EMC TEST REPORT For IC

Test Report No.	:	KES-E1-16T0648
Date of Issue	:	Dec. 14, 2016
Product name	:	NETWORK CAMERA
Model/Type No.	:	XNV-6010N
Variant Model	:	-
Applicant	:	Hanwha Techwin Co., Ltd.
Applicant Address	:	Changwon-daero, Seongsan-gu Changwon-si, Gyeongsangnam-do
Manufacturer	:	Tianjin Samsung Techwin Opto-Electronic Co.,Ltd.
Manufacturer Address	:	No.11 Weiliu Rd,Micro-Electronic Industrial Park,TEDA,Tianjin,300385,People's Republic of China
Date of Receipt	:	Nov, 30, 2016
Test date	:	Dec. 06, 2016
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Jin Bae Lee
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Dec. 14, 2016	KES-E1-16T0648	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/2.8" 2M CMOS (IMX291)
Total Pixels	1945(H) x 1109(V) 2.16M
Effective Pixels	1945(H) x 1097(V) 2.13M
Scanning System	Progressive Scan
Min. Illumination	Color : 0.07 lux (TBD)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation USB : Micro USB type B, 1920 x 1080(TBD), for installation
Lens	
Focal Length (Zoom Ratio	2.5mm Fixed
Max. Aperture Ratio	F2.0
Angular Field of View	H: 139°, V:73°, D: 167°
Min. Object Distance	0.4m
Focus Control	Manual
Lens Type	Fixed
Mount Type	Board-in type(M12)
Pan / Tilt / Rotate	
Pan / Tilt / Rotate range	0° ~ 354° / 0° ~ 85°(TBD) / 0° ~ 355°
Operational	
IR LED	-
Viewable Length	-
Camera Title	Off / On (Displayed up to 55 characters) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 6), 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(Seamless transition TBD)
Wide Dynamic Range	150dB(TBD)
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	SSNR5 (2D+3D Noise Filter) (Off / On)
Digital Image Stabilization	Off / On
Defog	Auto(input from fog&Dust detection) / Manual / Off
Motion Detection	Yes(8ea, 4point Polygonal zones)
Privacy Masking	Off / On (32ea, polygonal 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 →TBD)
Digital PTZ	24X, 'Digital PTZ(Preset, Group)
Flip / Mirror	Flip : On/Off Mirror : On/Off Hallway view : 90°/270°
Intelligent Video Analytics	Tampering, Loitering, Directional Detection, Defocus Detection, Fog&Dust Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Motion Detection, Digital Auto Tracking, Sound Classification, Heatmap, People counting, Queue management
Alarm I/O	Input 1ea / Output 1ea
Remote Control Interface	-
RS-485 Protocol	-

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Alarm Triggers	Alarm Input, Motion Detection, Intelligent Video Analytics, Network Disconnect
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 DPTZ preset
Audio In	Selectable (Mic IN/Line IN), Built-in MIC. Max output level : 1Vrms Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out, Max output level: 1 Vrms
Fan / Heater	-
Pixel Counter	Support
Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Forma	H.265/H.264 (MPEG-4 Part 10/AVC) : Main/Baseline/High , Motion JPEG
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x450, 720x576, 640x480, 640x360, 320x240, 320x180
Max. Framerate	H.265/H.264 : Max. 60fps at all resolutions Motion JPEG : Max. 30fps
Smart Codec	Manual Mode (area-based : 5EA)
Video Quality Adjustment	H.264/H.265 : Target Bitrate Level Control MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.264/H.265 : CBR or VBR, ※ WiseStream 별도항목으로 분리 MJPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10 Profiles)
Audio Compression Forma	G.711 u-law /G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 8/16/32/48KHz
Audio Communication	Bi-dierctional (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 Encryption 기능구현
Streaming Method	Streaming Method
Max. User Access	20 users at Unicast Mode(TBD)
Edge Storage	SD/SDHC/SDXC 2slot (up to 512 GB) - Continuous recording(1'st slot to 2'nd slot) - (TBD) Redundant recording - Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS(Network Attached Storage) Local PC for Instant Recording
Application Programming I	ONVIF Profile S/G SUNAPI(HTTP API) Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Denish, Portuguese, Czech, Polish, Turkish, Rumanian, Serbian, Dutch, Croatia, Hungary, Greek, Norsk, Finnish

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Web Viewer	Supported OS: Windows 7, 8, 10, Mac OS X 10.8. 10.9. 10.10. 10.11 **Non-plugin Webviewer** Supported Browser: Google Chrome 47, MS Edge 20 Support Codec : Video : H.264, MJPEG (MAX 1M 15FPS) Audio : G.711 **Plug-in Webviewer** Supported Browser : MS Explore 11 , Mozilla Firefox 43 , Apple Safari 9 * Mac OS X only
Central Management Soft	SmartViewer, SSM
Environmental	
Operating Temperature / Humidity	-30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH *Start up should be done at above -20°C
Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP67(TBD), IP66
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	DC12V,PoE(IEEE802.3af,Class3)
Power Consumption	TBD
Mechanical	
Color / Material	Ivory / Metal
Dimension (WxHxD)	ϕ120 x H92
Weight	TBD

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1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage ☐ 100 Vac ☐ 110 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	XNV-6010N	-	Tianjin Samsung Techwin Opto-Electronic Co.,Ltd.	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
POE Adapter	PD-3001GC/AC	RD9356082016964200	Power Dsine	-
Notebook	X56K	HN11N5151FJ0045W	HANSUNG	-
Notebook Adapter	A12-120P1A	F180271552011758	CHICONY POWER TECHNOLOGY CO.,LTD.	-
Phone	A1530	-	APPLE	-
MIC	CMK-303	-	CAMAC	1.7 m
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	1.6 m
Alarm	-	-	-	-

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1.6 External I/O Cabling

- 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
	7 Pin	MIC	3.5 ㎜	1.7	U
		Speaker	3.5 ㎜	1.6	U
		Alarm	2 pin	2.5	U
Notebook	Audio in	Phone	Audio out	1.7	-

- PoE Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (E.U.T)	RJ-45 (POE)	Notebook	RJ-45 (POE)	3.0	U
	7 Pin	MIC	3.5 ㎜	1.7	U
		Speaker	3.5 ㎜	1.6	U
		Alarm	2 pin	2.5	U
Notebook	Audio in	Phone	Audio out	1.7	U
	RJ-45 (DATA)	POE Adapter	RJ-45 (DATA)	3.0	U

* Unshielded = U, Shielded = S

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1.7 EUT Operating Mode(s)

Normal operating
E.U.T Monitoring , Ping test, 1 kHz

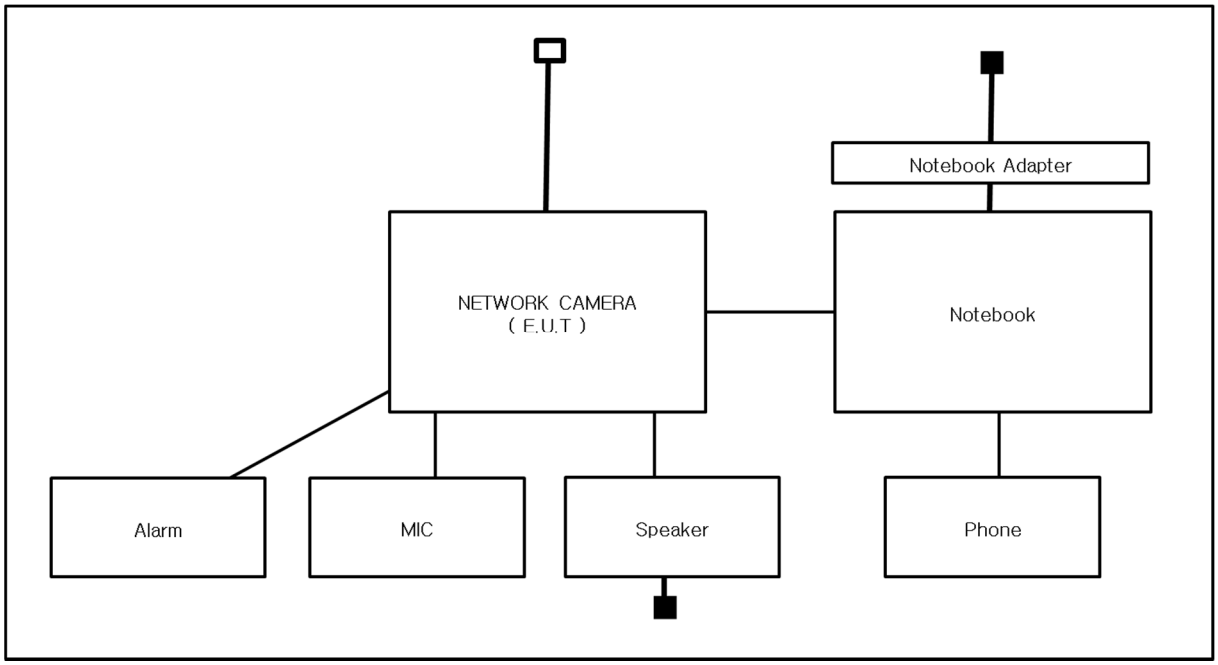
E.U.T Test operating S/W		
Name	Version	Manufacture Company
SmartViewer	-	Hanwha Techwin Co., Ltd.

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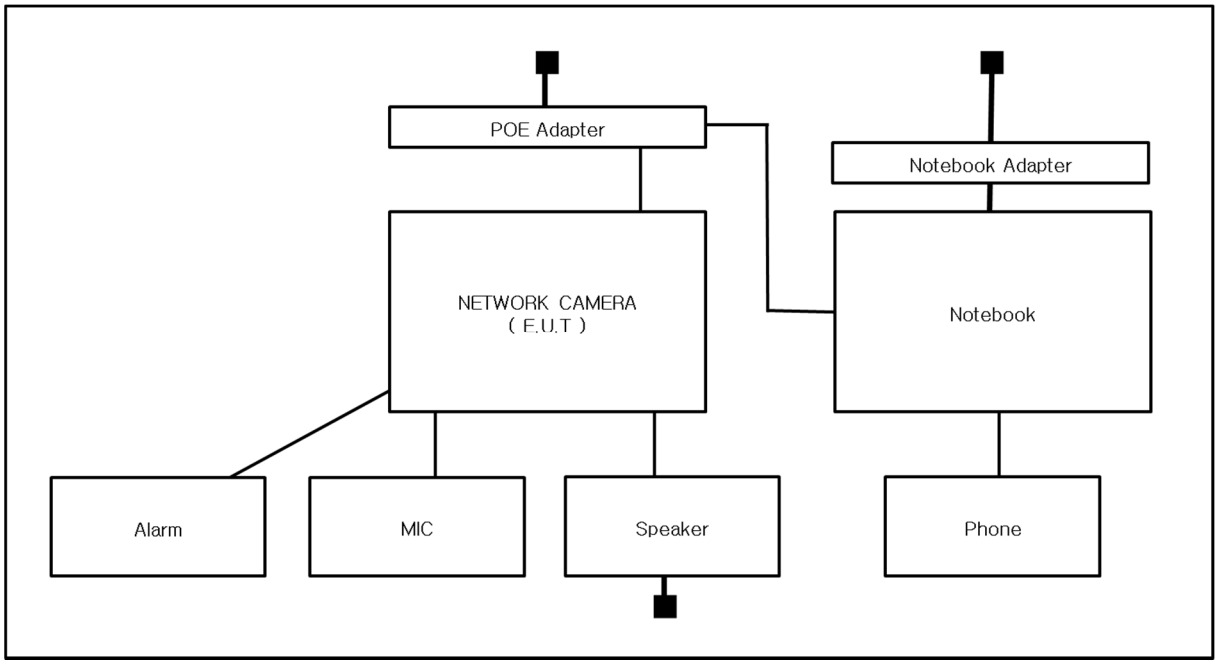
1.8 Configuration

■ AC VMain
□ DC 12 VMain

- DC 12V Mode



- PoE Mode



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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, Yeoju-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)	KOREA LABORATORY ACCREDITATION SCHEME KOLAS TESTING NO. 489

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2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010 ☐ Group 1 ☐ Class A ☐ Group 2 ☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 61547 :2009

☐ EN 55022:2010 ☐ 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

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☐ **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

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2.1 Conducted Emissions Mains Power Ports

Test Date
N/A

Test Location
Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☐	EMI Test Receiver	ESR3	R & S	101783	05, 03, 2017
☐	LISN	ENV216	R & S	101137	02, 04, 2017
☐	LISN	ENV216	R & S	101786	05, 02, 2017
☐	Electro wave Shieldroom	-	SEMITEC	-	-
☐	EMI Test S/W	EMC32	R & S	9.12.00	-

Test Conditions
Temperature: ℃
Relative Humidity: %

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

Test Results
The requirements are:

☐ PASS
☐ NOT PASS
☒ NOT APPLICABLE

Remarks
N/ABecause the E.U.T power is 12 v (dc) power and PoE, limits are not specified.

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2.2 Radiated Electric Field Emissions(Below 1 ㎓)

Test Date
Dec, 06, 2016

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

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESR3	R&S	101781	05, 03, 2017
☒	Trilog-Broadband Antenna	VULB 9163	SCHWARZBECK	9168-713	05, 15, 2017
☒	Open Area Test Site	-	KES	-	-
☒	Antenna Mast	-	DAEIL EMC	-	-
☒	Turn Table	-	DAEIL EMC	-	-
☒	EMI Test S/W	-	-	-	-

Test Conditions
Temperature: 4,4 ℃
Relative Humidity: 39,0 %

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.

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2.3 Radiated Electric Field Emissions(Above 1 ㎓)

Test Date
Dec, 06, 2016

Test Location
Semi Anechoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESU26	R&S	100552	04, 24, 2017
☒	Broadband Coaxial Preamplifier	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10, 24, 2017
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 07, 2017
☒	Semi Anechoic Chamber #2	-	SEMITEC	-	-
☒	Antenna Mast	-	AUDIX	-	-
☒	Turn Table	-	AUDIX	-	-
☒	EMI Test S/W	e3	AUDIX	8.083b	-

Test Conditions
Temperature: 16,9 ℃
Relative Humidity: 45,3 %

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.

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APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

N/A

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

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[NEUTRAL]

N/A

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

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Radiated Electric Field Emissions(Below 1 ㎓)

- DC 12V Mode

Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[㎒]	[dBμV]		[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	[dB]
51.27	11.78	V	1.00	13.79	2.11	27.68	40.00	12.32
225.83	8.80	H	3.62	11.87	4.43	25.10	40.00	14.90
334.52	7.09	V	1.18	14.18	5.49	26.76	47.00	20.24
398.10	8.87	H	3.29	15.66	6.15	30.68	47.00	16.32
449.82	7.14	V	1.24	16.40	6.80	30.34	47.00	16.66
464.77	7.68	H	3.78	16.61	6.86	31.15	47.00	15.85
600.58	6.15	V	1.00	19.30	7.83	33.28	47.00	13.72

* H : Horizontal, V : Vertical

♦ Calculation
Corrected Amplitude [㏈uV] = Amplitude[㏈uV] + Correction Factor [㏈]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

- PoE Mode

Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[㎒]	[dBμV]		[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	[dB]
66.16	8.39	H	3.72	10.84	2.33	21.56	40.00	18.44
221.34	8.42	V	1.45	11.77	4.37	24.56	40.00	15.44
250.87	6.18	H	3.92	12.43	4.73	23.34	47.00	23.66
461.61	7.70	H	4.00	16.56	6.85	31.11	47.00	15.89
484.82	9.01	V	1.34	16.89	6.94	32.84	47.00	14.16
680.33	13.44	V	1.00	19.62	8.38	41.44	47.00	5.56

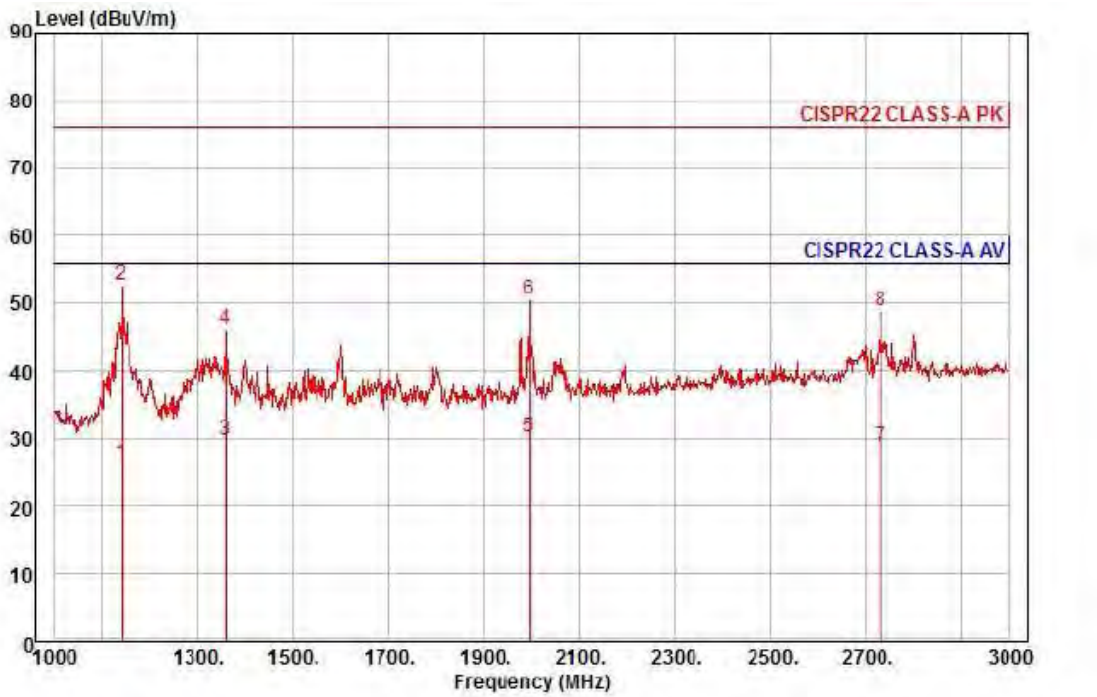
* H : Horizontal, V : Vertical

♦ Calculation
Corrected Amplitude [㏈uV] = Amplitude[㏈uV] + Correction Factor [㏈]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

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Radiated Electric Field Emissions(Above 1 ㎓)

- DC 12V Mode

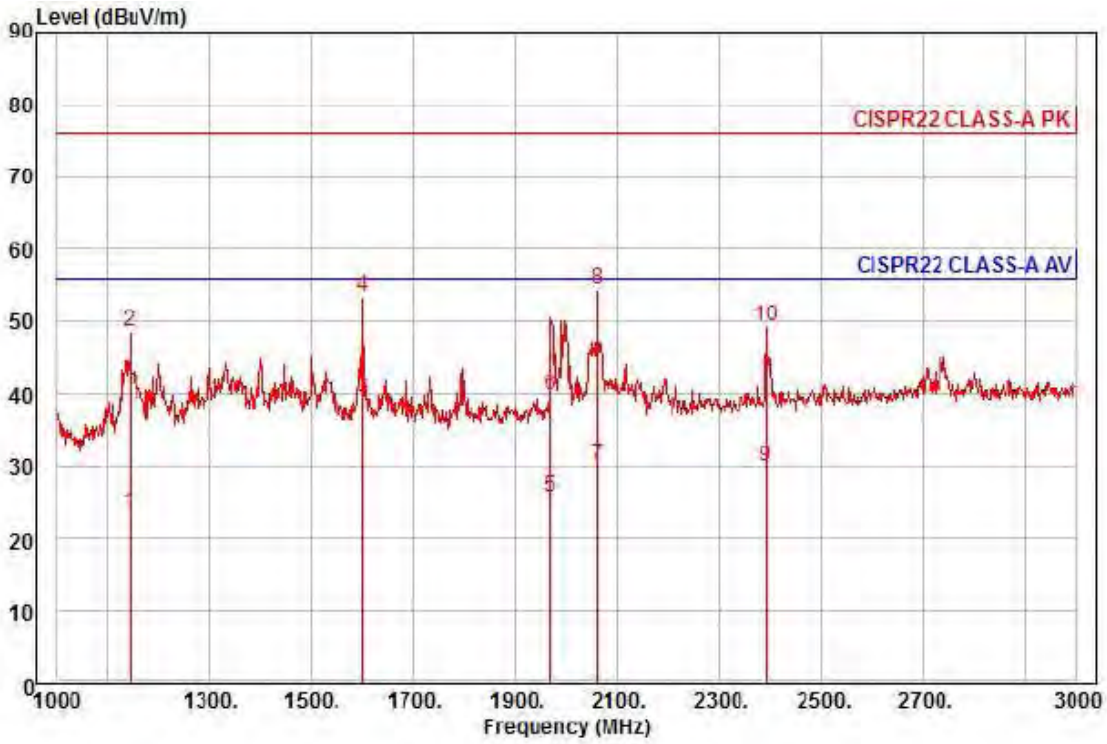


Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : DC 12 V
Memo : 1 ~ 3 GHz

	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	1140.00	34.64	24.47	6.94	39.75	208	56.00	-29.70	horizontal	Average
2 pp	1140.00	60.99	24.47	6.94	39.75	208	76.00	-23.35	horizontal	Peak
3	1360.00	35.96	25.34	7.61	39.23	29	56.00	-26.32	horizontal	Average
4	1360.00	52.47	25.34	7.61	39.23	29	76.00	-29.81	horizontal	Peak
5 av	1996.00	32.26	27.86	9.33	39.41	20	56.00	-25.96	horizontal	Average
6	1996.00	52.68	27.86	9.33	39.41	20	76.00	-25.54	horizontal	Peak
7	2732.00	27.87	29.67	11.07	39.80	335	56.00	-27.19	horizontal	Average
8	2732.00	47.81	29.67	11.07	39.80	335	76.00	-27.25	horizontal	Peak

♦ Calculation
Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] − Preamp Factor [㏈]) − Limit Line[㏈uV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : DC 12 V
Memo : 1 ~ 3 GHz

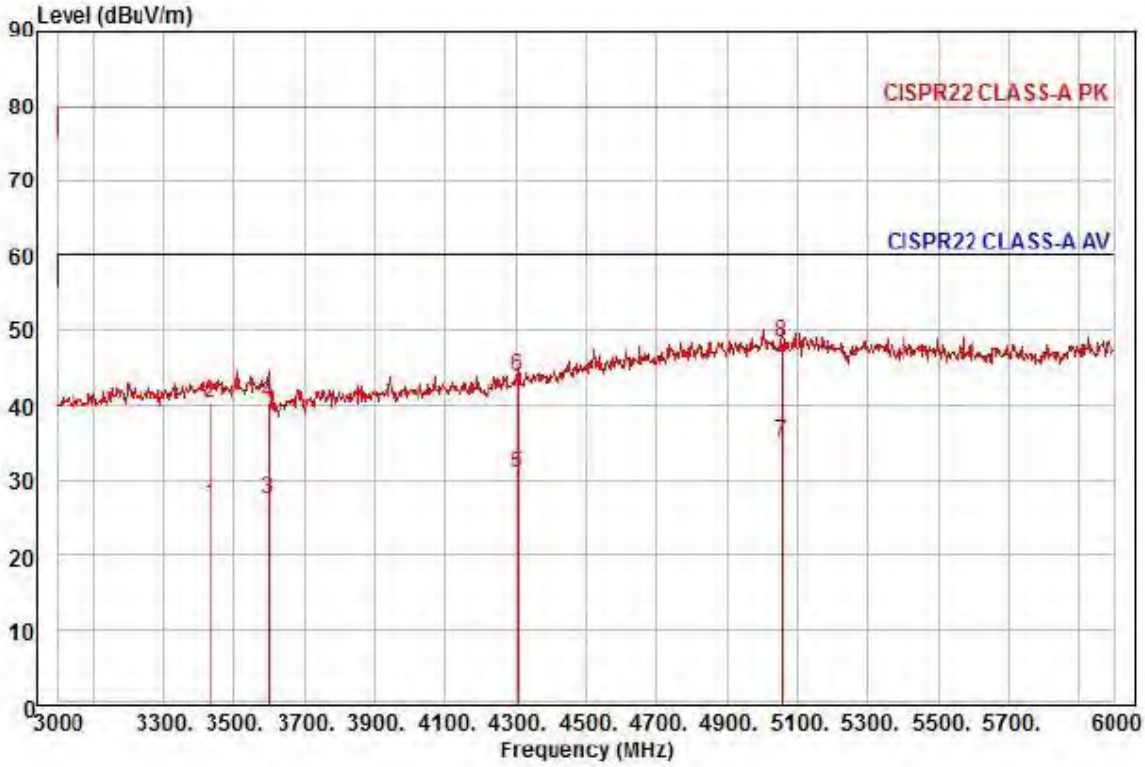
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1144.00	31.86	24.48	6.95	39.74	351	56.00	-32.45	vertical	Average
2	1144.00	56.90	24.48	6.95	39.74	351	76.00	-27.41	vertical	Peak
3 pp	1600.00	44.01	26.29	8.31	39.22	48	56.00	-16.61	vertical	Average
4	1600.00	58.11	26.29	8.31	39.22	48	76.00	-22.51	vertical	Peak
5	1970.00	28.12	27.76	9.26	39.40	0	56.00	-30.26	vertical	Average
6	1970.00	42.01	27.76	9.26	39.40	0	76.00	-36.37	vertical	Peak
7	2060.00	32.14	28.03	9.48	39.41	326	56.00	-25.76	vertical	Average
8 pk	2060.00	56.45	28.03	9.48	39.41	326	76.00	-21.45	vertical	Peak
9	2392.00	30.14	28.84	10.30	39.42	28	56.00	-26.14	vertical	Average
10	2392.00	49.57	28.84	10.30	39.42	28	76.00	-26.71	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

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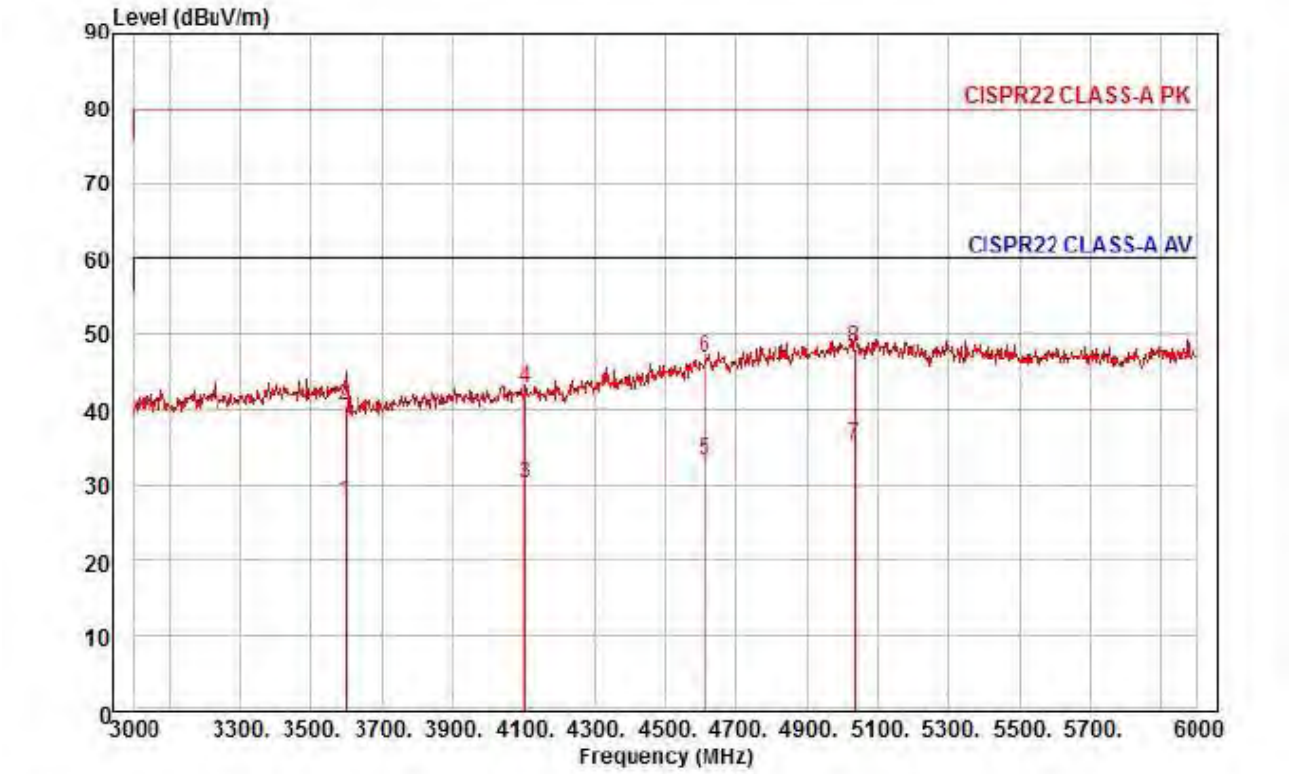


Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : DC 12 V
Memo : 3 ~ 6 GHz

	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	3435.00	23.97	31.06	12.51	40.78	230	60.00	-33.24	horizontal	Average
2	3435.00	37.49	31.06	12.51	40.78	230	80.00	-39.72	horizontal	Peak
3	3597.00	24.31	31.33	12.80	40.85	334	60.00	-32.41	horizontal	Average
4	3597.00	36.95	31.33	12.80	40.85	334	80.00	-39.77	horizontal	Peak
5	4305.00	23.74	33.75	14.11	40.74	70	60.00	-29.14	horizontal	Average
6	4305.00	36.71	33.75	14.11	40.74	70	80.00	-36.17	horizontal	Peak
7 pp	5058.00	22.50	37.60	15.43	40.37	299	60.00	-24.84	horizontal	Average
8 pk	5058.00	35.65	37.60	15.43	40.37	299	80.00	-31.69	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

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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
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	3597.00	24.35	31.33	12.80	40.85	51	60.00	-32.37	vertical	Average
2	3597.00	37.25	31.33	12.80	40.85	51	80.00	-39.47	vertical	Peak
3	4104.00	24.41	32.60	13.76	40.71	343	60.00	-29.94	vertical	Average
4	4104.00	37.20	32.60	13.76	40.71	343	80.00	-37.15	vertical	Peak
5	4611.00	23.86	35.50	14.68	40.66	233	60.00	-26.62	vertical	Average
6	4611.00	37.20	35.50	14.68	40.66	233	80.00	-33.28	vertical	Peak
7 pp	5037.00	22.53	37.65	15.39	40.33	216	60.00	-24.76	vertical	Average
8 pk	5037.00	35.32	37.65	15.39	40.33	216	80.00	-31.97	vertical	Peak

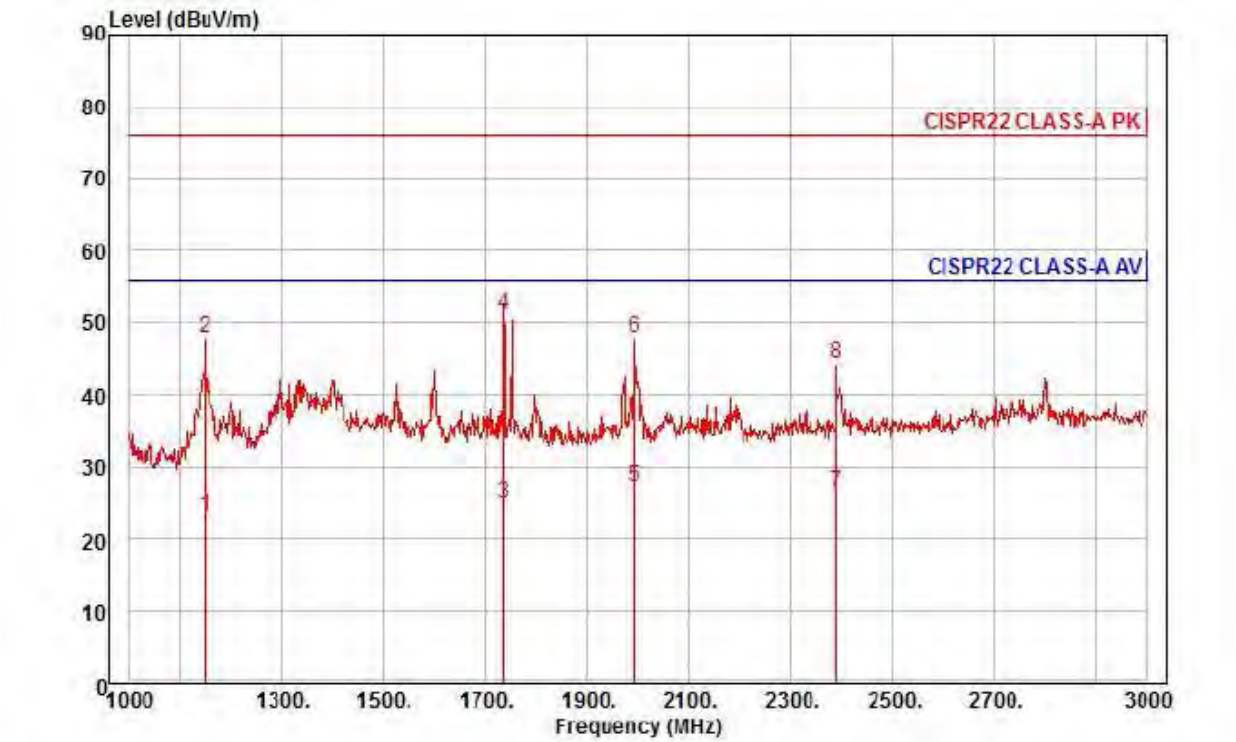
♦ Calculation

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

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- PoE Mode



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : POE
Memo : 1 ~ 3 GHz

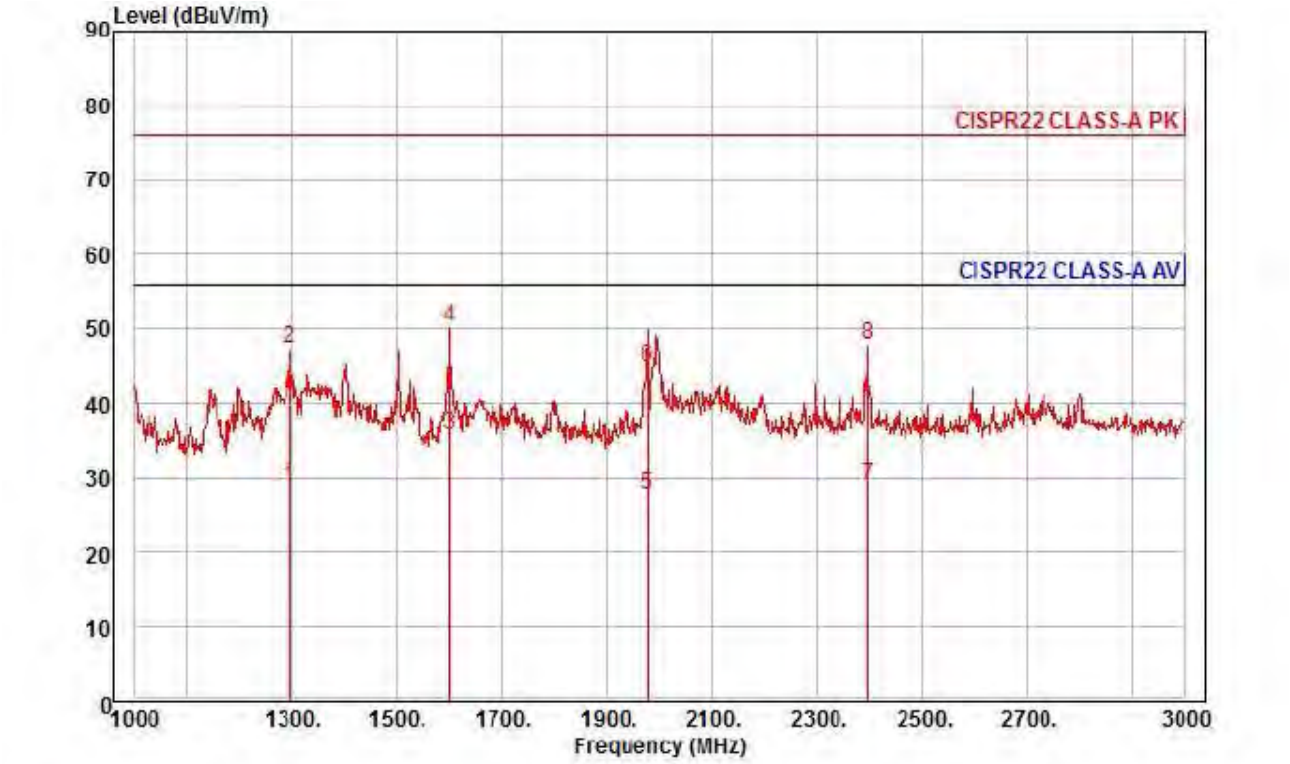
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1148.00	31.54	24.50	6.97	39.73	68	56.00	-32.72	horizontal	Average
2	1148.00	56.12	24.50	6.97	39.73	68	76.00	-28.14	horizontal	Peak
3	1736.00	28.81	26.83	8.66	39.29	282	56.00	-30.99	horizontal	Average
4 pp	1736.00	54.96	26.83	8.66	39.29	282	76.00	-24.84	horizontal	Peak
5 av	1994.00	29.39	27.86	9.32	39.41	177	56.00	-28.84	horizontal	Average
6	1994.00	50.12	27.86	9.32	39.41	177	76.00	-28.11	horizontal	Peak
7	2390.00	26.81	28.84	10.30	39.42	291	56.00	-29.47	horizontal	Average
8	2390.00	44.69	28.84	10.30	39.42	291	76.00	-31.59	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

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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : POE
Memo : 1 ~ 3 GHz

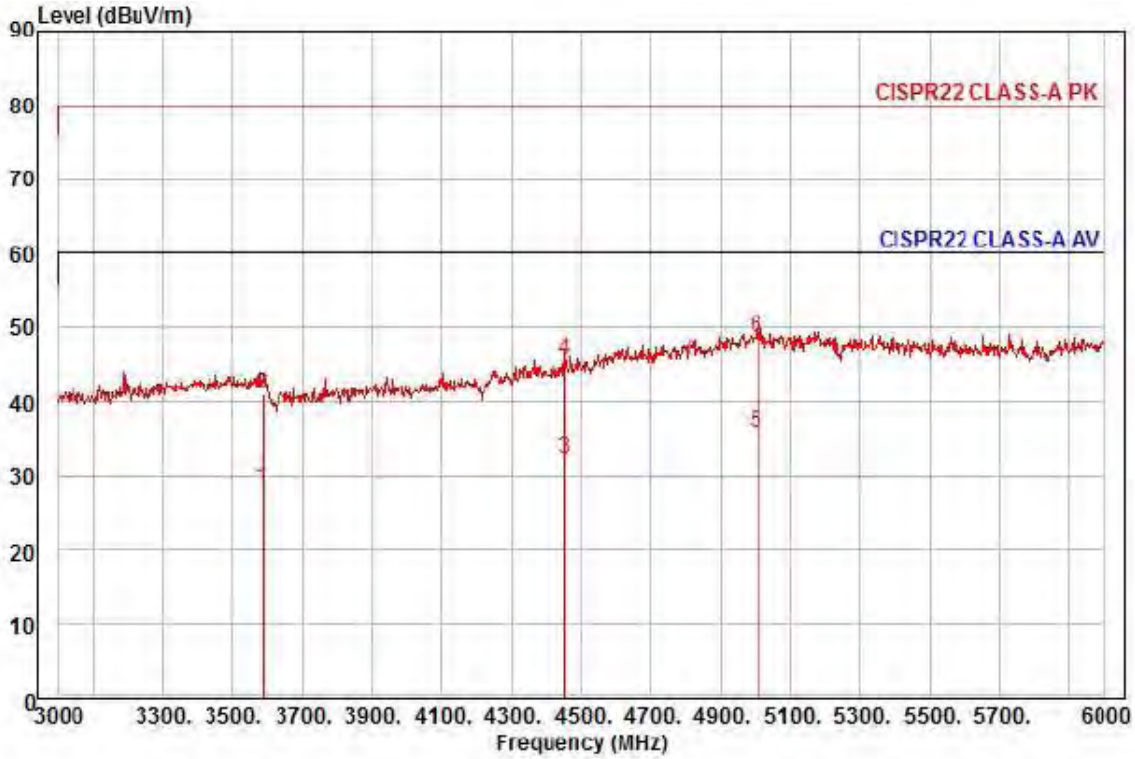
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1296.00	35.57	25.09	7.42	39.38	115	56.00	-27.30	vertical	Average
2	1296.00	54.10	25.09	7.42	39.38	115	76.00	-28.77	vertical	Peak
3 pp	1600.00	40.46	26.29	8.31	39.22	334	56.00	-20.16	vertical	Average
4 pk	1600.00	54.87	26.29	8.31	39.22	334	76.00	-25.75	vertical	Peak
5	1978.00	30.11	27.79	9.28	39.40	134	56.00	-28.22	vertical	Average
6	1978.00	47.18	27.79	9.28	39.40	134	76.00	-31.15	vertical	Peak
7	2398.00	29.13	28.86	10.32	39.42	32	56.00	-27.11	vertical	Average
8	2398.00	48.12	28.86	10.32	39.42	32	76.00	-28.12	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

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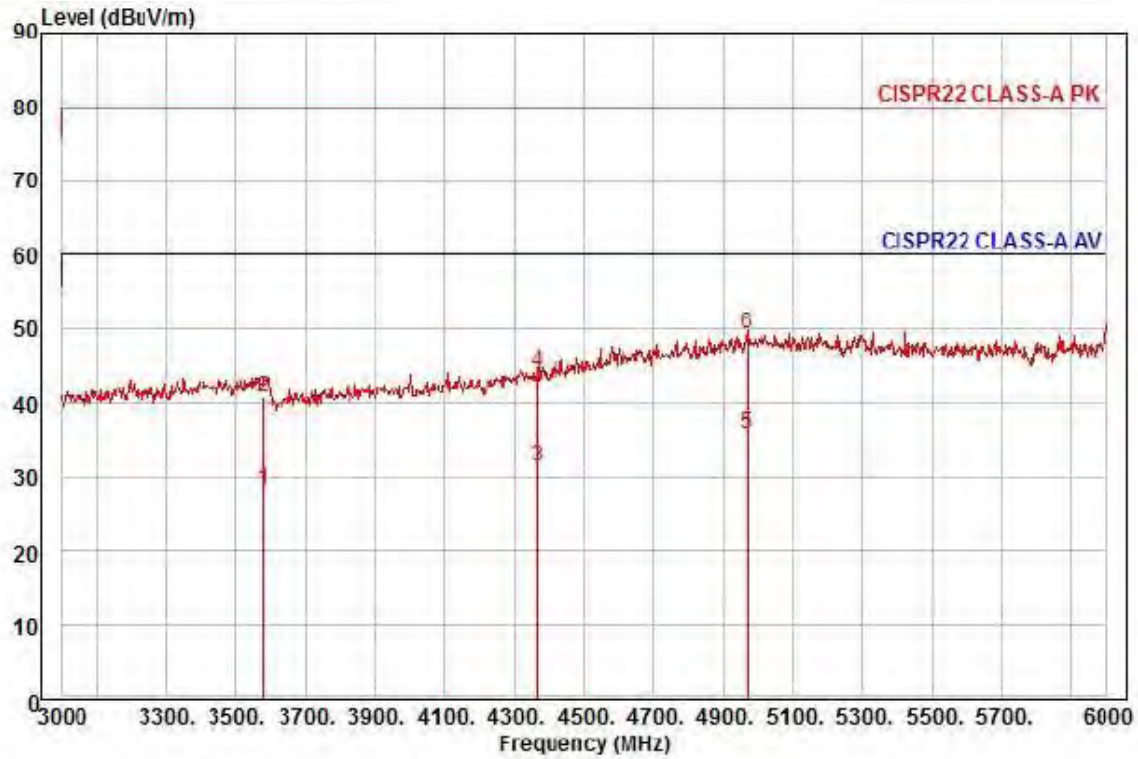


Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : POE
Memo : 3 ~ 6 GHz

	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	3585.00	24.91	31.31	12.78	40.85	356	60.00	-31.85	horizontal	Average
2	3585.00	37.60	31.31	12.78	40.85	356	80.00	-39.16	horizontal	Peak
3	4455.00	24.17	34.61	14.38	40.76	251	60.00	-27.60	horizontal	Average
4	4455.00	37.34	34.61	14.38	40.76	251	80.00	-34.43	horizontal	Peak
5 pp	5004.00	22.99	37.71	15.32	40.28	59	60.00	-24.26	horizontal	Average
6 pk	5004.00	35.72	37.71	15.32	40.28	59	80.00	-31.53	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

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```
Site      : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
          : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project   :
Model     : XNV-6010N
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	3579.00	24.97	31.30	12.77	40.85	311	60.00	-31.81	vertical	Average
2	3579.00	37.40	31.30	12.77	40.85	311	80.00	-39.38	vertical	Peak
3	4365.00	23.83	34.09	14.21	40.75	6	60.00	-28.62	vertical	Average
4	4365.00	36.64	34.09	14.21	40.75	6	80.00	-35.81	vertical	Peak
5 pp	4968.00	23.25	37.54	15.28	40.30	109	60.00	-24.23	vertical	Average
6 pk	4968.00	36.74	37.54	15.28	40.30	109	80.00	-30.74	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

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Test Setup Photos and Configuration
Conducted Voltage Emissions

N/A

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Radiated Electric Field Emissions(Below 1 ㎓)

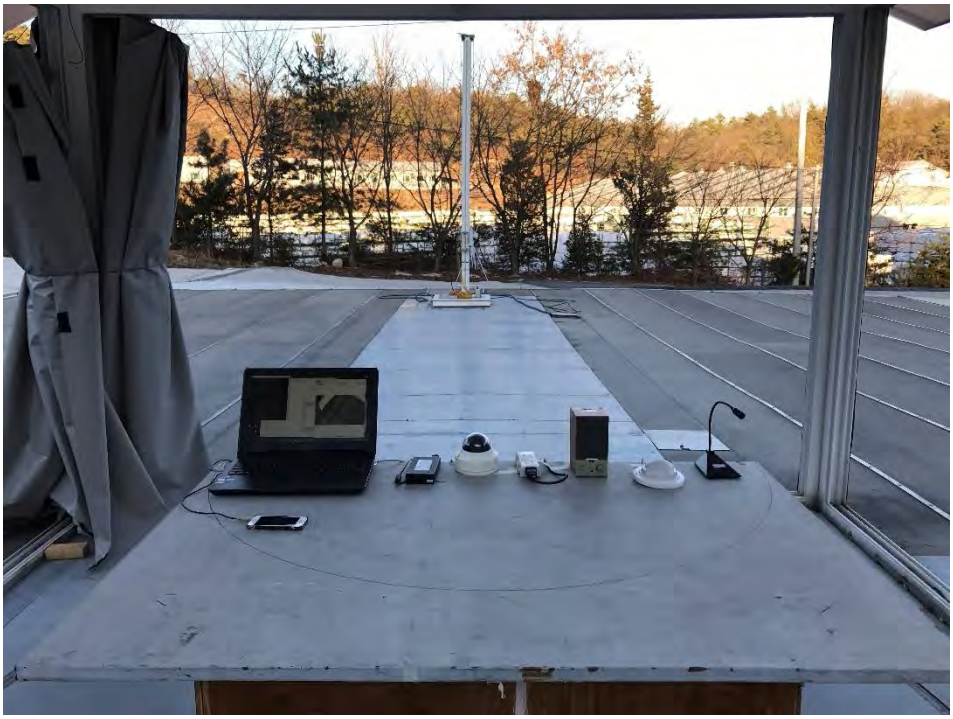
- DC 12V Mode





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- PoE Mode



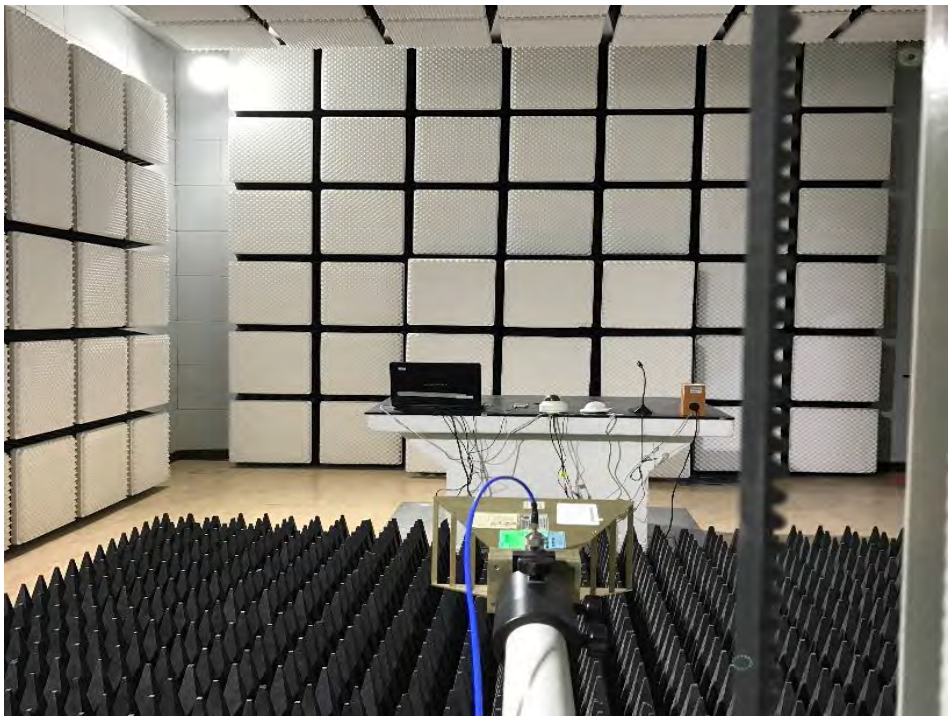


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Radiated Electric Field Emissions(Above 1 ㎓)

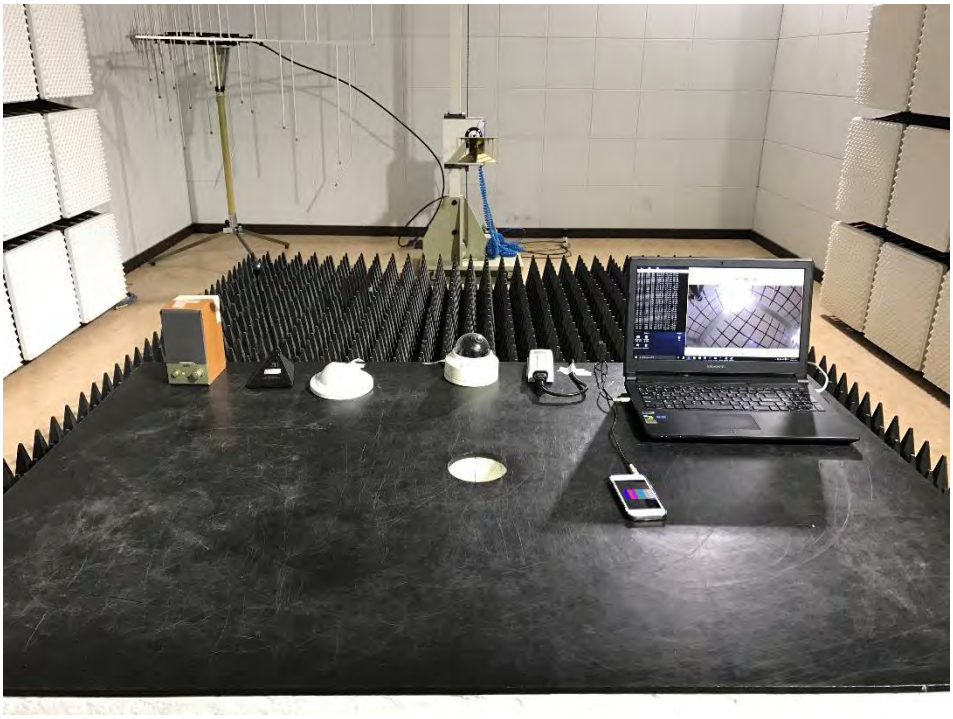
- DC 12V Mode

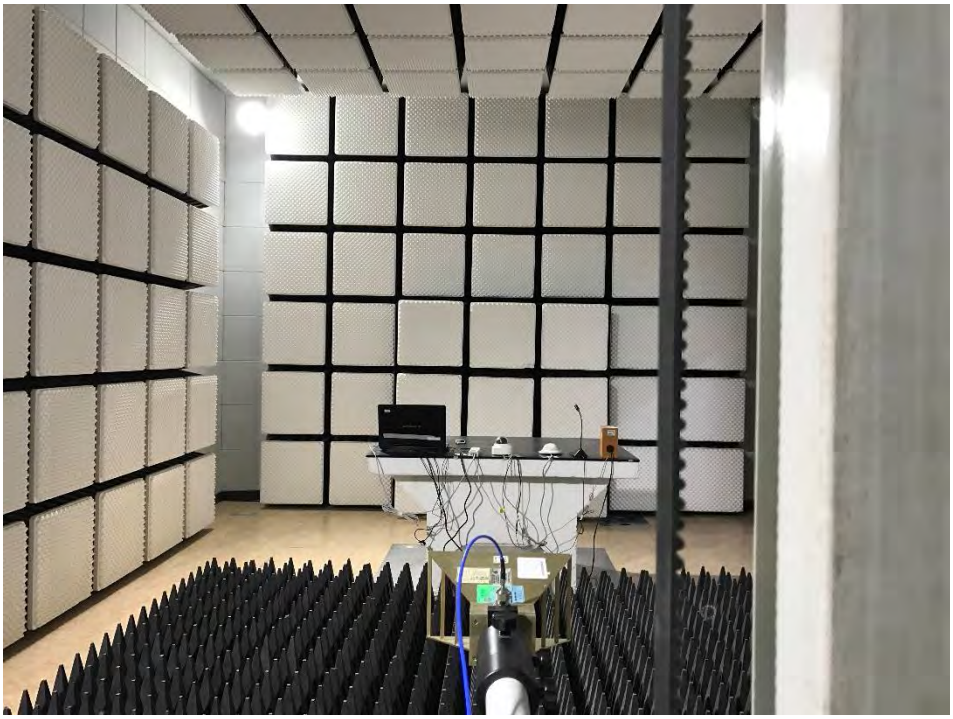




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- PoE Mode





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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

(Internal View)



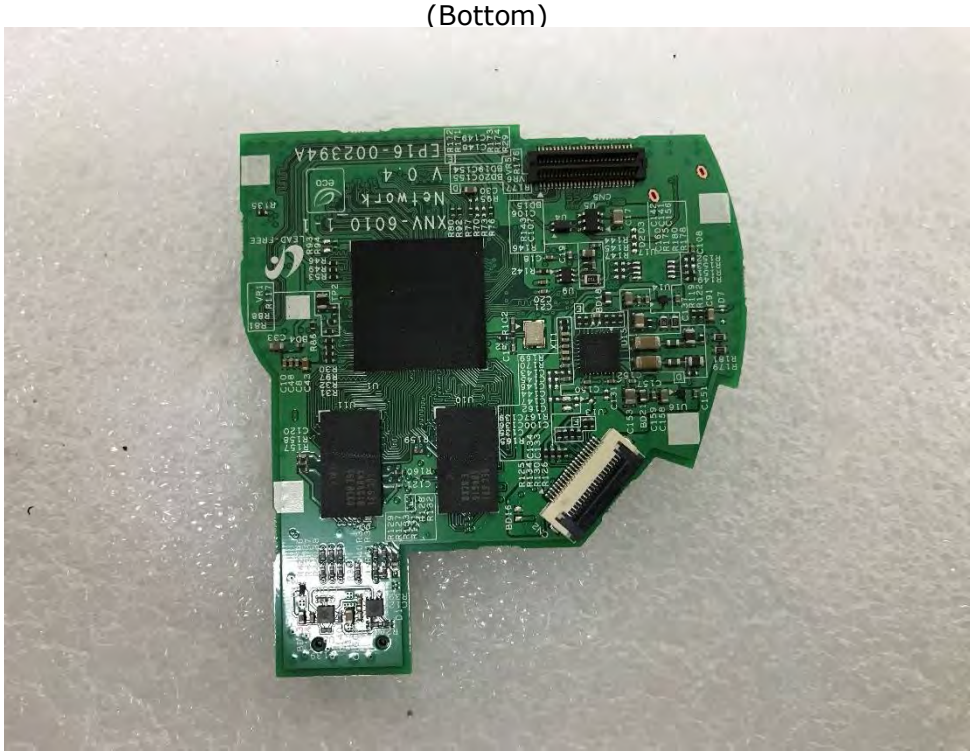
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EUT Internal View – board 1

(Top)



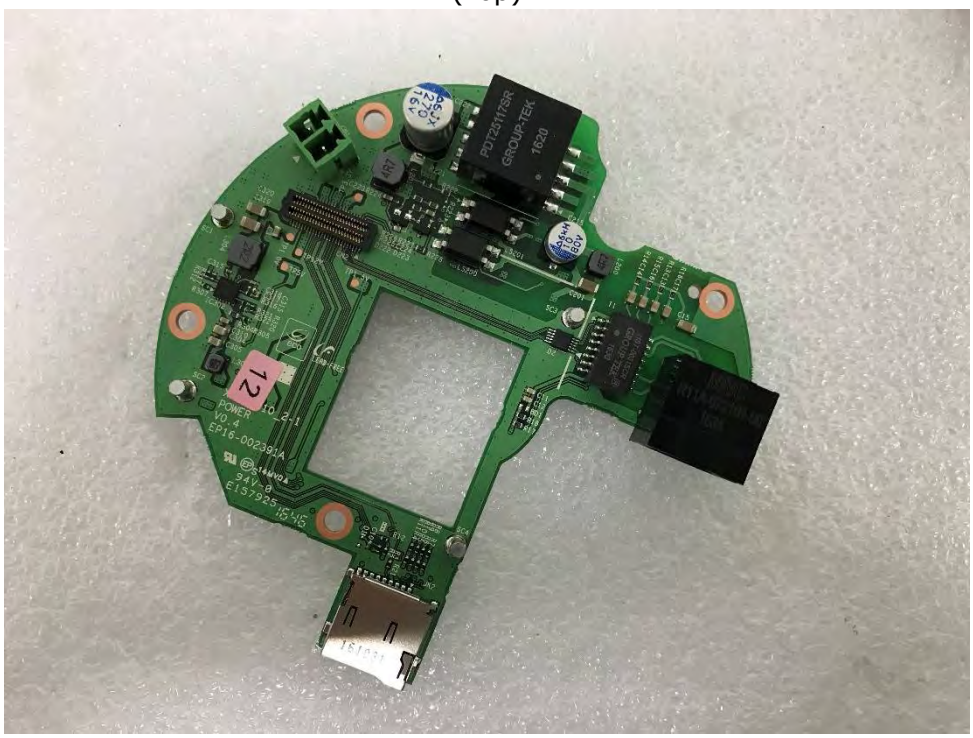
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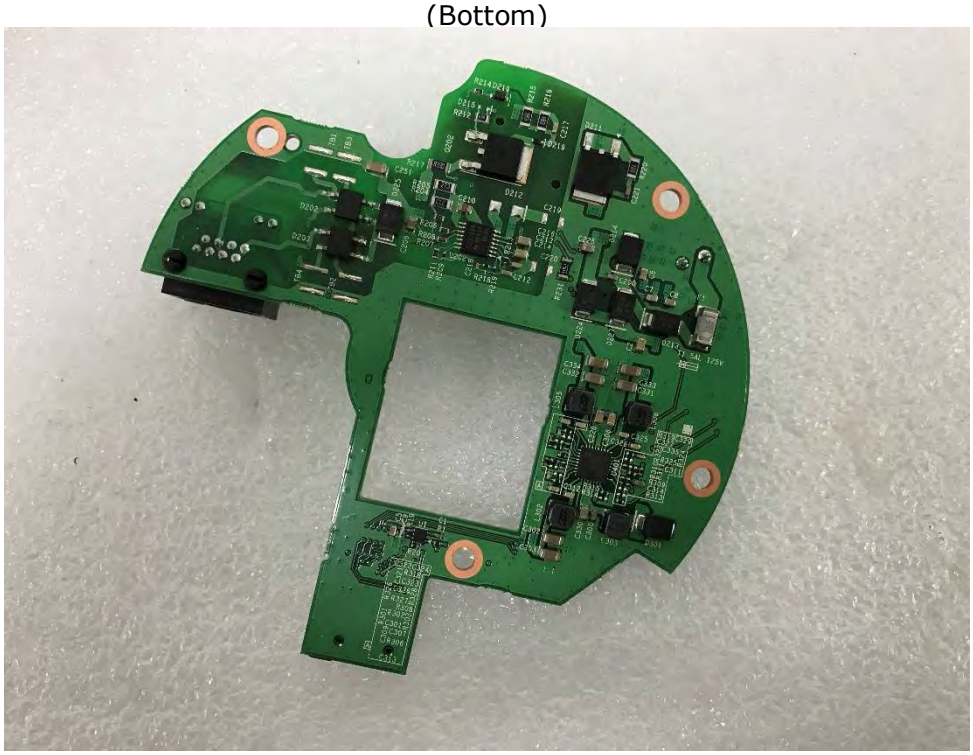
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EUT Internal View – board 2

(Top)



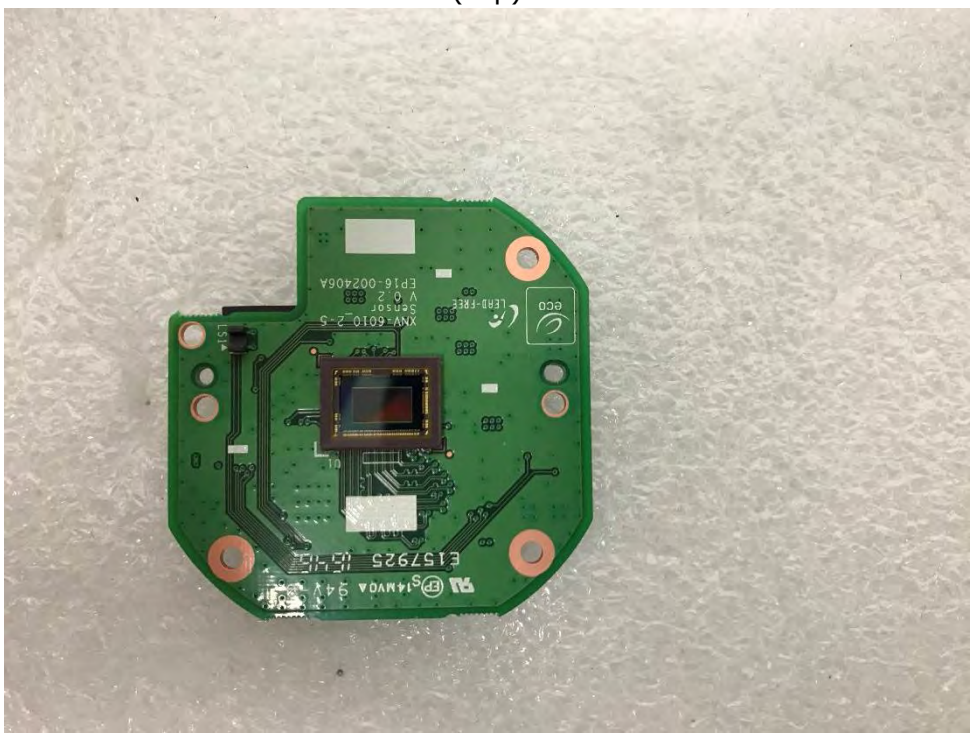
(Bottom)



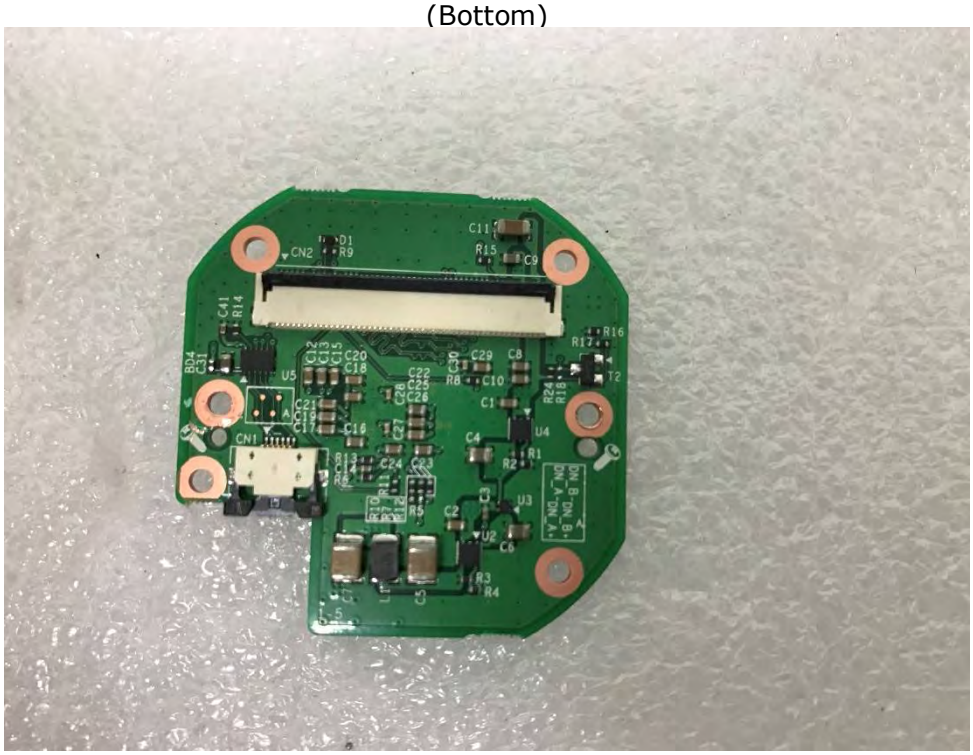
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EUT Internal View – Board 3

(Top)



(Bottom)



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Label Photographs



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

[LABEL VIEW]

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