



EMC TEST REPORT For VCCI

Test Report No. : KES-E1-17T0315
Date of Issue : May. 03, 2017
Product name : NETWORK CAMERA
Model/Type No. : XNO-6120RN
Variant Model : -
Applicant : Hanwha Techwin Co., Ltd.
Applicant Address : 1204, Changwon-daero, Seongsan-gu Changwon-si,
Gyeongsangnam-do, Korea
Manufacturer : Hanwha Techwin (Tianjin) Co., Ltd
Manufacturer Address : No.11 Weiliu Rd, Micro-Electronic Industrial
Park, TEDA, Tianjin, 300385, People's Republic of China.
Date of Receipt : Apr. 14, 2017
Test date : Apr. 29, 2017
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Young Suk, Song
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

**KES Co., Ltd.**

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

Test report No.:
KES-E1-17T0315
Page (2) of (52)

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
May. 03, 2017	KES-E1-17T0315	Issued

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



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	7
1.6	External I/O Cabling	8
1.7	EUT Operating Mode(s)	9
1.8	Configuration.....	10
1.9	Calibration Details of Equipment Used for Measurement	12
1.10	Test Facility	12
1.11	Laboratory Accreditations and Listings	12
2.0	Test Regulations.....	13
2.1	Conducted Emissions 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
APPENDIX A – TEST DATA.....		19
Conducted Emissions at Mains Power Ports.....		19
Conducted Emissions at Telecommunication Ports		21
Radiated Electric Field Emissions(Below 1 GHz)		27
Radiated Electric Field Emissions(Above 1 GHz)		29
Test Setup Photos and Configuration		41
Conducted Voltage Emissions		41
Conducted Telecommunication Emissions		42
Radiated Electric Field Emissions(Below 1 GHz)		43
Radiated Electric Field Emissions(Above 1 GHz)		44
EUT External Photographs.....		45
EUT Internal Photographs		46



1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/2.8" 2M CMOS
Total Pixels	1945(H) x 1109(V) 2.16M
Effective Pixels	1945(H) x 1097(V) 2.13M
Scanning System	Progressive
Min. Illumination	Color : 0.03 Lux (1/30sec, F1.6) B/W : 0 Lux (IR LED On)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation USB : Micro USB type B, 1280x720, for installation
Lens	
Focal Length (Zoom Ratio)	5.2~62.4mm(Optical 12X)
Max. Aperture Ratio	F1.6 (Wide) ~ F3.0(Tele)
Angular Field of View	W : 54.58(H) X 32.19(V) X 61.40(D) T : 5.30(H) X 3.00(V) X 6.06(D)
Min. Object Distance	1.5m
Focus Control	Auto / Manual / One Push
Lens Type	DC Auto Iris
Mount Type	Board-in type
Operational	
Viewable Length	70m
Camera Title	Off / On (Displayed up to 85 characters) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale by Resolution
Day & Night	Auto (ICR) / Color / B/W / External / Schedule
Backlight Compensation	Off / BLC / HLC(Masking/Dimming), WDR
Wide Dynamic Range	150dB
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	SSNR5 (2D+3D Noise Filter) (Off / On)
Digital Image Stabilization	Off / On
Defog	Auto / Manual / Off
Motion Detection	Off/ On(8ea, 8point Polygonal zones)
Privacy Masking	Off / On (32ea, Rectangle zones) - Color : Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor (included Mercury & Sodium)
Contrast	level adjustment
LDC	On/Off (5 levels with Min/Max)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
Digital PTZ	24X
Preset	300ea
Rotate Image	Flip : On/Off Mirror : On/Off Hallway : 90° / 270°
Video&Audio Analytics	Tampering, Loitering, Directional Detection, Defocus Detection, Fog Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection, Motion Detection, Sound Classification
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio Analytics, Network Disconnect

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.



KES Co., Ltd.

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

Test report No.:

KES-EI-17T0315

Page (5) of (52)

Alarm events	File upload via FTP, E-Mail Notification via E-Mail local storage(SD/SDHC/SDXC) or NAS recording at Event 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.265/H.264 (MPEG-4 Part 10/AVC) : Main/Baseline/High Motion JPEG
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.264/H.265 : Max 60fps at all resolutions Motion JPEG : Max. 30fps at all resolutions
Smart Codec	Manual Mode (area-based : 5EA)
WiseStream II	support
Video Quality Adjustment	H.264/H.265/MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.264/H.265 : CBR or VBR Motion JPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10 Profiles)
Audio Compression Format	G.711 u-law /G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 16KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast Mode
Edge Storage	SD/SDHC/SDXC 2slot (up to 512 GB) - Continuous recording(1'st slot to 2'nd slot) - Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS(Network Attached Storage) Local PC for Instant Recording
Application Programming Interface	ONVIF Profile S/G SUNAPI 2.0(HTTP API) Wisenet Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish,, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS: Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer Supported Browser: Google Chrome 56, MS Edge 39, Mozilla Firefox 49(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)

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.

**KES Co., Ltd.**

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

Test report No.:
KES-EI-17T0315
Page (6) of (52)

Central Management Software	SmartViewer
Environmental	
Operating Temperature / Humidity	-40°C ~ +55°C (-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -35°C
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP67, IP66, NEMA 4X
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	AC24V, DC12V, PoE (IEEE802.3af, Class3)
Power Consumption	24V AC : Max 14.5W 12V DC : Max 12.5W PoE : Max 12.95W
Mechanical	
Color / Material	DARK GRAY / ALUMINIUM
Dimension (WxHxD)	147.5mm x 368.6mm
Weight	2,175g

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.



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

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNO-6120RN	-	Hanwha Techwin (Tianjin) Co.,Ltd.	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook	RV518	HTK991NC600187E	Samsung Electronics Co., Ltd	-
Notebook Adaptor	ADP-60ZH	AD-6019R	DELTA ELECTRONICS, INC.	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-
MIC	CMK-303	-	CAMAC	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
PoE Adaptor	PoE36U-1AT-R	-	PHIHONG	-

1.6 External I/O Cabling

- AC 24 V Mode, DC 12 V Mode

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

- PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	RJ-45(PoE)	PoE Adaptor	RJ-45(PoE)	3.0	U
	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	1.7	U
Notebook	RJ-45 (DATA)	PoE Adaptor	RJ-45(DATA)	3.0	U

* Unshielded = U, Shielded = S



1.7 EUT Operating Mode(s)

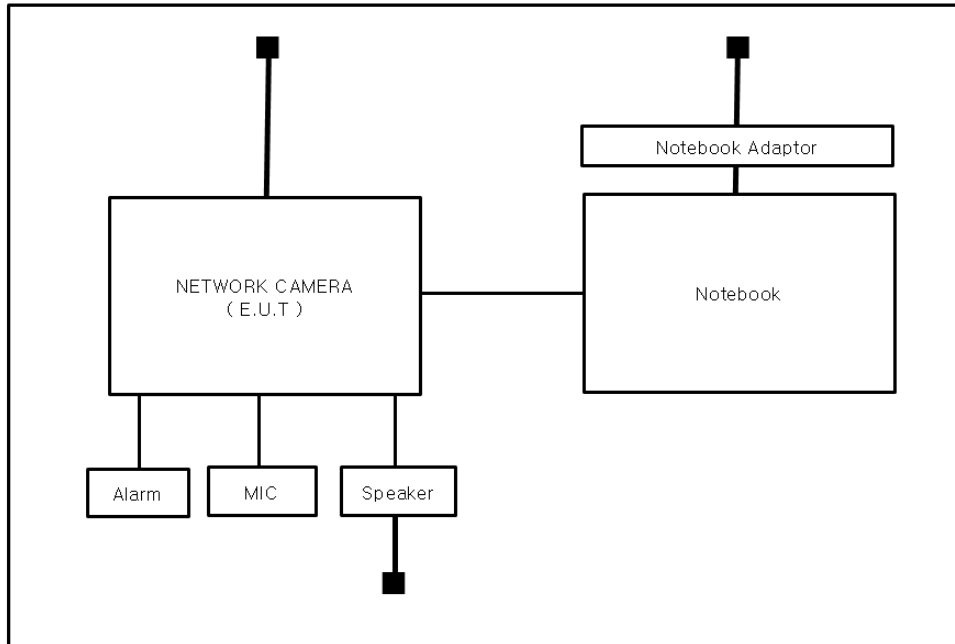
Test mode	operating
AC 24 V Mode	E.U.T Monitoring, Ping test, 1 kHz
DC 12 V Mode	E.U.T Monitoring, Ping test
PoE Mode	E.U.T Monitoring, Ping test

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

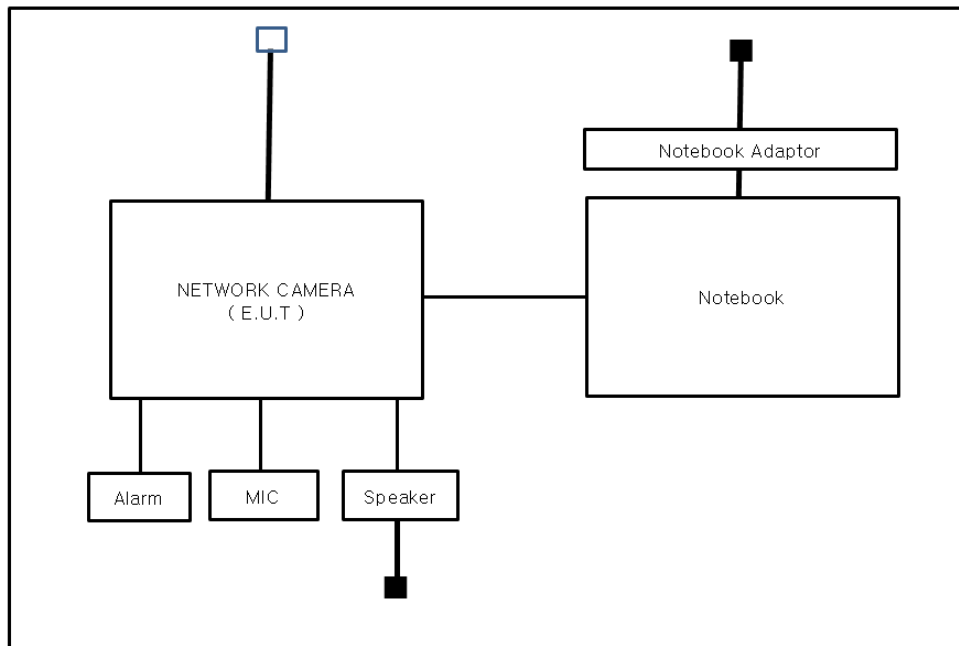
1.8 Configuration

■ AC Main

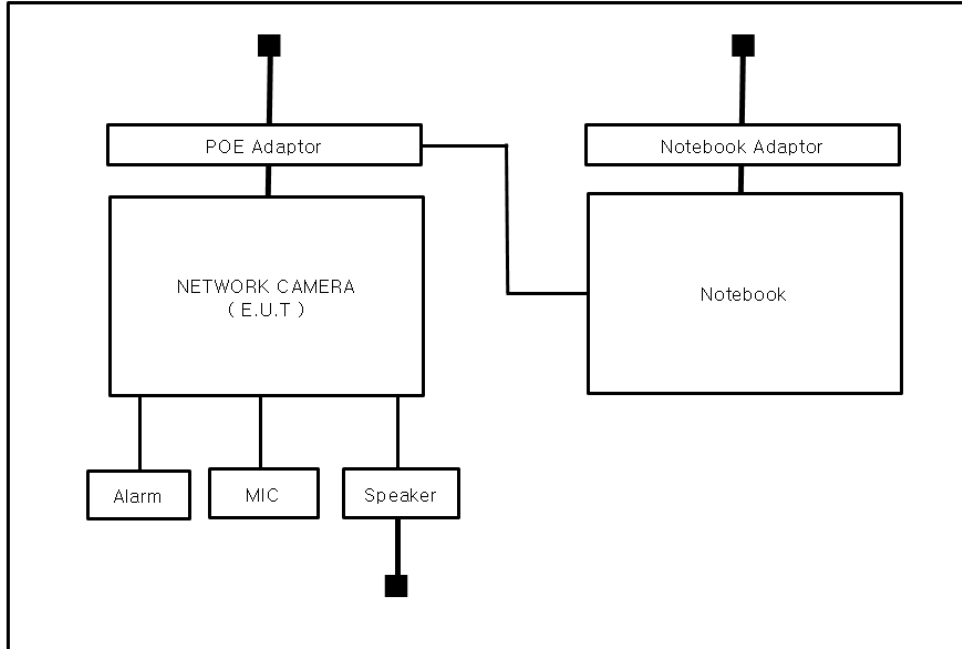
- AC 24 V Mode



- DC 12 V Mode



- PoE Mode



1.9 Calibration Details of Equipment Used for Measurement

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

1.10 Test Facility

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

1.11 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	
JAPAN	VCCI	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	 R-4308, C-4798, T-2311, G-914
KOREA	MSIP	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
Canada	IC	3 & 10 meter Open Area Test Sites and one conducted site	 4769B-1
Europe	CE	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	
International	KOLAS	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 61547 :2009

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010 +A1:2015

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



-
- | | | |
|---|---|----------------------------------|
| ☒ 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 Mains Power Ports

Test Date

Apr. 29, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	SHIELD ROOM #6	-	DYMSTEC	-	-
☒	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	12, 13, 2017

Test Conditions

Temperature: 21,2 °C

Relative Humidity: 36,3 %

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

RemarksSee Appendix A for test data.

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Apr. 29, 2017

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	SHIELD ROOM #6	-	DYMSTEC	-	-
☒	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	12, 13, 2017
☒	8-WIRE ISN CAT3,5	ENY81	Rohde & Schwarz	100174	01, 11, 2018
☐	8-WIRE ISN CAT6	ENY81-CAT6	Rohde & Schwarz	101665	01, 11, 2018

Test Conditions

Temperature: 21,2 °C

Relative Humidity: 36,3 %

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

RemarksSee Appendix A for test data.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Apr. 29, 2017

Test Location

☒ Open Area Test Site #1 ☐ Open Area Test Site #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	OPEN AREA TEST SITE (OATS) #1	-	KES	-	-
☐	OPEN AREA TEST SITE (OATS) #2	-	KES	-	-
☒	EMI Test S/W	-	-	-	-
☒	EMI TEST RECEIVER	ESVS10	Rohde & Schwarz	826008/014	04, 18, 2018
☐	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	714	11, 28, 2018
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	04, 14, 2018

Test Conditions

Temperature: 23,0 °C

Relative Humidity: 29,0 %

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

Apr. 29, 2017

Test Location

Semi Anechoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	SEMI ANECHOIC CHAMBER #2	-	SEMITEC	-	-
☒	EMI Test S/W	e3	AUDIX	8.083b	-
☒	EMI TEST RECEIVER	ESU26	R & S	100552	04, 19, 2018
☒	BROADBAND PREAMPLIFIER	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10, 14, 2017
☒	LOG-PERIODIC ANTENNA	STLP 9149	SCHWARZBECK	9149-255	05, 17, 2018

Test Conditions

Temperature: 19,2 °C

Relative Humidity: 38,2 %

Frequency Range of Measurement

1 GHz to 6 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.

APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

- AC 24 V Mode

[HOT]

Common Information

Test Description:

Model No.:

Mode

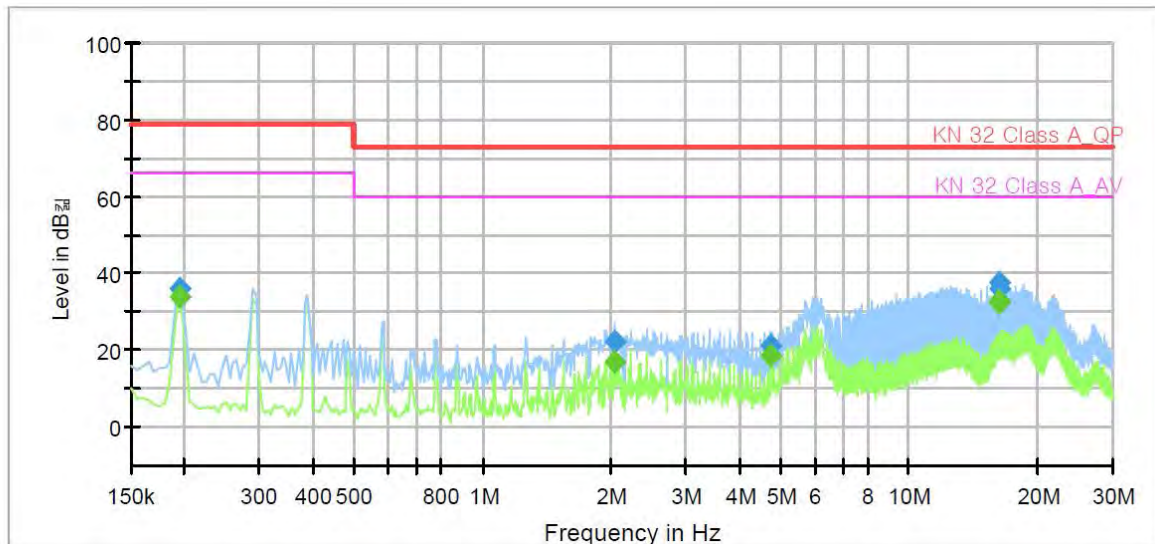
Operator Name:

Conducted Emission

XNO-6120RN

AC 24 V_H

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.195000	---	33.76	66.00	32.24	1000.0	9.000	L1	20.7
0.195000	36.14	---	79.00	42.86	1000.0	9.000	L1	20.7
2.040000	---	17.07	60.00	42.93	1000.0	9.000	L1	19.8
2.040000	22.18	---	73.00	50.82	1000.0	9.000	L1	19.8
4.760000	---	18.59	60.00	41.41	1000.0	9.000	L1	19.7
4.760000	21.31	---	73.00	51.69	1000.0	9.000	L1	19.7
16.225000	---	32.76	60.00	27.24	1000.0	9.000	L1	20.2
16.225000	37.51	---	73.00	35.49	1000.0	9.000	L1	20.2
16.230000	---	32.33	60.00	27.67	1000.0	9.000	L1	20.2
16.230000	36.06	---	73.00	36.94	1000.0	9.000	L1	20.2

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

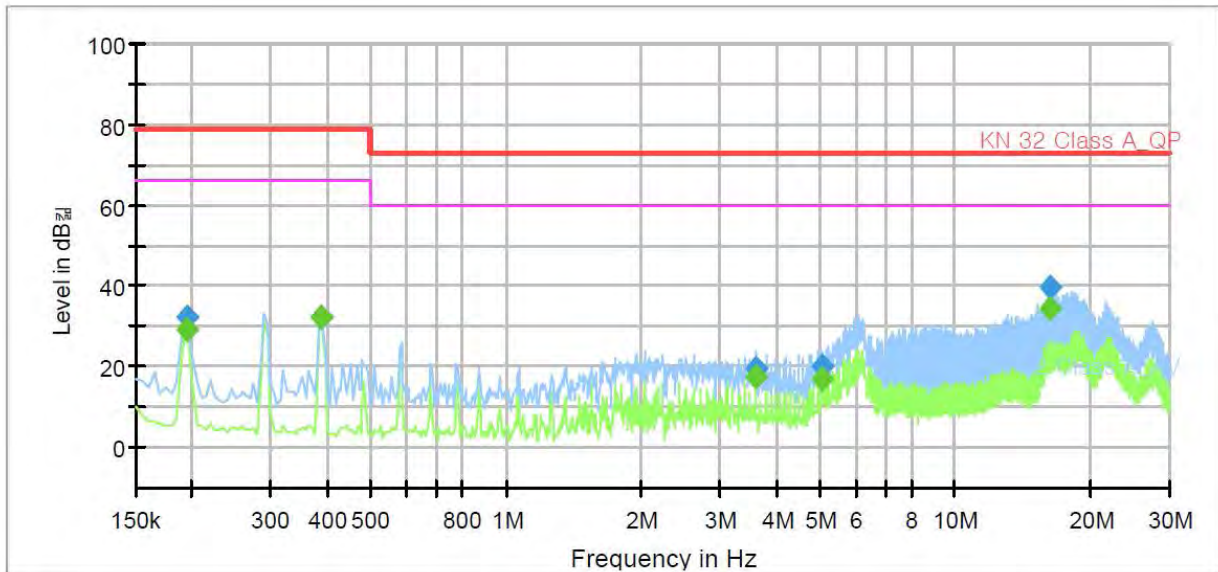
Reading Value : Not shown in the table.

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

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	XNO-6120RN
Mode	AC 24 V_N
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.195000	---	29.04	66.00	36.96	1000.0	9.000	N	20.7
0.195000	32.46	---	79.00	46.54	1000.0	9.000	N	20.7
0.390000	---	32.26	66.00	33.74	1000.0	9.000	N	20.6
0.390000	32.38	---	79.00	46.62	1000.0	9.000	N	20.6
3.595000	---	17.34	60.00	42.66	1000.0	9.000	N	19.7
3.595000	19.80	---	73.00	53.20	1000.0	9.000	N	19.7
5.050000	---	17.03	60.00	42.97	1000.0	9.000	N	19.7
5.050000	20.20	---	73.00	52.80	1000.0	9.000	N	19.7
16.225000	---	34.65	60.00	25.35	1000.0	9.000	N	20.2
16.225000	39.46	---	73.00	33.54	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))

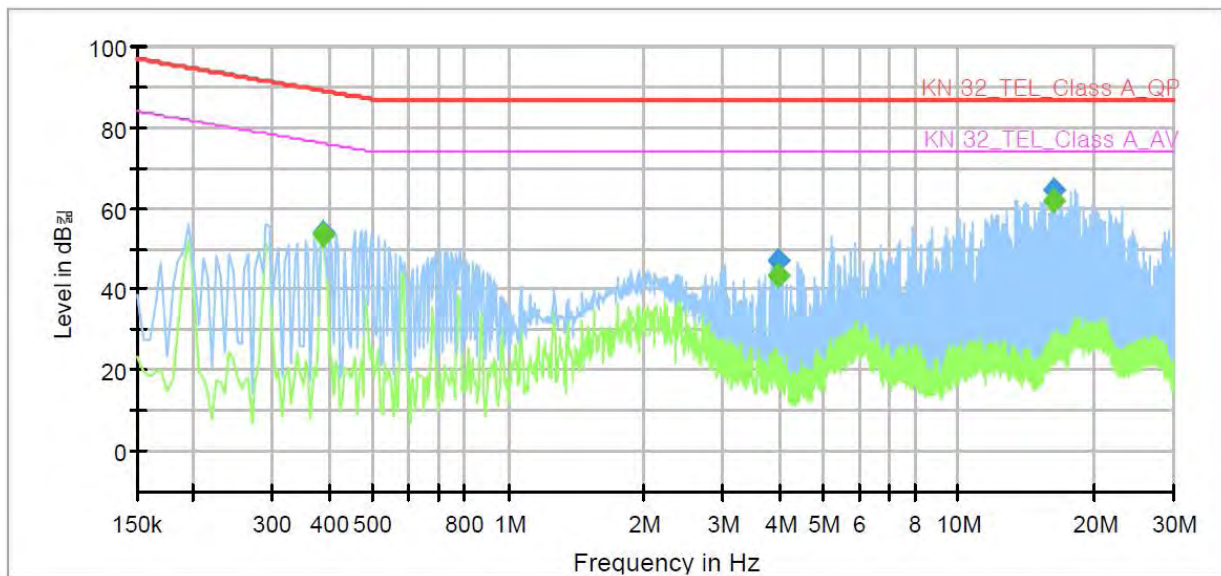
Conducted Emissions at Telecommunication Ports

- AC 24 V Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNO-6120RN
Mode	AC 24 V_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)
0.390000	---	53.47	76.06	22.59	1000.0	9.000	Single Line	20.6
0.390000	53.99	---	89.06	35.07	1000.0	9.000	Single Line	20.6
3.955000	---	43.67	74.00	30.33	1000.0	9.000	Single Line	19.4
3.955000	47.16	---	87.00	39.84	1000.0	9.000	Single Line	19.4
16.225000	---	61.74	74.00	12.26	1000.0	9.000	Single Line	20.0
16.225000	64.55	---	87.00	22.45	1000.0	9.000	Single Line	20.0

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

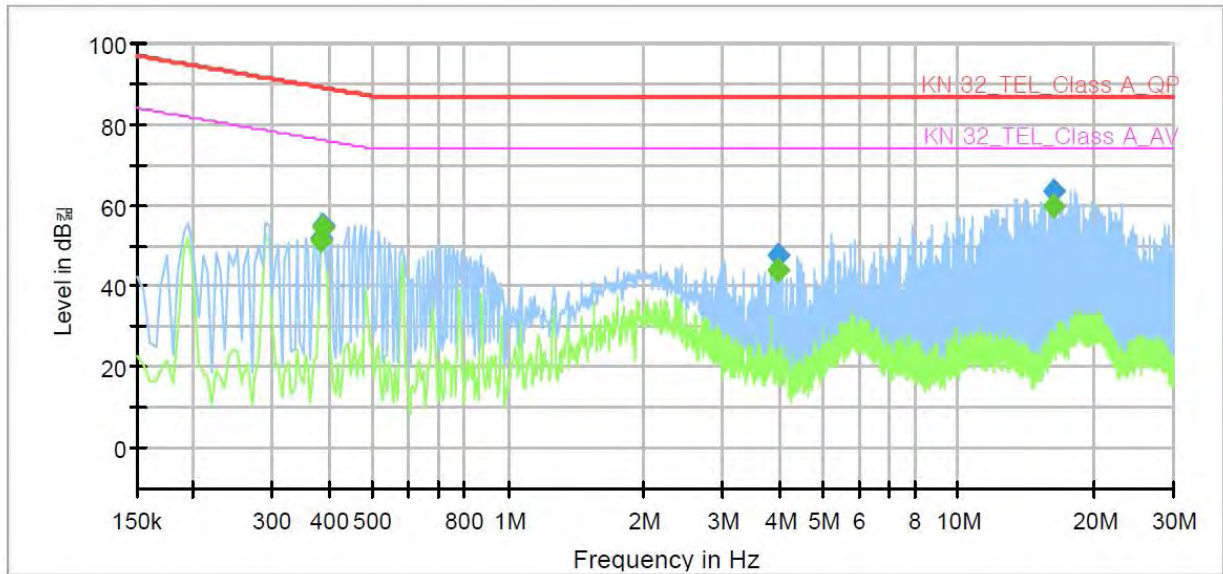
Reading Value : Not shown in the table.

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

[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNO-6120RN
Mode: AC 24 V_100 Mbps
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.385000	---	51.21	76.17	24.96	1000.0	9.000	Single Line	20.9
0.385000	51.94	---	89.17	37.23	1000.0	9.000	Single Line	20.9
0.390000	---	54.67	76.06	21.39	1000.0	9.000	Single Line	20.9
0.390000	55.28	---	89.06	33.78	1000.0	9.000	Single Line	20.9
3.955000	---	43.83	74.00	30.17	1000.0	9.000	Single Line	19.7
3.955000	47.51	---	87.00	39.49	1000.0	9.000	Single Line	19.7
16.225000	---	59.90	74.00	14.10	1000.0	9.000	Single Line	20.2
16.225000	63.38	---	87.00	23.62	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.

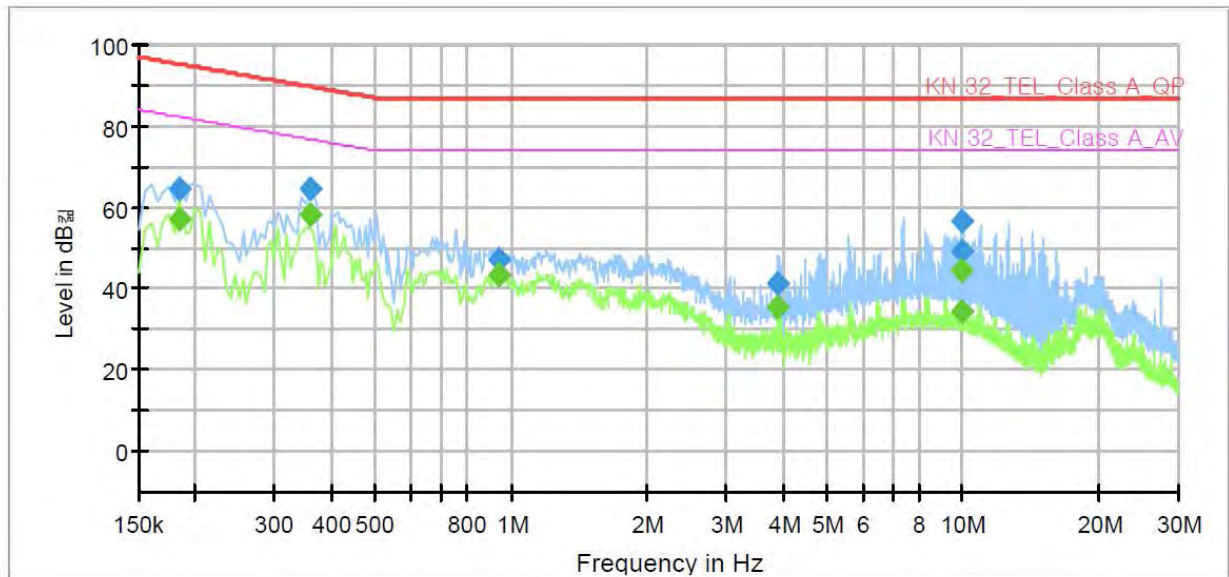
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

- DC 12 V Mode

[10 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNO-6120RN
Mode: DC 12 V_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)
0.185000	---	56.98	82.26	25.28	1000.0	9.000	Single Line	21.0
0.185000	64.38	---	95.26	30.88	1000.0	9.000	Single Line	21.0
0.360000	---	58.18	76.73	18.55	1000.0	9.000	Single Line	20.6
0.360000	64.69	---	89.73	25.04	1000.0	9.000	Single Line	20.6
0.945000	---	43.45	74.00	30.55	1000.0	9.000	Single Line	20.0
0.945000	47.37	---	87.00	39.63	1000.0	9.000	Single Line	20.0
3.910000	---	35.70	74.00	38.30	1000.0	9.000	Single Line	19.4
3.910000	41.44	---	87.00	45.56	1000.0	9.000	Single Line	19.4
9.985000	---	34.43	74.00	39.57	1000.0	9.000	Single Line	19.7
9.985000	49.40	---	87.00	37.60	1000.0	9.000	Single Line	19.7
10.000000	---	44.56	74.00	29.44	1000.0	9.000	Single Line	19.7
10.000000	56.51	---	87.00	30.49	1000.0	9.000	Single Line	19.7

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

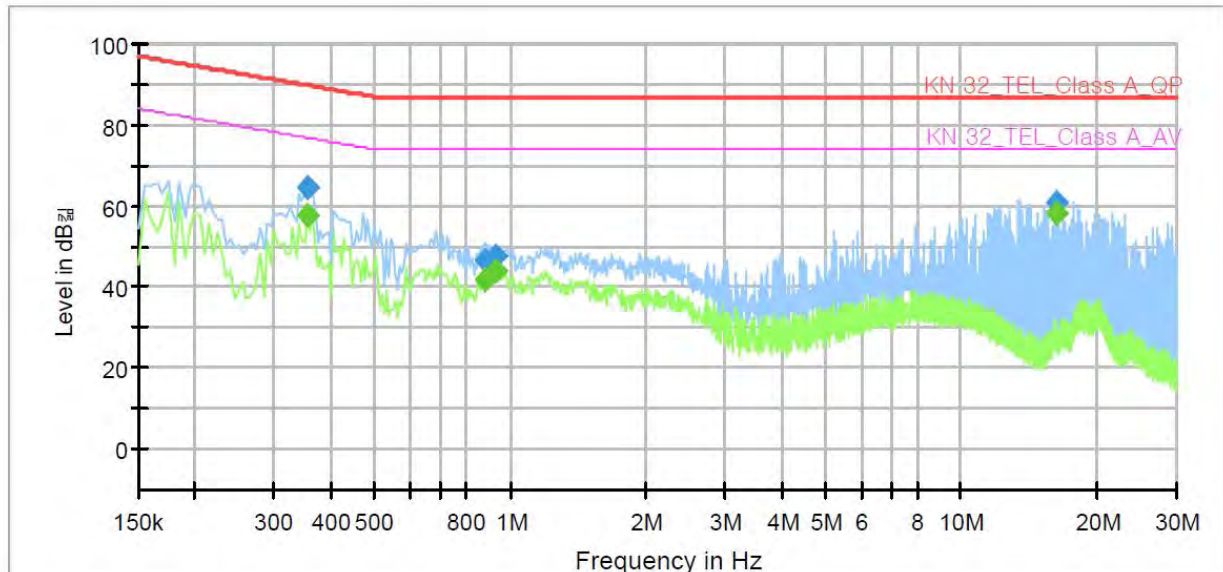
Reading Value : Not shown in the table.

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

[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: XNO-6120RN
Mode: DC 12 V_100 Mbps
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.355000	---	57.84	76.84	19.00	1000.0	9.000	Single Line	20.9
0.355000	64.78	---	89.84	25.06	1000.0	9.000	Single Line	20.9
0.885000	---	41.71	74.00	32.29	1000.0	9.000	Single Line	20.3
0.885000	46.52	---	87.00	40.48	1000.0	9.000	Single Line	20.3
0.925000	---	43.72	74.00	30.28	1000.0	9.000	Single Line	20.3
0.925000	47.75	---	87.00	39.25	1000.0	9.000	Single Line	20.3
16.230000	---	58.32	74.00	15.68	1000.0	9.000	Single Line	20.2
16.230000	61.06	---	87.00	25.94	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.

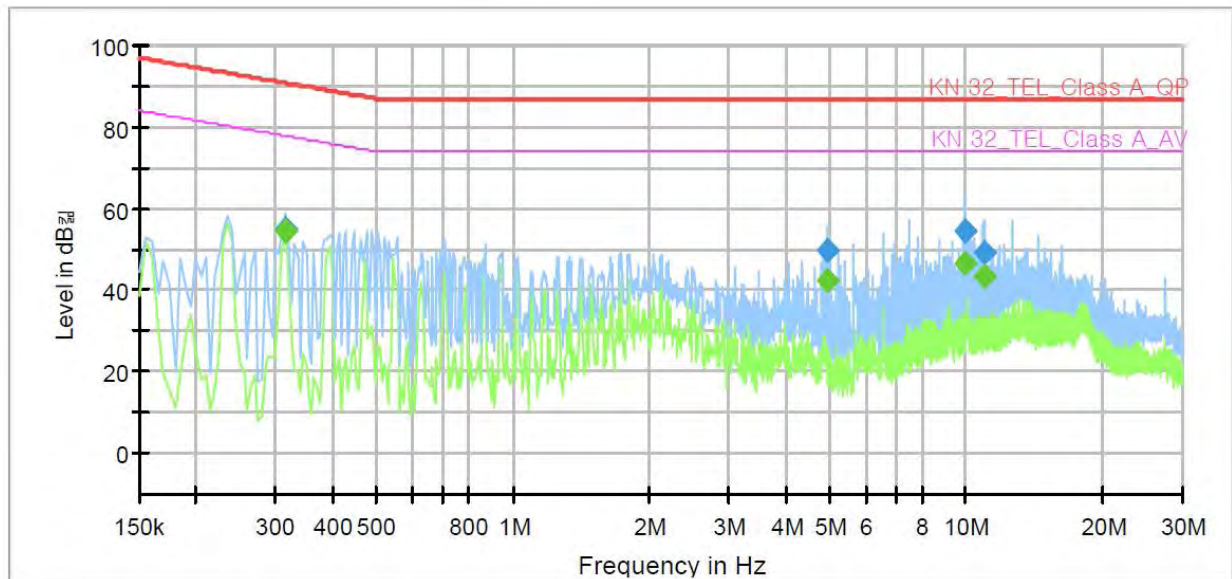
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

- PoE Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNO-6120RN
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)
0.315000	---	54.29	77.84	23.55	1000.0	9.000	Single Line	20.7
0.315000	54.97	---	90.84	35.87	1000.0	9.000	Single Line	20.7
4.945000	---	42.31	74.00	31.69	1000.0	9.000	Single Line	19.5
4.945000	49.62	---	87.00	37.38	1000.0	9.000	Single Line	19.5
10.000000	---	46.61	74.00	27.39	1000.0	9.000	Single Line	19.7
10.000000	54.42	---	87.00	32.58	1000.0	9.000	Single Line	19.7
10.925000	---	43.66	74.00	30.34	1000.0	9.000	Single Line	19.8
10.925000	49.09	---	87.00	37.91	1000.0	9.000	Single Line	19.8

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

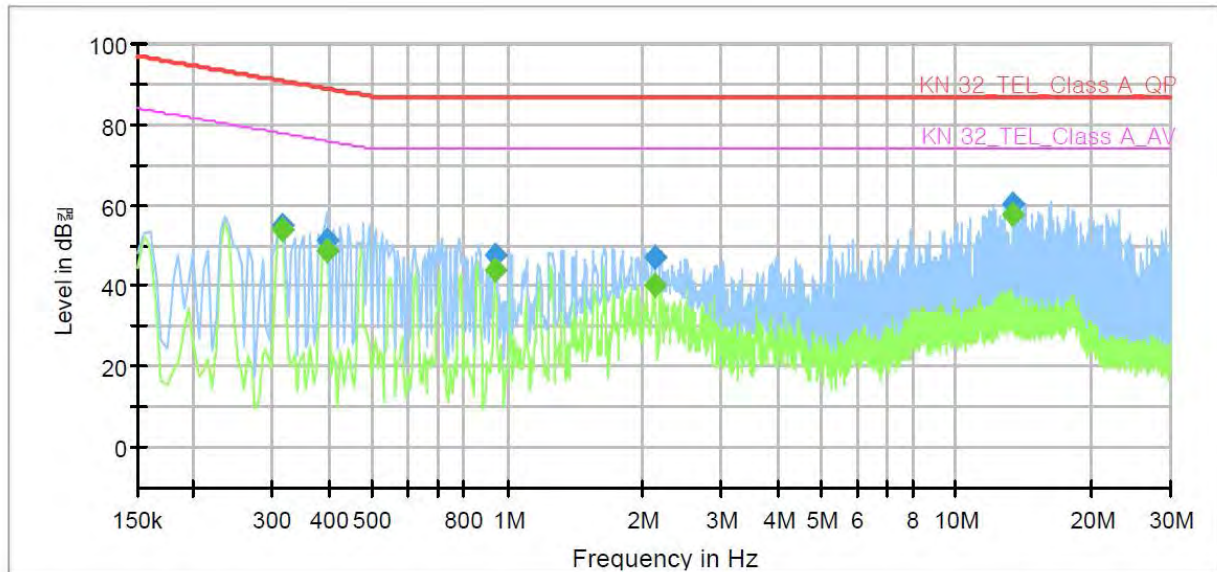
Reading Value : Not shown in the table.

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

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNO-6120RN
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)
0.315000	---	54.16	77.84	23.68	1000.0	9.000	Single Line	21.0
0.315000	55.15	---	90.84	35.69	1000.0	9.000	Single Line	21.0
0.395000	---	48.92	75.96	27.04	1000.0	9.000	Single Line	20.9
0.395000	51.50	---	88.96	37.46	1000.0	9.000	Single Line	20.9
0.940000	---	44.18	74.00	29.82	1000.0	9.000	Single Line	20.3
0.940000	47.70	---	87.00	39.30	1000.0	9.000	Single Line	20.3
2.125000	---	40.15	74.00	33.85	1000.0	9.000	Single Line	19.8
2.125000	47.03	---	87.00	39.97	1000.0	9.000	Single Line	19.8
13.420000	---	57.72	74.00	16.28	1000.0	9.000	Single Line	20.1
13.420000	60.28	---	87.00	26.72	1000.0	9.000	Single Line	20.1

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

**Radiated Electric Field Emissions(Below 1 GHz)**

- AC 24 V Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
225.32	8.20	H	2.14	12.02	3.43	23.65	40.00	16.35
251.37	13.90	H	1.50	12.57	3.70	30.17	47.00	16.83
275.37	12.80	V	1.23	12.98	3.90	29.68	47.00	17.32
334.52	11.20	H	3.02	14.15	4.20	29.55	47.00	17.45
351.26	10.50	V	1.25	14.51	4.25	29.26	47.00	17.74
501.37	13.20	V	2.01	17.33	5.21	35.74	47.00	11.26

* H : Horizontal, V : Vertical

◆ Calculation

Corrected Amplitude [dB μ V] = Amplitude[dBuV] + Correction Factor [dB]Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

- DC 12 V Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
252.37	13.20	H	2.30	12.59	3.71	29.50	47.00	17.50
274.26	11.90	H	1.25	12.96	3.89	28.75	47.00	18.25
300.26	10.30	V	2.33	13.41	4.10	27.81	47.00	19.19
400.03	12.50	H	3.01	15.57	4.60	32.67	47.00	14.33
478.26	11.90	V	1.28	16.92	5.16	33.98	47.00	13.02

* H : Horizontal, V : Vertical

◆ Calculation

Corrected Amplitude [dB μ V] = Amplitude[dBuV] + Correction Factor [dB]Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

**KES Co., Ltd.**

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

Test report No.:
KES-E1-17T0315
Page (28) of (52)

- PoE Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dBμV]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	[dB]
200.36	9.50	V	1.25	11.48	3.16	24.14	40.00	15.86
253.03	12.90	H	2.30	12.60	3.72	29.22	47.00	17.78
276.37	10.20	V	1.96	13.00	3.91	27.11	47.00	19.89
301.26	11.30	H	2.33	13.43	4.11	28.84	47.00	18.16
400.21	10.90	V	2.01	15.57	4.60	31.07	47.00	15.93
423.37	10.80	H	1.39	15.97	4.84	31.61	47.00	15.39

* H : Horizontal, V : Vertical

◆ Calculation

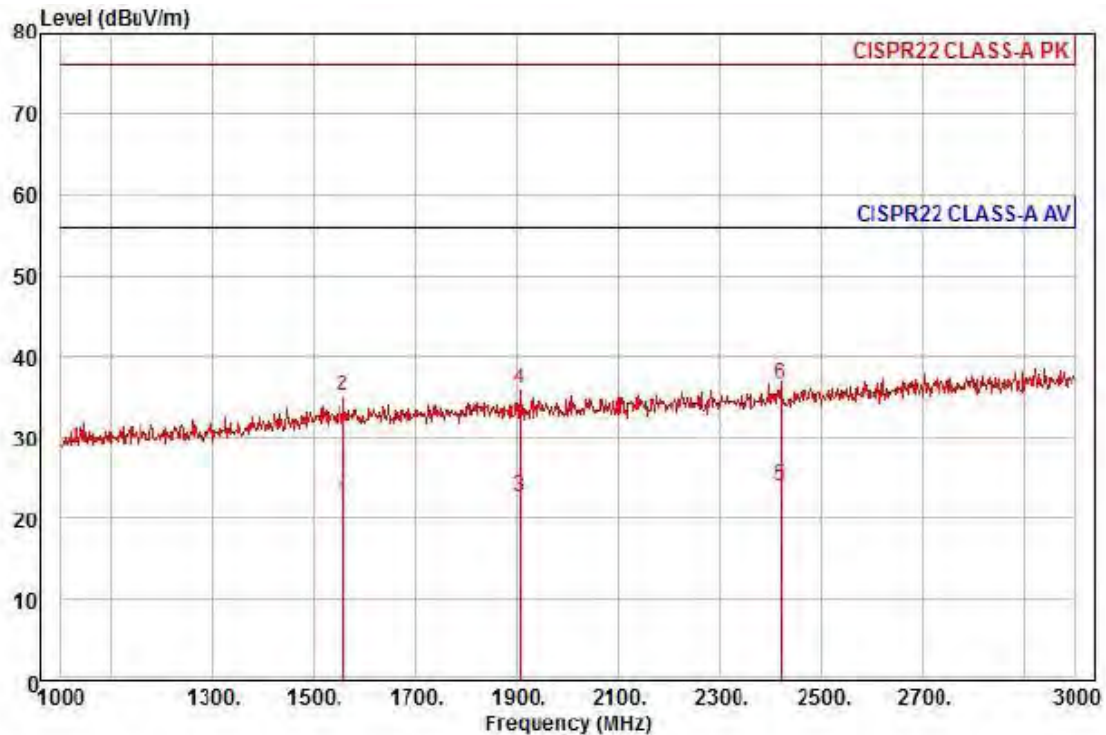
Corrected Amplitude [dBμV] = Amplitude[dBuV] + Correction Factor [dB]

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

Correction Factor : ANT FACTOR + Cable loss

Radiated Electric Field Emissions(Above 1 GHz)

- AC 24 V Mode



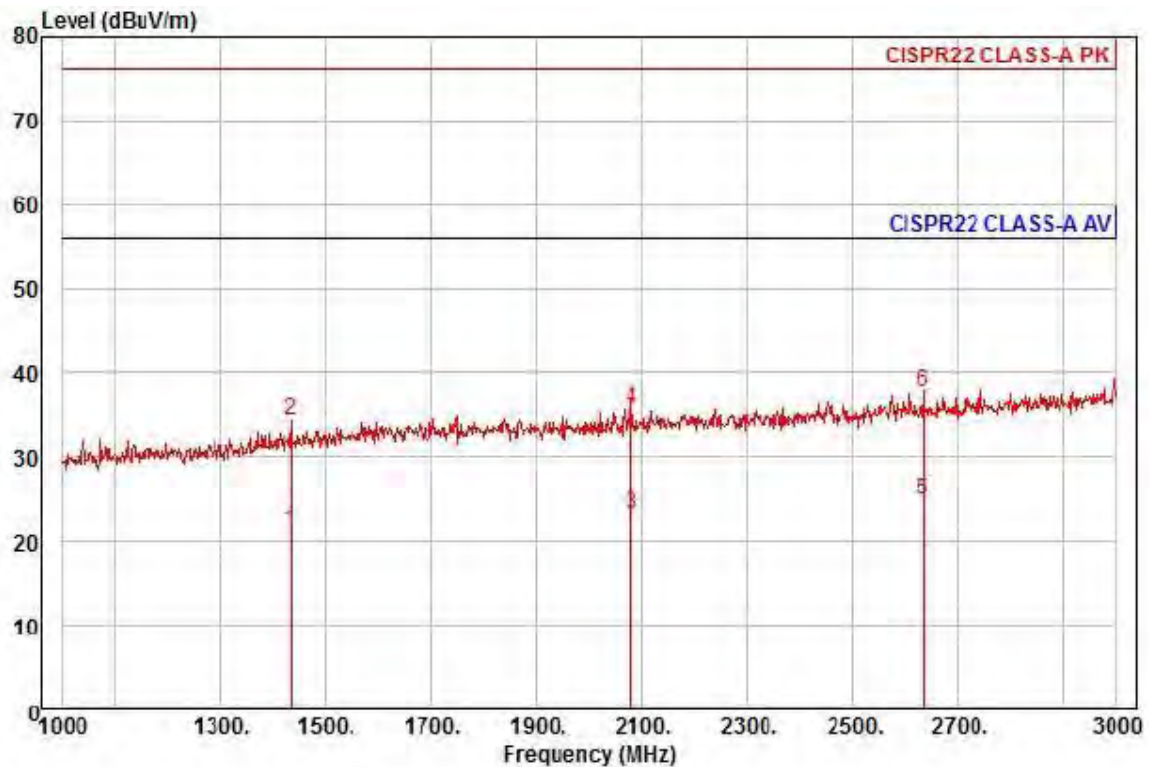
Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : AC 24 V
Memo : 1 ~ 3 GHz

	Read Freq	Ant Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1558.00	29.05	24.02	8.19	39.20	138	56.00	-33.94	horizontal	Average
2	1558.00	42.10	24.02	8.19	39.20	138	76.00	-40.89	horizontal	Peak
3	1906.00	27.67	25.26	9.10	39.37	126	56.00	-33.34	horizontal	Average
4	1906.00	40.87	25.26	9.10	39.37	126	76.00	-40.14	horizontal	Peak
5 pp	2420.00	25.70	27.25	10.36	39.44	308	56.00	-32.13	horizontal	Average
6 pk	2420.00	38.45	27.25	10.36	39.44	308	76.00	-39.38	horizontal	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



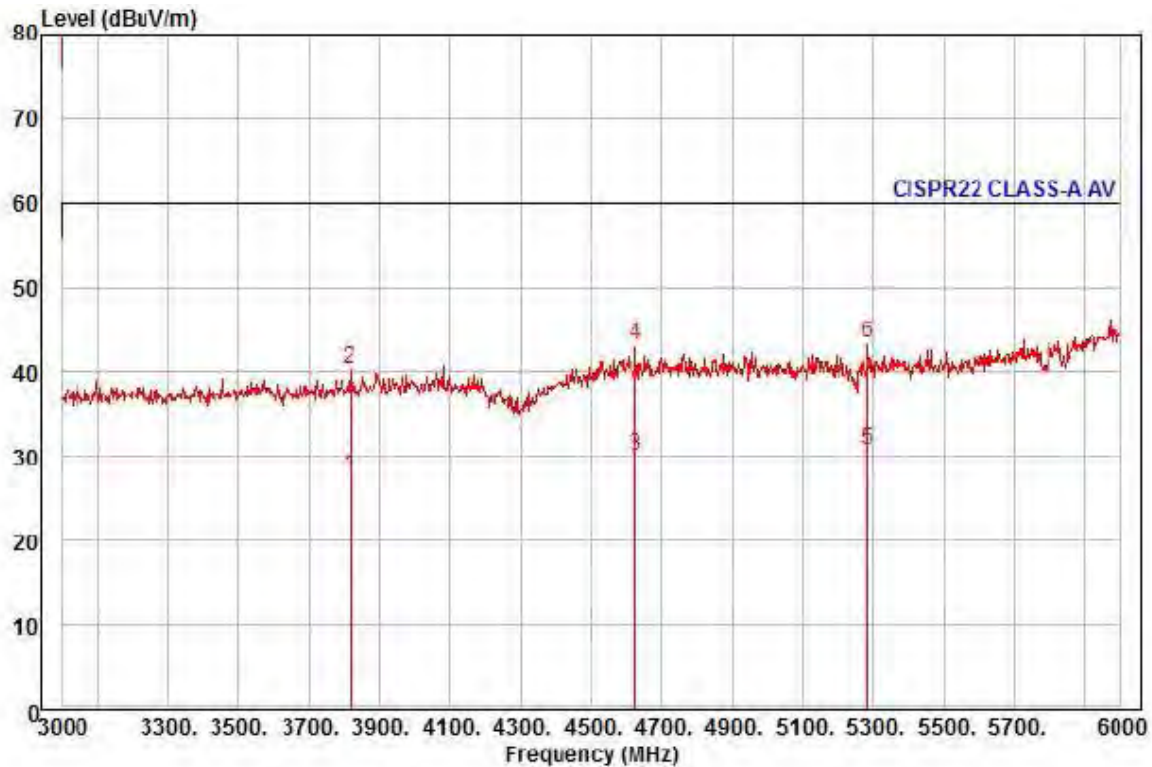
Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : AC 24 V
Memo : 1 ~ 3 GHz

	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	1436.00	29.17	23.39	7.83	39.15	216	56.00	-34.76	vertical	Average
2	1436.00	42.29	23.39	7.83	39.15	216	76.00	-41.64	vertical	Peak
3	2080.00	27.00	25.92	9.52	39.41	266	56.00	-32.97	vertical	Average
4	2080.00	39.63	25.92	9.52	39.41	266	76.00	-40.34	vertical	Peak
5 pp	2636.00	25.49	28.17	10.83	39.69	33	56.00	-31.20	vertical	Average
6 pk	2636.00	38.45	28.17	10.83	39.69	33	76.00	-38.24	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : AC 24 V
Memo : 3 ~ 6 GHz

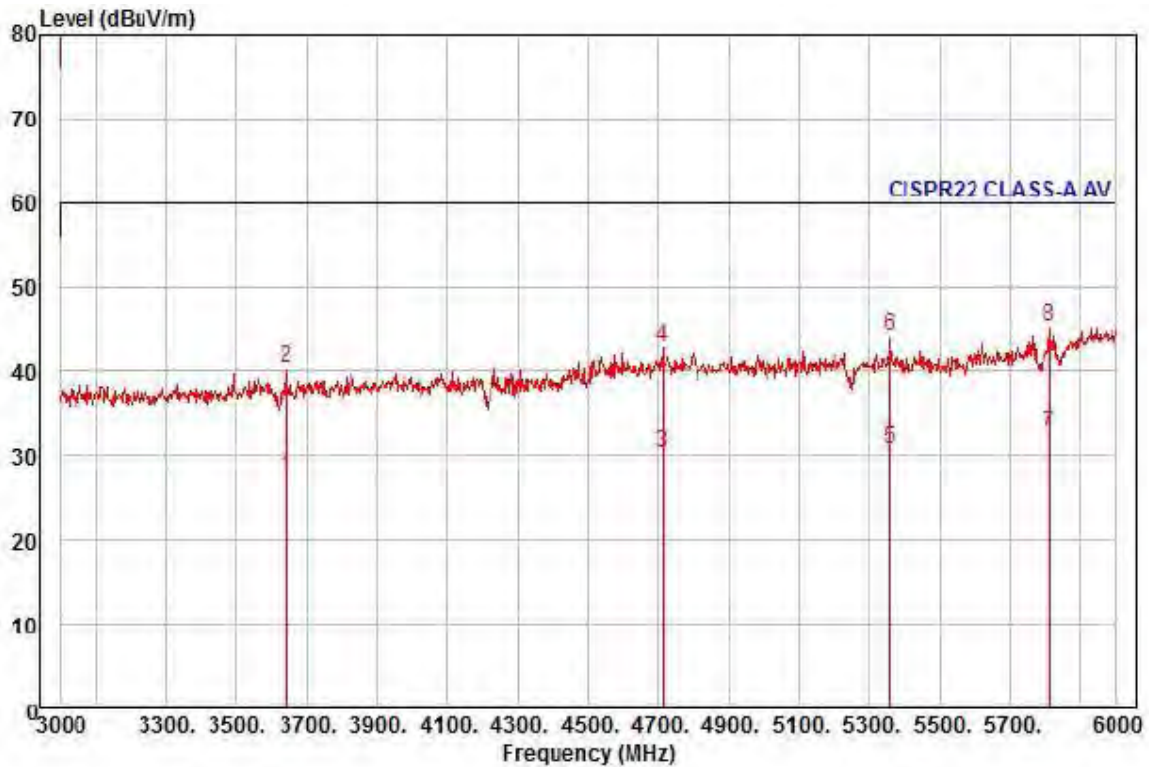
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3816.00	24.35	30.99	13.21	40.77	288	60.00	-32.22	horizontal	Average
2	3816.00	36.88	30.99	13.21	40.77	288	80.00	-39.69	horizontal	Peak
3	4626.00	23.06	32.91	14.72	40.64	348	60.00	-29.95	horizontal	Average
4	4626.00	36.12	32.91	14.72	40.64	348	80.00	-36.89	horizontal	Peak
5 pp	5283.00	22.21	33.41	15.84	40.74	1	60.00	-29.28	horizontal	Average
6 pk	5283.00	34.97	33.41	15.84	40.74	1	80.00	-36.52	horizontal	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,

Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber

Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical

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

Project :

Model : XNO-6120RN

Mode : AC 24 V

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	3642.00	24.77	30.60	12.88	40.83	74	60.00	-32.58	vertical	Average
2	3642.00	37.72	30.60	12.88	40.83	74	80.00	-39.63	vertical	Peak
3	4713.00	23.05	32.98	14.91	40.56	150	60.00	-29.62	vertical	Average
4	4713.00	35.54	32.98	14.91	40.56	150	80.00	-37.13	vertical	Peak
5	5358.00	22.18	33.45	15.97	40.86	16	60.00	-29.26	vertical	Average
6	5358.00	35.72	33.45	15.97	40.86	16	80.00	-35.72	vertical	Peak
7 pp	5814.00	21.32	35.43	16.73	40.68	133	60.00	-27.20	vertical	Average
8 pk	5814.00	33.88	35.43	16.73	40.68	133	80.00	-34.64	vertical	Peak

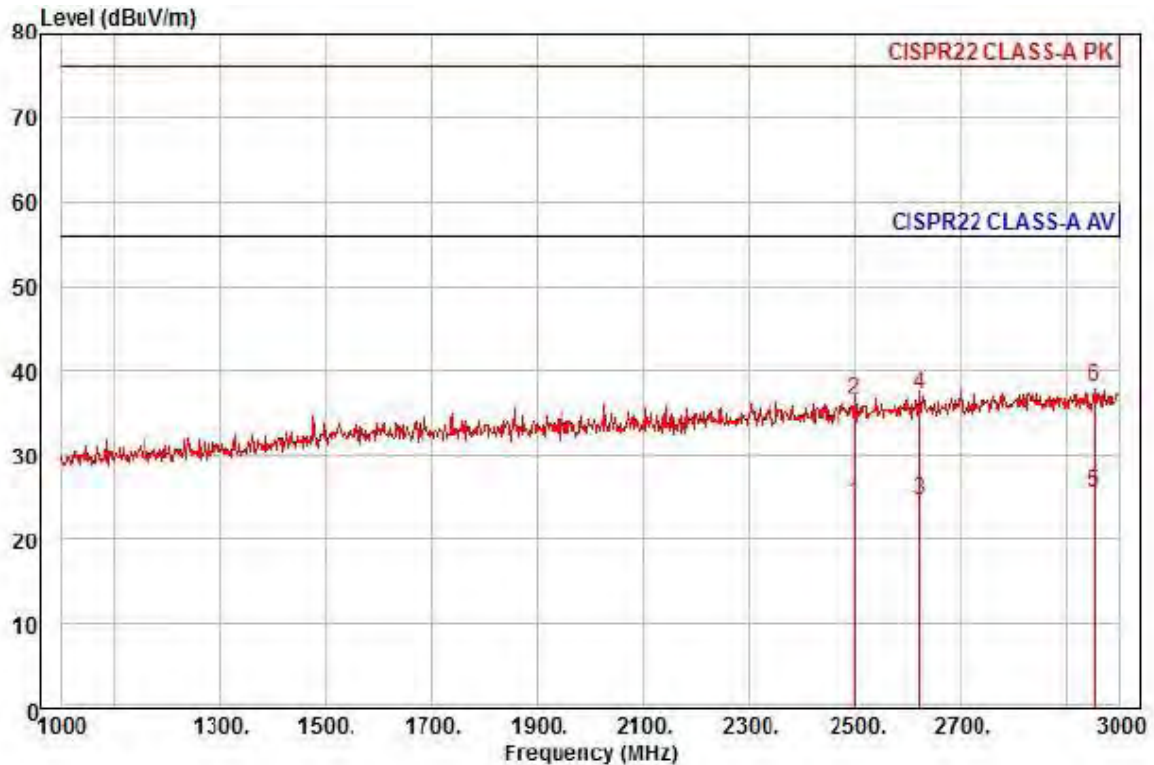
◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,

Cable Loss : Cable loss, Preamp Factor : Preamp Factor

- DC 12 V Mode



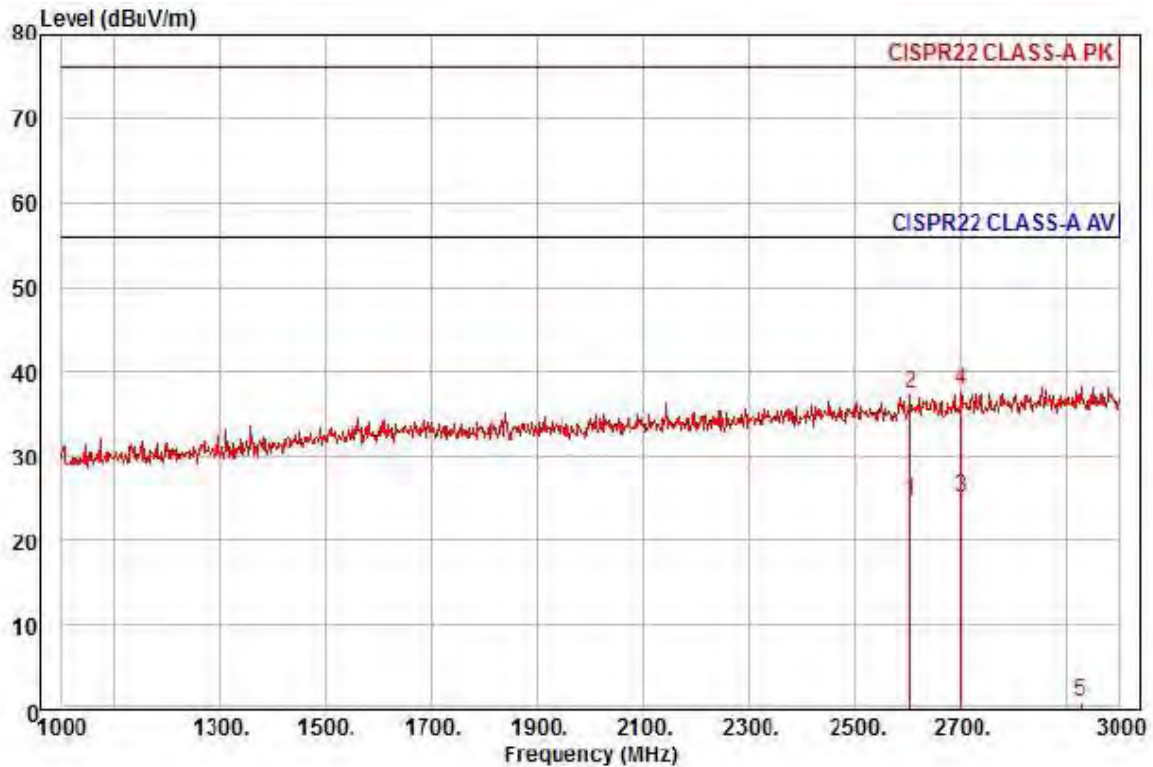
Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : DC 12 V
Memo : 1 ~ 3 GHz

		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	2500.00	25.59	27.57	10.53	39.53	111	56.00	-31.84	horizontal	Average
2	2500.00	38.03	27.57	10.53	39.53	111	76.00	-39.40	horizontal	Peak
3	2624.00	25.39	28.12	10.80	39.68	19	56.00	-31.37	horizontal	Average
4	2624.00	37.93	28.12	10.80	39.68	19	76.00	-38.83	horizontal	Peak
5 pp	2952.00	24.41	29.58	11.59	40.05	5	56.00	-30.47	horizontal	Average
6 pk	2952.00	37.10	29.58	11.59	40.05	5	76.00	-37.78	horizontal	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



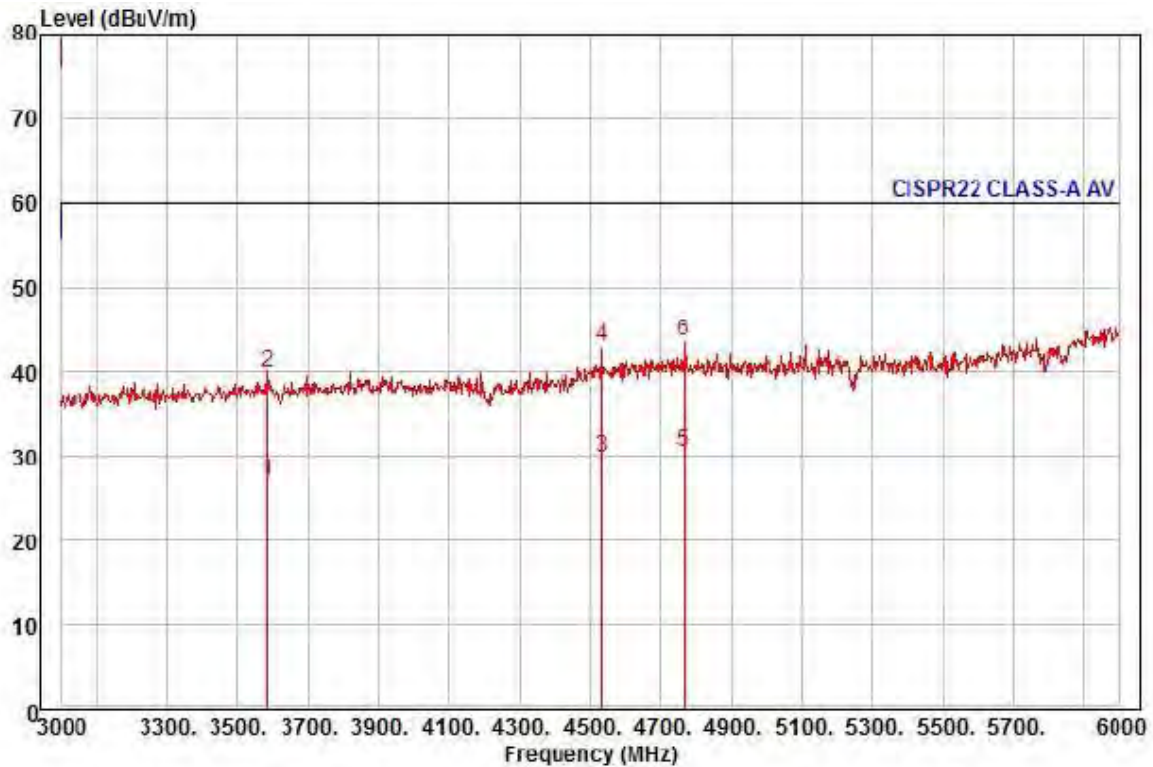
Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : DC 12 V
Memo : 1 ~ 3 GHz

	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	2606.00	25.48	28.04	10.76	39.66	27	56.00	-31.38	vertical	Average
2	2606.00	38.40	28.04	10.76	39.66	27	76.00	-38.46	vertical	Peak
3 pp	2700.00	25.27	28.46	10.99	39.76	227	56.00	-31.04	vertical	Average
4 pk	2700.00	38.25	28.46	10.99	39.76	227	76.00	-38.06	vertical	Peak
5	2928.00	0.00	29.47	11.53	40.03	339	76.00	-75.03	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



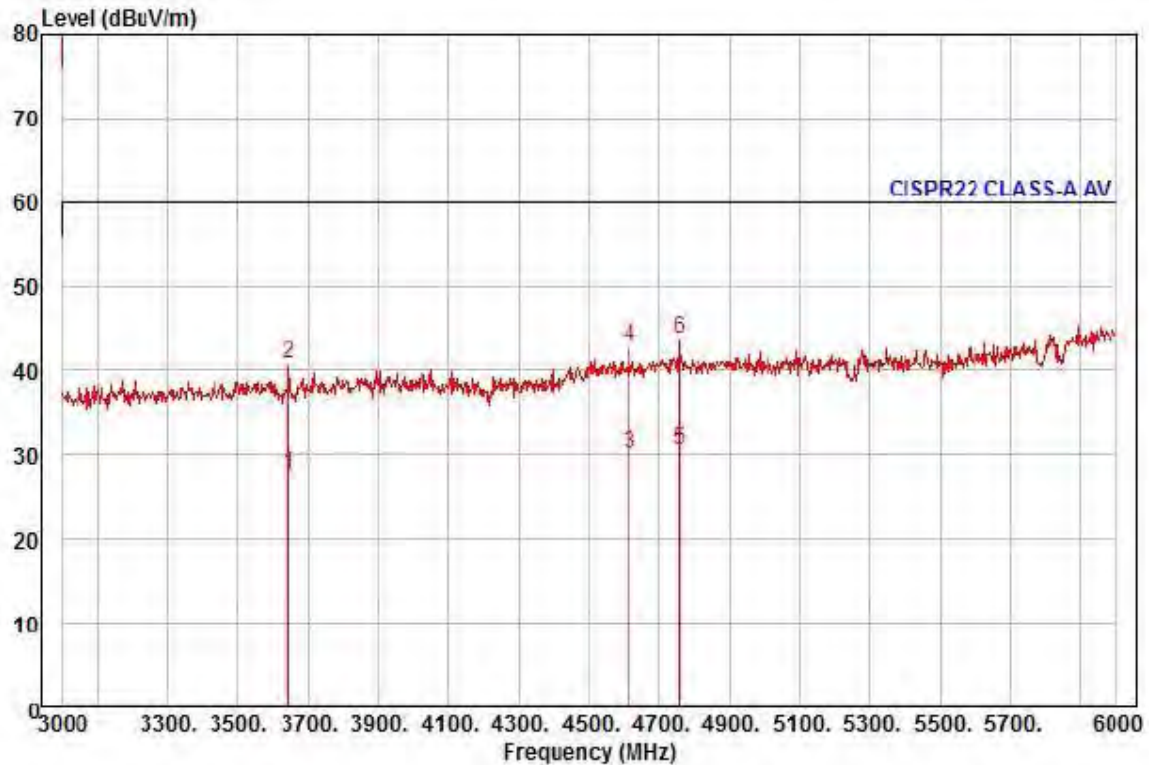
Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : DC 12 V
Memo : 3 ~ 6 GHz

		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	3582.00	24.54	30.47	12.77	40.85	343	60.00	-33.07	horizontal	Average
2	3582.00	37.60	30.47	12.77	40.85	343	80.00	-40.01	horizontal	Peak
3	4533.00	23.24	32.83	14.53	40.74	299	60.00	-30.14	horizontal	Average
4	4533.00	36.34	32.83	14.53	40.74	299	80.00	-37.04	horizontal	Peak
5 pp	4764.00	23.03	33.03	15.02	40.51	231	60.00	-29.43	horizontal	Average
6 pk	4764.00	36.11	33.03	15.02	40.51	231	80.00	-36.35	horizontal	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : DC 12 V
Memo : 3 ~ 6 GHz

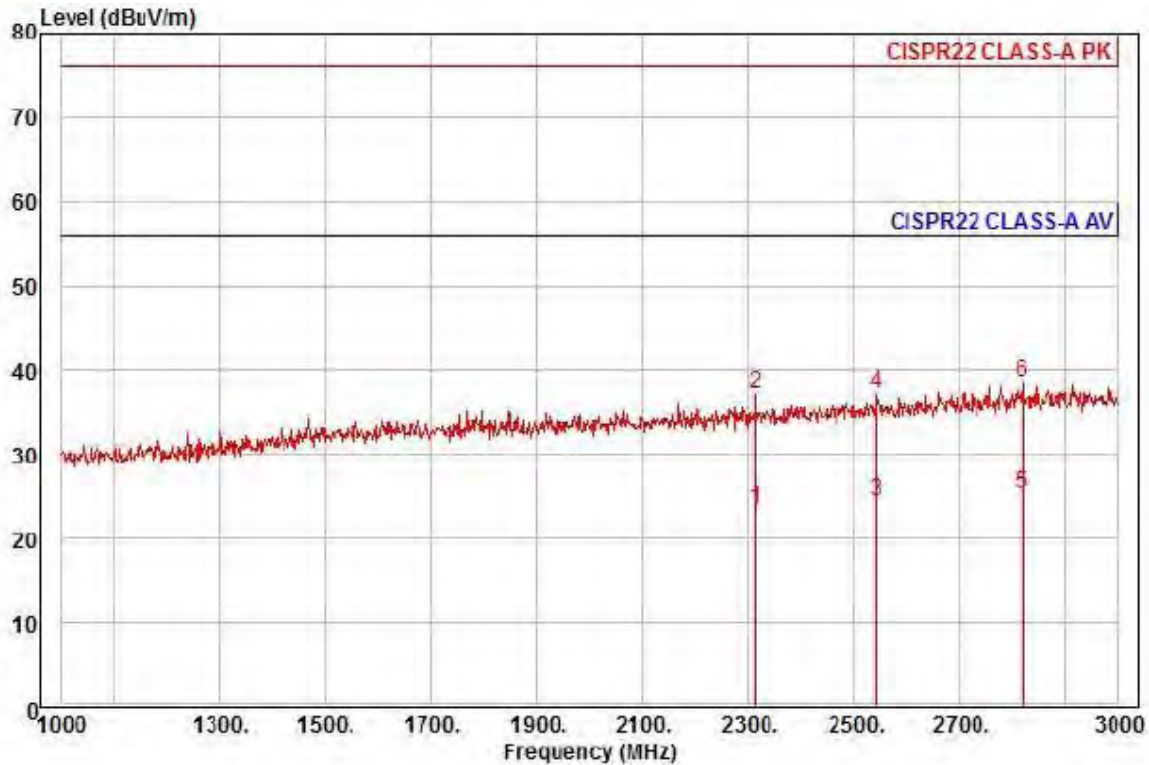
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3645.00	24.92	30.61	12.89	40.83	128	60.00	-32.41	vertical	Average
2	3645.00	38.03	30.61	12.89	40.83	128	80.00	-39.30	vertical	Peak
3	4617.00	23.15	32.90	14.70	40.65	70	60.00	-29.90	vertical	Average
4	4617.00	35.89	32.90	14.70	40.65	70	80.00	-37.16	vertical	Peak
5 pp	4758.00	23.03	33.02	15.01	40.51	277	60.00	-29.45	vertical	Average
6 pk	4758.00	36.19	33.02	15.01	40.51	277	80.00	-36.29	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

- PoE Mode



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : POE
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	2314.00	26.12	26.84	10.10	39.42	271	56.00	-32.36	horizontal Average
2	2314.00	39.78	26.84	10.10	39.42	271	76.00	-38.70	horizontal Peak
3	2544.00	25.51	27.77	10.62	39.59	167	56.00	-31.69	horizontal Average
4	2544.00	38.45	27.77	10.62	39.59	167	76.00	-38.75	horizontal Peak
5 pp	2820.00	25.01	28.99	11.28	39.90	165	56.00	-30.62	horizontal Average
6 pk	2820.00	36.26	28.99	11.28	39.90	165	76.00	-37.35	horizontal Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

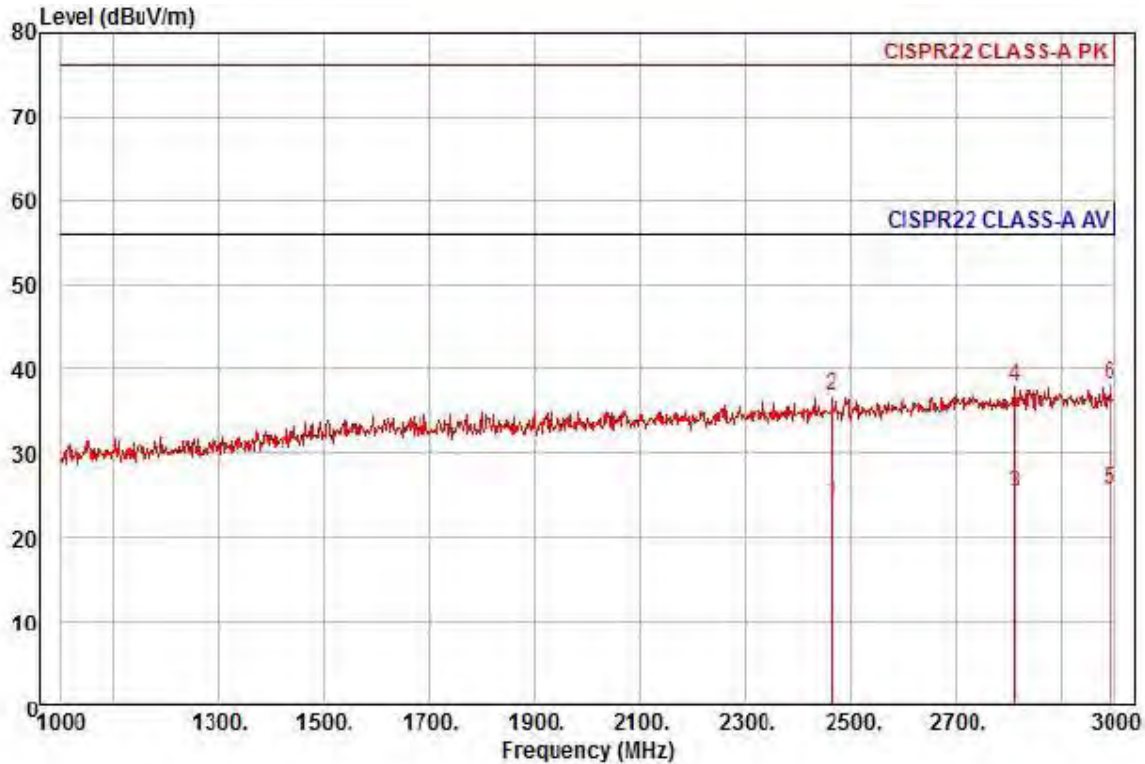
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



KES Co., Ltd.

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

Test report No.:
KES-E1-17T0315
Page (38) of (52)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
Mode : POE
Memo : 1 ~ 3 GHz

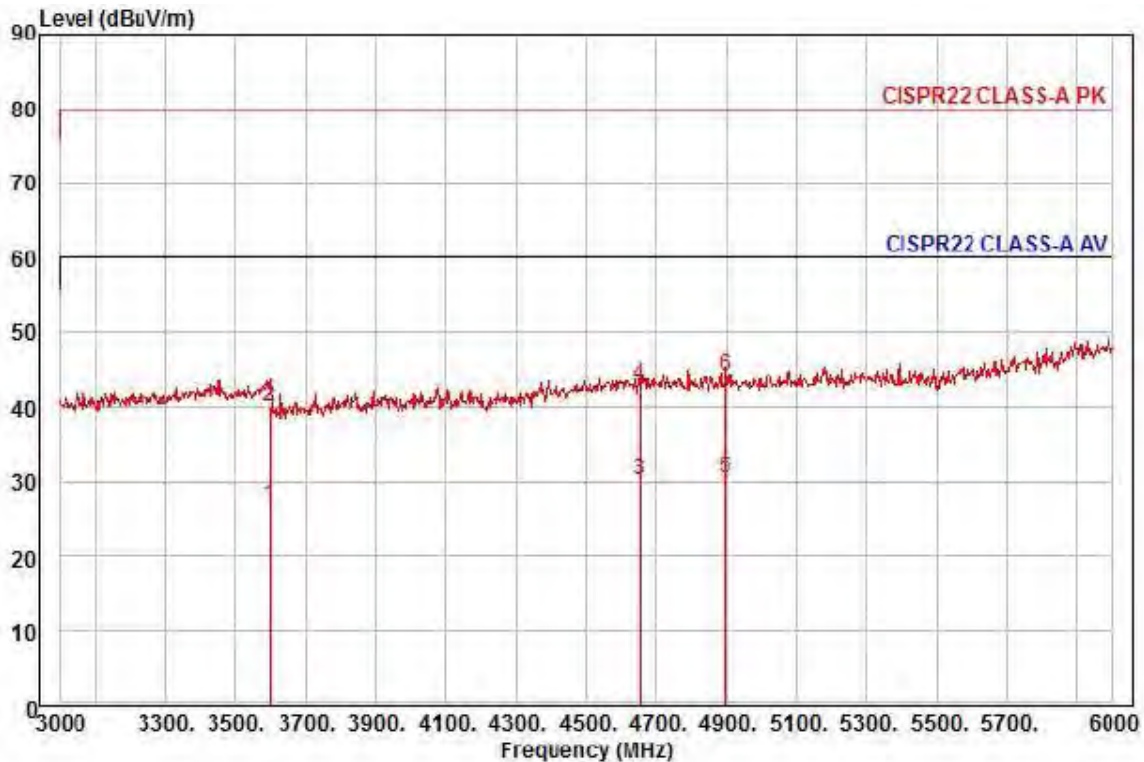
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	2464.00	25.64	27.43	10.46	39.49	280	56.00	-31.96	vertical	Average
2	2464.00	38.34	27.43	10.46	39.49	280	76.00	-39.26	vertical	Peak
3	2812.00	25.00	28.96	11.26	39.89	328	56.00	-30.67	vertical	Average
4	2812.00	37.59	28.96	11.26	39.89	328	76.00	-38.08	vertical	Peak
5 pp	2992.00	24.32	29.75	11.68	40.10	156	56.00	-30.35	vertical	Average
6 pk	2992.00	36.83	29.75	11.68	40.10	156	76.00	-37.84	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

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.



Site : chamber

Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto

Project :

Model : XNO-6120RN

Mode : POE

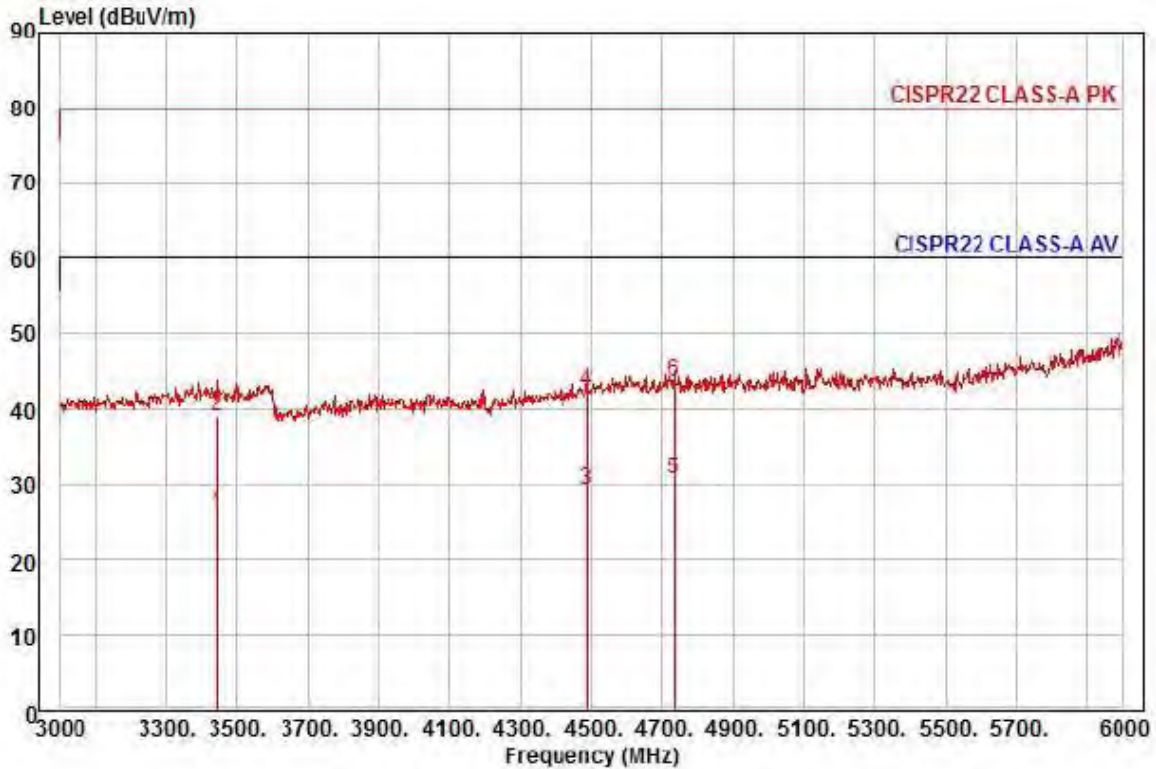
Memo : 3 ~ 6 GHz

		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	3597.00	24.37	30.50	12.80	40.85	311	60.00	-33.18	horizontal	Average
2	3597.00	37.47	30.50	12.80	40.85	311	80.00	-40.08	horizontal	Peak
3	4656.00	23.03	32.93	14.78	40.61	95	60.00	-29.87	horizontal	Average
4	4656.00	35.86	32.93	14.78	40.61	95	80.00	-37.04	horizontal	Peak
5 pp	4899.00	22.53	33.14	15.21	40.37	336	60.00	-29.49	horizontal	Average
6 pk	4899.00	36.19	33.14	15.21	40.37	336	80.00	-35.83	horizontal	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: CISPR22 CLASS-A PK 3m STLP9149(9149-255,2016-05-17) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNO-6120RN
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	3444.00	24.06	30.23	12.53	40.79	277	60.00	-33.97	vertical	Average
2	3444.00	36.97	30.23	12.53	40.79	277	80.00	-41.06	vertical	Peak
3	4488.00	22.84	32.77	14.44	40.77	241	60.00	-30.72	vertical	Average
4	4488.00	36.04	32.77	14.44	40.77	241	80.00	-37.52	vertical	Peak
5 pp	4734.00	23.17	33.00	14.95	40.54	277	60.00	-29.42	vertical	Average
6 pk	4734.00	36.16	33.00	14.95	40.54	277	80.00	-36.43	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

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.

Conducted Telecommunication Emissions



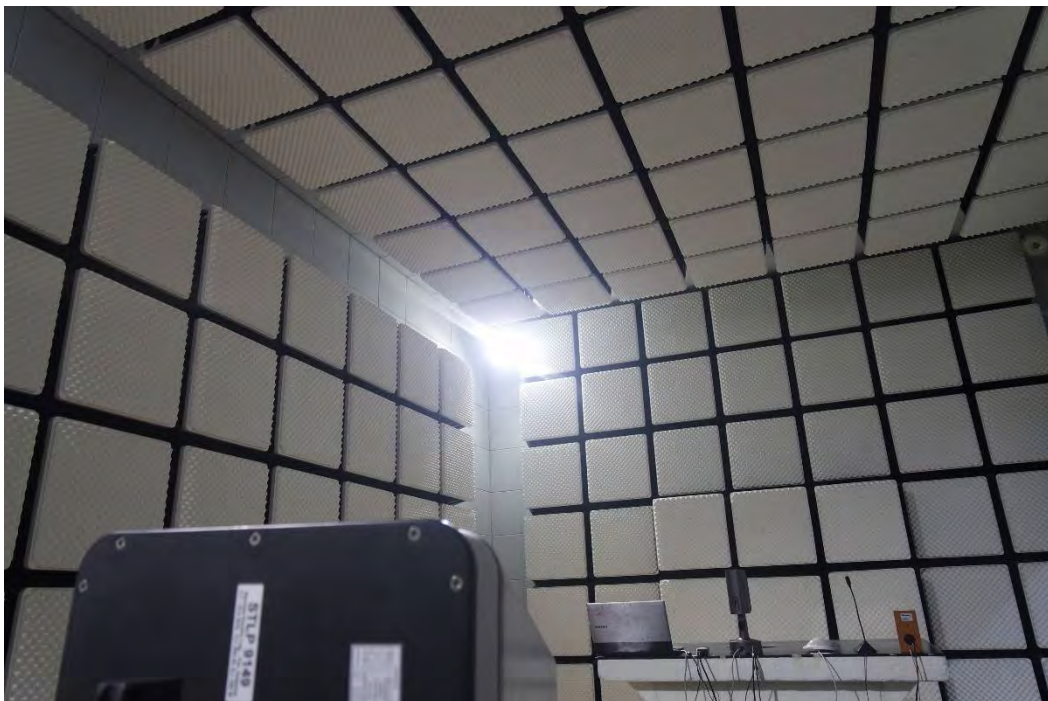
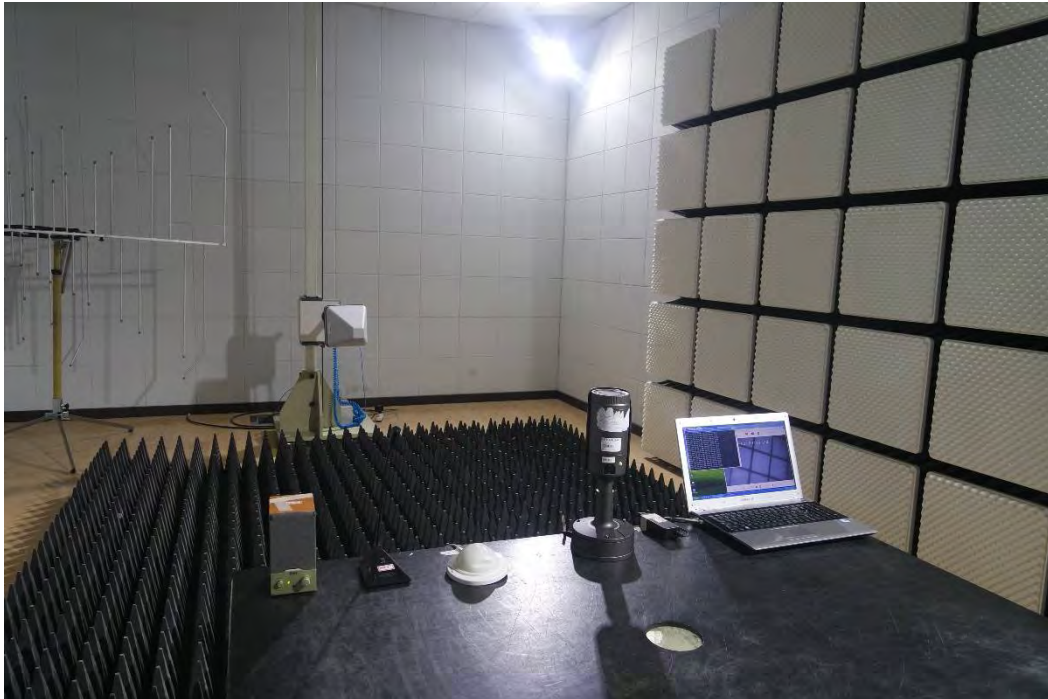
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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.

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.

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.

EUT Internal Photographs

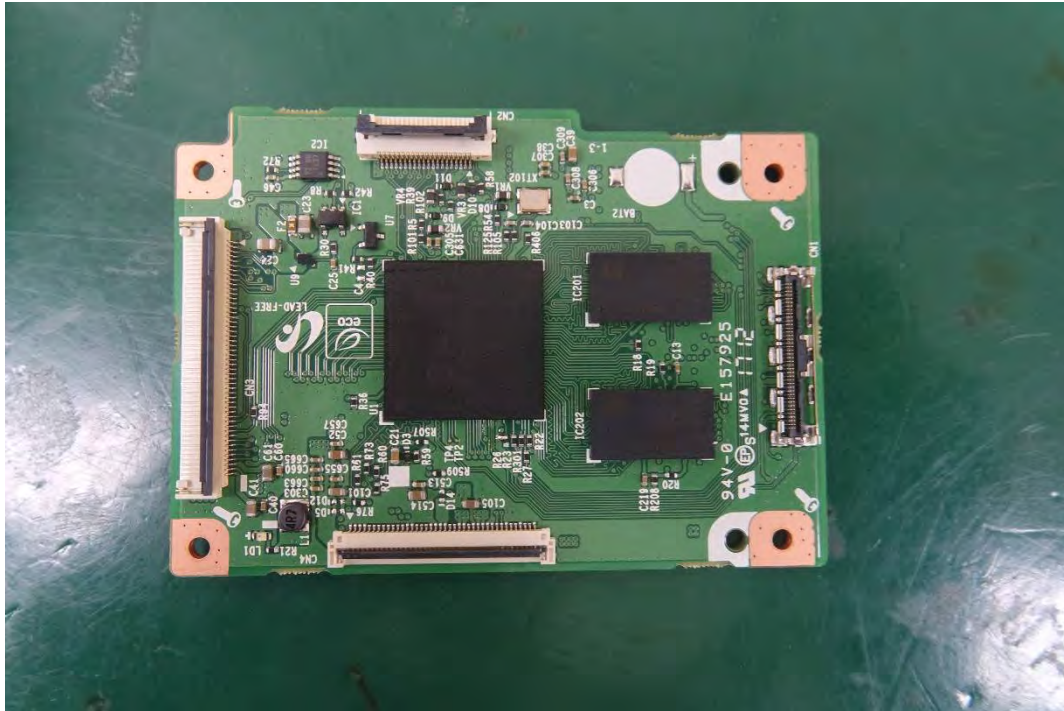
(Internal View)



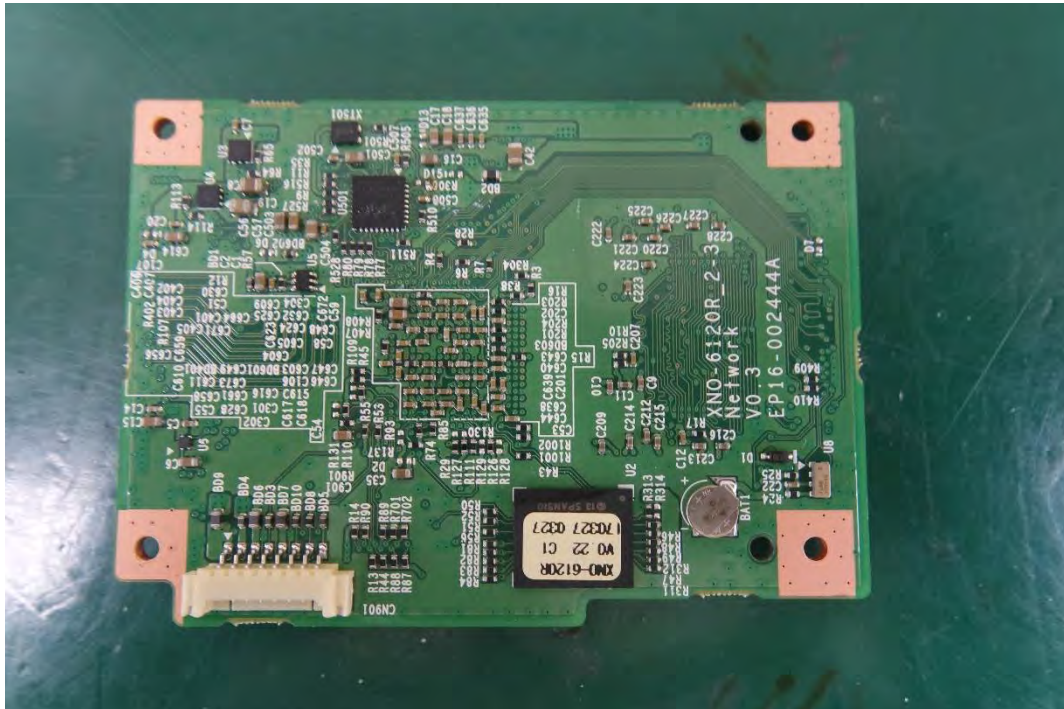
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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.

EUT Internal View – Lens Board

(Top)



(Top)



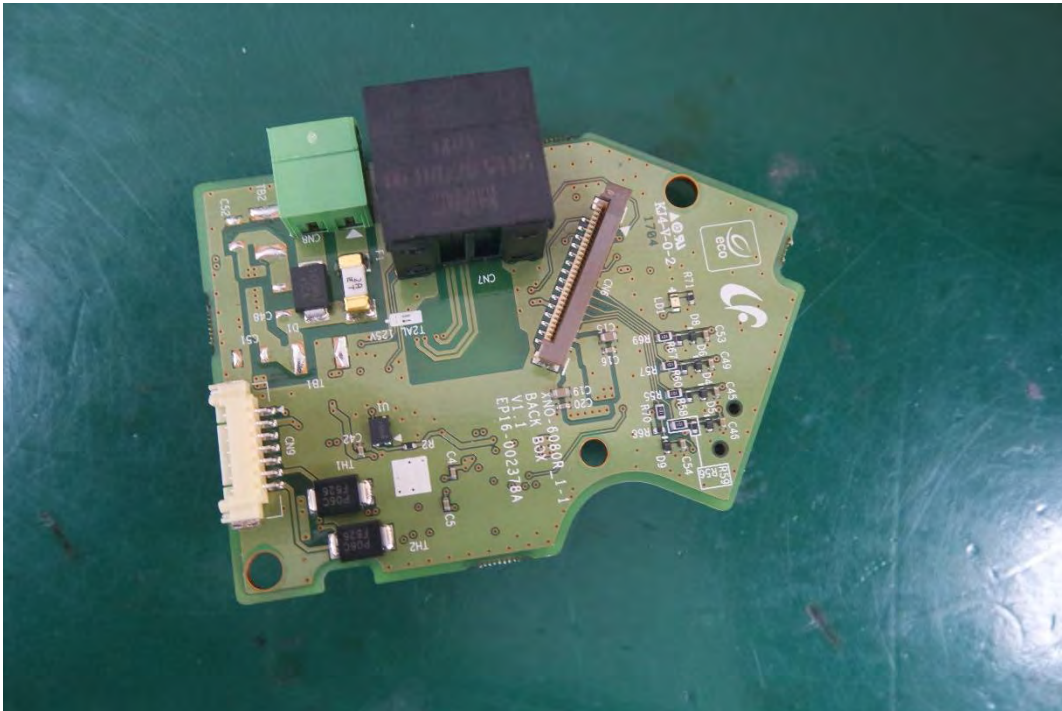
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

EUT Internal View – Sub Board 1

(Top)

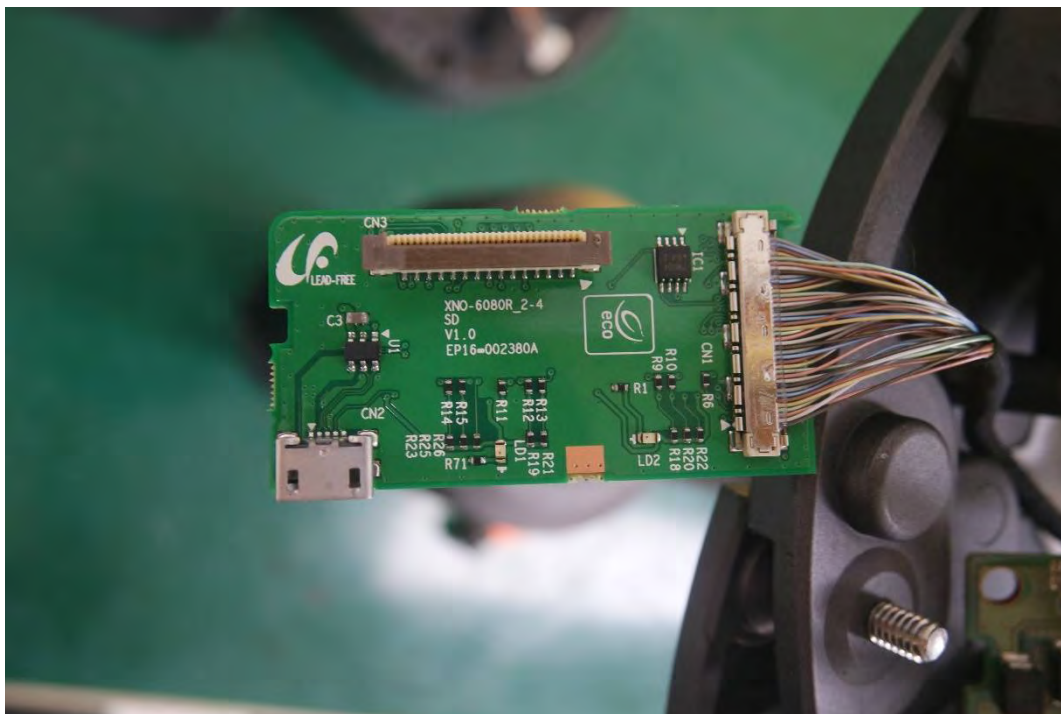


(Top)

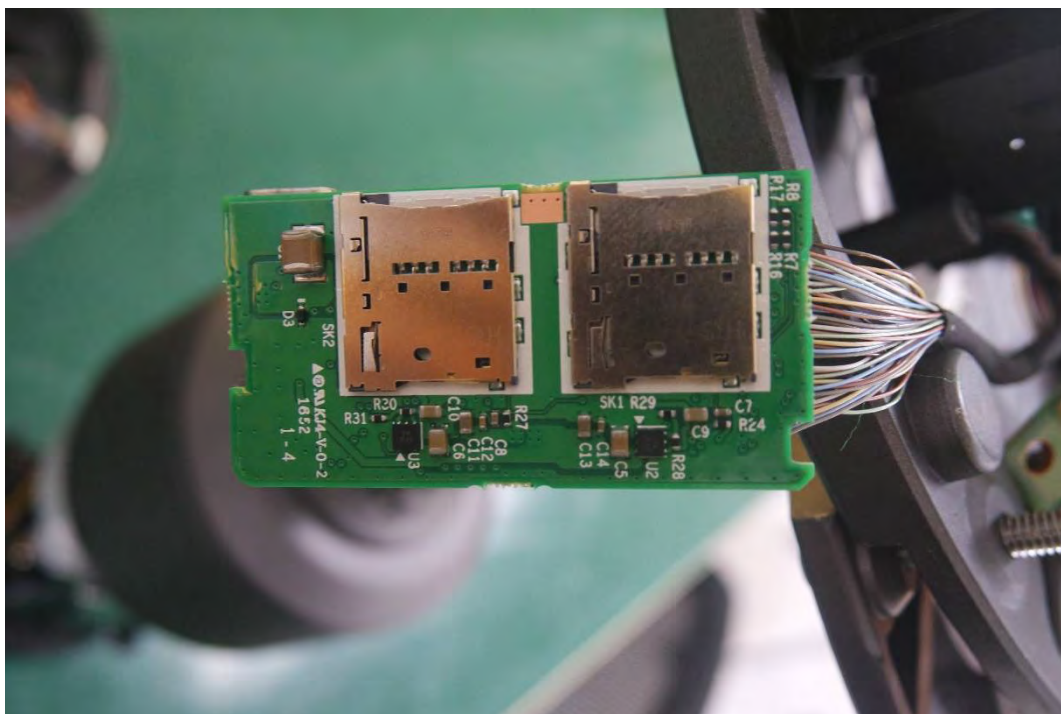


This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

(Top)



(Top)



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.

EUT Internal View – Sub Board 3

(Top)



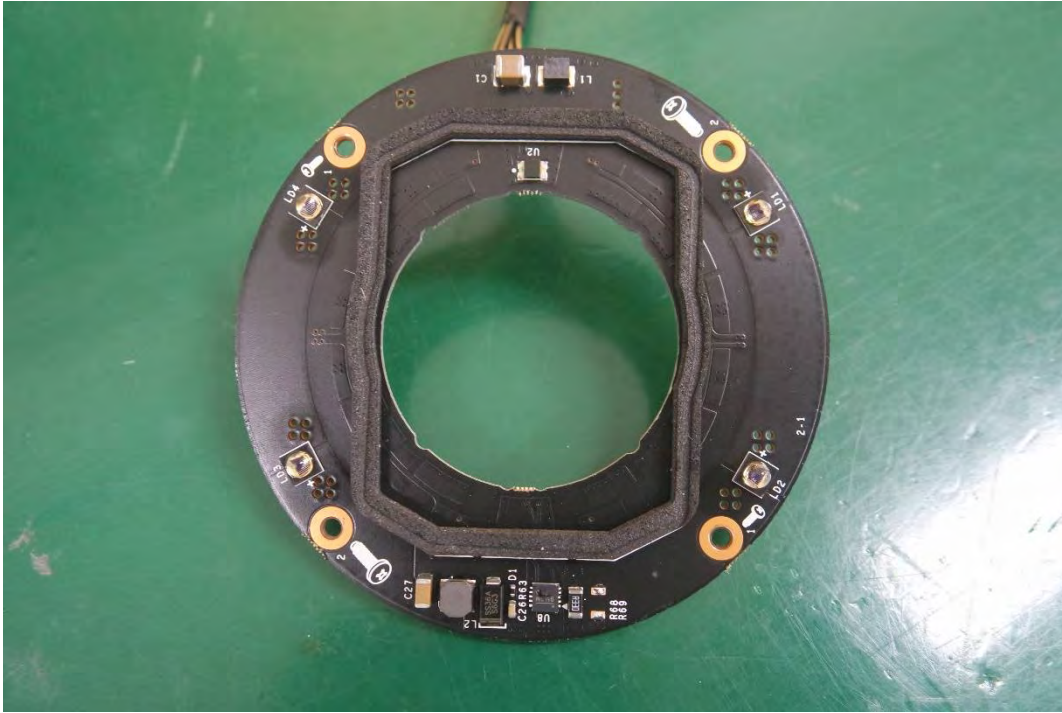
(Top)



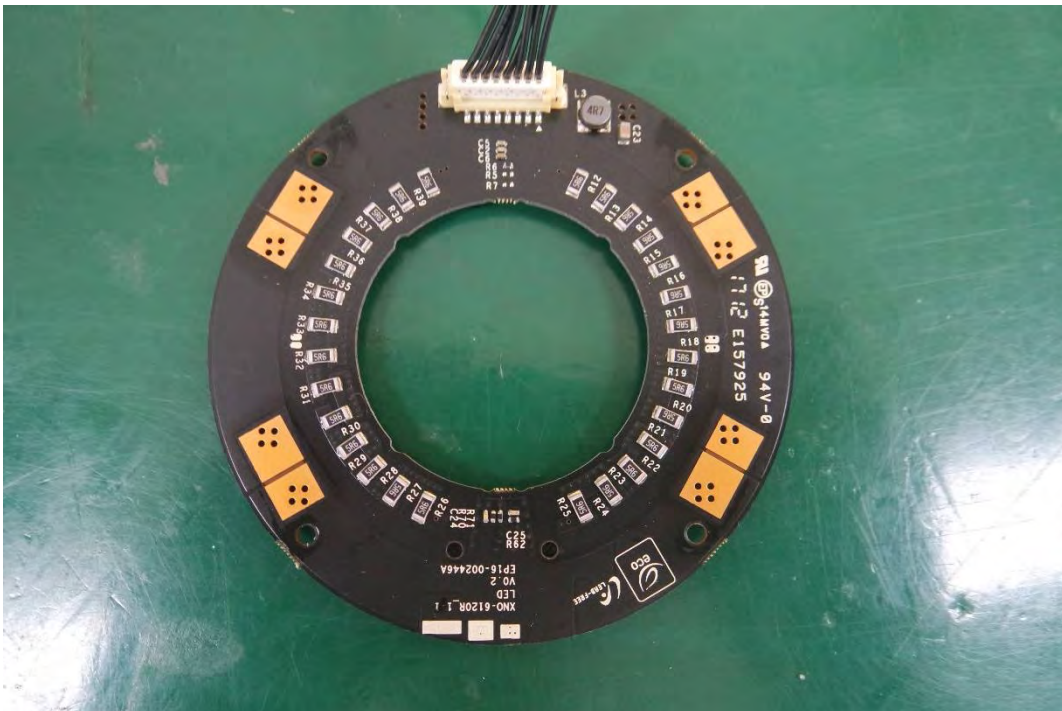
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

EUT Internal View – Sub Board 4

(Top)



(Top)



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.