

# EU Declaration of Conformity

# SAMSUNG



***We hereby declare that the product***

Type of equipment : NETWORK CAMERA

Brand Name / Trade Mark : SAMSUNG

Model number : XNP-6120HP

Variant Model : -

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

EN 55032:2012/AC:2013 : Electromagnetic compatibility of multimedia equipment –  
Emission requirements  
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, hold up, CCTV, access control  
and social alarm systems  
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

***All essential testing suites have been carried out.***

Manufacturer : Hanwha Techwin (Tianjin) 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 : Jun. 15, 2017



## EMC TEST REPORT For CE

Test Report No. : KES-E1-17T0385  
Date of Issue : Jun. 15, 2017  
Product name : NETWORK CAMERA  
Model/Type No. : XNP-6120HP  
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 : May. 08, 2017  
Test date : Jun. 13, 2017 – Jun. 14, 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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### REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jun. 15, 2017	KES-E1-17T0385	Issued

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## 1.0 General Product Description

### Main Specifications of E.U.T are:

Video	
Imaging Device	1/2.8" 2.16M 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 : 0.05 Lux (1/30sec, F1.6, 50IRE) B/W : 0.005 Lux (1/30sec, F1.6, 50IRE) Color : 0.03 Lux (1/30sec, F1.6, 30IRE) B/W : 0.003 Lux (1/30sec, F1.6, 30IRE)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation USB : Micro USB type B, 1280x720, for installation
Lens	
Focal Length (Zoom Ratio)	5.2~62.4mm(Optical 12X)
Max. Aperture Ratio	F1.6(Wide) ~ F3.0(Tele)
Angular Field of View	H : 54.58°(Wide) ~ 5.30°(Tele) / V : 32.19°(Wide) ~ 3.00°(Tele)
Min. Object Distance	Wide 1.5m ,Tele 2.1m
Focus Control	Auto / Manual / One shot AF
Lens Type	DC Auto Iris
Mount Type	Board-in type
Pan/Tilt/Rotate	
Pan Range	360° Endless
Pan Speed	Preset : 350°/sec, Manual : 0.024°/sec ~ 200°/sec
Tilt Range	190°(-5° ~ 185° )
Tilt Speed	Preset : 350°/sec, Manual : 0.024°/sec ~ 200°/sec
Sequence	Preset (300 ea), Swing, Group (6 ea), Trace, Tour (1 ea), Auto Run, Schedule
Preset Accuracy	±0.2°
Azimuth	Yes (E/W/S/N/NE/NW/SE/SW)

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Auto Tracking	Support
<b>Operational</b>	
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 / Schedule
Backlight Compensation	Off / BLC / HLC / WDR
Wide Dynamic Range	150dB
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	SSNR5 (2D+3D Noise Filter) (Off / On)
Digital Image Stabilization	Off / On (built-in Gyro)
Defog	Auto/Manual/Off
Motion Detection	Off / On(8ea, Polygonal)
Privacy Masking	Off / On ( 24 Zones of Rectangle zone) - Color : Grey/Green/Red/Blue/Black/White - Zoom ratio option for mask mode - Mosaic option
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor (included Mercury & Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
Digital Zoom	32x
Image Rotation	Flip : On/Off Mirror : On/Off
Video&Audio Analytics	Tampering, Loitering, Audio Detection, Virtual Line, Sound Classification, Enter/Exit, Appear/Disappear, Face Detection, Motion Detection, Fog Detection, Auto Tracking - with Metadata
Serial Interface	RS-485 - Samsung-T/E, Pelco-D/P, Panasonic, Bosch, AD, GE, Vicon, Honeywell
Alarm I/O	Input 1ea / Output 1ea (Relay type)
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio Analytics, Network Disconnect

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Alarm events	File upload via FTP and E-Mail Notification via E-Mail, TCP and HTTP local storage(SD/SDHC/SDXC) or NAS recording at Alarm Triggers External output Preset
Audio In	Selectable (Mic IN/Line IN) Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out (3.5mm mono jack), Max output level: 1 Vrms
Pixel counter	support
<b>Network</b>	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.264 (MPEG-4 Part 10/AVC), H.265, 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

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	802.1X Authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast Mode
Edge Storage	Micro SD/SDHC/SDXC 2slot (up to 512 GB) - Continuous recording(1'st slot to 2'nd slot) - Motion Images recorded in the Micro SD/SDHC/SDXC memory card can be downloaded. NAS(Network Attached Storage) Local PC for Instant Recording
Application Programming Interface	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 Plug-in Free Webviewer Supported Browser : Google Chrome, MS Edge, Mozilla Firefox(Window 64bit only) , Apple Safari 10 (Mac OS X only) Plug-in Webviewer Supported Browser : MS Explore 11, Apple Safari 10 (Mac OS X only)
Central Management Software	SmartViewer
<b>Environmental</b>	
Operating Temperature / Humidity	-30°C ~ +55°C(-22°F ~ +131°F) / Less than 90% RH
Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66
Vandal Resistance	IK10
<b>Electrical</b>	
Input Voltage / Current	DC12V,PoE

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Power Consumption	12W
<b>Mechanical</b>	
Color / Material	Ivory / Aluminum
Dimension (WxHxD)	Ø168.0mm x H161.5mm
Weight	1.9 kg

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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	XNP-6120HP	-	Hanwha Techwin (Tianjin) Co.,Ltd	E.U.T

## 1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
POE Adaptor	PD-9501GR	-	Microsemi	-
Notebook	NT63025J	JK9091EF400432X	Samsung Electronics Co., Ltd.	-
Notebook Adaptor	A13-040N2A	CN60BA4400313AD 0N843KO243	Chicony Power Technology (suzhou)Co., Ltd.	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-
MIC	CMK-303	-	CAMAC	-
Controller	SPC-1010	C50E67WG10100F	SamSung Techwin Co.,Ltd	-
Controller Adaptor	RS-AB1000	-	Dongguan Jinhua Sheng Power Technology Co.,Ltd	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-

## 1.6 External I/O Cabling

- DC 12 V Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45	Notebook	RJ-45	3.0	U
	3.5 mm	Speaker	3.5 mm	1.6	U
	3.5 mm	MIC	3.5 mm	1.7	U
	RS 232 (2 Pin)	Controller	RS 232 (2 Pin)	3.0	U
	3 Pin	Alarm	3 Pin	1.6	U

\* Unshielded=U, Shielded=S

- 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
	3.5 mm	Speaker	3.5 mm	1.6	U
	3.5 mm	MIC	3.5 mm	1.7	U
	RS 232 (2 Pin)	Controller	RS 232 (2 Pin)	3.0	U
	3 Pin	Alarm	3 Pin	1.6	U
Notebook	RJ-45 (DATA)	POE Adaptor	RJ-45 (DATA)	3.0	U

\* Unshielded=U, Shielded=S

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## 1.7 E.U.T Operating Mode(s)

Test mode	operating
DC 12 V	E.U.T Monitoring, Ping Test
POE	E.U.T Monitoring, Ping Test

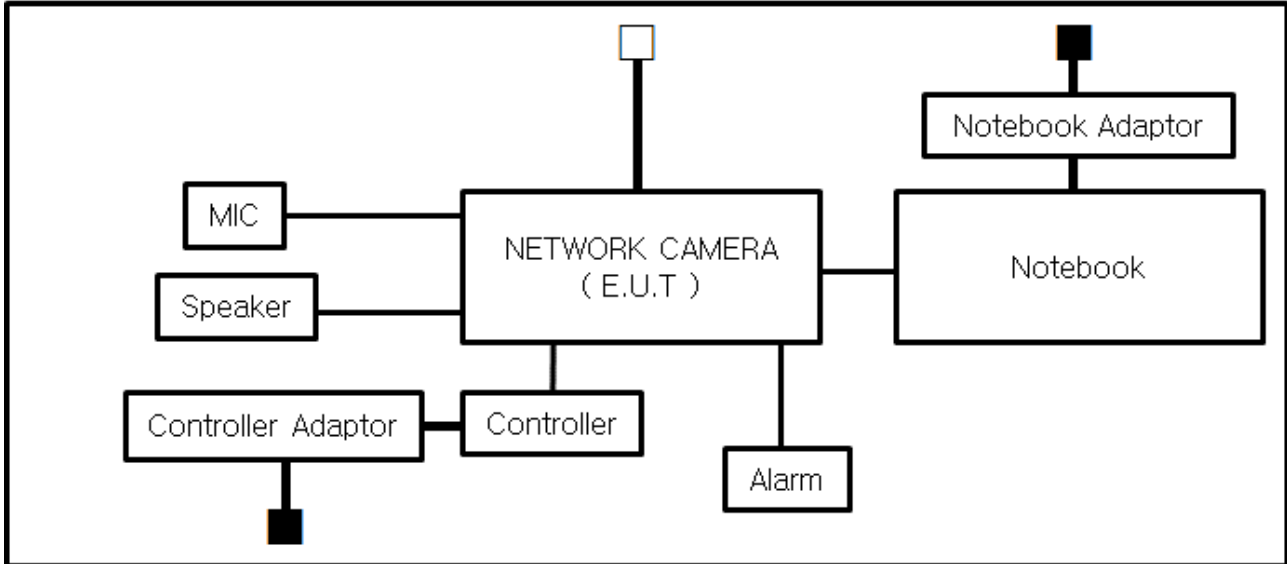
E.U.T Test operating S/W		
Name	Version	Manufacture Company
WebViewer	-	Hanwha Techwin Co., Ltd.

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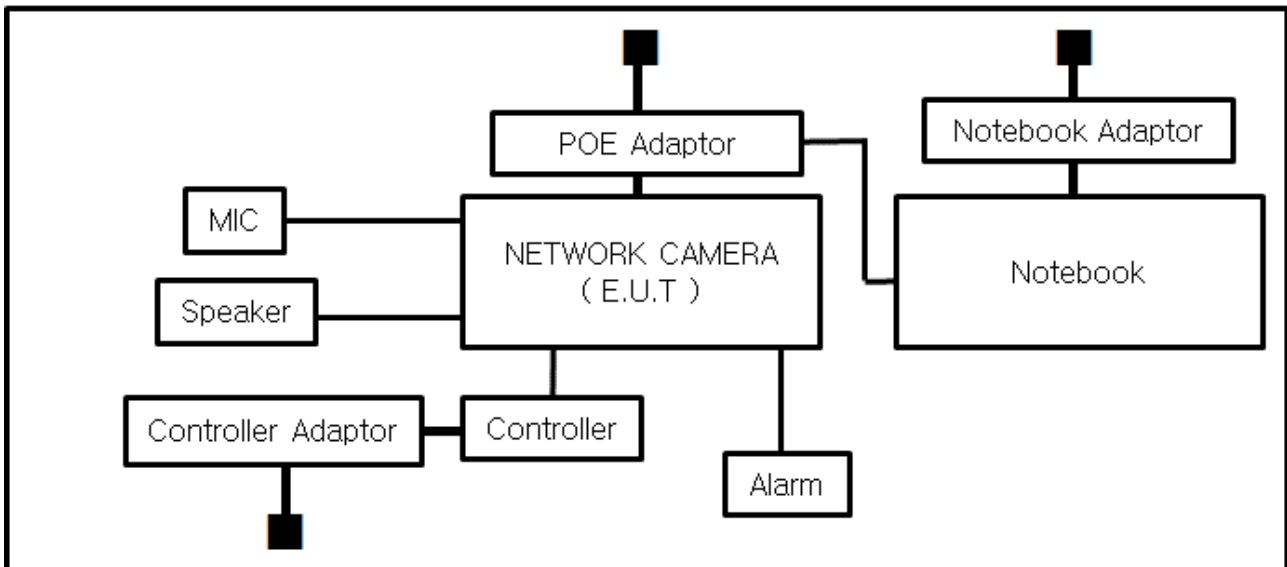
## 1.8 Configuration

■ AC Main  
□ DC Main

- 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. 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 55032:2012/AC:2013

☒ 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



- 
- |   |                                  |                                  |
|---|----------------------------------|----------------------------------|
| <input type="checkbox"/> <b>VCCI V-3 / 2015.04</b>            | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> <b>AS/NZS CISPR22:2009 +A1:2010</b>  | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> <b>47 CFR Part 15, Subpart B</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"/> <b>IC Regulation ICES-003 : 2016</b> |                                  |                                  |
| <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"/> <b>RE- Directive 2014/53/EU</b>      |                                  |                                  |
| <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                        |                                  |                                  |





## 2.1 Conducted Emissions at Mains Power Ports

### Test Date

N/A

### Test Location

Electro wave Shieldroom

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input type="checkbox"/>	EMI Test S/W	EMC32	R & S	9.12.00	-
<input type="checkbox"/>	EMI TEST RECEIVER	ESR3	R & S	101783	04, 27, 2018
<input type="checkbox"/>	LISN	ENV216	R & S	101137	02, 03, 2018
<input type="checkbox"/>	LISN	ENV216	R & S	101786	04, 27, 2018
<input type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101914	12, 13, 2017

### Test Conditions

Temperature: °C

Relative Humidity: %

### 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

-

## 2.2 Conducted Emissions at Telecommunication Ports

### Test Date

Jun. 13, 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	101783	04, 27, 2018
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101137	02, 03, 2018
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101786	04, 27, 2018
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101914	12, 13, 2017
<input checked="" type="checkbox"/>	8-WIRE ISN CAT3	CAT3 8158	SCHWARZBECK	8158-0019	03, 29, 2018
<input checked="" type="checkbox"/>	8-WIRE ISN CAT5	CAT5 8158	SCHWARZBECK	8158-0030	03, 29, 2018

### Test Conditions

Temperature: 21,1 °C

Relative Humidity: 47,2 %

### 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

Jun. 13, 2017

### Test Location

☐ OPEN AREA TEST SITE #2      ☒ SAC #4(10 m)

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESU26	R & S	100551	04, 18, 2018
<input checked="" type="checkbox"/>	AMPLIFIER	SCU 01	R & S	100603	12, 13, 2017
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	716	11, 28, 2018

### Test Conditions

Temperature: 21,0 °C  
Relative Humidity: 50,5 %

### 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**

Jun. 13, 2017

**Test Location**

SEMI ANECHOIC CHAMBER #3

**Test Equipment**

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESR7	R & S	101190	08, 08, 2017
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	AGILENT	3008A01967	05, 31, 2018
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 02, 2019

**Test Conditions**

Temperature: 22,1 °C

Relative Humidity: 47,8 %

**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

N/A

### Test Location

Electro wave Shieldroom

### Test Equipment

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

### Test Conditions

Relative Humidity:                      °C  
    %

### 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

-



### 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

Jun. 14, 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: 22,0 °C  
Relative Humidity: 47,4 %  
Atmospheric Pressure: 99,9 kPa



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Test report No.:  
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### Test Specifications

Discharge Factor:  $\geq 1$  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

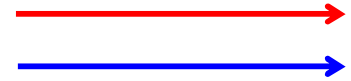
Notes: HCP: Horizontal coupling plane

VCP: Vertical coupling plane

Required Performance Criteria: ☒ Complied

**Location of Discharge:**

Air
Contact





## Test Data

### - 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	Surface	Contact Discharge	Complied	-
2	Screw	Contact Discharge	Complied	-

### - 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	Surface	Contact Discharge	Complied	-
2	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.

## 3.2 Radiated Electric Field Immunity

### Reference Standard

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

### Test Date

Jun. 13, 2017

### Test Location

EMS-RS: ☐ SEMI ANECHOIC CHAMBER #2

☒ SEMI ANECHOIC CHAMBER #3

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	SEMI ANECHOIC CHAMBER #3	-	DYMSTEC	-	-
<input checked="" type="checkbox"/>	EMS Test S/W	EMC32	R & S	10.10.02	08, 08, 2017
<input checked="" type="checkbox"/>	SIGNAL GENERATOR	SMB 100A	R & S	177586	08, 08, 2017
<input checked="" type="checkbox"/>	BROADBAND AMPLIFIER	BBA100	R & S	101239	08, 08, 2017
<input checked="" type="checkbox"/>	BROADBAND AMPLIFIER	100S1G6M1	AR	579931	08, 08, 2017
<input checked="" type="checkbox"/>	POWER METER	NRP2	R & S	103475	08, 08, 2017
<input checked="" type="checkbox"/>	AVG POWER SENSOR	NRP-Z91	R & S	102526	08, 08, 2017
<input checked="" type="checkbox"/>	AVG POWER SENSOR	NRP-Z91	R & S	102527	08, 08, 2017
<input checked="" type="checkbox"/>	STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	Schwarzbeck	9128ES-121	-

### Test Conditions

Temperature: 22,1 °C  
Relative Humidity: 47,8 %  
Atmospheric Pressure: 99,8 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

- 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

Jun. 14, 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: 22,0 °C  
Relative Humidity: 47,4 %  
Atmospheric Pressure: 99,9 kPa

#### Test Specifications

Pulse Amplitude & Polarity:  
(AC Power Lines) ☐ ± 1.0 kV ☐ ± 2.0 kV  
☐ ± 4.0 kV

Pulse Amplitude & Polarity:  
(Other supply / Signal Lines) ☐ ± 0.5 kV ☒ ± 1.0 kV  
☐ ± 2.0 kV

Burst Period: ☒ 300 ms ☐ 2 s

Repetition Rate: ☐ 5 klz ☒ 100 klz

Duration of Test Voltage: ☒ ≥ 1 min

Required Performance Criteria: ☒ Complied



## Test Data

- 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)
L – N	Complied	Complied

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ-45	Complied	Complied
Controller (2Pin)	Complied	Complied
Alarm (3Pin)	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	Complied	Complied
Controller (2Pin)	Complied	Complied
Alarm (3Pin)	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

Jun. 14, 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, 26, 2018
<input type="checkbox"/>	CDN	CNV 508T5	EM TEST	P1549168422	04, 26, 2018

### Test Conditions

Temperature: 22,0 °C  
Relative Humidity: 47,4 %  
Atmospheric Pressure: 99,9 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

- DC 12 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



- 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

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

Jun. 13, 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 checked="" type="checkbox"/>	CDN	CDN T800	TESEQ	42800	11, 28, 2017
<input checked="" type="checkbox"/>	EM CLAMP	KEMZ 801A	TESEQ	44099	11, 30, 2017
<input type="checkbox"/>	MICROPHONE	MP201	BSWA	520963	11, 11, 2017
<input type="checkbox"/>	SOUND ACOUSTIC TESTER	TST-1000	TESTEK	150045	11, 08, 2017

#### Test Conditions

Temperature: 23,7 °C  
Relative Humidity: 41,3 %  
Atmospheric Pressure: 99,2 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

- 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
L – N	CDN	Complied

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN T800	Complied
Controller (2Pin)	EM Injection Clamp	Complied
Alarm (3Pin)	EM Injection Clamp	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)	CDN T800	Complied
Controller (2Pin)	EM Injection Clamp	Complied
Alarm (3Pin)	EM Injection Clamp	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

N/A

#### Test Location

EMS-Voltage dip: Electro wave Shieldroom

#### Test Equipment

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

#### Test Conditions

Temperature: °C  
Relative Humidity: %  
Atmospheric Pressure: kPa



## Test Specifications & Observations/Remarks

(Test Voltage : 50 Hz)

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

- Voltage variations

<input type="checkbox"/> Unom + 10 %	<input type="checkbox"/> 253.0 V (ac)	_____
<input type="checkbox"/> Unom - 15 %	<input type="checkbox"/> 195.5 V (ac)	_____

Observations:

Complied – No degradation of function

### Test Results

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

### Remarks

-



## APPENDIX A – TEST DATA

### Conducted Emissions at Mains Power Ports

[HOT]

N/A

#### ◆ 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 ]

N/A

◆ 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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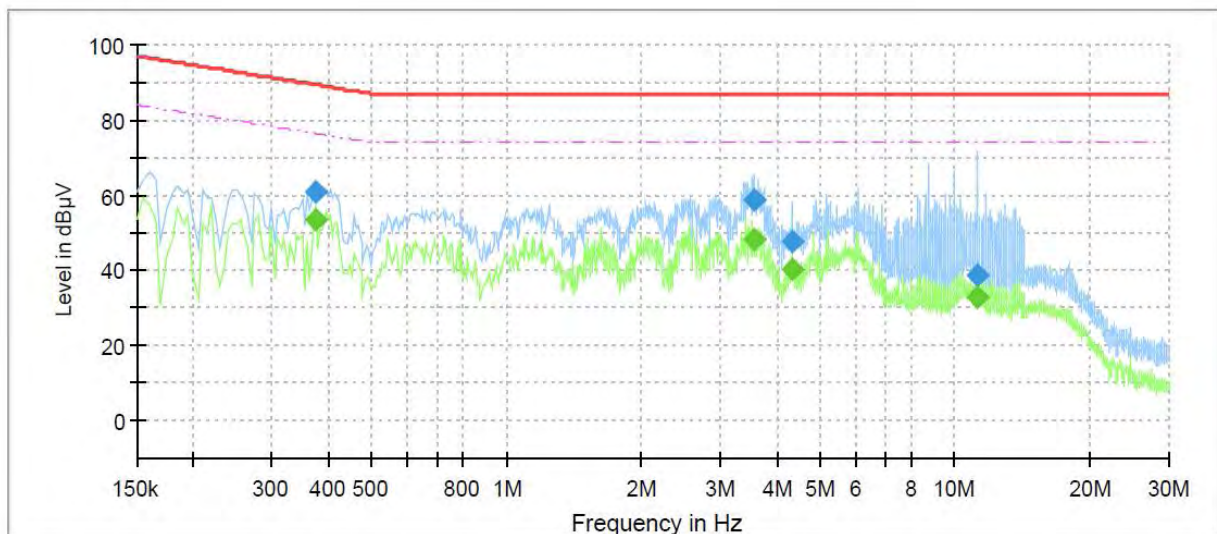
## Conducted Emissions at Telecommunication Ports

- DC 12 V Mode

[10 Mbps]

### Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-6120HP
Mode	DC_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)
0.375000	---	53.54	76.39	22.85	1000.0	9.000	Single Line	21.1
0.375000	60.88	---	89.39	28.51	1000.0	9.000	Single Line	21.1
3.555000	---	48.08	74.00	25.92	1000.0	9.000	Single Line	19.8
3.555000	58.53	---	87.00	28.47	1000.0	9.000	Single Line	19.8
4.350000	---	40.30	74.00	33.70	1000.0	9.000	Single Line	19.8
4.350000	47.83	---	87.00	39.17	1000.0	9.000	Single Line	19.8
11.250000	---	32.61	74.00	41.39	1000.0	9.000	Single Line	20.0
11.250000	38.61	---	87.00	48.39	1000.0	9.000	Single Line	20.0

#### ◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

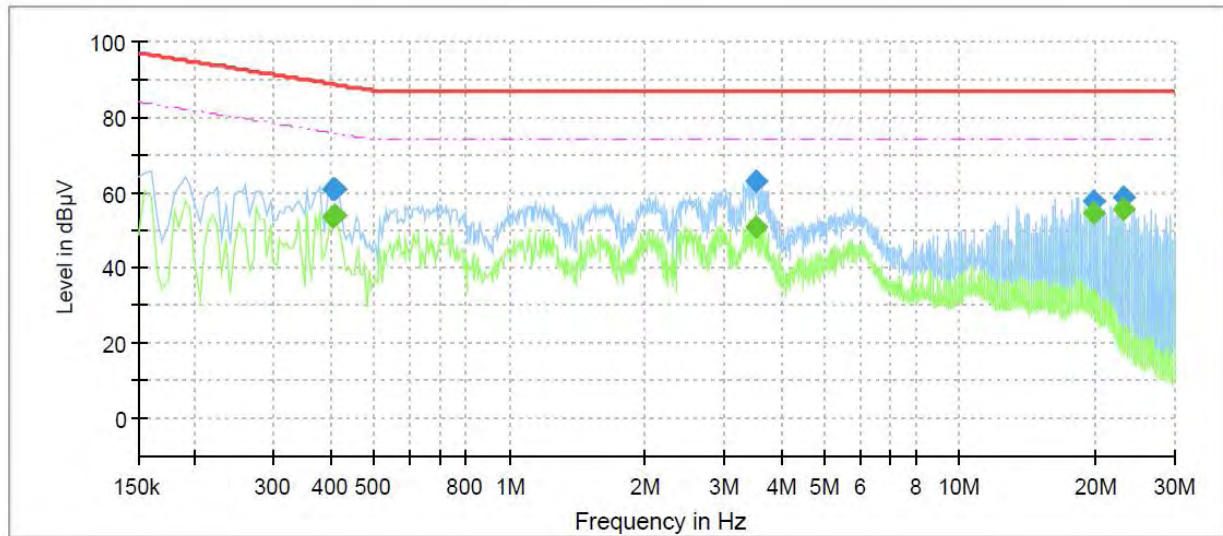
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))



## [100 Mbps]

### Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-6120HP
Mode	DC_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)
0.405000	---	53.67	75.75	22.08	1000.0	9.000	Single Line	20.5
0.405000	60.98	---	88.75	27.77	1000.0	9.000	Single Line	20.5
0.410000	---	53.81	75.65	21.84	1000.0	9.000	Single Line	20.5
0.410000	60.94	---	88.65	27.71	1000.0	9.000	Single Line	20.5
3.525000	---	50.77	74.00	23.23	1000.0	9.000	Single Line	19.3
3.525000	62.96	---	87.00	24.04	1000.0	9.000	Single Line	19.3
19.710000	---	54.44	74.00	19.56	1000.0	9.000	Single Line	19.6
19.710000	57.54	---	87.00	29.46	1000.0	9.000	Single Line	19.6
23.130000	---	55.60	74.00	18.40	1000.0	9.000	Single Line	19.5
23.130000	58.96	---	87.00	28.04	1000.0	9.000	Single Line	19.5

#### ◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

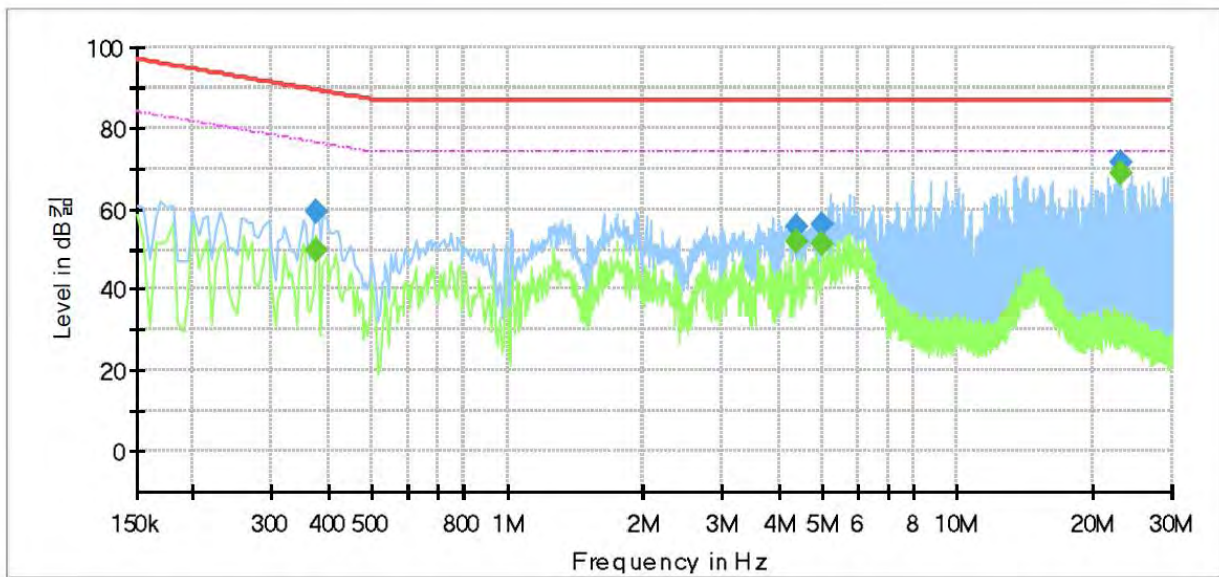


- POE Mode

**[10 Mbps]**

## Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-6120HP
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)
0.375000	---	49.65	76.39	26.74	1000.0	9.000	Single Line	21.1
0.375000	59.07	---	89.39	30.32	1000.0	9.000	Single Line	21.1
4.410000	---	51.62	74.00	22.38	1000.0	9.000	Single Line	19.8
4.410000	55.38	---	87.00	31.62	1000.0	9.000	Single Line	19.8
5.025000	---	51.26	74.00	22.74	1000.0	9.000	Single Line	19.8
5.025000	56.15	---	87.00	30.85	1000.0	9.000	Single Line	19.8
23.130000	---	68.97	74.00	5.03	1000.0	9.000	Single Line	20.1
23.130000	71.66	---	87.00	15.34	1000.0	9.000	Single Line	20.1

### ◆ Calculation

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

QuasiPeak / CAverage : The Final Value

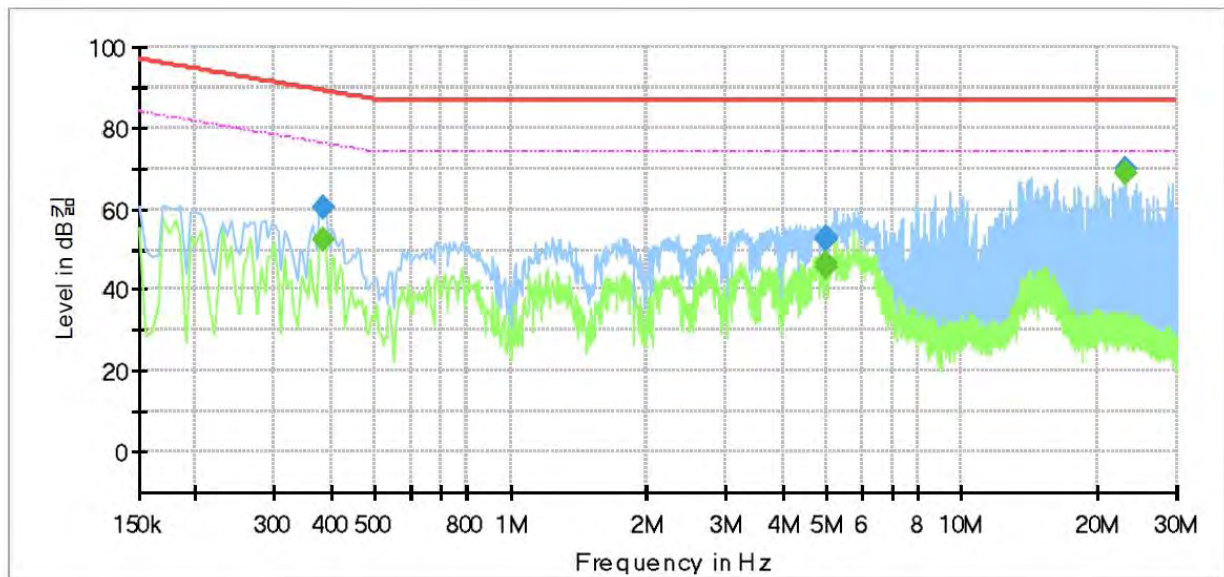
Reading Value : Not shown in the table.

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

## [100 Mbps]

### Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-6120HP
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)
0.385000	---	52.32	76.17	23.85	1000.0	9.000	Single Line	20.6
0.385000	60.16	---	89.17	29.01	1000.0	9.000	Single Line	20.6
4.990000	---	45.36	74.00	28.64	1000.0	9.000	Single Line	19.3
4.990000	52.17	---	87.00	34.83	1000.0	9.000	Single Line	19.3
5.025000	---	46.77	74.00	27.23	1000.0	9.000	Single Line	19.3
5.025000	52.95	---	87.00	34.05	1000.0	9.000	Single Line	19.3
23.130000	---	68.75	74.00	5.25	1000.0	9.000	Single Line	19.5
23.130000	69.96	---	87.00	17.04	1000.0	9.000	Single Line	19.5

#### ◆ Calculation

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

QuasiPeak / CAverage : The Final Value

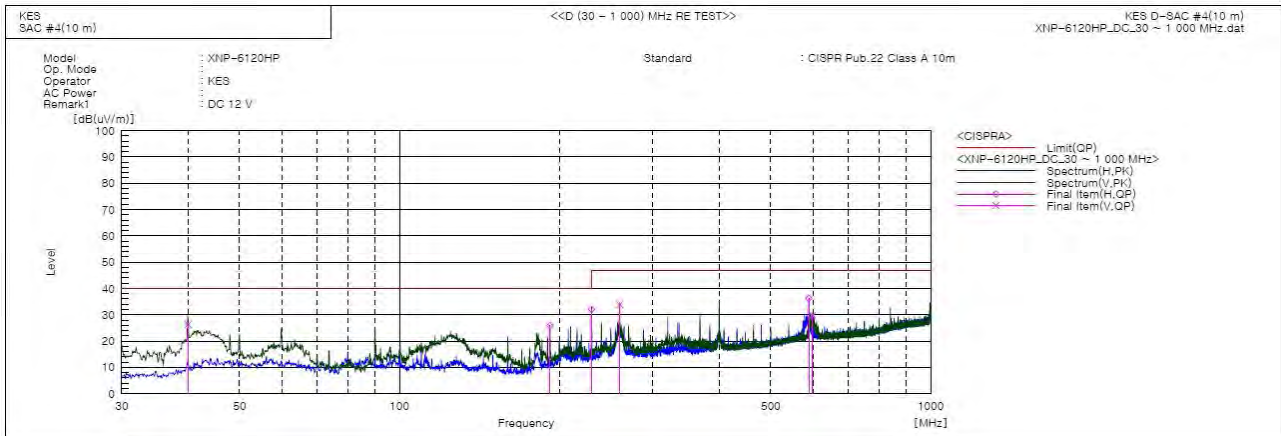
Reading Value : Not shown in the table.

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



## Radiated Electric Field Emissions(Below 1 GHz)

- DC 12 V Mode



### Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	39.995	V	56.0	-29.7	26.3	40.0	13.7	101.0	114.0	
2	191.999	H	54.1	-28.2	25.9	40.0	14.1	323.0	112.0	
3	229.997	H	58.8	-26.7	32.1	40.0	7.9	390.0	152.0	
4	259.890	V	59.7	-25.8	33.9	47.0	13.1	100.0	173.0	
5	589.811	H	52.2	-16.0	36.2	47.0	10.8	400.0	10.0	
6	599.390	V	45.5	-15.8	29.7	47.0	17.3	400.0	102.0	

### ◆ Calculation

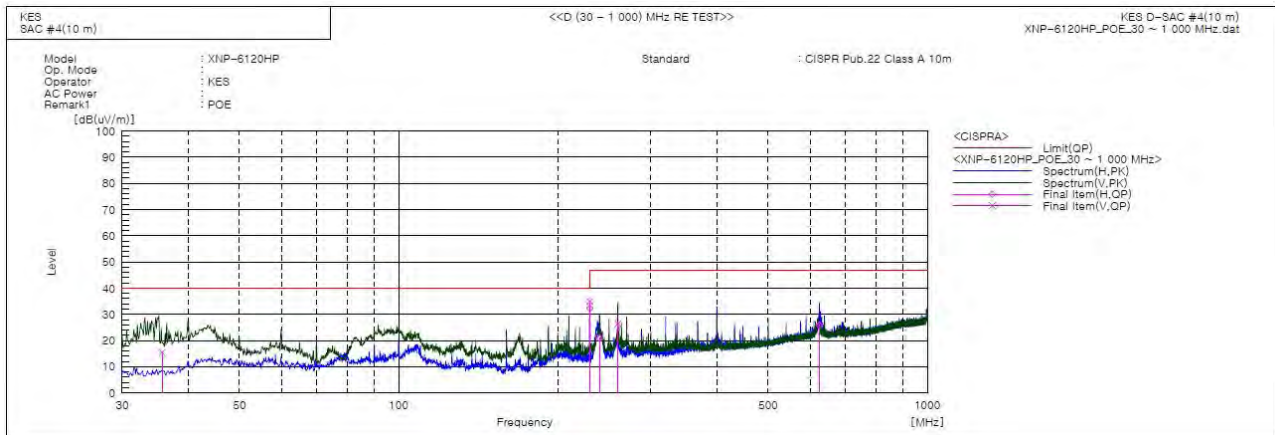
Corrected Amplitude [dBuV] = Amplitude[dBuV] + Correction Factor [dB]

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

Correction Factor : ANT FACTOR + Cable loss



## - POE Mode



### Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	35.700	V	47.0	-31.6	15.4	40.0	24.6	100.0	80.0	
2	230.006	H	58.9	-26.7	32.2	47.0	14.8	400.0	155.0	
3	230.001	V	61.6	-26.7	34.9	47.0	12.1	101.0	139.0	
4	240.005	H	47.3	-26.4	20.9	47.0	26.1	400.0	11.0	
5	259.890	V	52.2	-25.8	26.4	47.0	20.6	100.0	182.0	
6	624.974	H	41.5	-15.6	25.9	47.0	21.1	100.0	56.0	

### ◆ Calculation

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

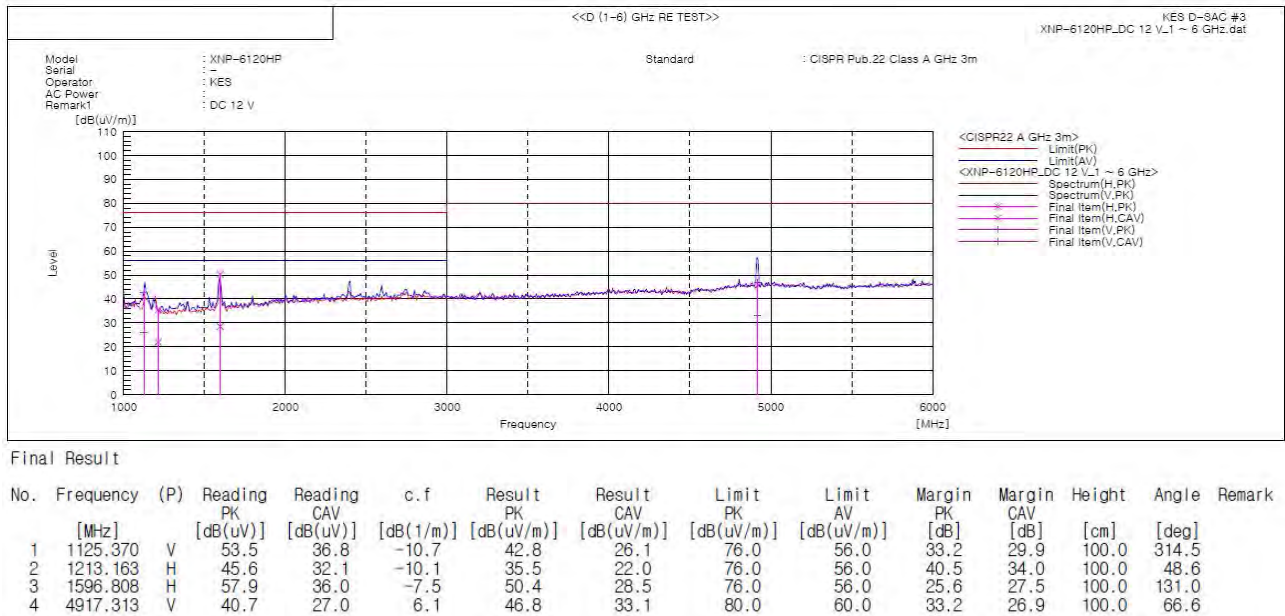
Corrected Amplitude : The Final Value, Amplitude : Reading Value,

Correction Factor : ANT FACTOR + Cable loss



## Radiated Electric Field Emissions(Above 1 GHz)

- DC 12 V mode



### ◆ 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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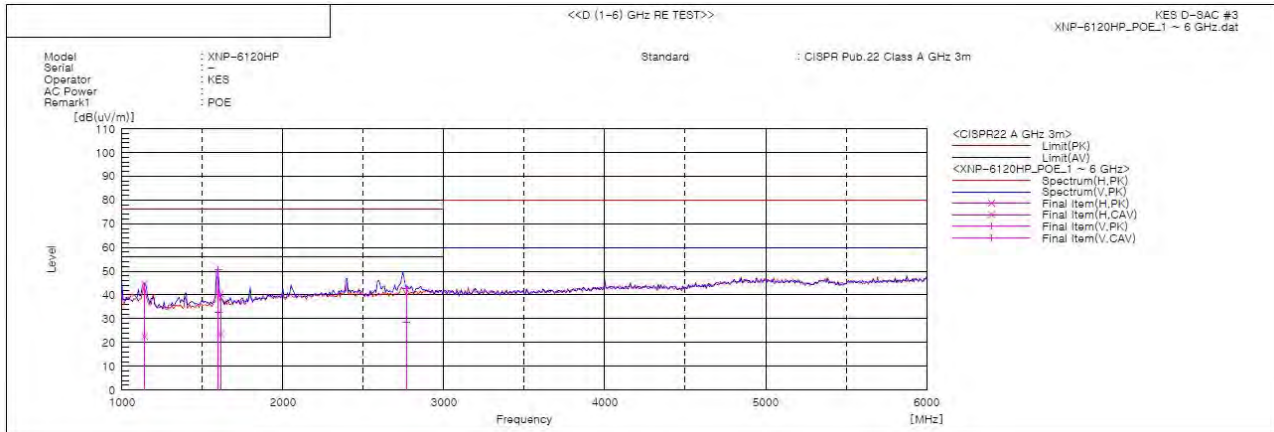
C-3701, Simin-daero 365-40,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
www.kes.co.kr

Test report No.:

KES-E1-17T0385

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### - POE Mode



#### Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1139.996	H	55.2	33.2	-10.6	44.6	22.6	76.0	56.0	31.4	33.4	100.0	201.1	
2	1612.365	H	47.7	30.8	-7.3	40.4	23.5	76.0	56.0	35.6	32.5	100.0	182.1	
3	1599.702	V	58.1	40.2	-7.4	50.7	32.8	76.0	56.0	25.3	23.2	100.0	48.6	
4	2767.144	V	43.9	29.6	-1.1	42.8	28.5	76.0	56.0	33.2	27.5	100.0	170.5	

#### ◆ 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 Data - Voltage Fluctuations

**Maximum Flicker results**

	<b>EUT values</b>	<b>Limit</b>	<b>Result</b>
Pst	N/A		
Plt			
dc [%]			
dmax [%]			
Tmax [s]			



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## **Test Setup Photos and Configuration**

### **Conducted Voltage Emissions**

N/A

N/A

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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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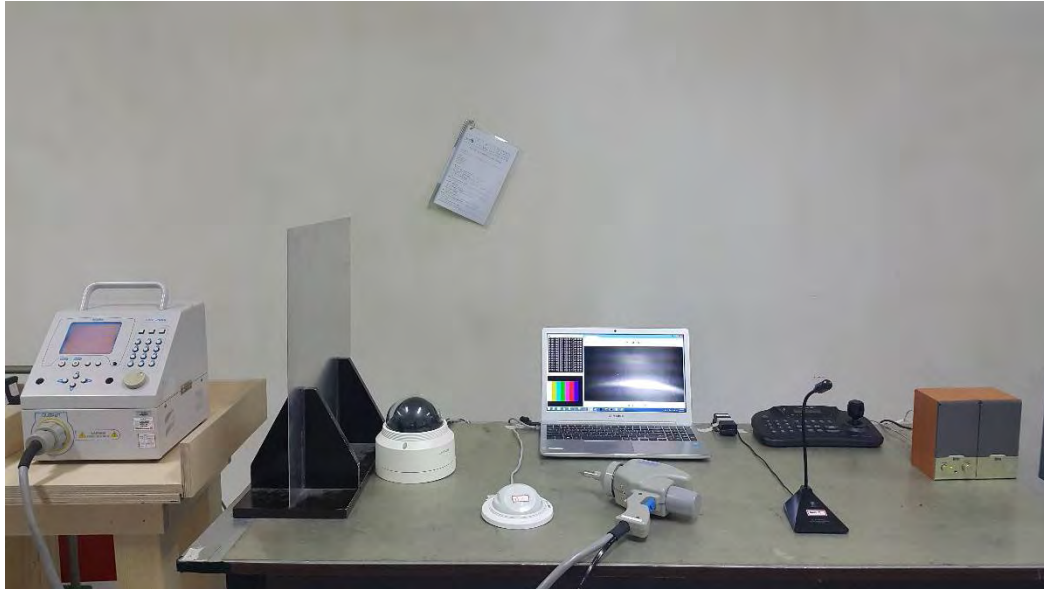
## **Harmonic Current Emissions and Voltage Fluctuations and Flicker**

N/A

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## Electrostatic Discharge

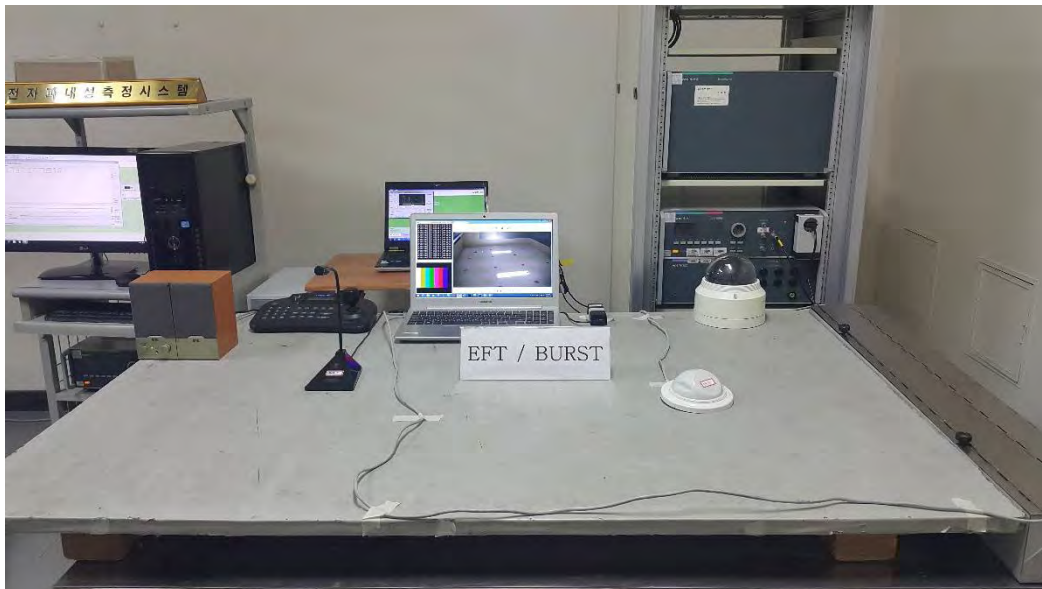
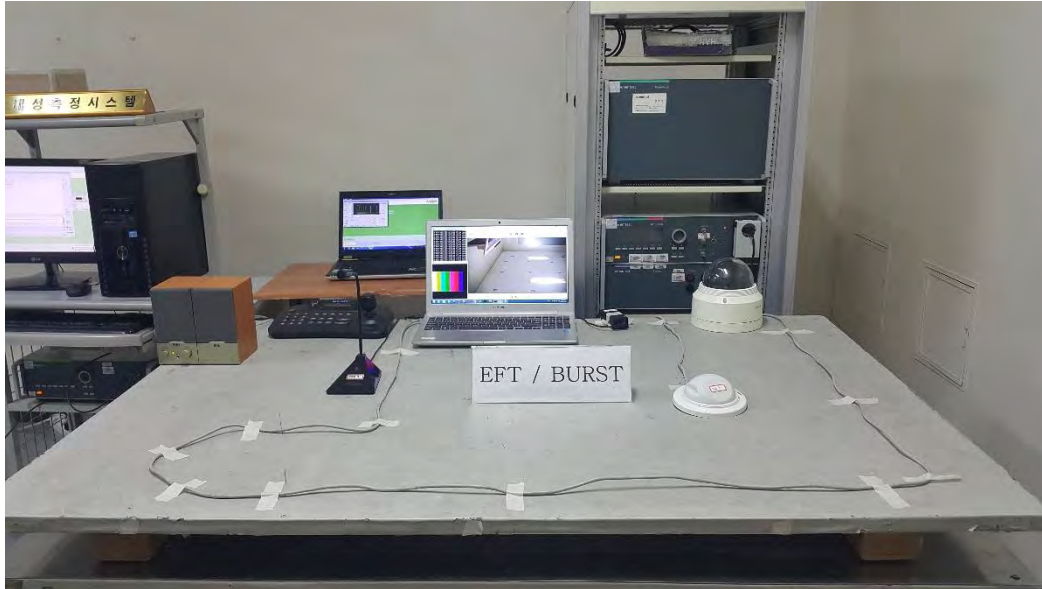


## Radiated Electric Field Immunity



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## Electrical Fast Transients/Bursts



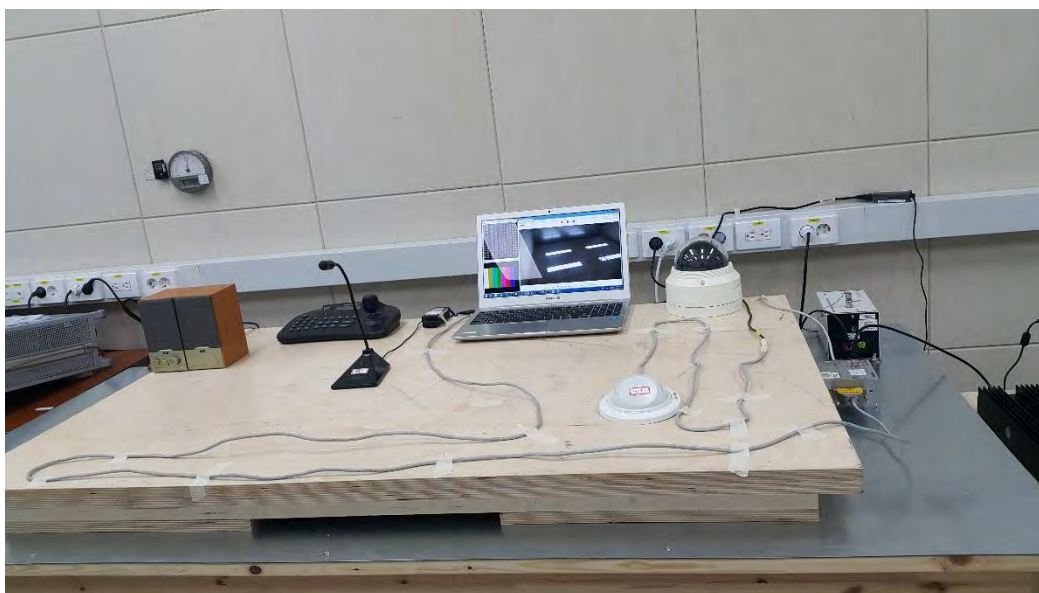
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## Surge Transients



## Conducted Disturbance



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## **Voltage Dips and Short Interruptions**

N/A

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## EUT External Photographs

(Top)



(Bottom)



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## EUT Internal Photographs

(Internal View)



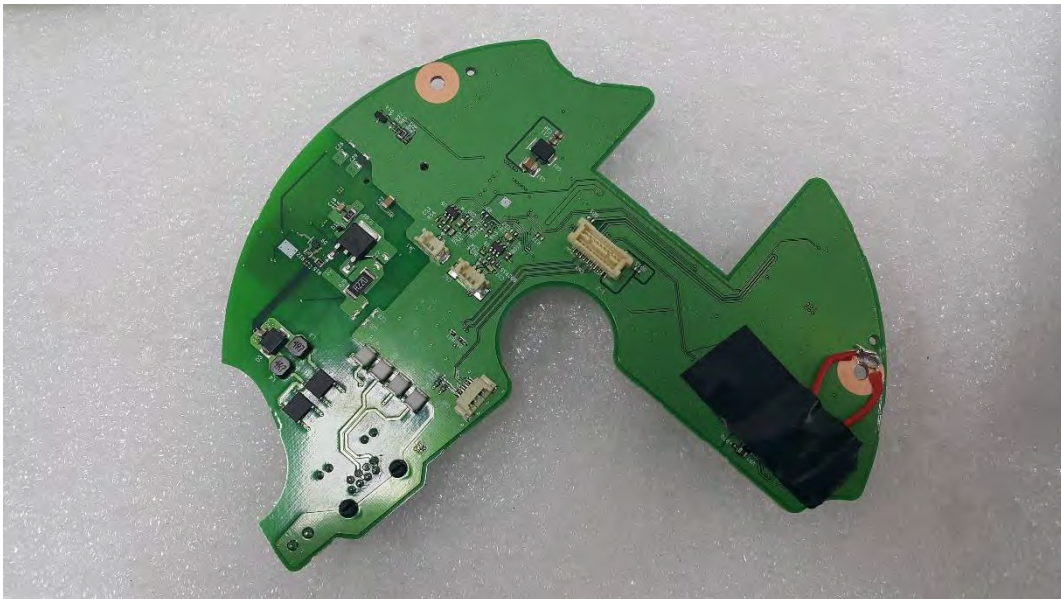
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## EUT Internal View – Board 1

(Top)



(Bottom)





## EUT Internal View – Board 2

(Top)

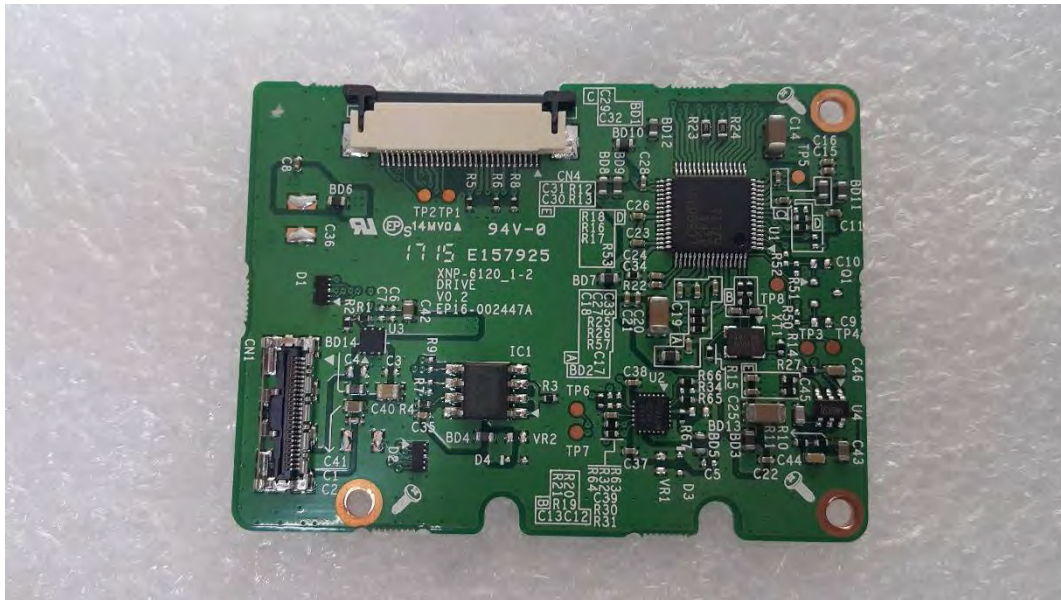


(Bottom)

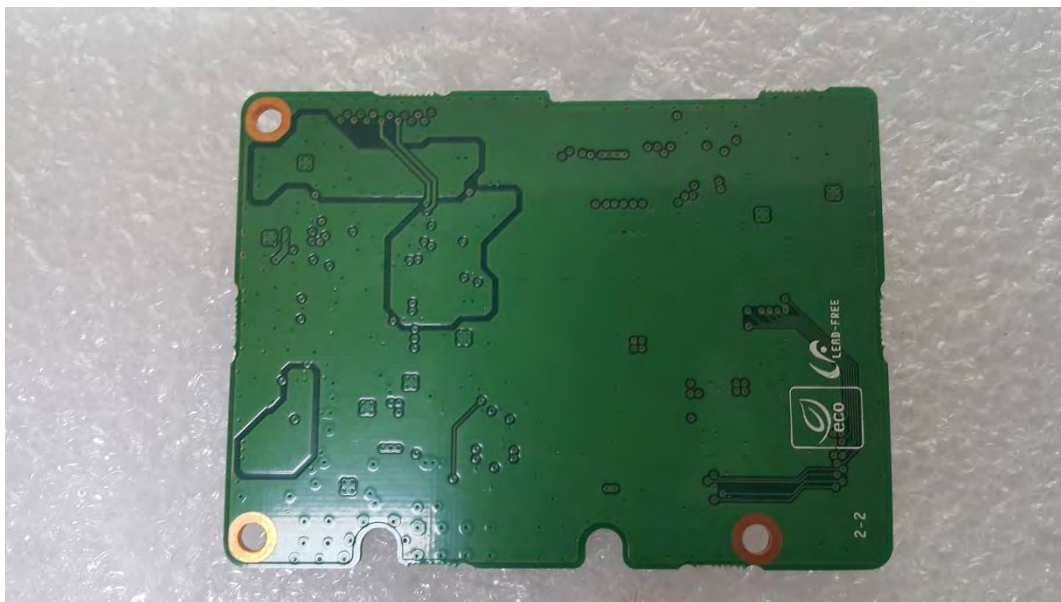


## EUT Internal View – Board 3

(Top)



(Bottom)

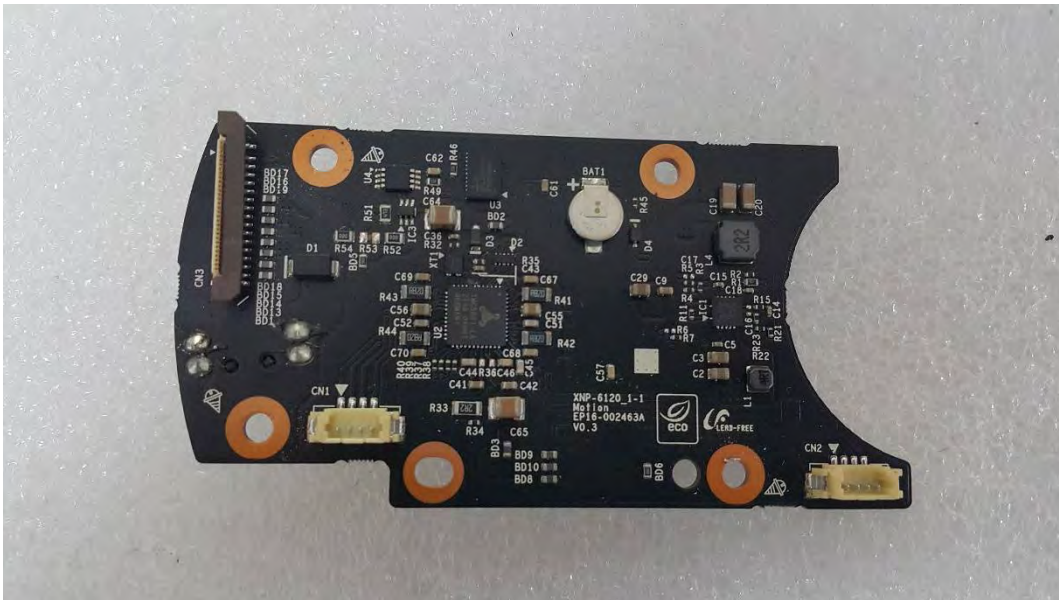


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## EUT Internal View – Board 4

(Top)

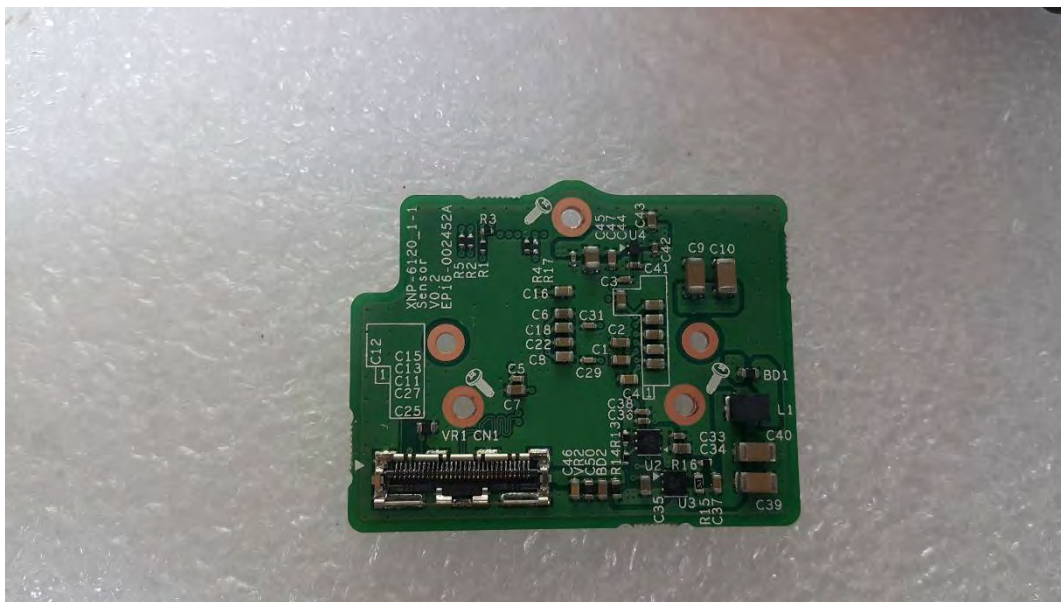


## EUT Internal View – Lens Board

(Top)



(Bottom)



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## Label and Location



### **NETWORK CAMERA**

Model No : XNP-6120HP

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

Made in of China

