



## EMC TEST REPORT

Test Report No. : KES-E1-17T0819  
Date of Issue : Dec. 12, 2017  
Product name : Network Camera  
Model/Type No. : XNP-6320HSN  
Variant Mode : -  
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  
Equipment authorization : ☐ Declaration of Conformity  
☒ Verification  
☐ Certification  
Date of Receipt : Nov. 22, 2017  
Test date : Dec. 04, 2017 ~ Dec. 05, 2017  
Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

Tae Yeon, Kim  
EMC Test Engineer

Reviewed by

Dong-Hun, Jang  
EMC Technical Manager

This test report is not related to KOLAS.

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Test report No.:  
KES-E1-17T0819  
Page (2) of (37)

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
Dec. 12, 2017	KES-E1-17T0819	Issued

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## 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	EUT 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	Radiated Electric Field Emissions(Below 1 GHz) .....	16
2.3	Radiated Electric Field Emissions(Above 1 GHz) .....	17
APPENDIX A	– TEST DATA.....	18
	Conducted Emissions at Mains Power Ports.....	18
	Radiated Electric Field Emissions(Below 1 GHz) .....	20
	Radiated Electric Field Emissions(Above 1 GHz) .....	22
	Test Setup Photos and Configuration .....	24
	Conducted Voltage Emissions .....	24
	Radiated Electric Field Emissions(Below 1 GHz) .....	25
	Radiated Electric Field Emissions(Above 1 GHz) .....	26
	EUT External Photographs .....	27
	EUT Internal Photographs .....	28



## 1.0 General Product Description

### Main Specifications of EUT are:

	XNP-6320HS
<b>Video</b>	
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 / 75 $\Omega$ composite, 720x480(N), 720x576(P), for installation USB : Micro USB type B, 1280x720, for installation
<b>Lens</b>	
Focal Length (Zoom Ratio)	4.4 ~ 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
<b>Pan/Tilt/Rotate</b>	
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	set (300 ea), Swing, Group (6 ea), Trace, Tour (1 ea), Auto Run, Sched
Preset Accuracy	±0.2°
Azimuth	Yes (E/W/S/N/NE/NW/SE/SW)
Auto Tracking	Support
<b>Operational</b>	
Camera Title	Off / On (Displayed up to 85 characters) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale by
Day & Night	Auto (ICR) / Color / B/W / Schedule
Backlight Compensation	Off / BLC / HLC / WDR
Wide Dynamic Range	150dB
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	SSNR5 (2D+3D Noise Filter) (Off / On)
Digital Image Stabilization	Off / On (built-in Gyro)
Defog	Auto/Manual/Off
Motion Detection	Off / On(8ea, Polygonal)
Privacy Masking	Off / On ( 24 Zones of Rectangle zone) - Color : Grey/Green/Red/Blue/Black/White - Zoom ratio option for mask mode - Mosaic option
Gain Control	Off / Low / Middle / High
White Balance	TW / AWC / Manual / Indoor / Outdoor (included Mercury & Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1 ~ 1/12,000sec)

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Test report No.:  
KES-E1-17T0819  
Page (5) of (37)

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
<b>Network</b>	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.264 (MPEG-4 Part 10/AVC), H.265, Motion JPEG
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.264/H.265 : Max 60fps at all resolutions Motion JPEG : Max. 30fps at all resolutions
Smart Codec	Manual mode (Area-Based : Sea)
WiseStream-II	support
Video Quality Adjustment	H.264 / H.265 / MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.264 / H.265 : CBR or VBR Motion JPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10 Profiles)
Audio Compression Format	G.711 u-law /G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 16KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour

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Test report No.:  
KES-E1-17T0819  
Page (6) of (37)

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 Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Plug-in Free Webviewer Supported Browser : Google Chrome, MS Edge, Mozilla Firefox(Window 64bit only) , Apple Safari 10 (Mac OS X only) Plug-in Webviewer Supported Browser : MS Explore 11, Apple Safari 10 (Mac OS X only)
Central Management Software	SmartViewer
<b>Environmental</b>	
Operating Temperature / Humidity	24V AC: -50°C ~ +55°C (-58°F ~ +131°F) / ~ 90% RH * Start up should be done at above -40°C
	PoE+ : -35°C ~ +55°C (-31°F ~ +131°F) / ~ 90% RH * Start up should be done at above -25°C
Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66/IP67, NEMA4X
Vandal Resistance	IK10
<b>Electrical</b>	
Input Voltage / Current	AC24V±10%, PoE+ (IEEE802.3at, Class4)
Power Consumption	24W Max(Heater Off), 65W Max(Heater On, AC24V)
<b>Mechanical</b>	
Color / Material	SUS316L
Dimension (WxH)	Φ227*296H
Weight	5.3Kg

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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 ☐ 230 Vac ☐ 120 Vac ☒ 24 Vac ☐ 12 Vdc ☒ PoE

Frequency ☐ 50 Hz ☐ 60 Hz ☐ Hz

## 1.2 Variant Model Differences

Not applicable

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

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

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Test report No.:  
KES-E1-17T0819  
Page (8) of (37)

## 1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE Adaptor	GS728TPP	-	NETGEAR, INC.	-
Notebook	X56K	HN11N5151FJ0045W	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

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## 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

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Test report No.:  
KES-E1-17T0819  
Page (10) of (37)

## 1.7 EUT Operating Mode(s)

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

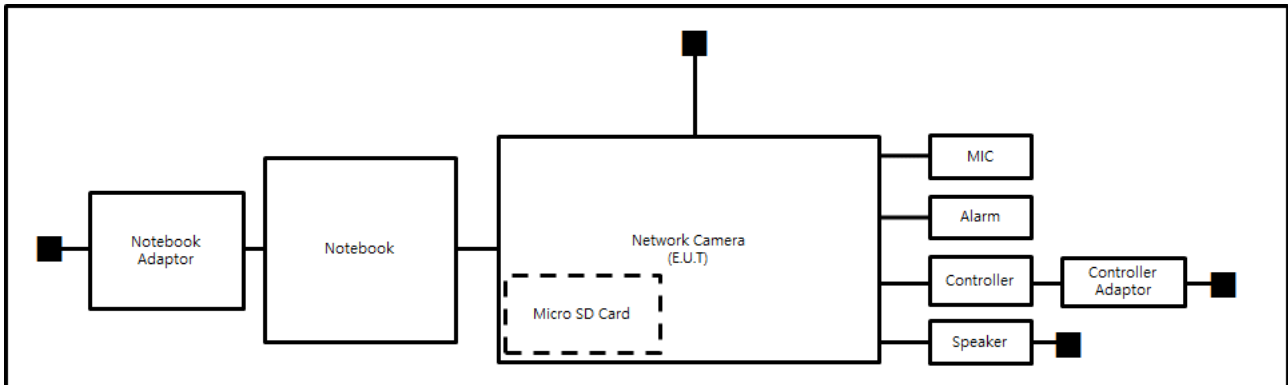
E.U.T Test operating S/W		
Name	Version	Manufacture Company
WebViewer	-	Hanwha Techwin Co., Ltd.

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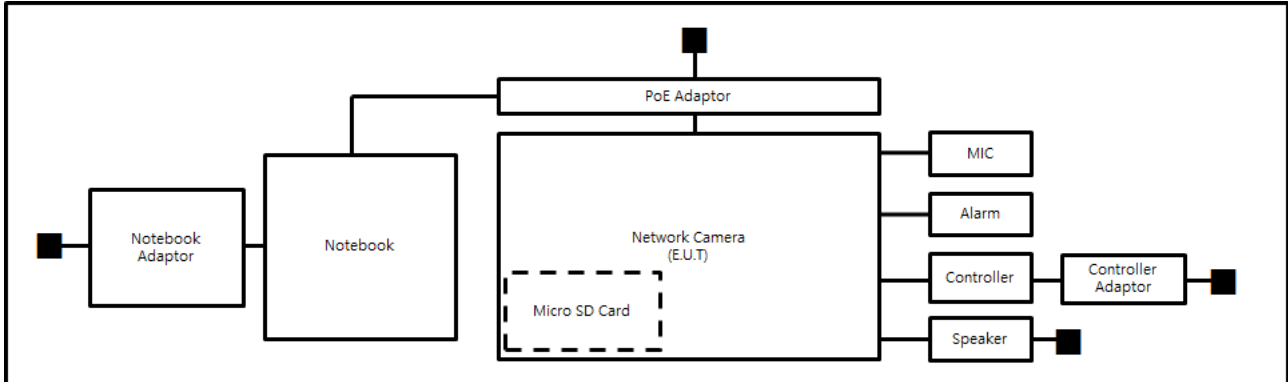
## 1.8 Configuration

■ 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 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 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



☐ **VCCI V-3 / 2015.04**

☐ Class A

☐ Class B

☐ **AS/NZS:2013**

☐ Class A

☐ Class B

☒ **47 CFR Part 15, Subpart B**

☒ CISPR 22:2009 +A1:2010

☒ Class A

☐ Class B

☐ ANSI C63.4-2014

☐ Class A

☐ Class B

☒ **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 #6

**Test Equipment**

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EMC32	R & S	9.12.00	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESR3	R & S	101781	04, 27, 2018
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	01, 11, 2018
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	04, 27, 2018
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 27, 2018
<input type="checkbox"/>	LISN	NNBM8124	SCHWARZBECK	8124-1002	08, 07, 2018
<input type="checkbox"/>	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 Radiated Electric Field Emissions(Below 1 GHz)

**Test Date**

Dec. 04, 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	11, 27, 2018
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	716	11, 28, 2018

**Test Conditions**Temperature: 22,0 °C  
Relative Humidity: 43,0 % 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.



## 2.3 Radiated Electric Field Emissions(Above 1 GHz)

**Test Date**

Dec. 05, 2017

**Test Location**

SEMI ANECHOIC CHAMBER #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, 17, 2018
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	AGILENT	3008A01967	05, 31, 2018
<input type="checkbox"/>	ATTENUATOR	8491A	HP	32173	03, 24, 2018
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 02, 2019

**Test Conditions**Temperature: 21,6 °C  
Relative Humidity: 40,9 % 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.

## APPENDIX A – TEST DATA

### Conducted Emissions at Mains Power Ports

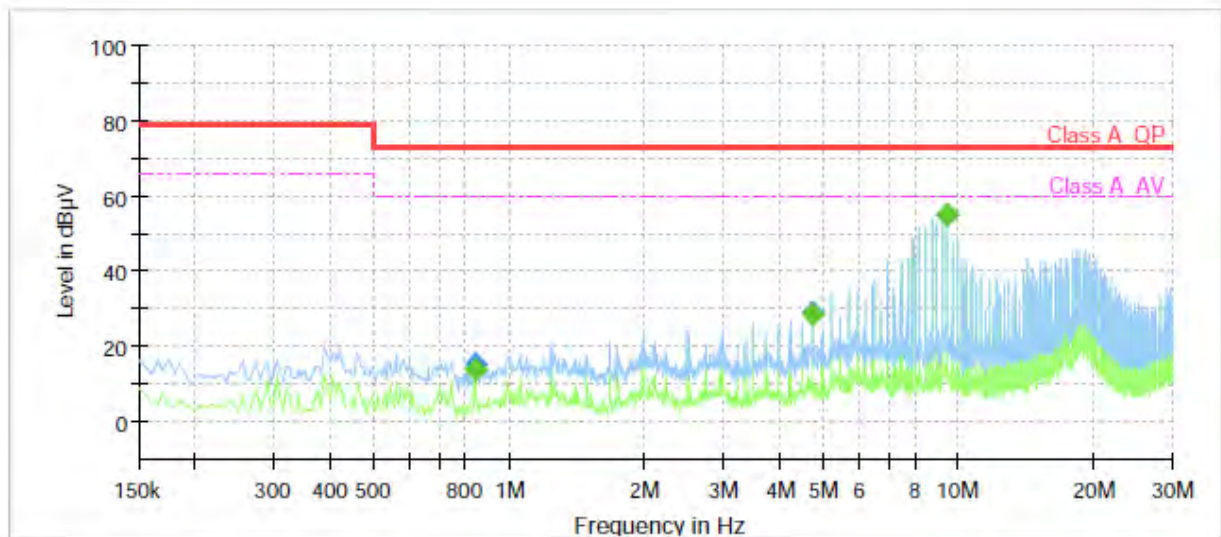
■ AC 24 V Mode

HOT LINE

#### Common Information

Test Description:  
Model No.:  
Mode  
Operator Name:

Conducted Emission  
XNP-6320HSN  
AC\_H  
KES



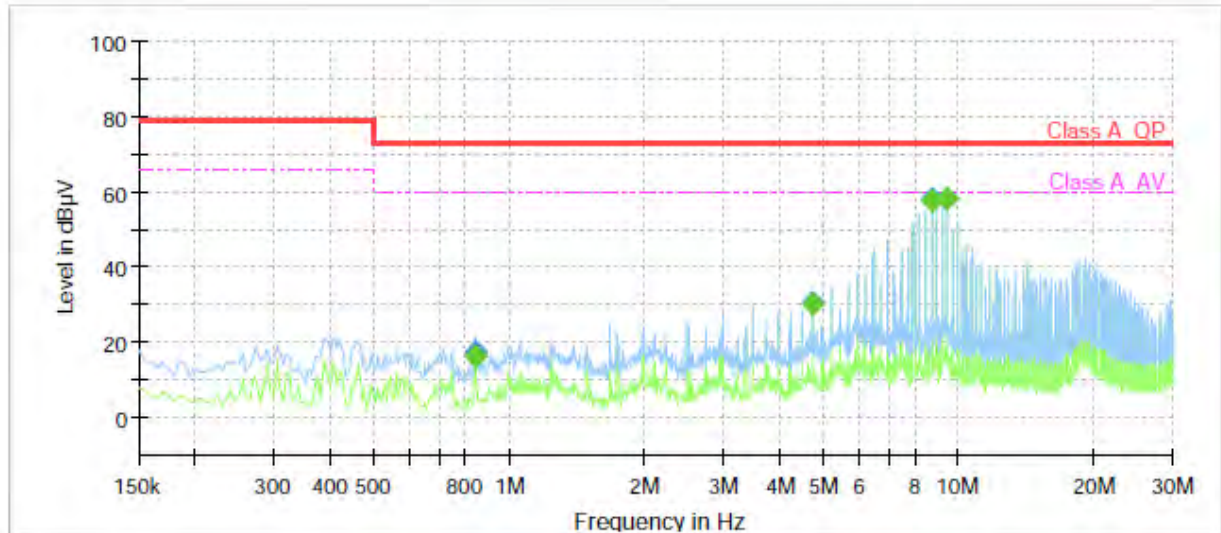
#### Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.840000	---	13.96	60.00	46.04	1000.0	9.000	L1	20.0
0.840000	15.23	---	73.00	57.77	1000.0	9.000	L1	20.0
4.725000	---	28.40	60.00	31.60	1000.0	9.000	L1	19.8
4.725000	29.08	---	73.00	43.92	1000.0	9.000	L1	19.8
9.445000	---	54.91	60.00	5.09	1000.0	9.000	L1	20.0
9.445000	55.09	---	73.00	17.91	1000.0	9.000	L1	20.0

## NEUTRAL LINE

### Common Information

Test Description:	Conducted Emission
Model No.:	XNP-6320HSN
Mode	AC_N
Operator Name:	KES



### Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.840000	---	16.65	60.00	43.35	1000.0	9.000	N	20.0
0.840000	17.73	---	73.00	55.27	1000.0	9.000	N	20.0
4.725000	---	30.07	60.00	29.93	1000.0	9.000	N	19.8
4.725000	30.75	---	73.00	42.25	1000.0	9.000	N	19.8
8.700000	---	57.90	60.00	2.10	1000.0	9.000	N	19.9
8.700000	58.14	---	73.00	14.86	1000.0	9.000	N	19.9
9.445000	---	57.99	60.00	2.01	1000.0	9.000	N	20.0
9.445000	58.27	---	73.00	14.73	1000.0	9.000	N	20.0

#### ◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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



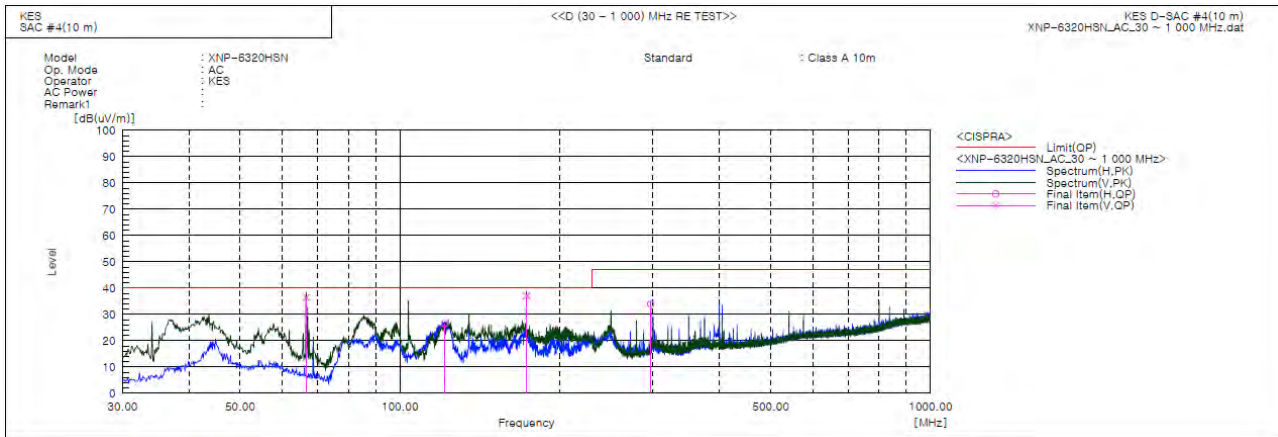
## KES Co., Ltd.

C-3701, Simin-daero 365-40,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
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www.kes.co.kr

Test report No.:  
KES-E1-17T0819  
Page (20) of (37)

### 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	66.618	V	67.3	-30.9	36.4	40.0	3.6	131.0	146.0	
2	121.301	H	57.6	-31.1	26.5	40.0	13.5	400.0	169.0	
3	173.075	V	67.3	-30.3	37.0	40.0	3.0	100.0	252.0	
4	296.993	H	57.9	-24.0	33.9	47.0	13.1	332.0	247.0	

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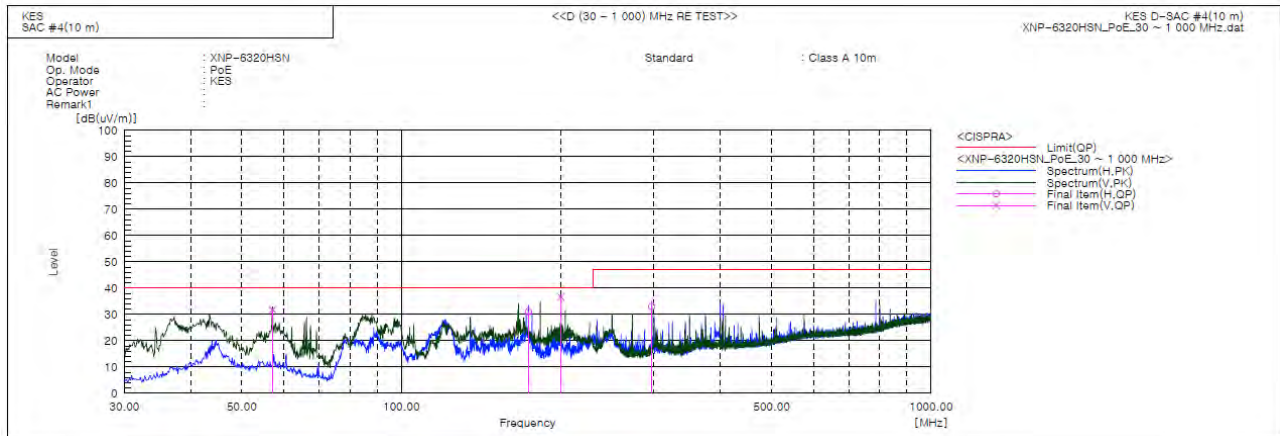


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Test report No.:  
KES-E1-17T0819  
Page (21) of (37)

### ■ PoE Mode



### Final Result

No.	Frequency	(P)	Reading	c.f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		QP [dB(uV)]	[dB(1/m)]	QP [dB(uV/m)]	QP [dB(uV/m)]	QP [dB]	[cm]	[deg]	
1	57.160	V	60.3	-28.5	31.8	40.0	8.2	114.0	293.0	
2	173.803	H	61.3	-30.2	31.1	40.0	8.9	400.0	242.0	
3	200.114	V	63.3	-26.7	36.6	40.0	3.4	135.0	3.0	
4	296.993	H	57.0	-24.0	33.0	47.0	14.0	342.0	255.0	

### ◆ Calculation – SAC #4(10 m)

Result(QP) [dB( $\mu$ V/m)] = (Reading(QP)[dB( $\mu$ V)] + c.f[dB(1/m)])

Margin(QP)[dB] = Limit[dB( $\mu$ V/m)] - Result(QP) [dB( $\mu$ V/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





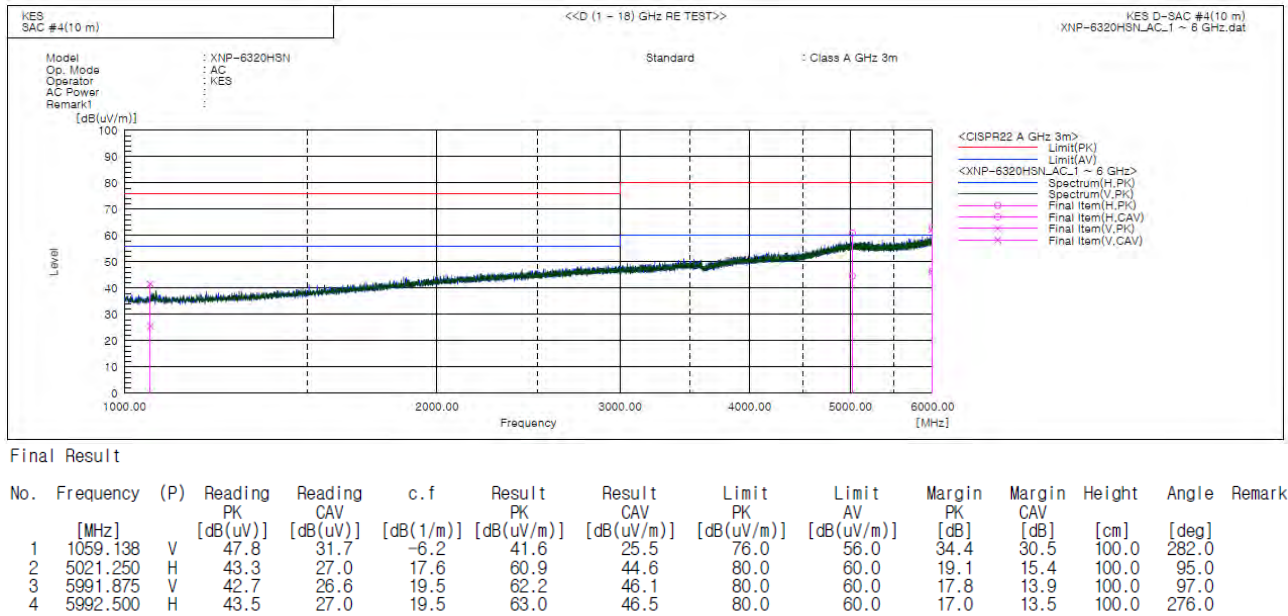
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KES-E1-17T0819  
Page (22) of (37)

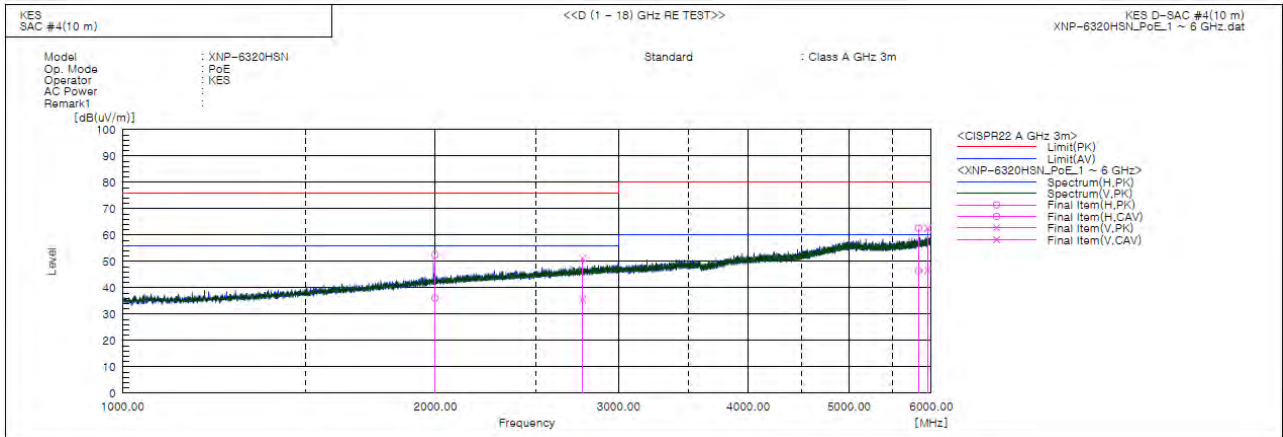
## Radiated Electric Field Emissions(Above 1 GHz)

### ■ AC 24 V Mode



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## ■ PoE Mode



### Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1998.125	H	49.8	33.4	2.7	52.5	36.1	76.0	56.0	23.5	19.9	100.0	117.0	
2	2770.625	V	44.2	28.7	6.9	51.1	35.6	76.0	56.0	24.9	20.4	100.0	234.0	
3	5832.500	H	43.9	27.7	18.7	62.6	46.4	80.0	60.0	17.4	13.6	100.0	22.0	
4	5952.500	V	43.2	27.3	19.3	62.5	46.6	80.0	60.0	17.5	13.4	100.0	211.0	

## ◆ Calculation

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

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

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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

## Test Setup Photos and Configuration

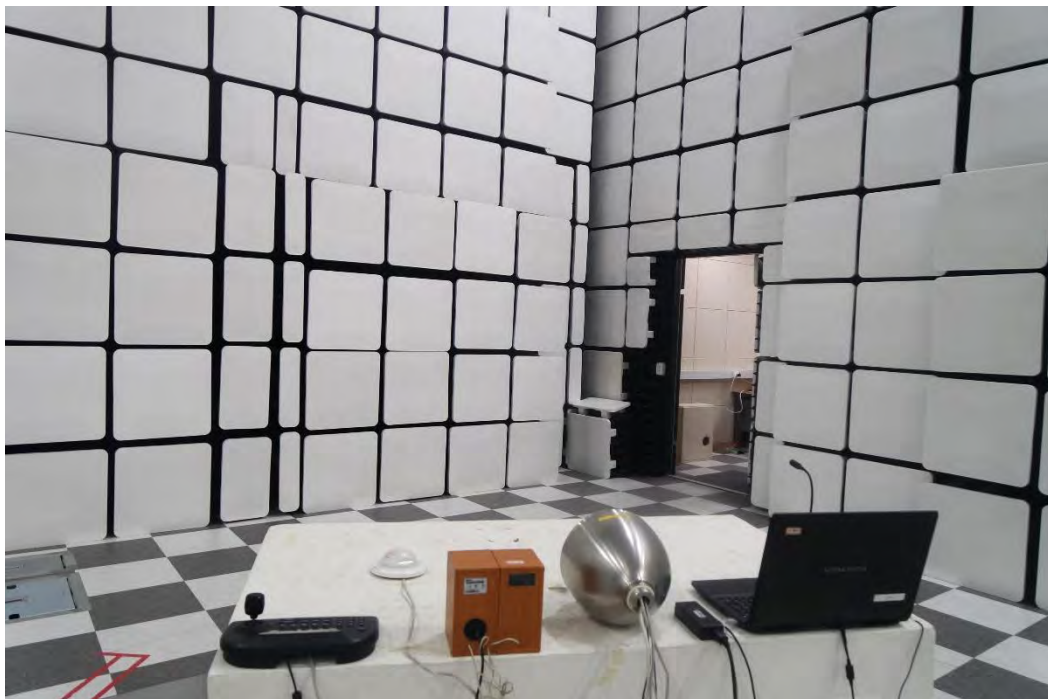
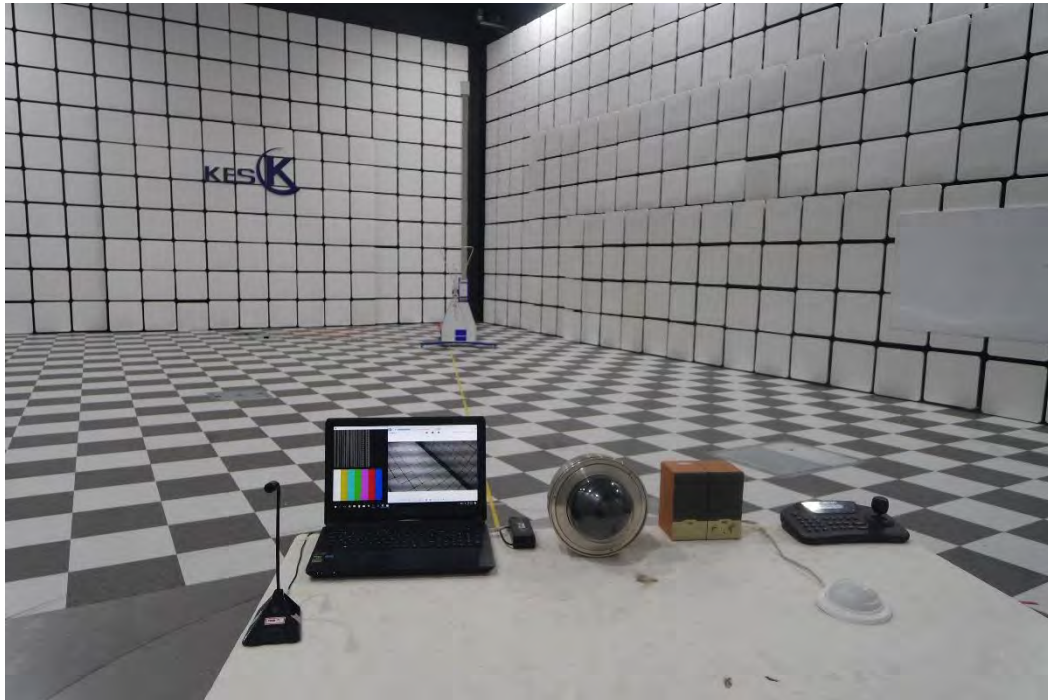
### Conducted Voltage Emissions



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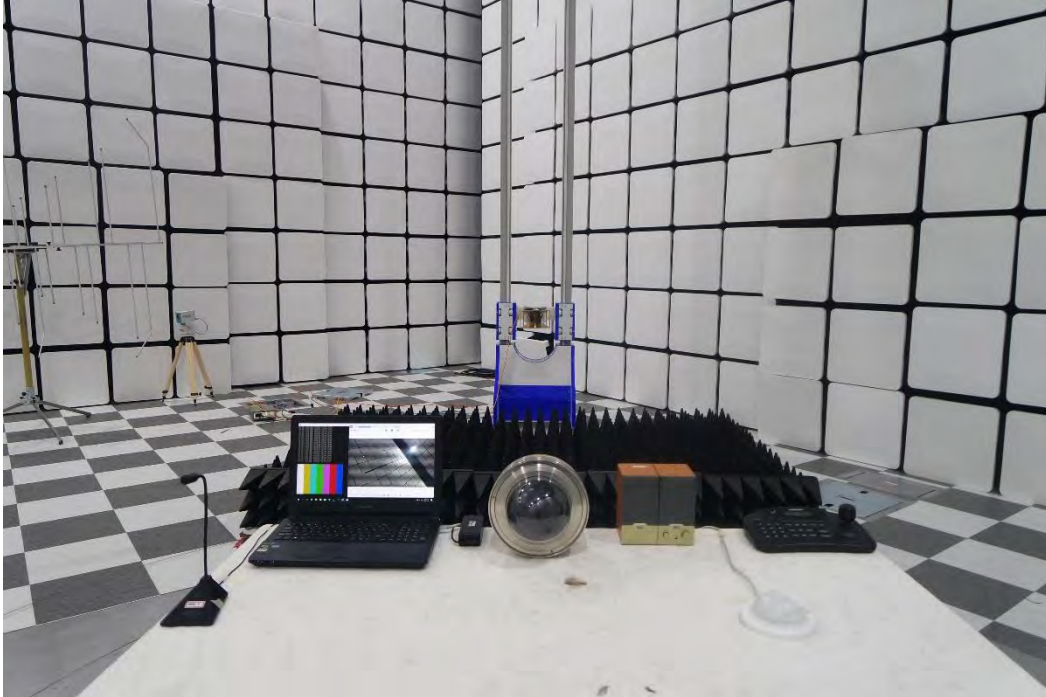


## Radiated Electric Field Emissions(Below 1 GHz)



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## Radiated Electric Field Emissions(Above 1 GHz)



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## EUT External Photographs

(Top)



(Bottom)



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## EUT Internal Photographs

(Internal View)

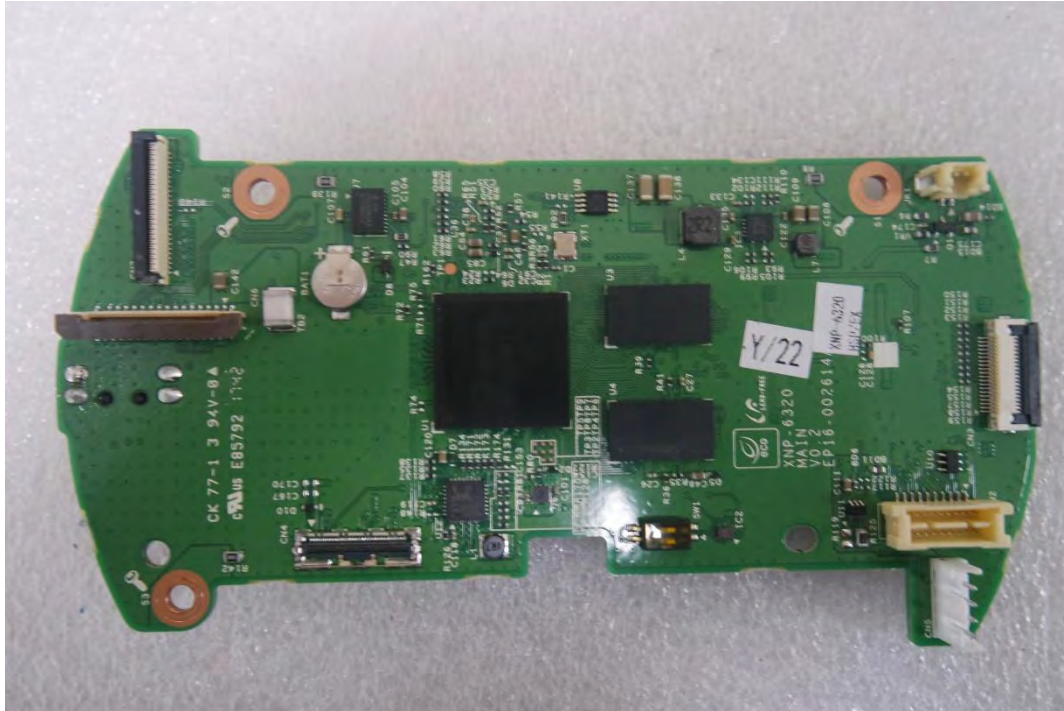


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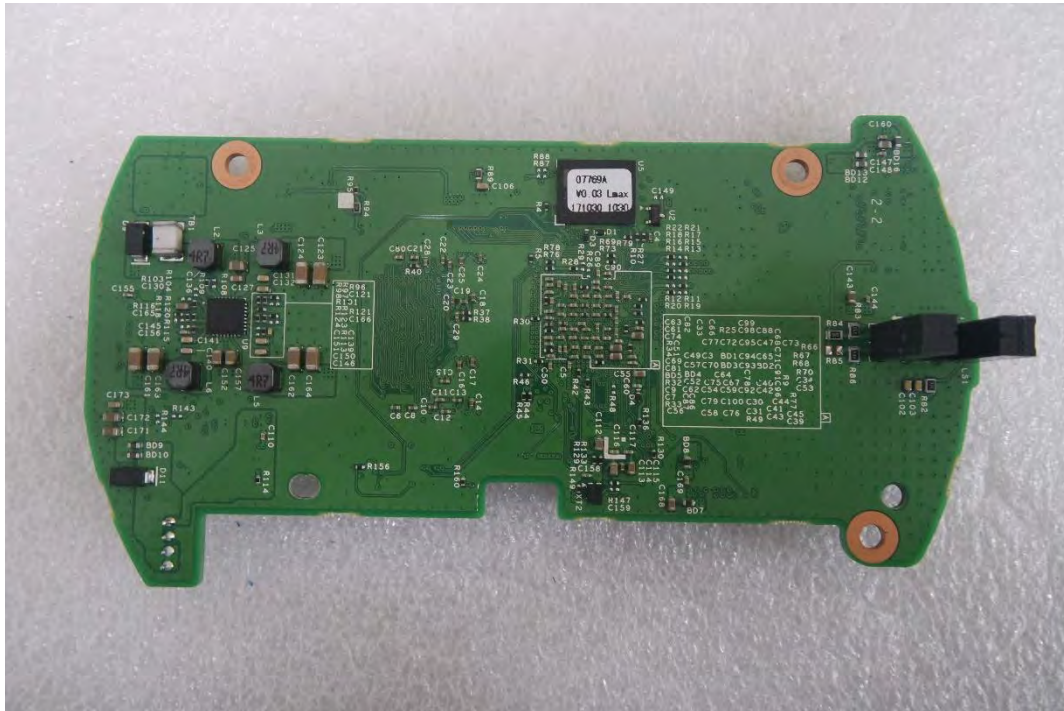


## EUT Internal View – Main board

(Top)



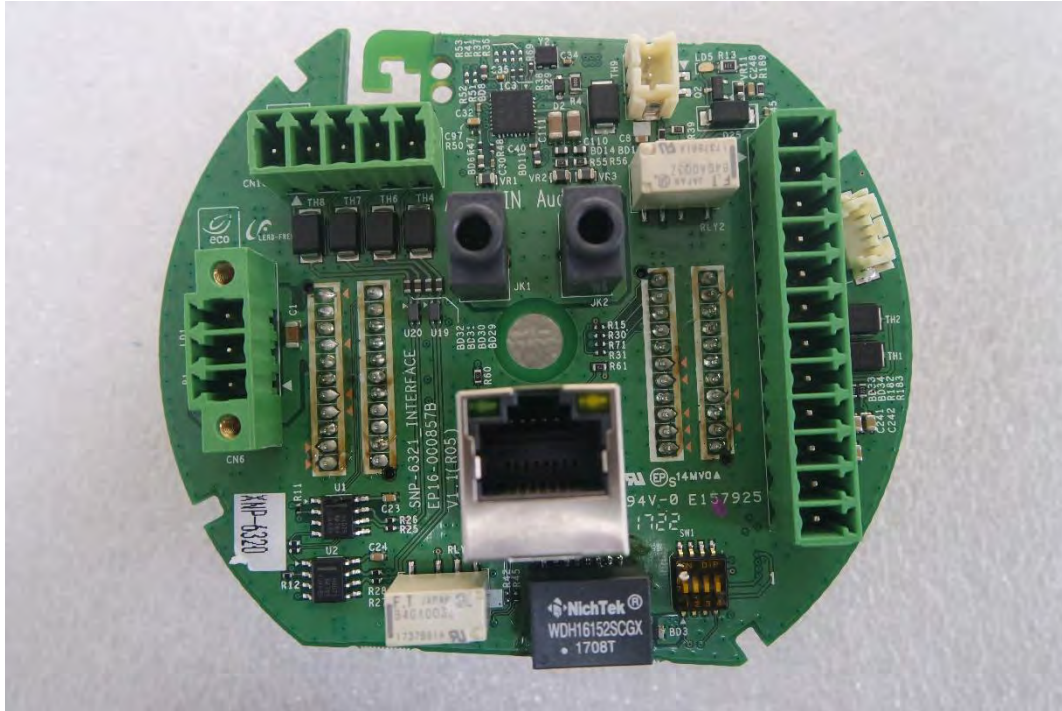
(Bottom)



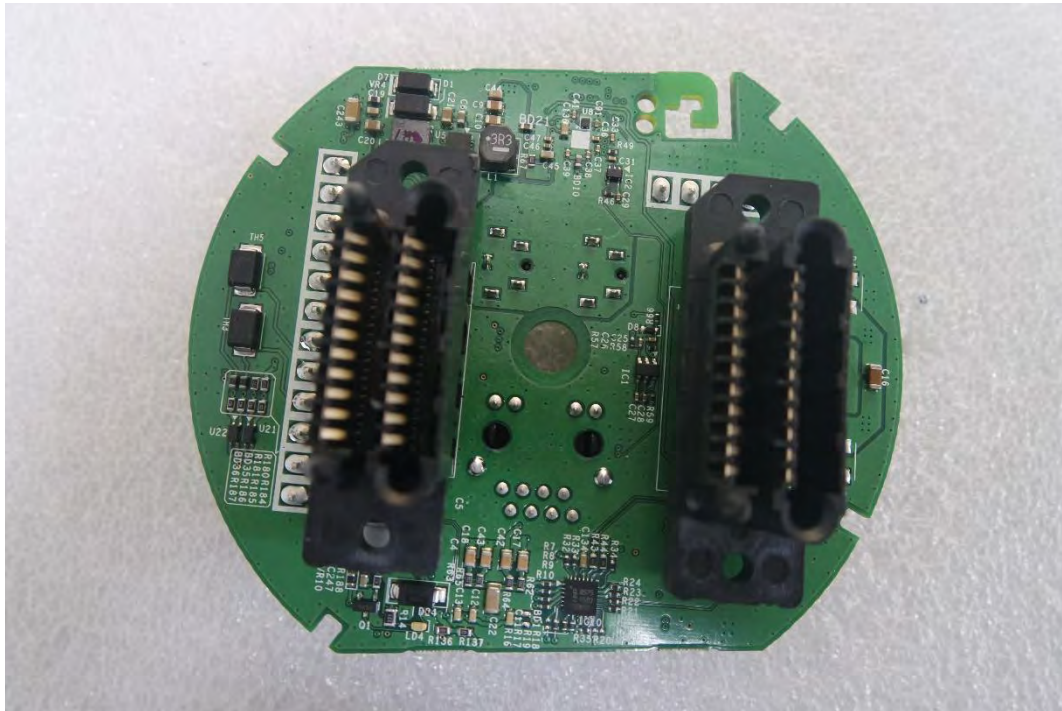
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## EUT Internal View – Interface board

(Top)



(Bottom)

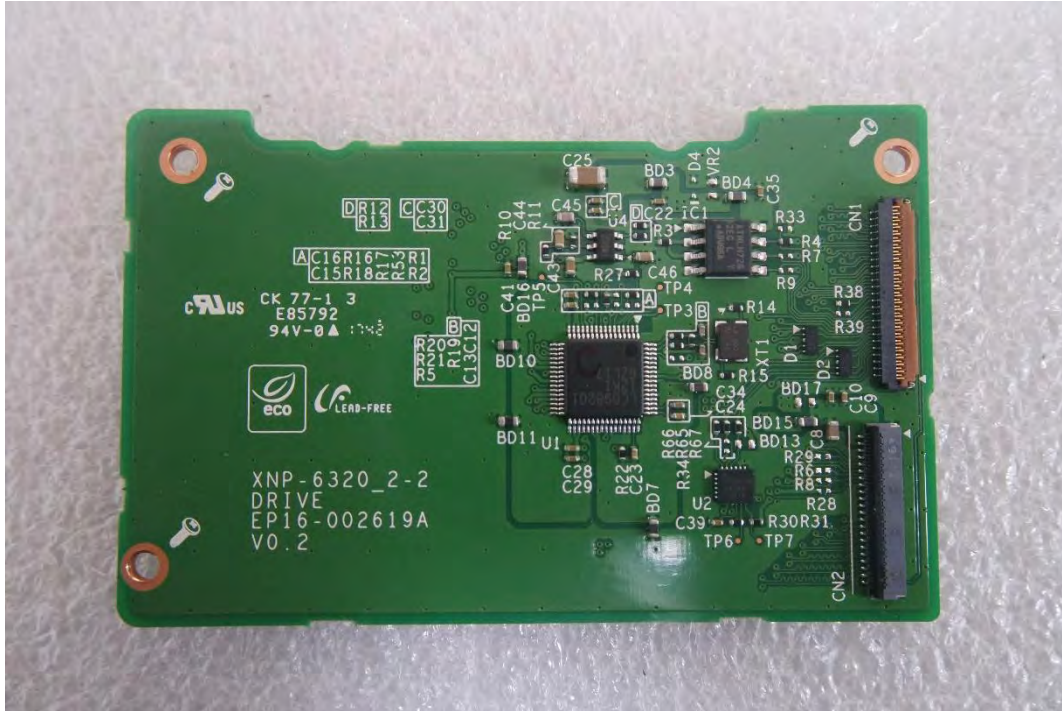


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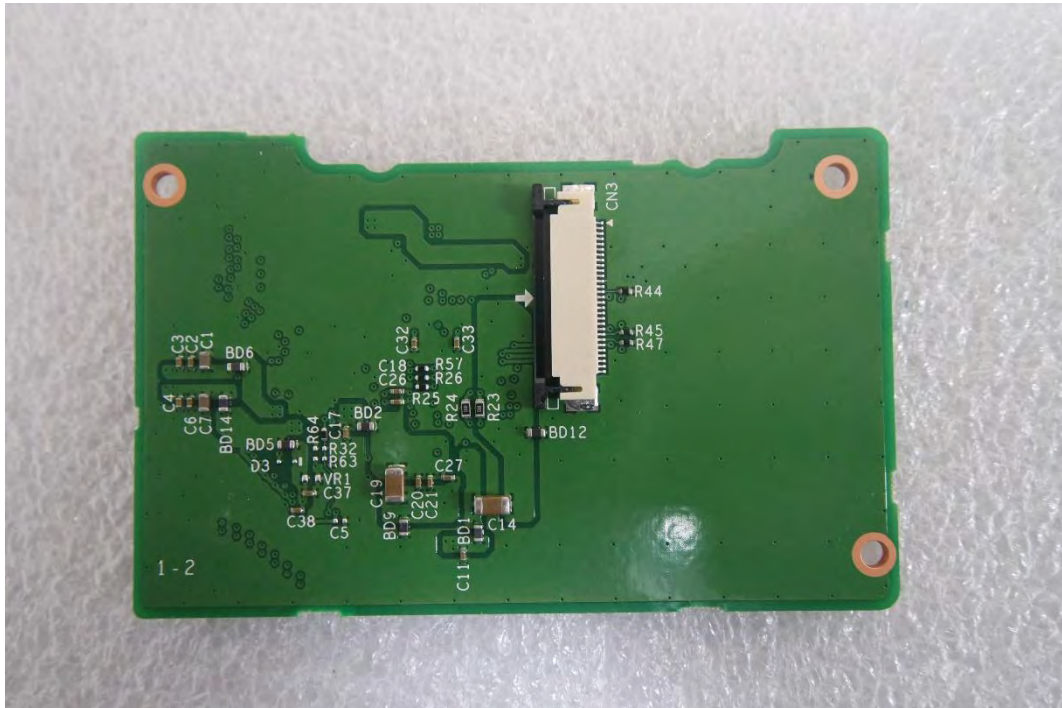


## EUT Internal View – Drive board

(Top)



(Bottom)



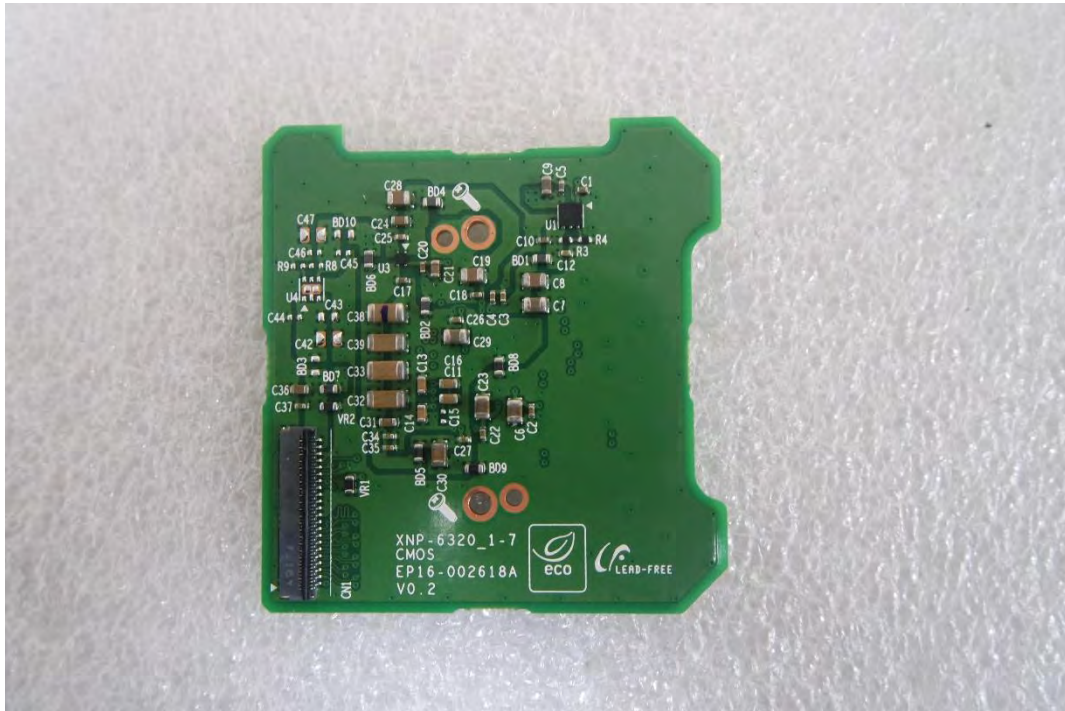
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## EUT Internal View – CCD board

(Top)



(Bottom)

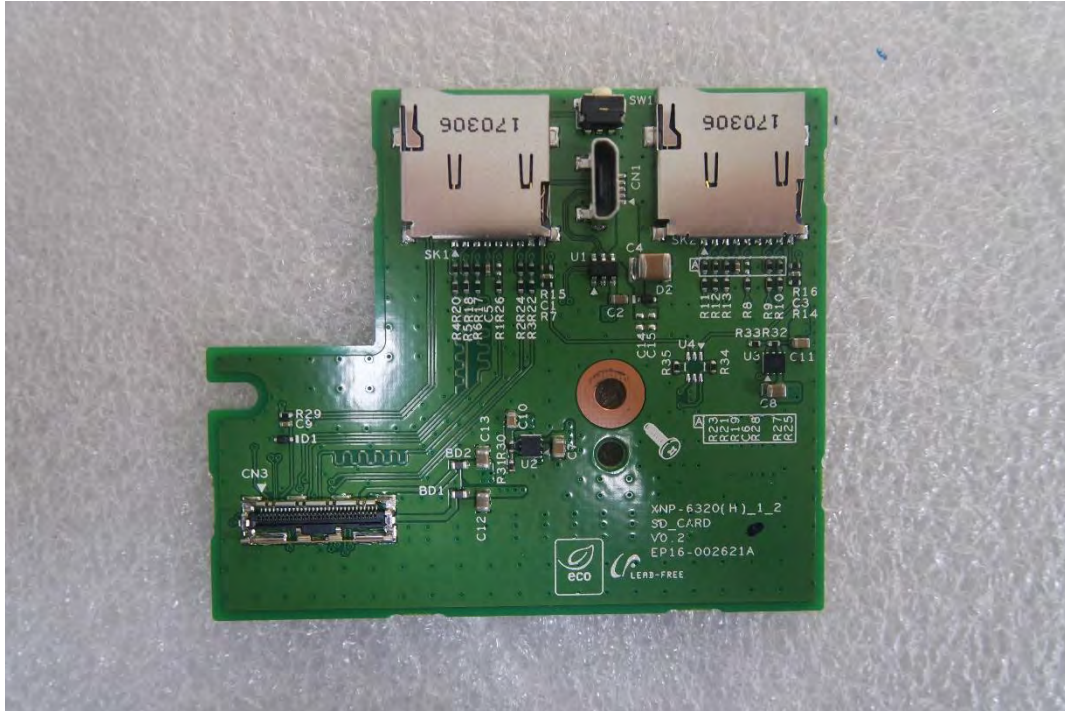


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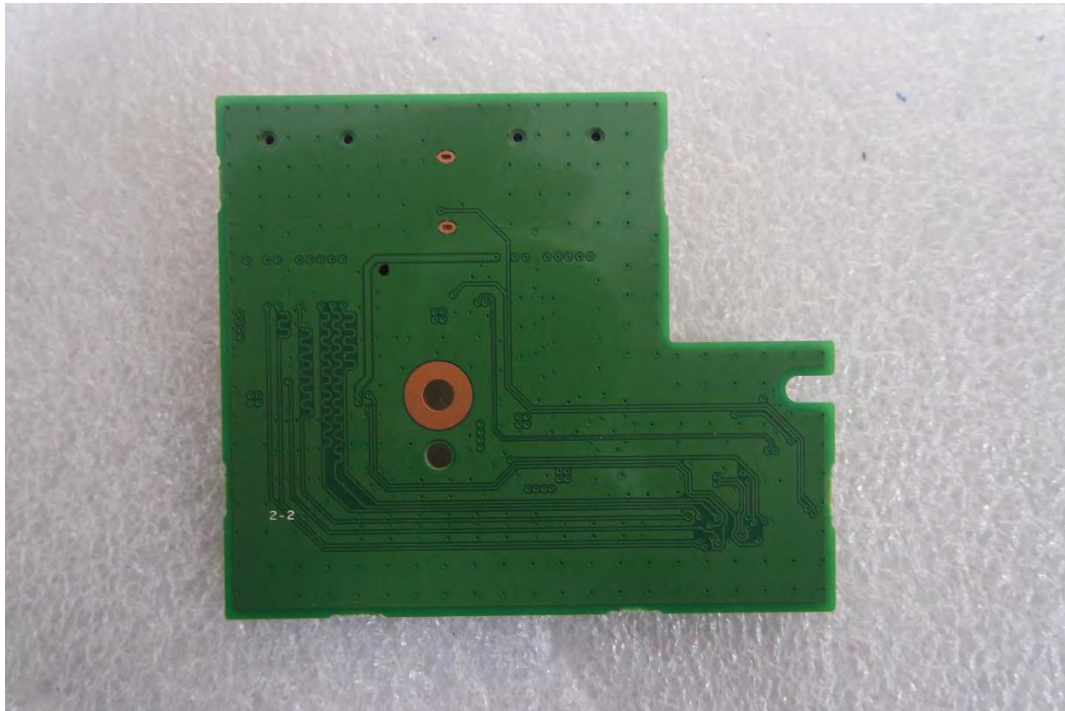


## EUT Internal View – SD board

(Top)



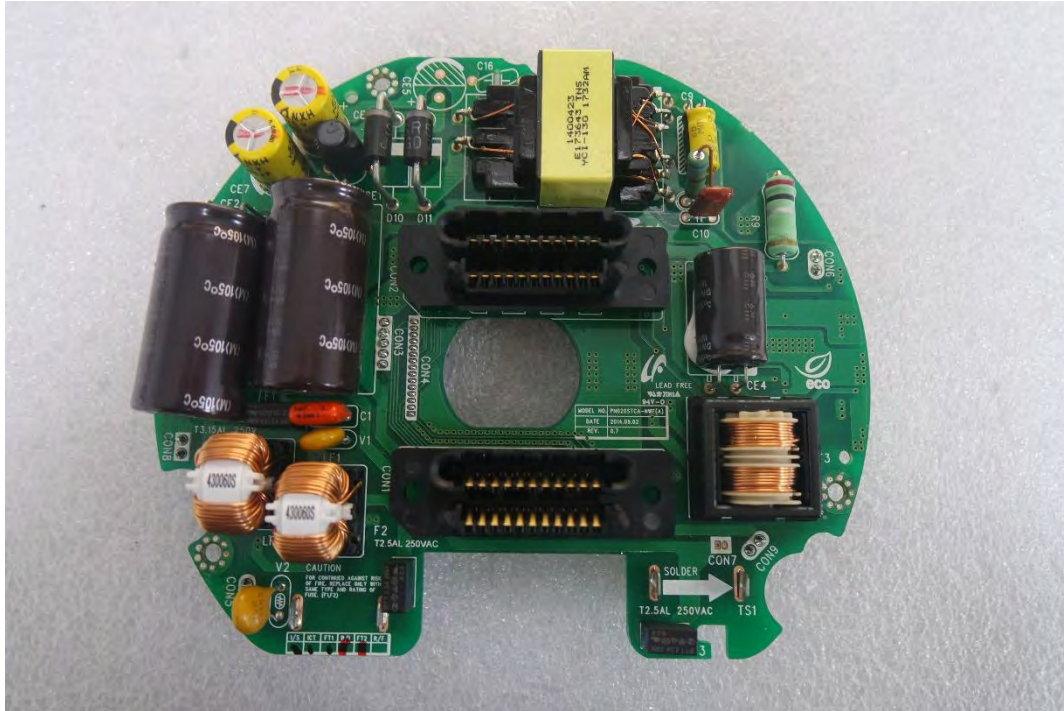
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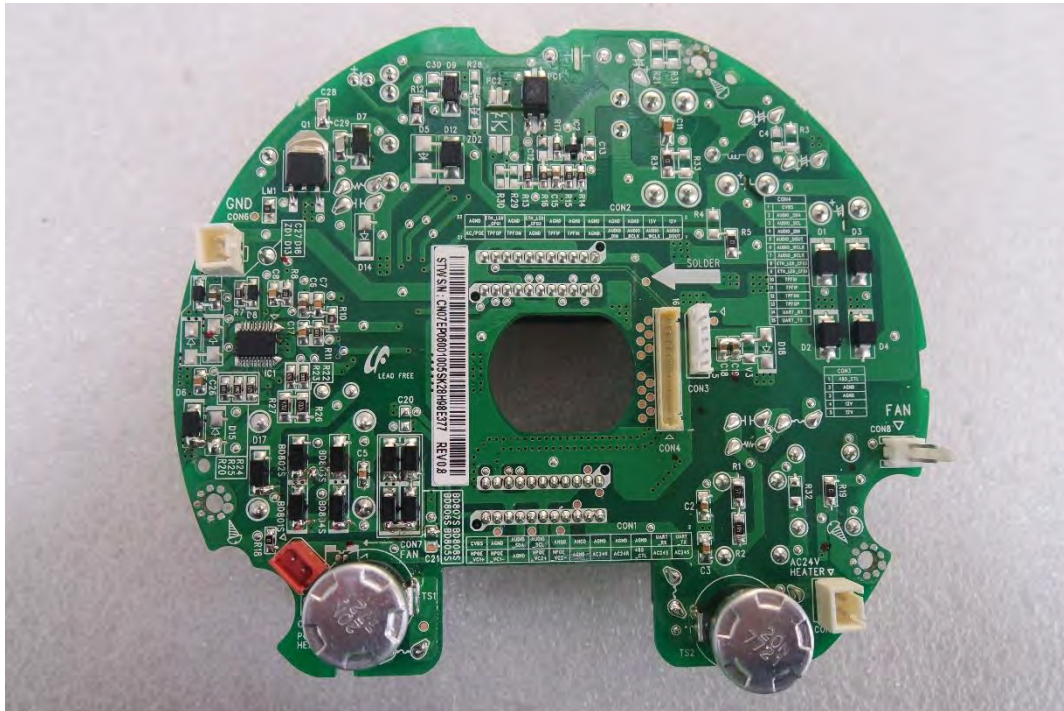
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## EUT Internal View – Power board

(Top)



(Bottom)

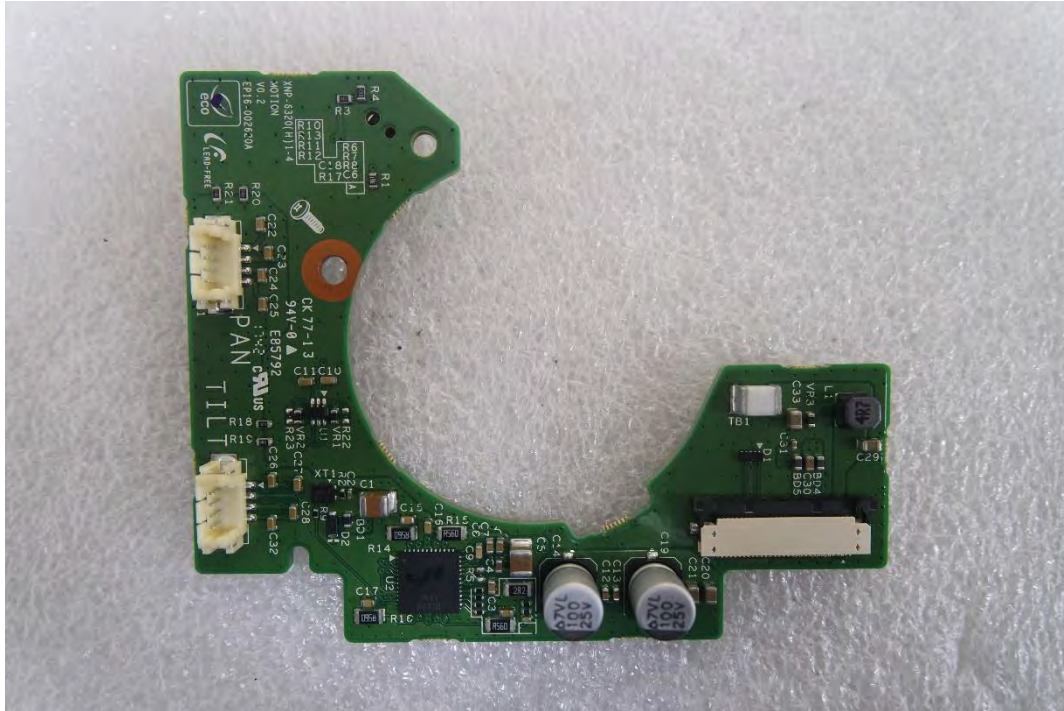


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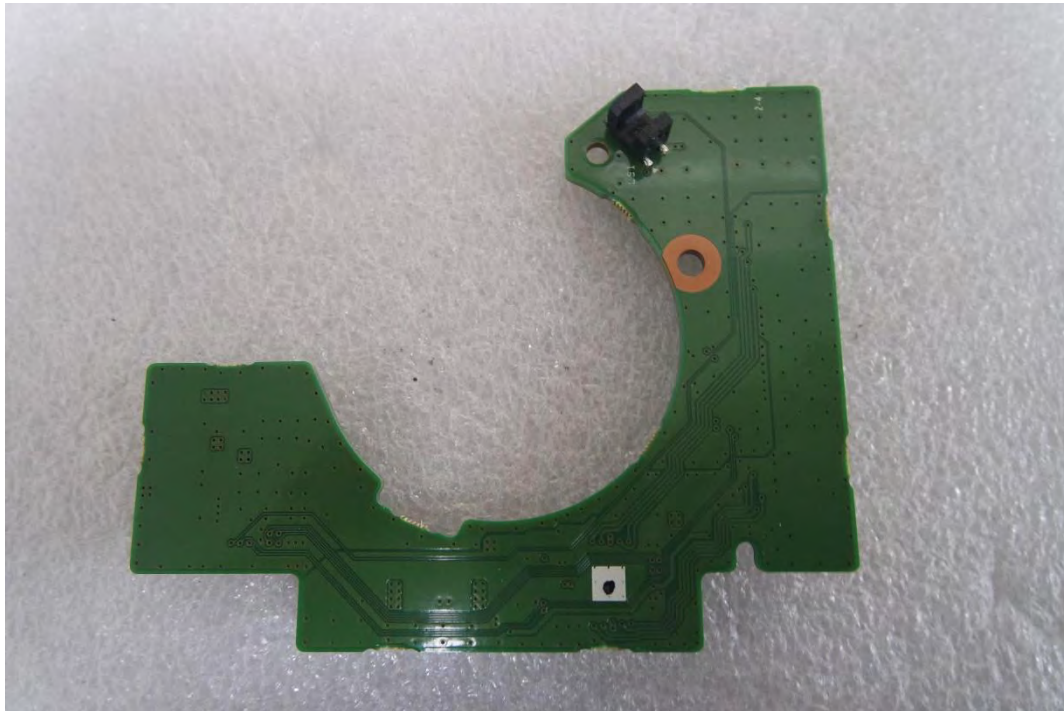


## EUT Internal View – TILT board

(Top)



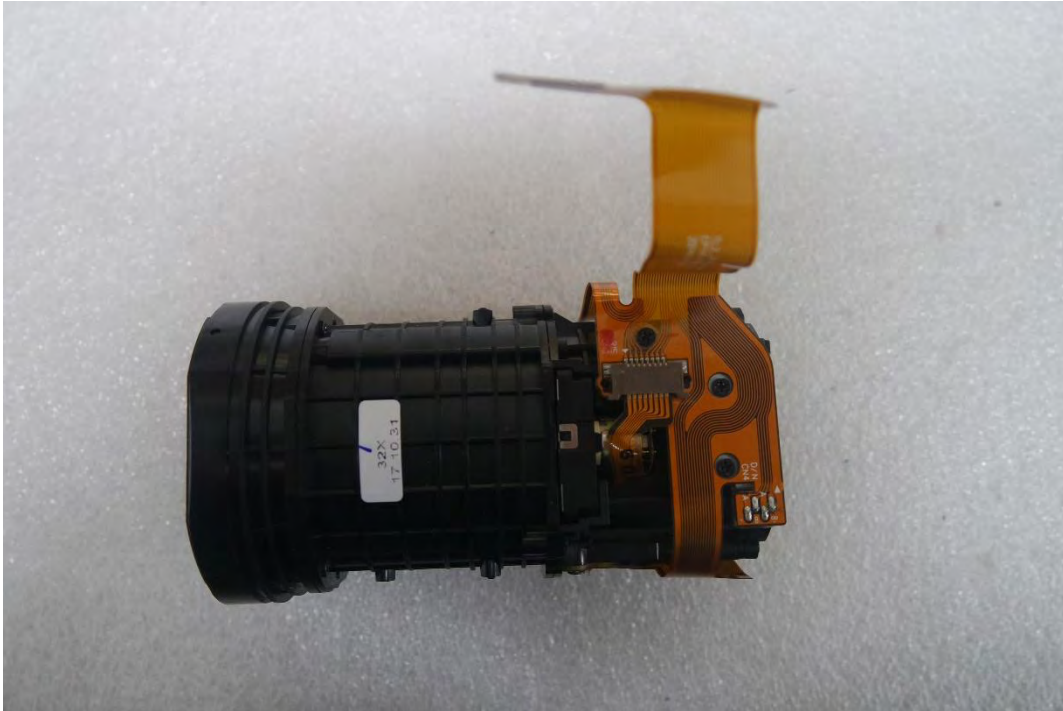
(Bottom)



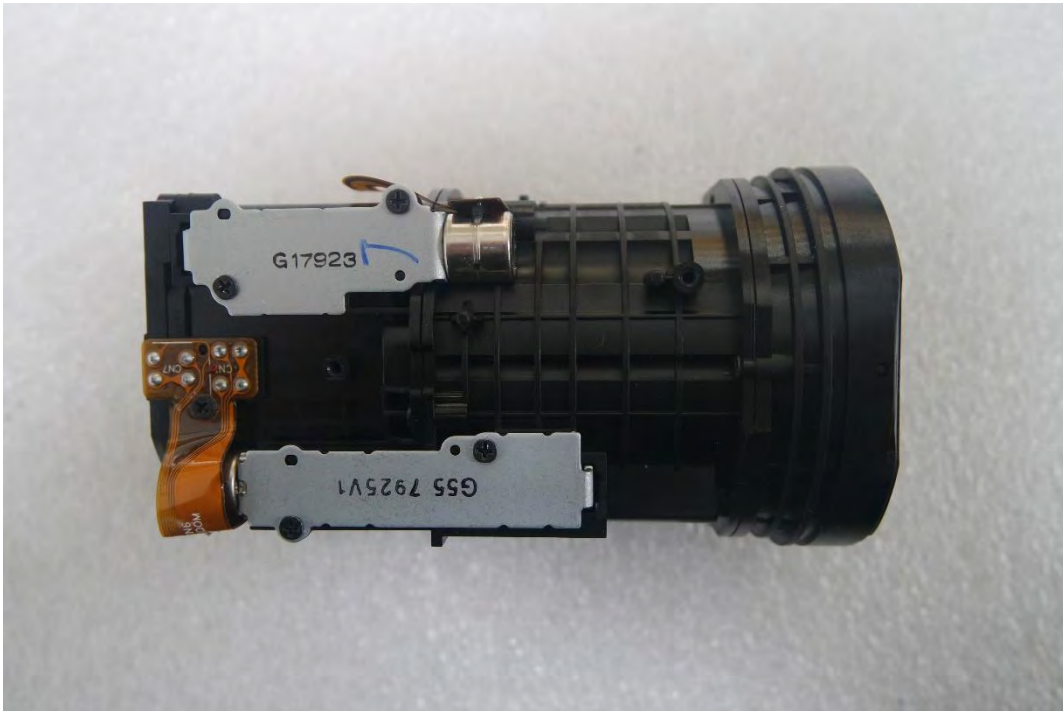
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## EUT Internal View – Lens Module

(Top)



(Bottom)



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## Label Photographs



This device complies with part 15 of the FCC Rules. Operation in subject to the following two conditions: (1) This device Sep not cause harmful interference, and (2) this device must accept any interference received, including interference that Sep cause undesired operation.

CAN ICES-3(A) / NMB-3(A)