



EMC TEST REPORT For CE

Test Report No. : KES-E1-17T0810-R2

Date of Issue : May. 15, 2019

Product name : Network Camera

Model/Type No. : XNP-6320

Variant Model : XNP-6320G, XNP-6321

Applicant : Hanwha Techwin Co., Ltd.

Applicant Address : 6, Pangyo-ro 319 Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, 13488, KOREA

Manufacturer : 1. Hanwha Techwin (Tianjin) Co.,Ltd.
2. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
3. D-TECH CO.,LTD.

Manufacturer Address : 1. No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin,
300385, People's Republic of China
2. Lot O-2, Que Vo Industrial Zone extended area,
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
3. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do,
Korea (Suwon Industrial Complex)

Date of Receipt : Nov. 22, 2017

Test date : Dec. 04, 2017 ~ Dec. 07, 2017

Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

Ju Won, Yun
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KOLAS.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2
Page (2) of (81)

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Dec. 11, 2017	KES-E1-17T0810	Issued
Dec. 28, 2018	KES-E1-17T0810-R1	Add a simple derivative model
May. 15, 2019	KES-E1-17T0810-R2	Re-issue due to manufacturer change

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd. This document may be altered or revised by KES Co., Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by KES Co., Ltd. will constitute fraud and shall nullify the document.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



TABLE OF CONTENTS

1.0	General Product Description	4
1.1	Test Voltage & Frequency	7
1.2	Variant Model Differences.....	7
1.3	Device Modifications.....	7
1.4	Equipment Under Test.....	7
1.5	Support Equipments.....	8
1.6	External I/O Cabling	9
1.7	E.U.T Operating Mode(s).....	10
1.8	Configuration.....	11
1.9	Remarks when standards applied	12
1.10	Calibration Details of Equipment Used for Measurement.....	12
1.11	Test Facility	12
1.12	Laboratory Accreditations and Listings	12
2.0	Test Regulations.....	13
2.1	Conducted Emissions at Mains Power Ports.....	15
2.2	Conducted Emissions at Telecommunication Ports	16
2.3	Radiated Electric Field Emissions(Below 1 GHz)	17
2.4	Radiated Electric Field Emissions(Above 1 GHz).....	18
2.5	Harmonic Current Emissions.....	19
2.6	Voltage Fluctuations and Flicker	20
3.0	Criteria for compliance.....	21
3.1	Electrostatic Discharge.....	23
3.2	Radiated Electric Field Immunity	27
3.3	Electrical Fast Transients/Bursts	30
3.4	Surge Transients.....	33
3.5	Conducted Disturbance	36
3.6	Voltage Dips and Short Interruptions	39
APPENDIX A – TEST DATA.....		41
Conducted Emissions at Mains Power Ports.....		41
Conducted Emissions at Telecommunication Ports		43
Radiated Electric Field Emissions(Below 1 GHz)		47
Radiated Electric Field Emissions(Above 1 GHz).....		49
Harmonic Current Emissions and Voltage Fluctuations and Flicker		57
Test Setup Photos and Configuration		61
Conducted Voltage Emissions		61
Conducted Telecommunication Emissions		62
Radiated Electric Field Emissions(Below 1 GHz)		63
Radiated Electric Field Emissions(Above 1 GHz).....		64
Harmonic Current Emissions and Voltage Fluctuations and Flicker		65
Electrostatic Discharge		66
Radiated Electric Field Immunity		66
Electrical Fast Transients/Bursts.....		67
Surge Transients.....		68
Conducted Disturbance.....		69
Voltage Dips and Short Interruptions.....		70
EUT External Photographs		71
EUT Internal Photographs		72



1.0 General Product Description

Main Specifications of E.U.T are:

Video	XNP-6320	XNP-6320H
Imaging Device	1/2.8" 2.4M CMOS	
Total Pixels	1981(H) x 1288(V), 2.55M	
Effective Pixels	1944(H) x 1212(V), 2.35M	
Scanning System	Progressive	
Min. Illumination	Color : 0.05Lux (1/30sec, F1.6) B/W : 0.005 Lux (1/30sec, F1.6)	
S / N Ratio	50dB	
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation USB : Micro USB type B, 1280x720, for installation	
Lens		
Focal Length (Zoom Ratio)	4.44 ~ 142.6mm(Optical 32X)	
Max. Aperture Ratio	F1.6 (Wide) / F4.4 (Tele)	
Angular Field of View	H : 61.8°(Wide) ~ 2.19°(Tele) / V : 36.2°(Wide) ~ 1.24°(Tele)	
Min. Object Distance	Wide 1.5m ,Tele 2m	
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 : 700°/sec, Manual : 0.024°/sec ~ 200°/sec	
Tilt Range	210°(-15° ~195°)	
Tilt Speed	Preset : 700°/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)	
Auto Tracking	Support	
Operational		
Camera Title	Off / On (Displayed up to 85 characters) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale, by Resolution	
Day & Night	Auto (ICR) / Color / B/W / 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	



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2
Page (5) of (81)

Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor (included Mercury & Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1 ~ 1/12,000sec)
Digital Zoom	32x
Image Rotation	Flip/Mirror : On/Off
Video&Audio Analytics	Tampering, Loitering, Directional Detection, Fog Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection, Motion Detection, Sound Classification
Serial Interface	RS-485 - Samsung-T, Pelco-D/P, Panasonic, Bosch, AD, GE, Vicon, Honeywell
Alarm I/O	Input 4ea / Output 2ea (Relay)
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio Analytics, Network Disconnect
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
Network	
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

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
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-EI-17T0810-R2
Page (6) of (81)

Audio Communication	Bi-directional (2-Way)	
IP	IPv4, IPv6	
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour	
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication (EAP-TLS, EAP-LEAP)	
Streaming Method	Unicast / Multicast	
Max. User Access	20 users at Unicast Mode	
Edge Storage	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	ONVIF Profile S/G SUNAPI 2.0(HTTP API) Wisenet Open Plarform	
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	
Environmental		
Operating Temperature / Humidity	-10°C ~ +55°C(+14°F ~ +131°F) / Less than 90% RH	24V AC: -50°C ~ +55°C (-58°F ~ +131°F) / ~ 90% RH
		PoE+ : -35°C ~ +55°C (-31°F ~ +131°F) / ~ 90% RH * Start up should be done at above -30°C
Storage Temperature /	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH	
Ingress Protection	-	IP66
Vandal Resistance	IK10 (with SHP-3701H)	IK10
Electrical		
Input Voltage / Current	AC24V±10%,PoE+(IEEE802.3at,Class4)	
Power Consumption	20W	24W Max(Heater Off), 65W Max(Heater On, AC24V)
Mechanical		
Color / Material	Ivory / Plastic+Metal	
Dimension (WxH)	Ø152 x H218 mm	Ø220 x H293.6 mm
Weight	1.7Kg	3.3Kg

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



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

Add a simple derivative model

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
Network Camera	XNP-6320	-	Hanwha Techwin (Tianjin) Co.,Ltd	E.U.T

**KES Co., Ltd.**

3701, 40, Simin-daero 365beon-gil,
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-EI-17T0810-R2
Page (8) of (81)

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE Adaptor	GS728TPP	-	NETGEAR, INC.	-
Notebook	X56K	HN11N5151FJ0045 W	Hansung computer co., Ltd.	-
Notebook Adaptor	PA-1900-14	-	LITE-ON TECHNOLOGY (CHANGZHOU)CO., LTD.	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-
MIC	CMK-303	-	CAMAC	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
Controller	SPC-1010	C50E67WG10100F	SamSung Techwin Co.,Ltd.	-
Controller Adaptor	RS-AB1000	-	Dongguan JinhuaSheng Power Technology Co.,Ltd.	-
Micro SD Card	-	-	SanDisk	32 GB

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

1.6 External I/O Cabling

■ AC 24 V Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camera (E.U.T)	RJ-45	Notebook	RJ-45	3.0	U
	3.5 mm	Speaker	3.5 mm	1.6	U
	3.5 mm	MIC	3.5 mm	1.7	U
	3 Pin	Alarm	3 Pin	4.0	U
	RS-485 (3 Pin)	Controller	RS-485 (3 Pin)	3.5	U
	SLOT	Micro SD Card	SLOT	-	-

* 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
	3 Pin	Alarm	3 Pin	4.0	U
	RS-485 (3 Pin)	Controller	RS-485 (3 Pin)	3.5	U
	SLOT	Micro SD Card	SLOT	-	-
PoE Adaptor	RJ-45 (Data)	Notebook	RJ-45 (Data)	3.0	U

* Unshielded=U, Shielded=S

**KES Co., Ltd.**

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2
Page (10) of (81)

1.7 E.U.T Operating Mode(s)

Test Mode	operating
AC 24 V	E.U.T Monitoring, Ping Test
PoE	

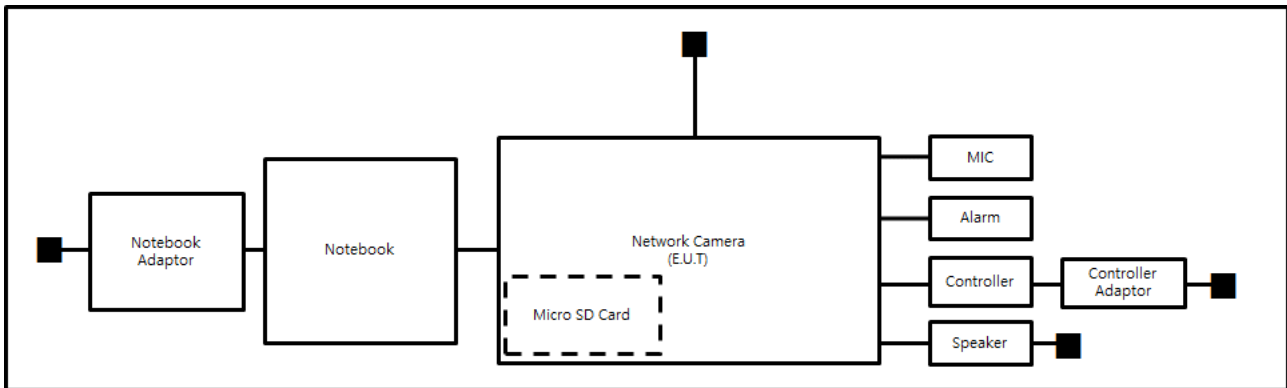
E.U.T Test operating S/W		
Name	Version	Manufacture Company
Webviewer	-	Hanwha Techwin Co., Ltd.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

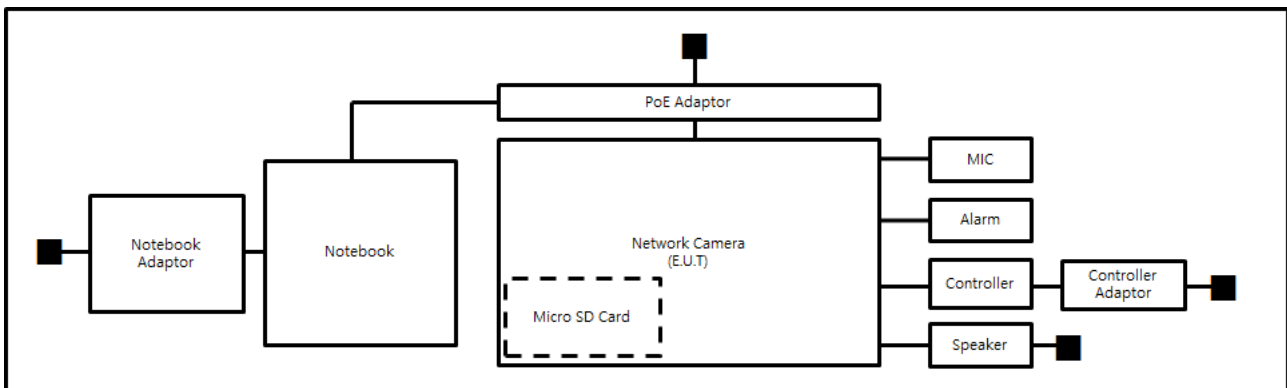
1.8 Configuration

■ AC Main
 □ DC Main

■ AC 24 V Mode



■ PoE Mode



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 C63.4:2014 and CISPR 16-1-4:2012

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	KOLAS	EMI (3 m & 10 m Semi-Anechoic Chamber , and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	FCC	3 m & 10 m Semi-Anechoic Chamber, 10 m Open Area and Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298-1
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
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 17 07 01633 001

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

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

☐ Group 2

☐ Class A

☐ 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

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



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



2.1 Conducted Emissions at Mains Power Ports

Test Date

Dec. 04, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101781	04, 27, 2018
☒	LISN	ENV216	R & S	101787	01, 11, 2018
☒	LISN	ESH2-Z5	R & S	100450	04, 27, 2018
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 27, 2018
☐	LISN	NNBM8124	SCHWARZBECK	8124-1002	08, 07, 2018
☐	LISN	NNBM8124	SCHWARZBECK	8124-1003	08, 07, 2018

Test Conditions

Temperature: 22,0 °C
Relative Humidity: 43,0 % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Dec. 04, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101781	04, 27, 2018
☒	LISN	ENV216	R & S	101787	01, 11, 2018
☒	LISN	ESH2-Z5	R & S	100450	04, 27, 2018
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 27, 2017
☒	8-WIRE ISN CAT3,5	ENY81	R & S	100174	01, 11, 2018
☐	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	01, 11, 2018
☐	ISN	ISN S8	SCHWARZBECK	ISN-S8-0019	05, 12, 2018
☐	CDN	CDNS502A	TESEQ	40431	01, 11, 2018

Test Conditions

Temperature: 22,0 °C
Relative Humidity: 43,0 % R.H.

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.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Dec. 04, 2017

Test Location

☐ OPEN AREA TEST SITE #2 ☒ SEMI ANECHOIC CHAMBER #4(10m)

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	04, 18, 2018
☒	AMPLIFIER	SCU 01	R & S	100603	11, 27, 2018
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	716	11, 28, 2018

Test Conditions

Temperature: 22,7 °C
Relative Humidity: 41,3 % R.H.

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

Dec. 05, 2017

Test Location

SEMI ANECHOIC CHAMBER #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	e3	AUDIX	8.083b	-
☒	EMI TEST RECEIVER	ESU26	R & S	100552	04, 19, 2018
☒	PREAMPLIFIER	8449B	AGILENT	3008A01729	05, 31, 2018
☐	ATTENUATOR	8491A	HP	35496	03, 24, 2018
☐	LOG-PERIODIC ANTENNA	STLP 9149	SCHWARZBECK	9149-255	05, 17, 2018
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	09, 04, 2019

Test Conditions

Temperature: 20,5 °C
Relative Humidity: 45,2 % R.H.

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.

3.0 Criteria for compliance

Criteria for compliance was based on the following guidelines:

EN 50130-4:2011 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

Dec. 07, 2017

Test Location

EMS-ESD: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	ESD SIMULATOR	ESS-2000	Noise Ken	ESS01Z0454	10, 11, 2018
☒	HCP	-	KES	-	-
☒	VCP	-	KES	-	-

Test Conditions

Temperature: 21,0 °C
Relative Humidity: 43,0 % R.H.
Atmospheric Pressure: 100,2 kPa



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2

Page (24) of (81)

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
	☐ 2 kV	☒ 2 kV	☐ 2 kV	☐ 2 kV
	☐ 4 kV	☒ 4 kV	☐ 4 kV	☐ 4 kV
	☒ 6 kV	☐ 6 kV	☒ 6 kV	☒ 6 kV
	☐ 8 kV	☒ 8 kV	☐ 8 kV	☐ 8 kV
	☐ 15 kV	☐ 15 kV	☐ 15 kV	☐ 15 kV

Notes: HCP: Horizontal coupling plane

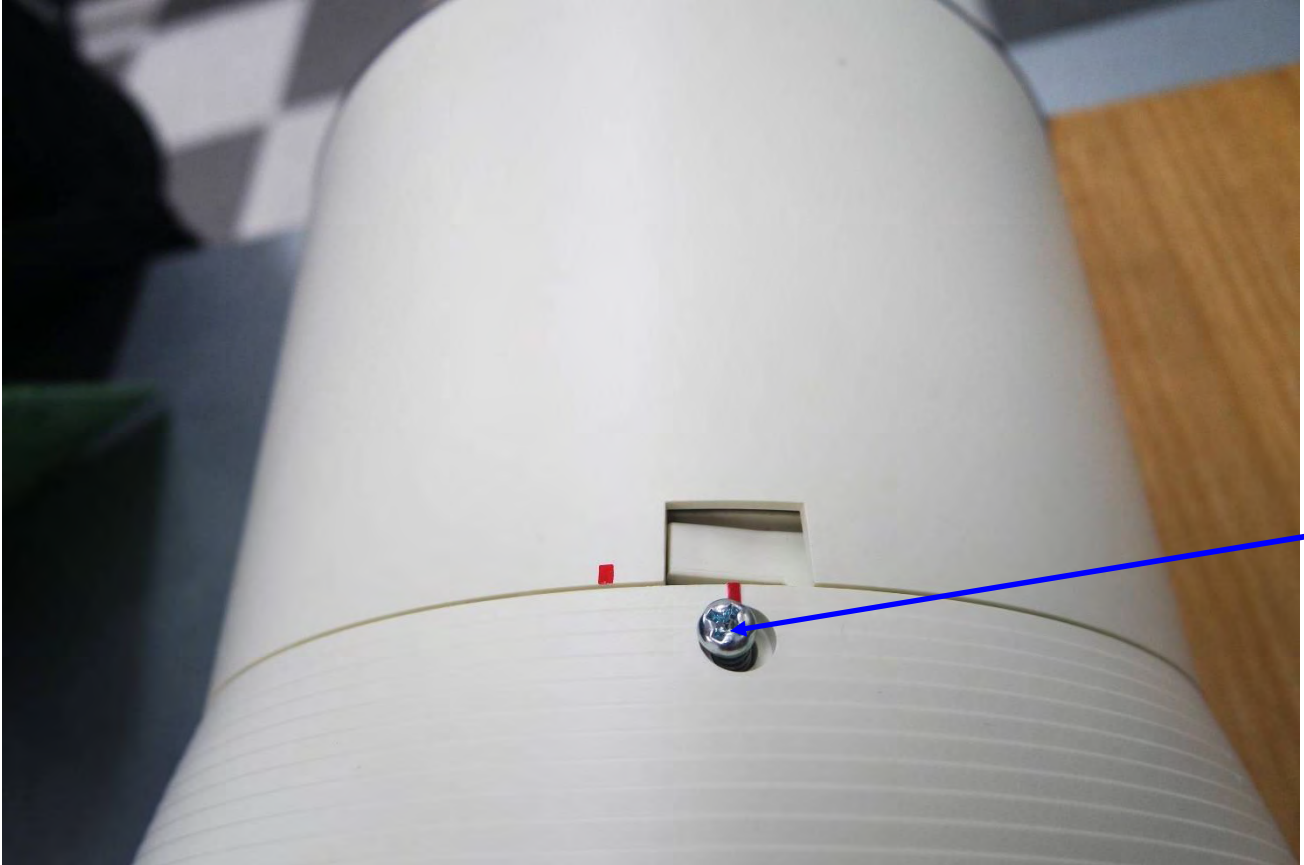
VCP: Vertical coupling plane

Required Performance Criteria: ☒ Complied

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Location of Discharge:

Air
Contact



1

**KES Co., Ltd.**

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2
Page (26) of (81)

Test Data**■ AC 24 V, PoE Mode****Indirect Discharge**

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

Direct Discharge

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

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

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

Remarks

PASS Required Performance Criteria.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

3.2 Radiated Electric Field Immunity

Reference Standard

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

Test Date

Dec. 05, 2017

Test Location

EMS-RS: ☒ SEMI ANECHOIC CHAMBER #2 ☐ SEMI ANECHOIC CHAMBER #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	KTI_RS2012	KOREA TECHNOLOGY INSTITUTE CO., LTD	2.1.1	-
☒	SIGNAL GENERATOR	ESG-3000A	HP	US37040210	11, 01, 2018
☒	AMPLIFIER	ITA0300-200	Infinitech	-	11, 01, 2018
☒	AMPLIFIER	ITA0750-200	Infinitech	-	11, 01, 2018
☒	AMPLIFIER	ITA1500-100	Infinitech	-	11, 01, 2018
☒	AMPLIFIER	ITA2500-100	Infinitech	-	11, 01, 2018
☒	POWER METER	E4419B	Agilent	MY45101506	06, 26, 2018
☒	AVERAGE POWER SENSOR	E9301A	Agilent	-	06, 26, 2018
☒	AVERAGE POWER SENSOR	E9301A	Agilent	MY41495698	06, 26, 2018
☒	HYBRID LOG-PERIODIC ANTENNA	HLP-2603	TDK	100400	-

Test Conditions

Temperature: 20,5 °C
Relative Humidity: 45,2 % R.H.
Atmospheric Pressure: 100,2 kPa

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



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

**KES Co., Ltd.**

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2
Page (29) of (81)

Test Data**■ AC 24 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

Dec. 06, 2017

Test Location

EMS-EFT: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	AMETEK CTS	7.1.2	-
☒	ULTRA COMPACT SIMULATOR	UCS 500 N5	EM TEST	V0936105120	06, 26, 2018
☒	MOTOR VARIAC	MV2616	EM TEST	V0936105123	06, 26, 2018
☒	CAPACITIVE COUPLING CLAMP	HFK	EM TEST	070925	06, 26, 2018

Test Conditions

Temperature: 20,9 °C
Relative Humidity: 45,0 % R.H.
Atmospheric Pressure: 100,1 kPa

Test Specifications

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

Test Data

■ AC 24 V Mode

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

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

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

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

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ-45	Complied	Complied
Alarm (3 Pin)	Complied	Complied
RS-485 (3 Pin)	Complied	Complied



■ PoE Mode

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

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

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

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

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ-45 (PoE)	Complied	Complied
Alarm (3 Pin)	Complied	Complied
RS-485 (3 Pin)	Complied	Complied

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria

☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.4 Surge Transients

Reference Standard

EN 61000-4-5:2014

Test Date

Dec. 06, 2017

Test Location

EMS-Surge: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	AMETEK CTS	7.1.2	-
☒	ULTRA COMPACT SIMULATOR	UCS 500 N5	EM TEST	V0936105120	10, 16, 2018
☒	MOTOR VARIAC	MV2616	EM TEST	V0936105123	06, 26, 2018
☒	CDN	CNV 508N1	EM TEST	P1551168979	04, 26, 2018
☐	CDN	CNV 508T5	EM TEST	P1549168422	04, 26, 2018

Test Conditions

Temperature: 20,9 °C
Relative Humidity: 45,0 % R.H.
Atmospheric Pressure: 100,1 kPa



Test Specifications

AC Power Lines

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

Surge Amplitude : Common Mode
☐ (0,5 / 1,0 / 2,0) kV
Differential Mode
☒ (0,5 / 1,0) kV

Number of Surges: ☒ 5 surges per angle

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

Polarity: ☒ Positive & Negative

Repetition Rate: ☒ 1 surge per min ☐ 1 surge per 30 sec.

Required Performance Criteria: ☒ Complied

Other supply / Signal Lines

Source Impedance: 42 ohm for common Mode

Surge Amplitude: Common Mode
☒ (0,5 / 1,0) kV

Number of Surges: ☒ 5 Surges

Polarity: ☒ Positive & Negative

Repetition Rate: ☒ 1 surge per min ☐ 1 surge per 30 sec.

Required Performance Criteria: ☒ Complied

Test Data

■ AC 24 V Mode

☒ Line to Line – Differential Mode

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

Signal Lines

☒ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
RJ-45	Complied	Complied
Alarm (3 Pin)	Complied	Complied
RS-485 (3 Pin)	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 (PoE)	Complied	Complied
Alarm (3 Pin)	Complied	Complied
RS-485 (3 Pin)	Complied	Complied

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria

☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.5 Conducted Disturbance

Reference Standard

EN 61000-4-6:2014

Test Date

Dec. 07, 2017

Test Location

EMS-CS: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	icd.control	EM TEST	5.3.11	-
☒	CONTINUOUS WAVE SIMULATOR	CWS 500N1.4	EM TEST	P1602169880	11, 27, 2018
☒	ATTENUATOR	ATT 6/80	EM TEST	P1614178148	11, 27, 2018
☒	CDN	CDN M016	TESEQ	43694	11, 27, 2018
☐	CDN	CDN M016	TESEQ	43697	11, 27, 2018
☒	CDN	CDN T800	TESEQ	42800	11, 27, 2018
☒	EM CLAMP	KEMZ 801A	TESEQ	44099	11, 28, 2018

Test Conditions

Temperature: 22,1 °C
Relative Humidity: 42,0 % R.H.
Atmospheric Pressure: 100,8 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

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



Test Data

■ AC 24 V Mode

☒ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
L - N	CDN (☒ M2, ☐ M3)	Complied

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (☐ M2, ☐ M3)	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN T800	Complied
Alarm (3 Pin)	Clamp	Complied
RS-485 (3 Pin)	Clamp	Complied

**KES Co., Ltd.**

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2

Page (38) of (81)

■ PoE Mode☐ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (☐ M2, ☐ M3)	-

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (☐ M2, ☐ M3)	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45 (PoE)	CDN T800	Complied
Alarm (3 Pin)	Clamp	Complied
RS-485 (3 Pin)	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

Dec. 06, 2017

Test Location

EMS-Voltage dip: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	AMETEK CTS	7.1.2	-
☒	ULTRA COMPACT SIMULATOR	UCS 500 N5	EM TEST	V0936105120	06, 26, 2018
☒	MOTOR VARIAC	MV2616	EM TEST	V0936105123	06, 26, 2018

Test Conditions

Temperature: 20,9 °C
Relative Humidity: 45,0 % R.H.
Atmospheric Pressure: 100,1 kPa



Test Specifications & Observations/Remarks

■ AC 24 V Mode (Test Voltage : 230 V)

<u>Test Level</u>	<u>Duration [in period/ms (50 Hz)]</u>	<u>Results</u>
☒ 20 % dip	☒ 250 / 5 000	<u>Complied</u>
☒ 30 % dip	☒ 25 / 500	<u>Complied</u>
☒ 60 % dip	☒ 10 / 200	<u>Complied</u>
☒ 100 % dip	☒ 250 / 5 000	<u>Complied</u>

- Voltage variations

☒ Unom + 10 %	☒ 253.0 V (ac)	<u>Complied</u>
☒ Unom - 15 %	☒ 195.5 V (ac)	<u>Complied</u>

Observations:
Complied – No degradation of function

Test Results

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

Remarks

PASS Required Performance Criteria.

*The test has been tested using the AC / AC Adaptor

APPENDIX A – TEST DATA

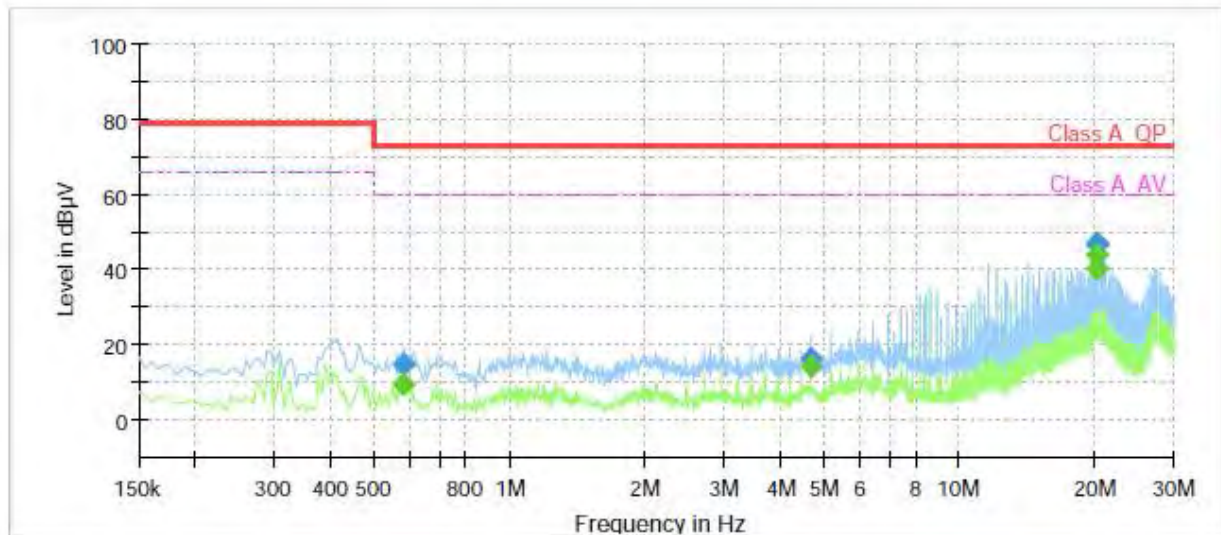
Conducted Emissions at Mains Power Ports

■ AC 24 V Mode
[HOT]

Common Information

Test Description:
Model No.:
Mode
Operator Name:

Conducted Emission
XNP-6320P
AC_H
KES



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.580000	---	9.58	60.00	50.42	1000.0	9.000	L1	19.8
0.580000	15.00	---	73.00	58.00	1000.0	9.000	L1	19.8
4.695000	---	14.19	60.00	45.81	1000.0	9.000	L1	19.8
4.695000	16.21	---	73.00	56.79	1000.0	9.000	L1	19.8
20.265000	---	40.24	60.00	19.76	1000.0	9.000	L1	20.4
20.265000	46.64	---	73.00	26.36	1000.0	9.000	L1	20.4
20.270000	---	43.90	60.00	16.10	1000.0	9.000	L1	20.4
20.270000	47.19	---	73.00	25.81	1000.0	9.000	L1	20.4



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2

Page (42) of (81)

[NEUTRAL]

Common Information

Test Description:

Model No.:

Mode

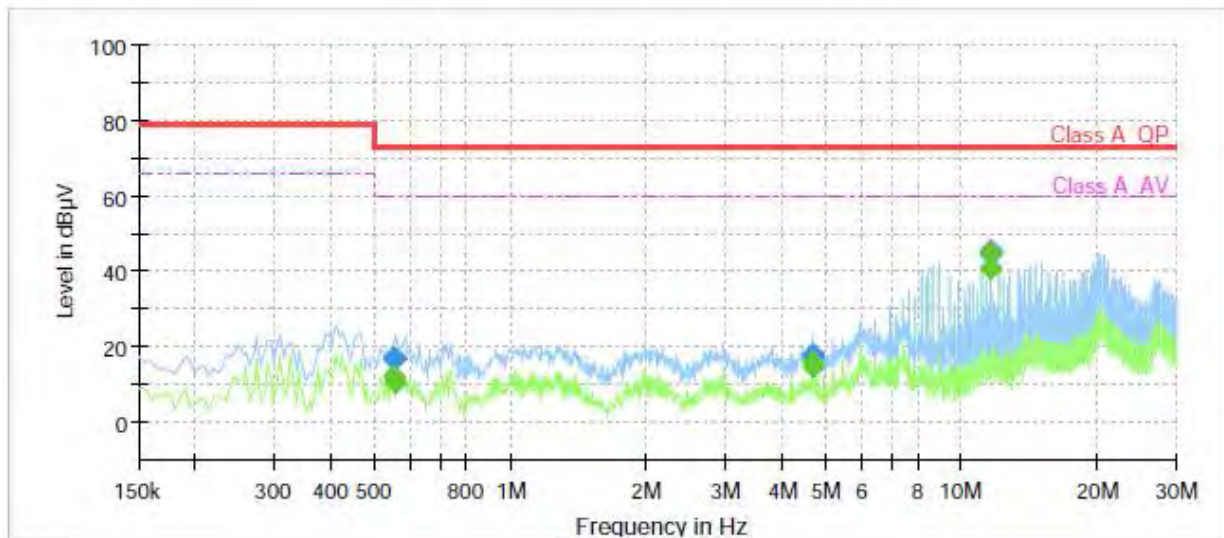
Operator Name:

Conducted Emission

XNP-6320P

AC_N

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.550000	---	11.97	60.00	48.03	1000.0	9.000	N	19.8
0.550000	17.05	---	73.00	55.95	1000.0	9.000	N	19.8
0.555000	---	10.65	60.00	49.35	1000.0	9.000	N	19.8
0.555000	17.04	---	73.00	55.96	1000.0	9.000	N	19.8
4.695000	---	15.79	60.00	44.21	1000.0	9.000	N	19.8
4.695000	17.98	---	73.00	55.02	1000.0	9.000	N	19.8
4.700000	---	14.64	60.00	45.36	1000.0	9.000	N	19.8
4.700000	17.28	---	73.00	55.72	1000.0	9.000	N	19.8
11.615000	---	40.97	60.00	19.03	1000.0	9.000	N	20.2
11.615000	44.23	---	73.00	28.77	1000.0	9.000	N	20.2
11.620000	---	44.97	60.00	15.03	1000.0	9.000	N	20.2
11.620000	45.43	---	73.00	27.57	1000.0	9.000	N	20.2

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

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.

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

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

Conducted Emissions at Telecommunication Ports

■ AC 24 V mode
[10 Mbps]

Common Information

Test Description:

Telecommunication Emission

Model No.:

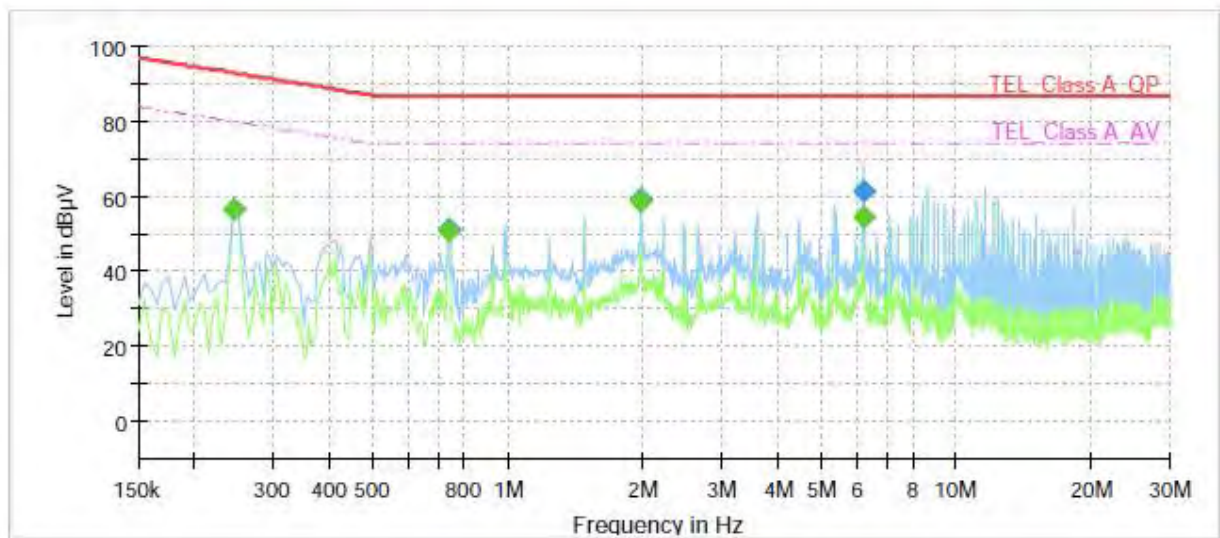
XNP-6320P

Mode

AC_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)
0.245000	---	56.76	79.92	23.16	1000.0	9.000	Single Line	19.6
0.245000	56.81	---	92.92	36.11	1000.0	9.000	Single Line	19.6
0.740000	---	50.70	74.00	23.30	1000.0	9.000	Single Line	19.8
0.740000	51.14	---	87.00	35.86	1000.0	9.000	Single Line	19.8
1.980000	---	58.71	74.00	15.29	1000.0	9.000	Single Line	20.0
1.980000	59.44	---	87.00	27.56	1000.0	9.000	Single Line	20.0
6.250000	---	54.63	74.00	19.37	1000.0	9.000	Single Line	19.4
6.250000	61.44	---	87.00	25.56	1000.0	9.000	Single Line	19.4

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.

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

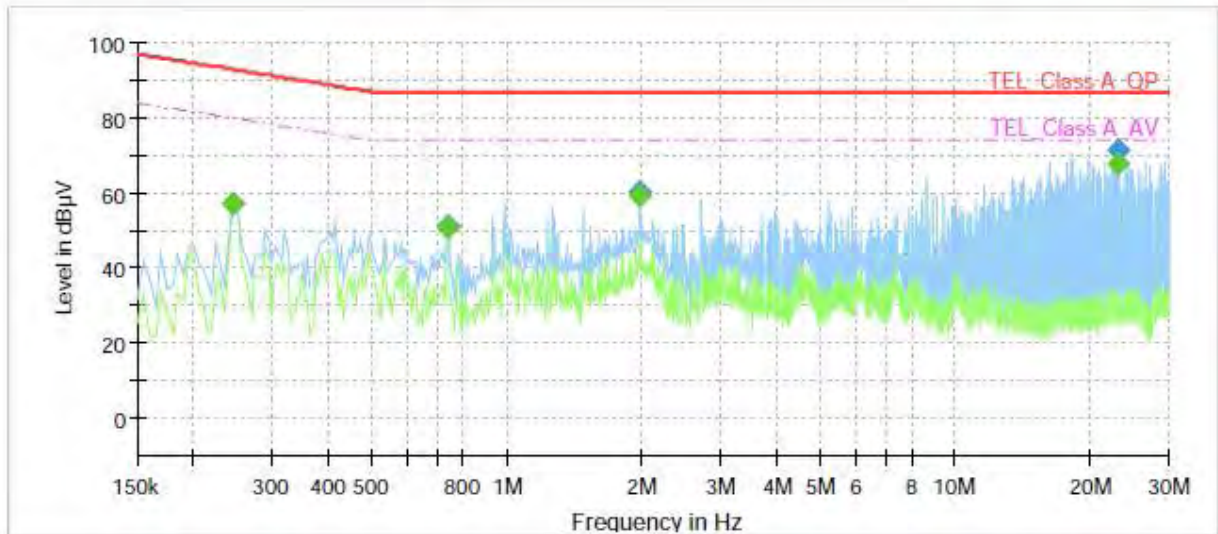
The authenticity of the test report, contact shchoi@kes.co.kr

[100 Mbps]

Common Information

Test Description:
Model No.:
Mode
Operator Name:

Telecommunication Emission
XNP-6320P
AC_100 Mbps
KES



Final Result

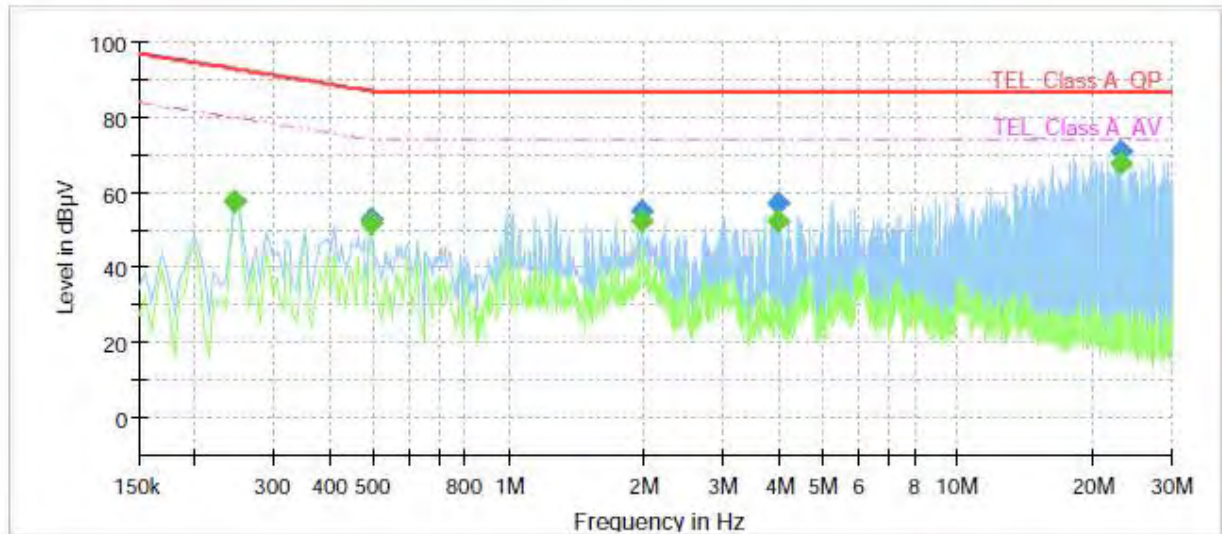
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.245000	---	57.06	79.92	22.86	1000.0	9.000	Single Line	19.9
0.245000	57.16	---	92.92	35.76	1000.0	9.000	Single Line	19.9
0.740000	---	50.59	74.00	23.41	1000.0	9.000	Single Line	20.1
0.740000	51.20	---	87.00	35.80	1000.0	9.000	Single Line	20.1
1.980000	---	59.47	74.00	14.53	1000.0	9.000	Single Line	20.3
1.980000	60.20	---	87.00	26.80	1000.0	9.000	Single Line	20.3
23.130000	---	67.65	74.00	6.35	1000.0	9.000	Single Line	20.6
23.130000	71.35	---	87.00	15.65	1000.0	9.000	Single Line	20.6

■ PoE mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-6320P
Mode	PoE_10 Mbps
Operator Name:	KES



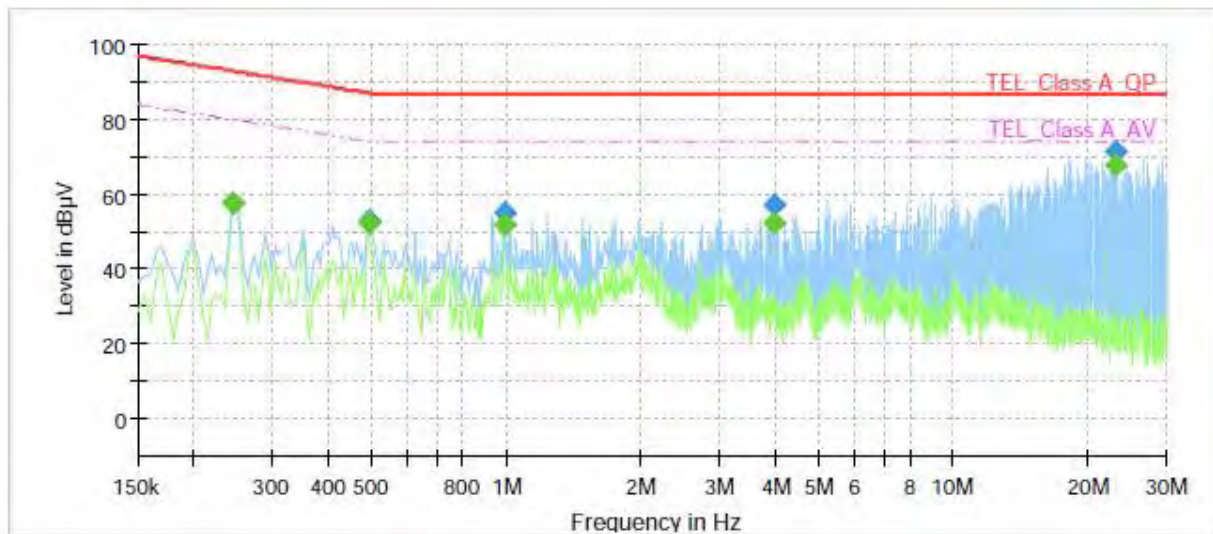
Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.245000	---	57.47	79.92	22.45	1000.0	9.000	Single Line	19.6
0.245000	57.50	---	92.92	35.42	1000.0	9.000	Single Line	19.6
0.495000	---	52.02	74.08	22.06	1000.0	9.000	Single Line	19.7
0.495000	52.87	---	87.08	34.21	1000.0	9.000	Single Line	19.7
1.975000	---	52.43	74.00	21.57	1000.0	9.000	Single Line	20.0
1.975000	55.30	---	87.00	31.70	1000.0	9.000	Single Line	20.0
3.955000	---	52.27	74.00	21.73	1000.0	9.000	Single Line	19.7
3.955000	56.96	---	87.00	30.04	1000.0	9.000	Single Line	19.7
23.130000	---	67.77	74.00	6.23	1000.0	9.000	Single Line	20.4
23.130000	71.16	---	87.00	15.84	1000.0	9.000	Single Line	20.4

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-6320P
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)
0.245000	---	57.75	79.92	22.17	1000.0	9.000	Single Line	19.9
0.245000	57.80	---	92.92	35.12	1000.0	9.000	Single Line	19.9
0.495000	---	52.25	74.08	21.83	1000.0	9.000	Single Line	20.0
0.495000	53.19	---	87.08	33.89	1000.0	9.000	Single Line	20.0
0.990000	---	51.97	74.00	22.03	1000.0	9.000	Single Line	20.2
0.990000	55.21	---	87.00	31.79	1000.0	9.000	Single Line	20.2
3.955000	---	52.43	74.00	21.57	1000.0	9.000	Single Line	20.0
3.955000	57.15	---	87.00	29.85	1000.0	9.000	Single Line	20.0
23.130000	---	67.83	74.00	6.17	1000.0	9.000	Single Line	20.6
23.130000	71.51	---	87.00	15.49	1000.0	9.000	Single Line	20.6



KES Co., Ltd.

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

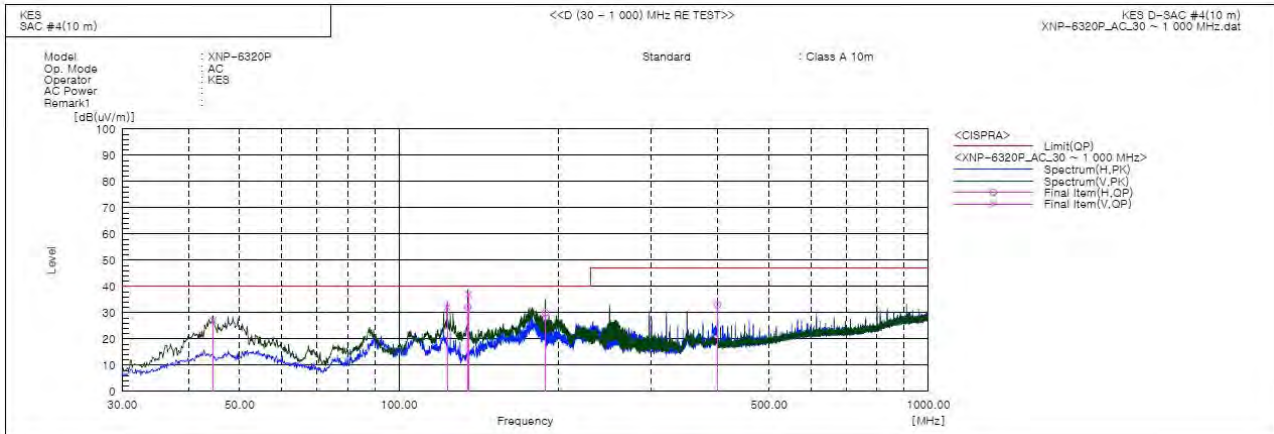
Test report No.:

KES-E1-17T0810-R2

Page (47) of (81)

Radiated Electric Field Emissions(Below 1 GHz)

■ AC 24 V Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	44.550	V	55.1	-28.1	27.0	40.0	13.0	276.0	16.0	
2	123.363	V	63.6	-31.4	32.2	40.0	7.8	121.0	252.0	
3	135.003	H	64.0	-31.9	32.1	40.0	7.9	400.0	84.0	
4	135.436	V	68.8	-31.9	36.9	40.0	3.1	100.0	199.0	
5	188.959	H	58.0	-28.0	30.0	40.0	10.0	396.0	76.0	
6	400.055	H	53.4	-20.4	33.0	47.0	14.0	274.0	268.0	

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



KES Co., Ltd.

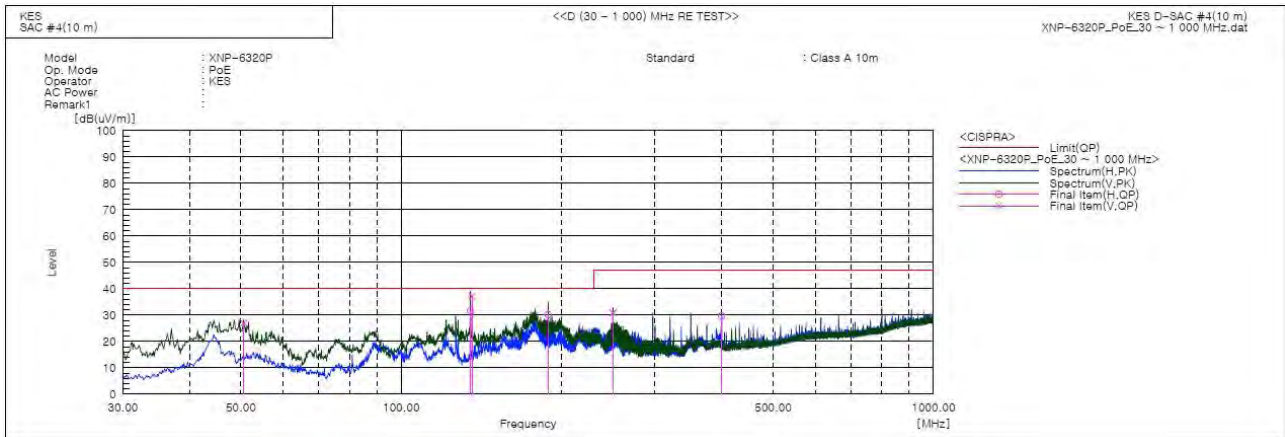
3701, 40, Simin-daero 365beon-gil,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:

KES-E1-17T0810-R2

Page (48) of (81)

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	50.613	V	54.8	-27.8	27.0	40.0	13.0	119.0	106.0	
2	135.003	H	63.8	-31.9	31.9	40.0	8.1	400.0	85.0	
3	135.923	V	69.1	-31.9	37.2	40.0	2.8	100.0	194.0	
4	188.959	H	58.2	-28.0	30.2	40.0	9.8	379.0	73.0	
5	249.948	V	56.3	-25.4	30.9	47.0	16.1	100.0	218.0	
6	400.055	H	50.1	-20.4	29.7	47.0	17.3	365.0	279.0	

◆ Calculation – SEMI ANECHOIC CHAMBER #4(10 m)

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

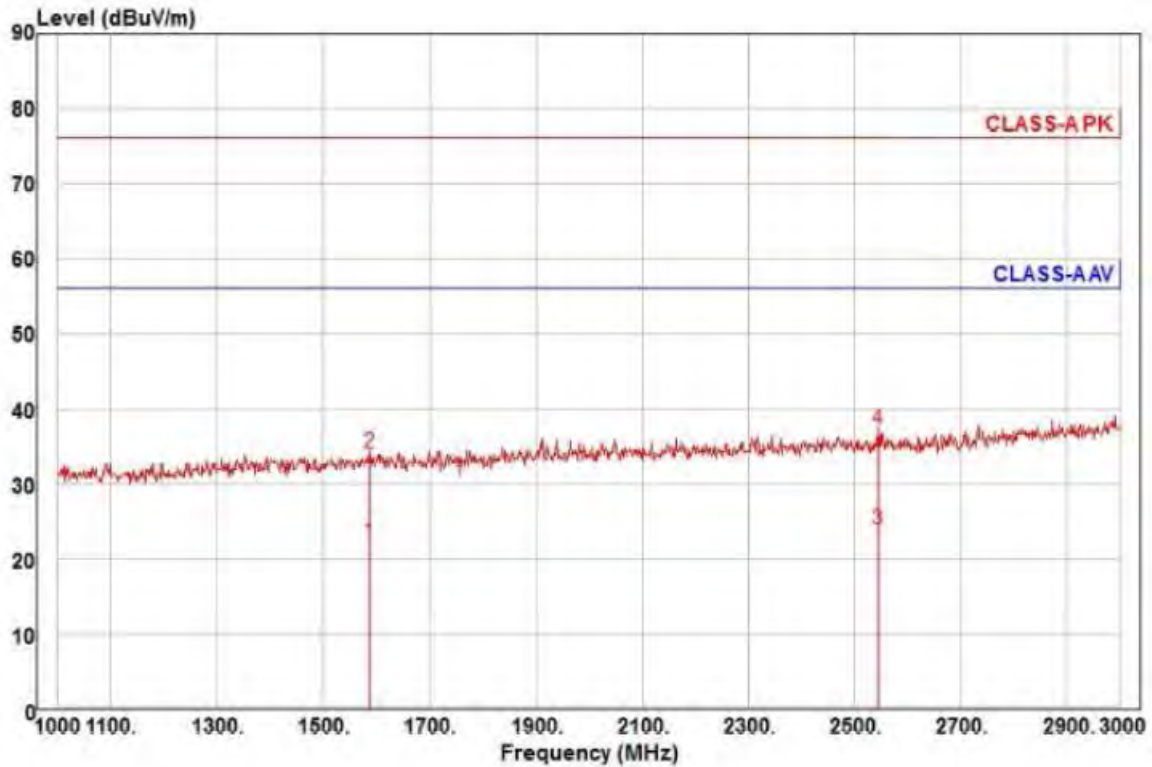
Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

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

Radiated Electric Field Emissions(Above 1 GHz)

■ AC 24 V Mode



Site : YEOJU_C 3 m SAC
Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNP-6320P
Mode : AC
Memo : 1 ~ 3 GHz

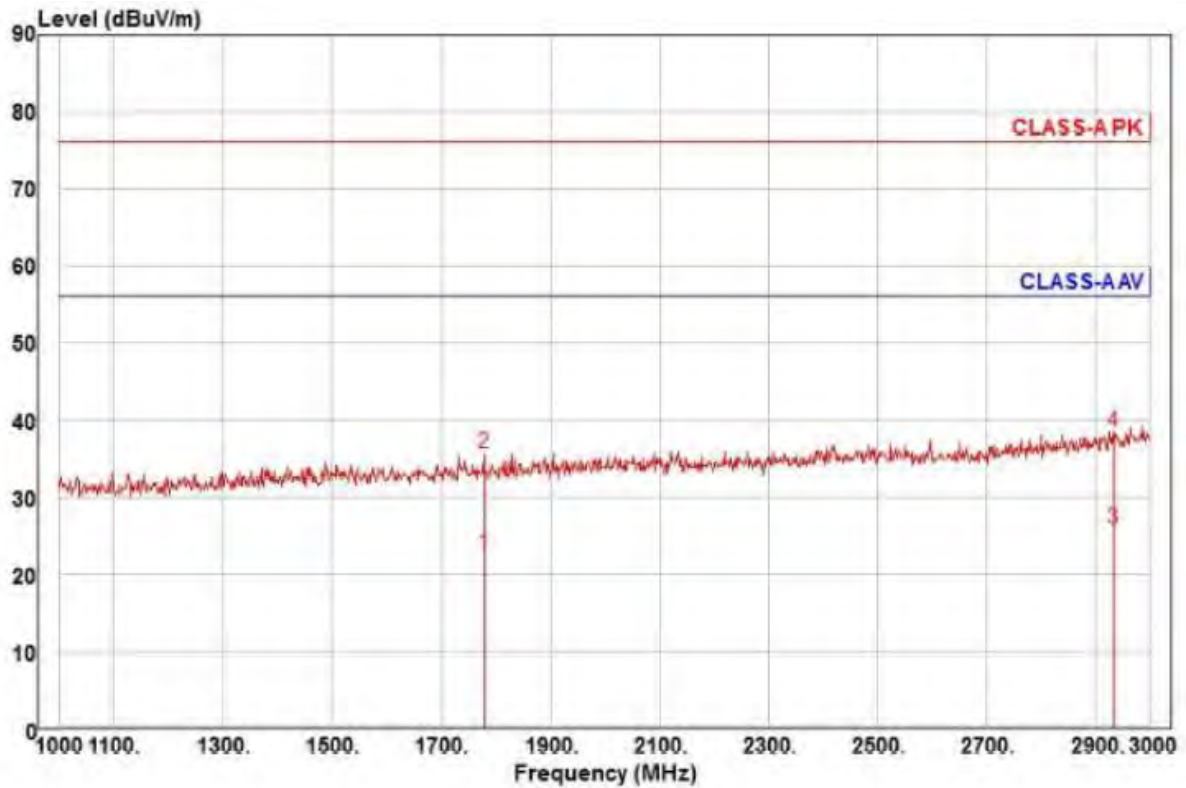
	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1588.00	23.58	25.67	8.47	35.54	52	56.00	-33.82	horizontal Average
2	1588.00	35.56	25.67	8.47	35.54	52	76.00	-41.84	horizontal Peak
3 pp	2546.00	21.05	27.33	10.94	35.38	201	56.00	-32.06	horizontal Average
4 pk	2546.00	34.41	27.33	10.94	35.38	201	76.00	-38.70	horizontal Peak



KES Co., Ltd.

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

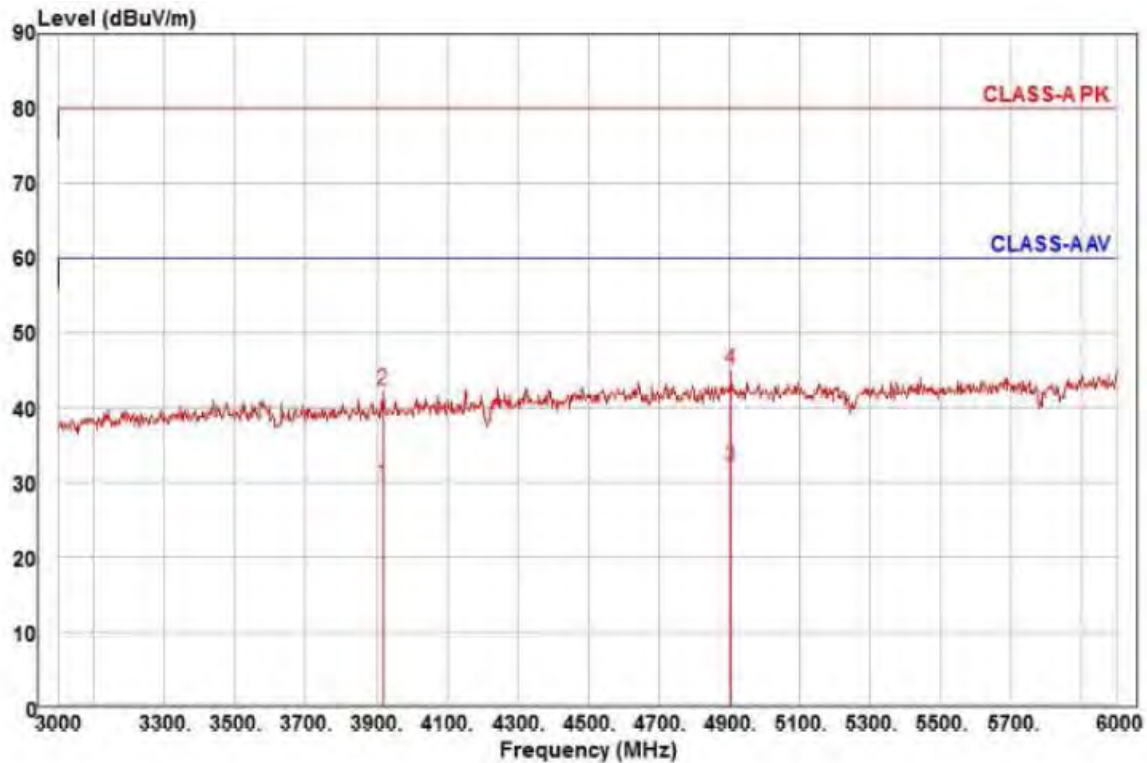
Test report No.:
KES-E1-17T0810-R2
Page (50) of (81)



Site : YEOJU_C 3 m SAC
Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNP-6320P
Mode : AC
Memo : 1 ~ 3 GHz

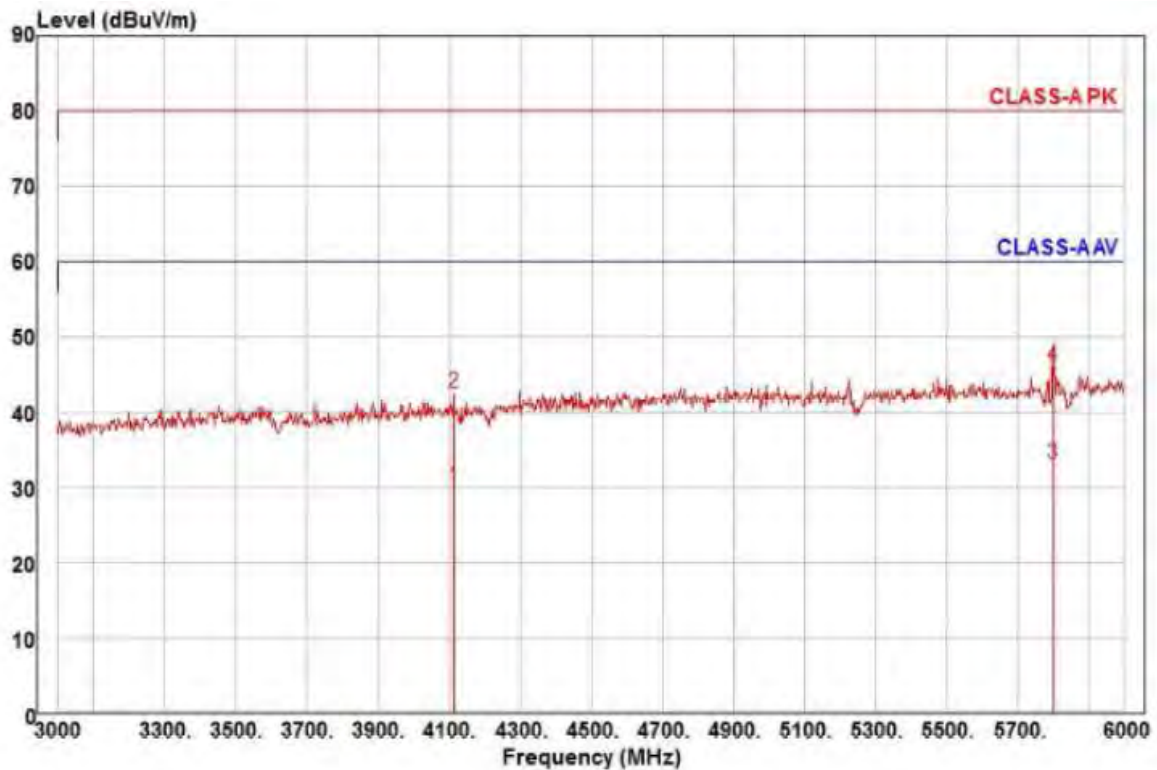
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1778.00	23.03	25.90	9.03	35.37	341	56.00	-33.41	vertical	Average
2	1778.00	36.20	25.90	9.03	35.37	341	76.00	-40.24	vertical	Peak
3 pp	2934.00	21.09	28.34	11.97	35.53	4	56.00	-30.13	vertical	Average
4 pk	2934.00	33.68	28.34	11.97	35.53	4	76.00	-37.54	vertical	Peak

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



Site : YEOJU_C 3 m SAC
Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNP-6320P
Mode : AC
Memo : 3 ~ 6 GHz

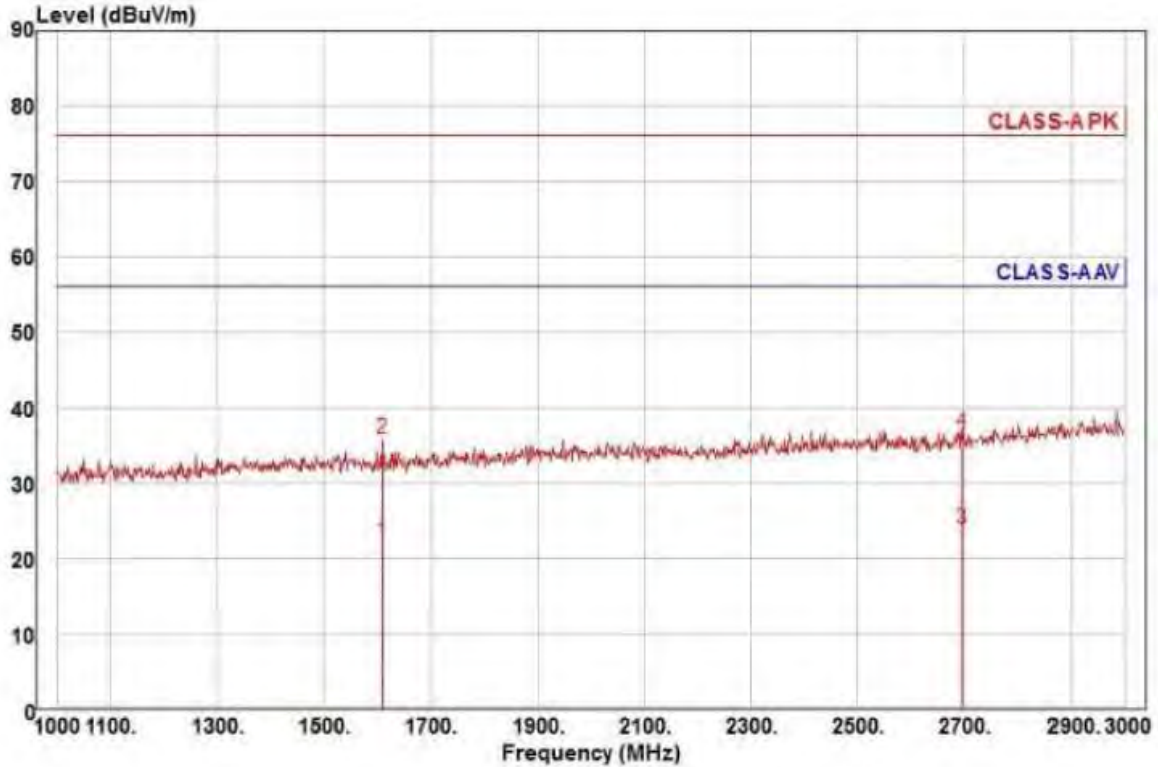
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3918.00	21.49	29.67	13.89	35.30	143	60.00	-30.25	horizontal	Average
2	3918.00	34.11	29.67	13.89	35.30	143	80.00	-37.63	horizontal	Peak
3 pp	4908.00	20.76	31.37	15.65	35.60	141	60.00	-27.82	horizontal	Average
4 pk	4908.00	33.62	31.37	15.65	35.60	141	80.00	-34.96	horizontal	Peak



Site : YEOJU_C 3 m SAC
Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNP-6320P
Mode : AC
Memo : 3 ~ 6 GHz

	Read Freq	Ant Level	Cable Factor	Preamp Loss	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	deg	dBuV/m	dB		
1	4113.00	21.10	30.07	14.26	35.32	223	60.00	-29.89	vertical Average
2	4113.00	33.63	30.07	14.26	35.32	223	80.00	-37.36	vertical Peak
3 pp	5802.00	19.53	32.27	17.05	35.68	127	60.00	-26.83	vertical Average
4 pk	5802.00	32.44	32.27	17.05	35.68	127	80.00	-33.92	vertical Peak

■ PoE Mode



Site : YEOJU_C 3 m SAC
Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNP-6320P
Mode : PoE
Memo : 1 ~ 3 GHz

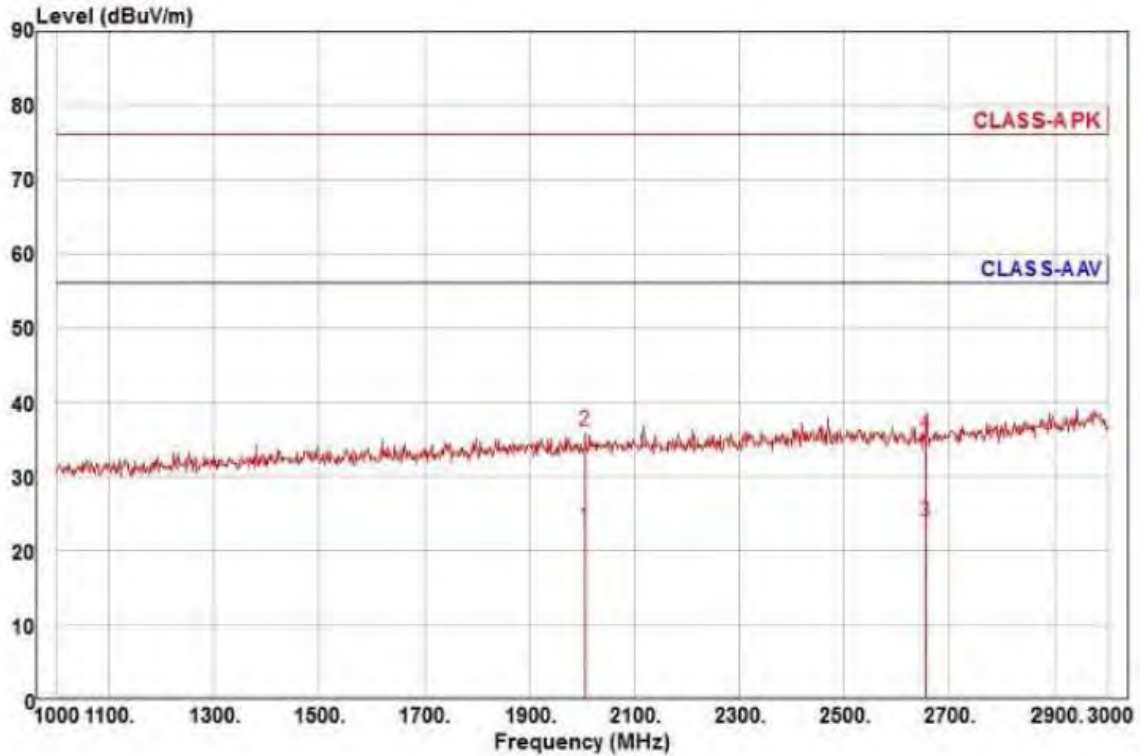
	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1610.00	23.54	25.70	8.54	35.52	360	56.00	-33.74	horizontal	Average
2	1610.00	37.08	25.70	8.54	35.52	360	76.00	-40.20	horizontal	Peak
3 av	2698.00	28.25	27.72	11.33	35.44	121	56.00	-32.14	horizontal	Average
4 pk	2698.00	33.05	27.72	11.33	35.44	121	76.00	-39.34	horizontal	Peak



KES Co., Ltd.

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

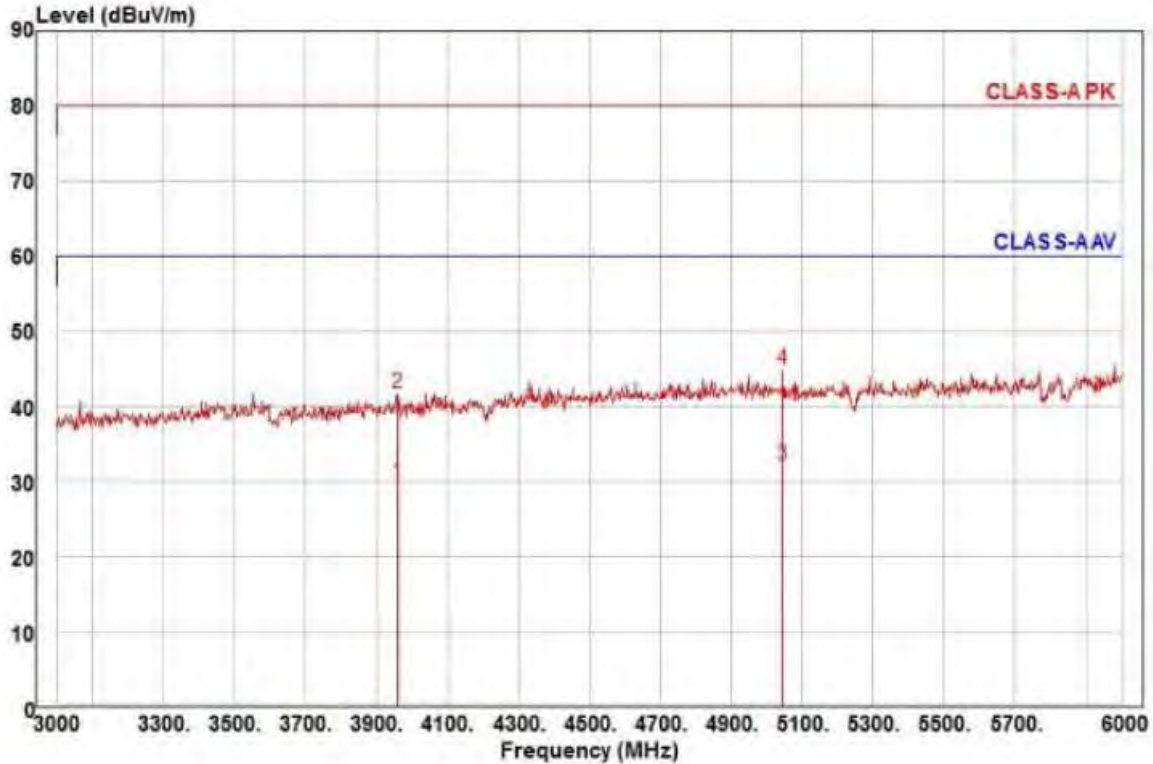
Test report No.:
KES-E1-17T0810-R2
Page (54) of (81)



Site : YEOJU_C 3 m SAC
Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNP-6320P
Mode : PoE
Memo : 1 ~ 3 GHz

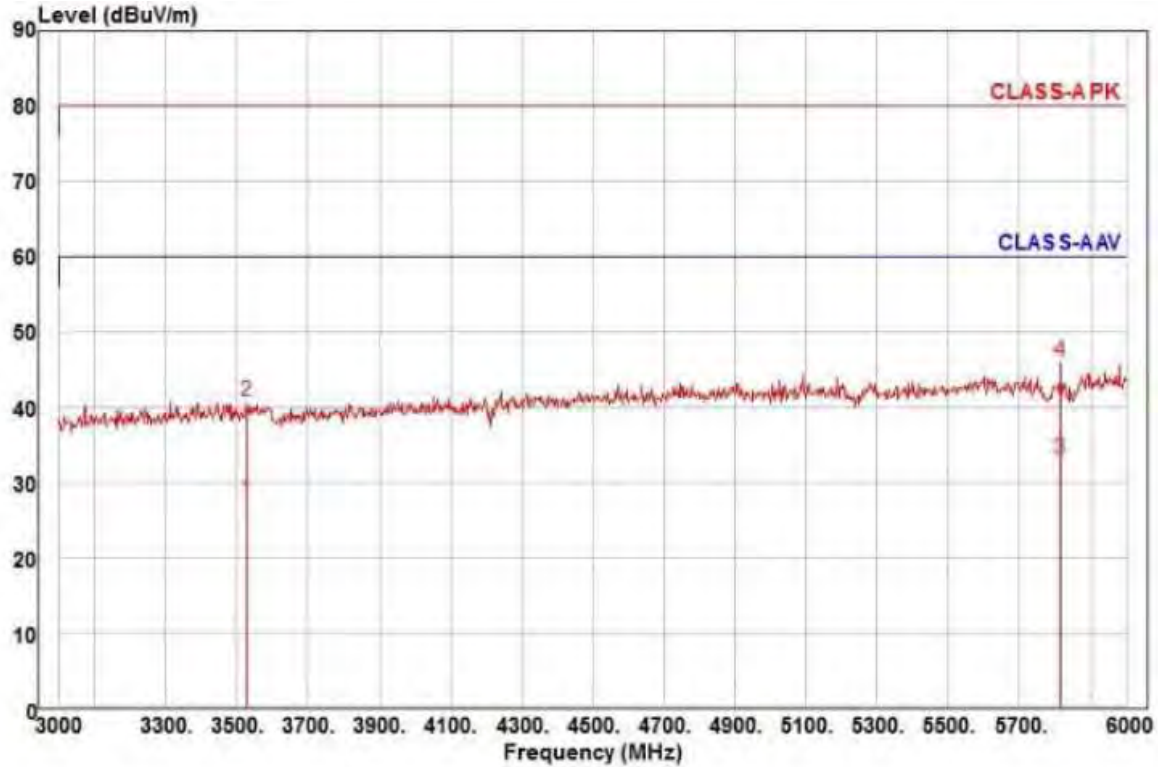
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	2008.00	22.47	26.18	9.67	35.17	134	56.00	-32.85	vertical	Average
2 pk	2008.00	35.34	26.18	9.67	35.17	134	76.00	-39.98	vertical	Peak
3 pp	2658.00	20.44	27.62	11.22	35.43	195	56.00	-32.15	vertical	Average
4	2658.00	32.20	27.62	11.22	35.43	195	76.00	-40.39	vertical	Peak

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



Site : YEOJU_C 3 m SAC
Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNP-6320P
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	3960.00	21.41	29.75	13.98	35.29	189	60.00	-30.15	horizontal	Average
2	3960.00	33.26	29.75	13.98	35.29	189	80.00	-38.30	horizontal	Peak
3	5049.00	20.48	31.51	15.84	35.63	334	60.00	-27.80	horizontal	Average
4	5049.00	33.12	31.51	15.84	35.63	334	80.00	-35.16	horizontal	Peak



Site : YEOJU_C 3 m SAC

Condition: CISPR22 CLASS-A PK 3m BBHA 9120D(RRA 2019-09-04) vertical

: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto

Project :

Model : XNP-6320P

Mode : PoE

Memo : 3 ~ 6 GHz

	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3528.00	21.04	28.92	13.18	35.41	161	60.00	-32.27	vertical Average
2	3528.00	34.13	28.92	13.18	35.41	161	80.00	-39.18	vertical Peak
3 pp	5814.00	19.47	32.29	17.09	35.68	231	60.00	-26.83	vertical Average
4 pk	5814.00	32.35	32.29	17.09	35.68	231	80.00	-33.95	vertical Peak

◆ Calculation

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

Over Limit : Margin, Read Level : Reading value, Ant Factor : ANT Factor,

Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.

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

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



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2
Page (60) of (81)

Test Data - Voltage Fluctuations

Maximum Flicker results

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

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Test Setup Photos and Configuration

Conducted Voltage Emissions



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Conducted Telecommunication Emissions



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Radiated Electric Field Emissions(Below 1 GHz)



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Radiated Electric Field Emissions(Above 1 GHz)



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr



KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,
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-E1-17T0810-R2
Page (65) of (81)

Harmonic Current Emissions and Voltage Fluctuations and Flicker

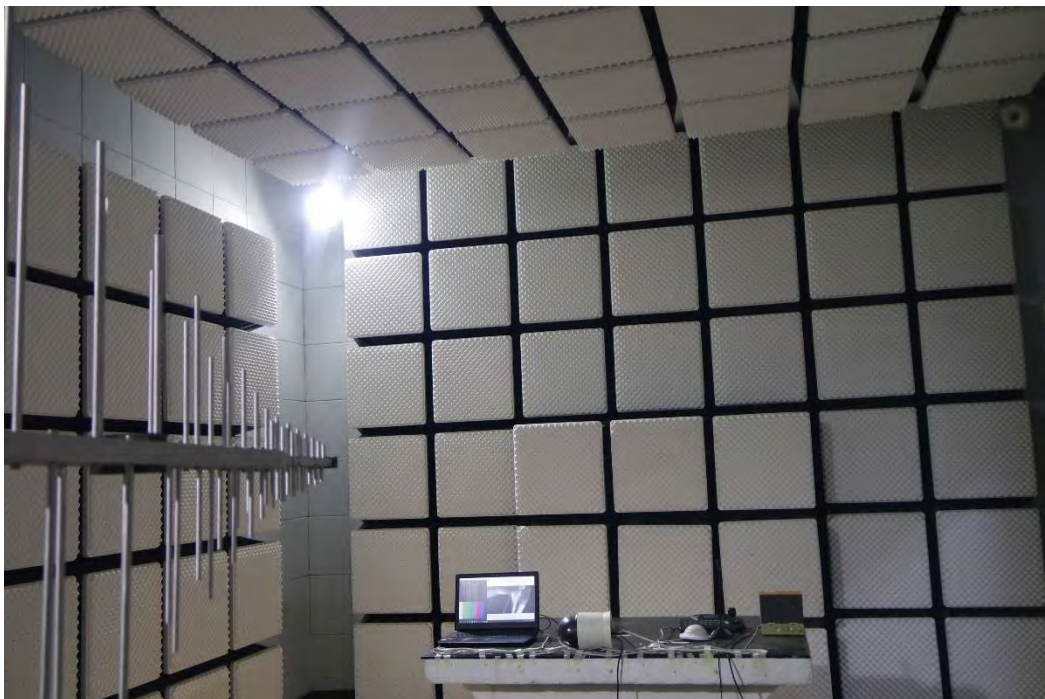
N/A

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Electrostatic Discharge



Radiated Electric Field Immunity



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Electrical Fast Transients/Bursts



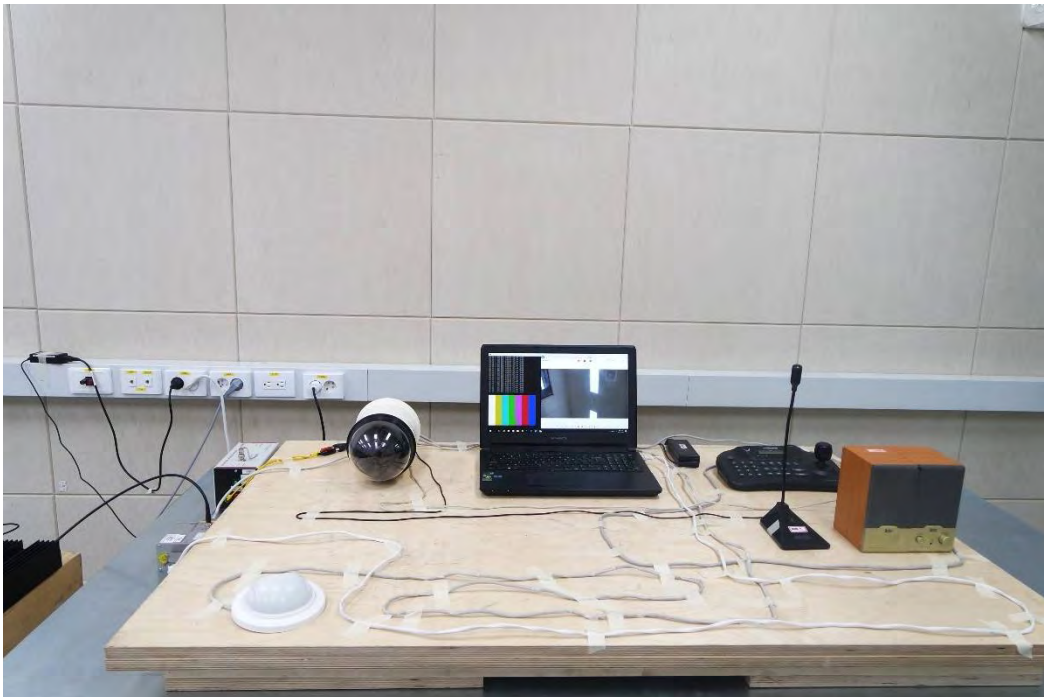
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Surge Transients



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Conducted Disturbance



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Voltage Dips and Short Interruptions



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

EUT External Photographs

(Top)



(Bottom)



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

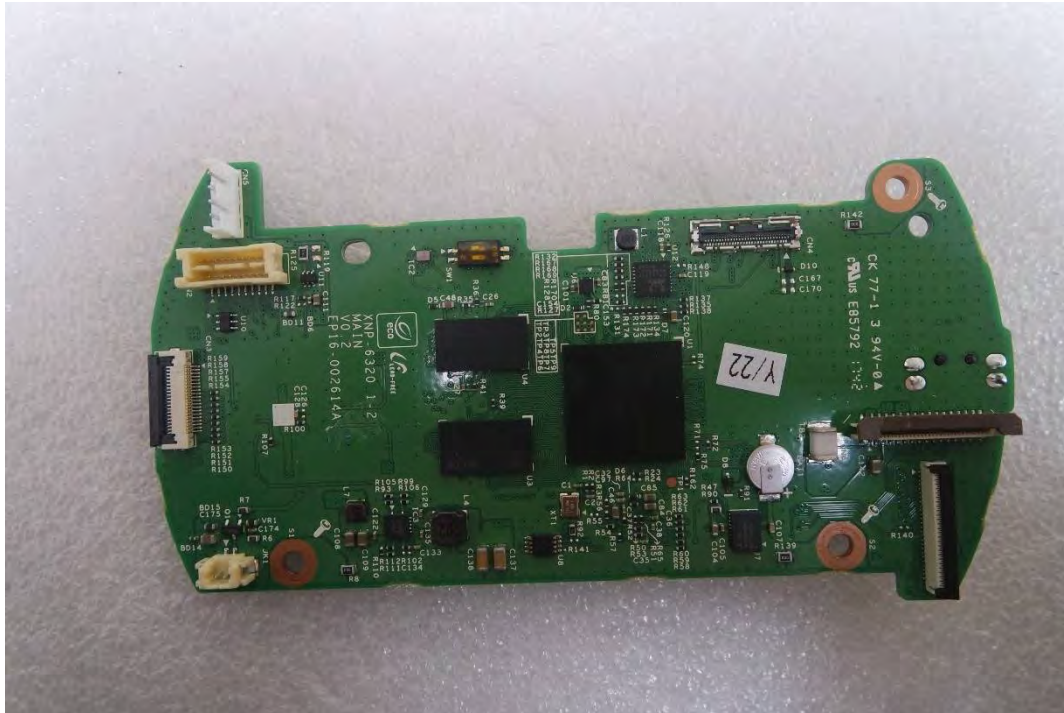
EUT Internal Photographs

(Internal View)

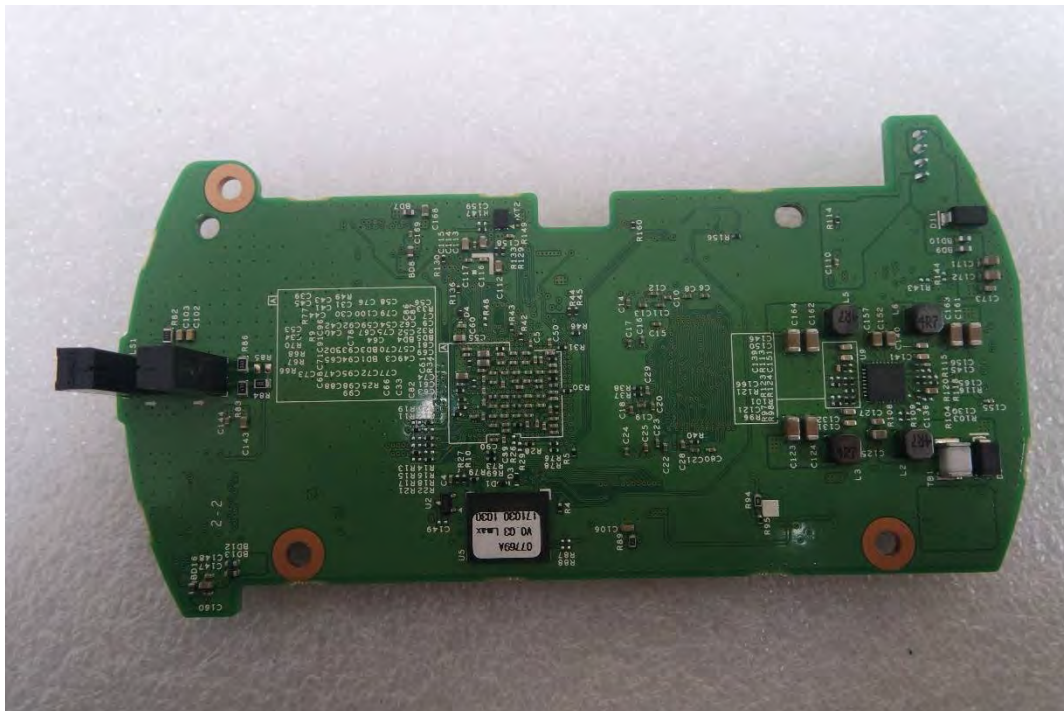


EUT Internal View – Main board

(Top)



(Bottom)



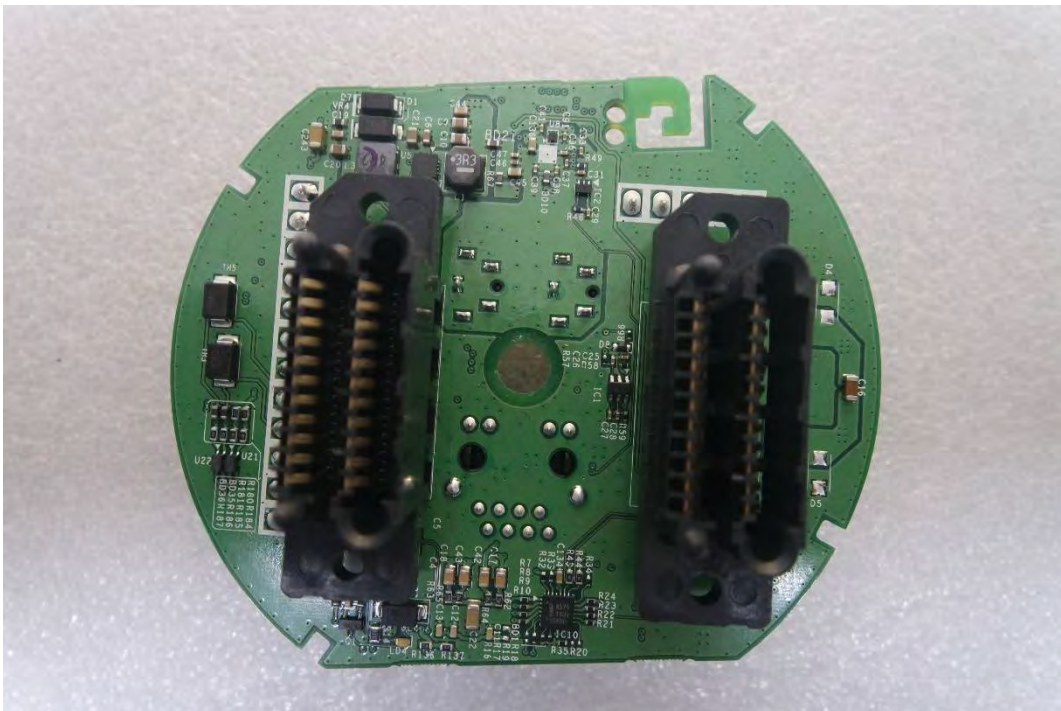
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

EUT Internal View – Interface board

(Top)



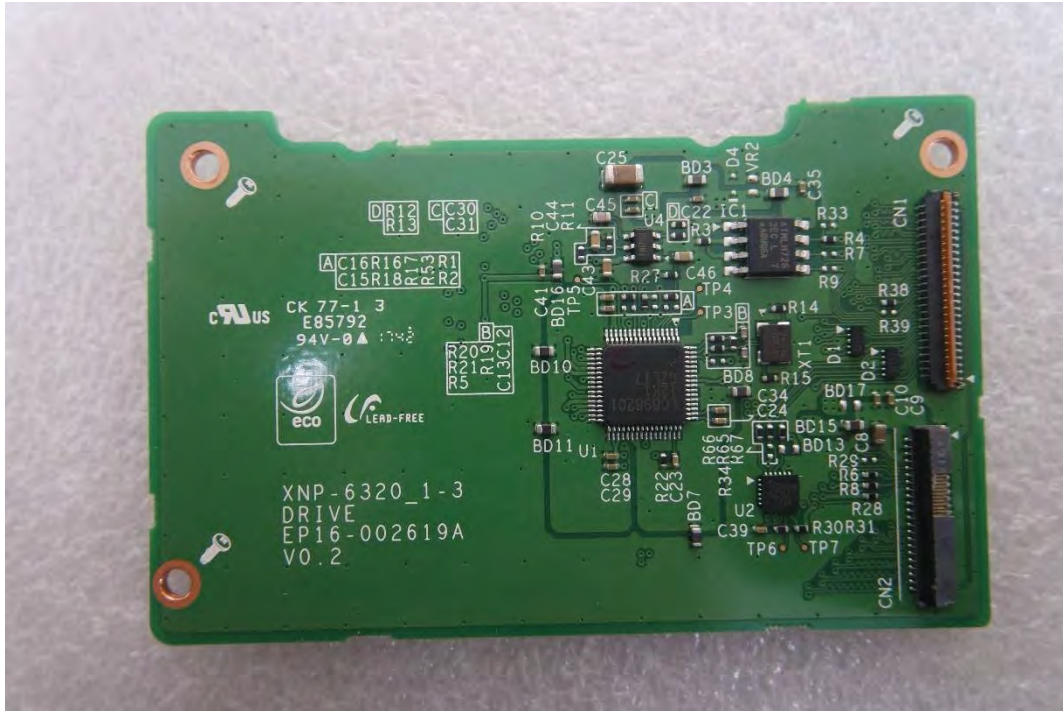
(Bottom)



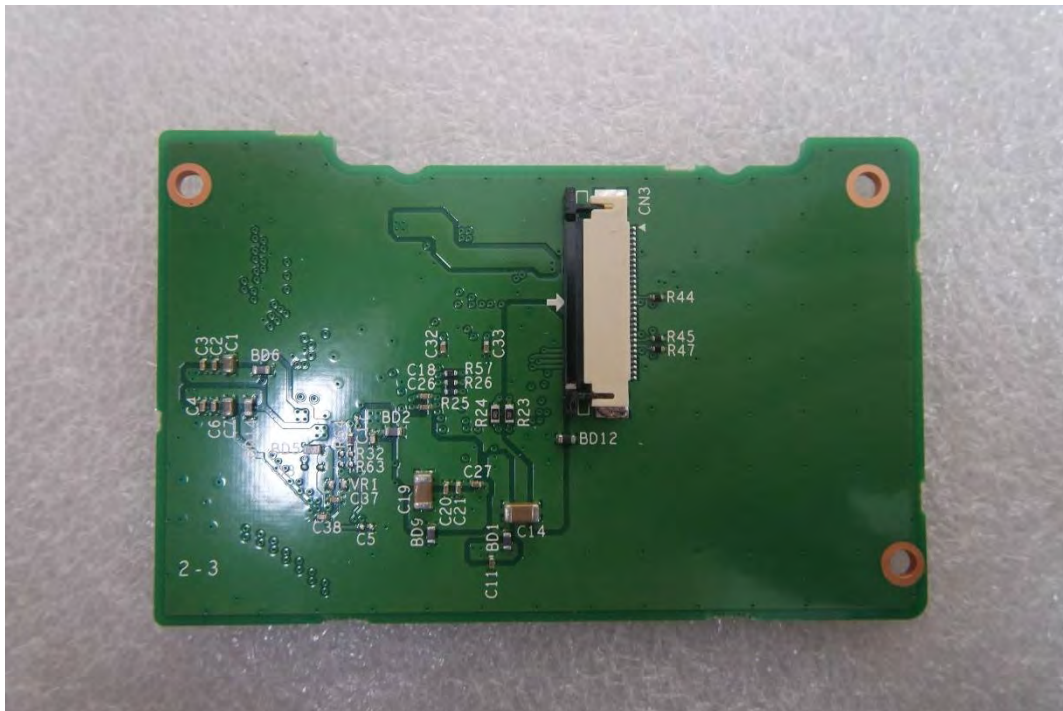
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

EUT Internal View – Drive board

(Top)



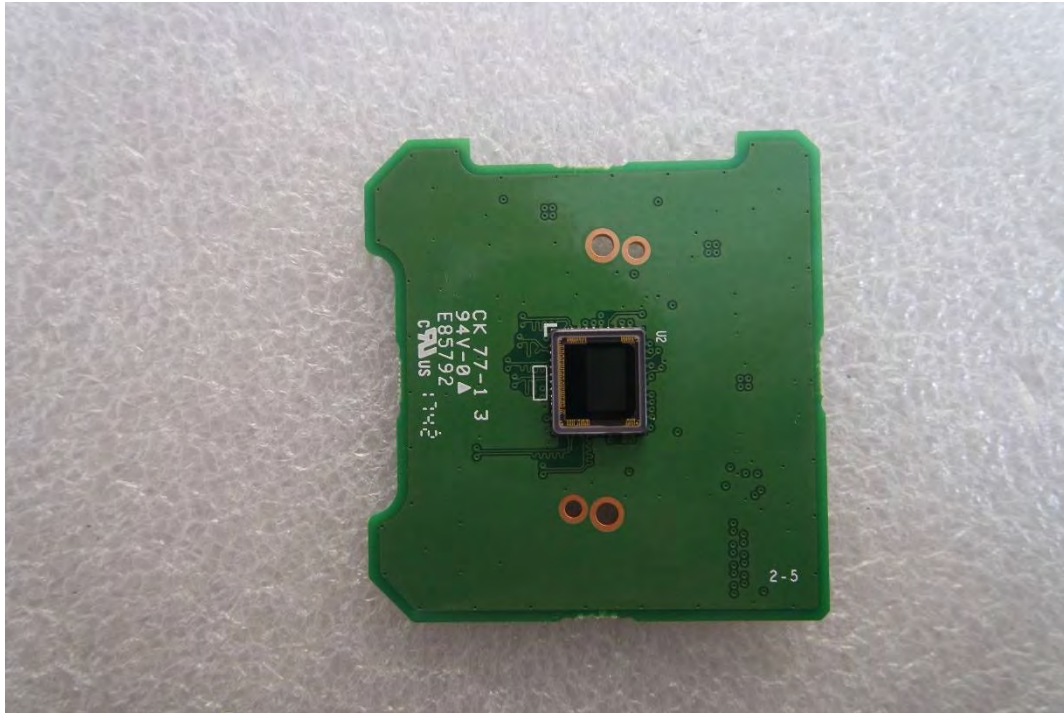
(Bottom)



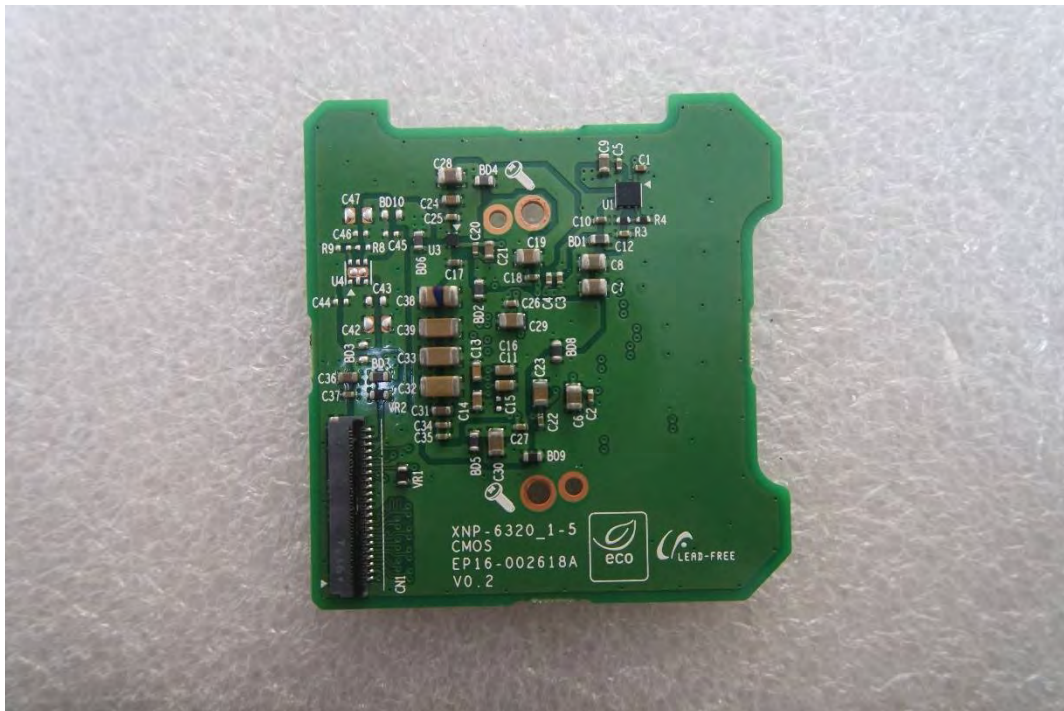
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

EUT Internal View – CCD board

(Top)



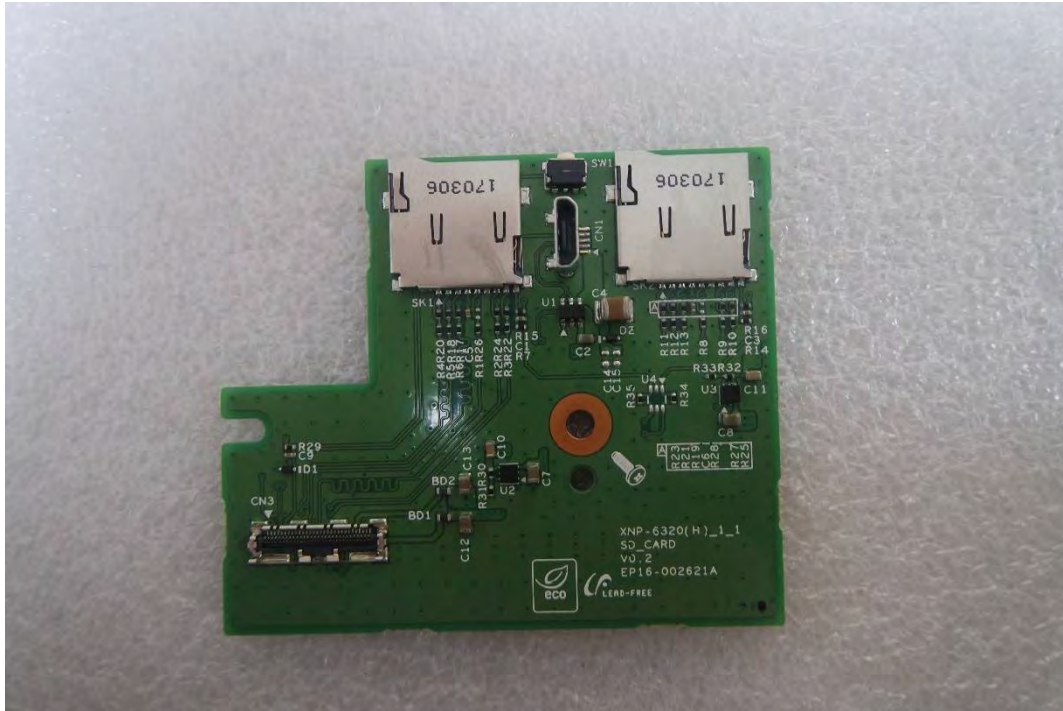
(Bottom)



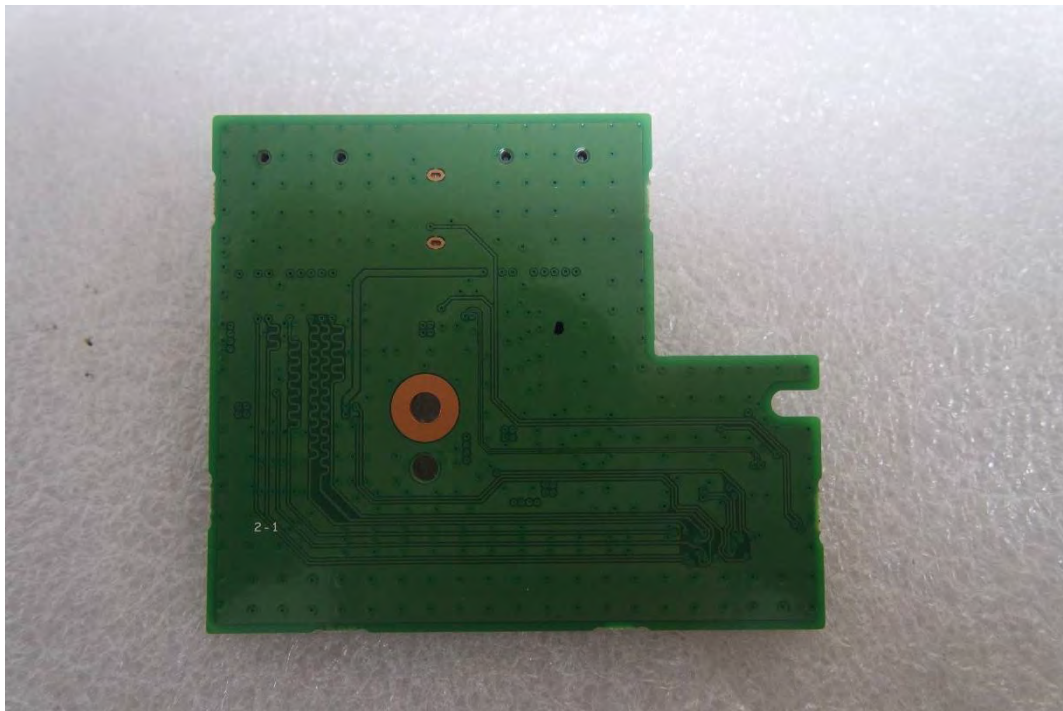
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
 The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
 The authenticity of the test report, contact shchoi@kes.co.kr

EUT Internal View – SD board

(Top)



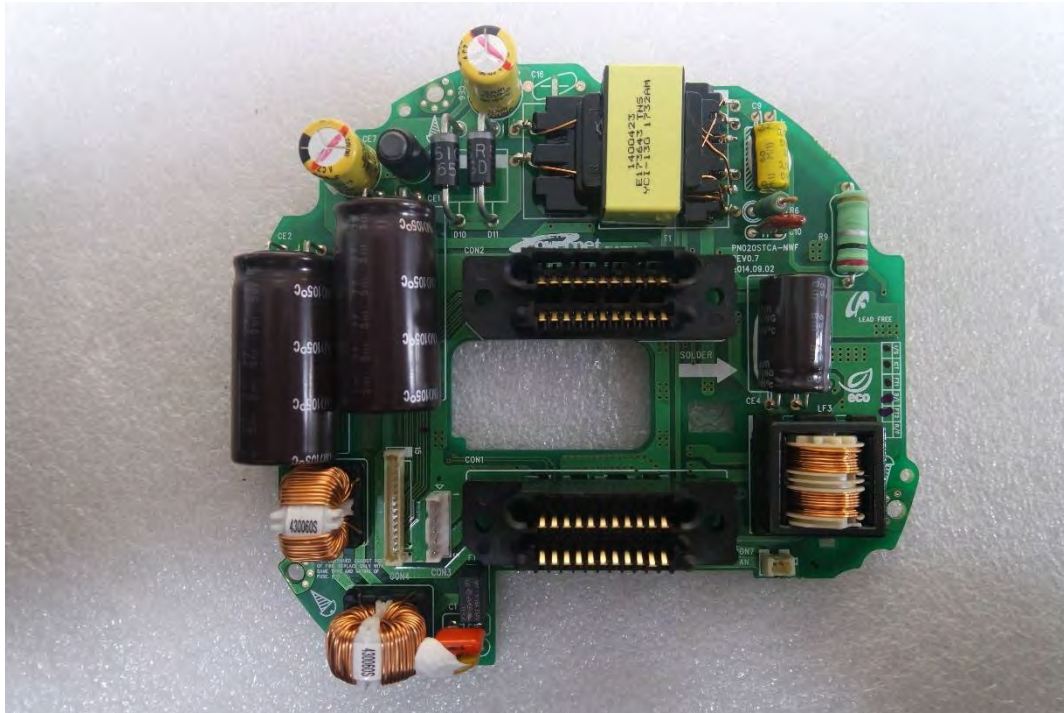
(Bottom)



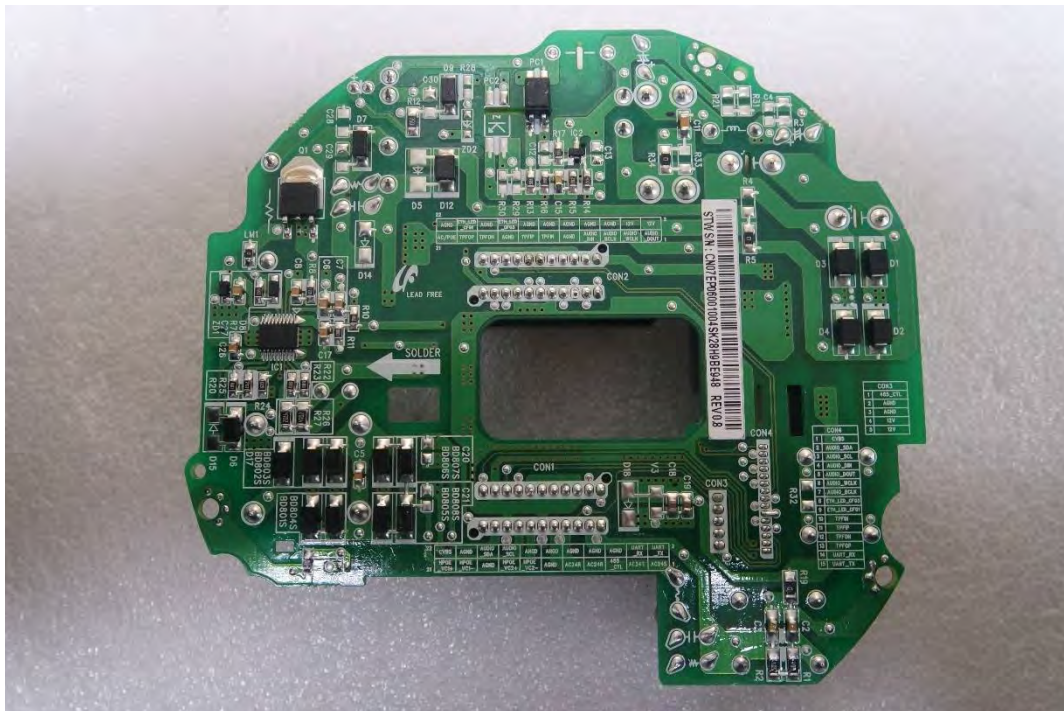
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

EUT Internal View – Power board

(Top)



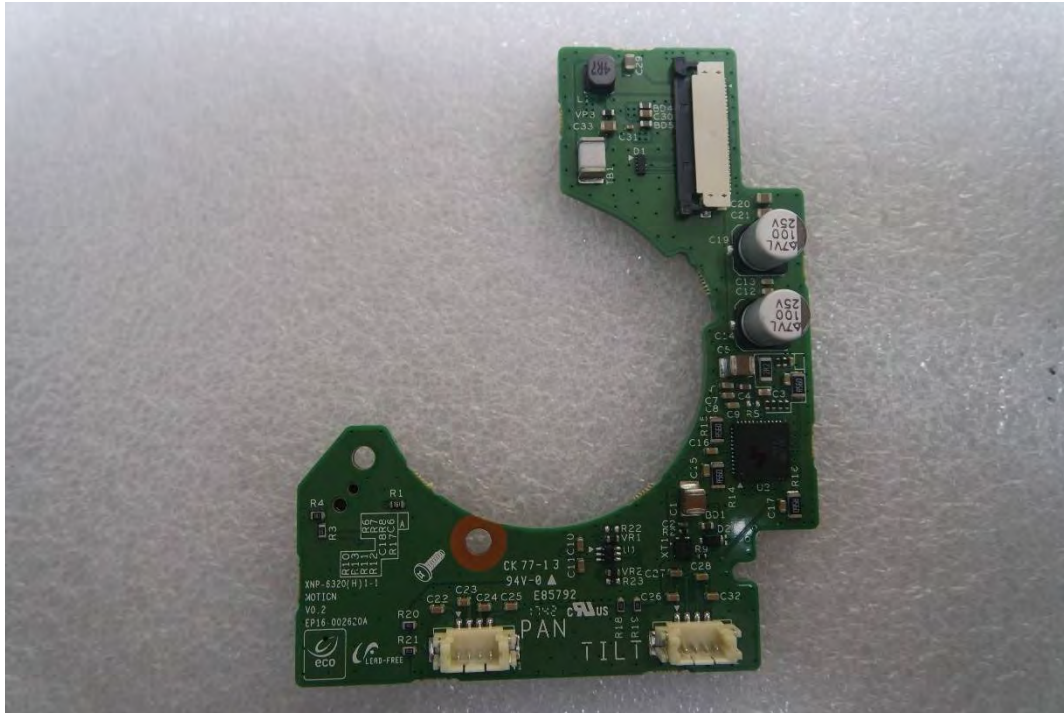
(Bottom)



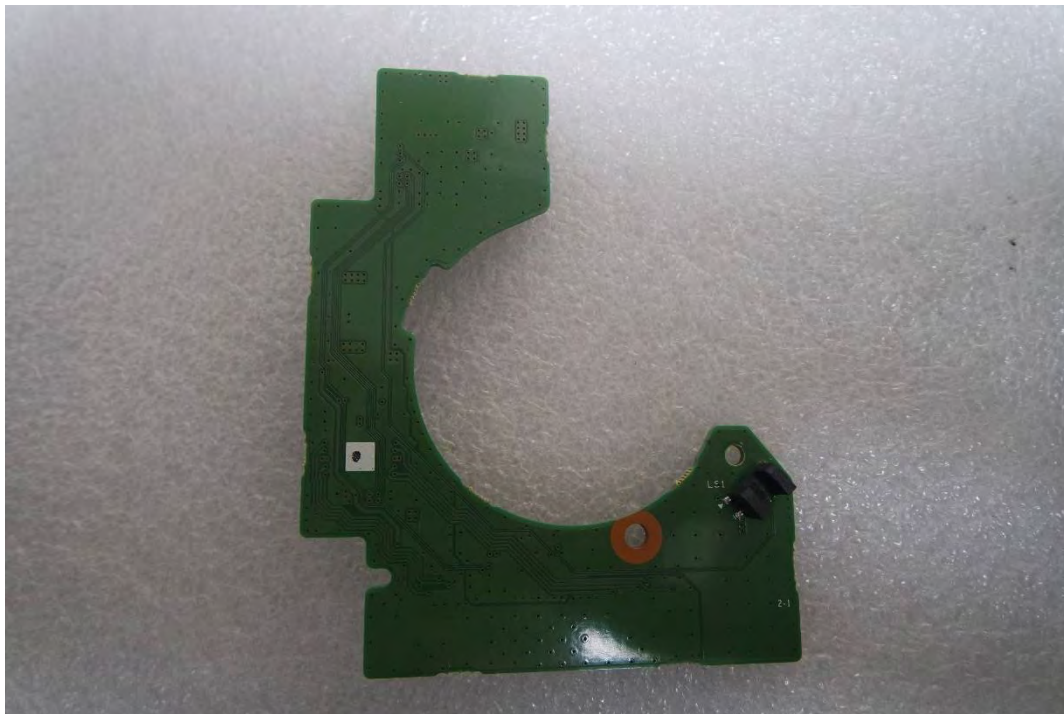
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

EUT Internal View – TILT board

(Top)



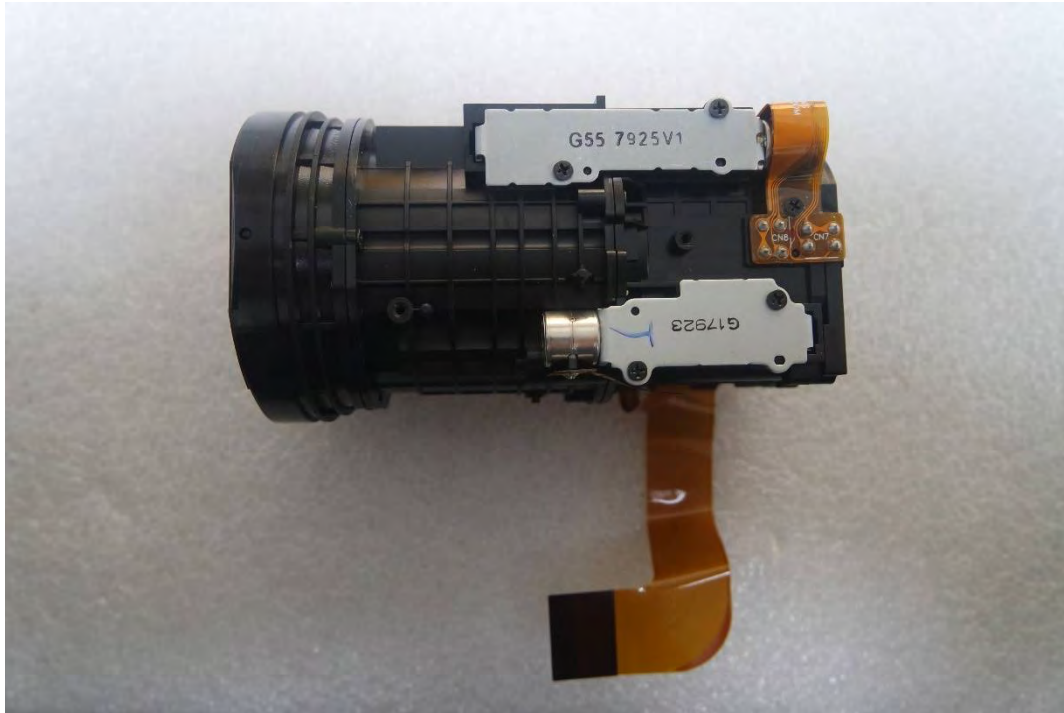
(Bottom)



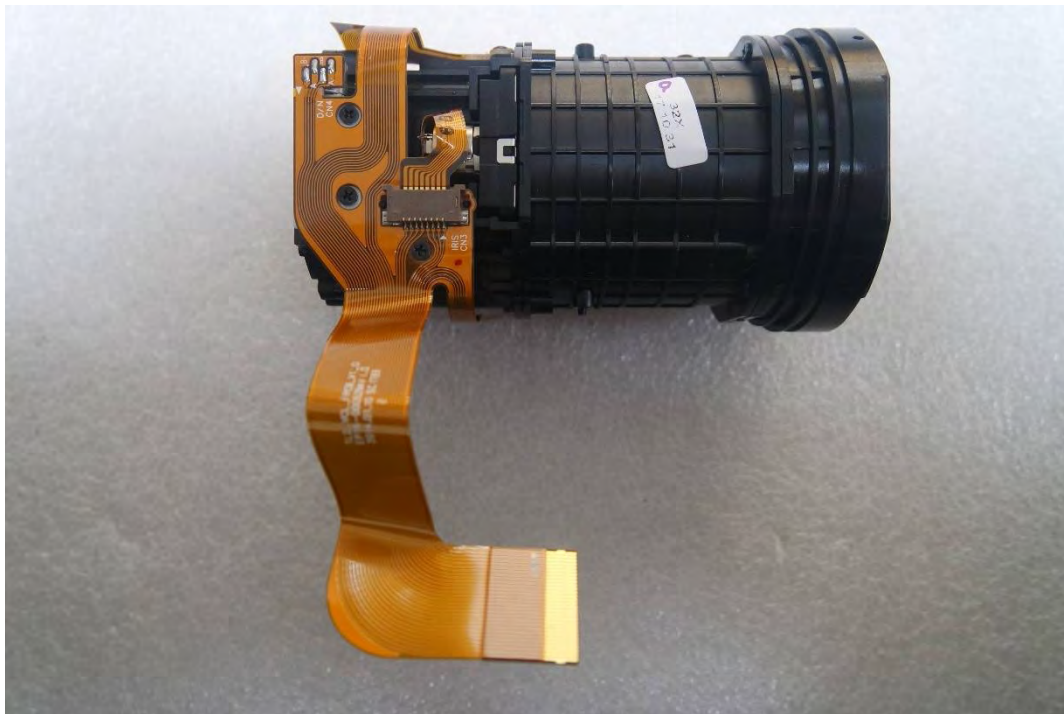
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

EUT Internal View – Lens Module

(Top)



(Bottom)



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
The authenticity of the test report, contact shchoi@kes.co.kr

Label and Location



Network Camera

Model No : XNP-6320

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

Made in China

