EMC TEST REPORT For CE

Test Report No.	:	KES-EM-20T0359-R1
Date of Issue	:	Jun. 25, 2020
Product name	:	NETWORK CAMERA
Model/Type No.	:	XNP-9300RW
Variant Model	:	XNP-8300RW
Applicant	:	Hanwha Techwin Co., Ltd.
Applicant Address	:	6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Manufacturer	:	1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. 2. D-TECH CO.,LTD.
Manufacturer Address	:	1. Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam 2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)
Date of Receipt	:	Jun. 05, 2020
Test date	:	Jun. 06, 2020 ~ Jun. 09, 2020
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Min Seong, Kim
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jun. 17, 2020	KES-EM-20T0359	Issued
Jun. 25, 2020	KES-EM-20T0359-R1	Re-issue due to variant model addition

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/2.8" 8MP CMOS
Effective Pixels	3864(H)x2192(V)
Min. Illumination	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)
Video Out	None
Lens	
Focal Length (Zoom Ratio)	5~150mm(30x) zoom
Max. Aperture Ratio	F1.6(Wide)
Angular Field of View	H: 57.42°(Wide)~2.19°(Tele) / V: 33.54°(Wide)~1.25°(Tele)
Min. Object Distance	Wide: 1.5m(4.92ft), Tele: 3m(9.84ft)
Focus Control	Oneshot AF, Focus save
Lens Type	DC auto iris
Pan / Tilt / Rotate	
Pan Range	360° Endless
Pan Speed	Max. 500°/sec, Manual: 0.024°/sec~250°/sec
Tilt Range	110°(-20°~90°)
Tilt Speed	Max. 350°/sec, Manual: 0.024°/sec~250°/sec
Sequence	Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule, Preset trace recording
Preset Accuracy	±0.1°
Azimuth	Support
Auto Tracking	Object auto tracking(Person/Vehicle)
Operational	
IR Viewable Length	200m(656.17ft)
Camera Title	Displayed up to 85 characters, Direction Indicator
Day & Night	Auto(ICR)/Color/BW/Schedule
Backlight Compensation	BLC, HLC, WDR
Wide Dynamic Range	150 dB
Digital Noise Reduction	SSNRV
Digital Image Stabilization	Support(built-in gyro sensor)
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, rectangular Support - Color: Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC	None
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2~1/12,000sec)
Video Rotation	Flip, Mirror

Analytics	Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Shock detection * Audio detection, Sound classification(with NW I/O Box)
Business Intelligence	None
Serial Interface	None
Alarm I/O	None
Alarm Triggers	Analytics, Network disconnect * Alarm input(with NW I/O Box)
Alarm Events	File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or NAS recording at event triggers PTZ Preset * Alarm output(with NW I/O Box)
Audio In	None
Audio Out	None
Wiper	Support
Network	
Ethernet	RJ-45(10/100BASE-T)
Video Compression	H.265/H.264,MJPEG
Resolution	3840x2160, 2592x1944, 2592x1464, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
Smart Codec	Manual(5ea area), WiseStream Ⅱ
Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast (128 user) Multiple streaming(Up to 10 profiles)
Audio Compression	None
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour,LLDP, SRTP
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP) Device certificate(Hanwha Techwin Root CA)
Edge Storage	Micro SD/SDHC/SDXC 2slot 1TB
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(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 Recommended Browser: Google Chrome Supported Browser: MS Explore11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OS X only)
Memory	4GB RAM, 512MB Flash

Environmental	
Operating Temperature / Humidity (TBD)	-40°C~+60°C (-40°F ~ +140°F) / Less than 95% RH(Non-condensing) Maximum Temperature : +60°C(+140°F), □□□ within 8 hours Absolute maximum(According to NEMA TS2, 2.2.7):+74℃ → TBD
Storage Temperature / Humidity	-50°C~+60°C (-58°F~+140°F) / Less than 95% RH(Non-condensing)
Certification	IP66, IK10(Camera body only→TBD), NEMA4X
Electrical	
Input Voltage(TBD)	HPoE(IEEE802.3bt, Class7, Type4). TBD(Power Class)
Power Consumption(TBD)	Typ.20W, Max.35W Camera only
Mechanical	
Color / Material	White, Black / Aluminum + Polycarbonate + ASA (Sun shield) + Tempered glass (Window)
RAL Code	White : RAL 9003 / Black : RAL 9005
Product dimensions / weight	Ø184.9 x 318.8.mm / 5.4Kg
Conduit hole	None
Hanging mount(Dome)	None
Skin cover(Dome)	None
Weather cap(Dome)	None
Power module	None
Backbox	None

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 ☐ 100 Vac ☐ 24 Vac ☐ 12 Vdc ☐ PoE

Frequency ☒ 50 Hz ☐ 60 Hz ☐ Hz

1.2 Variant Model Differences

Addition of derivative models for place of sale management

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNP-9300RW	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.	EUT
Fiber PoE Injector	PT-PSE109GBRO-AH-S	-	Dongguan PROCET Network Technology Co.,Ltd	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook 1	P95G001	8KM8HT2	Wistron Infocom (Chengdu) Company Limited	-
Notebook 1 Adapter	LA65NS2-01	-	LITE-ON TECHNOLOGY(CHANGZHOU)CO.,LTD.	-
Micro SD Card	-	-	SanDisk	8 GB
PoE Switch	GS728TPP	-	NETGEAR	-
Notebook 2	LG15N54	410NZGK015231	LG Electronics Co., Ltd.	-
Notebook 2 Adapter	ADP-90WH B	84ZW19F1663	DELTA ELECTRONICS(JIANGSU) LTD.	-

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (EUT)	RJ-45	Fiber PoE Injector (EUT)	PoE	1.0	S
	SLOT	Micro SD Card	SLOT	-	-
Fiber PoE Injector (EUT)	LAN	Notebook 1	RJ-45	3.0	S
	SFP	PoE Switch	SFP	10.0	U
PoE Switch	LAN	Notebook 2	RJ-45	1.0	S

* Unshielded=U, Shielded=S

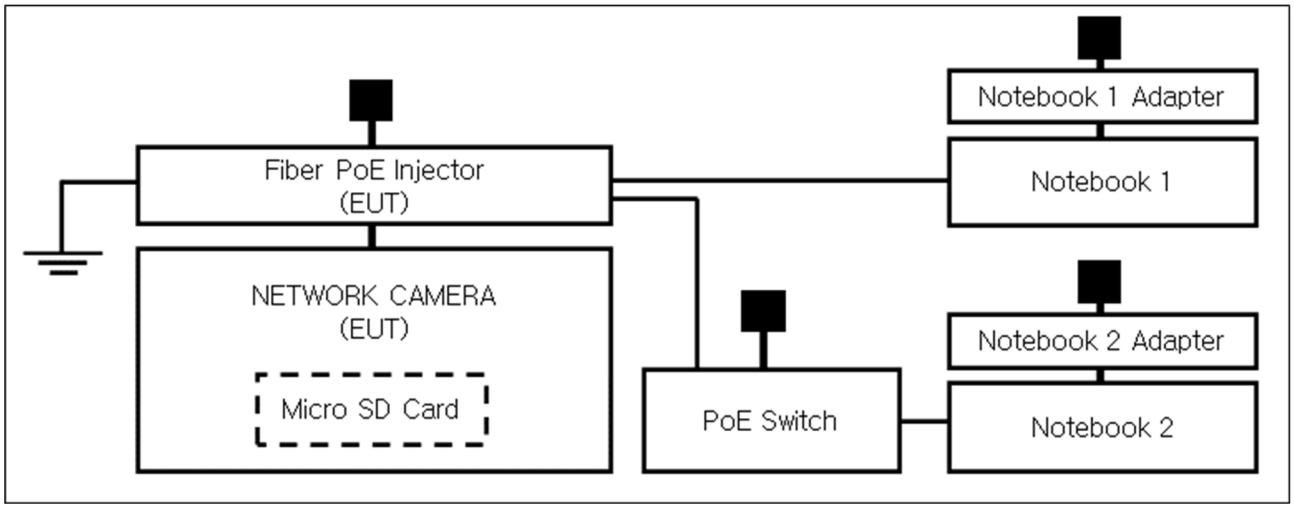
1.7 EUT Operating Mode(s)

Test Mode	operating
Operation mode	checked that the camera video output was working properly in the web viewer and used the ping test to verify that the network behavior was working properly.

EUT Test operating S/W		
Name	**Version**	**Manufacture Company**
Web Viewer	-	-

1.8 Configuration

■ AC Main
□ DC Main



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, Yeoju-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-20056, C-20036, T-20040, G-20057
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 001633 0003

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011		
☐ EN 61000-6-1:2007		
☐ EN 61000-6-4:2007 +A1:2011		
☐ EN 61000-6-2:2005		
☐ EN 55011:2007 +A1:2010	☐ Group 1 ☐ Class A	☐ Group 2 ☐ Class B
☐ EN 55014-1:2006 +A2:2011		
☐ EN 55014-2:1997 +A2:2008		
☐ EN 55015:2013		
☐ EN 61547:2009		
☒ EN 55032:2012/AC:2013	☒ Class A	☐ Class B
☐ EN 55024:2010 +A1:2015		
☒ EN 50130-4:2011		
☒ EN 61000-3-2:2014		
☒ EN 61000-3-3:2013		
☐ EN 61326-1:2013		

☐ **VCCI-CISPR 32:2016** ☐ Class A ☐ Class B

☐ **AS/NZS CISPR32:2015** ☐ Class A ☐ Class B

☐ **47 CFR Part 15, Subpart B**

- ☐ CISPR 22:2009 +A1:2010 ☐ Class A ☐ Class B
- ☐ ANSI C63.4-2014

☐ **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
Jun. 06, 2020

Test Location
Electro wave Shieldroom #6

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	101783	01, 20, 2021
☒	LISN	ENV216	R & S	101787	01, 02, 2021
☒	LISN	ESH2-Z5	R & S	100450	01, 02, 2021
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	01, 02, 2021

Test Conditions
Temperature: 25,1 ℃
Relative Humidity: 48,1 % R.H.

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

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
Jun. 06, 2020

Test Location
Electro wave Shieldroom #6

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	101783	01, 20, 2021
☒	LISN	ENV216	R & S	101787	01, 02, 2021
☒	LISN	ESH2-Z5	R & S	100450	01, 02, 2021
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	01, 02, 2021
☐	8-WIRE ISN CAT3,5	ENY81	R & S	100174	01, 07, 2021
☐	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	01, 07, 2021
☒	ISN	ISN S8	SCHWARZBECK	ISN-S8-0019	03, 10, 2021
☐	CDN	CDNS502A	TESEQ	40431	01, 02, 2021

Test Conditions
Temperature: 25,1 ℃
Relative Humidity: 48,1 % R.H.

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.3 Radiated Electric Field Emissions(Below 1 ㎓)

Test Date
Jun. 06, 2020

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, 01, 2021
☒	AMPLIFIER	SCU 01	R & S	100603	11, 25, 2020
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 29, 2020
☒	ATTENUATOR	8491A	HP	32173	03, 10, 2021

Test Conditions
Temperature: 25,1 ℃
Relative Humidity: 47,8 % R.H.

Frequency Range of Measurement
30 ㎒ to 1 ㎓

Instrument Settings
IF Band Width: 120 ㎑

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 ㎓)

Test Date
Jun. 06, 2020

Test Location
SEMI ANECHOIC CHAMBER #3

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	ESR7	R & S	101190	08, 06, 2020
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	04, 20, 2021
☐	ATTENUATOR	8491A	HP	35496	03, 10, 2021
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 11, 2021

Test Conditions
Temperature: 25,0 ℃
Relative Humidity: 47,7 % R.H.

Frequency Range of Measurement
1 ㎓ to 6 ㎓

Instrument Settings
IF Band Width: 1 ㎒

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.5 Harmonic Current Emissions

Test Date
Jun. 08, 2020

Test Location
Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	net.control	EM TEST	2.1.4	-
☒	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	04, 06, 2021
☒	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test Conditions
Temperature: 23,5 ℃
Relative Humidity: 49,1 % R.H.

Classification of Equipment for Harmonic Current Emissions
☒ Class A
☐ Class B
☐ Class C(Below 25 W)
☐ Class C(Above 25 W)
☐ Class D

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.6 Voltage Fluctuations and Flicker

Test Date
Jun. 08, 2020

Test Location
Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	net.control	EM TEST	2.1.4	-
☒	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	04, 06, 2021
☒	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test Conditions
Temperature: 23,5 ℃
Relative Humidity: 49,1 % R.H.

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 dBμV.

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 dBμV, 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 dBμV, 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 dBμV.

Voltage dip/interruption / Voltage variation

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

Flickering of an indicator during the conditioning is permissible, providing that there is no residual

change in the EUT or any change in outputs, which could be interpreted by associated equipment

as a change. The EUT shall meet the acceptance criteria for the functional test, after the conditioning.

3.1 Electrostatic Discharge

Reference Standard
EN 61000-4-2:2009

Test Date
Jun. 09, 2020

Test Location
EMS-ESD: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	ESD SIMULATOR	ESS-2000	Noise Ken	ESS05X4620	01, 28, 2021
☒	HCP	-	KES	-	-
☒	VCP	-	Noise Ken	-	-

Test Conditions
Temperature: 24,9 ℃
Relative Humidity: 49,6 % R.H.
Atmospheric Pressure: 99,8 kPa

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

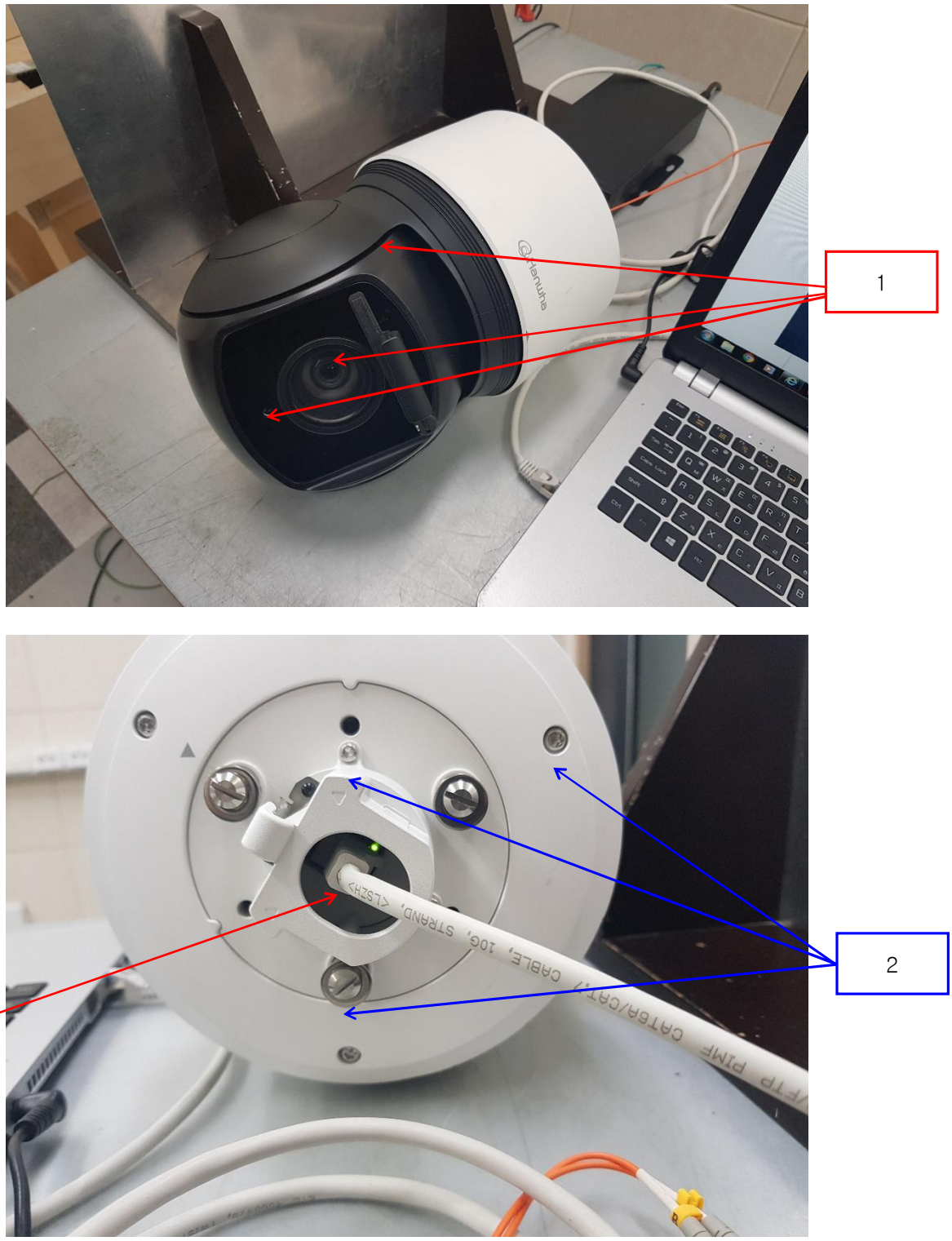
Discharge Voltage:	Contact	Air	HCP	VCP
	☐ 2 kV	☒ 2 kV	☐ 2 kV	☐ 2 kV
	☐ 4 kV	☒ 4 kV	☐ 4 kV	☐ 4 kV
	☒ 6 kV	☐ 6 kV	☒ 6 kV	☒ 6 kV
	☐ 8 kV	☒ 8 kV	☐ 8 kV	☐ 8 kV
	☐ 15 kV	☐ 15 kV	☐ 15 kV	☐ 15 kV

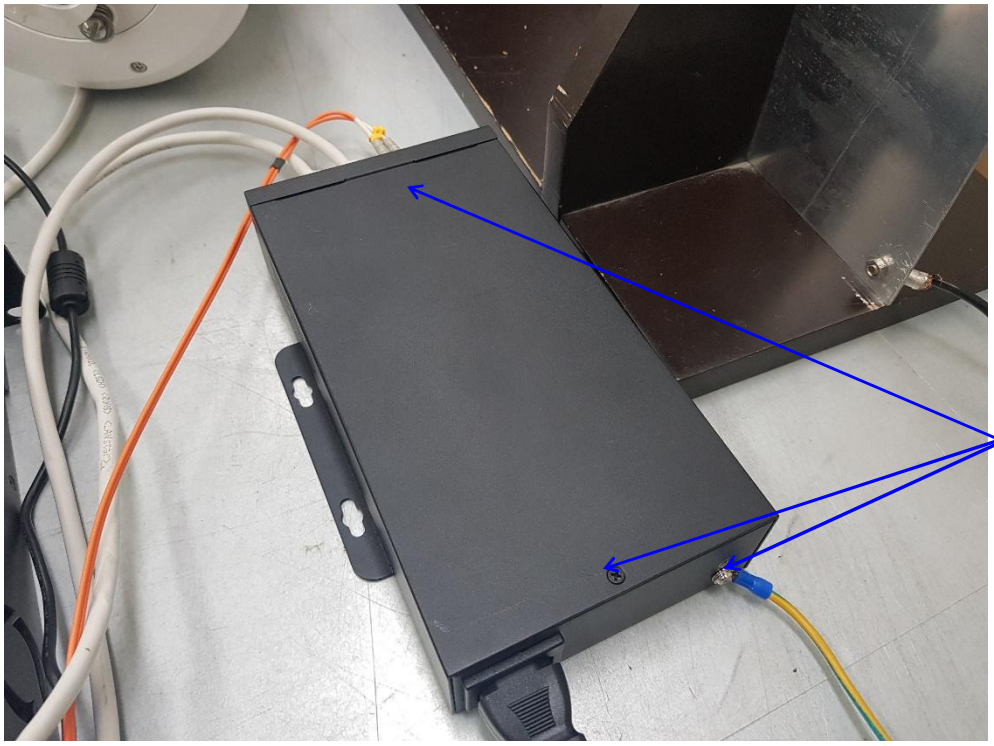
Notes: HCP: Horizontal coupling plane
VCP: Vertical coupling plane

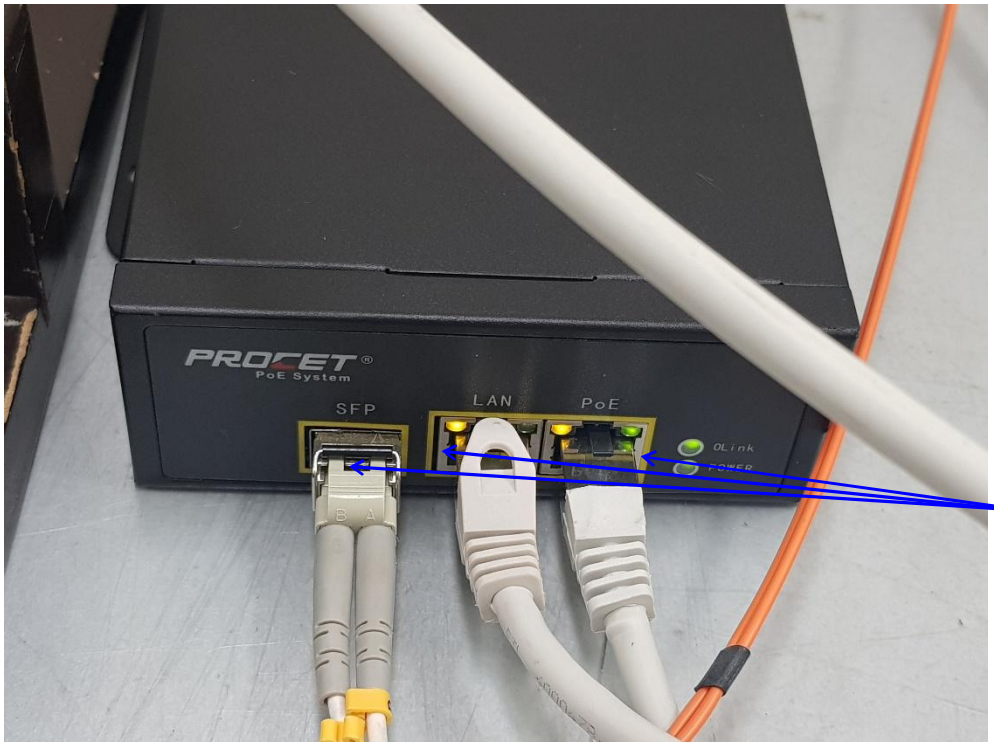
Required Performance Criteria: ☒ Complied

Location of Discharge:

Air
Contact







Test Data

Indirect Discharge

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

Direct Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	Enclosure	Air Discharge	Complied	-
2	Screws	Contact Discharge	Complied	-
3	RJ-45 Port	Air Discharge	Complied	-
4	Fiber PoE Injector Enclosure, Screw	Contact Discharge	Complied	-
5	Fiber PoE Injector Ports	Contact Discharge	Complied	-

Note: "Blank" = Not performed

Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.2 Radiated Electric Field Immunity

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

Test Date
Jun. 07, 2020

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	EMC32	R & S	9.12.00	-
☒	SIGNAL GENERATOR	SMB 100A	Rohde & Schwarz	108252	08, 06, 2020
☒	HIGH POWER DUAL AMP	SSA532	SUNGSAN	SSA532-001	-
☒	POWER METER	E4419B	Agilent	GB40203000	04, 20, 2021
☒	CW POWER SENSOR	E4412A	Agilent	US38488240	04, 20, 2021
☒	CW POWER SENSOR	E4412A	Agilent	MY41501662	04, 20, 2021
☒	STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	Schwarzbeck	9128ES-121	-
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 11, 2021

Test Conditions
Temperature: 24,5 ℃
Relative Humidity: 49,0 % R.H.
Atmospheric Pressure: 100,0 kPa

Test Specifications

Antenna Polarization: Horizontal & vertical unless indicated otherwise

Antenna Distance: ☒ 3 m

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

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

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

Frequency step: ☒ 1 % step

Dwell Time: ☐ 1 s ☒ 3 s

# of Sides Radiated: ☒ 4

Required Performance Criteria: ☒ Complied

Test Data

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

Note: "Blank" = Not performed

Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.3 Electrical Fast Transients/Bursts

Reference Standard
EN 61000-4-4:2012

Test Date
Jun. 09, 2020

Test Location
EMS-EFT: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.7	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 27, 2020
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 27, 2020
☒	CAPACITIVE COUPLING CLAMP	HFK	EM TEST	P1633183115	11, 27, 2020

Test Conditions
Temperature: 24,9 ℃
Relative Humidity: 49,6 % R.H.
Atmospheric Pressure: 99,8 ㎪

Test Specifications

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

Test Data

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

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

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

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

☒ Signal ports and telecommunication ports – Coupling Clamp used

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

Note: "Blank" = Not performed
Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.4 Surge Transients

Reference Standard
EN 61000-4-5:2014

Test Date
Jun. 09, 2020

Test Location
EMS-EFT: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.7	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 27, 2020
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 27, 2020
☒	CDN	CNV 508N1	EM TEST	P1610176296	11, 27, 2020

Test Conditions
Temperature: 24,9 ℃
Relative Humidity: 49,6 % R.H.
Atmospheric Pressure: 99,8 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

☒ Line to Line – Differential Mode

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

☒ Line to Earth – Common Mode

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

Signal Lines

☒ Line to Earth – Common Mode

Mode of Application	Coupling Method	Observations	
		(+) Surge (㎸)	(-) Surge (㎸)
LAN	CDN	Complied	Complied
	LINE	Complied	Complied

Note:"Blank" = Not performed
Observations:
Complied – No degradation of function

Test Results

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

Remarks

PASS Required Performance Criteria

3.5 Conducted Disturbance

Reference Standard
EN 61000-4-6:2014

Test Date
Jun. 09, 2020

Test Location
EMS-CS: Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	icd.control	EM TEST	5.3.7	-
☒	CONTINUOUS WAVE SIMULATOR	CWS 500N1	EM TEST	V0936105119	08, 06, 2020
☒	ATTENUATOR	ATT6	EM TEST	1208-34	08, 06, 2020
☒	CDN	CDN-M2/M3N	EM TEST	0909-06	08, 06, 2020
☒	CDN	CDN ST08A	TESEQ	43886	11, 25, 2020

Test Conditions
Temperature: 24,9 ℃
Relative Humidity: 49,6 % R.H.
Atmospheric Pressure: 99,8 kPa

Test Specifications
Frequency range: ☒ 150 ㎑ to 100 ㎒ ☐ 150 ㎑ to 80 ㎒

Voltage Level: ☐ 1 Vrms ☐ 3 Vrms
☒ 10 Vrms

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

Frequency step: ☒ 1 % step

Dwell Time: ☐ 1 s ☒ 3 s

Required Performance Criteria: ☒ Complied

Test Data

☒ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
L – N - PE	CDN	Complied

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	-	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
LAN	CDN	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
Jun. 09, 2020

Test Location
EMS-Voltage dip: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.7	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 27, 2020
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 27, 2020

Test Conditions
Temperature: 24,9 ℃
Relative Humidity: 49,6 % R.H.
Atmospheric Pressure: 99,8 kPa

Test Specifications & Observations/Remarks

- Voltage Dips and Short Interruptions

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

- Voltage variations

☒ Unom + 10 %	☒ 253.0 V (ac)	Complied
☒ Unom - 15 %	☒ 195.5 V (ac)	Complied

Observations:
Complied – No degradation of function
Degradation - See "Remarks "

Test Results

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

Remarks

-During the test(100%, 250cycle), EUT was turned off but after the test, it was recovered by no operator's intervention.

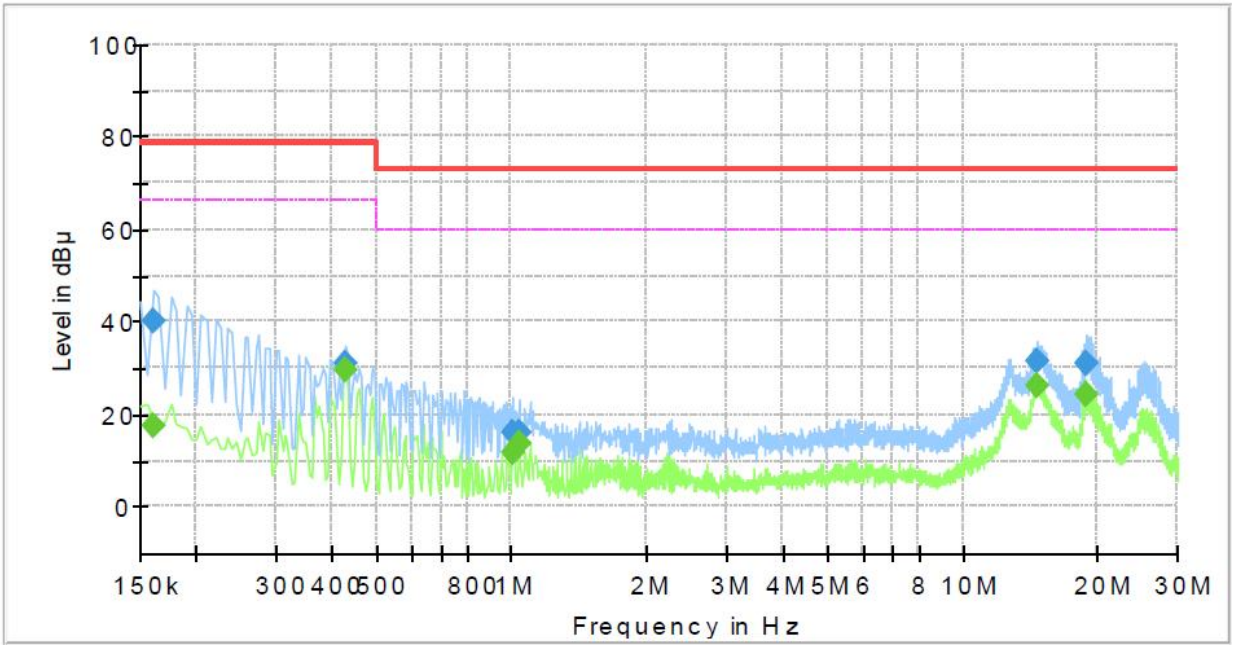
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	XNP-9300RW
Phase:	-
Mode:	H
Operator Name:	KES



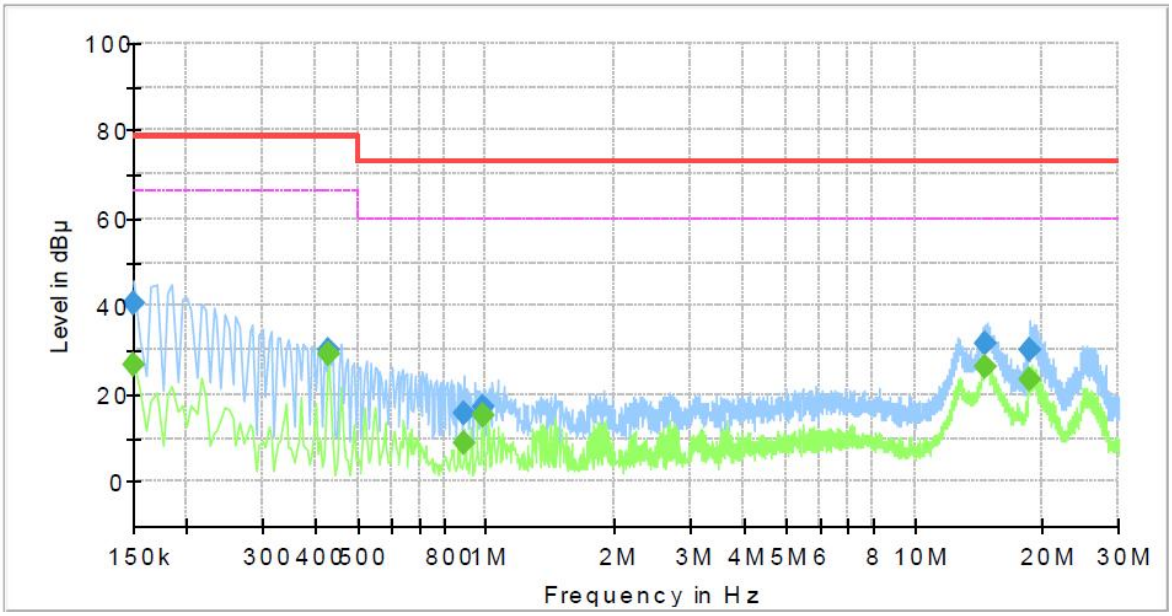
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	17.39	66.00	48.61	1000.0	9.000	L1	19.5
0.160000	40.03	---	79.00	38.97	1000.0	9.000	L1	19.5
0.430000	---	29.77	66.00	36.23	1000.0	9.000	L1	19.6
0.430000	31.14	---	79.00	47.86	1000.0	9.000	L1	19.6
1.005000	---	11.80	60.00	48.20	1000.0	9.000	L1	19.7
1.005000	16.02	---	73.00	56.98	1000.0	9.000	L1	19.7
1.040000	---	13.40	60.00	46.60	1000.0	9.000	L1	19.7
1.040000	16.28	---	73.00	56.72	1000.0	9.000	L1	19.7
14.590000	---	25.96	60.00	34.04	1000.0	9.000	L1	20.1
14.590000	31.28	---	73.00	41.72	1000.0	9.000	L1	20.1
18.800000	---	24.04	60.00	35.96	1000.0	9.000	L1	20.2
18.800000	30.82	---	73.00	42.18	1000.0	9.000	L1	20.2

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	XNP-9300RW
Phase:	-
Mode:	N
Operator Name:	KES



Final_Result

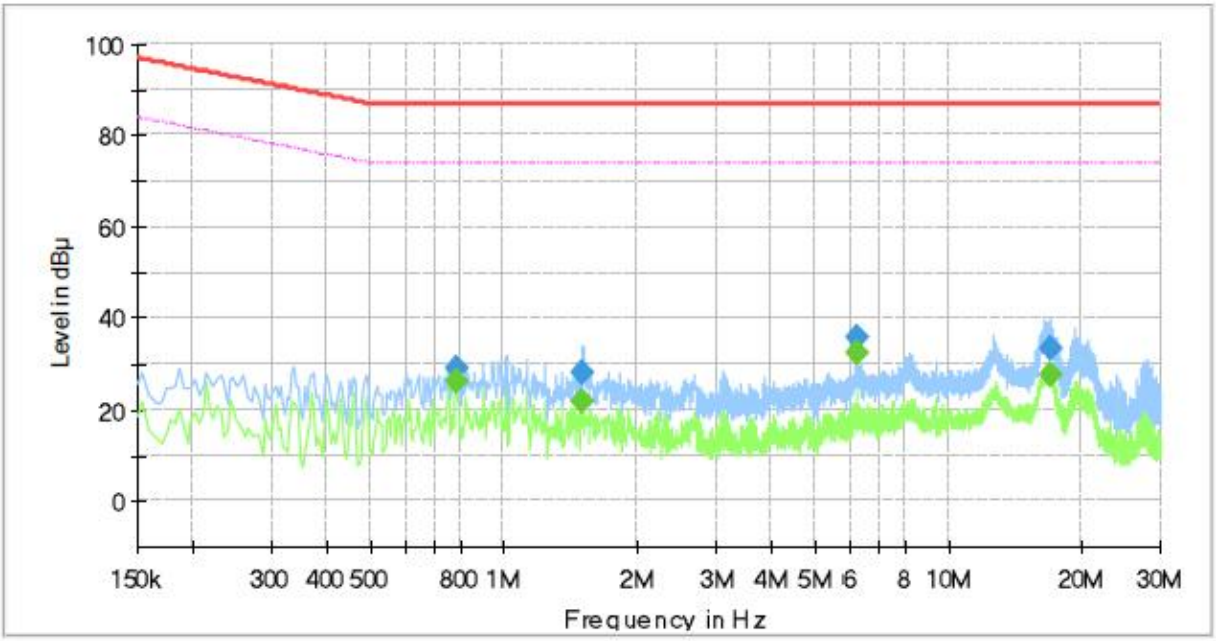
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	26.63	66.00	39.37	1000.0	9.000	N	19.5
0.150000	40.43	---	79.00	38.57	1000.0	9.000	N	19.5
0.430000	---	29.11	66.00	36.89	1000.0	9.000	N	19.6
0.430000	30.16	---	79.00	48.84	1000.0	9.000	N	19.6
0.885000	---	9.00	60.00	51.00	1000.0	9.000	N	19.6
0.885000	15.69	---	73.00	57.31	1000.0	9.000	N	19.6
0.980000	---	15.10	60.00	44.90	1000.0	9.000	N	19.7
0.980000	17.15	---	73.00	55.85	1000.0	9.000	N	19.7
14.630000	---	26.10	60.00	33.90	1000.0	9.000	N	20.1
14.630000	31.41	---	73.00	41.59	1000.0	9.000	N	20.1
18.625000	---	23.29	60.00	36.71	1000.0	9.000	N	20.2
18.625000	30.08	---	73.00	42.92	1000.0	9.000	N	20.2

♦ 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))

Conducted Emissions at Telecommunication Ports
[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-9300RW
Mode :	-
Speed :	100 Mbps
Operator Name:	KES

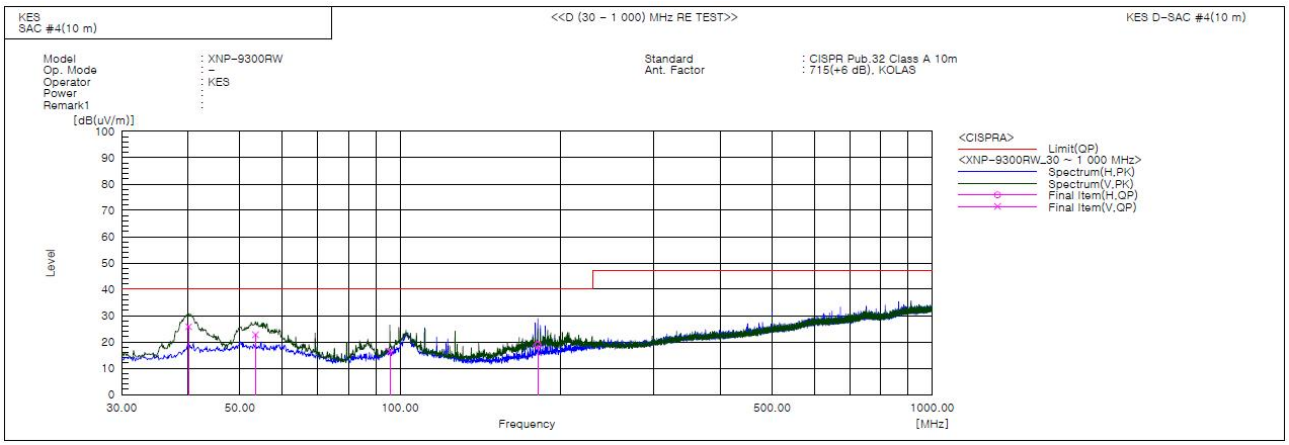


Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.782000	---	26.25	74.00	47.75	1000.0	9.000	Single Line	19.6
0.782000	29.02	---	87.00	57.98	1000.0	9.000	Single Line	19.6
1.498000	---	21.90	74.00	52.10	1000.0	9.000	Single Line	19.6
1.498000	28.25	---	87.00	58.75	1000.0	9.000	Single Line	19.6
6.250000	---	32.23	74.00	41.77	1000.0	9.000	Single Line	19.7
6.250000	35.68	---	87.00	51.32	1000.0	9.000	Single Line	19.7
16.902000	---	27.52	74.00	46.48	1000.0	9.000	Single Line	20.2
16.902000	33.58	---	87.00	53.42	1000.0	9.000	Single Line	20.2

♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

Radiated Electric Field Emissions(Below 1 ㎓)

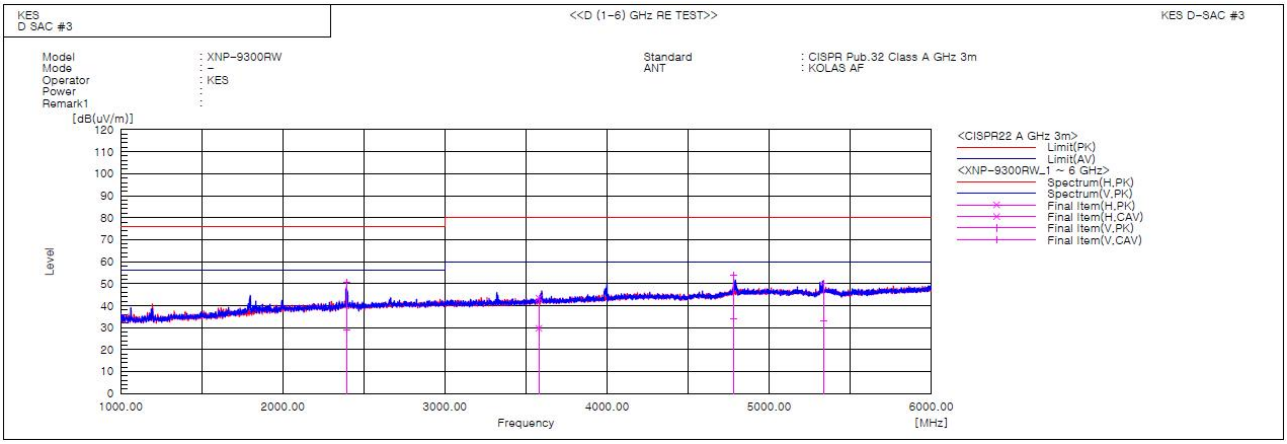


Final Result

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	40.064	V	48.8	-23.0	25.8	40.0	14.2	100.0	327.0	
2	53.523	V	44.5	-21.7	22.8	40.0	17.2	127.0	103.0	
3	95.718	V	39.7	-23.3	16.4	40.0	23.6	115.0	252.0	
4	181.563	H	42.7	-23.8	18.9	40.0	21.1	377.0	274.0	

♦ Calculation – SEMI ANECHOIC CHAMBER #4(10 m)
Result(QP) [㏈(㎶/m)] = (Reading(QP)[㏈(㎶)] + c.f[㏈(1/m)]
Margin(QP)[㏈] = Limit[㏈(㎶/m)] - Result(QP) [㏈(㎶/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 ㎓)



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	2396.519	V	51.2	29.2	-0.4	50.8	28.8	76.0	56.0	25.2	27.2	100.0	218.7	
2	3579.863	H	40.5	26.9	2.8	43.3	29.7	80.0	60.0	36.7	30.3	100.0	117.8	
3	4782.582	V	46.0	26.1	7.6	53.6	33.7	80.0	60.0	26.4	26.3	100.0	166.2	
4	5332.789	V	41.8	24.6	8.5	50.3	33.1	80.0	60.0	29.7	26.9	100.0	225.6	

♦ Calculation
Result(PK/CAV) [㏈(㎶/m)] = (Reading(PK/CAV)[㏈(㎶)] + c.f[㏈(1/m)]
Margin(PK/CAV)[㏈] = Limit[㏈(㎶/m)] - Result(PK/CAV) [㏈(㎶/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

Harmonic Current Emissions and Voltage Fluctuations and Flicker

Average harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	0.084			
2	0.003	0.323	1.080	n/a
3	0.075	3.249	2.300	PASS
4	0.005	1.230	0.430	PASS
5	0.072	6.336	1.140	PASS
6	0.004	1.477	0.300	n/a
7	0.069	8.952	0.770	PASS
8	0.004	1.815	0.230	n/a
9	0.064	16.082	0.400	PASS
10	0.005	2.561	0.184	n/a
11	0.059	17.937	0.330	PASS
12	0.004	2.577	0.153	n/a
13	0.054	25.529	0.210	PASS
14	0.003	2.236	0.131	n/a
15	0.048	31.711	0.150	PASS
16	0.002	2.170	0.115	n/a
17	0.041	31.125	0.132	PASS
18	0.002	2.293	0.102	n/a
19	0.034	29.123	0.118	PASS
20	0.002	2.089	0.092	n/a
21	0.028	17.465	0.161	PASS
22	0.001	1.692	0.084	n/a
23	0.022	15.270	0.147	PASS
24	0.001	1.541	0.077	n/a
25	0.017	12.626	0.135	PASS
26	0.001	1.277	0.071	n/a
27	0.012	9.802	0.125	PASS
28	0.001	1.282	0.066	n/a
29	0.008	7.184	0.116	PASS
30	0.001	1.381	0.061	n/a
31	0.005	4.750	0.109	PASS
32	0.001	1.301	0.058	n/a
33	0.003	2.906	0.102	n/a
34	0.001	1.352	0.054	n/a
35	0.002	2.558	0.096	n/a
36	0.001	1.301	0.051	n/a
37	0.003	3.160	0.091	n/a
38	0.001	1.434	0.048	n/a
39	0.003	3.744	0.087	n/a
40	0.001	1.431	0.046	n/a

Note: Harmonic currents less than 0.6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.
* Application of limits for average is 100% except for odd harmonics from 21 to 39, where 150% applies.

Test Data - Harmonics (continued)

Maximum harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	0.084			
2	0.004	0.237	1.620	n/a
3	0.075	2.169	3.450	PASS
4	0.006	0.906	0.645	PASS
5	0.072	4.229	1.710	PASS
6	0.005	1.083	0.450	n/a
7	0.069	5.978	1.155	PASS
8	0.005	1.331	0.345	n/a
9	0.064	10.736	0.600	PASS
10	0.005	1.889	0.276	PASS
11	0.059	12.020	0.495	PASS
12	0.004	1.917	0.230	n/a
13	0.054	17.064	0.315	PASS
14	0.003	1.680	0.197	n/a
15	0.048	21.217	0.225	PASS
16	0.003	1.643	0.173	n/a
17	0.041	20.811	0.199	PASS
18	0.003	1.726	0.153	n/a
19	0.035	19.582	0.178	PASS
20	0.002	1.583	0.138	n/a
21	0.028	17.571	0.161	PASS
22	0.002	1.297	0.125	n/a
23	0.023	15.465	0.147	PASS
24	0.001	1.188	0.115	n/a
25	0.017	12.727	0.135	PASS
26	0.001	1.020	0.106	n/a
27	0.012	9.927	0.125	PASS
28	0.001	0.966	0.099	n/a
29	0.008	7.276	0.116	PASS
30	0.001	1.018	0.092	n/a
31	0.005	4.864	0.109	PASS
32	0.001	0.980	0.086	n/a
33	0.003	3.000	0.102	n/a
34	0.001	1.054	0.081	n/a
35	0.003	2.868	0.096	n/a
36	0.001	0.967	0.077	n/a
37	0.003	3.565	0.091	n/a
38	0.001	1.054	0.073	n/a
39	0.003	3.986	0.087	n/a
40	0.001	1.070	0.069	n/a

Note: Harmonic currents less than 0.6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.
* Application of limits for average is 100% except for odd harmonics from 21 to 39, where 150% applies.

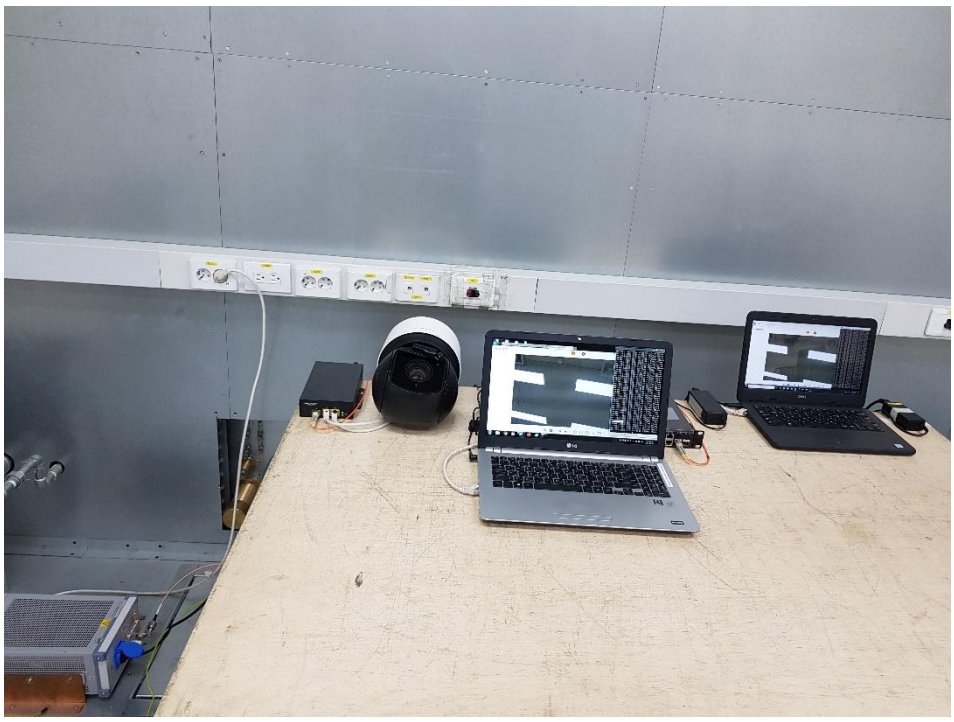
Test Data - Voltage Fluctuations

Maximum Flicker results

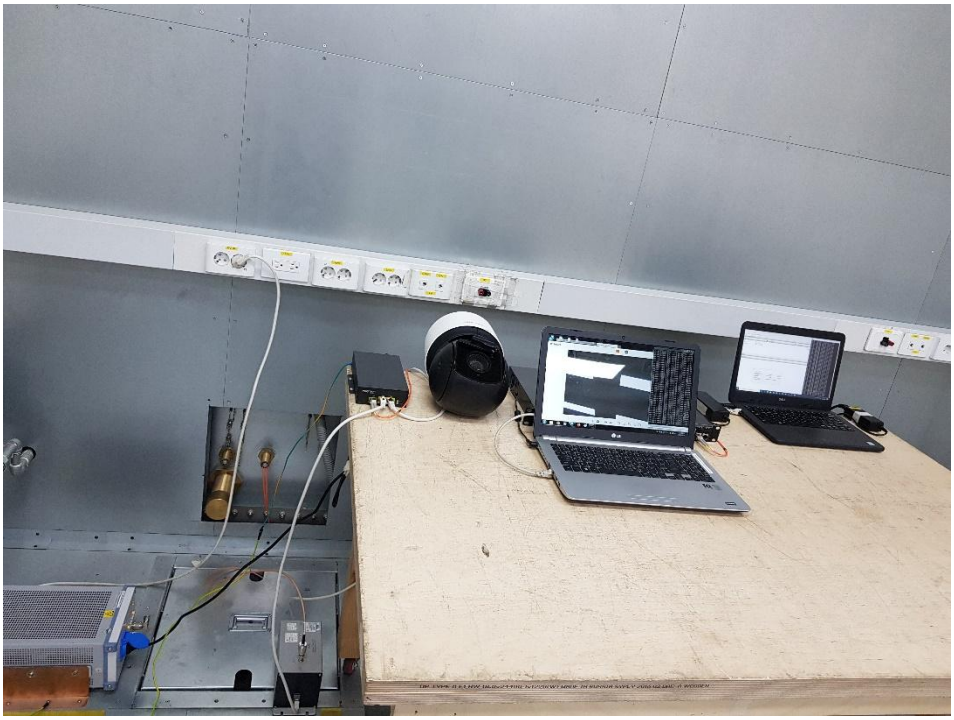
Flicker Measurements					
	Plt	**Max Pst**	**Max Dc**	**Max Dmax**	**Max Tmax**
Line 1:	0.028	0.028	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

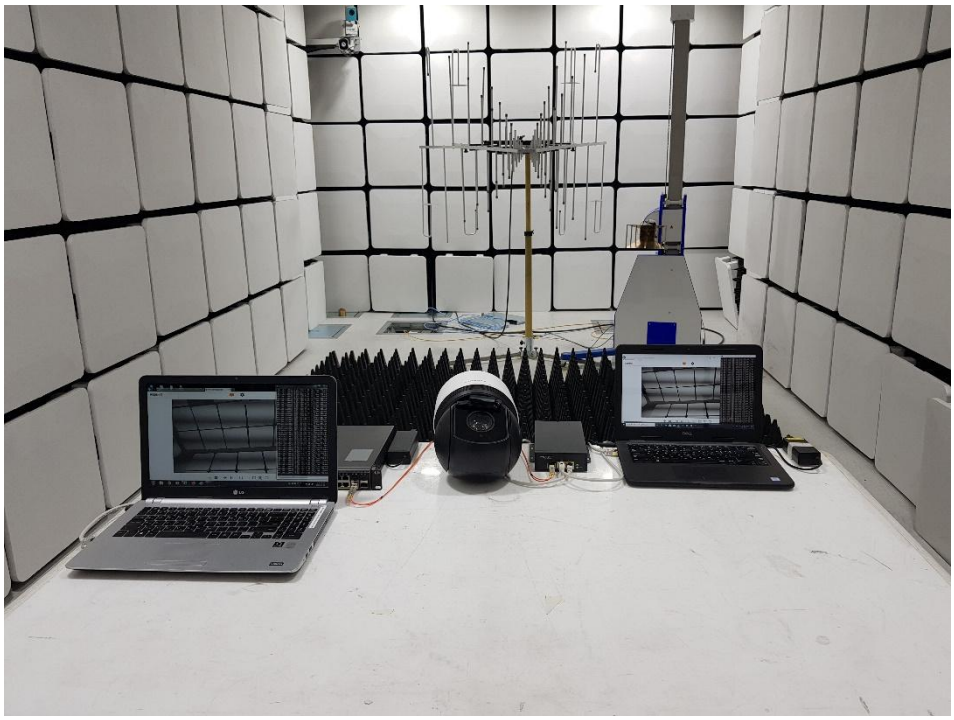


Conducted Emissions at Telecommunication Ports



Radiated Electric Field Emissions(Below 1 ㎓)

Radiated Electric Field Emissions(Above 1 ㎓)



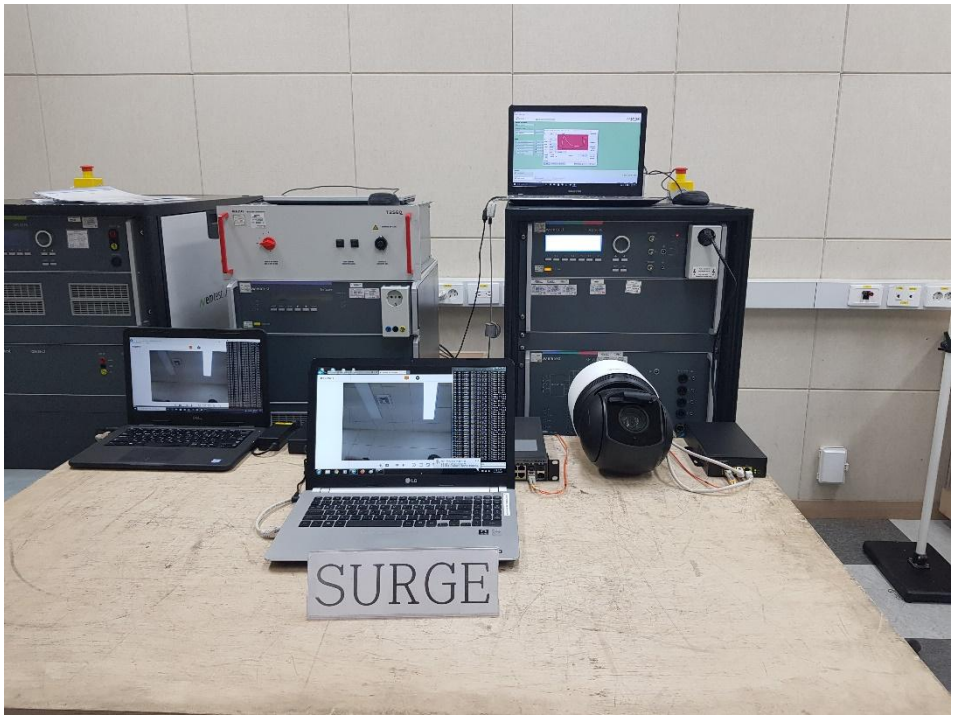
Harmonic Current Emissions and Voltage Fluctuations and Flicker

Electrostatic Discharge

Radiated Electric Field Immunity

Electrical Fast Transients/Bursts

Surge Transients



Conducted Disturbance

Voltage Dips and Short Interruptions

EUT External Photographs

(Top)

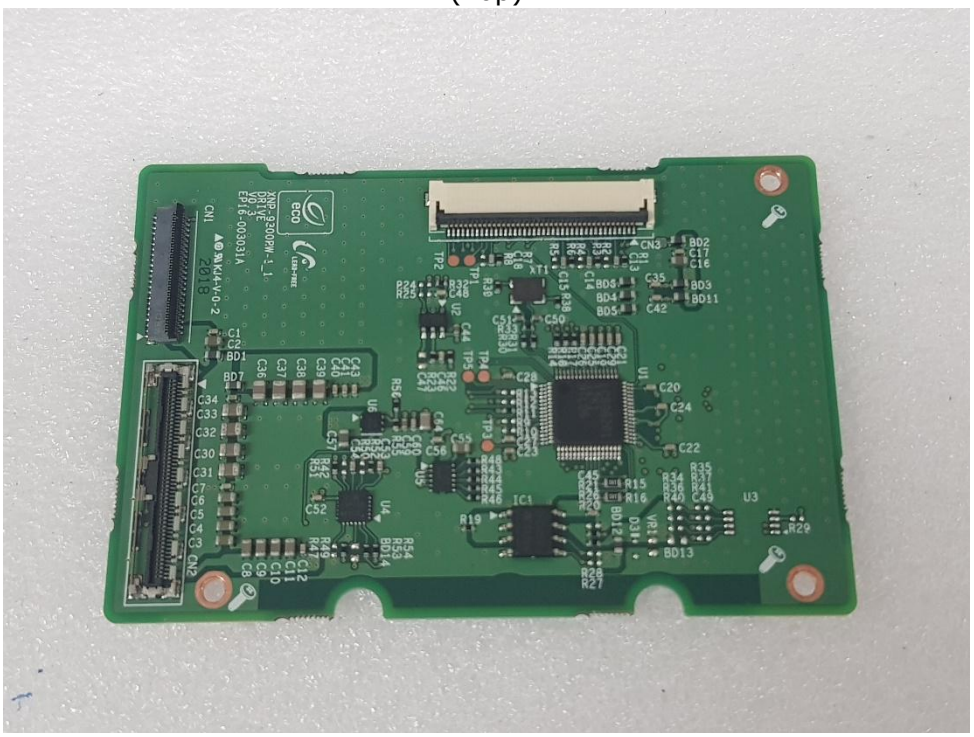
(Bottom)

EUT Internal Photographs

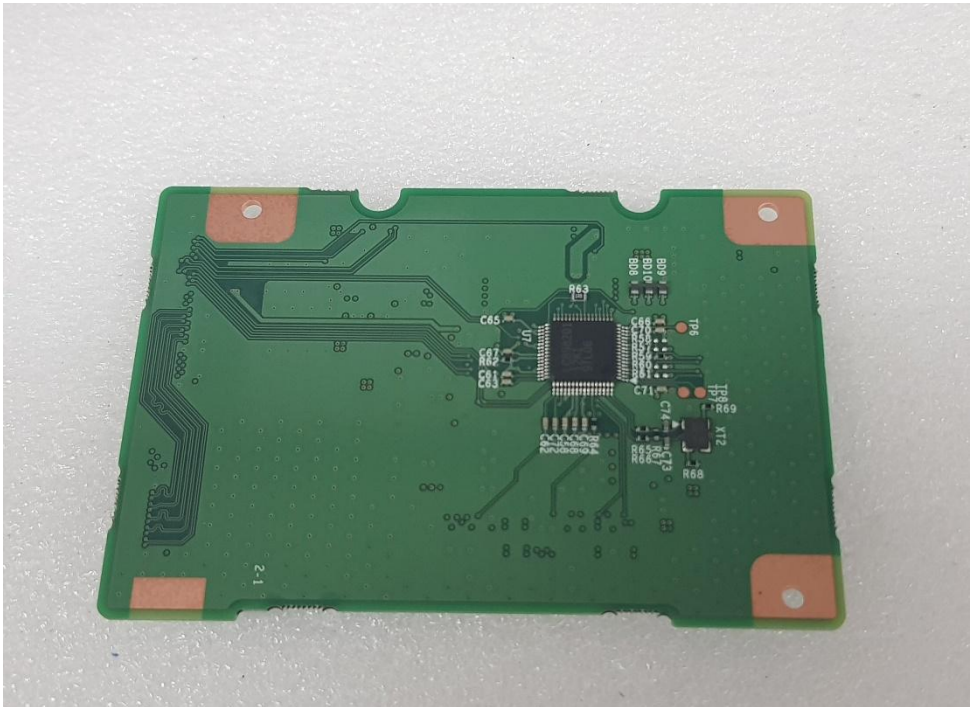
(Internal View)

EUT Internal View – DRIVE Board

(Top)

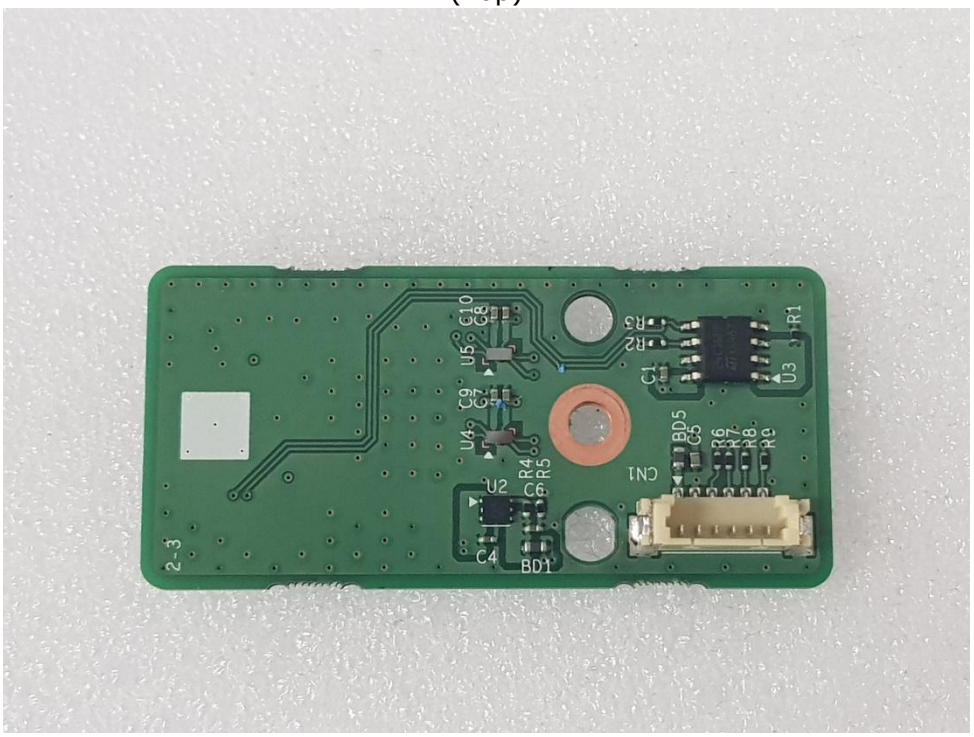


(Bottom)

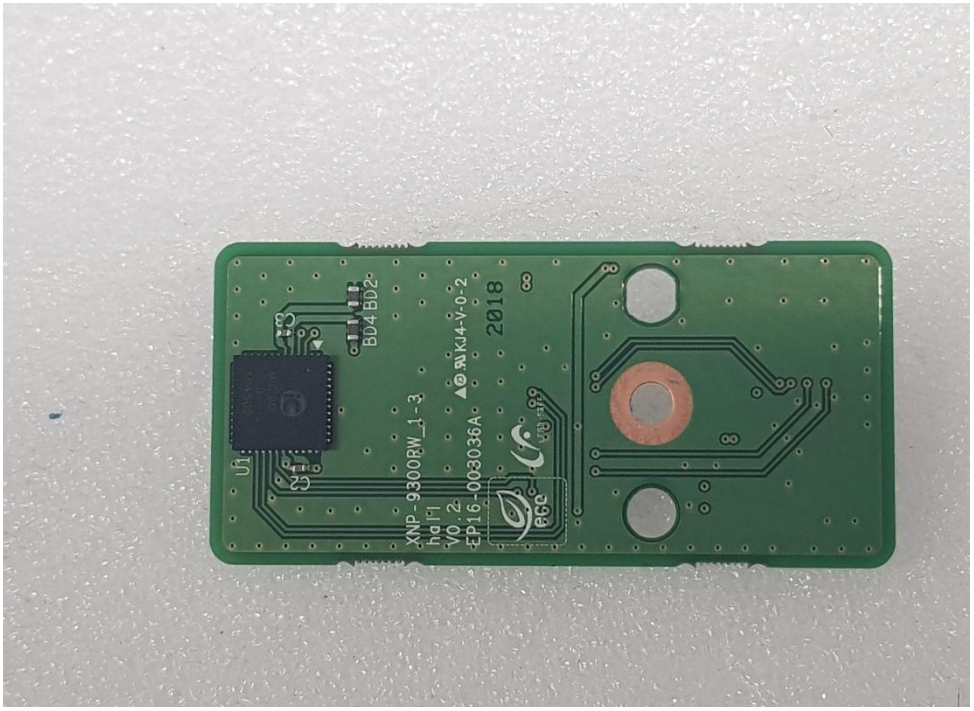


EUT Internal View – HALL Board

(Top)

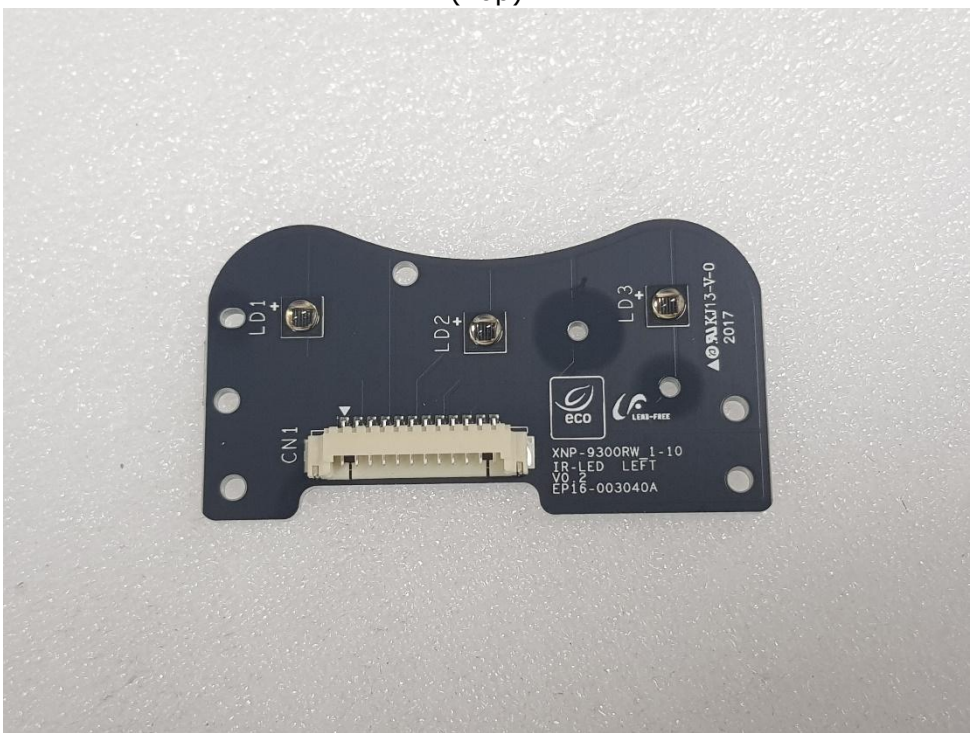


(Bottom)



EUT Internal View – IR-LED LEFT Board

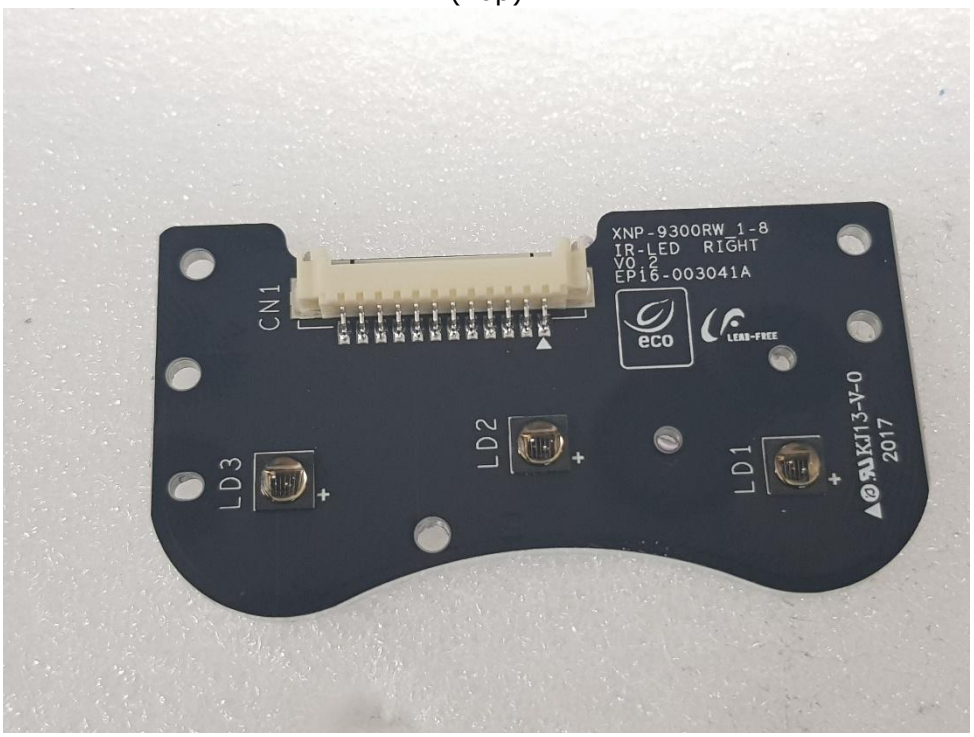
(Top)



(Bottom)

EUT Internal View – IR-LED RIGHT Board

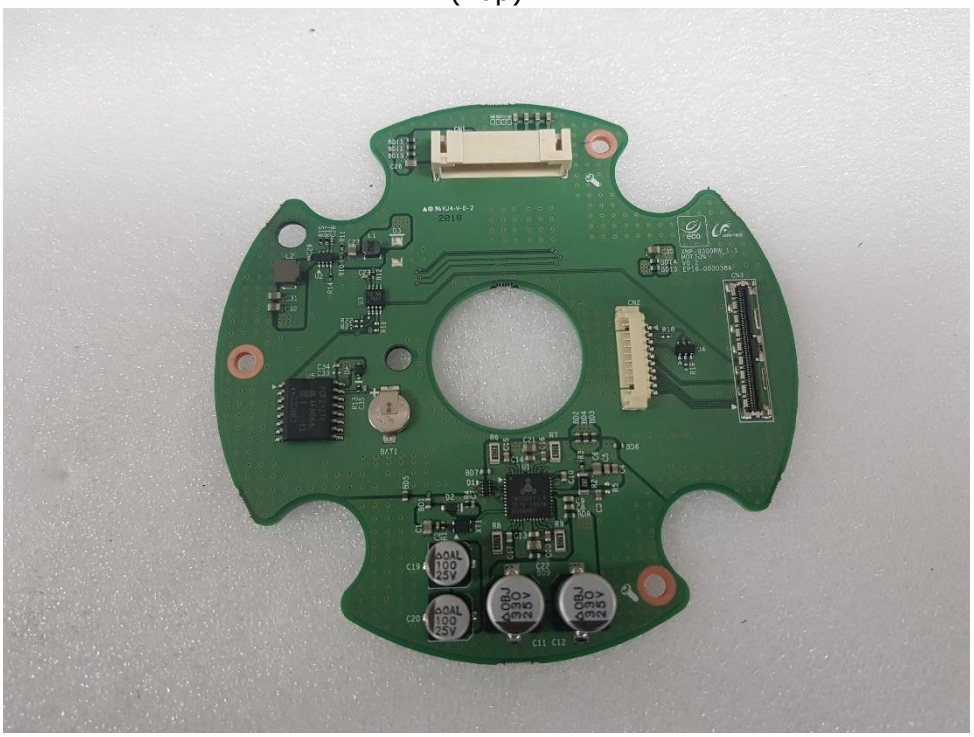
(Top)



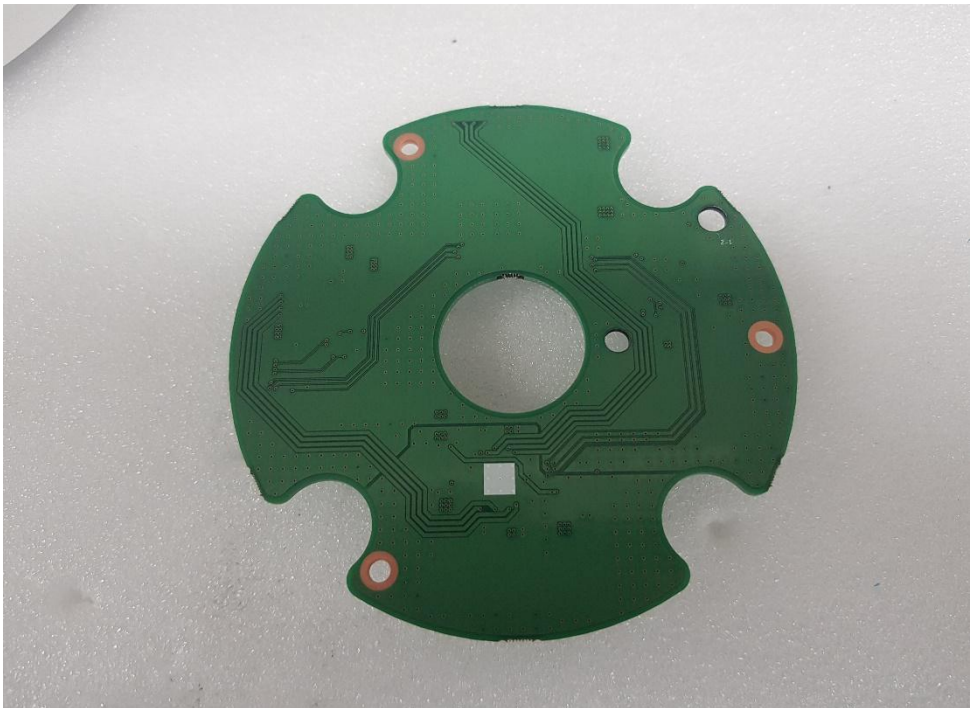
(Bottom)

EUT Internal View – MOTION Board

(Top)

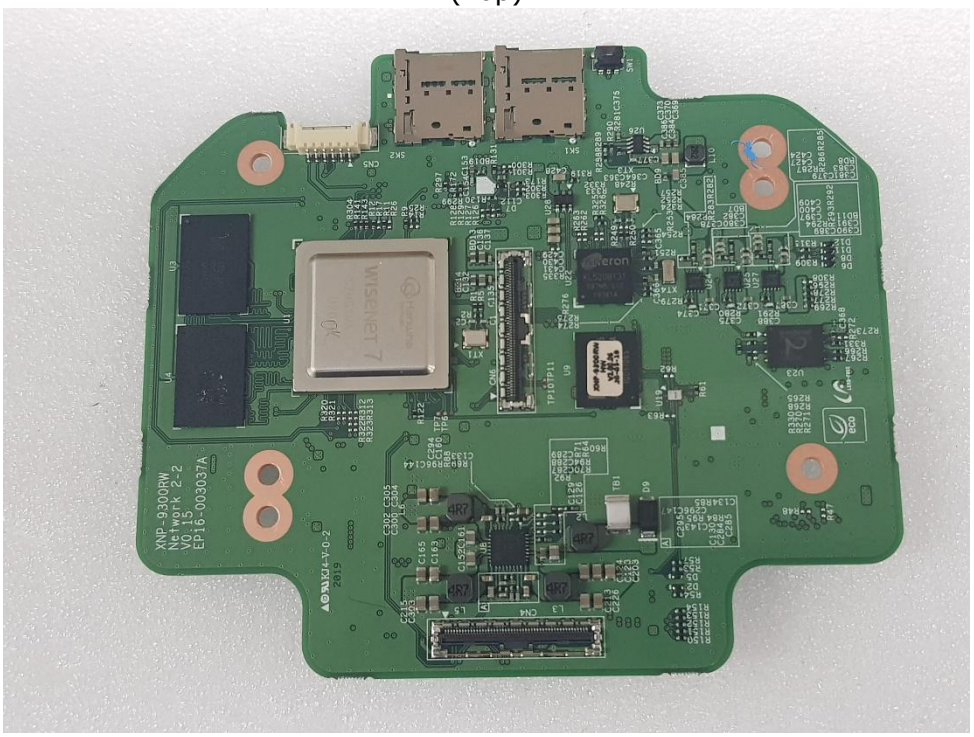


(Bottom)

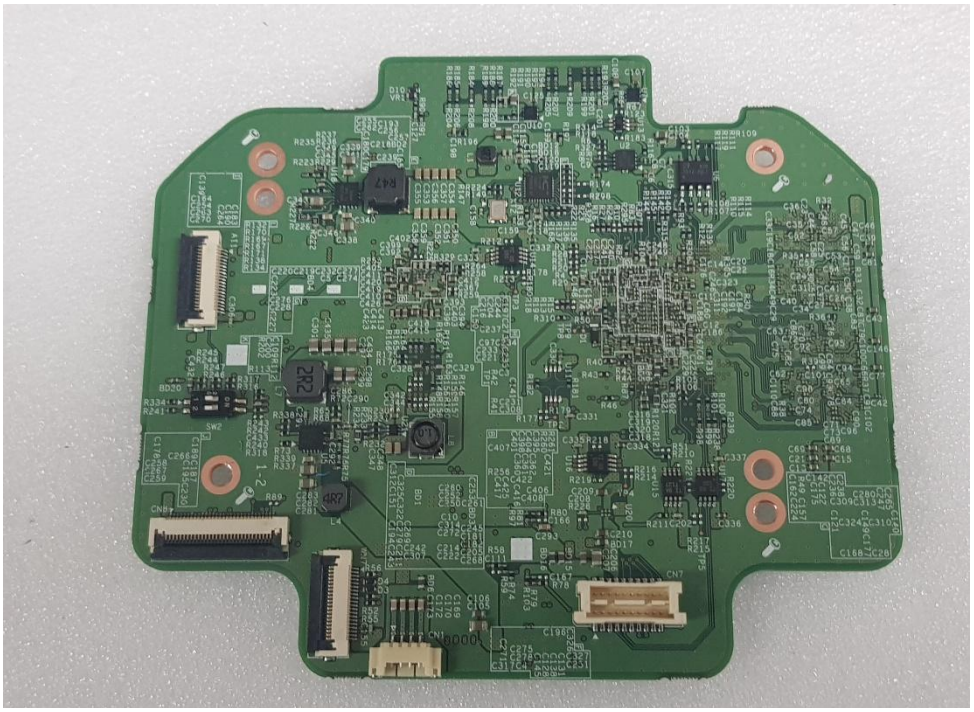


EUT Internal View – NETWORK Board

(Top)

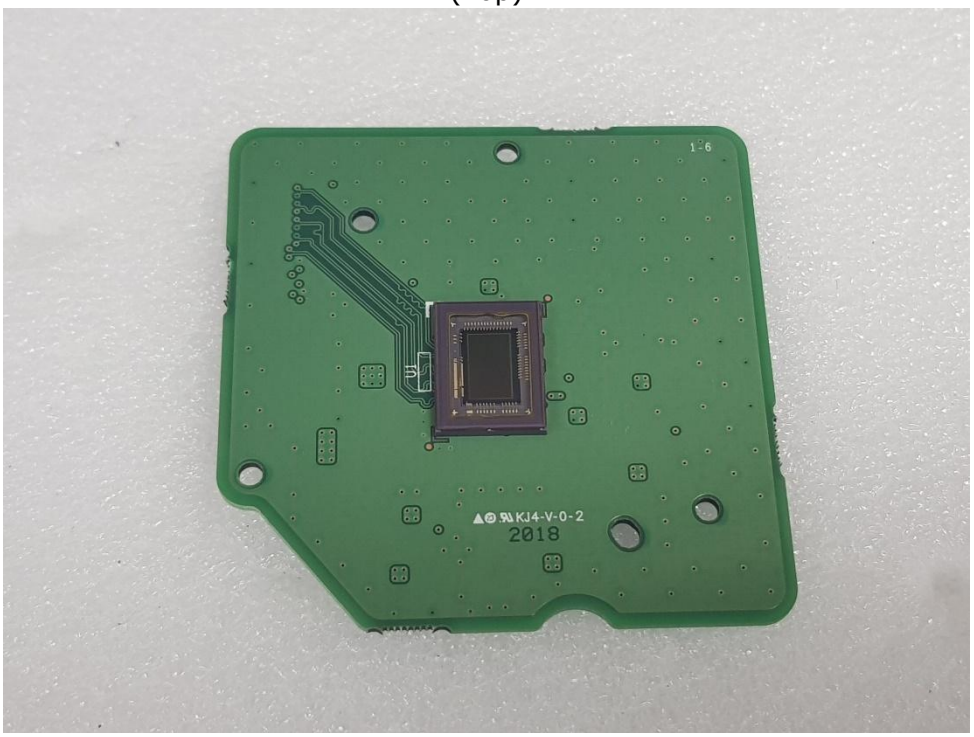


(Bottom)

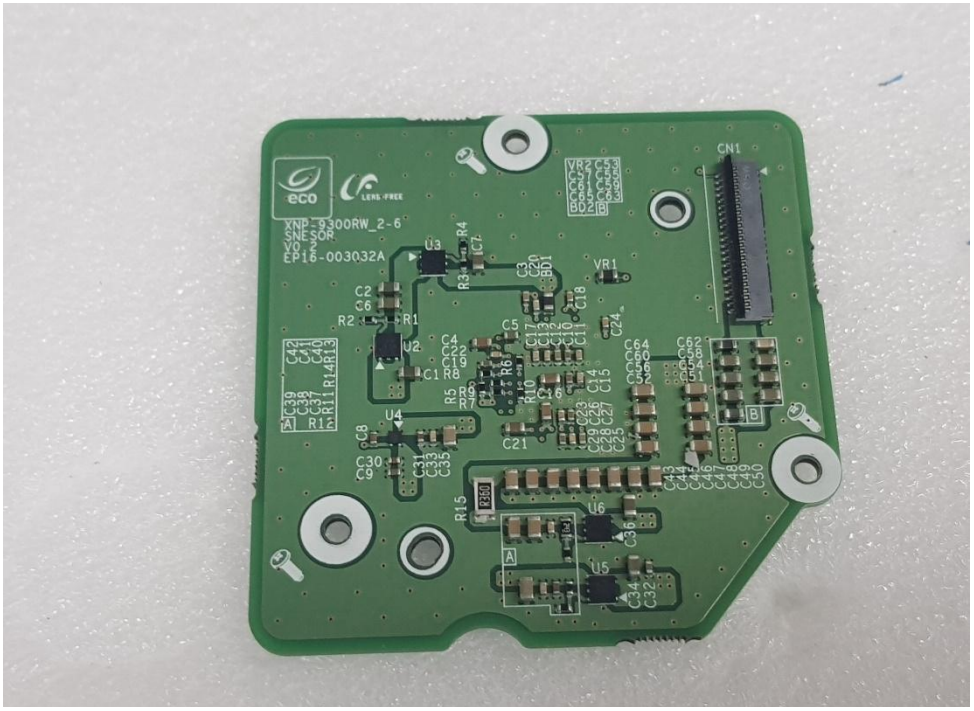


EUT Internal View – SENSOR Board 2

(Top)

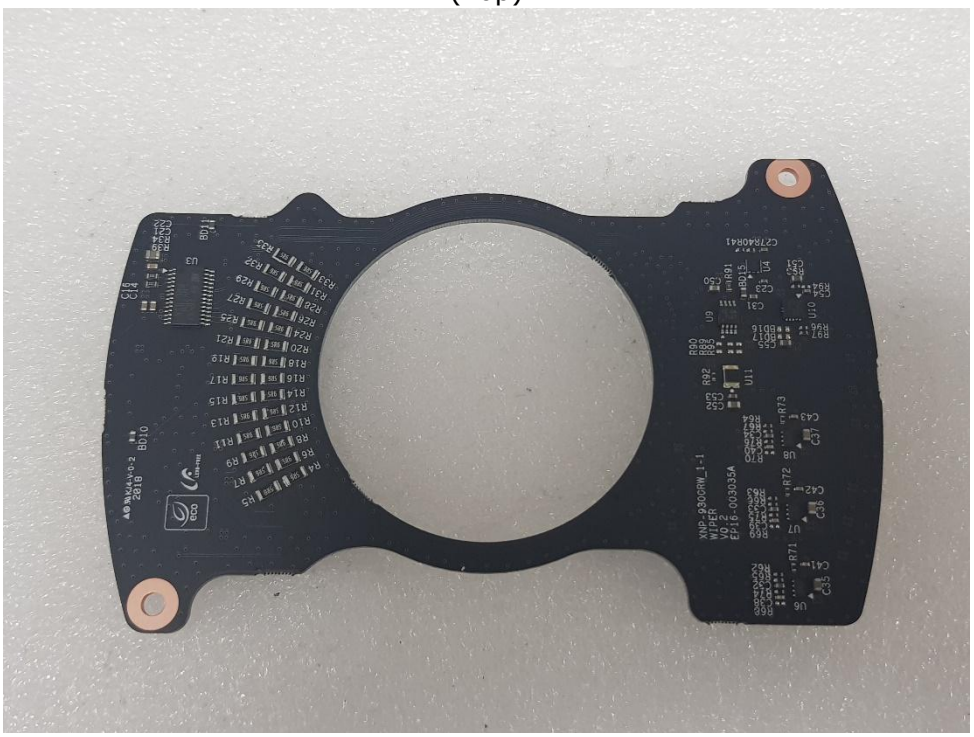


(Bottom)

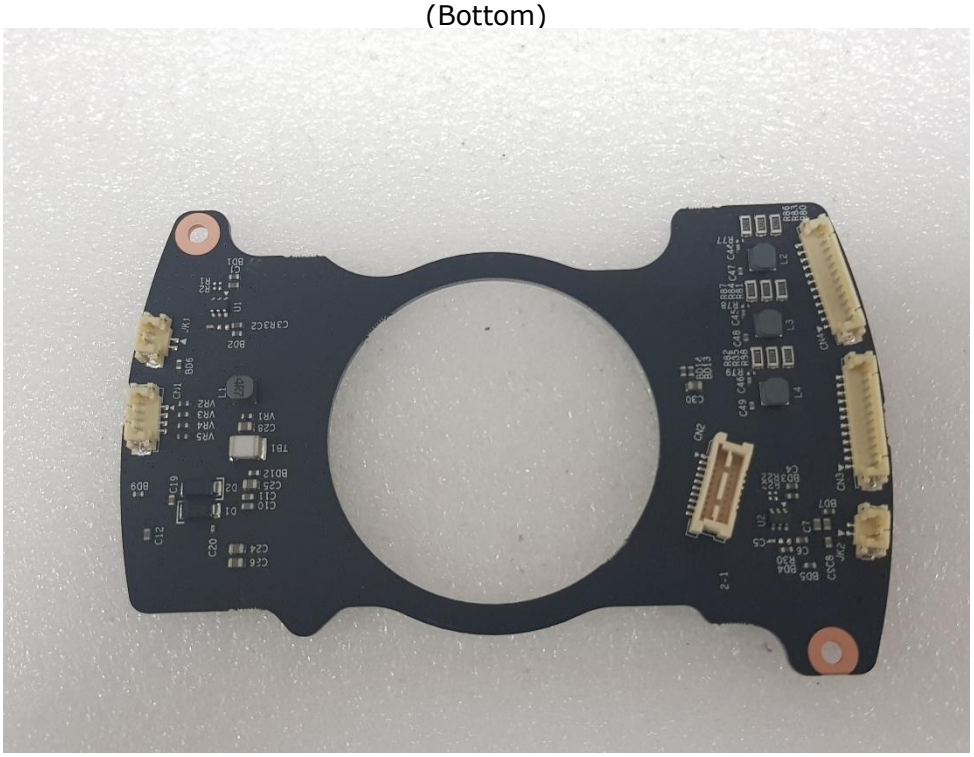


EUT Internal View – WIPER Board 3

(Top)

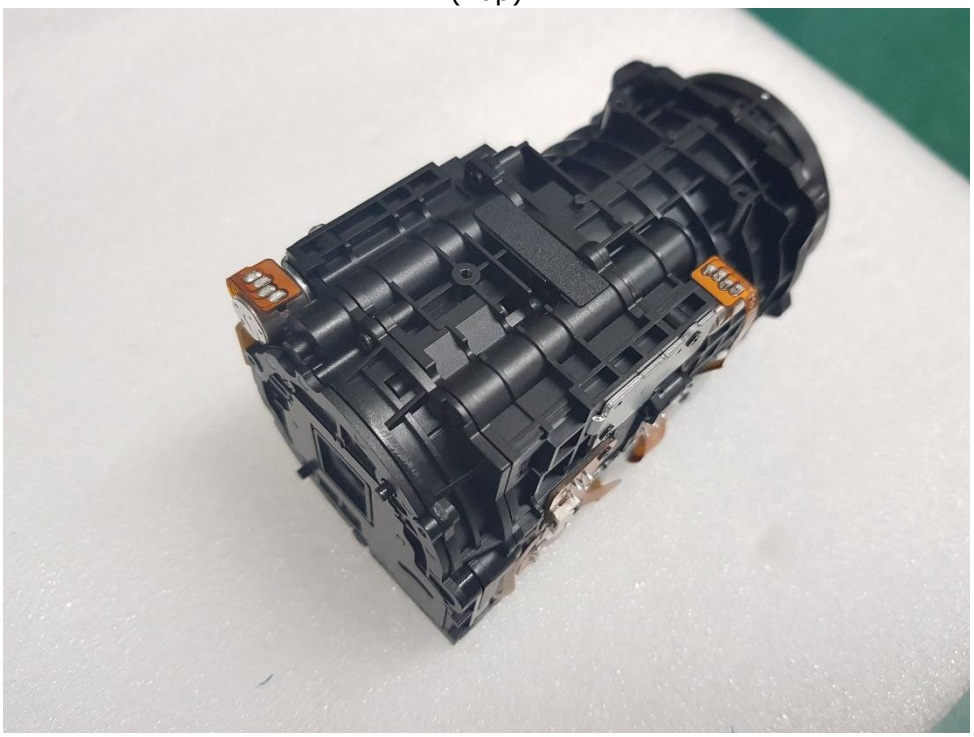


(Bottom)



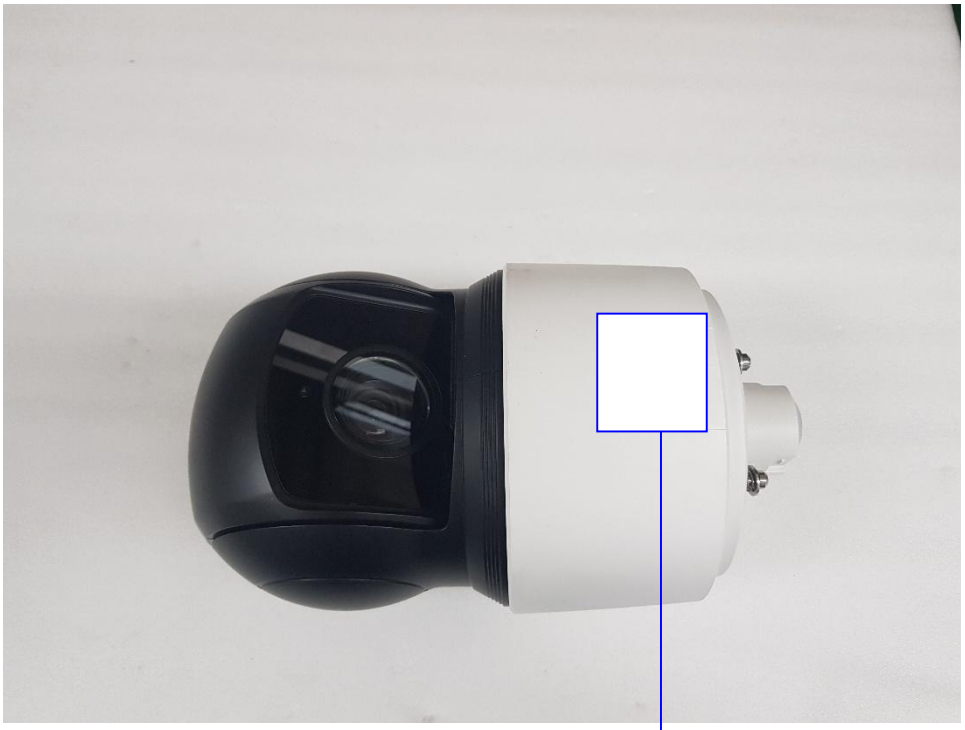
EUT Internal View – LENS

(Top)



(Bottom)

Label and Location



NETWORK CAMERA

Model No : XNP-9300RW

Manufacturer : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.

Made in Vietnam