



EMC TEST REPORT For CE

Test Report No. : KES-E1-17T0631-R1
Date of Issue : Oct. 31, 2017
Product name : NETWORK CAMERA
Model/Type No. : XNF-8010RVMP
Variant Model : XNF-8010RP, XNF-8010RVP
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 : Aug. 04, 2017
Test date : Aug. 14, 2017 ~ Sep. 05, 2017
Test Results : **In Compliance** **Not in Compliance**

Tested by

Dae Jung, Choi
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

[This test report is not related to KOLAS.](#)

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KES Co., Ltd.

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

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Sep. 14, 2017	KES-E1-17T0631	Issued
Oct. 31, 2017	KES-E1-17T0631-R1	Standard Revision

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1.0 General Product Description

Main Specifications of E.U.T are:

Video	
Imaging Device	1/1.8" 6M CMOS
Total Pixels	3,096x2,094
Effective Pixels	2,048x2,048
Scanning System	Progressive
Min. Illumination	Color : 0.07Lux(F2.2, 30IRE) B/W : 0 Lux (IR LED On)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 714x480(N), 702x576(P), for installation - DIP connector type USB
Lens	
Focal Length (Zoom Ratio)	1.6mm
Max. Aperture Ratio	F1.6
Angular Field of View	H : 187° / V : 187° / D : 187°
Min. Object Distance	0.3m
Focus Control	Simple Focus / Manual - Remote control via network
Lens Type	Fixed Lens
Mount Type	Board Type
Operational	
Viewable Length	15m
Camera Title	Off / On (Displayed up to 85 characters) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale by Resolution
Day & Night	Auto (ICR) / Color / B/W / External / Schedule
Backlight Compensation	OFF / BLC / HLC(Masking / Dimming) / WDR
Wide Dynamic Range	120dB
Contrast Enhancement	SSDR Off / On
Digital Noise Reduction	SSNR V (2D+3D noise filter) Off / On
Digital Image Stabilization	Off/On
Defog	Off/Auto(input from fog detection) / Manual
Motion Detection	Off / On (8ea, 8point Polygonal zones), Hand over
Privacy Masking	Off / On (32ea, Polygonal) - Color : Gray, Green, Red, Blue, Black, White, Mosaic
Gain Control	Off / Low / Middle / High / Manual
White Balance	ATW / AWC / Manual / Indoor / Outdoor(Included mercury&Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker(2~1/12,000sec)
Digital Zoom	24x, Digital PTZ(Preset, Group)
Flip / Mirror	Off / On
Video & Audio Analytics	Tampering, Loitering, Directional detection, Defocus-detection, Fog-detection , Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Face-detection , Motion detection, Digital-auto-tracking , Sound classification
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio Analytics , Network Disconnect, SD card error, NAS error
Alarm events	File upload via FTP and E-Mail Notification via E-Mail local storage(SD/SDHC/SDXC) or NAS recording at Event Triggers External output, DPTZ-preset

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View Composition	<Camera Side> Fisheye Single Panorama Double Panorama Fisheye+4 PTZ Quad view Fisheye+8 PTZ
Pixel Counter	Support
Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.265/H.264/MJPEG
Resolution	[Original View(1:1)] 2048x2048 / 1280x1280 / 1080x1080 / 960x960 / 768x768 / 720x720 / 640x640 / 480x480 [Single Panorama(4:1)] 2048x512 / 1920x480 / 1280x320 / 640x160 / 704x176 [Double Panorama(2:1)] 2048x1024 / 1920x960 / 1280x640 / 640x320 / 704x352 [Quad View(4:3)] 2048x1536 / 1600x1200 / 1280x960 / 1024x768 / 800x600 / 640x480 / 704x576 [Q1/2/3/4] 1024x768, 800x600, 640x480
Max. Framerate	H.265/H.264 : 30fps@2,048x2,048 MJPEG : Max 15fps
Smart Codec	Manual Mode (area-based : 5EA)
WiseStreamII	Support
Video Quality Adjustment	H.265/H.264 : Target Bitrate Level Control MJPEG : Quality Level Control
Bitrate Control Method	H.265/H.264 : CBR or VBR MJPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10profiles)
Audio In	Selectable (Mic IN/Line IN/Built-in mic) Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out (3.5mm mono jack), Max output level: 1 Vrms
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(2way)
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, SIP
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 512GB) - Continuous recording(1st slot to 2nd slot) - motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. - camera can detect automatically when the memory is connected - memory status display (normal/error/active/formatting/lock) NAS(Network Attached Storage) Local PC for Instant Recording(plug-in viewer only)
Application Programming Inter	ONVIF Profile S/G SUNAPI Wisenet open plafrom

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Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Portuguese, Turkish, Polish, Czech, Dutch, Hungary, Greek
Web Viewer	Supported OS: Windows 7, 8.1, 10, Mac OS X 10.9. 10.10. 10.11. 10.12 Plug-in Free Webviewer Supported Browser : Google Chrome, MS Edge, Mozilla Firefox (Window 64bit only), Apple Safari *Mac OS X only Plug-in Webviewer Supported Browser : MS Explore, Apple Safari * Mac OS X only
Central Management Software	Smart Viewer
Environmental	
Operating Temperature / Humidity	-10°C ~ +55°C / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	-
Vandal Resistance	-
Electrical	
Input Voltage / Current	DC12V±10%,PoE(IEEE802.3af,Class3)
Power Consumption	DC12V(9.5W 0.8A), PoE(10.5W 0.28A)
Mechanical	
Color / Material	Ivory/ALUMINUM, PLASTIC
Dimension (WxHxD)	D146 x H54.8
Weight	730g

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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

The Variant model is management model of each different sellers.

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNF-8010RVMP	-	Hanwha Techwin (Tianjin) Co.,Ltd	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE ADAPTER	GS728TPP	-	NETGEAR, INC.	-
Notebook	NT730U3E	JJRE91CF200065A	Samsung Electronics Co., Ltd.	-
AC/DC ADAPTER	PA-1600-66	AD-6019P	LITE ON TECHNOLOGY CORPORATION	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-
Mike	CMK-303	-	CAMAC	-
Alarm	-	-	-	-

1.6 External I/O Cabling

- 12 V (dc) Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45(LAN)	Notebook	RJ-45(LAN)	4.0	U
	MIKE	Mike	MIKE	1.7	U
	AUDIO	Speaker	AUDIO	1.7	U
	Alarm	Alarm	Alarm	3.0	U

- PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45(PoE)	PoE ADAPTER	RJ-45(PoE)	4.0	U
	MIKE	Mike	MIKE	1.7	U
	AUDIO	Speaker	AUDIO	1.7	U
	Alarm	Alarm	Alarm	3.0	U
PoE ADAPTER	RJ-45(LAN)	Notebook	RJ-45(LAN)	5.0	U

* Unshielded=U, Shielded=S

1.7 E.U.T Operating Mode(s)

Test mode	operating
12 V (dc)	E.U.T Monitoring, Ping test
PoE	E.U.T Monitoring, Ping test

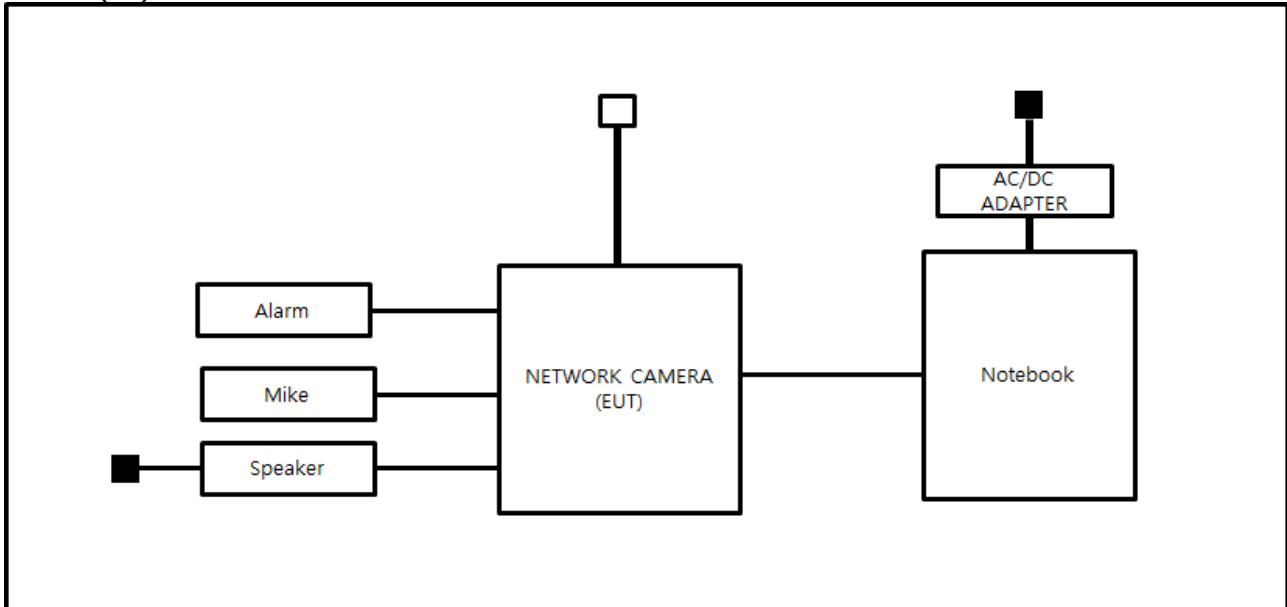
E.U.T Test operating S/W		
Name	Version	Manufacture Company
-	-	-

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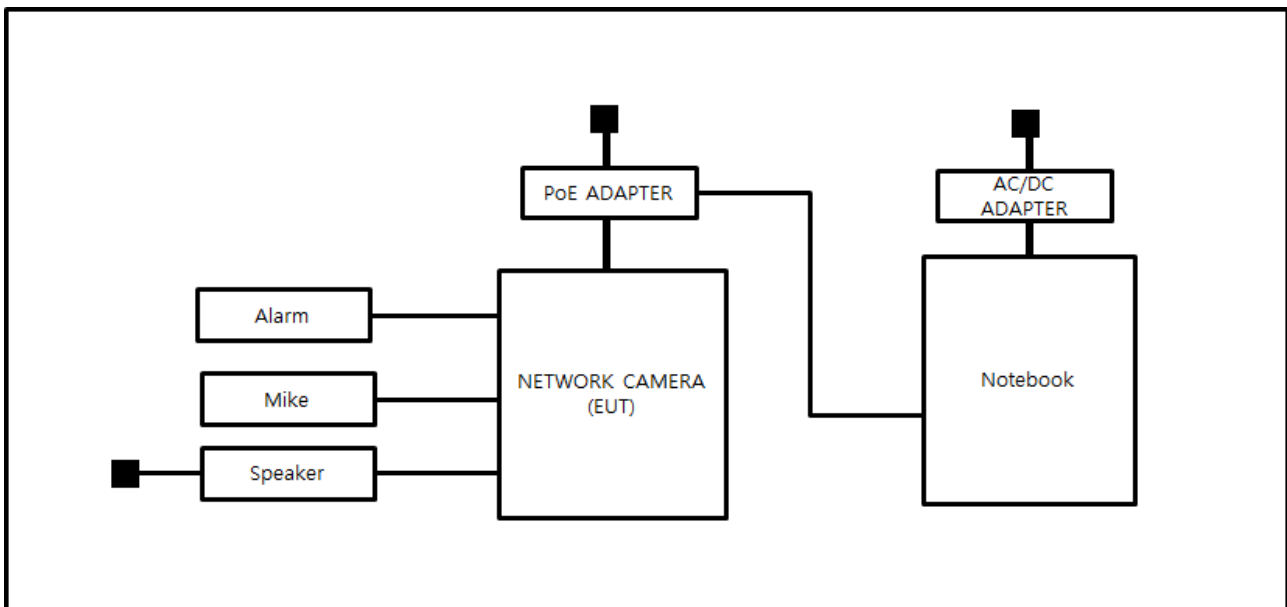
1.8 Configuration

■ AC Main
 □ DC Main

- 12 V (dc) Mode



- PoE Mode



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1.9 Remarks when standards applied

- N/A





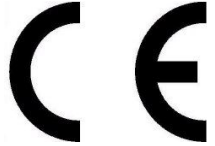

1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

1.11 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

1.12 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)	

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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

Class A

Class B

EN 55024:2010 +A1:2015

EN 50130-4:2011

EN 61000-3-2:2014

EN 61000-3-3:2013

EN 61326-1:2013



-
- | | | |
|---|----------------------------------|----------------------------------|
| <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

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	101781	04, 27, 2018
<input type="checkbox"/>	LISN	ENV216	R & S	101787	01, 11, 2018
<input type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	04, 27, 2018
<input type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	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

N/A

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Aug. 14, 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
<input type="checkbox"/>	8-WIRE ISN CAT6	NTFM 8158	SCHWARZBECK	8158-0029	08, 11, 2017

Test Conditions

Temperature: 21,9 °C

Relative Humidity: 48,2 %

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

Aug. 16, 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: 24,1 °C

Relative Humidity: 52,4 %

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

- PASS
 NOT PASS
 NOT APPLICABLE

RemarksSee Appendix A for test data.

2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Aug. 17, 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"/>	PREAMPLIFIER	8449B	AGILENT	3008A01729	05, 31, 2018
<input type="checkbox"/>	ATTENUATOR	8491A	HP	35496	03, 24, 2018
<input checked="" type="checkbox"/>	LOG-PERIODIC ANTENNA	STLP 9149	SCHWARZBECK	9149-255	05, 17, 2018

Test Conditions

Temperature: 23,1 °C

Relative Humidity: 49,6 %

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

RemarksSee 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

Sep. 05, 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 ConditionsTemperature: 22,8 °C
Relative Humidity: 50,9 %
Atmospheric Pressure: 99,6 kPa



KES Co., Ltd.

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

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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

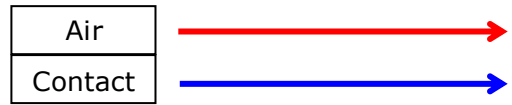
Discharge Voltage:	Contact	Air	HCP	VCP
	<input type="checkbox"/> 2 kV	<input checked="" type="checkbox"/> 2 kV	<input type="checkbox"/> 2 kV	<input type="checkbox"/> 2 kV
	<input type="checkbox"/> 4 kV	<input checked="" type="checkbox"/> 4 kV	<input type="checkbox"/> 4 kV	<input type="checkbox"/> 4 kV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

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Location of Discharge:



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Test Data

- 12 V (dc) 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	Enclosure 1	Contact Discharge	Complied	-
2	Enclosure 2	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	Enclosure 1	Contact Discharge	Complied	-
2	Enclosure 2	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

Sep. 01, 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"/>	EMS Test S/W	EMC32	R & S	10.10.02	-
<input checked="" type="checkbox"/>	SIGNAL GENERATOR	SMB 100A	R & S	177586	08, 07, 2018
<input checked="" type="checkbox"/>	BROADBAND AMPLIFIER	BBA100	R & S	101239	08, 07, 2018
<input checked="" type="checkbox"/>	BROADBAND AMPLIFIER	100S1G6M1	AR	579931	08, 07, 2018
<input checked="" type="checkbox"/>	POWER METER	NRP2	R & S	103475	08, 07, 2018
<input checked="" type="checkbox"/>	AVG POWER SENSOR	NRP-Z91	R & S	102526	08, 07, 2018
<input checked="" type="checkbox"/>	AVG POWER SENSOR	NRP-Z91	R & S	102527	08, 07, 2018
<input checked="" type="checkbox"/>	STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	Schwarzbeck	9128ES-121	-
<input checked="" type="checkbox"/>	DIRECTIONAL COUPLER	KYDC-D1070-DX40	KY TELECOM	KY150001	08, 07, 2018
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 02, 2019

Test Conditions

Temperature: 24,6 °C
Relative Humidity: 51,5 %
Atmospheric Pressure: 99,6 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

- 12 V (dc) 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.

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3.3 Electrical Fast Transients/Bursts

Reference Standard

EN 61000-4-4:2012

Test Date

Sep. 04, 2017

Test Location

EMS-EFT: Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.3.9	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500N5T	EM TEST	P1317117973	02, 08, 2018
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	V0936105123	02, 08, 2018
<input checked="" type="checkbox"/>	CAPACITIVE COUPLING CLAMP	HFK	EM TEST	070925	06, 26, 2018

Test Conditions

Temperature: 24,7 °C
Relative Humidity: 51,7 %
Atmospheric Pressure: 99,5 kPa

Test Specifications

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

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

Burst Period: 300 ms 2 s

Repetition Rate: 5 kHz 100 kHz

Duration of Test Voltage: ≥ 1 min

Required Performance Criteria: Complied

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Test Data

- 12 V (dc) 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	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
Alarm	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

Sep. 04, 2017

Test Location

EMS-Surge: Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.3.9	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500N5T	EM TEST	P1317117973	02, 08, 2018
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	V0936105123	02, 08, 2018
<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 ConditionsTemperature: 24,7 °C
Relative Humidity: 51,7 %
Atmospheric Pressure: 99,5 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

- 12 V (dc) Mode

Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L1 - PE	Complied	Complied
L2 - PE	Complied	Complied

Signal Lines

Line to Earth – Common Mode

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

- PoE Mode

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	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

Sep. 05, 2017

Test Location

EMS-CS: Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	icd.control	EM TEST	5.3.7	-
<input checked="" type="checkbox"/>	CONTINUOUS WAVE SIMULATOR	CWS 500N1	EM TEST	V0936105119	08, 07, 2018
<input checked="" type="checkbox"/>	ATTENUATOR	ATT6	EM TEST	1208-34	08, 07, 2018
<input checked="" type="checkbox"/>	CDN	CDN-M2/M3N	EM TEST	0909-06	08, 07, 2018
<input checked="" type="checkbox"/>	CDN	CDN T8RJ45	EM TEST	0909-09	08, 07, 2018
<input checked="" type="checkbox"/>	EM INJECTION CLAMP	EM 101	Liithi	35943	02, 03, 2018

Test Conditions

Temperature: 22,8 °C
Relative Humidity: 50,9 %
Atmospheric Pressure: 99,6 kPa

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

- 12 V (dc) 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	CDN	Complied
Alarm	Clamp	Complied



- 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	CDN	Complied
Alarm	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	5.3.9	-
<input type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500N5T	EM TEST	P1317117973	02, 08, 2018
<input type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	V0936105123	02, 08, 2018

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 / 5 000	_____
<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 / 5 000	_____

- 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

N/A



KES Co., Ltd.

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.:
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APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

N/A

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KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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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))

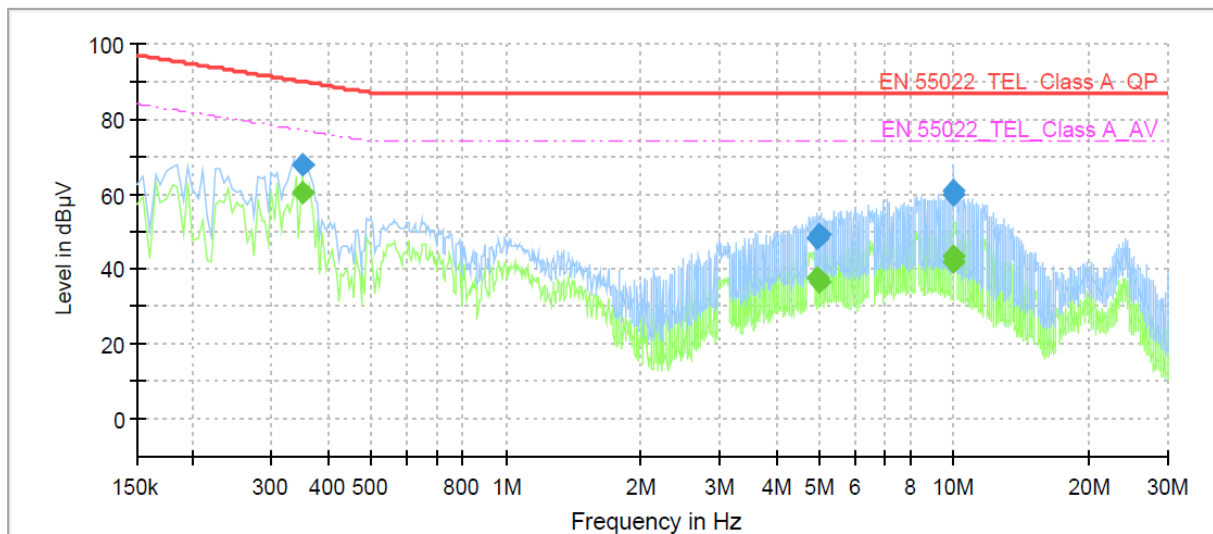
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Conducted Emissions at Telecommunication Ports

- 12 V (dc) Mode
 [10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNF-8010RVMP
Mode	TEL 10 Mbps
Operator Name:	KES



Final Result

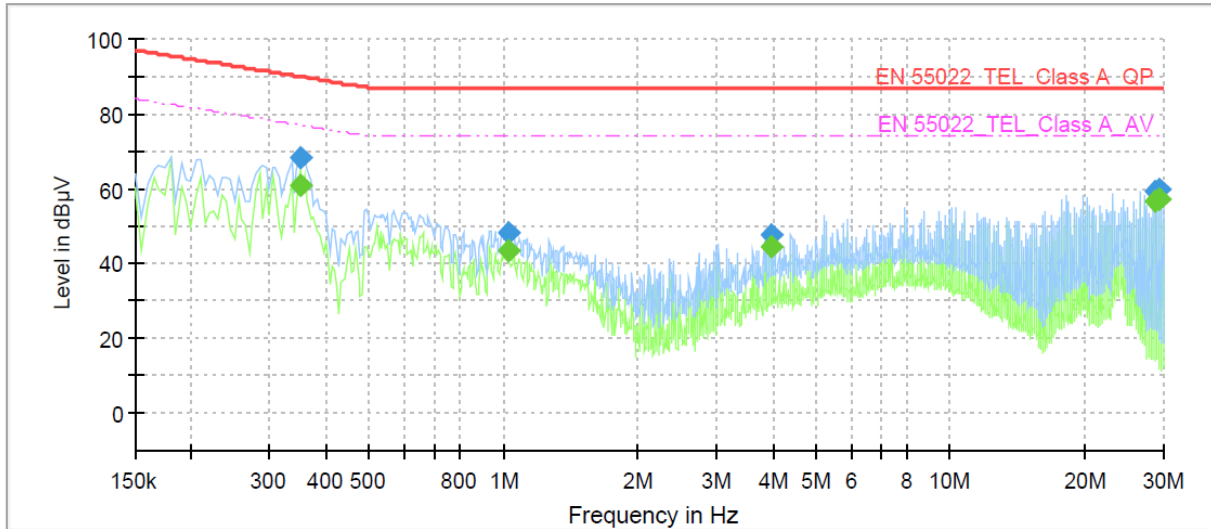
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.350000	---	60.39	76.96	16.57	1000.0	9.000	Single Line	19.6
0.350000	67.84	---	89.96	22.12	1000.0	9.000	Single Line	19.6
4.930000	---	37.34	74.00	36.66	1000.0	9.000	Single Line	19.5
4.930000	48.29	---	87.00	38.71	1000.0	9.000	Single Line	19.5
4.990000	---	36.30	74.00	37.70	1000.0	9.000	Single Line	19.5
4.990000	49.11	---	87.00	37.89	1000.0	9.000	Single Line	19.5
10.000000	---	41.85	74.00	32.15	1000.0	9.000	Single Line	19.8
10.000000	60.00	---	87.00	27.00	1000.0	9.000	Single Line	19.8
10.005000	---	43.29	74.00	30.71	1000.0	9.000	Single Line	19.8
10.005000	60.68	---	87.00	26.32	1000.0	9.000	Single Line	19.8

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[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNF-8010RVMP
Mode	TEL 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)
0.350000	---	60.90	76.96	16.06	1000.0	9.000	Single Line	19.9
0.350000	68.13	---	89.96	21.83	1000.0	9.000	Single Line	19.9
1.025000	---	43.27	74.00	30.73	1000.0	9.000	Single Line	20.2
1.025000	48.36	---	87.00	38.64	1000.0	9.000	Single Line	20.2
3.955000	---	44.30	74.00	29.70	1000.0	9.000	Single Line	20.0
3.955000	47.54	---	87.00	39.46	1000.0	9.000	Single Line	20.0
28.685000	---	56.49	74.00	17.51	1000.0	9.000	Single Line	20.9
28.685000	59.24	---	87.00	27.76	1000.0	9.000	Single Line	20.9
29.235000	---	56.96	74.00	17.04	1000.0	9.000	Single Line	20.9
29.235000	59.67	---	87.00	27.33	1000.0	9.000	Single Line	20.9

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

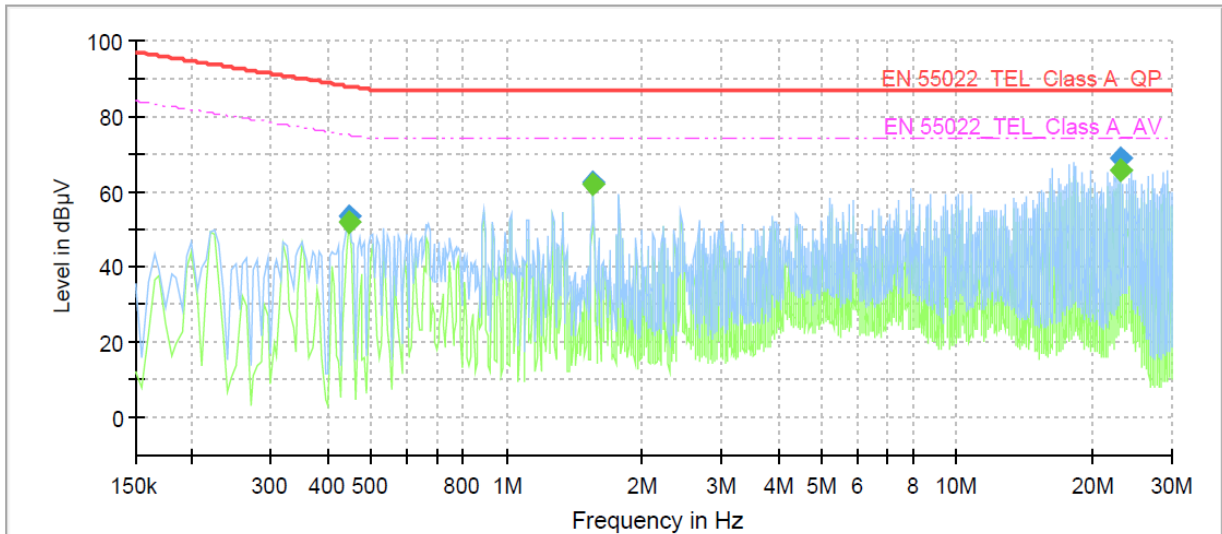
Reading Value : Not shown in the table.

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

- PoE Mode
[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNF-8010RVMP
Mode	PoE , TEL 10 Mbps
Operator Name:	KES



Final Result

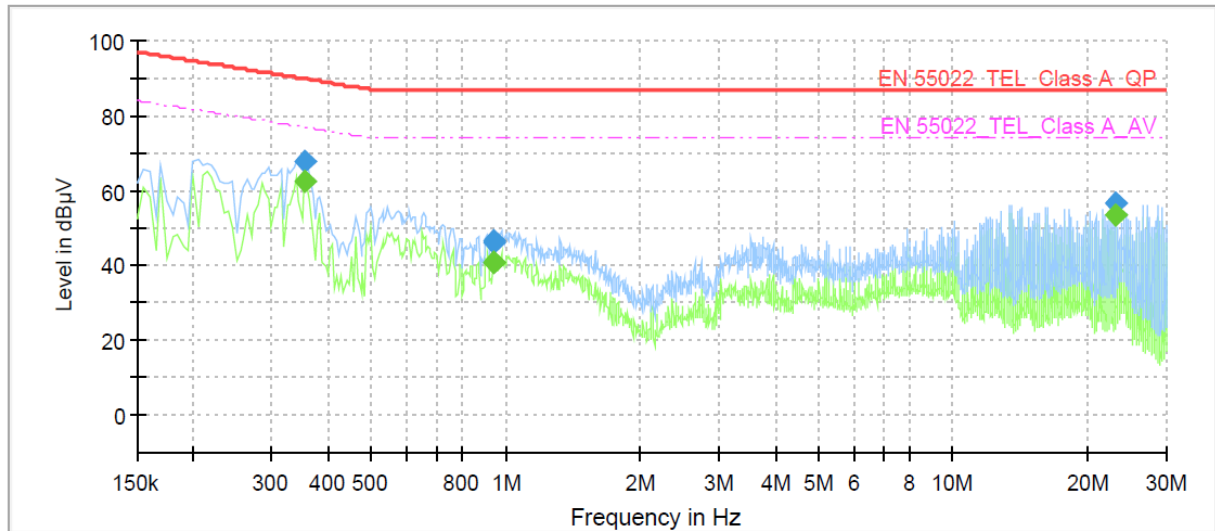
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.445000	---	51.99	74.97	22.98	1000.0	9.000	Single Line	19.7
0.445000	53.54	---	87.97	34.43	1000.0	9.000	Single Line	19.7
1.555000	---	61.79	74.00	12.21	1000.0	9.000	Single Line	20.0
1.555000	62.60	---	87.00	24.40	1000.0	9.000	Single Line	20.0
23.130000	---	65.46	74.00	8.54	1000.0	9.000	Single Line	20.4
23.130000	68.78	---	87.00	18.22	1000.0	9.000	Single Line	20.4

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[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNF-8010RVMP
Mode	PoE , TEL 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)
0.355000	---	62.41	76.84	14.43	1000.0	9.000	Single Line	19.9
0.355000	67.71	---	89.84	22.13	1000.0	9.000	Single Line	19.9
0.940000	---	40.69	74.00	33.31	1000.0	9.000	Single Line	20.2
0.940000	45.87	---	87.00	41.13	1000.0	9.000	Single Line	20.2
0.945000	---	40.90	74.00	33.10	1000.0	9.000	Single Line	20.2
0.945000	46.40	---	87.00	40.60	1000.0	9.000	Single Line	20.2
23.130000	---	53.62	74.00	20.38	1000.0	9.000	Single Line	20.6
23.130000	56.85	---	87.00	30.15	1000.0	9.000	Single Line	20.6

◆ Calculation

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

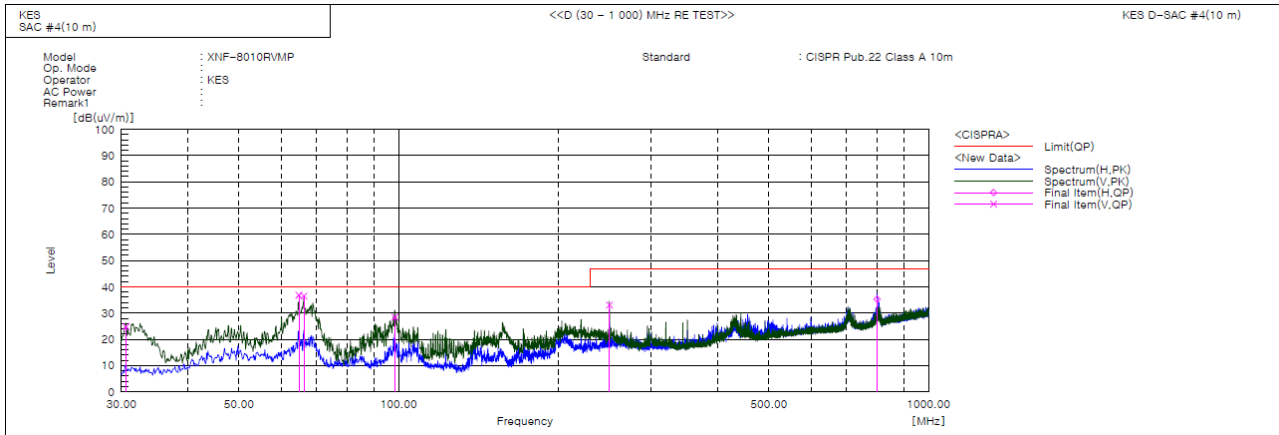
QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

Radiated Electric Field Emissions(Below 1 GHz)

- 12 V (dc) 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	30.634	V	57.0	-32.2	24.8	40.0	15.2	100.0	226.0	
2	64.879	V	67.0	-30.2	36.8	40.0	3.2	209.0	87.0	
3	66.290	V	67.2	-30.7	36.5	40.0	3.5	213.0	105.0	
4	98.430	V	56.9	-28.4	28.5	40.0	11.5	100.0	246.0	
5	249.997	V	58.3	-25.3	33.0	47.0	14.0	103.0	8.0	
6	799.995	H	47.4	-12.1	35.3	47.0	11.7	195.0	10.0	

◆ Calculation

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

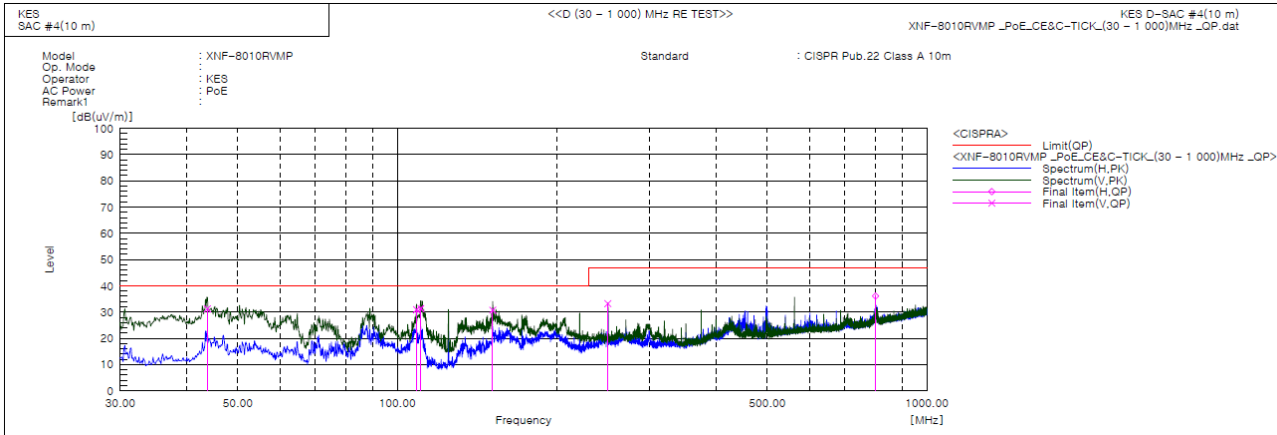
Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

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



- 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	43.807	V	59.3	-28.1	31.2	40.0	8.8	397.0	291.0	
2	108.813	V	59.9	-29.0	30.9	40.0	9.1	100.0	102.0	
3	110.772	V	60.6	-29.3	31.3	40.0	8.7	123.0	125.0	
4	151.493	V	62.0	-31.3	30.7	40.0	9.3	125.0	193.0	
5	249.948	V	58.5	-25.3	33.2	47.0	13.8	105.0	345.0	
6	800.059	H	48.2	-12.1	36.1	47.0	10.9	352.0	275.0	

◆ Calculation – SAC #4(10 m)

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

Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

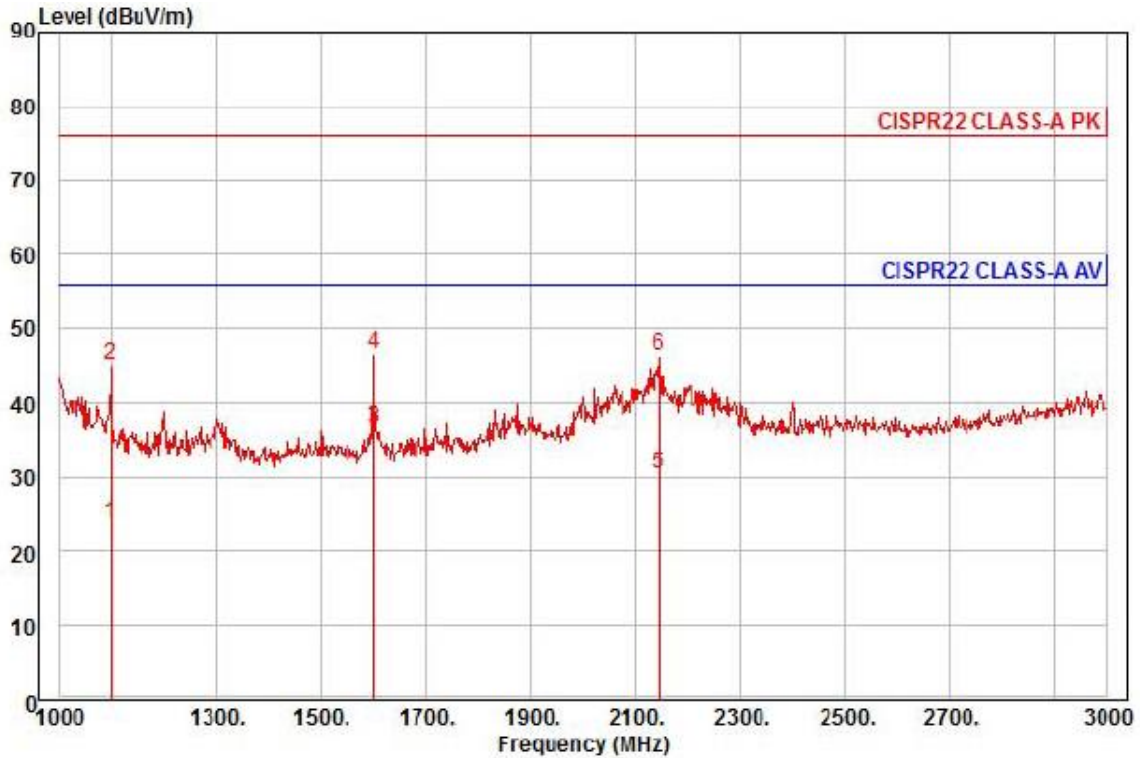
Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

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

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Radiated Electric Field Emissions(Above 1 GHz)

- 12 V (dc) Mode



Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) horizontal
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 Mode : 12 V (dc)
 Memo : (1 - 3) GHz

	Read Freq	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	1098.00	29.92	22.80	6.95	35.97	139	56.00	-32.30	horizontal	Average
2	1098.00	51.33	22.80	6.95	35.97	139	76.00	-30.89	horizontal	Peak
3 pp	1600.00	39.05	24.42	8.51	35.53	54	56.00	-19.55	horizontal	Average
4 pk	1600.00	49.07	24.42	8.51	35.53	54	76.00	-29.53	horizontal	Peak
5	2146.00	29.23	26.45	9.99	35.23	32	56.00	-25.56	horizontal	Average
6	2146.00	45.21	26.45	9.99	35.23	32	76.00	-29.58	horizontal	Peak

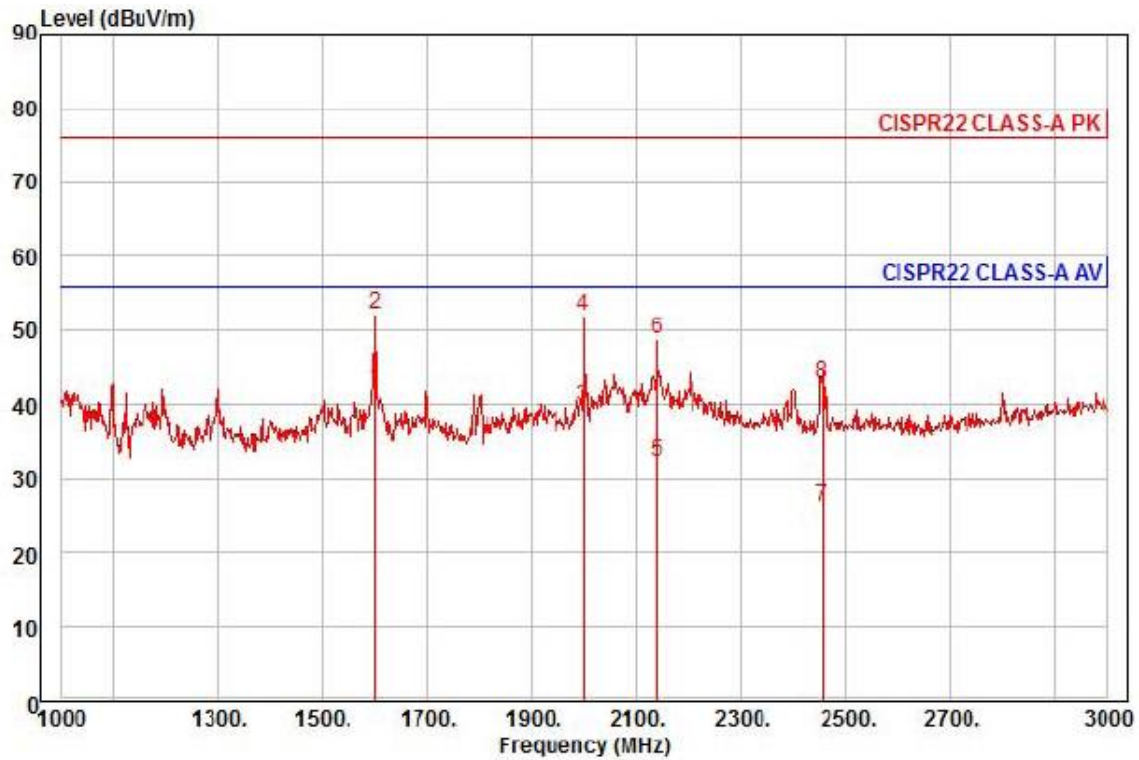
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 Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
 Tel: +82-31-425-6200 / Fax: +82-31-424-0450
 www.kes.co.kr

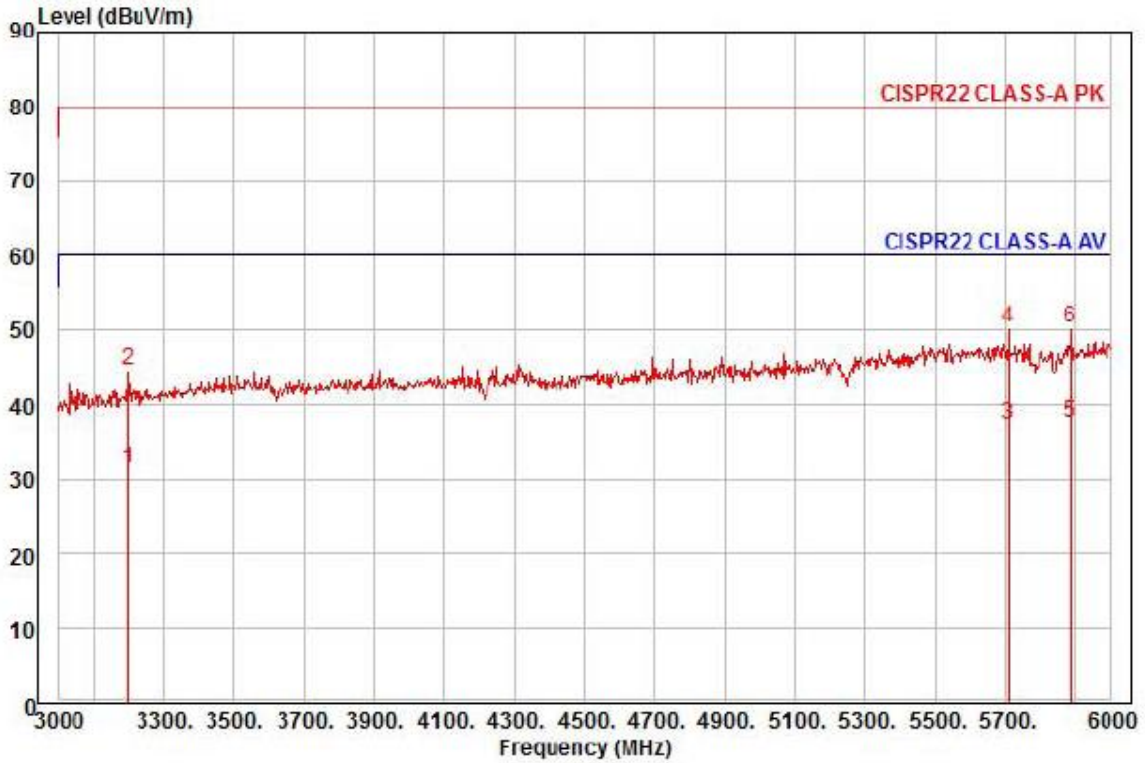
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 KES-E1-17T0631-R1
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Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) vertical
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 Mode : 12 V (dc)
 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 pp	1600.00	44.86	24.42	8.51	35.53	142	56.00	-13.74	vertical	Average
2 pk	1600.00	54.87	24.42	8.51	35.53	142	76.00	-23.73	vertical	Peak
3	2000.00	39.14	26.01	9.65	35.17	252	56.00	-16.37	vertical	Average
4	2000.00	51.44	26.01	9.65	35.17	252	76.00	-24.07	vertical	Peak
5	2140.00	31.19	26.44	9.98	35.22	347	56.00	-23.61	vertical	Average
6	2140.00	47.69	26.44	9.98	35.22	347	76.00	-27.11	vertical	Peak
7	2454.00	23.43	27.39	10.72	35.35	311	56.00	-29.81	vertical	Average
8	2454.00	40.09	27.39	10.72	35.35	311	76.00	-33.15	vertical	Peak

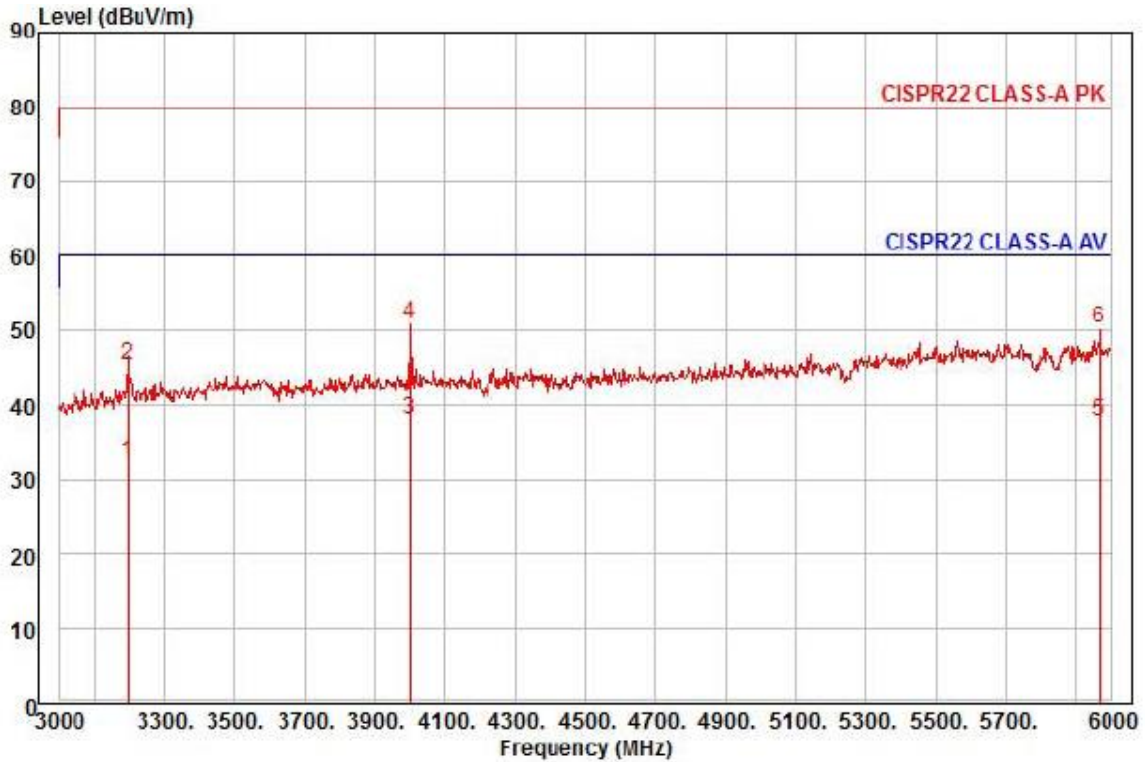
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Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) horizontal
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 Mode : 12 V (dc)
 Memo : (3 - 6) GHz

	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor	deg	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3198.00	23.87	30.30	12.66	35.50	50	60.00	-28.67	horizontal Average
2	3198.00	37.11	30.30	12.66	35.50	50	80.00	-35.43	horizontal Peak
3	5709.00	20.42	35.68	16.92	35.67	225	60.00	-22.65	horizontal Average
4	5709.00	33.39	35.68	16.92	35.67	225	80.00	-29.68	horizontal Peak
5 pp	5886.00	19.94	35.95	17.30	35.68	103	60.00	-22.49	horizontal Average
6 pk	5886.00	32.80	35.95	17.30	35.68	103	80.00	-29.63	horizontal Peak

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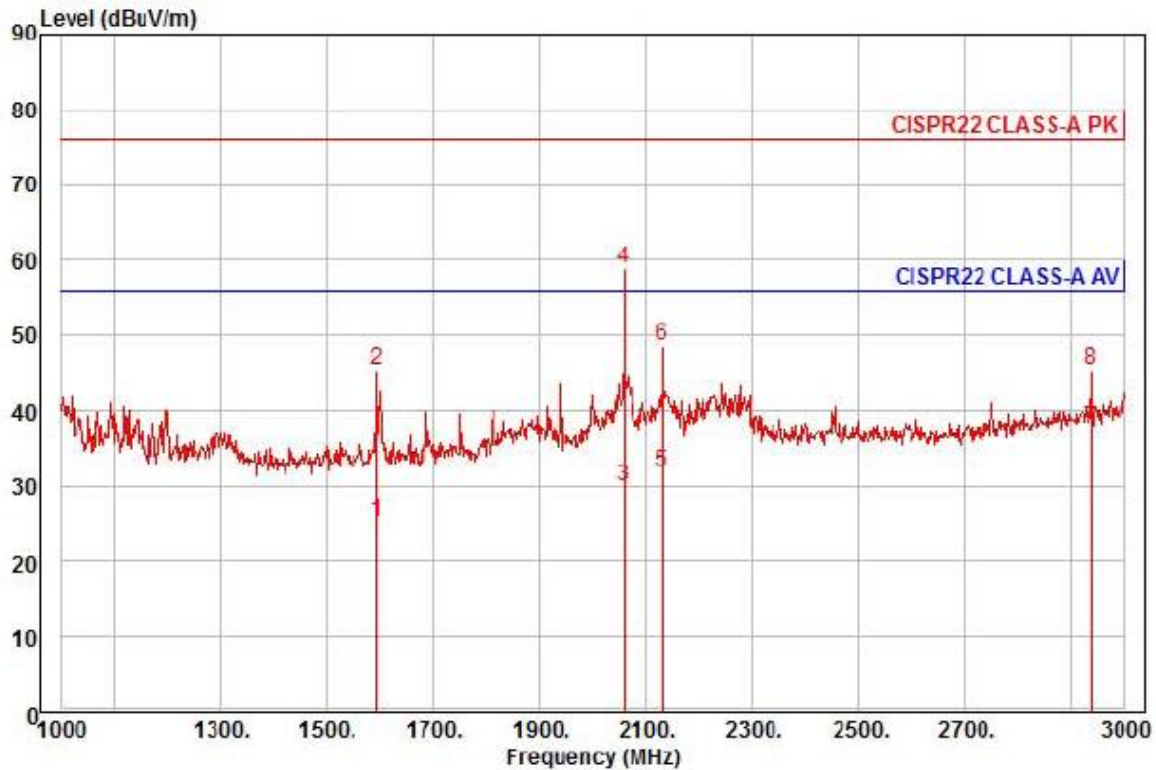


Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) vertical
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 Mode : 12 V (dc)
 Memo : (3 - 6) GHz

	Read	Ant	Cable	Preamp	TPos	Limit	Over			
Freq	Level	Factor	Loss	Factor	deg	Line	Limit	Pol/Phase	Remark	
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB			
1	3195.00	24.82	30.29	12.65	35.51	339	60.00	-27.75	vertical	Average
2	3195.00	37.95	30.29	12.65	35.51	339	80.00	-34.62	vertical	Peak
3 pp	3999.00	26.68	32.50	14.07	35.28	24	60.00	-22.03	vertical	Average
4 pk	3999.00	39.77	32.50	14.07	35.28	24	80.00	-28.94	vertical	Peak
5	5964.00	19.89	36.07	17.54	35.69	321	60.00	-22.19	vertical	Average
6	5964.00	32.38	36.07	17.54	35.69	321	80.00	-29.70	vertical	Peak

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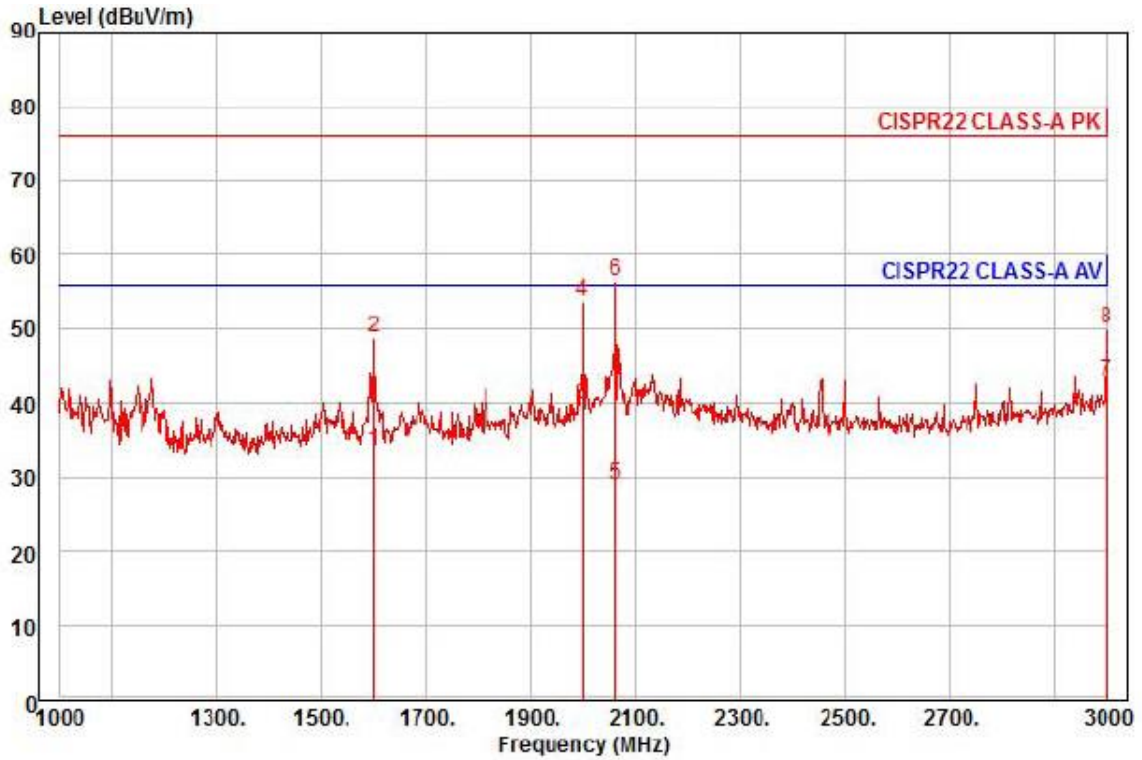
- PoE Mode



Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) horizontal
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 Mode : PoE
 Memo : (1 - 3) GHz

	Read Freq	Ant Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1594.00	27.84	24.39	8.49	35.53	205	56.00	-30.81	horizontal	Average
2	1594.00	47.94	24.39	8.49	35.53	205	76.00	-30.71	horizontal	Peak
3	2058.00	29.06	26.19	9.79	35.19	100	56.00	-26.15	horizontal	Average
4 pp	2058.00	58.02	26.19	9.79	35.19	100	76.00	-17.19	horizontal	Peak
5	2132.00	30.65	26.41	9.96	35.22	103	56.00	-24.20	horizontal	Average
6	2132.00	47.31	26.41	9.96	35.22	103	76.00	-27.54	horizontal	Peak
7 av	2938.00	31.72	29.47	11.98	35.54	179	56.00	-18.37	horizontal	Average
8	2938.00	39.52	29.47	11.98	35.54	179	76.00	-30.57	horizontal	Peak

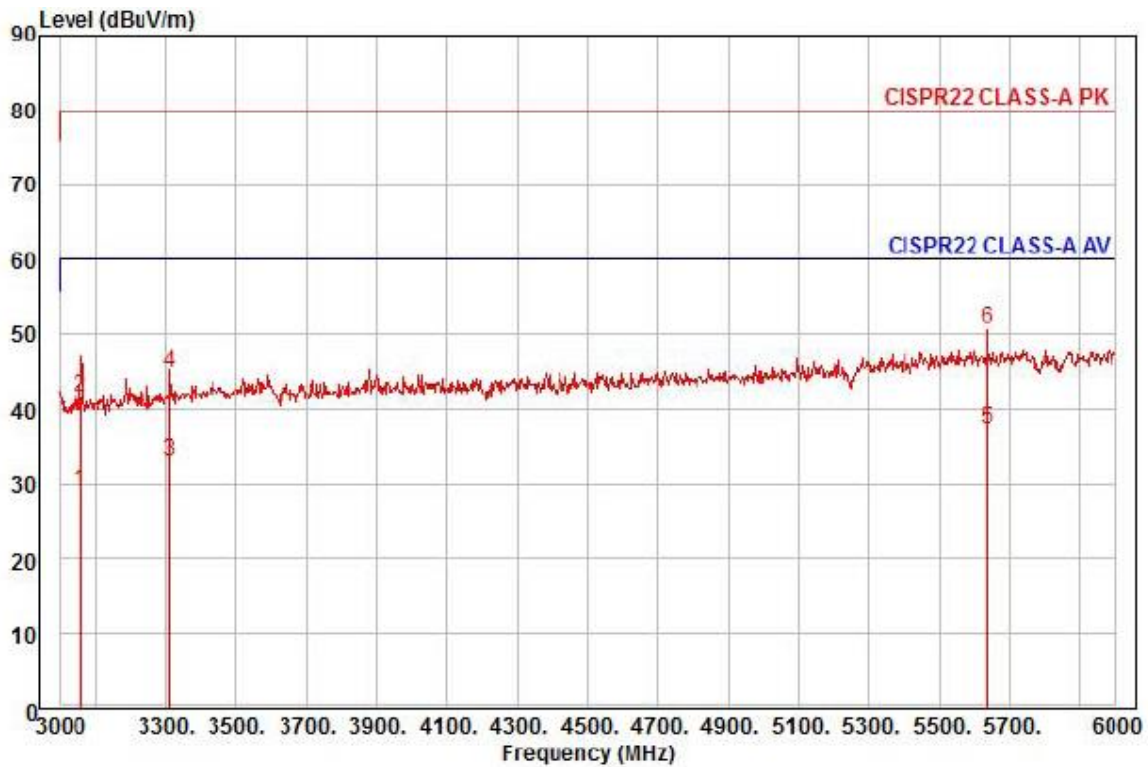
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Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) vertical
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 Mode : PoE
 Memo : (1 - 3) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1600.00	36.18	24.42	8.51	35.53	228	56.00	-22.42	vertical	Average
2	1600.00	51.50	24.42	8.51	35.53	228	76.00	-27.10	vertical	Peak
3	2000.00	39.21	26.01	9.65	35.17	245	56.00	-16.30	vertical	Average
4	2000.00	53.28	26.01	9.65	35.17	245	76.00	-22.23	vertical	Peak
5	2060.00	28.15	26.19	9.79	35.19	183	56.00	-27.06	vertical	Average
6 pk	2060.00	55.64	26.19	9.79	35.19	183	76.00	-19.57	vertical	Peak
7 pp	3000.00	36.65	29.74	12.15	35.56	180	56.00	-13.02	vertical	Average
8	3000.00	43.81	29.74	12.15	35.56	180	76.00	-25.86	vertical	Peak

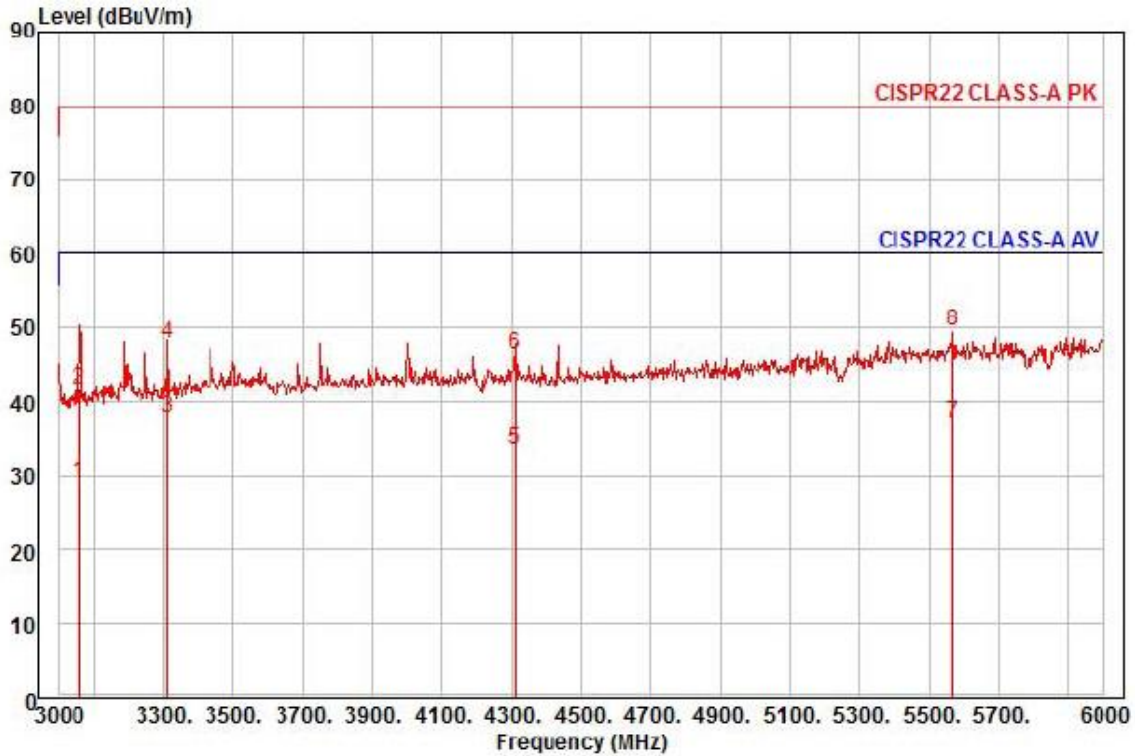
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Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) horizontal
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 Mode : PoE
 Memo : (3 - 6) GHz

	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor	deg	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3060.00	22.34	29.91	12.30	35.54	132	60.00	-30.99	horizontal Average
2	3060.00	34.91	29.91	12.30	35.54	132	80.00	-38.42	horizontal Peak
3	3312.00	25.14	30.62	12.86	35.47	192	60.00	-26.85	horizontal Average
4	3312.00	36.98	30.62	12.86	35.47	192	80.00	-35.01	horizontal Peak
5 pp	5640.00	20.47	35.58	16.82	35.67	51	60.00	-22.80	horizontal Average
6 pk	5640.00	33.95	35.58	16.82	35.67	51	80.00	-29.32	horizontal Peak

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Site : chamber
 Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) vertical
 : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
 Project :
 Model : XNF-8010RVMP
 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	3060.00	22.36	29.91	12.30	35.54	141	60.00	-30.97	vertical	Average
2	3060.00	35.09	29.91	12.30	35.54	141	80.00	-38.24	vertical	Peak
3 pp	3312.00	29.73	30.62	12.86	35.47	187	60.00	-22.26	vertical	Average
4	3312.00	39.76	30.62	12.86	35.47	187	80.00	-32.23	vertical	Peak
5	4311.00	21.95	32.41	14.63	35.39	195	60.00	-26.40	vertical	Average
6	4311.00	34.81	32.41	14.63	35.39	195	80.00	-33.54	vertical	Peak
7	5565.00	20.60	35.47	16.71	35.66	147	60.00	-22.88	vertical	Average
8 pk	5565.00	33.02	35.47	16.71	35.66	147	80.00	-30.46	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[$\text{dB}\mu\text{V}$] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[$\text{dB}\mu\text{V}$]

Over Limit : Margin, 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
		N/A		

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.

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Test Data - Harmonics (continued)

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
		N/A		

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.

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Test Data - Voltage Fluctuations

Maximum Flicker results

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

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KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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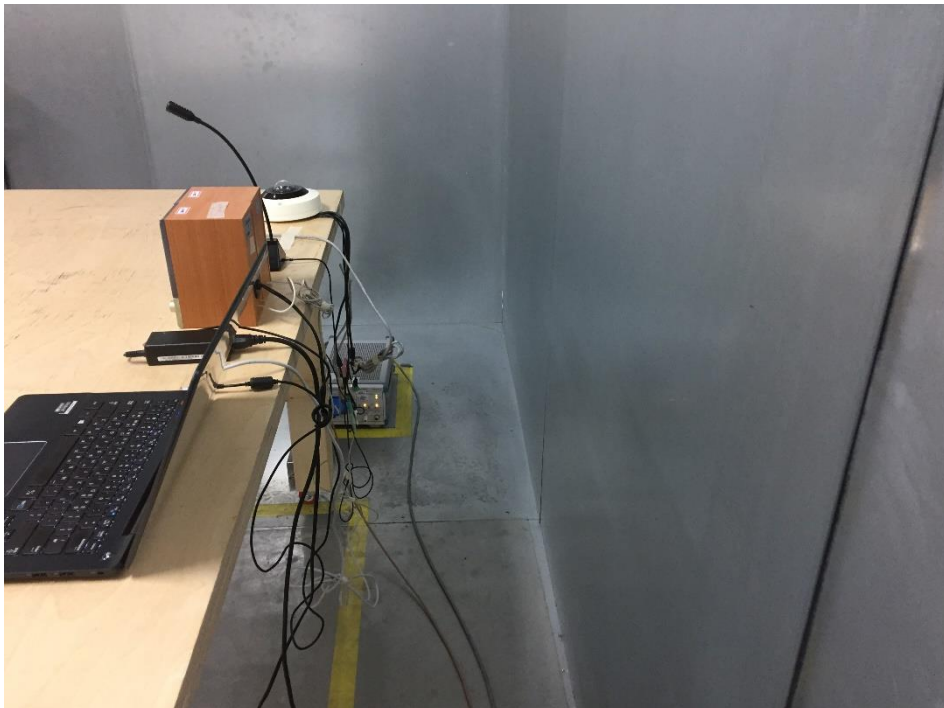
Test Setup Photos and Configuration

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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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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Harmonic Current Emissions and Voltage Fluctuations and Flicker

N/A

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Electrostatic Discharge

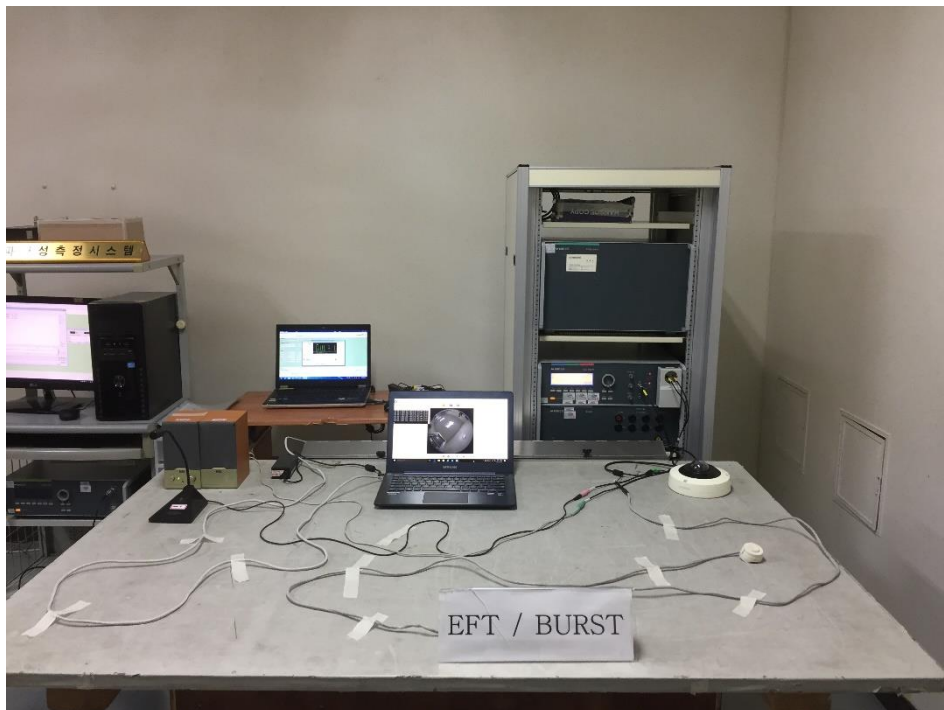
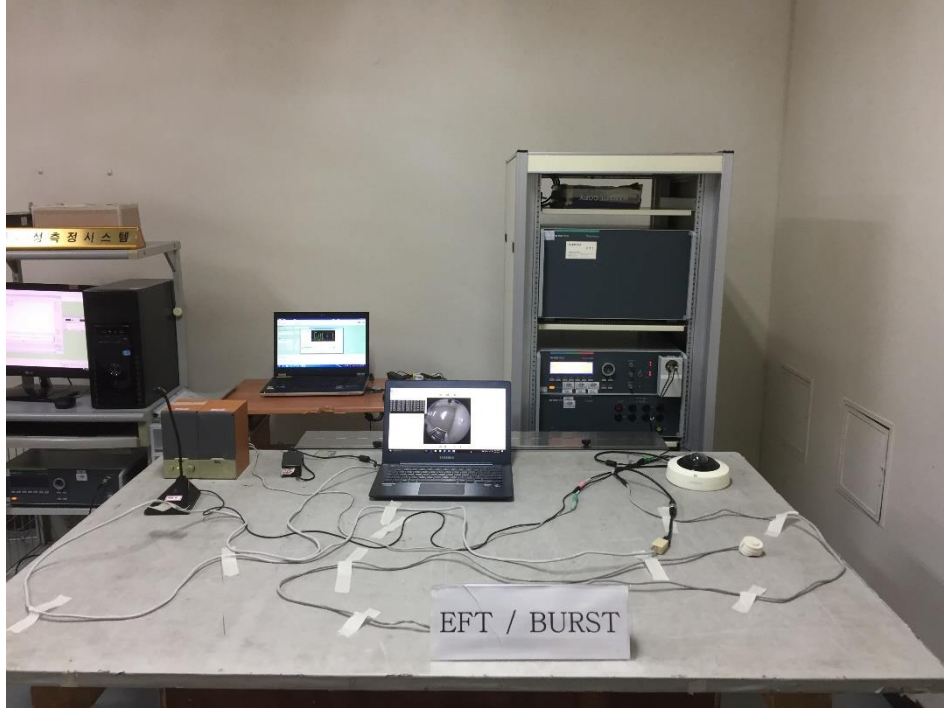


Radiated Electric Field Immunity



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Electrical Fast Transients/Bursts



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Surge Transients



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Conducted Disturbance



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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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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)



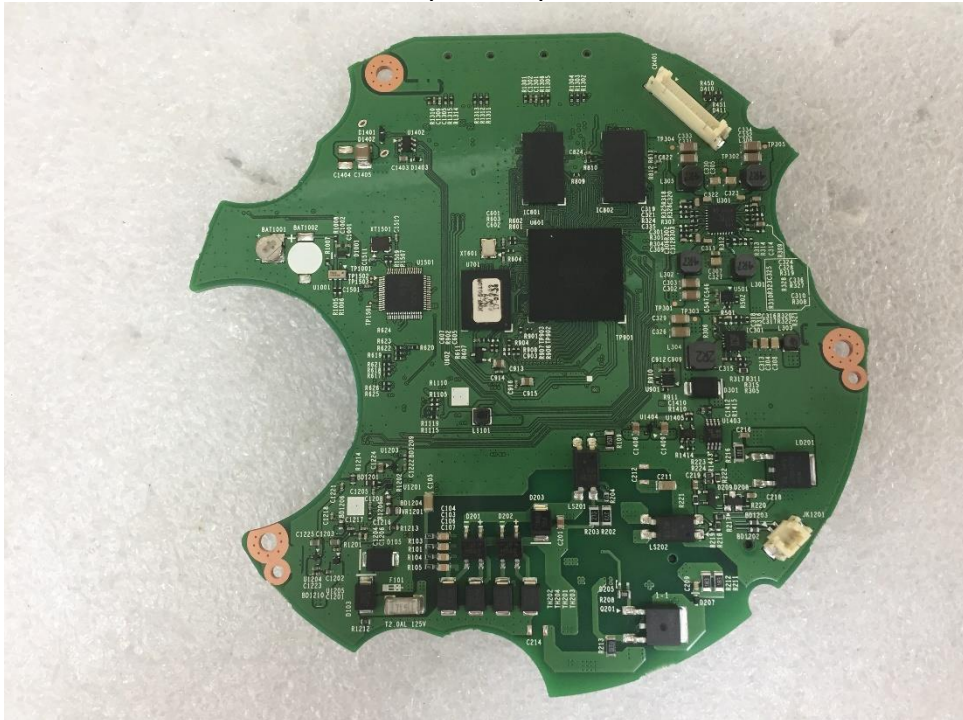
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EUT Internal View – Main board

(Top)



(Bottom)



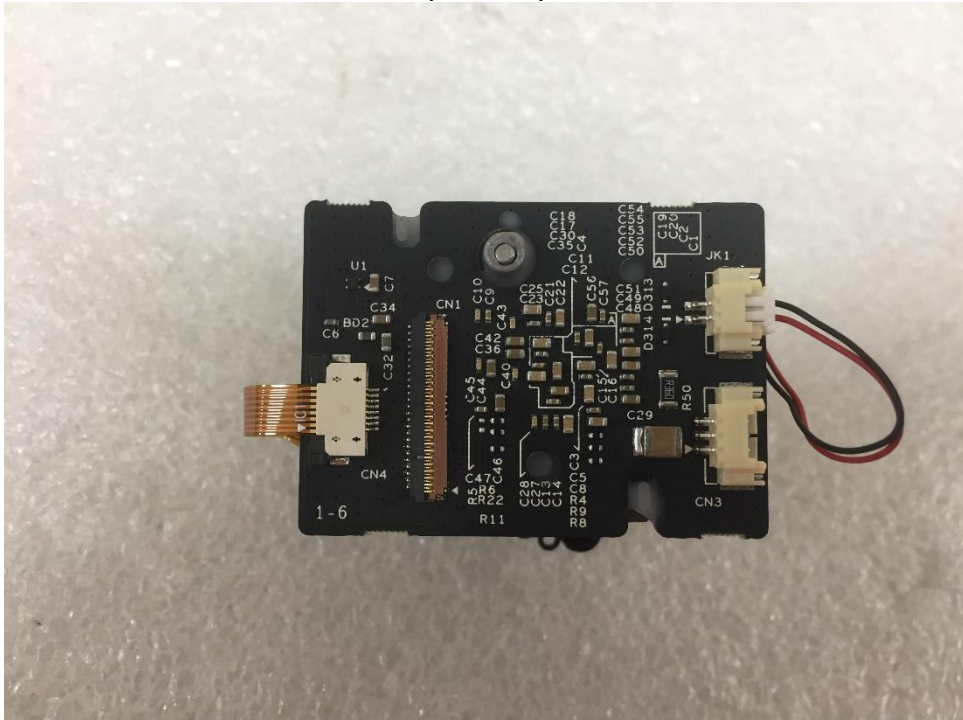
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EUT Internal View – CAMERA board

(Top)



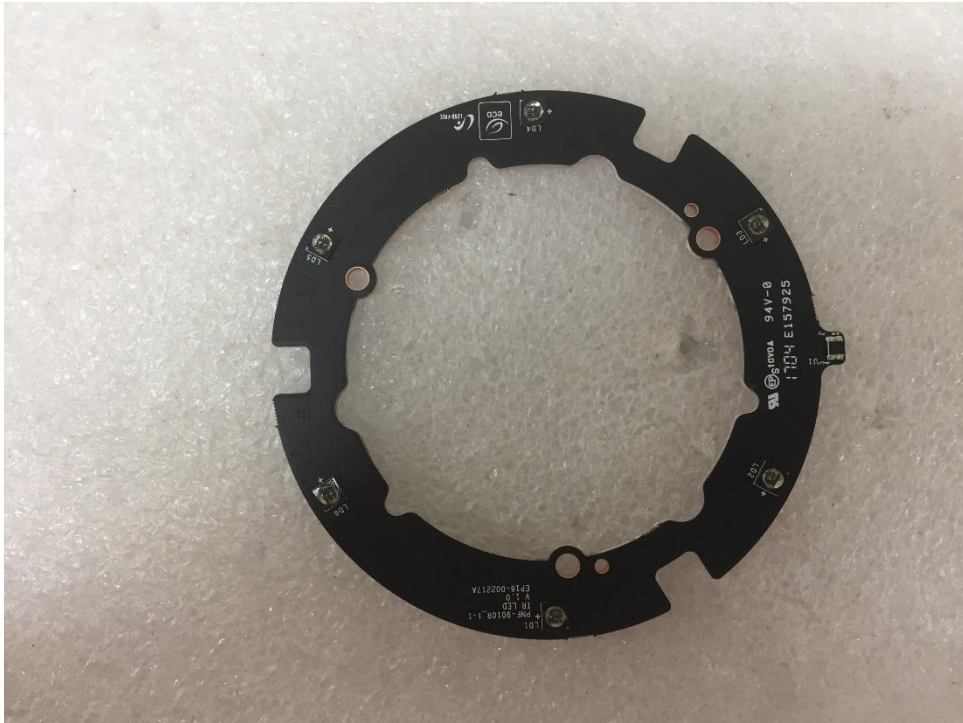
(Bottom)



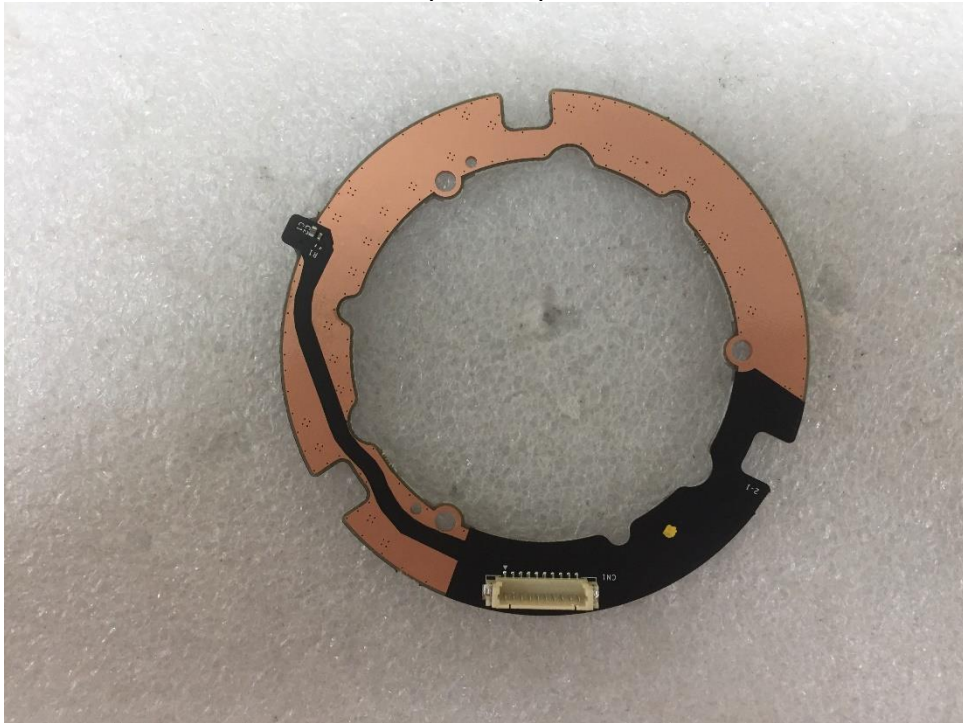
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EUT Internal View – LED board

(Top)

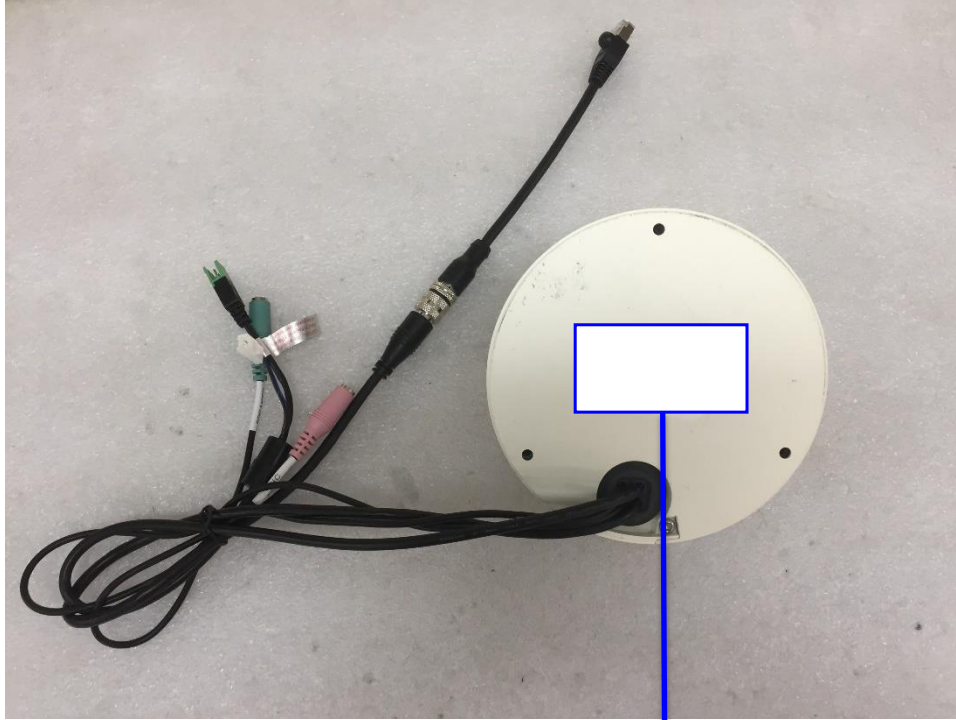


(Bottom)



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Label and Location



NETWORK CAMERA

Model No : XNF-8010RVMP

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

Made in of China

