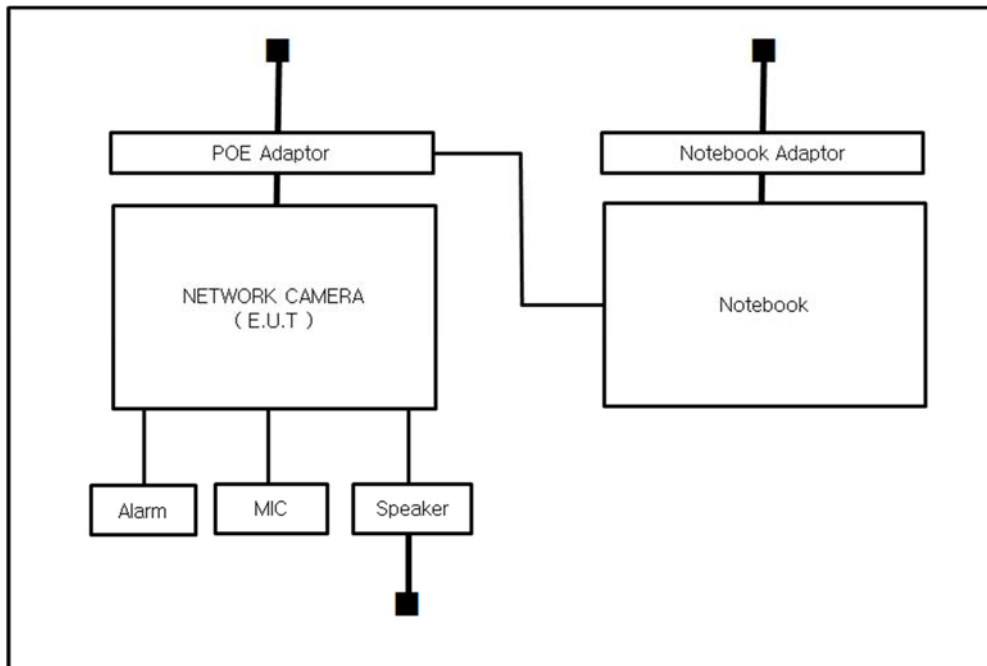


- DC 12 V Mode



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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, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

1.11 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	
JAPAN	VCCI	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	 R-4308, C-4798, T-2311, G-914
KOREA	MSIP	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
Canada	IC	3 & 10 meter Open Area Test Sites and one conducted site	 4769B-1
Europe	CE	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	
International	KOLAS	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	

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 55032:2015

☒ 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



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-
- | | | |
|---|----------------------------------|----------------------------------|
| <input type="checkbox"/> VCCI V-3 / 2015.04 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> AS/NZS CISPR22:2009 +A1:2010 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> 47 CFR Part 15, Subpart B | | |
| <input type="checkbox"/> CISPR 22:2009 +A1:2010 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2009 | | |
| <input type="checkbox"/> IC Regulation ICES-003 : 2016 | | |
| <input type="checkbox"/> CAN/CSA CISPR 22-10 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2014 | | |
|
<input type="checkbox"/> RE– Directive 2014/53/EU | | |
|
<input type="checkbox"/> EN 301 489-1 V1.9.2 | | |
| <input type="checkbox"/> Equipment for fixed use | | |
| <input type="checkbox"/> Equipment for vehicular use | | |
| <input type="checkbox"/> Equipment for portable use | | |
|
<input type="checkbox"/> EN 301 489-3 V1.6.1 | | |
|
<input type="checkbox"/> EN 301 489-17 V2.2.1 | | |
|
<input type="checkbox"/> EN 60945:2002 | | |

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Apr. 29, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EMC32	R & S	9.12.00	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESR3	R & S	101781	04, 27, 2018
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	01, 11, 2018
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	04, 27, 2018
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 13, 2017

Test Conditions

Temperature: 21,2 °C

Relative Humidity: 36,3 %

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

Apr. 29, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EMC32	R & S	9.12.00	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESR3	R & S	101781	04, 27, 2018
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	01, 11, 2018
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	04, 27, 2018
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 13, 2017
<input checked="" type="checkbox"/>	8-WIRE ISN CAT3,5	ENY81	Rohde & Schwarz	100174	01, 11, 2018
<input type="checkbox"/>	8-WIRE ISN CAT6	ENY81-CAT6	Rohde & Schwarz	101665	01, 11, 2018

Test Conditions

Temperature: 21,2 °C

Relative Humidity: 36,3 %

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

Apr. 29, 2017

Test Location

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

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	-	-	-	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESVS10	Rohde & Schwarz	826008/014	04, 18, 2018
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	714	11, 28, 2018
<input type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	04, 14, 2018

Test Conditions

Temperature: 23,0 °C

Relative Humidity: 29,0 %

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.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Apr. 29, 2017

Test Location

Semi Anechoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	e3	AUDIX	8.083b	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESU26	R & S	100552	04, 19, 2018
<input checked="" type="checkbox"/>	BROADBAND PREAMPLIFIER	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10, 14, 2017
<input checked="" type="checkbox"/>	LOG-PERIODIC ANTENNA	STLP 9149	SCHWARZBECK	9149-255	05, 17, 2018

Test Conditions

Temperature: 19,2 °C
Relative Humidity: 38,2 %

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.



2.5 Harmonic Current Emissions

Test Date

Apr. 29, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	dpa.control	EM TEST	5.4.8.0	-
<input checked="" type="checkbox"/>	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	08, 08, 2017
<input checked="" type="checkbox"/>	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	08, 08, 2017

Test Conditions

Temperature: 19,2 °C

Relative Humidity: 38,2 %

Classification of Equipment for Harmonic Current Emissions

- ☒ Class A
- ☐ Class B
- ☐ Class C (Below 25 W)
- ☐ Class C (Above 25 W)
- ☐ Class D

Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.6 Voltage Fluctuations and Flicker

Test Date

Apr. 29, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	dpa.control	EM TEST	5.4.8.0	-
<input checked="" type="checkbox"/>	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	08, 08, 2017
<input checked="" type="checkbox"/>	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	08, 08, 2017

Test Conditions

Temperature: 19,2 °C

Relative Humidity: 38,2 %

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

3.0 Criteria for compliance

Criteria for compliance was based on the following guidelines:

EN 50130-4:2011 +A1:2014 Alarm systems-Part 4: Electromagnetic compatibility Product family standard: Immunity requirements for components of fire, intruder and social alarm systems

The variety and the diversity of the apparatus within the scope of this document makes it difficult to define precise criteria for the evaluation of the immunity test results.

If as a result of the application of the tests defined in this standard, the apparatus becomes dangerous or unsafe then the apparatus shall be deemed to have failed the test.

A functional description and a definition of performance by the manufacture and noted in the test report, based on the following criteria:

Electrostatic discharge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing that is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

Radiated electromagnetic fields

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing which could be interpreted by associated equipment as a change, and no such

Flickering of indicators occurs at a field strength of 3 V/m.

For components of CCTV systems, where the picture is allowed at 10 V/m, providing.

(a) there is no permanent damage or change to EUT

(e.g. no corruption of memory or changes to programmable setting etc.)

(b) at 3 V/m, any deterioration of the picture is so minor that the system could still be used; and

(c) there is no observable deterioration of the picture at 1 V/m.

Fast transient burst / slow high energy voltage surge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

Conducted RF immunity

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change,
and no such flickering of indicators oeuvres at $U = 130 \text{ dB}\mu\text{V}$.

For component of CCTV systems, where the status is monitored by observing the TV picture,
then deterioration of the picture is allowed at $U = 140 \text{ dB}\mu\text{V}$, providing:

- (a) there is no permanent damage or change to the EUT
(e.g. no corruption of memory or changes to programmable settings etc.)
- (b) at $U = 130 \text{ dB}\mu\text{V}$, any deterioration of the picture is so minor that the system could still be used; and
- (c) there in no observable deterioration of the picture at $U = 120 \text{ dB}\mu\text{V}$.

Voltage dip/interruption / Voltage variation

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the conditioning is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change. The EUT shall meet the acceptance criteria for the functional test, after the conditioning.



3.1 Electrostatic Discharge

Reference Standard

EN 61000-4-2: 2009

Test Date

Apr. 27, 2017

Test Location

EMS-ESD: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	-	-	-	-
<input checked="" type="checkbox"/>	ESD SIMULATOR	ESS-2000	Noise Ken	ESS05X4620	02, 24, 2018
<input checked="" type="checkbox"/>	HCP	-	Noise Ken	-	-
<input checked="" type="checkbox"/>	VCP	-	Noise Ken	-	-

Test Conditions

Temperature: 23,2 °C
Relative Humidity: 36,8 %
Atmospheric Pressure: 100,1 kPa



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Test Specifications

Discharge Factor: ≥ 1 s

Discharge Impedance: 330 ohm / 150 pF

Kind of Discharge: Air, Contact (direct and indirect)

Polarity: Positive and Negative

Number of Discharge: 10 at all locations for Air discharge
10 at all locations for Contact discharge

Discharge Voltage:	Contact	Air	HCP	VCP
	<input type="checkbox"/> 2 kV	<input checked="" type="checkbox"/> 2 kV	<input type="checkbox"/> 2 kV	<input type="checkbox"/> 2 kV
	<input type="checkbox"/> 4 kV	<input checked="" type="checkbox"/> 4 kV	<input type="checkbox"/> 4 kV	<input type="checkbox"/> 4 kV
	<input checked="" type="checkbox"/> 6 kV	<input type="checkbox"/> 6 kV	<input checked="" type="checkbox"/> 6 kV	<input checked="" type="checkbox"/> 6 kV
	<input type="checkbox"/> 8 kV	<input checked="" type="checkbox"/> 8 kV	<input type="checkbox"/> 8 kV	<input type="checkbox"/> 8 kV
	<input type="checkbox"/> 15 kV	<input type="checkbox"/> 15 kV	<input type="checkbox"/> 15 kV	<input type="checkbox"/> 15 kV

Notes: HCP: Horizontal coupling plane

VCP: Vertical coupling plane

Required Performance Criteria: ☒ Complied

Location of Discharge:

Air
Contact



1



Test Data

- AC 24 V Mode

Indirect Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

Direct Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	Screw	Contact Discharge	Complied	-

- DC 12 V Mode

Indirect Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

Direct Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	Screw	Contact Discharge	Complied	-

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- PoE Mode

Indirect Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

Direct Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	Screw	Contact Discharge	Complied	-

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

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3.2 Radiated Electric Field Immunity

Reference Standard

EN 61000-4-3:2006 +A2:2010

Test Date

Apr. 27, 2017

Test Location

EMS-RS: ☐ Semi Anechoic Chamber #1 ☒ Semi Anechoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	KTI_RS2012	KOREA TECHNOLOGY INSTITUTE CO., LTD	2.1.1	-
<input checked="" type="checkbox"/>	SIGNAL GENERATOR	ESG-3000A	HP	US37040210	11, 01, 2017
<input checked="" type="checkbox"/>	AMPLIFIER	ITA0300-200	Infinitech	-	11, 01, 2017
<input checked="" type="checkbox"/>	AMPLIFIER	ITA0750-200	Infinitech	-	11, 01, 2017
<input checked="" type="checkbox"/>	AMPLIFIER	ITA1500-100	Infinitech	-	11, 01, 2017
<input checked="" type="checkbox"/>	AMPLIFIER	ITA2500-100	Infinitech	-	11, 01, 2017
<input checked="" type="checkbox"/>	POWER METER	E4419B	Agilent	MY45101506	06, 27, 2017
<input checked="" type="checkbox"/>	AVERAGE POWER SENSOR	E9301A	Agilent	-	06, 27, 2017
<input checked="" type="checkbox"/>	AVERAGE POWER SENSOR	E9301A	Agilent	MY41495698	11, 17, 2017
<input checked="" type="checkbox"/>	STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 D	SCHWARZBECK	9128D038	-

Test Conditions

Temperature: 23,2 °C
Relative Humidity: 36,8 %
Atmospheric Pressure: 100,1 kPa



Test Specifications

Antenna Polarization: Horizontal & vertical unless indicated otherwise

Antenna Distance: ☒ 3 m

Field Strength: ☐ 1 V/m ☐ 3 V/m
☒ 10 V/m

Frequency Range: ☐ 80 MHz to 1 GHz ☐ 1,4 GHz to 2,7 GHz
☒ 80 MHz to 2,7 GHz

Modulation: ☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)

Frequency step: ☒ 1 % step

Dwell Time: ☐ 1 s ☒ 3 s

of Sides Radiated: ☒ 4

Required Performance Criteria: ☒ Complied



Test Data

- AC 24 V Mode

Side Exposed	Observations	
	Horizontal	Vertical
Front	Complied	Complied
Right	Complied	Complied
Back	Complied	Complied
Left	Complied	Complied

- DC 12 V Mode

Side Exposed	Observations	
	Horizontal	Vertical
Front	Complied	Complied
Right	Complied	Complied
Back	Complied	Complied
Left	Complied	Complied

- PoE Mode

Side Exposed	Observations	
	Horizontal	Vertical
Front	Complied	Complied
Right	Complied	Complied
Back	Complied	Complied
Left	Complied	Complied

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.3 Electrical Fast Transients/Bursts

Reference Standard

EN 61000-4-4: 2012

Test Date

Apr. 28, 2017

Test Location

EMS-EFT: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.0.9.0	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500 N5	EM TEST	V0936105120	06, 27, 2017
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	V0936105123	06, 27, 2017
<input checked="" type="checkbox"/>	CAPACITIVE COUPLING CLAMP	HFK	EM TEST	070925	06, 27, 2017

Test Conditions

Temperature: 22,4 °C
Relative Humidity: 37,5 %
Atmospheric Pressure: 100,2 kPa

Test Specifications

Pulse Amplitude & Polarity: (AC Power Lines)	<input type="checkbox"/> ± 1.0 kV <input type="checkbox"/> ± 4.0 kV	<input checked="" type="checkbox"/> ± 2.0 kV
Pulse Amplitude & Polarity: (Other supply / Signal Lines)	<input type="checkbox"/> ± 0.5 kV <input type="checkbox"/> ± 2.0 kV	<input checked="" type="checkbox"/> ± 1.0 kV
Burst Period:	<input checked="" type="checkbox"/> 300 ms	<input type="checkbox"/> 2 s
Repetition Rate:	<input type="checkbox"/> 5 kHz	<input checked="" type="checkbox"/> 100 kHz
Duration of Test Voltage:	<input checked="" type="checkbox"/> ≥ 1 min	
Required Performance Criteria:	<input checked="" type="checkbox"/> Complied	

Test Data

- AC 24 V Mode

☒ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
L – N	Complied	Complied

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ – 45	Complied	Complied
Alarm (3 Pin)	Complied	Complied

- DC 12 V Mode

☐ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
L1 – L2	Complied	Complied

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ – 45	Complied	Complied
Alarm (3 Pin)	Complied	Complied

- PoE Mode

☐ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ – 45 (PoE)	Complied	Complied
Alarm (3 Pin)	Complied	Complied

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.



3.4 Surge Transients

Reference Standard

EN 61000-4-5: 2014

Test Date

Apr. 28, 2017

Test Location

EMS-Surge: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.0.9.0	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500 N5	EM TEST	V0936105120	06, 27, 2017
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	V0936105123	06, 27, 2017
<input checked="" type="checkbox"/>	CDN	CNV 508N1	EM TEST	P1551168979	04, 27, 2017
<input type="checkbox"/>	CDN	CNV 508T5	EM TEST	P1549168422	04, 27, 2017

Test Conditions

Temperature: 22,4 °C
Relative Humidity: 37,5 %
Atmospheric Pressure: 100,2 kPa



Test Specifications

AC Power Lines

Source Impedance: 12 ohm for common mode and 2 ohm for differential mode

Surge Amplitude :

Common Mode

☐ (0,5 / 1,0 / 2,0) kV

Differential Mode

☒ (0,5 / 1,0) kV

Number of Surges:

☒ 5 surges per angle

Angle:

☒ 0°, 90°, 180°, 270° (input a.c. power port)

Polarity:

☒ Positive & Negative

Repetition Rate:

☒ 1 surge per min ☐ 1 surge per 30 sec.

Required Performance Criteria: ☒ Complied

Other supply / Signal Lines

Source Impedance: 42 ohm for common mode

Surge Amplitude:

Common Mode

☒ (0,5 / 1,0) kV

Number of Surges:

☒ 5 Surges

Polarity:

☒ Positive & Negative

Repetition Rate:

☒ 1 surge per min ☐ 1 surge per 30 sec.

Required Performance Criteria: ☒ Complied

Test Data

- AC 24 V Mode

☒ Line to Line – Differential Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L – N	Complied	Complied
L – PE	-	-
N - PE	-	-

☐ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
-	-	-

Signal Lines

☒ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
RJ – 45	Complied	Complied
Alarm (3 Pin)	Complied	Complied

- DC 12 V Mode

☐ Line to Line – Differential Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L – N	-	-
L – PE	-	-
N - PE	-	-

☐ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
-	-	-

Signal Lines

☒ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
RJ – 45	Complied	Complied
Alarm (3 Pin)	Complied	Complied

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- PoE Mode

☐ Line to Line – Differential Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L – N	-	-
L – PE	-	-
N - PE	-	-

☐ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
-	-	-

Signal Lines

☒ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
RJ – 45 (PoE)	Complied	Complied
Alarm (3 Pin)	Complied	Complied

Note: “Blank” = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.



3.5 Conducted Disturbance

Reference Standard

EN 61000-4-6: 2014

Test Date

Apr. 28, 2017

Test Location

EMS-CS: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	icd.control	EM TEST	5.3.11	-
<input checked="" type="checkbox"/>	CONTINUOUS WAVE SIMULATOR	CWS 500N1.4	EM TEST	P1602169880	11, 28, 2017
<input checked="" type="checkbox"/>	ATTENUATOR	ATT 6/80	EM TEST	P1614178148	11, 28, 2017
<input checked="" type="checkbox"/>	CDN	CDN M016	TESEQ	43694	11, 28, 2017
<input type="checkbox"/>	CDN	CDN M016	TESEQ	43697	11, 28, 2017
<input checked="" type="checkbox"/>	CDN	CDN T800	TESEQ	42800	11, 28, 2017
<input checked="" type="checkbox"/>	EM CLAMP	KEMZ 801A	TESEQ	44099	11, 30, 2017

Test Conditions

Temperature: 19,7 °C
Relative Humidity: 38,3 %
Atmospheric Pressure: 100,1 kPa



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Test Specifications

- Frequency range: ☒ 150 kHz to 100 MHz ☐ 150 kHz to 80 MHz
- Voltage Level: ☐ 1 Vrms ☐ 3 Vrms
☒ 10 Vrms
- Modulation: ☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)
- Frequency step: ☒ 1 % step
- Dwell Time: ☒ 1 s ☐ 3 s
- Required Performance Criteria: ☒ Complied

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Test Data

- AC 24 V Mode

☒ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
L – N	CDN (<input checked="" type="checkbox"/> M2, <input type="checkbox"/> M3)	Complied

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (<input type="checkbox"/> M2, <input type="checkbox"/> M3)	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ – 45	Complied	Complied
Alarm (3 Pin)	Complied	Complied

- DC 12 V Mode

☐ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (<input type="checkbox"/> M2, <input type="checkbox"/> M3)	-

☒ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
L1 – L2	CDN (<input checked="" type="checkbox"/> M2, <input type="checkbox"/> M3)	Complied

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ – 45	Complied	Complied
Alarm Alarm (3 Pin)	Complied	Complied

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- PoE Mode

☐ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (<input type="checkbox"/> M2, <input type="checkbox"/> M3)	-

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (<input type="checkbox"/> M2, <input type="checkbox"/> M3)	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ – 45 (PoE)	Complied	Complied
Alarm (3 Pin)	Complied	Complied

Notes: CDN = Coupling Decoupling Network
"blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.



3.6 Voltage Dips and Short Interruptions

Reference Standard

EN 61000-4-11:2004

Test Date

Apr. 28, 2017

Test Location

EMS-Voltage dip: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.0.9.0	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500 N5	EM TEST	V0936105120	06, 27, 2017
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	V0936105123	06, 27, 2017

Test Conditions

Temperature: 22,4 °C
Relative Humidity: 37,5 %
Atmospheric Pressure: 100,2 kPa



Test Specifications & Observations/Remarks

- AC 24 V Mode

(Test Voltage : 50 Hz)

<u>Test Level</u>	<u>Duration [in period/ms (50 Hz)]</u>	<u>Results</u>
<input checked="" type="checkbox"/> 20 % dip	<input checked="" type="checkbox"/> 250 / 5000	<u>Complied</u>
<input checked="" type="checkbox"/> 30 % dip	<input checked="" type="checkbox"/> 25 / 500	<u>Complied</u>
<input checked="" type="checkbox"/> 60 % dip	<input checked="" type="checkbox"/> 10 / 200	<u>Complied</u>
<input checked="" type="checkbox"/> 100 % dip	<input checked="" type="checkbox"/> 250 / 5000	<u>Complied</u>

- Voltage variations

<input checked="" type="checkbox"/> Unom + 10 %	<input checked="" type="checkbox"/> 253 V (ac)	<u>Complied</u>
<input checked="" type="checkbox"/> Unom - 15 %	<input checked="" type="checkbox"/> 195.5 V (ac)	<u>Complied</u>

Observations:
Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria
☐ NOT APPLICABLE

Remarks

The test has been tested using the AC Adaptor

APPENDIX A – TEST DATA

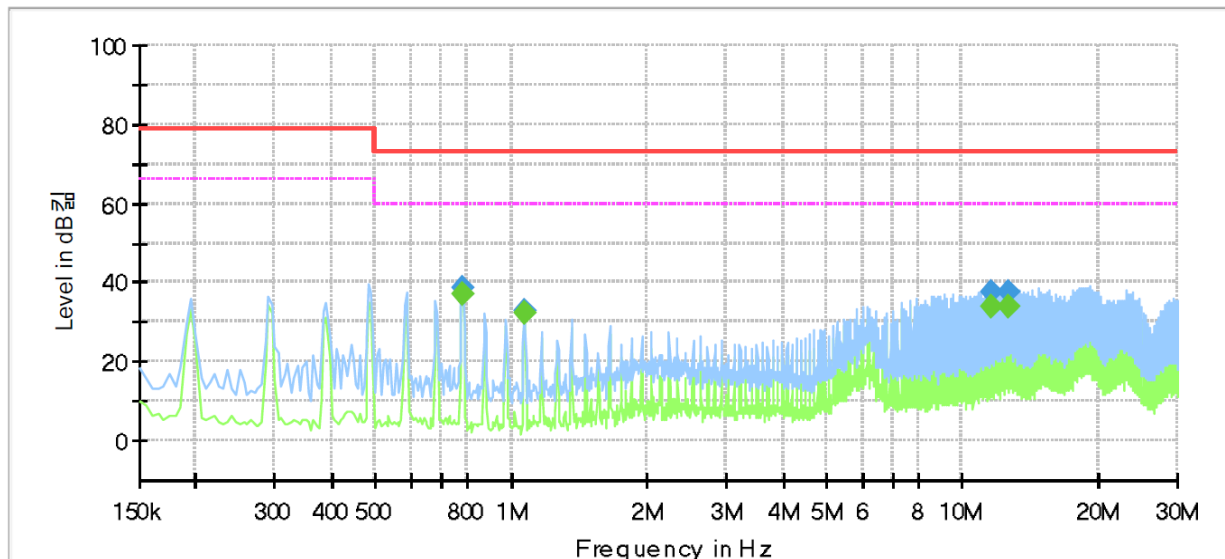
Conducted Emissions at Mains Power Ports

- AC 24 V Mode

[HOT]

Common Information

Test Description: Conducted Emission
Model No.: XNV-6120P
Mode: AC 24 V_H
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.780000	---	37.21	60.00	22.79	1000.0	9.000	L1	20.2
0.780000	38.69	---	73.00	34.31	1000.0	9.000	L1	20.2
1.070000	---	32.17	60.00	27.83	1000.0	9.000	L1	20.1
1.070000	32.63	---	73.00	40.37	1000.0	9.000	L1	20.1
11.585000	---	34.03	60.00	25.97	1000.0	9.000	L1	20.0
11.585000	37.51	---	73.00	35.49	1000.0	9.000	L1	20.0
12.655000	---	33.90	60.00	26.10	1000.0	9.000	L1	20.1
12.655000	37.75	---	73.00	35.25	1000.0	9.000	L1	20.1

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

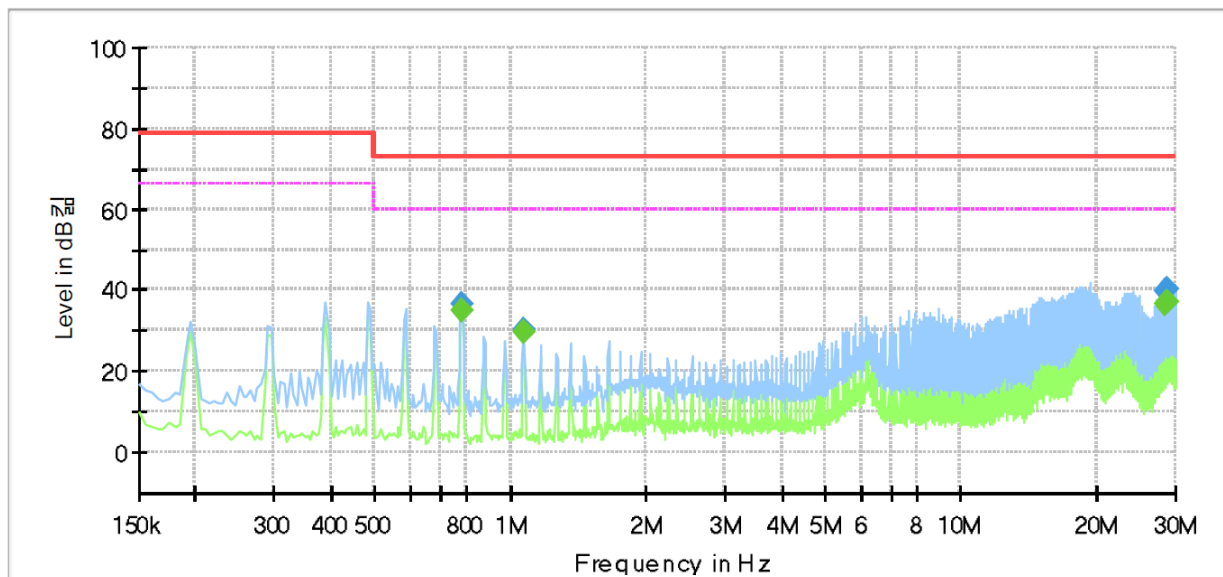
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[NEUTRAL]

Common Information

Test Description: Conducted Emission
Model No.: XNV-6120P
Mode: AC 24 V_N
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.780000	---	34.81	60.00	25.19	1000.0	9.000	N	20.2
0.780000	36.28	---	73.00	36.72	1000.0	9.000	N	20.2
1.070000	---	29.86	60.00	30.14	1000.0	9.000	N	20.1
1.070000	30.32	---	73.00	42.68	1000.0	9.000	N	20.1
28.425000	---	36.51	60.00	23.49	1000.0	9.000	N	20.6
28.425000	39.61	---	73.00	33.39	1000.0	9.000	N	20.6
28.715000	---	37.17	60.00	22.83	1000.0	9.000	N	20.6
28.715000	40.17	---	73.00	32.83	1000.0	9.000	N	20.6

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

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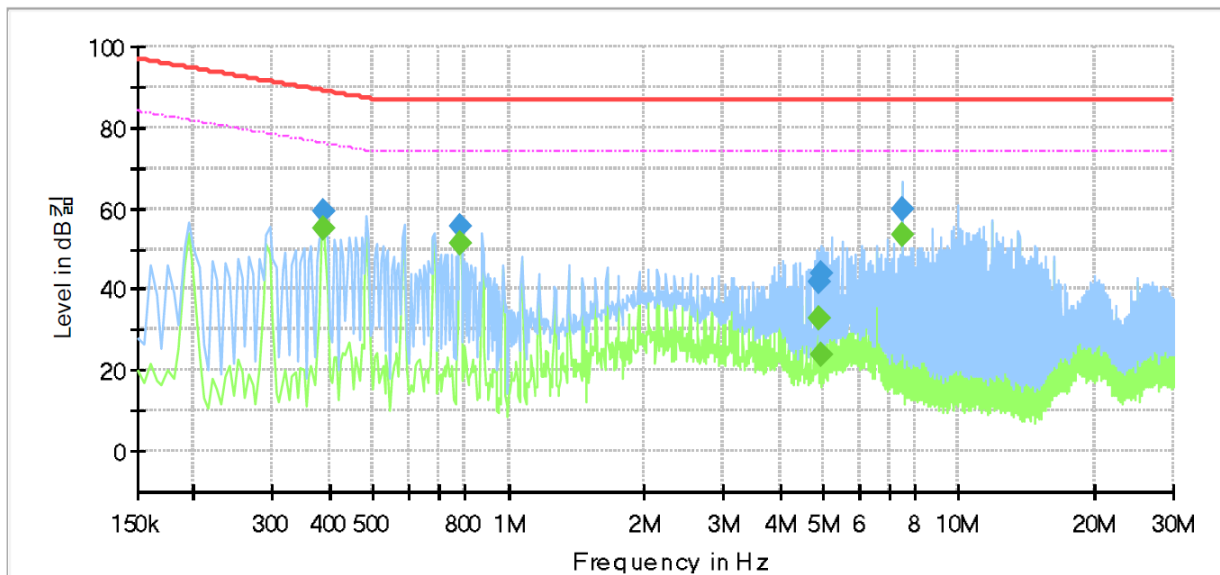
Conducted Emissions at Telecommunication Ports

- AC 24 V Mode

[10 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6120P
Mode: AC 24 V_10 Mbps
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.390000	---	54.91	76.06	21.15	1000.0	9.000	Single Line	20.6
0.390000	59.49	---	89.06	29.57	1000.0	9.000	Single Line	20.6
0.780000	---	51.57	74.00	22.43	1000.0	9.000	Single Line	20.1
0.780000	55.80	---	87.00	31.20	1000.0	9.000	Single Line	20.1
4.890000	---	32.67	74.00	41.33	1000.0	9.000	Single Line	19.5
4.890000	41.93	---	87.00	45.07	1000.0	9.000	Single Line	19.5
4.930000	---	23.68	74.00	50.32	1000.0	9.000	Single Line	19.5
4.930000	43.93	---	87.00	43.07	1000.0	9.000	Single Line	19.5
7.500000	---	53.29	74.00	20.71	1000.0	9.000	Single Line	19.6
7.500000	59.91	---	87.00	27.09	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.

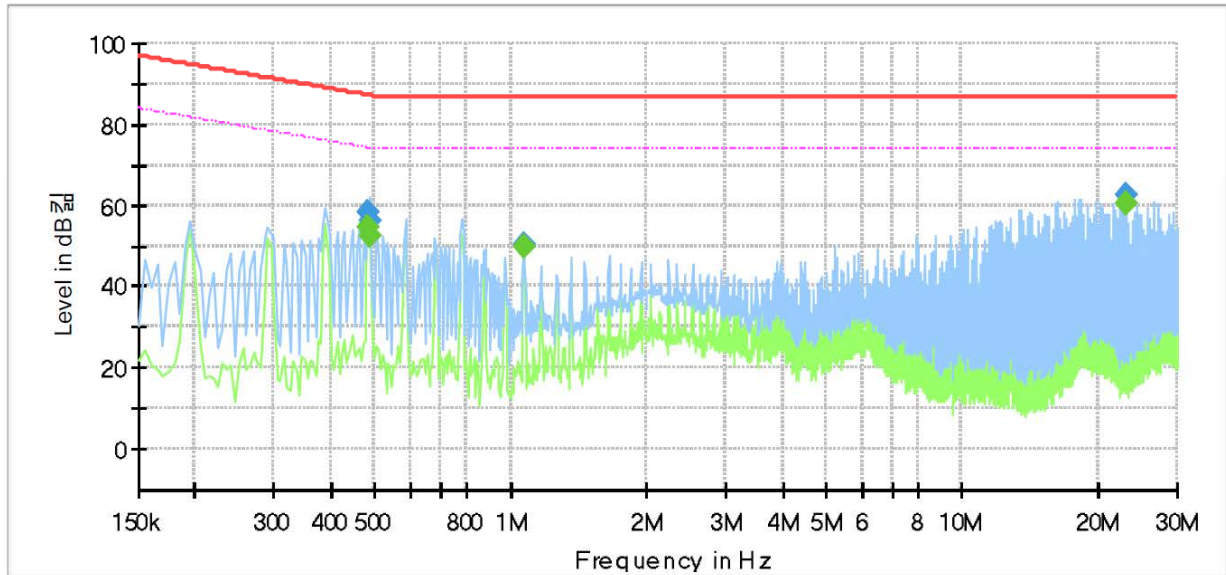
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6120P
Mode: AC 24 V_100 Mbps
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.485000	---	54.72	74.25	19.53	1000.0	9.000	Single Line	20.7
0.485000	58.23	---	87.25	29.02	1000.0	9.000	Single Line	20.7
0.490000	---	52.43	74.17	21.74	1000.0	9.000	Single Line	20.7
0.490000	56.06	---	87.17	31.11	1000.0	9.000	Single Line	20.7
1.070000	---	49.59	74.00	24.41	1000.0	9.000	Single Line	20.2
1.070000	50.23	---	87.00	36.77	1000.0	9.000	Single Line	20.2
23.130000	---	60.18	74.00	13.82	1000.0	9.000	Single Line	20.5
23.130000	62.49	---	87.00	24.51	1000.0	9.000	Single Line	20.5

◆ 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))

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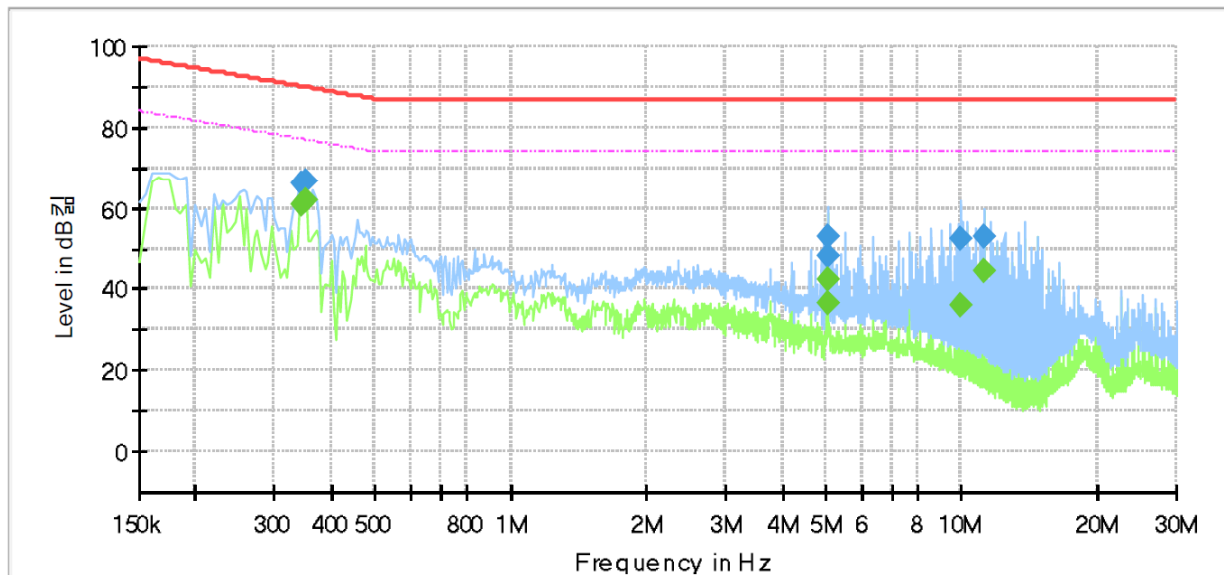


- DC 12 V Mode

[10 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6120P
Mode: DC 12 V_10 Mbps
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	---	60.98	77.08	16.10	1000.0	9.000	Single Line	20.7
0.345000	66.12	---	90.08	23.96	1000.0	9.000	Single Line	20.7
0.350000	---	61.78	76.96	15.18	1000.0	9.000	Single Line	20.6
0.350000	66.77	---	89.96	23.19	1000.0	9.000	Single Line	20.6
5.055000	---	42.34	74.00	31.66	1000.0	9.000	Single Line	19.5
5.055000	52.91	---	87.00	34.09	1000.0	9.000	Single Line	19.5
5.060000	---	36.51	74.00	37.49	1000.0	9.000	Single Line	19.5
5.060000	48.29	---	87.00	38.71	1000.0	9.000	Single Line	19.5
10.005000	---	35.92	74.00	38.08	1000.0	9.000	Single Line	19.7
10.005000	52.33	---	87.00	34.67	1000.0	9.000	Single Line	19.7
11.195000	---	44.63	74.00	29.37	1000.0	9.000	Single Line	19.8
11.195000	52.68	---	87.00	34.32	1000.0	9.000	Single Line	19.8

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

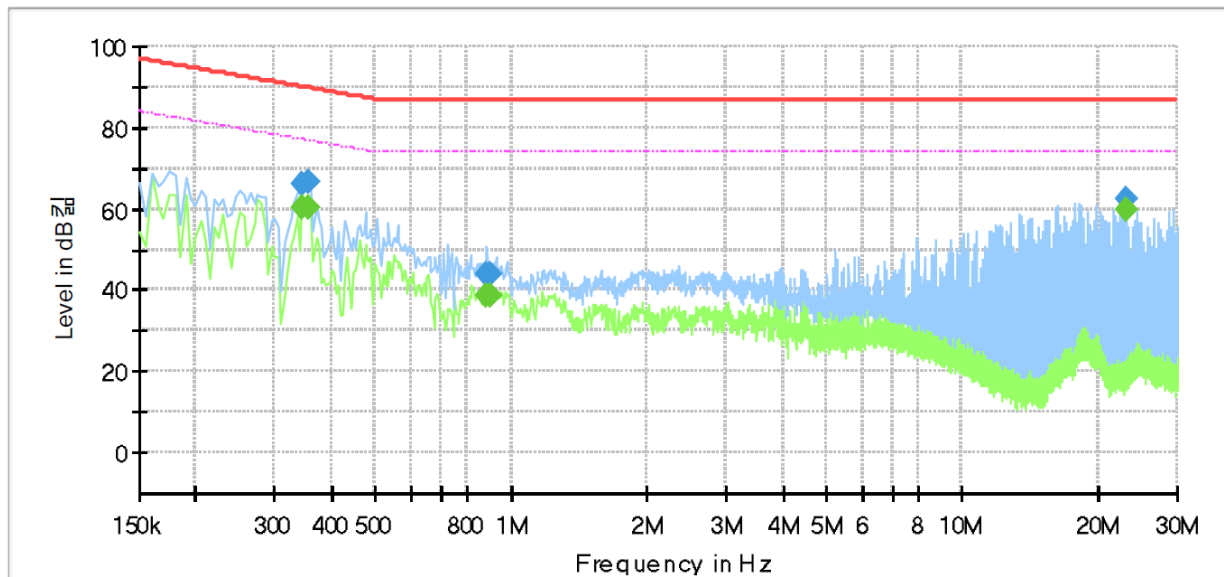
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6120P
Mode: DC 12 V_100 Mbps
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	---	60.34	77.08	16.74	1000.0	9.000	Single Line	20.9
0.345000	66.34	---	90.08	23.74	1000.0	9.000	Single Line	20.9
0.355000	---	60.11	76.84	16.73	1000.0	9.000	Single Line	20.9
0.355000	66.67	---	89.84	23.17	1000.0	9.000	Single Line	20.9
0.885000	---	38.44	74.00	35.56	1000.0	9.000	Single Line	20.3
0.885000	44.18	---	87.00	42.82	1000.0	9.000	Single Line	20.3
0.895000	---	38.80	74.00	35.20	1000.0	9.000	Single Line	20.3
0.895000	44.09	---	87.00	42.91	1000.0	9.000	Single Line	20.3
23.130000	---	60.03	74.00	13.97	1000.0	9.000	Single Line	20.5
23.130000	62.23	---	87.00	24.77	1000.0	9.000	Single Line	20.5

◆ 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))

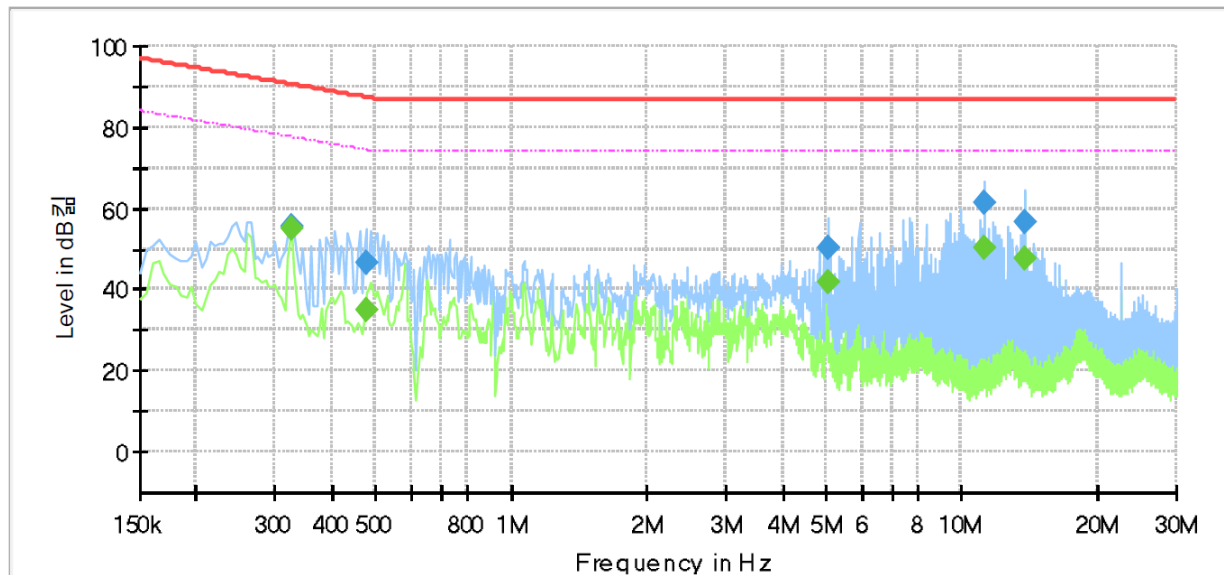
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- PoE Mode

[10 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6120P
Mode: POE_10 Mbps
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.325000	---	54.91	77.58	22.67	1000.0	9.000	Single Line	20.7
0.325000	55.37	---	90.58	35.21	1000.0	9.000	Single Line	20.7
0.475000	---	34.81	74.43	39.62	1000.0	9.000	Single Line	20.4
0.475000	46.80	---	87.43	40.63	1000.0	9.000	Single Line	20.4
5.055000	---	41.94	74.00	32.06	1000.0	9.000	Single Line	19.5
5.055000	50.27	---	87.00	36.73	1000.0	9.000	Single Line	19.5
11.250000	---	50.23	74.00	23.77	1000.0	9.000	Single Line	19.8
11.250000	61.41	---	87.00	25.59	1000.0	9.000	Single Line	19.8
13.750000	---	47.89	74.00	26.11	1000.0	9.000	Single Line	19.9
13.750000	56.69	---	87.00	30.31	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.

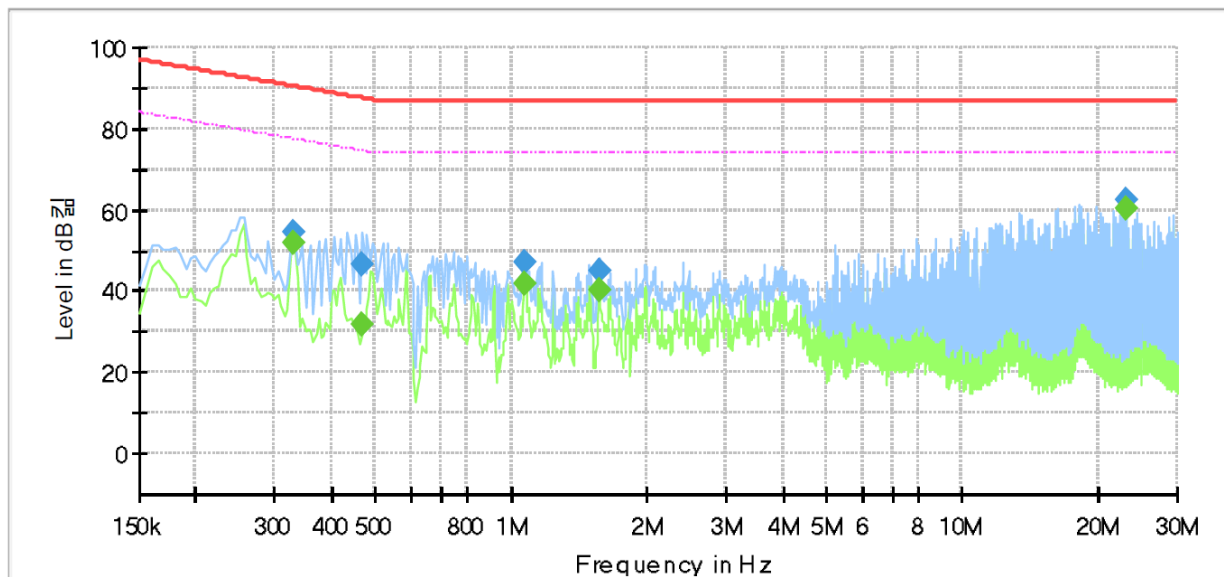
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNV-6120P
Mode: POE_100 Mbps
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.330000	---	51.99	77.45	25.46	1000.0	9.000	Single Line	21.0
0.330000	54.37	---	90.45	36.08	1000.0	9.000	Single Line	21.0
0.465000	---	31.60	74.60	43.00	1000.0	9.000	Single Line	20.7
0.465000	46.83	---	87.60	40.77	1000.0	9.000	Single Line	20.7
1.075000	---	42.09	74.00	31.91	1000.0	9.000	Single Line	20.2
1.075000	47.07	---	87.00	39.93	1000.0	9.000	Single Line	20.2
1.570000	---	40.30	74.00	33.70	1000.0	9.000	Single Line	20.0
1.570000	45.26	---	87.00	41.74	1000.0	9.000	Single Line	20.0
23.130000	---	60.33	74.00	13.67	1000.0	9.000	Single Line	20.5
23.130000	62.34	---	87.00	24.66	1000.0	9.000	Single Line	20.5

◆ 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))

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**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]
215.27	15.00	H	4.00	12.02	3.32	30.34	40.00	9.66
215.56	15.20	V	1.00	12.02	3.32	30.54	40.00	9.46
239.15	15.80	V	1.02	12.34	3.58	31.72	47.00	15.28
250.67	16.40	H	3.98	12.50	3.70	32.60	47.00	14.40
299.15	16.90	V	1.01	13.40	4.10	34.40	47.00	12.60
333.68	16.80	H	3.99	14.16	4.20	35.16	47.00	11.84

* 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

- DC 12 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]
209.80	17.00	V	1.00	11.94	3.26	32.20	40.00	7.80
216.18	15.20	H	4.00	12.03	3.33	30.56	40.00	9.44
250.62	15.80	V	1.02	12.50	3.70	32.00	47.00	15.00
312.72	16.20	V	1.01	13.70	4.14	34.04	47.00	12.96
334.28	15.10	H	3.98	14.17	4.20	33.47	47.00	13.53
399.99	14.00	H	3.99	15.61	4.60	34.21	47.00	12.79

* 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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Test report No.:
KES-E1-17T0303
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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]
42.12	17.50	V	1.00	12.45	1.57	31.52	40.00	8.48
42.92	15.50	H	4.00	12.64	1.58	29.72	40.00	10.28
76.56	19.50	V	1.01	7.41	2.02	28.93	40.00	11.07
250.00	16.40	H	3.98	12.49	3.69	32.58	47.00	14.42
311.00	17.30	V	1.02	13.66	4.13	35.09	47.00	11.91
350.00	16.80	H	3.99	14.52	4.24	35.56	47.00	11.44

* H : Horizontal, V : Vertical

◆ Calculation

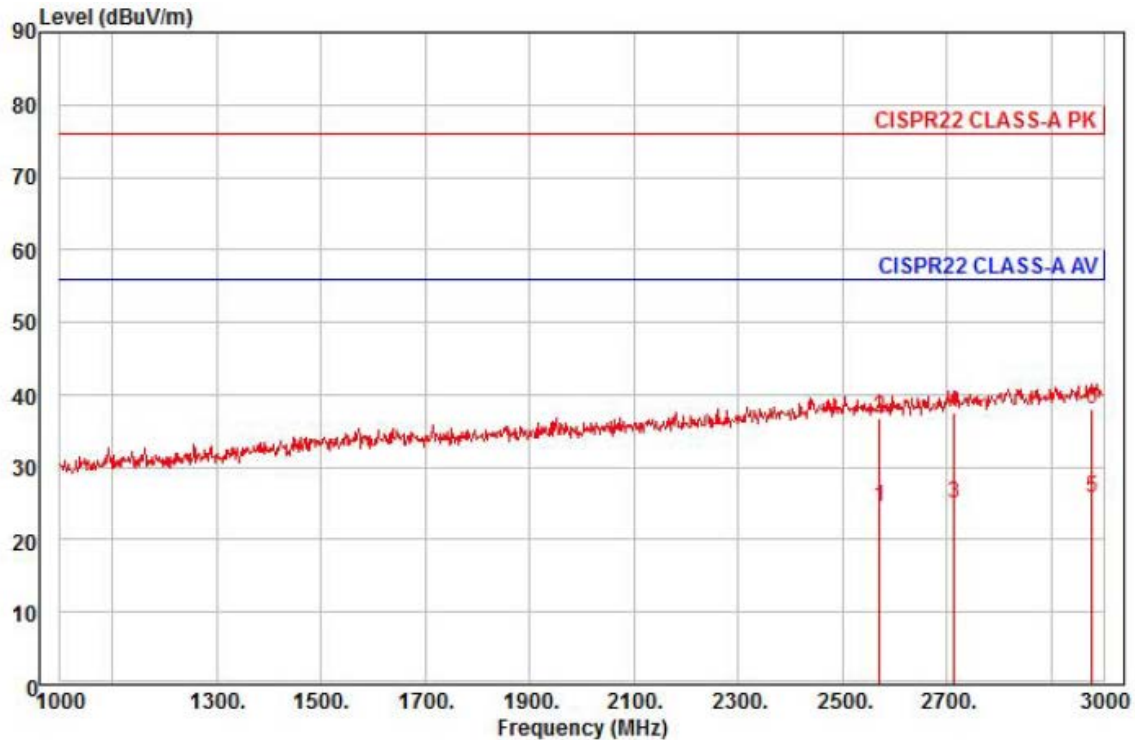
Corrected Amplitude [dBμV] = Amplitude[dBuV] + Correction Factor [dB]

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

Correction Factor : ANT FACTOR + Cable loss

Radiated Electric Field Emissions(Above 1 GHz)

- AC 24 V Mode



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : AC 24 V
Memo : 1 ~ 3 GHz

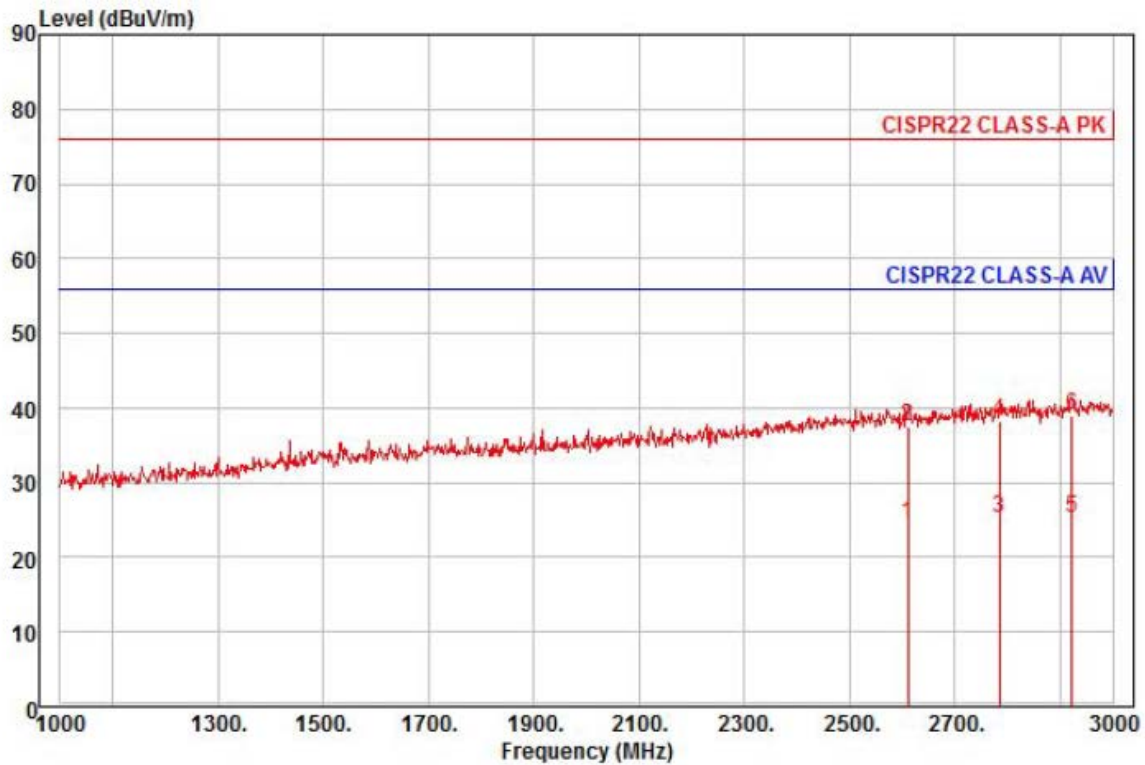
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	2572.00	25.54	27.89	10.68	39.62	1	56.00	-31.51	horizontal	Average
2	2572.00	37.86	27.89	10.68	39.62	1	76.00	-39.19	horizontal	Peak
3	2714.00	25.23	28.52	11.02	39.78	251	56.00	-31.01	horizontal	Average
4	2714.00	37.76	28.52	11.02	39.78	251	76.00	-38.48	horizontal	Peak
5 pp	2978.00	24.45	29.69	11.65	40.08	235	56.00	-30.29	horizontal	Average
6 pk	2978.00	36.87	29.69	11.65	40.08	235	76.00	-37.87	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

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Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : AC 24 V
Memo : 1 ~ 3 GHz

	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	2612.00	25.43	28.07	10.77	39.66	267	56.00	-31.39	vertical
2	2612.00	38.46	28.07	10.77	39.66	267	76.00	-38.36	vertical
3	2786.00	25.06	28.84	11.20	39.86	115	56.00	-30.76	vertical
4	2786.00	38.14	28.84	11.20	39.86	115	76.00	-37.68	vertical
5 pp	2922.00	24.35	29.44	11.52	40.02	307	56.00	-30.71	vertical
6 pk	2922.00	38.03	29.44	11.52	40.02	307	76.00	-37.03	vertical

◆ 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

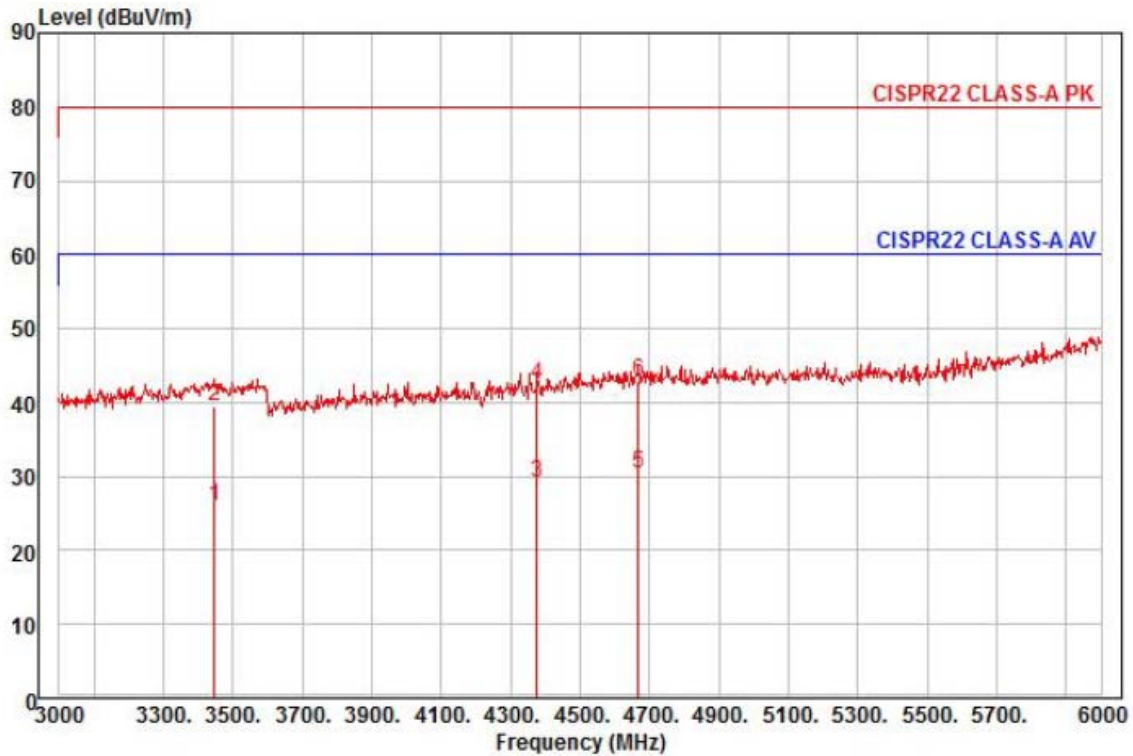
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Test report No.:
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Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : AC 24 V
Memo : 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	3447.00	24.02	30.24	12.53	40.80	218	60.00	-34.01	horizontal	Average
2	3447.00	37.50	30.24	12.53	40.80	218	80.00	-40.53	horizontal	Peak
3	4377.00	23.26	32.45	14.23	40.75	28	60.00	-30.81	horizontal	Average
4	4377.00	36.40	32.45	14.23	40.75	28	80.00	-37.67	horizontal	Peak
5 pp	4668.00	23.26	32.94	14.81	40.60	110	60.00	-29.59	horizontal	Average
6 pk	4668.00	35.85	32.94	14.81	40.60	110	80.00	-37.00	horizontal	Peak

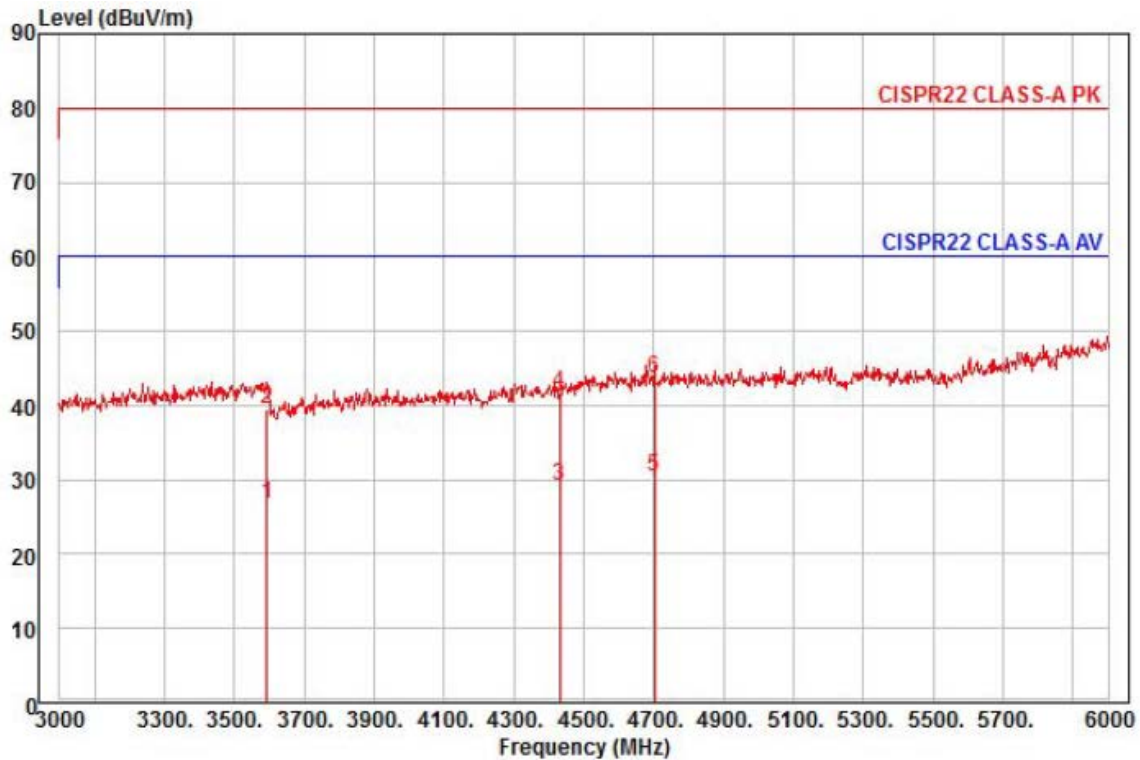
◆ Calculation

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

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Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : AC 24 V
Memo : 3 ~ 6 GHz

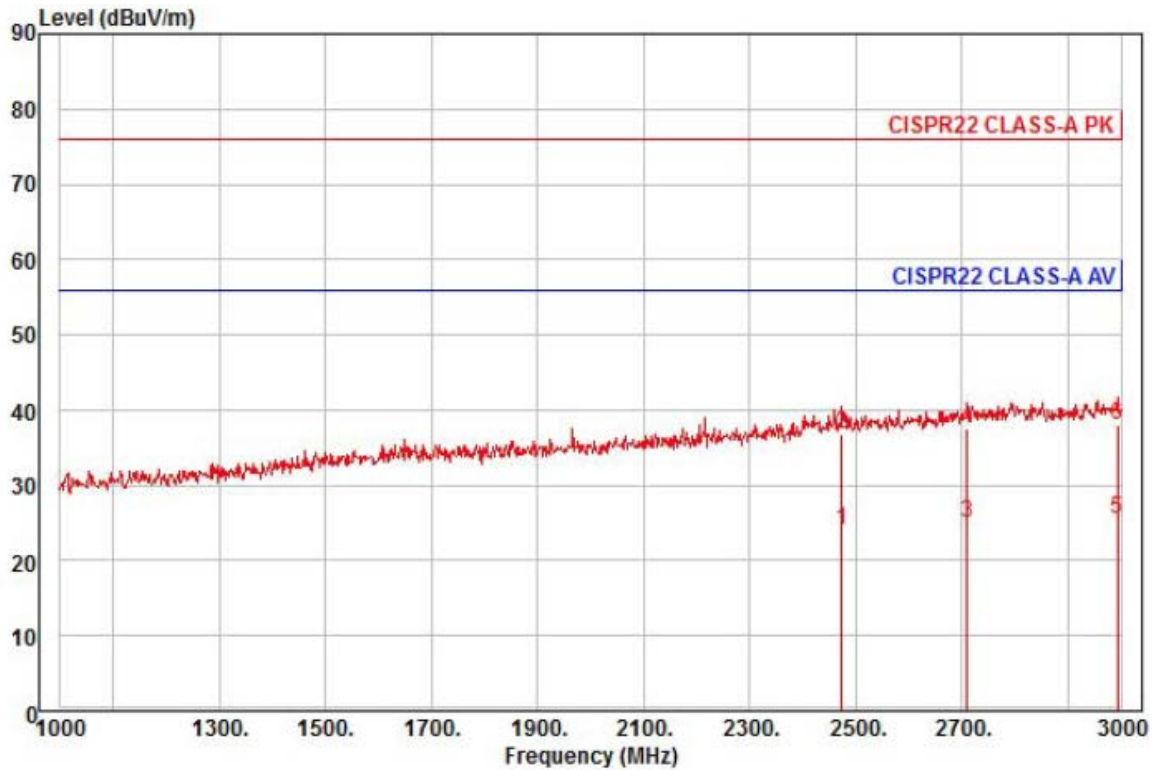
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3594.00	24.30	30.50	12.79	40.85	103	60.00	-33.26	vertical	Average
2	3594.00	37.04	30.50	12.79	40.85	103	80.00	-40.52	vertical	Peak
3	4431.00	23.02	32.61	14.33	40.76	69	60.00	-30.80	vertical	Average
4	4431.00	35.56	32.61	14.33	40.76	69	80.00	-38.26	vertical	Peak
5 pp	4701.00	23.20	32.97	14.88	40.57	136	60.00	-29.52	vertical	Average
6 pk	4701.00	36.30	32.97	14.88	40.57	136	80.00	-36.42	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

- DC 12 V Mode



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : DC 12 V
Memo : 1 ~ 3 GHz

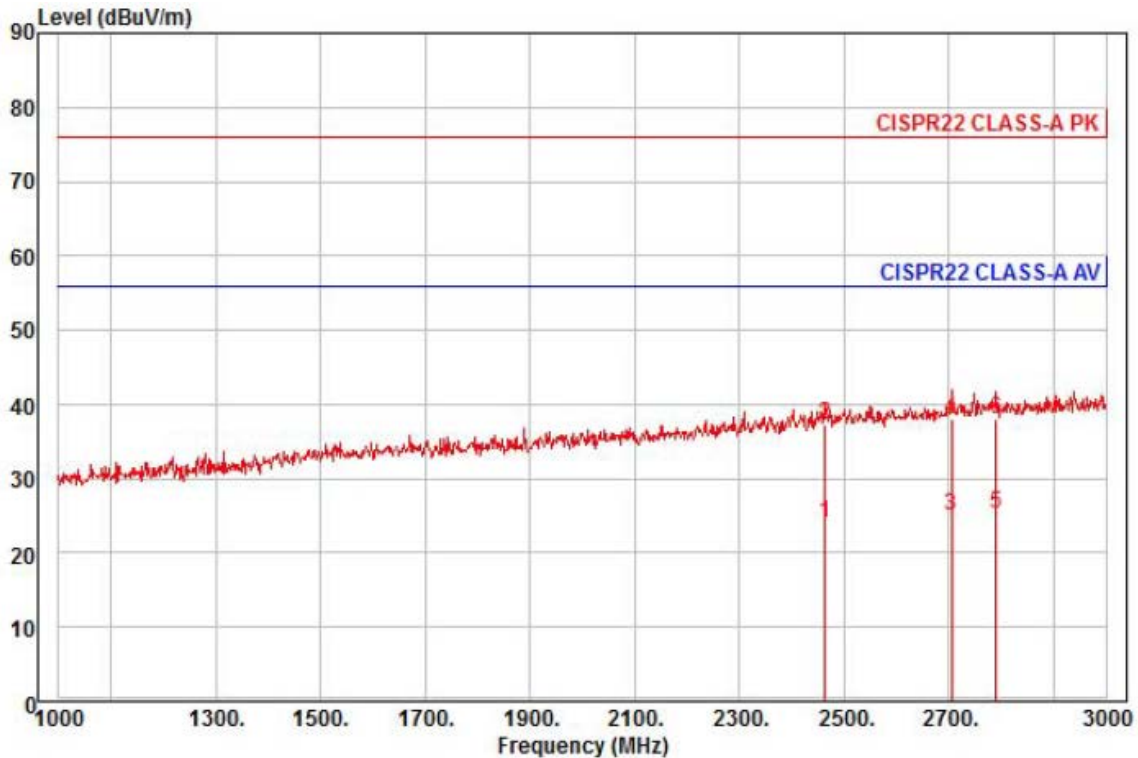
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	2474.00	25.67	27.47	10.48	39.51	49	56.00	-31.89	horizontal	Average
2	2474.00	38.33	27.47	10.48	39.51	49	76.00	-39.23	horizontal	Peak
3	2710.00	25.26	28.50	11.01	39.78	155	56.00	-31.01	horizontal	Average
4	2710.00	37.88	28.50	11.01	39.78	155	76.00	-38.39	horizontal	Peak
5 pp	2994.00	24.11	29.76	11.68	40.10	333	56.00	-30.55	horizontal	Average
6 pk	2994.00	36.57	29.76	11.68	40.10	333	76.00	-38.09	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

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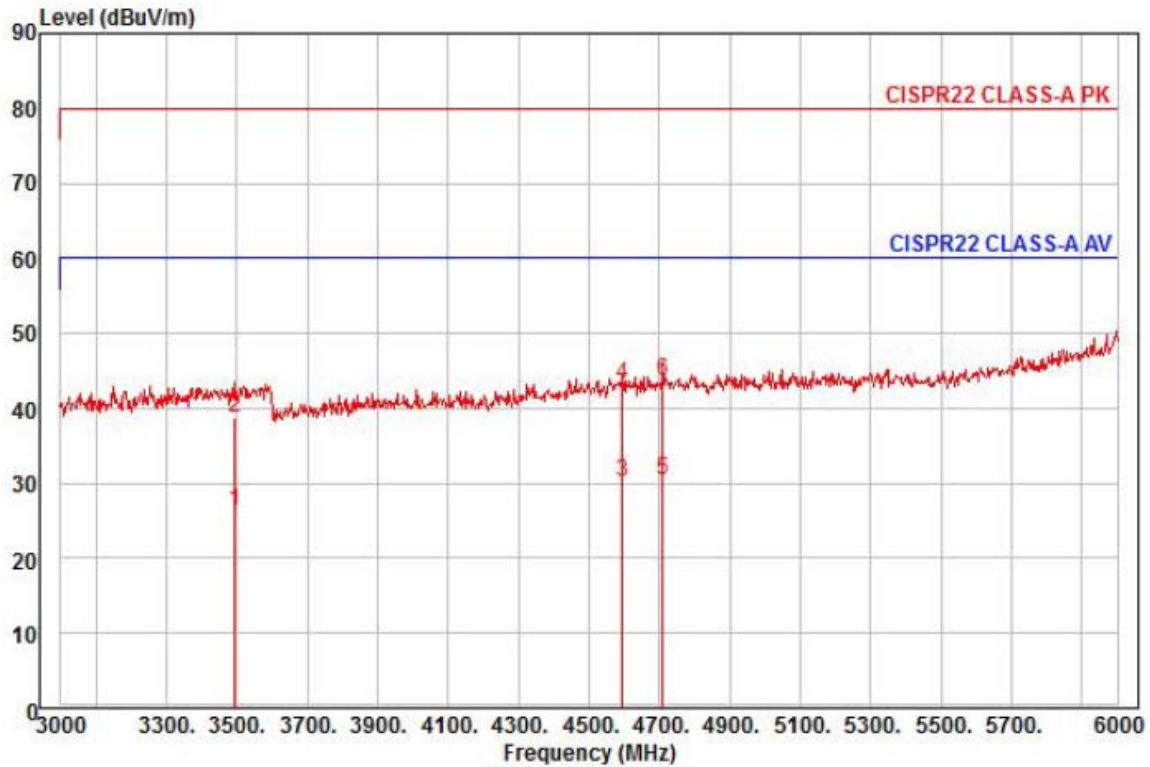
Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : DC 12 V
Memo : 1 ~ 3 GHz

	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	2464.00	25.59	27.43	10.46	39.49	146	56.00	-32.01	vertical	Average
2	2464.00	38.99	27.43	10.46	39.49	146	76.00	-38.61	vertical	Peak
3	2706.00	25.22	28.48	11.00	39.77	267	56.00	-31.07	vertical	Average
4	2706.00	38.29	28.48	11.00	39.77	267	76.00	-38.00	vertical	Peak
5 pp	2790.00	25.03	28.86	11.21	39.87	356	56.00	-30.77	vertical	Average
6 pk	2790.00	37.84	28.86	11.21	39.87	356	76.00	-37.96	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



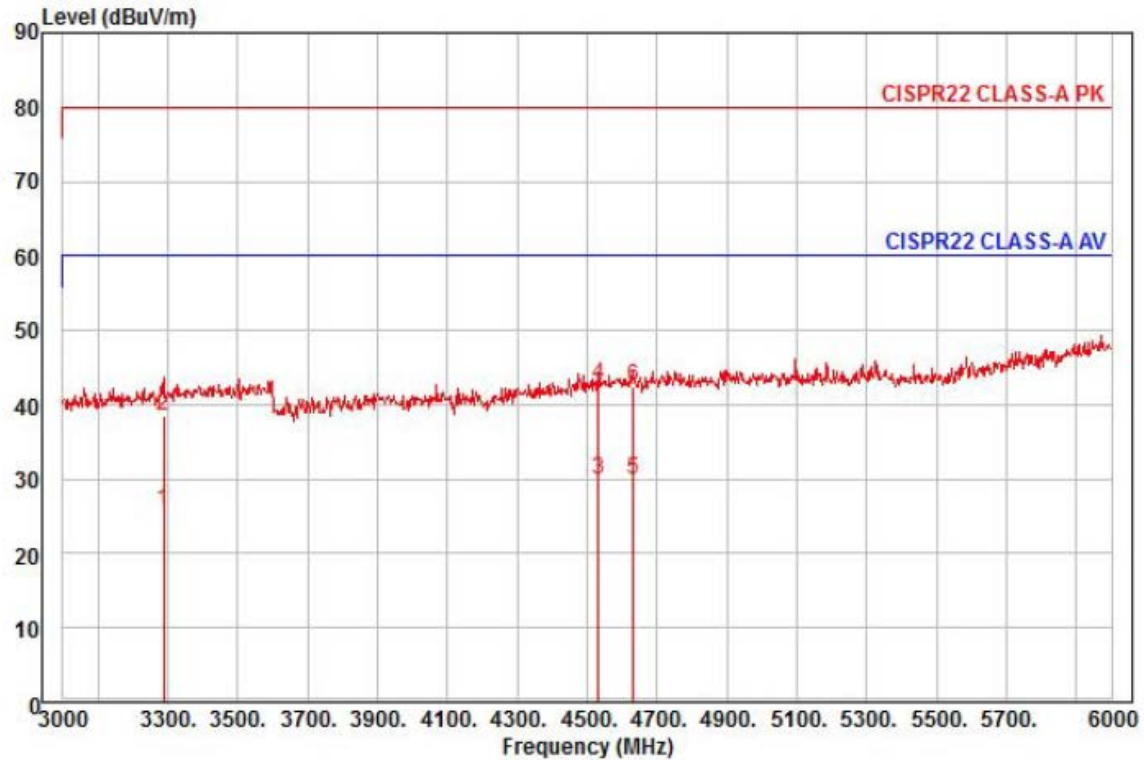
Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : DC 12 V
Memo : 3 ~ 6 GHz

	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	3495.00	24.20	30.29	12.62	40.87	73	60.00	-33.76	horizontal	Average
2	3495.00	36.80	30.29	12.62	40.87	73	80.00	-41.16	horizontal	Peak
3	4596.00	23.31	32.88	14.65	40.67	126	60.00	-29.83	horizontal	Average
4	4596.00	36.29	32.88	14.65	40.67	126	80.00	-36.85	horizontal	Peak
5 pp	4710.00	23.11	32.98	14.90	40.56	235	60.00	-29.57	horizontal	Average
6 pk	4710.00	36.43	32.98	14.90	40.56	235	80.00	-36.25	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 STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : DC 12 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	3288.00	23.95	30.08	12.23	40.55	24	60.00	-34.29	vertical	Average
2	3288.00	36.80	30.08	12.23	40.55	24	80.00	-41.44	vertical	Peak
3	4533.00	23.19	32.83	14.53	40.74	331	60.00	-30.19	vertical	Average
4 pk	4533.00	36.09	32.83	14.53	40.74	331	80.00	-37.29	vertical	Peak
5 pp	4632.00	22.94	32.91	14.73	40.64	250	60.00	-30.06	vertical	Average
6	4632.00	35.46	32.91	14.73	40.64	250	80.00	-37.54	vertical	Peak

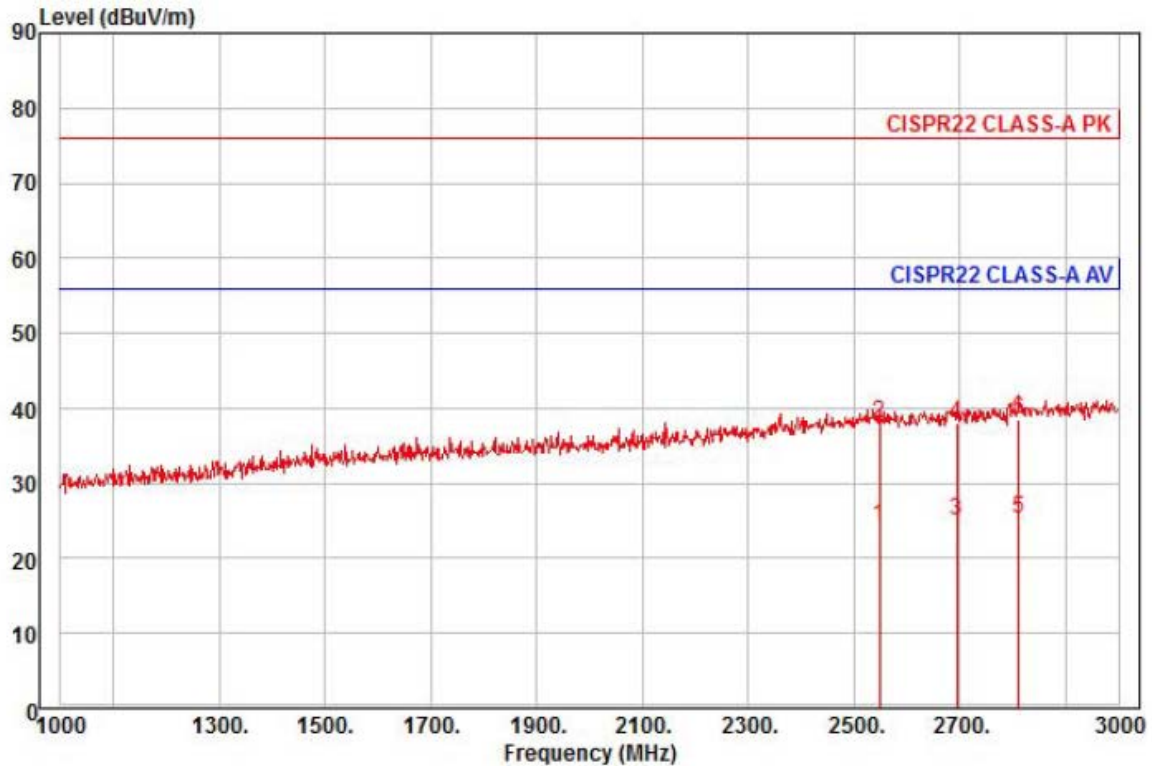
◆ Calculation

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

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- PoE Mode



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : POE
Memo : 1 ~ 3 GHz

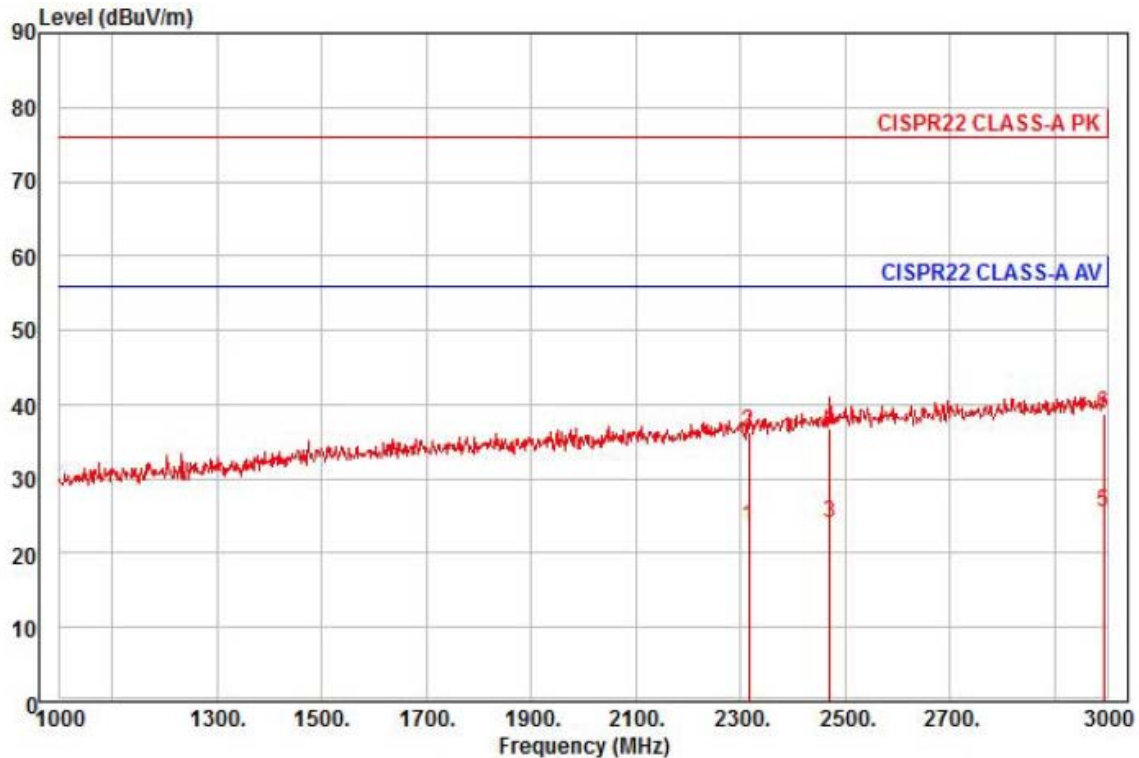
	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	2548.00	25.51	27.78	10.63	39.59	50	56.00	-31.67	horizontal Average
2	2548.00	39.18	27.78	10.63	39.59	50	76.00	-38.00	horizontal Peak
3	2694.00	25.26	28.43	10.97	39.76	5	56.00	-31.10	horizontal Average
4	2694.00	38.28	28.43	10.97	39.76	5	76.00	-38.08	horizontal Peak
5 pp	2812.00	24.96	28.96	11.26	39.89	27	56.00	-30.71	horizontal Average
6 pk	2812.00	38.16	28.96	11.26	39.89	27	76.00	-37.51	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

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Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
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	2316.00	26.07	26.85	10.10	39.42	148	56.00	-32.40	vertical	Average
2	2316.00	38.79	26.85	10.10	39.42	148	76.00	-39.68	vertical	Peak
3	2470.00	25.58	27.45	10.47	39.50	281	56.00	-32.00	vertical	Average
4	2470.00	38.27	27.45	10.47	39.50	281	76.00	-39.31	vertical	Peak
5 pp	2994.00	24.25	29.76	11.68	40.10	118	56.00	-30.41	vertical	Average
6 pk	2994.00	37.47	29.76	11.68	40.10	118	76.00	-37.19	vertical	Peak

◆ Calculation

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

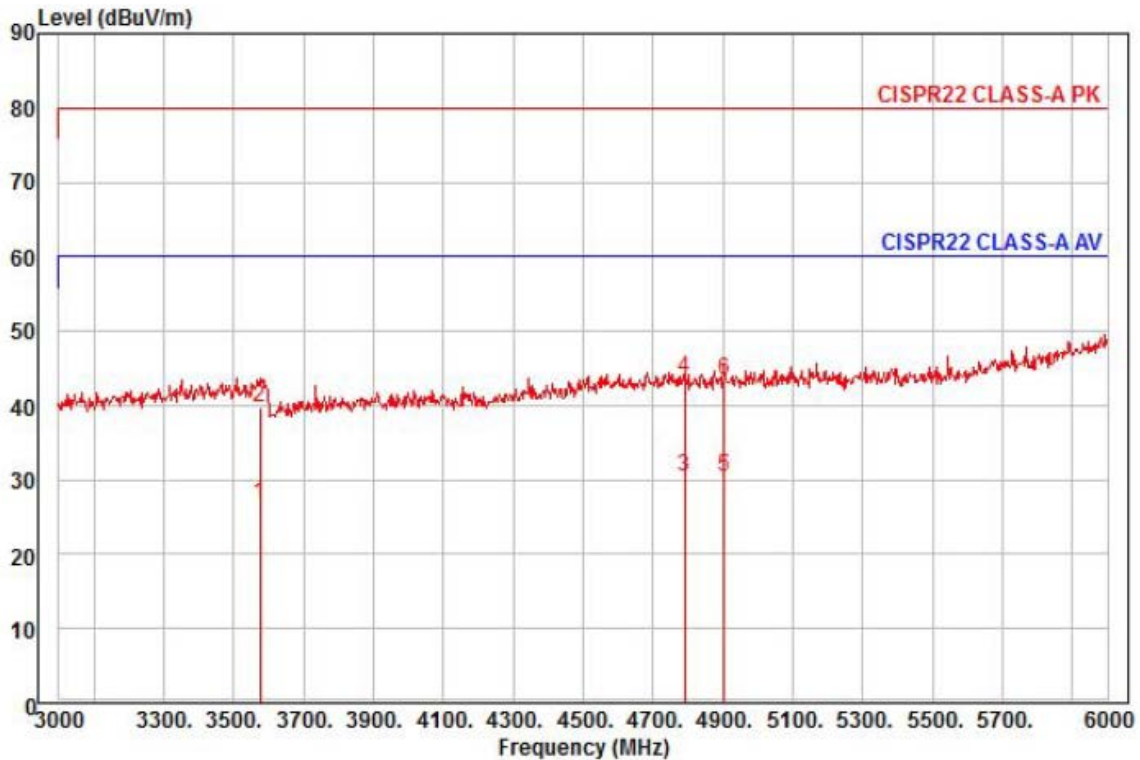
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



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Test report No.:
KES-E1-17T0303
Page (63) of (83)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : POE
Memo : 3 ~ 6 GHz

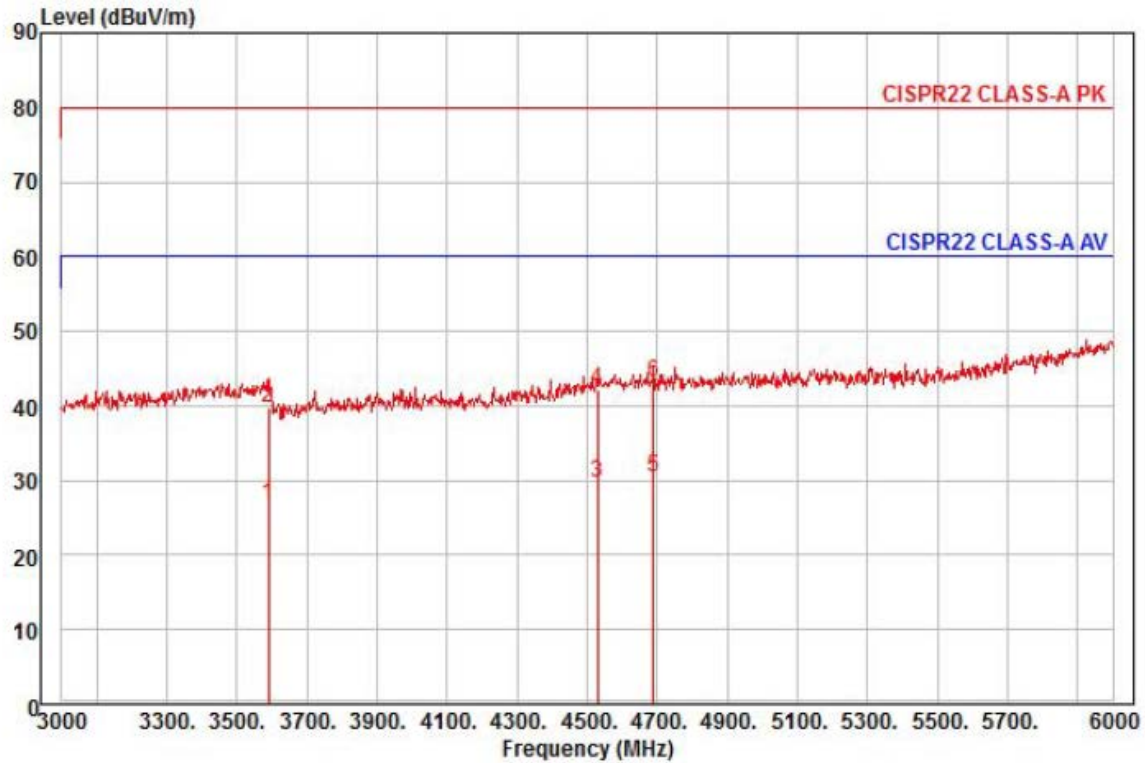
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3576.00	24.48	30.46	12.76	40.85	55	60.00	-33.15	horizontal	Average
2	3576.00	37.32	30.46	12.76	40.85	55	80.00	-40.31	horizontal	Peak
3	4791.00	22.74	33.05	15.08	40.48	136	60.00	-29.61	horizontal	Average
4 pk	4791.00	35.89	33.05	15.08	40.48	136	80.00	-36.46	horizontal	Peak
5 pp	4902.00	22.48	33.15	15.21	40.37	307	60.00	-29.53	horizontal	Average
6	4902.00	35.33	33.15	15.21	40.37	307	80.00	-36.68	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

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Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6120P
Mode : POE
Memo : 3 ~ 6 GHz

	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3591.00	24.36	30.49	12.79	40.85	83	60.00	-33.21	vertical
2	3591.00	37.33	30.49	12.79	40.85	83	80.00	-40.24	vertical
3	4530.00	23.04	32.83	14.52	40.74	235	60.00	-30.35	vertical
4	4530.00	35.46	32.83	14.52	40.74	235	80.00	-37.93	vertical
5 pp	4689.00	23.10	32.96	14.85	40.58	27	60.00	-29.67	vertical
6 pk	4689.00	36.00	32.96	14.85	40.58	27	80.00	-36.77	vertical

◆ 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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**Harmonic Current Emissions and Voltage Fluctuations and Flicker*****Average harmonic current results***

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	93.905E-3			
2	456.862E-6			PASS
3	35.687E-3	1.552	2.30	PASS
4	247.610E-6			PASS
5	29.207E-3	2.562	1.14	PASS
6	191.016E-6			PASS
7	5.094E-3	0.662	770.00E-3	PASS
8	155.697E-6			PASS
9	6.404E-3	1.601	400.00E-3	PASS
10	198.021E-6			PASS
11	1.339E-3			PASS
12	134.093E-6			PASS
13	1.946E-3			PASS
14	137.684E-6			PASS
15	1.677E-3			PASS
16	143.958E-6			PASS
17	559.850E-6			PASS
18	148.529E-6			PASS
19	864.847E-6			PASS
20	155.878E-6			PASS
21	925.910E-6			PASS
22	149.198E-6			PASS
23	573.207E-6			PASS
24	153.924E-6			PASS
25	519.986E-6			PASS
26	153.540E-6			PASS
27	413.546E-6			PASS
28	143.233E-6			PASS
29	491.529E-6			PASS
30	153.494E-6			PASS
31	626.862E-6			PASS
32	180.826E-6			PASS
33	188.542E-6			PASS
34	190.169E-6			PASS
35	703.263E-6			PASS
36	185.935E-6			PASS
37	602.324E-6			PASS
38	160.202E-6			PASS
39	375.014E-6			PASS
40	160.358E-6			PASS

Harmonic currents less than 0.6% of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.



Test Data - Harmonics (continued)

Maximum harmonic current results				
Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	94.209E-3			
2	870.288E-6			PASS
3	35.867E-3	1.040	3.45	PASS
4	426.446E-6			PASS
5	29.462E-3	1.723	1.71	PASS
6	282.319E-6			PASS
7	5.295E-3	0.458	1.15	PASS
8	264.359E-6			PASS
9	6.508E-3	1.085	600.00E-3	PASS
10	300.461E-6			PASS
11	1.630E-3			PASS
12	199.085E-6			PASS
13	2.058E-3			PASS
14	295.628E-6			PASS
15	1.893E-3			PASS
16	249.093E-6			PASS
17	674.765E-6			PASS
18	234.622E-6			PASS
19	1.031E-3			PASS
20	227.971E-6			PASS
21	1.031E-3			PASS
22	304.435E-6			PASS
23	729.557E-6			PASS
24	363.587E-6			PASS
25	743.121E-6			PASS
26	358.037E-6			PASS
27	796.265E-6			PASS
28	227.741E-6			PASS
29	601.459E-6			PASS
30	376.060E-6			PASS
31	791.846E-6			PASS
32	346.386E-6			PASS
33	342.527E-6			PASS
34	288.147E-6			PASS
35	839.133E-6			PASS
36	451.502E-6			PASS
37	733.078E-6			PASS
38	245.126E-6			PASS
39	615.107E-6			PASS
40	301.383E-6			PASS

Harmonic currents less than 0.6% of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.



Test Data - Voltage Fluctuations

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.033	1.00	PASS
Plt	0.033	0.65	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.185	4.00	PASS
Tmax [s]	0.000	0.50	PASS

Test Setup Photos and Configuration

Conducted Voltage Emissions



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Conducted Telecommunication Emissions



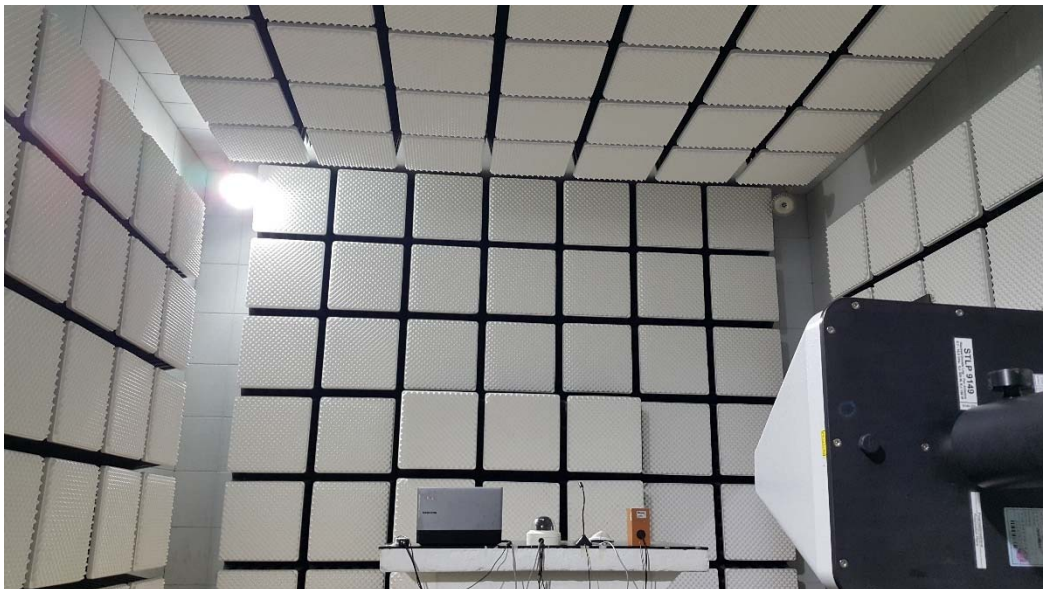
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Radiated Electric Field Emissions(Below 1 GHz)



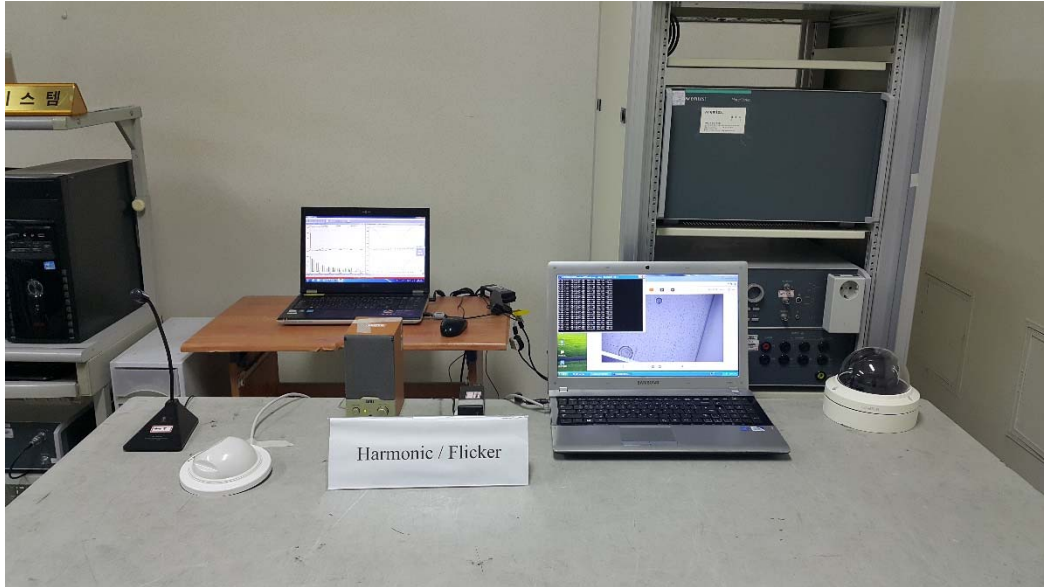
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Radiated Electric Field Emissions(Above 1 GHz)



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Harmonic Current Emissions and Voltage Fluctuations and Flicker

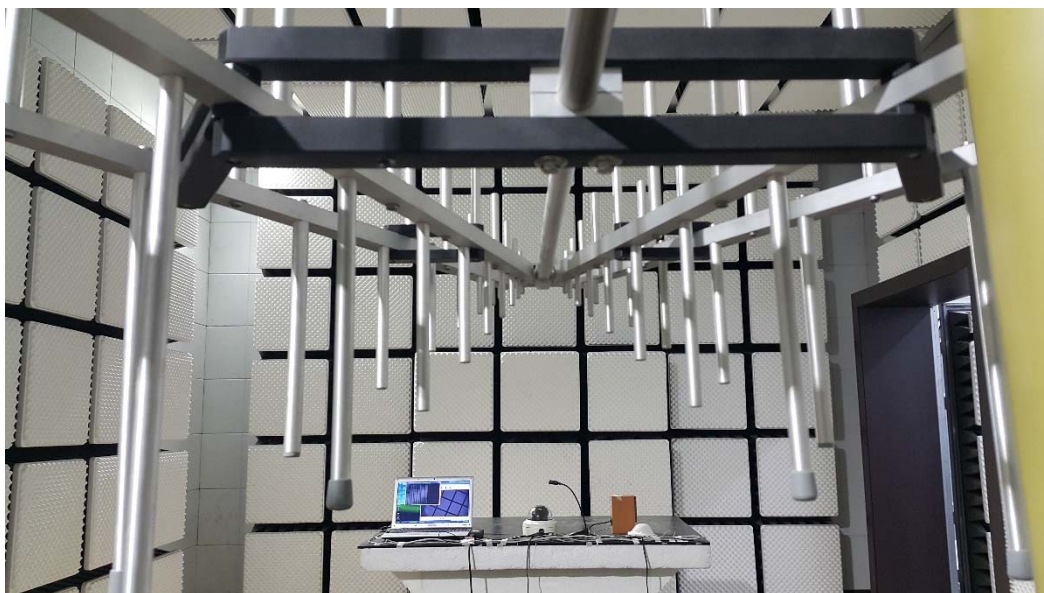


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Electrostatic Discharge

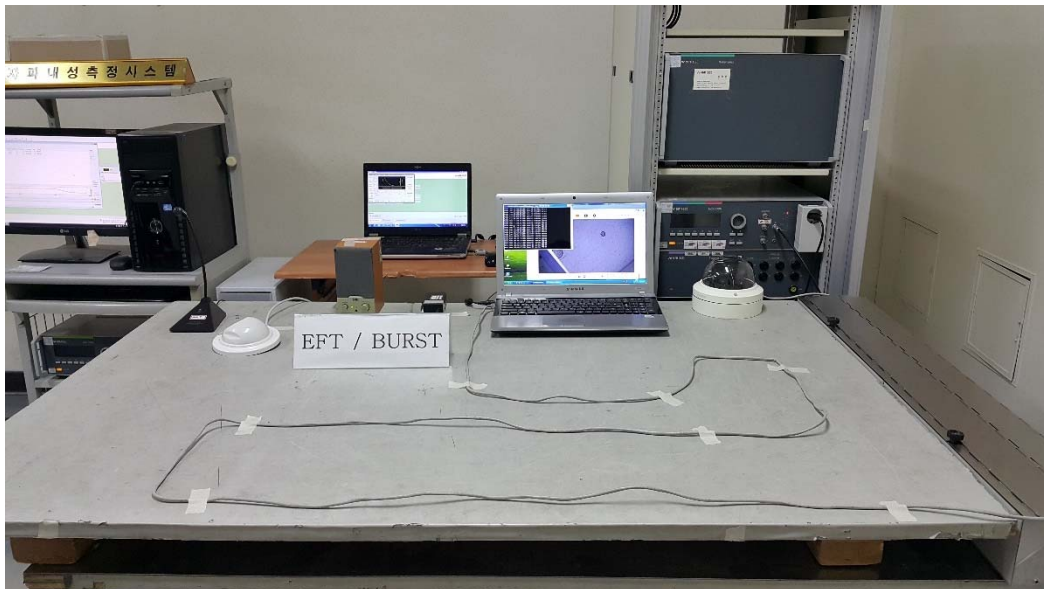


Radiated Electric Field Immunity



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Electrical Fast Transients/Bursts



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Surge Transients



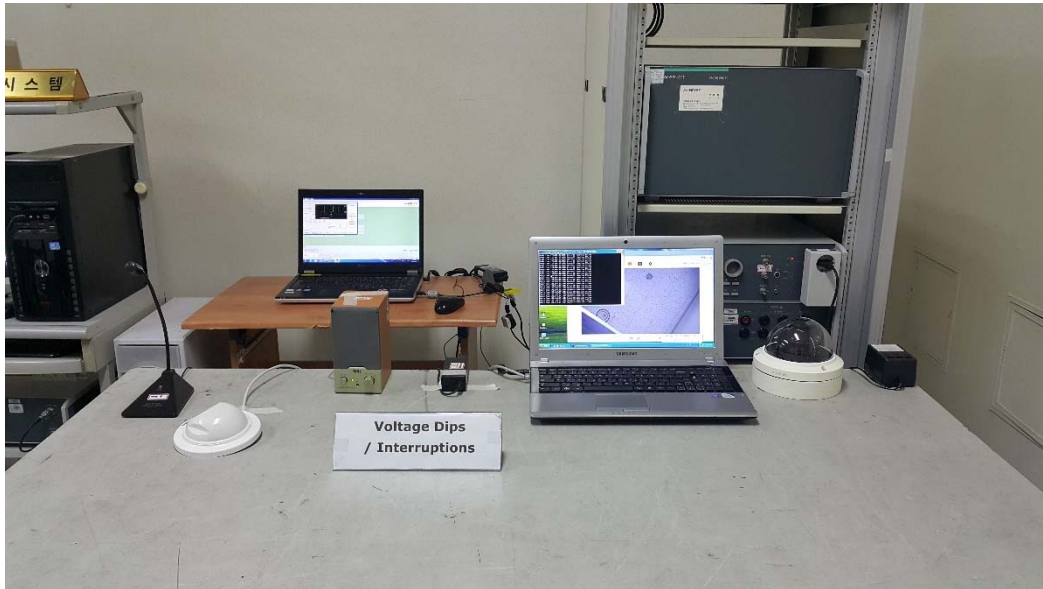
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Conducted Disturbance



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Voltage Dips and Short Interruptions



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

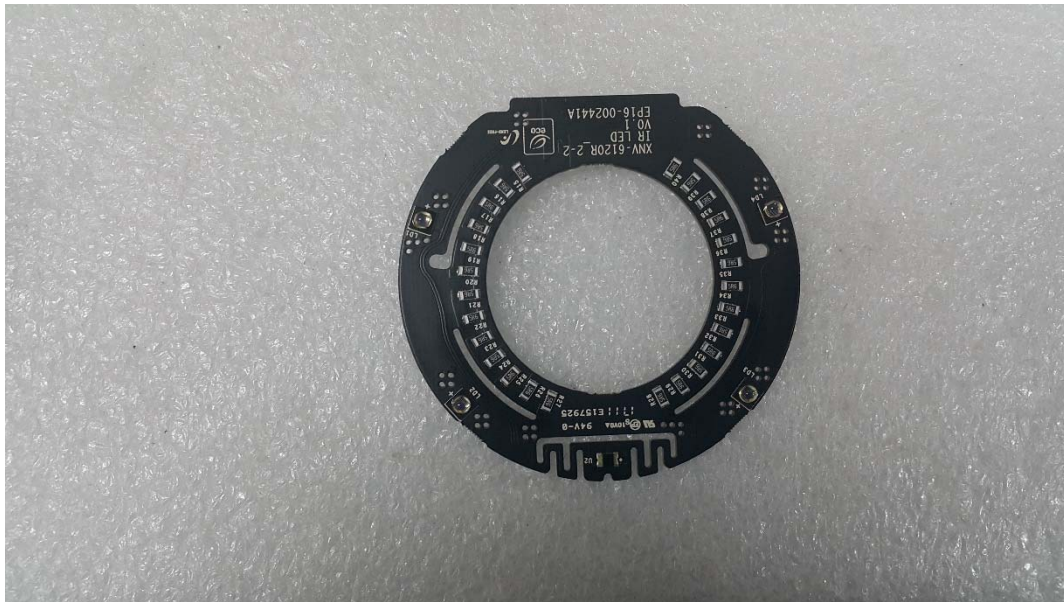
(Internal View)



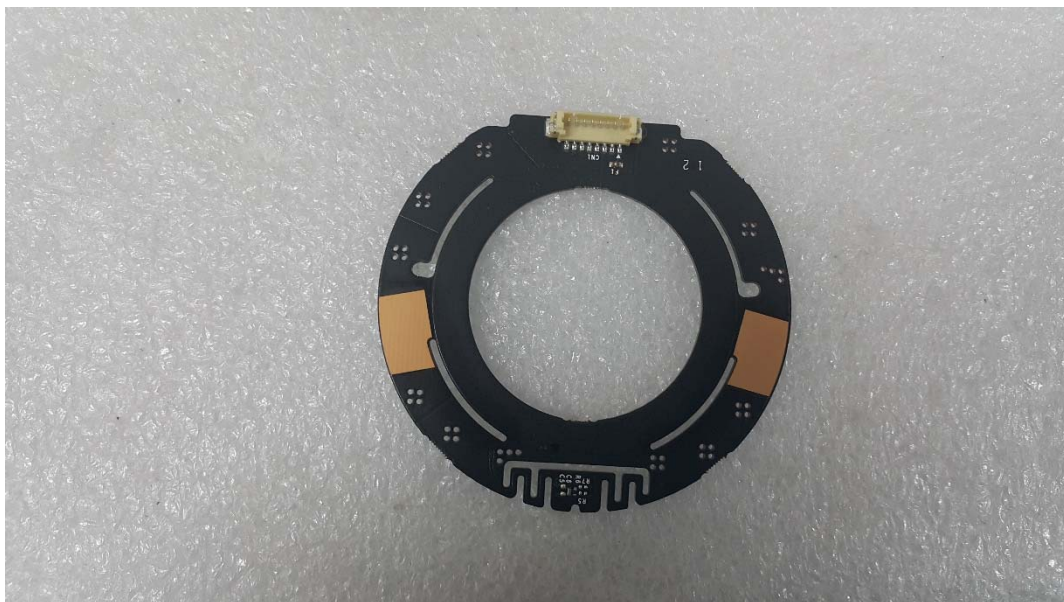
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EUT Internal View – LED Board

(Top)



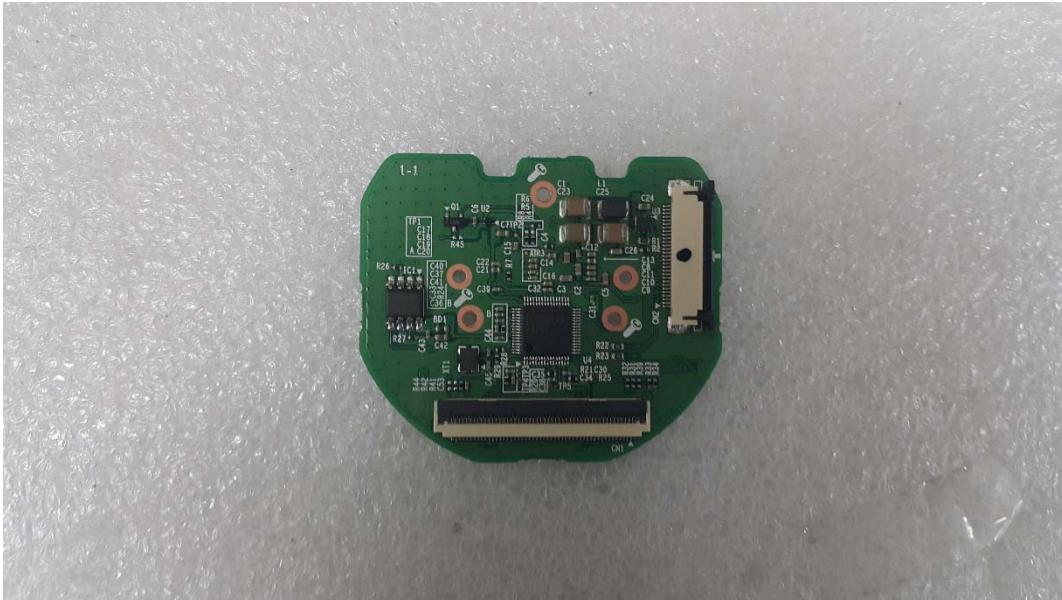
(Bottom)



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EUT Internal View – Lens Board

(Top)

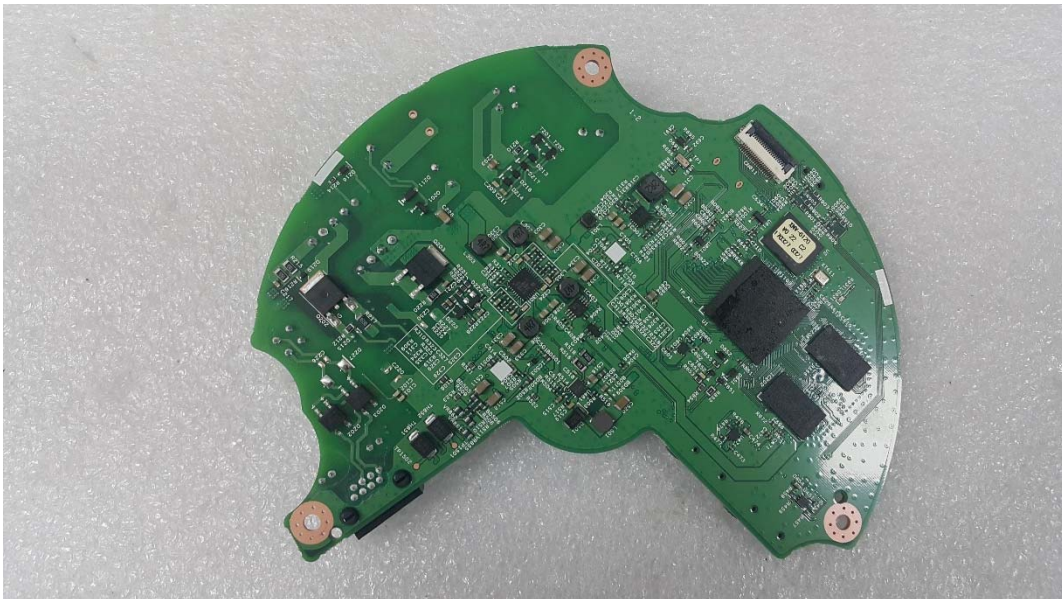


EUT Internal View – Board

(Top)

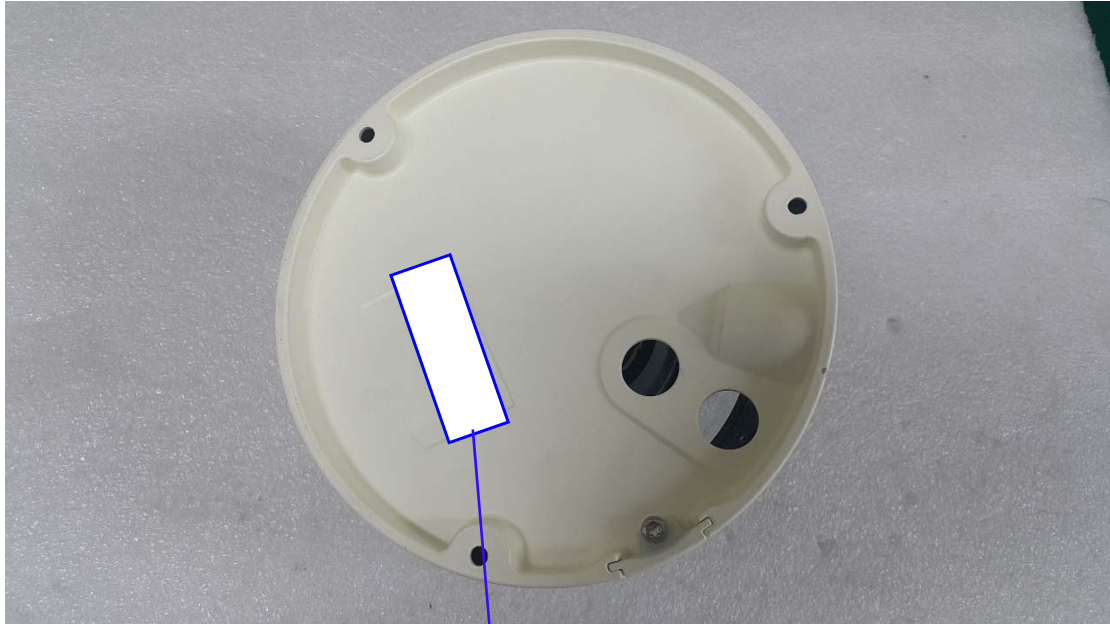


(Bottom)



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

Label and Location



NETWORK CAMERA

Model No : XNV-6120P

Manufacturer : Hanwha Techwin (Tianjin) Co.,Ltd.

Made in of China

