EMC TEST REPORT For VCCI

Test Report No.	:	KES-E1-16T0689-R1
Date of Issue	:	Feb. 24, 2023
Product name	:	NETWORK CAMERA
Model/Type No.	:	XND-6080V
Variant Model	:	-
Applicant	:	Hanwha Vision Co., Ltd
Applicant Address	:	6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Manufacturer	:	1. HANWHA VISION VIETNAM COMPANY LIMITED 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	:	Nov, 23, 2016
Test date	:	Dec, 18, 2016 ~ Dec, 21, 2016
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dae Hyun, 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
Dec. 28, 2016	KES-E1-16T0689	Issued
Feb. 24, 2023	KES-E1-16T0680-R1	Change the Applicant and manufacturer at the request of the customer

TABLE OF CONTENTS

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 Scan
Min. Illumination	Color : 0.03 lux(F1.4, 1./30sec) B/W : 0.003 Lux (F1.4, 1/30sec)
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 for installation
Lens	
Focal Length (Zoom Ratio	2.8~12mm(4.3x) motorized varifocal
Max. Aperture Ratio	1.4(Wide) ~ 3.6(Tele)
Angular Field of View	H: 119.5°, V: 62.8°, D: 142.1° H: 27.9°, V: 15.7°, D: 32.0°
Min. Object Distance	0.5m (1.64ft)
Focus Control	Simple focus(Motorized V/F) / Manual, Remote control via network (Manual, Simple focus)
Lens Type	DC Auto Iris, P-iris
Mount Type	Board-in type
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 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(input from fog detection) / Manual / Off
Motion Detection	Off/ On(8ea, 8point Polygonal zones), Hand over
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)
Digital PTZ	24X, 'Digital PTZ(Preset, Group)

Flip / Mirror	Flip : On/Off Mirror : On/Off Hallway view : 90°/270°
Video & Audio Analytics	Tampering, Loitering, Directional Detection, Defocus Detection, Fog Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Motion Detection, Digital Auto Tracking, Sound Classification
Alarm I/O	Input 1ea / Output 1ea
Remote Control Interface	-
RS-485 Protocol	-
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio 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	N/A
Pixel Counter	Support
Network	
Ethernet	RJ-45 (10/100/1000BASE-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)
WiseStream	Support
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 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 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 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
Web Viewer	Supported OS: Windows 7, 8, 10, Mac OS X 10.10. 10.11 10.12 **Non-plugin Webviewer** Supported Browser: Google Chrome 54, MS Edge 38, Mozilla Firefox 49 , Apple Safari 9 (Mac OS X only) **Plug-in Webviewer** Supported Browser : MS Explore 11, Apple Safari 9 (Mac OS X only)
Central Management Soft	SmartViewer, SSM
Environmental	
Operating Temperature / Humidity	-10°C ~ +55°C (-14°F ~ +131°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	
Vandal Resistance	IK08
Electrical	
Input Voltage / Current	12VDC ± 10%, PoE(IEEE802.3af)
Power Consumption	TBD
Mechanical	
Color / Material	IVORY / Aluminum
Dimension (WxHxD)	PND-9080R
Weight	

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	XND-6080V	-	HANWHA VISION VIETNAM COMPANY LIMITED	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE Adapter	ANY4805C-LT1	10H300002	ANY ELECTRONICS CO., LTD	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-
Mobile Phone	A1688	-	Apple Inc.	-
Micro SD Card	-	-	-	-
Notebook	ProBook4430s	-	HP	-
Notebook Adapter	SeriesPPP0009H	-	CHICONY POWER TECHNOLOGY (SUZHOU) CO.,LTD,	-
Alarm Jig	-	-	-	-

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(LAN)	Notebook	RJ-45(LAN)	4.0	U
	Audio in	Mobile Phone	Audio Out	1.2	U
	Audio Out	Speaker	Audio in	1.1	U
	Alarm	Alarm Jig	Alarm	3.2	U
	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-

- PoE Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (E.U.T)	Audio in	Mobile Phone	Audio Out	1.2	U
	Audio Out	Speaker	Audio in	1.1	U
	Alarm	Alarm Jig	Alarm	3.2	U
	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-
	RJ-45(PoE)	PoE Adapter	RJ-45(PoE)	4.0	U
PoE Adapter	RJ-45(LAN)	Notebook	RJ-45(LAN)	1.9	U

* Unshielded = U, Shielded = S

1.7 EUT Operating Mode(s)

Test mode	Normal operating
DC 12 V	E.U.T Monitoring , Ping test
PoE	

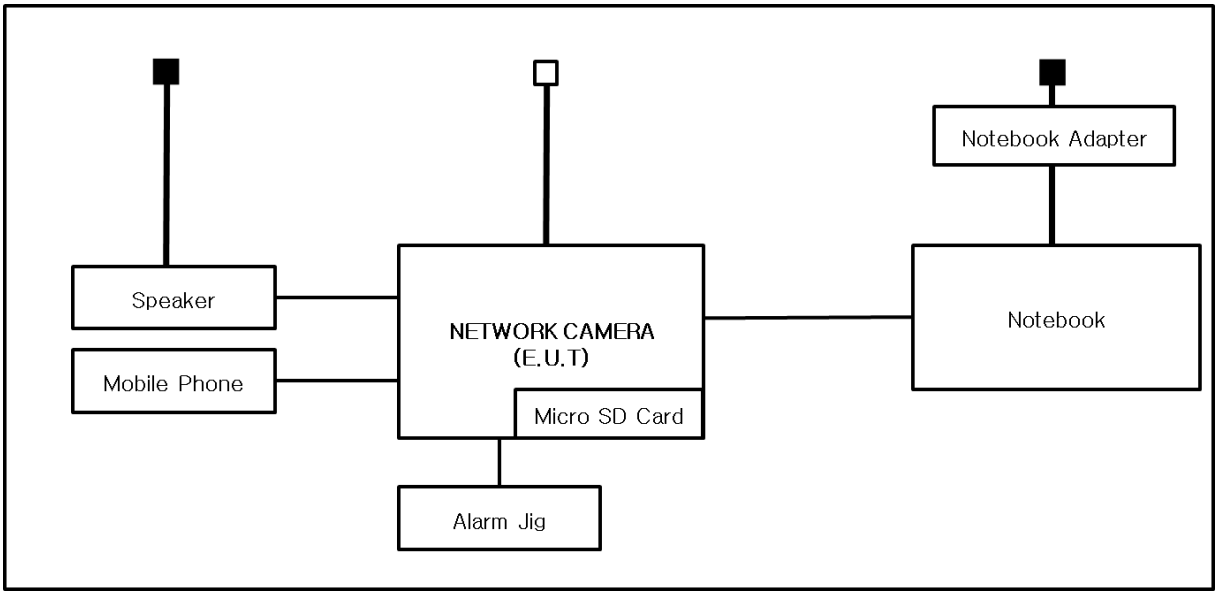
E.U.T Test operating S/W		
Name	Version	Manufacture Company
WebViewer	-	Hanwha Vision Co., Ltd

- Input power condition during the measurements was 12 v (dc) , PoE.

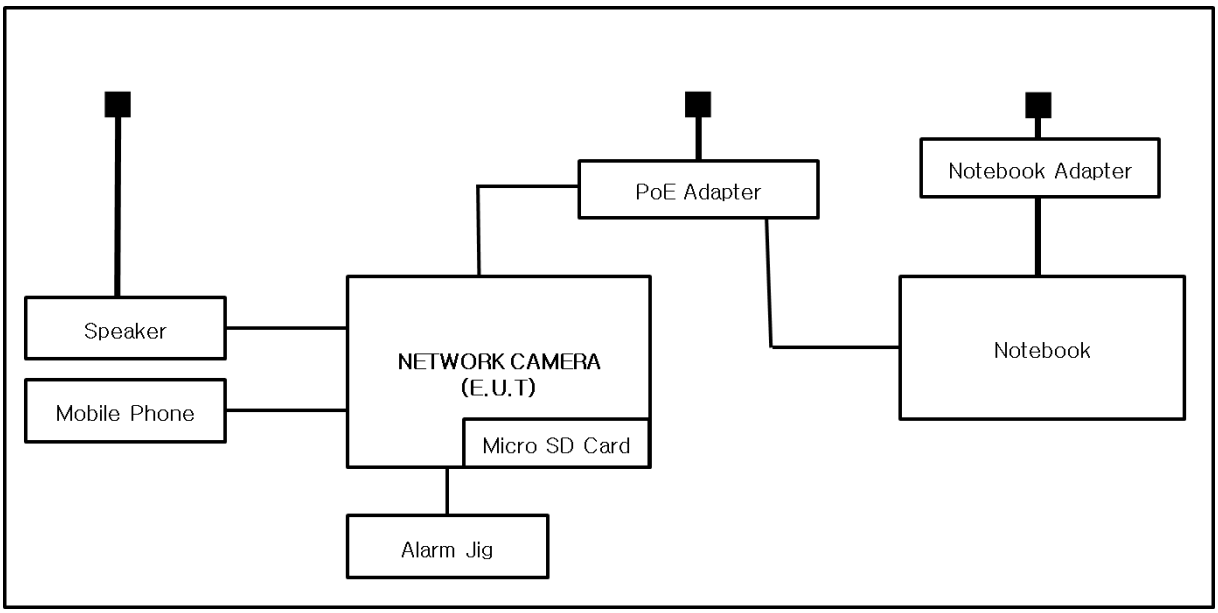
1.8 Configuration

■ AC Main
□ DC 12 V Main

- 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, Yeoju-si, Gyeonggi-do, 12658, Korea, Republic of. The sites are constructed in conformance with the requirements of ANSI C63.4a-2017 and CISPR 16-1-4:2019

1.11 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	**RRA**	EMI (3 m & 10 m Semi-Anechoic Chamber 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 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
JAPAN	**VCCI**	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)	C-20136, T-20137, R-20181, G-20176
Europe	**TÜV SÜD**	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	CARAT 001633 0004

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

☒ **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
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
DC 12 V , PoE Mode N/A :
E.U.T power is 12 v (dc) power and PoE, limits are not specified

2.2 Conducted Emissions at Telecommunication Ports

Test Date
Dec, 18, 2016

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
☒	8-Wire ISN CAT3	CAT3 8158	Schwarzbeck Mess	8158-0019	04, 01, 2017
☒	8-Wire ISN CAT5	CAT5 8158	Schwarzbeck Mess	8158-0030	04, 01, 2017
☐	8-Wire ISN CAT6	NTFM 8158	Schwarzbeck Mess	8158-0029	08, 11, 2017
☒	Electro wave Shieldroom	-	SEMITEC	-	-
☒	EMI Test S/W	EMC32	R & S	9.12.00	-

Test Conditions
Temperature: 19,6 ℃
Relative Humidity: 39,3 %

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
Dec, 19, 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	ESU26	R&S	100551	04, 18, 2017
☒	Trilog-Broadband ANT	VULB 9163	Schwarzbeck	9163-715	04, 14, 2018
☒	OATS	-	KES	-	-
☒	Antenna Mast	1070/1080	EMCO	-	-
☒	Turn Table	-	DAEIL EMC	-	-
☒	EMI Test S/W	N/A	N/A	N/A	N/A

Test Conditions
Temperature: 3,6 ℃
Relative Humidity: 61,0 %

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.

2.4 Radiated Electric Field Emissions(Above 1 ㎓)

Test Date
Dec, 21, 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: 19,9 ℃
Relative Humidity: 39,7 %

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.

APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

N/A

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

[NEUTRAL]

N/A

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

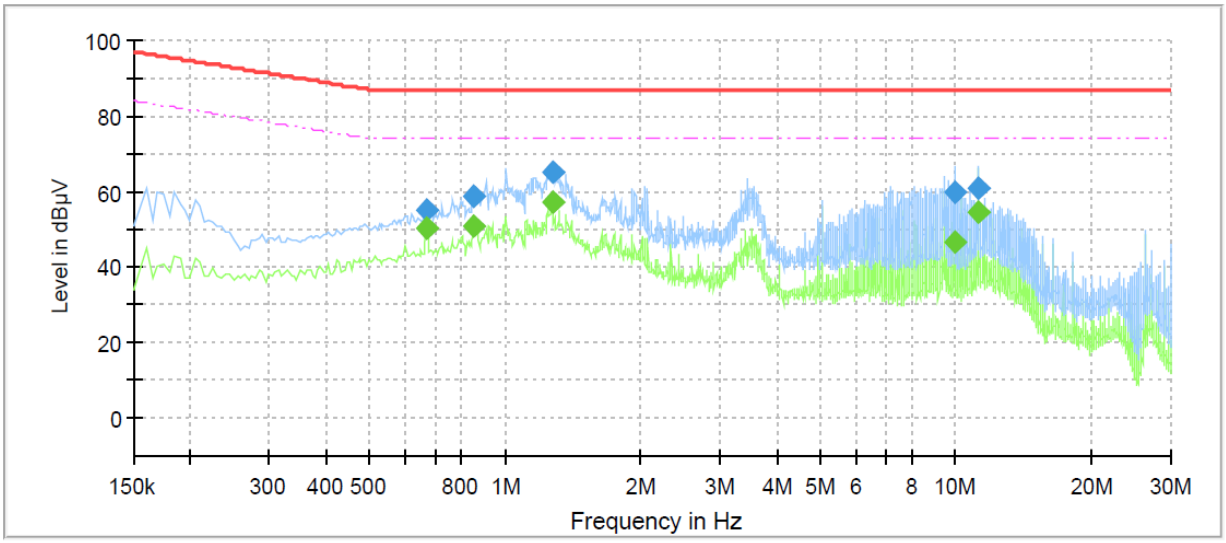
Conducted Emissions at Telecommunication Ports

- DC 12 V Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XND-6080VN
Mode	DC 12 V_10 Mbps
Operator Name:	KES



Final_Result

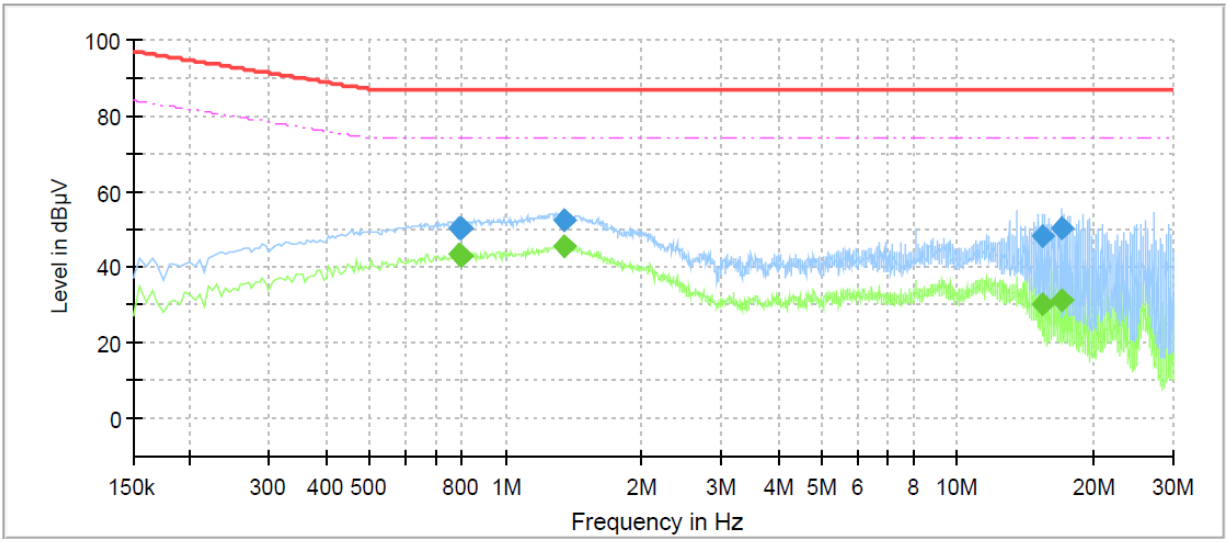
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.670000	---	50.41	74.00	23.59	1000.0	9.000	Single Line	10.1
0.670000	55.03	---	87.00	31.97	1000.0	9.000	Single Line	10.1
0.855000	---	50.62	74.00	23.38	1000.0	9.000	Single Line	10.2
0.855000	58.79	---	87.00	28.21	1000.0	9.000	Single Line	10.2
1.270000	---	57.37	74.00	16.63	1000.0	9.000	Single Line	10.2
1.270000	65.00	---	87.00	22.00	1000.0	9.000	Single Line	10.2
9.995000	---	46.42	74.00	27.58	1000.0	9.000	Single Line	10.0
9.995000	60.02	---	87.00	26.98	1000.0	9.000	Single Line	10.0
11.250000	---	54.30	74.00	19.70	1000.0	9.000	Single Line	10.0
11.250000	60.73	---	87.00	26.27	1000.0	9.000	Single Line	10.0

♦ 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)

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XND-6080VN
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)
0.785000	---	43.26	74.00	30.74	1000.0	9.000	Single Line	9.7
0.785000	50.37	---	87.00	36.63	1000.0	9.000	Single Line	9.7
0.795000	---	42.85	74.00	31.15	1000.0	9.000	Single Line	9.7
0.795000	50.31	---	87.00	36.69	1000.0	9.000	Single Line	9.7
1.345000	---	45.27	74.00	28.73	1000.0	9.000	Single Line	9.7
1.345000	52.28	---	87.00	34.72	1000.0	9.000	Single Line	9.7
1.350000	---	45.28	74.00	28.72	1000.0	9.000	Single Line	9.7
1.350000	52.32	---	87.00	34.68	1000.0	9.000	Single Line	9.7
15.330000	---	30.37	74.00	43.63	1000.0	9.000	Single Line	9.6
15.330000	47.95	---	87.00	39.05	1000.0	9.000	Single Line	9.6
16.975000	---	31.10	74.00	42.90	1000.0	9.000	Single Line	9.7
16.975000	50.46	---	87.00	36.54	1000.0	9.000	Single Line	9.7

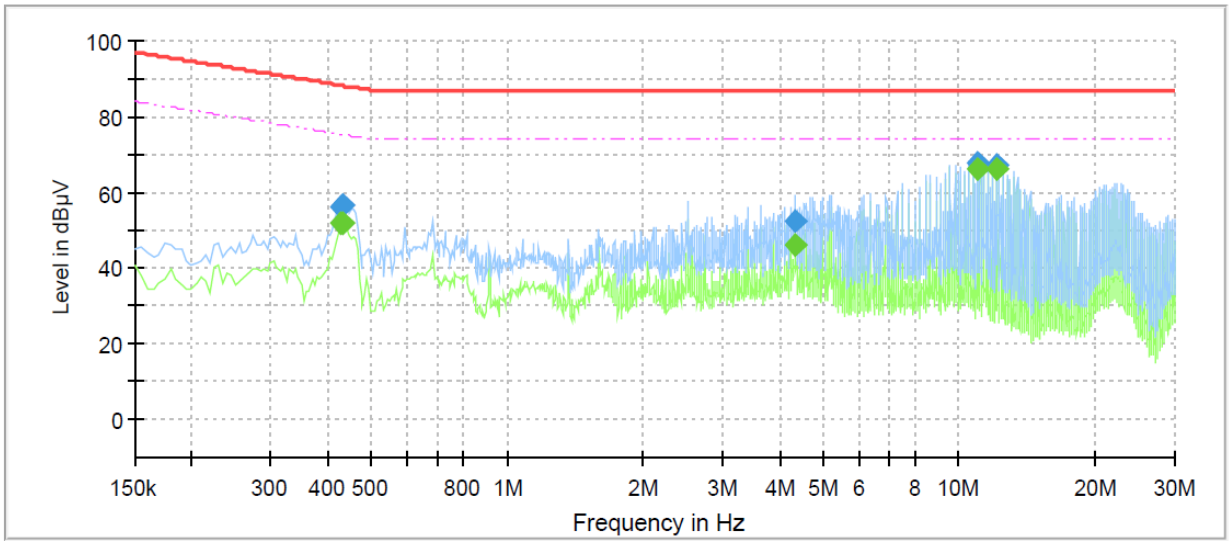
♦ Calculation
QuasiPeak[㏈uV] / CAverage [㏈uV] = Reading Value[㏈uV] + Corr. [㏈]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (ISN FACTOR+ Cable Loss)

- PoE Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XND-6080VN
Mode	PoE_10 Mbps
Operator Name:	KES



Final_Result

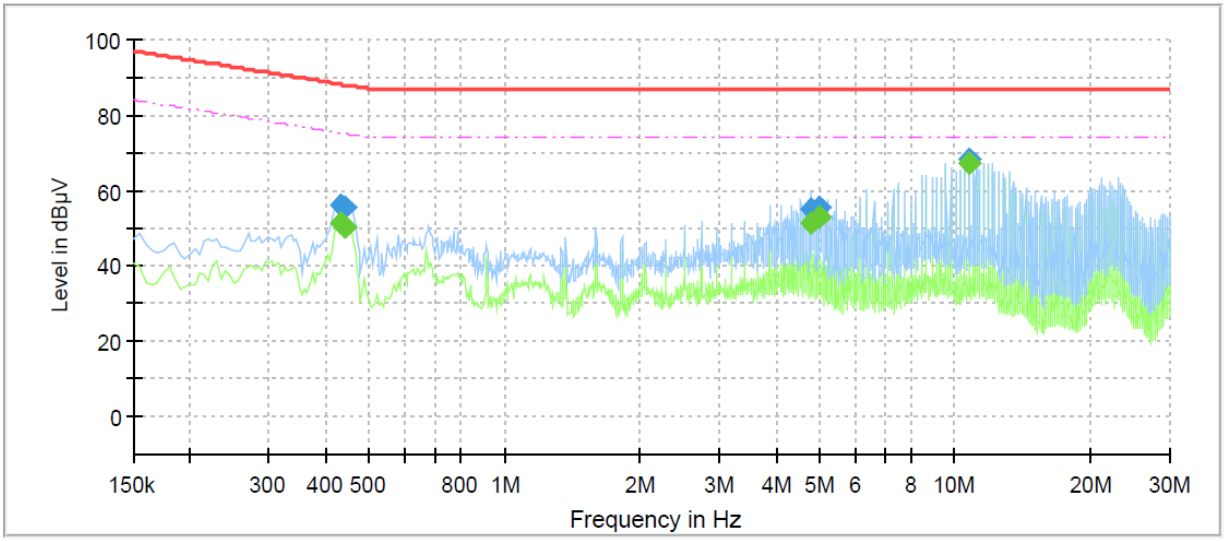
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.430000	---	51.65	75.25	23.60	1000.0	9.000	Single Line	10.1
0.430000	56.11	---	88.25	32.14	1000.0	9.000	Single Line	10.1
0.435000	---	51.80	75.16	23.36	1000.0	9.000	Single Line	10.1
0.435000	56.40	---	88.16	31.76	1000.0	9.000	Single Line	10.1
4.350000	---	45.81	74.00	28.19	1000.0	9.000	Single Line	10.1
4.350000	52.63	---	87.00	34.37	1000.0	9.000	Single Line	10.1
10.935000	---	66.06	74.00	7.94	1000.0	9.000	Single Line	10.0
10.935000	67.60	---	87.00	19.40	1000.0	9.000	Single Line	10.0
12.075000	---	66.21	74.00	7.79	1000.0	9.000	Single Line	10.0
12.075000	67.40	---	87.00	19.60	1000.0	9.000	Single Line	10.0

♦ 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)

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XND-6080VN
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)
0.435000	---	51.52	75.16	23.64	1000.0	9.000	Single Line	9.6
0.435000	56.13	---	88.16	32.03	1000.0	9.000	Single Line	9.6
0.440000	---	50.28	75.06	24.78	1000.0	9.000	Single Line	9.6
0.440000	55.46	---	88.06	32.60	1000.0	9.000	Single Line	9.6
4.785000	---	51.34	74.00	22.66	1000.0	9.000	Single Line	9.6
4.785000	55.19	---	87.00	31.81	1000.0	9.000	Single Line	9.6
5.015000	---	53.06	74.00	20.94	1000.0	9.000	Single Line	9.6
5.015000	55.72	---	87.00	31.28	1000.0	9.000	Single Line	9.6
10.710000	---	67.25	74.00	6.75	1000.0	9.000	Single Line	9.5
10.710000	68.06	---	87.00	18.94	1000.0	9.000	Single Line	9.5

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

Radiated Electric Field Emissions(Below 1 ㎓)

- DC 12 V Mode

Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin [dB]
[㎒]	[dB㎶]		[m]	ANT. [dB/m]	Cable [dB]	[dB㎶/m]	[dB㎶/m]	
225.79	11.65	H	3.90	12.03	3.13	26.81	40.00	13.19
425.49	12.84	H	4.00	16.01	4.66	33.51	47.00	13.49
452.86	10.86	H	4.00	16.48	4.86	32.20	47.00	14.80
600.09	10.23	H	3.50	19.27	5.59	35.09	47.00	11.91
612.88	8.69	V	1.20	19.33	5.69	33.71	47.00	13.29
624.01	10.27	V	1.90	19.37	5.78	35.42	47.00	11.58

* 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

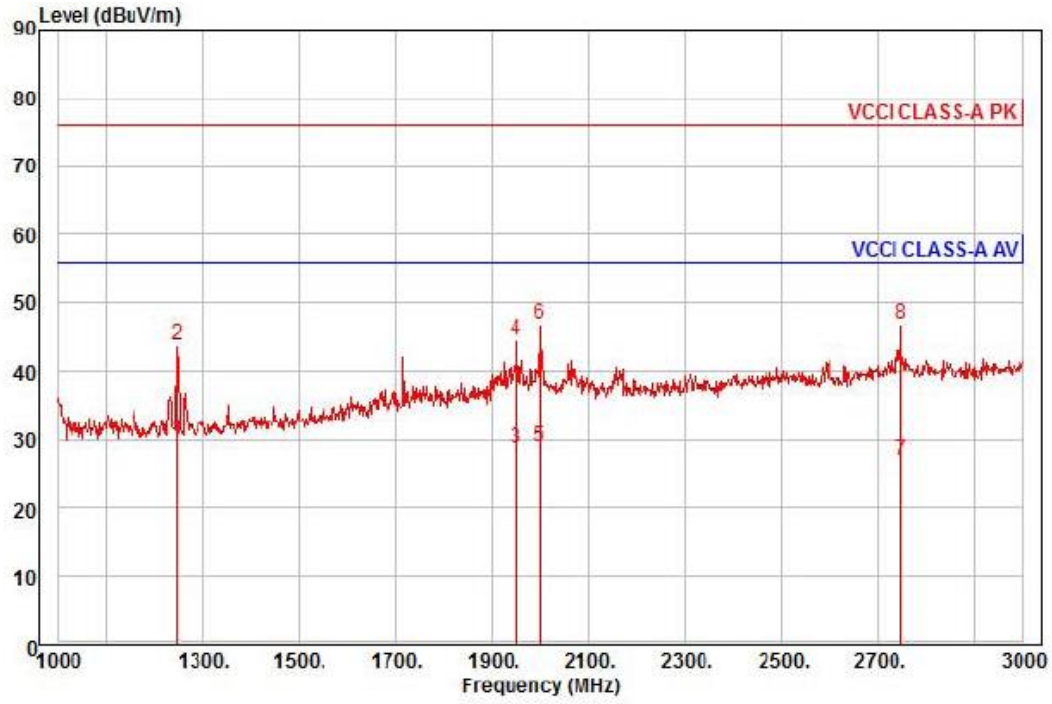
Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin [dB]
[㎒]	[dB㎶]		[m]	ANT. [dB/m]	Cable [dB]	[dB㎶/m]	[dB㎶/m]	
50.19	11.29	V	1.00	13.88	1.37	26.54	40.00	13.46
151.23	15.83	H	3.90	8.24	2.54	26.61	40.00	13.39
475.05	11.12	H	4.00	16.87	4.95	32.94	47.00	14.06
525.39	10.19	V	1.50	17.80	5.15	33.14	47.00	13.86
575.01	7.56	V	2.00	18.78	5.42	31.76	47.00	15.24
600.69	8.50	V	2.00	19.27	5.60	33.37	47.00	13.63

* 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

Radiated Electric Field Emissions(Above 1 ㎓)

- DC 12 V Mode



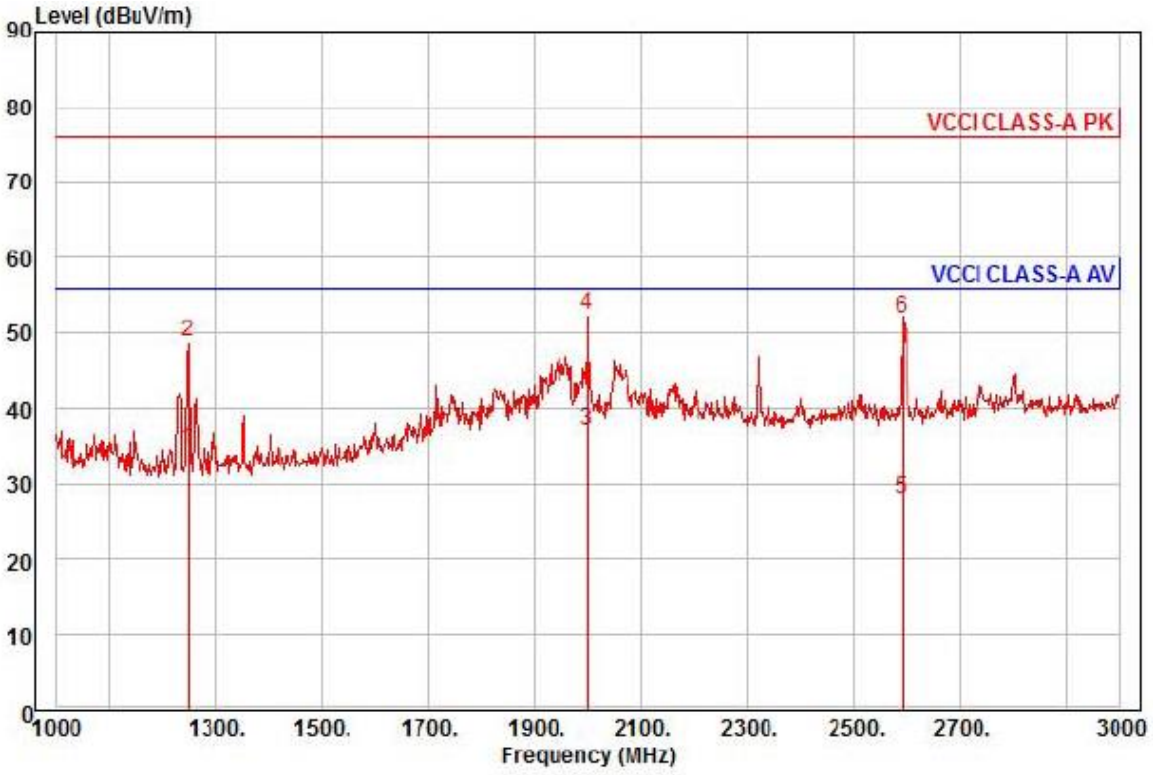
Site : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : XND-6080VN
Mode : DC 12 V
Memo : 1 ~ 3 GHz

	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 pp	1246.00	37.24	24.89	7.27	39.50	303	56.00	-26.10	horizontal	Average
2	1246.00	51.31	24.89	7.27	39.50	303	76.00	-32.03	horizontal	Peak
3	1950.00	31.30	27.68	9.21	39.39	153	56.00	-27.20	horizontal	Average
4	1950.00	47.20	27.68	9.21	39.39	153	76.00	-31.30	horizontal	Peak
5	2000.00	31.07	27.88	9.34	39.41	239	56.00	-27.12	horizontal	Average
6	2000.00	48.98	27.88	9.34	39.41	239	76.00	-29.21	horizontal	Peak
7	2748.00	25.91	29.71	11.11	39.82	2	56.00	-29.09	horizontal	Average
8 pk	2748.00	45.87	29.71	11.11	39.82	2	76.00	-29.13	horizontal	Peak

♦ Calculation

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

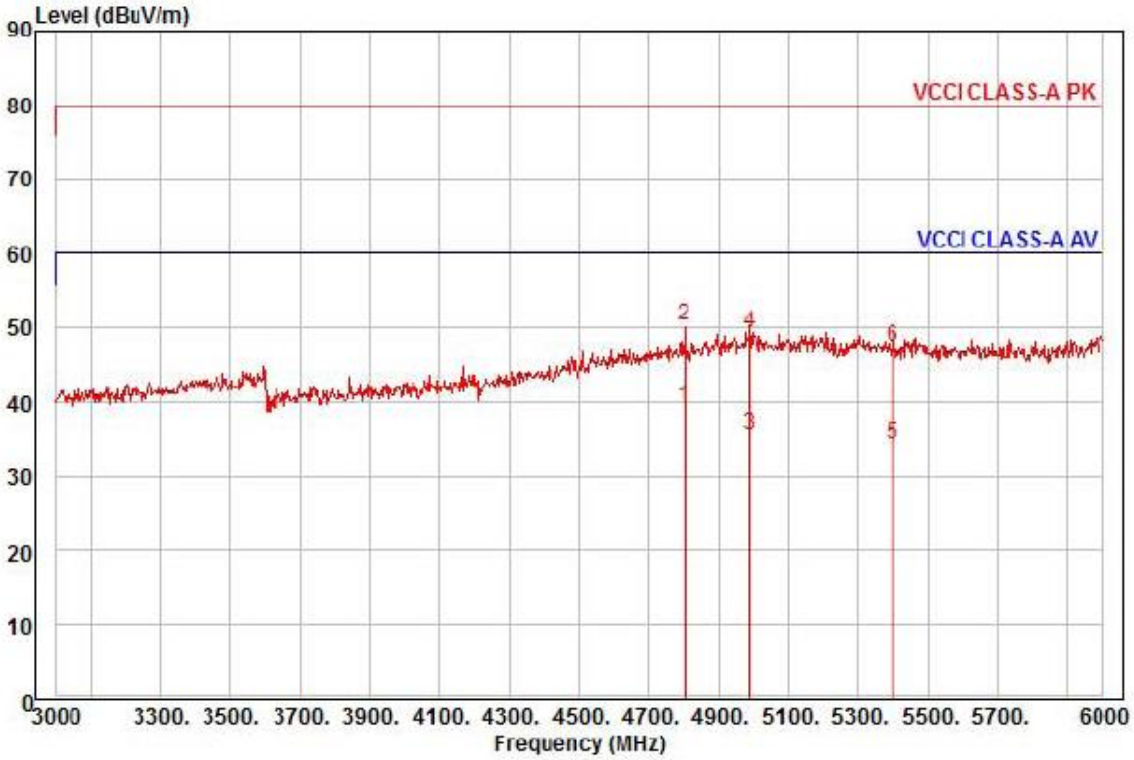
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : XND-6080VN
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	1248.00	41.82	24.89	7.28	39.49	188	56.00	-21.50	vertical	Average
2	1248.00	56.06	24.89	7.28	39.49	188	76.00	-27.26	vertical	Peak
3 pp	2000.00	39.24	27.88	9.34	39.41	321	56.00	-18.95	vertical	Average
4 pk	2000.00	54.59	27.88	9.34	39.41	321	76.00	-23.60	vertical	Peak
5	2590.00	27.57	29.33	10.72	39.64	237	56.00	-28.02	vertical	Average
6	2590.00	51.52	29.33	10.72	39.64	237	76.00	-24.07	vertical	Peak

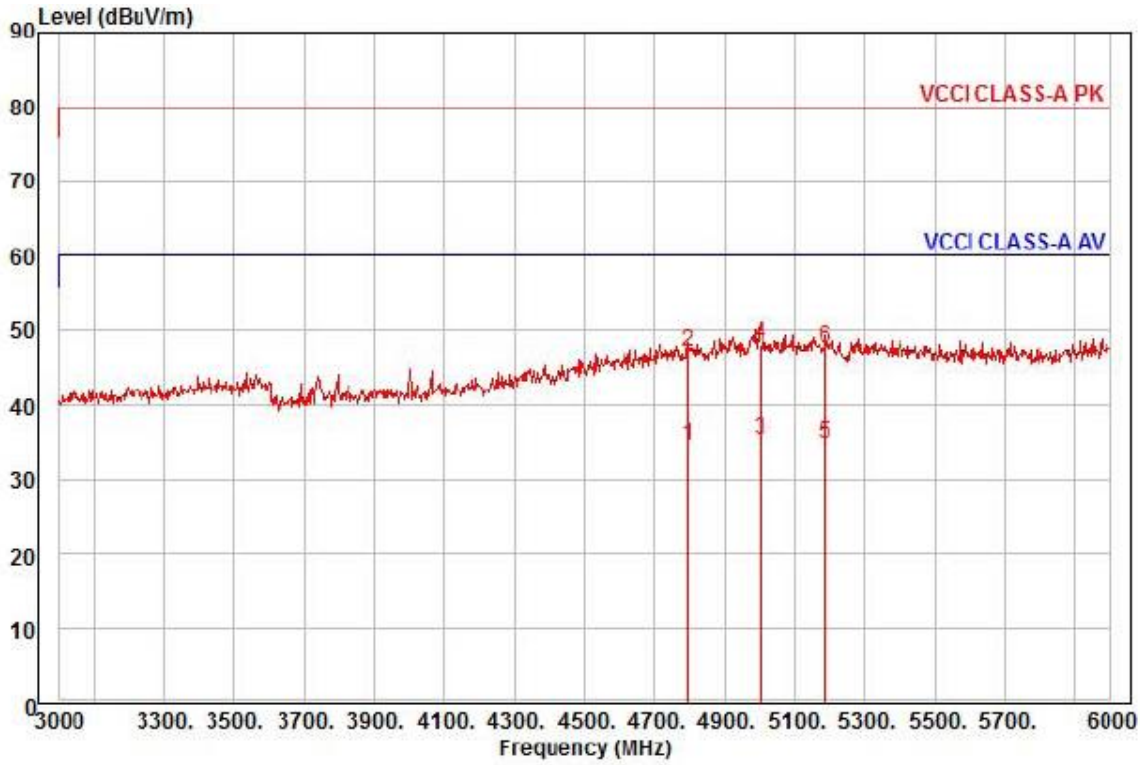
♦ Calculation
Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] – Preamp Factor [dB]) – Limit Line[dBuV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Site : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : XND-6080VN
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 pp	4800.00	28.08	36.58	15.10	40.47	146	60.00	-20.71	horizontal	Average
2 pk	4800.00	38.97	36.58	15.10	40.47	146	80.00	-29.82	horizontal	Peak
3	4986.00	22.86	37.64	15.30	40.28	115	60.00	-24.48	horizontal	Average
4	4986.00	36.55	37.64	15.30	40.28	115	80.00	-30.79	horizontal	Peak
5	5400.00	22.36	36.91	16.04	40.93	113	60.00	-25.62	horizontal	Average
6	5400.00	35.39	36.91	16.04	40.93	113	80.00	-32.59	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

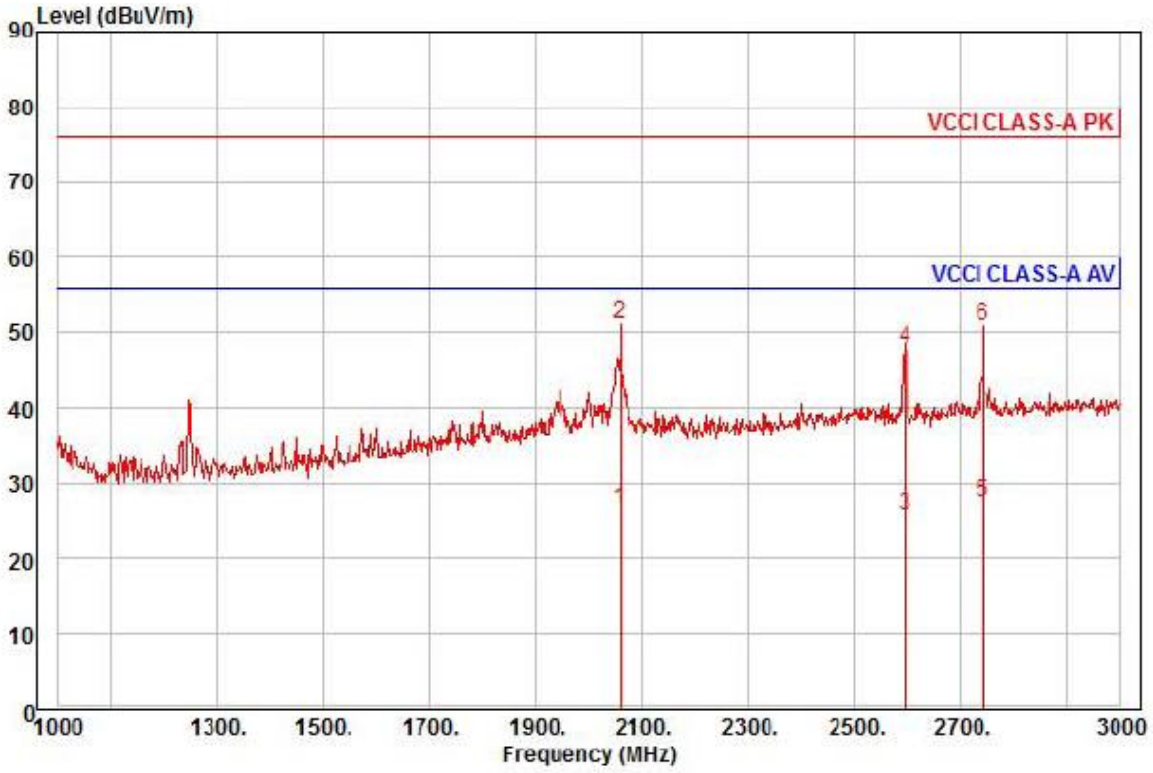


Site : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : XND-6080VN
Mode : DC 12 V
Memo : 3 ~ 6 GHz

	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	4794.00	23.40	36.54	15.08	40.48	125	60.00	-25.46	vertical	Average
2	4794.00	36.04	36.54	15.08	40.48	125	80.00	-32.82	vertical	Peak
3 pp	5001.00	22.66	37.72	15.32	40.27	73	60.00	-24.57	vertical	Average
4 pk	5001.00	35.36	37.72	15.32	40.27	73	80.00	-31.87	vertical	Peak
5	5184.00	22.29	37.35	15.68	40.58	218	60.00	-25.26	vertical	Average
6	5184.00	35.03	37.35	15.68	40.58	218	80.00	-32.52	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

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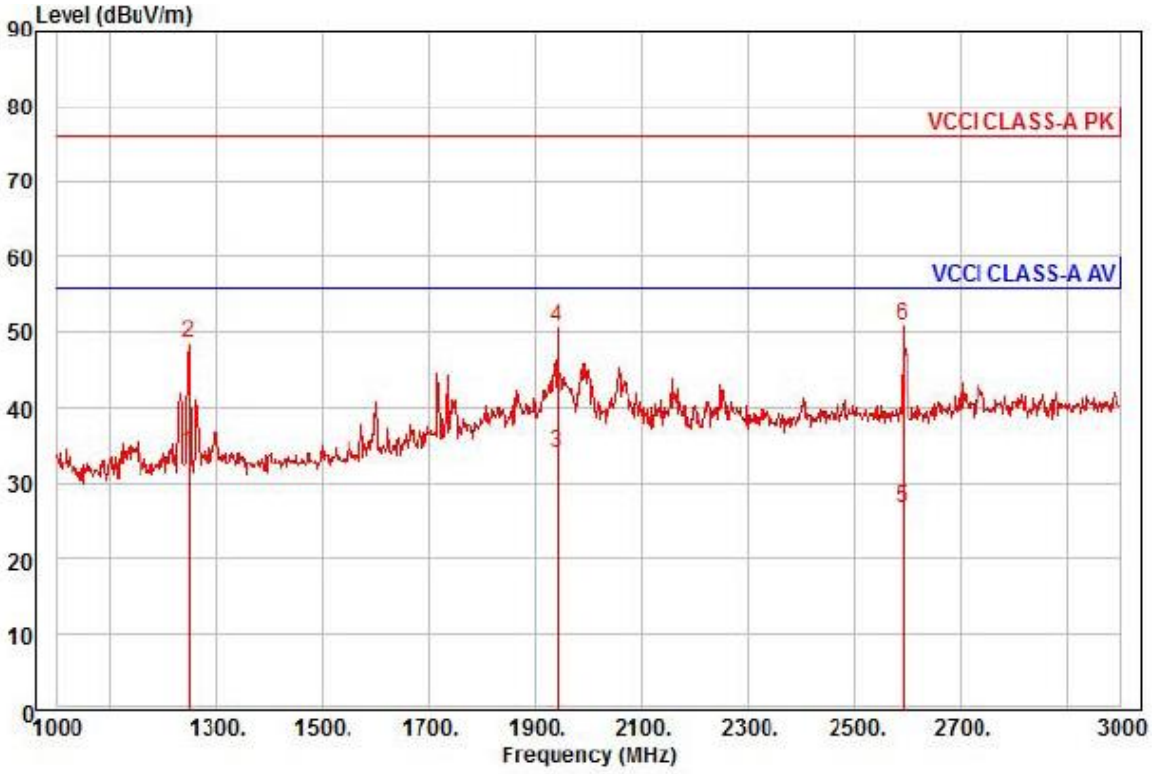
Site      : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) horizontal
          : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project   : NETWORK CAMERA
Model     : XND-6080VN
Mode      : PoE
Memo      : 1 ~ 3 GHz
```

	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	2058.00	28.37	28.02	9.47	39.41	144	56.00	-29.55	horizontal	Average
2 pp	2058.00	53.29	28.02	9.47	39.41	144	76.00	-24.63	horizontal	Peak
3	2596.00	25.29	29.34	10.73	39.65	231	56.00	-30.29	horizontal	Average
4	2596.00	47.34	29.34	10.73	39.65	231	76.00	-28.24	horizontal	Peak
5 av	2744.00	26.51	29.70	11.10	39.82	38	56.00	-28.51	horizontal	Average
6	2744.00	50.00	29.70	11.10	39.82	38	76.00	-25.02	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



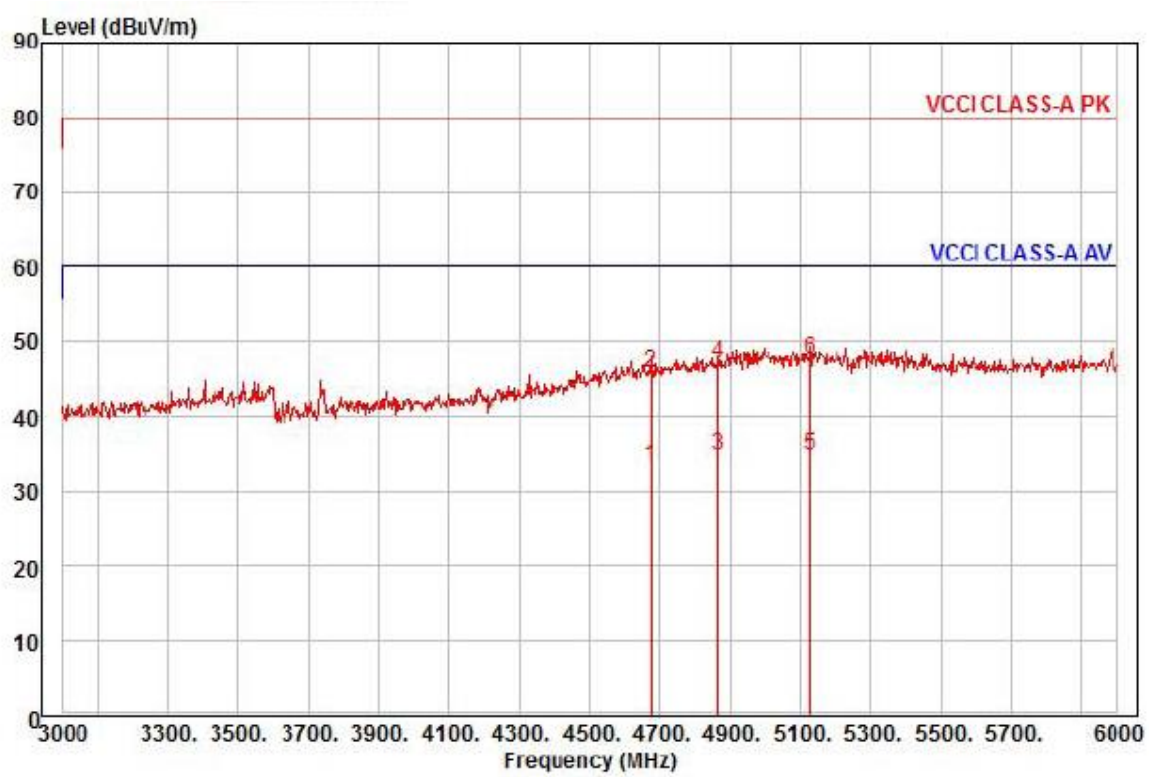
Site : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : XND-6080VN
Mode : PoE
Memo : 1 ~ 3 GHz

	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 pp	1248.00	41.39	24.89	7.28	39.49	164	56.00	-21.93	vertical	Average
2	1248.00	55.79	24.89	7.28	39.49	164	76.00	-27.53	vertical	Peak
3	1940.00	36.58	27.64	9.18	39.38	218	56.00	-21.98	vertical	Average
4	1940.00	53.26	27.64	9.18	39.38	218	76.00	-25.30	vertical	Peak
5	2590.00	26.26	29.33	10.72	39.64	235	56.00	-29.33	vertical	Average
6 pk	2590.00	50.67	29.33	10.72	39.64	235	76.00	-24.92	vertical	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



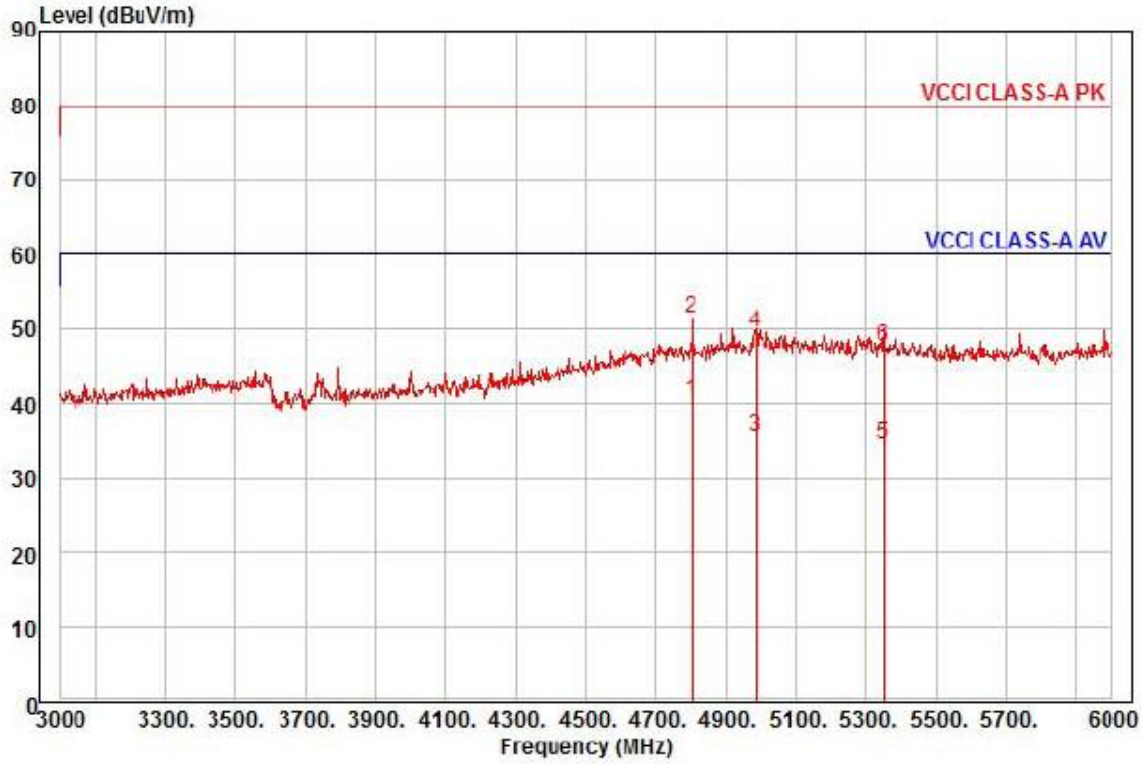
Site : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : XND-6080VN
Mode : PoE
Memo : 3 ~ 6 GHz

	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	4677.00	23.16	35.88	14.83	40.59	357	60.00	-26.72	horizontal	Average
2	4677.00	35.73	35.88	14.83	40.59	357	80.00	-34.15	horizontal	Peak
3 pp	4866.00	23.09	36.95	15.17	40.40	50	60.00	-25.19	horizontal	Average
4	4866.00	35.41	36.95	15.17	40.40	50	80.00	-32.87	horizontal	Peak
5	5127.00	22.25	37.46	15.57	40.48	29	60.00	-25.20	horizontal	Average
6 pk	5127.00	34.99	37.46	15.57	40.48	29	80.00	-32.46	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




```
Site      : chamber
Condition: VCCI CLASS-A PK 3m HORN781(2015.05.07) vertical
          : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project   : NETWORK CAMERA
Model     : XND-6080VN
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 pp	4800.00	29.33	36.58	15.10	40.47	32	60.00	-19.46	vertical	Average
2 pk	4800.00	40.19	36.58	15.10	40.47	32	80.00	-28.60	vertical	Peak
3	4983.00	22.84	37.62	15.30	40.29	64	60.00	-24.53	vertical	Average
4	4983.00	36.85	37.62	15.30	40.29	64	80.00	-30.52	vertical	Peak
5	5349.00	22.45	37.02	15.95	40.85	121	60.00	-25.43	vertical	Average
6	5349.00	35.51	37.02	15.95	40.85	121	80.00	-32.37	vertical	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

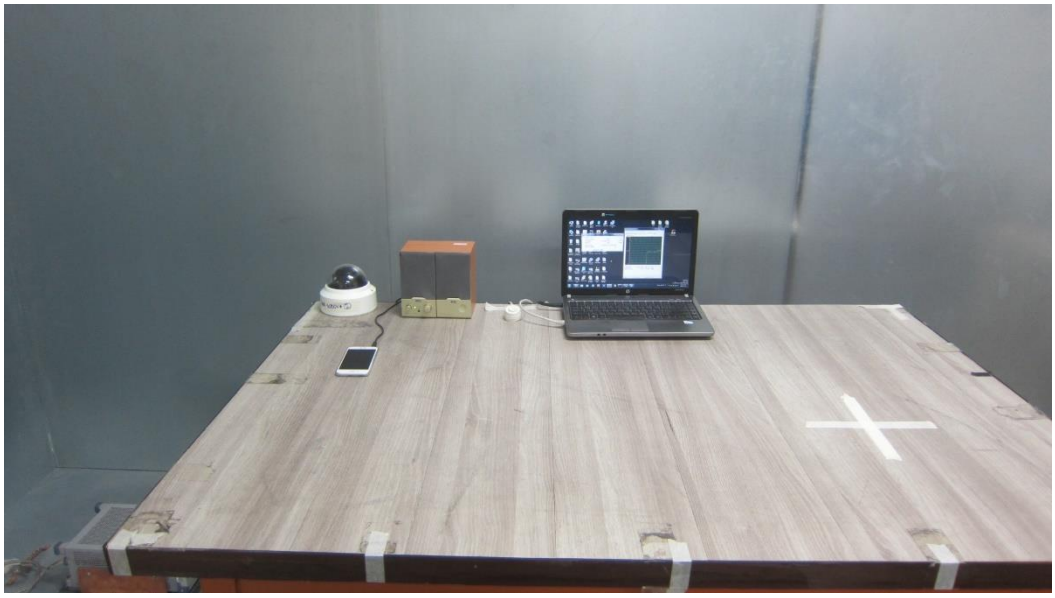
Test Setup Photos and Configuration

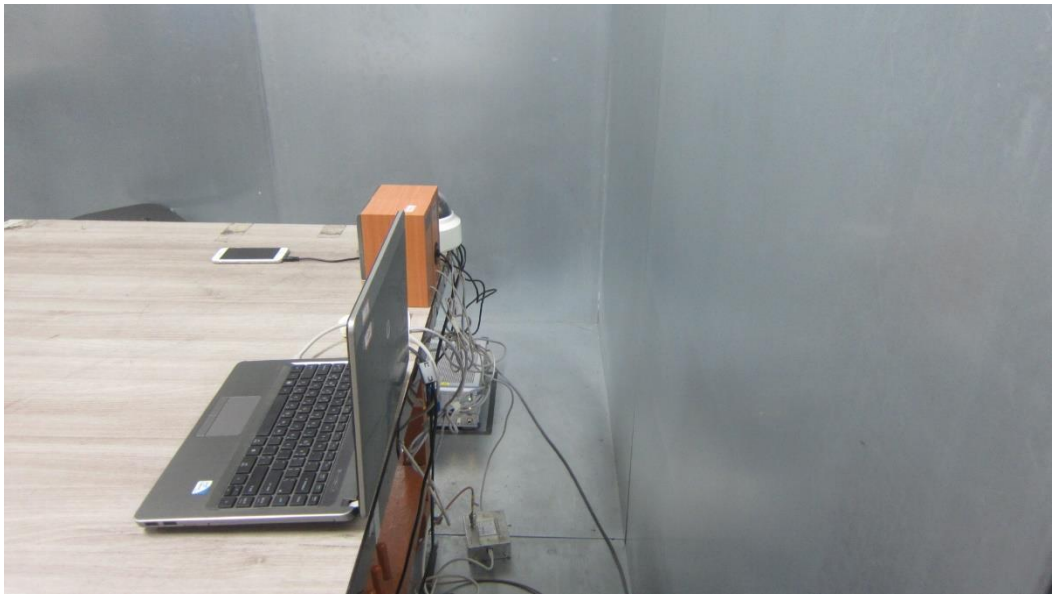
Conducted Voltage Emissions

N/A

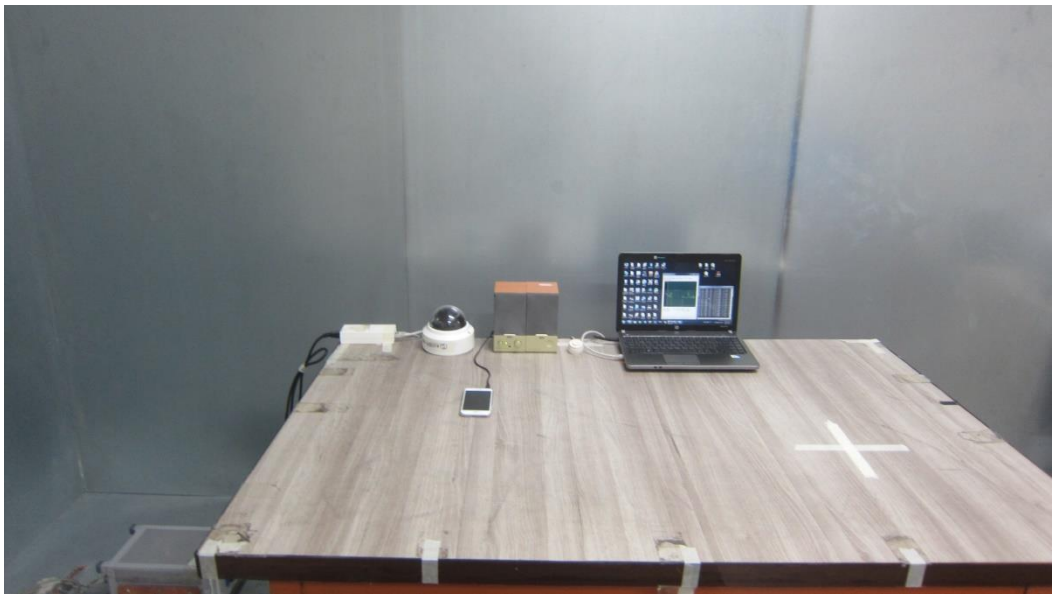
Conducted Telecommunication Emissions

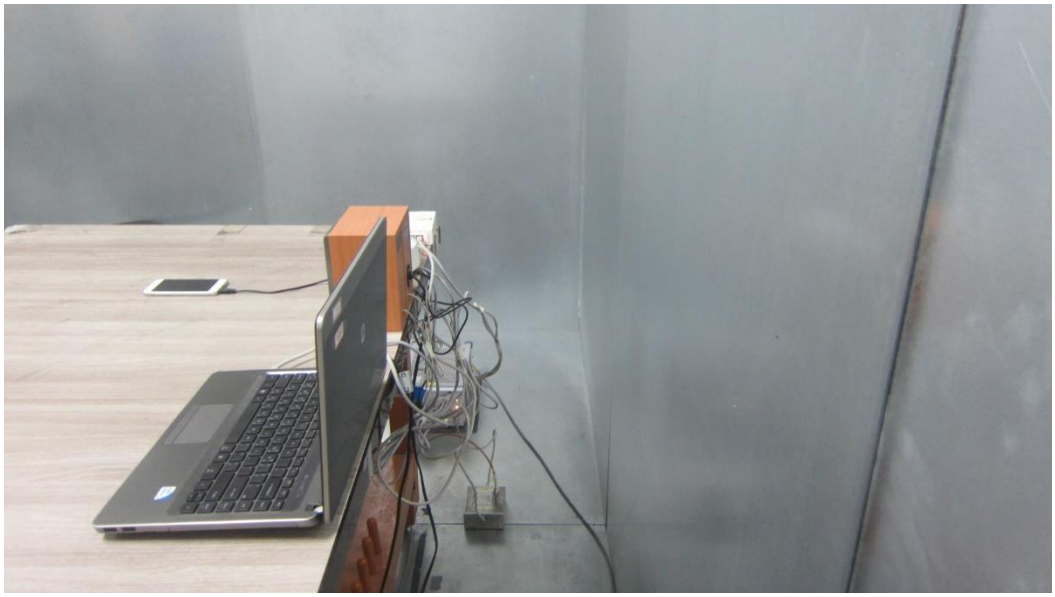
- DC 12 V Mode





- PoE Mode





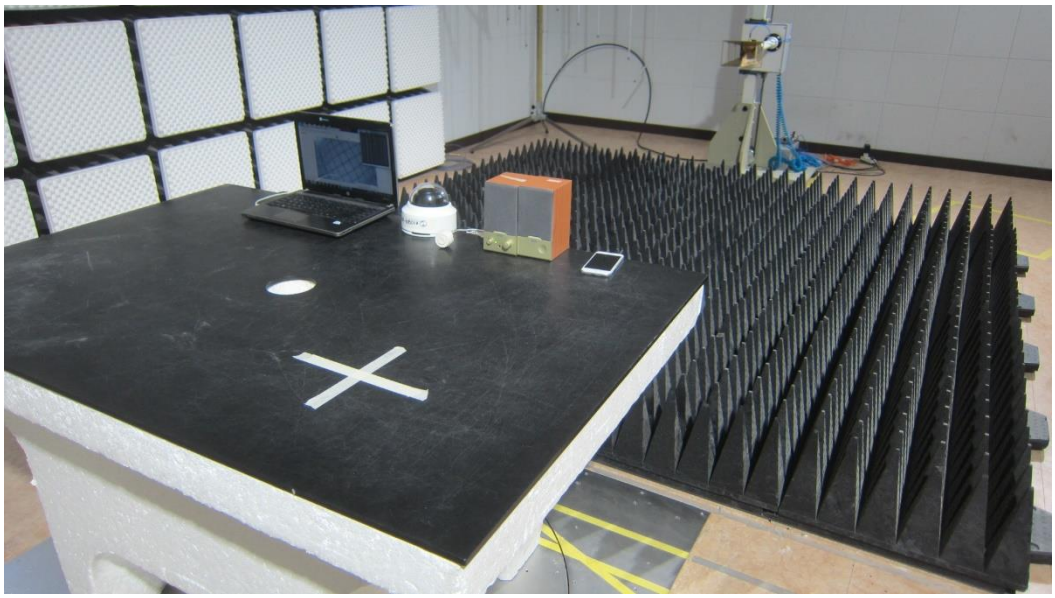
Radiated Electric Field Emissions(Below 1 ㎓)

- DC 12 V Mode

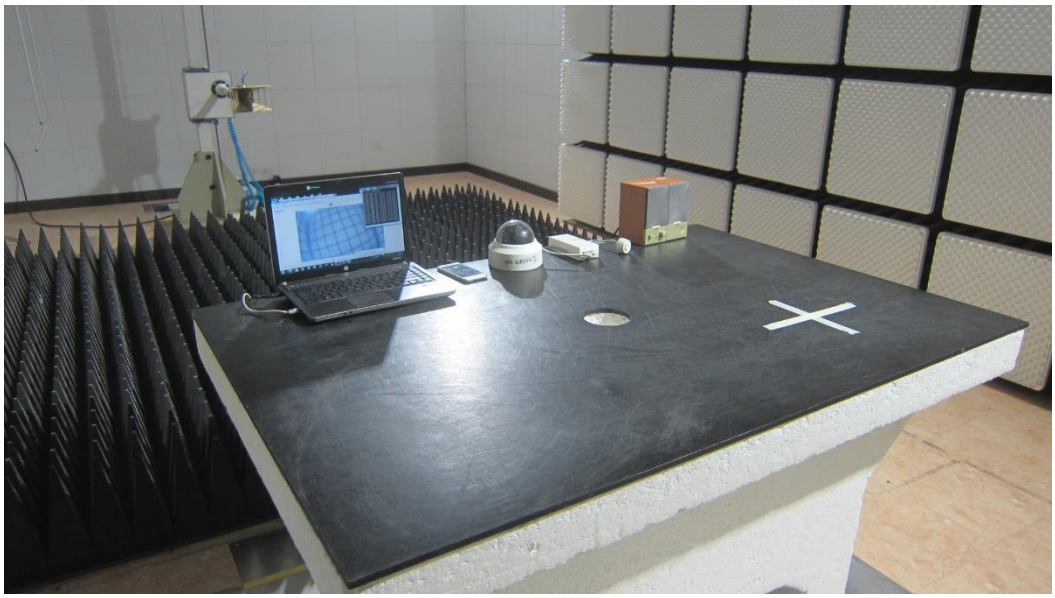
- PoE Mode

Radiated Electric Field Emissions(Above 1 ㎓)

- DC 12 V Mode



- PoE Mode



EUT External Photographs

(Top)

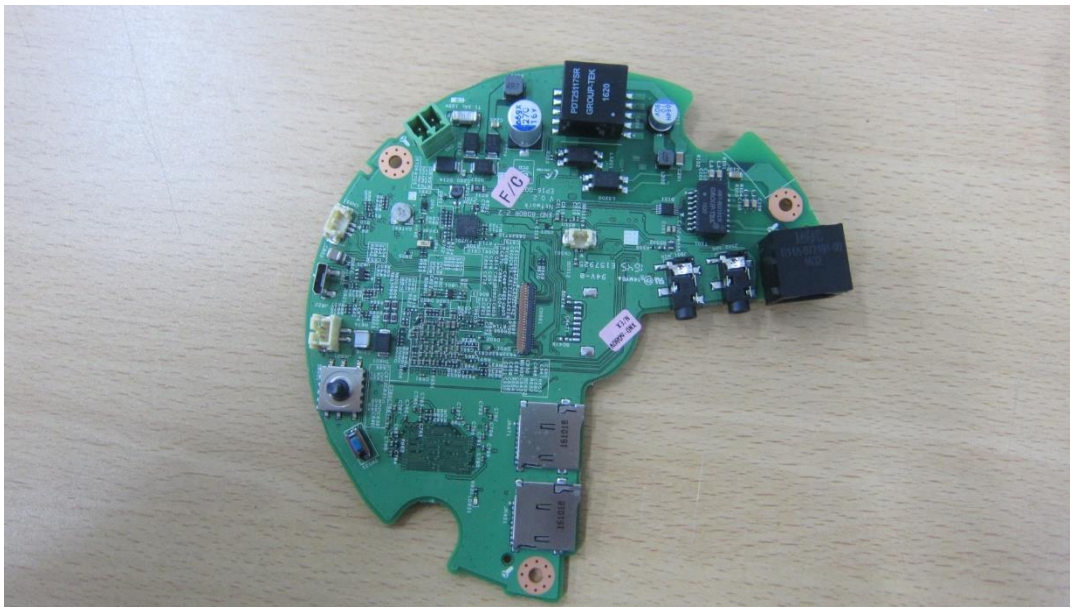
(Bottom)

EUT Internal Photographs

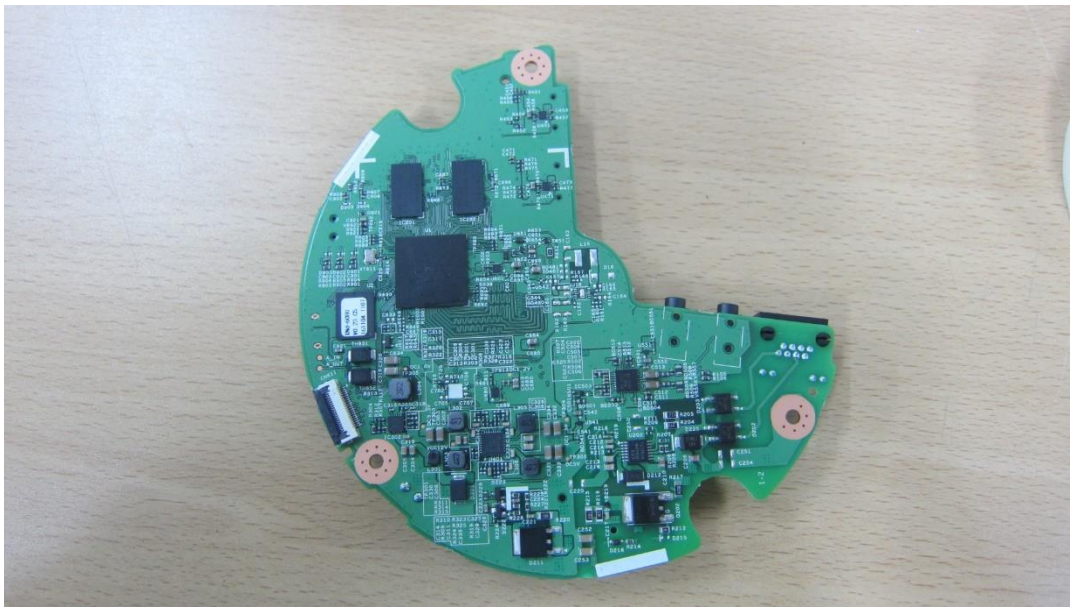
(Internal View)

EUT Internal View – Main board

(Top)

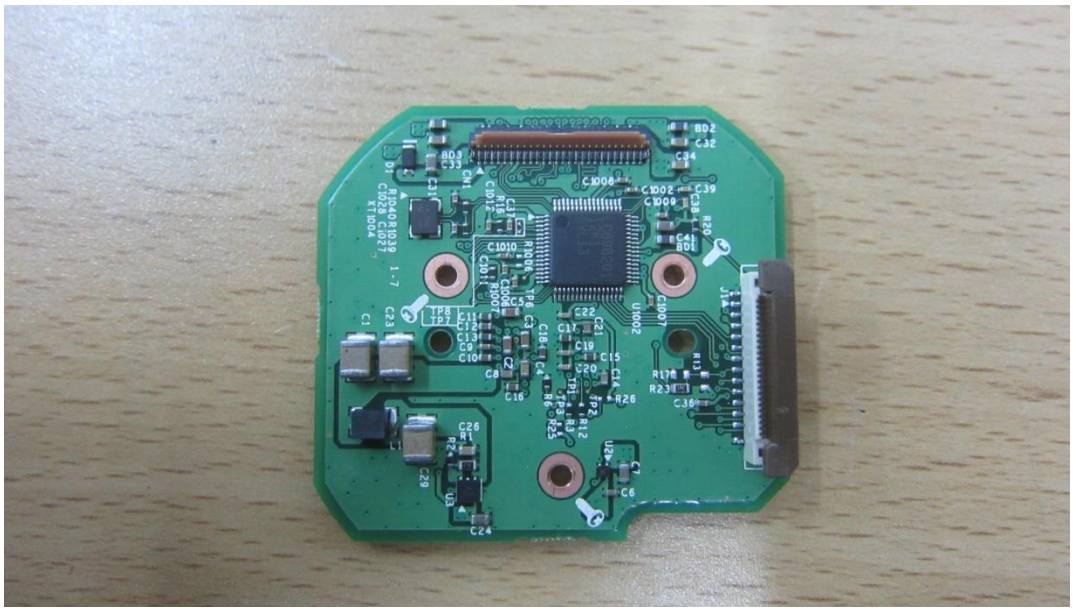


(Bottom)



EUT Internal View – Sub board

(Top)



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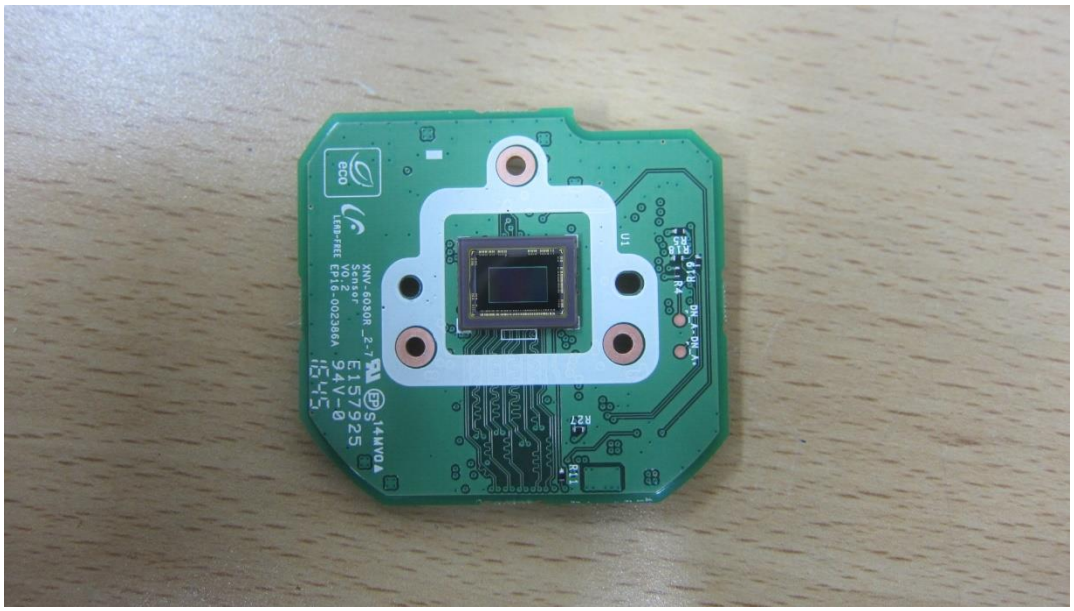

EUT Internal View – Lens

(Top)

(Bottom)