

VERIFICATION OF FCC PART 15 COMPLIANCE

*KES hereby verify that the subject product complies with all the
electromagnetic emission specified in the FCC Rule Part 15*

Product Description:	NETWORK CAMERA
Model/Brand Name:	SNV-6085RN
Variant Model:	-
FCC Rule Part(s):	FCC 47CFR Part 15 Subpart B Class B Part 15.107(b) & Part 15.109(b)
FCC Procedure:	Verification
Applicant Name:	Hanwha Techwin Company Limited.
Applicant Address:	1204, Changwo-daero, Seongsan-gu, Chang- won-si, Gyeongsangnam-do
Manufacturer Name:	Tianjin Samsung Electronics Co.,Ltd.
Manufacturer Address:	No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Test Report Reference No.:	KES-E1-15T0302

NETWORK CAMERA, Model SNV-6085RN has been tested in accordance with the measurement procedures specified in FCC 47CFR Part 15 Subpart B class B and has been shown to be complied with the electromagnetic emission limits specified in FCC Rule Part 15 Subpart B class B. A testing of the sample product has been valid for the sample tested based on the reference test report, KES-E1-15T0302

Date of Issue: 11. 16. 2015

Dong Hun, Jang
Technical Manager
Signature:



KES.Co., Ltd.

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EMI Test Report for FCC

DoC / Verification

Test Report No. : KES-E1-15T302
Date of Issue : 11. 16. 2015
Description of Product : NETWORK CAMERA
Model No. : SNV-6085RN
Variant Model : -
Applicant : Hanwha Techwin Company Limited
Applicant's Address : 1204, Changwo-daero, Seongsan-gu, Chang-won-si, Gyeongsangnam-do
Manufacturer : Tianjin Samsung Electronics Co.,Ltd.
Manufacturer's Address : Weisi Rd., Micro-Electronic Industrial Park, Jingang Rd.Xiqing Dist, Tianjin, 300385 China
Standards : FCC Part 15 Subpart A
- Part 15.107(b) : Conducted Emission
- Part 15.109(b) : Radiated Emission
Date of Receipt : 10. 22. 2015
Test Date : 11. 09. 2015 ~ 11. 10. 2015
Test Results : ☒ Pass ☐ Fail

The test results relate only to the items tested.

Tested by: 
Dae Hyun, Kim
Test Engineer

Reviewed by: 
Dong Hun, Jang
Technical Manager



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1. General Information

1.1 Introduction

The EMI Test Report of Information Technology Equipment is prepared on behalf of named applicant in accordance with the ANSI C63.4-2009. The test results reported in this document relate only to the item that was tested.

The detailed description of the measurement facility was found to be in compliance with the requirement of Section 2.948 of the FCC Rules. The Federal Communications Commission has the reports on file and is listed under Registration Number. The scope of the accreditation covers the FCC Method - 47 CFR Part 15 or 18 of the Commission's Rules.

All measurements contained in this report were conducted in accordance with ANSI C63.4-2009. The instrumentation utilized for the measurements conforms with CISPR16 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods. Some accessories are used to increase sensitivity and prevent overloading of the measuring instrument. Calibration checks are performed yearly on the instruments by a local calibration laboratories.

All radiated and conducted emission measurements are performed manually at KES Co., Ltd. (hereinafter referred to as "KES"), 473-29, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658 Korea

The radiated emission measurements required by the FCC Rules were performed on 3 meter or 10 meter, Open Area Test Site, test range maintained by KES. Complete ANSI 63.4-2009 description and site attenuation measurement data records are maintained at the test facility and have been placed on file with the Federal Communications Commission. The power line conducted emission measurements were performed in a shielded enclosure also located at the same facility.

The KES EMC test facilities in Yeosu-si are designated testing laboratory according to ISO/IEC 17025 by Radio Research Agency(RRA), Korea Communications Commission.

1.2 Geographic location



KES Office Latitude : 37°23'54.59"N, Longitude : 126°58'14.66"E



KES OATS Latitude : 37°13'58.03"N, Longitude : 127°37'21.95"E

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1.3 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.	
KOREA	KCC	EMC (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site)	 KR0100
Canada	IC	3 & 10 meter Open Area Test Sites and one conducted site	 4769B-1
Europe	TUV_SUD	EMC EN 55011, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 55014-1, EN 61326 EN 50130-4, EN 55024, EN 55014-2 EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	

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1.4 Product Description

Hanwha Techwin Company Limited, NETWORK CAMERA, Model No:SNV-6085RN or the "E.U.T" as referred to in this report is base model.

Main Specifications of EUT are

	SNV-6085R(N/P)
Video	
Imaging Device	1/2.8" PS Exmor 2.38M CMOS (IMX136)
Total Pixels	1952(H) x 1116(V)
Effective Pixels	1944(H) x 1104(V)
Scanning System	Progressive
Min. Illumination	Color : 0.25 Lux (F1.6, 50IRE), B/W : 0 Lux (F1.6, 50IRE) Color : 0.09 Lux (F1.6, 30IRE), B/W : 0 Lux (F1.6, 30IRE)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation - DIP connector type
Lens	
Focal Length (Zoom Ratio)	10 ~ 23mm(2.3x) V/F
Max. Aperture Ratio	F1.6
Angular Field of View	H : 31.3°(Wide) ~ 13.9°(Tele), V : 17.1°(Wide) ~ 7.8°(Tele) ※ 1/2.8" Sensor
Min. Object Distance	0.8m
Focus Control	Simple Focus (Motorized V/F) / Manual - Remote control via network (Manual, Simple Focus)
Lens Type	P-Iris
Mount Type	Board-in type
Pan / Tilt / Rotate	
Pan Range	0° ~ +354°
Tilt Range	0° ~ +67°
Rotate Range	0° ~ +355°
Operational	
IR LED	14 ea
Viewable Length	20m
Camera Title	Off / On (Displayed up to 45 characters)
Day & Night	Auto (ICR) / Color / B/W / External / Schedule
Backlight Compensation	Off / BLC
Wide Dynamic Range	120dB
Contrast Enhancement	SSDR (Samsung Super Dynamic Range) (Off / On)
Digital Noise Reduction	SSNR II (2D+3D Noise Filter) (Off / On)
Defog	Auto/Manual/Off
Digital Image Stabilization	Off / On
Motion Detection	Off / On (4ea 4 Points Polygonal zones)
Privacy Masking	Off / On (32 Zones with 4 Points of Polygonal)
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
Electronic Shutter Speed	Minimum / Maximum / Anti flicker
Digital PTZ	-
Flp / Mirror	Off / On
Intelligent Video Analytics	Tampering, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection
Alarm I/O	Input 1ea / Output 1ea
Audio In	Selectable (Mic IN/Line IN), Max output level: 1 Vrms Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out (3.5mm stereo mini jack)
Alarm Triggers	Motion detection, Tampering, Audio Detection, Face Detection, Video Analytics, Network Disconnection, Alarm Input
Alarm events	File upload via FTP and E-Mail Notification via E-Mail local storage(SD/SDHC/SDXC) or NAS recording at Event (Alarm Triggers) External output

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Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.264(MPEG-4 Part 10/AVC), Motion JPEG
Resolution	1920x1080 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 / 800x600 / 800x450 / 640x480 / 640x360 / 320x240 / 320x180
Max. Framerate	H.264 : Max 60fps at all resolutions Motion JPEG : 1920x1080 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 : Max. 15 fps 800x600 / 800x450 / 640x480 / 640x360 / 320x240 / 320x180 : Max. 30fps
Smart Codec	Manual mode(Area-based : 5ea), Face detection mode
Video Quality Adjustment	H.264 : Compression Level, Target Bitrate Level Control MJPEG : Quality Level Control
Bitrate Control Method	H.264 : CBR or VBR M-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
Audio Communication	Bi-directional
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL, 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
Streaming Method	Unicast / Multicast
Max. User Access	15 users at Unicast Mode
Edge Storage	Micro SD/SDHC Max 64G, NAS - Motion images recorded in the SD memory card can be downloaded - Manual recording at Local PC
Application Programming Interface	ONVIF Profile S, G SUNAPI(HTTP API), SVNIP
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Danish, Portuguese, Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatia, Hungary, Greek, Finnish, Norwegian
Web Viewer	Supported OS : Windows XP / VISTA / 7 / 8 / 8.1, MAC OS X 10.7 ~ 10.10 Supported Browser : Microsoft Internet Explorer (Ver. 8~11), Mozilla Firefox (Ver. 9~35), Google Chrome (Ver. 15~44), Apple Safari (Ver. 8.0.2(Mac OS X 10.10), 7.0.6(Mac OS X 10.9), 6.0.2 (Mac OS X 10.8, 10.7 only), 5.1.7) * Mac OS X only
Central Management Software	SmartViewer
Environmental	
Operating Temperature / Humidity	PoE, AC24, DC12V : -40°C ~ +55°C (-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -35°C
Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	AC24, DC12V, PoE(IEEE802.3af)
Power Consumption	Max. 11.0W(Heater Off) Max. 12.95W(Heater On)
Mechanical	
Color / Material	Ivory / Aluminum
Dimension (WxHxD)	Ø160 x H118.5mm
Weight	985g

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1.5 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	SNV-6085RN	-	Tianjin Samsung Electronics Co.,Ltd.	EUT

1.6 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook	ProBook4430s	811NMMEG76923	HP	-
Notebook Adapter	SeriesPPP0009H	-	CHICONY POWER TECHNOLOGY (SUZHOU) CO.,LTD,	-
Alarm Zig	-	-	-	-
PoE Adapter	PD3001GC/AC	RD9356082016964200	Power Dsine	-
Headset	RHS-2000	-	Ryoche	-

1.7 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	LAN(RJ-45)	Notebook	LAN(RJ-45)	3.0	Unshielded
	alarm 2 pin	Alarm Zig	alarm 2 pin	3.0	Unshielded
	LAN(RJ-45)	PoE Adapter	LAN(RJ-45)	3.0	Unshielded
PoE Adapter	RJ-45	Notebook	RJ-45	1.0	Unshielded

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1.8 Special Accessories

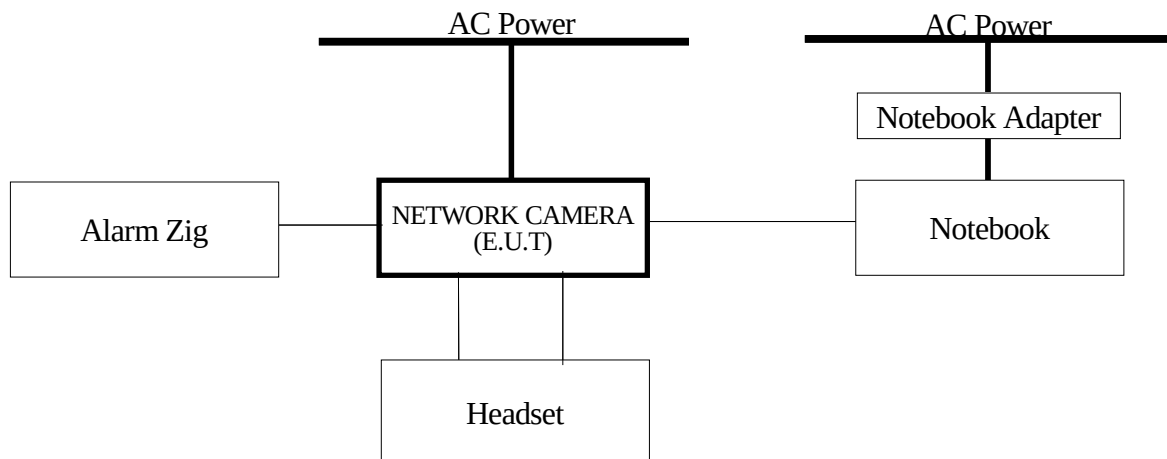
As shown in section 1.10, all interface cables used for compliance testing are shielded as normally supplied or by use respective component manufacturers.

1.9 E.U.T Modifications

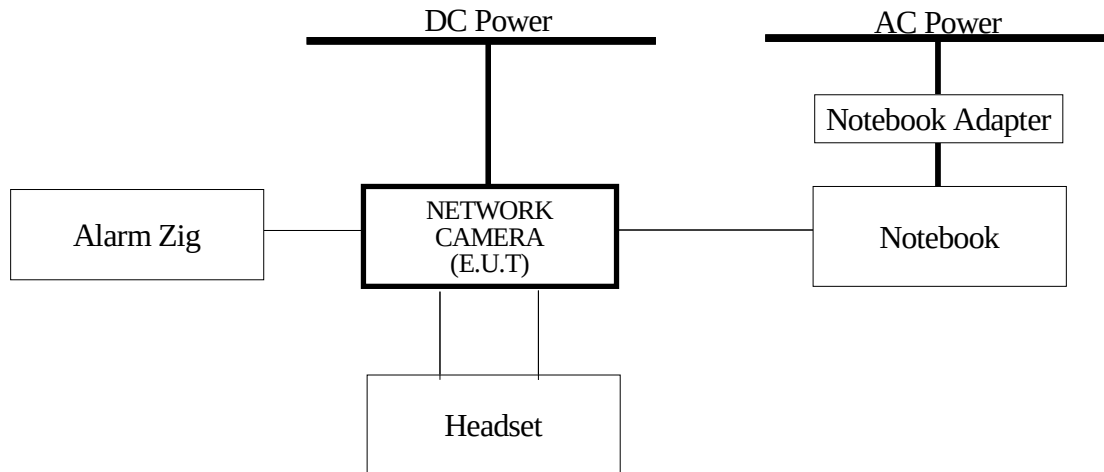
No modifications were made to the E.U.T in order to achieve and maintain compliance to the standards described in this report.

1.10 Configuration of Test System

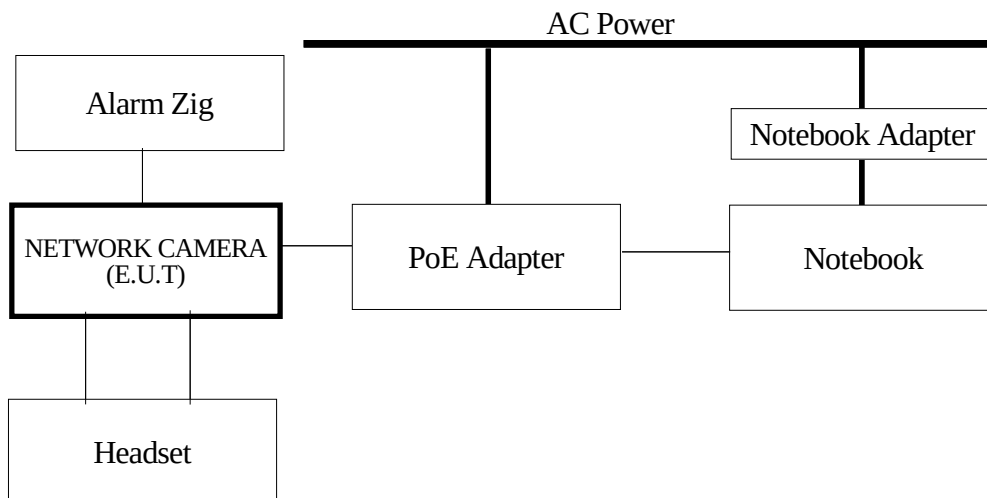
- AC Mode



- DC Mode



- PoE Mode



1.11 Operating condition

- Normal operating Mode
- WebView Monitoring
- Pingtest

1.12 Statements and User Information

■ Class A / □ Class B

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2. Summary of Tests

FCC Part Section(s)	Parameter	Test Condition	Status (note 1)
15.109(a)	Emission limits	Radiated	C
15.107(a)	Conducted limits	Conducted	C

Note 1 : C=Complies N/C=Not Complies N/T=Not Tested N/A=Not Applicable

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2.1 Conducted Emission Measurements

2.1.1 Test Methods

The power line conducted emission measurements were performed in a shielded enclosure, using the setup in accordance with ANSI C63.4-2009 conducted emission measurement procedure.

2.1.2 Test Equipments

Description	Manufacturer	Model Number	Serial Number	Cal. Due
EMI Test Receiver	R&S	ESR	101783	05. 06. 2016
LISN	R&S	ENV216	101137	02. 10. 2016
LISN	R&S	ENV216	101786	05. 06. 2016
Electro wave Shieldroom	SEMITEC	-	-	-

2.1.3 Test Environments

Ambient Temperatures	Relative Humidity
see the data	see the data

2.1.4 Test Limits

Frequency (MHz)	15.107 Conducted limits			
	Class B (dB μ V)		Class A (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.50	66.0 to 56.0	56.0 to 46.0	79.0	66.0
0.50 to 5.00	56.0	46.0	73.0	60.0
5.00 to 30.00	60.0	50.0	73.0	60.0

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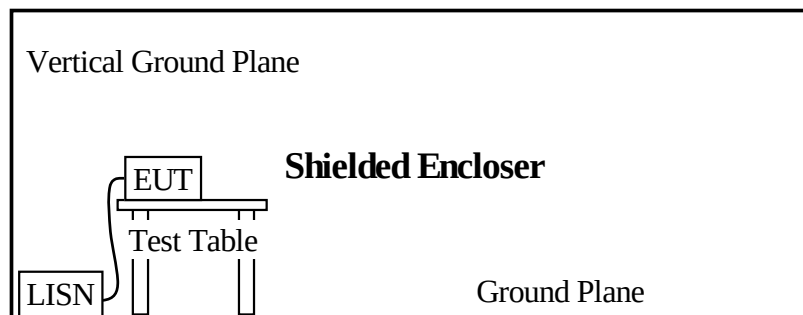
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2.1.5 Test Procedure

Conducted emission levels were measured on each current-carrying line with the EMI TEST Receiver operating in the CISPR quasi-peak mode (or peak mode if applicable). The Receiver's 6 dB bandwidth was set to 9 kHz. The initial step in collecting conducted data is a EMI TEST Receiver peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

The conducted emission test was performed with the E.U.T exercise program loaded, and the emissions were scanned between 150 kHz to 30 MHz on the HOT side and NEUTRAL side, herein referred to as H and N, respectively.

2.1.6 Test Configuration



2.1.7 Test Results

According to the data in section 2.1.7, the E.U.T complied with the FCC Part 15.107



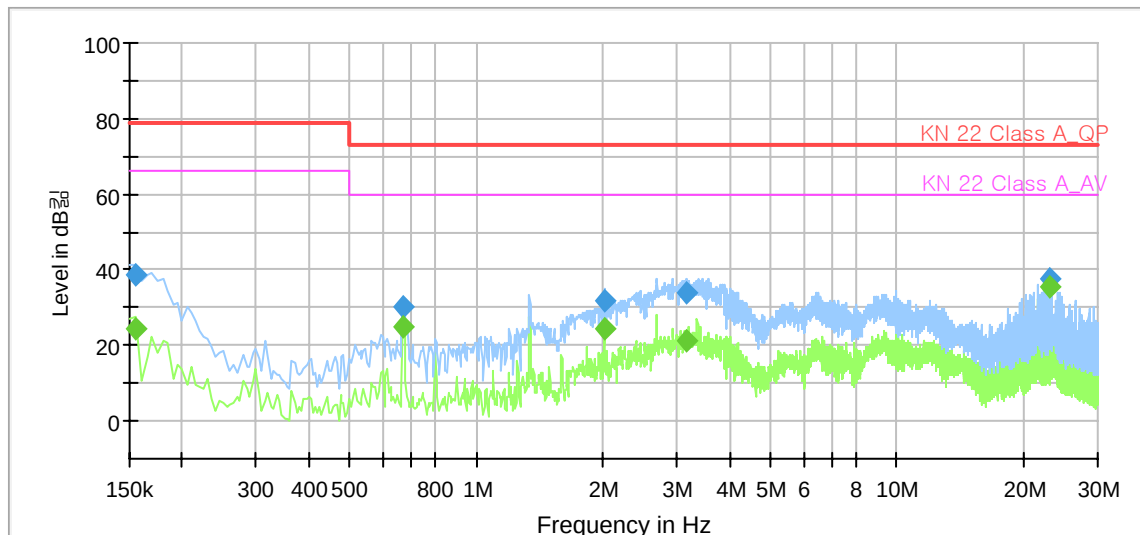
2.1.8 Test Data

Temperature: 18.6 °C Humidity: 53.9 % R.H. Test Date: 11. 10. 2015 Tested by: Dae Hyun, Kim

- AC Mode

Polarization: HOT

Test Description: Conducted Emission
Model No.: SNV-6085RN
Mode AC Mode
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	24.32	66.00	41.68	1000.0	9.000	L1	9.7
0.155000	38.40	---	79.00	40.60	1000.0	9.000	L1	9.7
0.670000	---	24.92	60.00	35.08	1000.0	9.000	L1	9.7
0.670000	29.93	---	73.00	43.07	1000.0	9.000	L1	9.7
2.015000	---	24.50	60.00	35.50	1000.0	9.000	L1	9.7
2.015000	31.74	---	73.00	41.26	1000.0	9.000	L1	9.7
3.150000	---	21.12	60.00	38.88	1000.0	9.000	L1	9.8
3.150000	33.67	---	73.00	39.33	1000.0	9.000	L1	9.8
23.130000	---	35.53	60.00	24.47	1000.0	9.000	L1	10.2
23.130000	37.71	---	73.00	35.29	1000.0	9.000	L1	10.2

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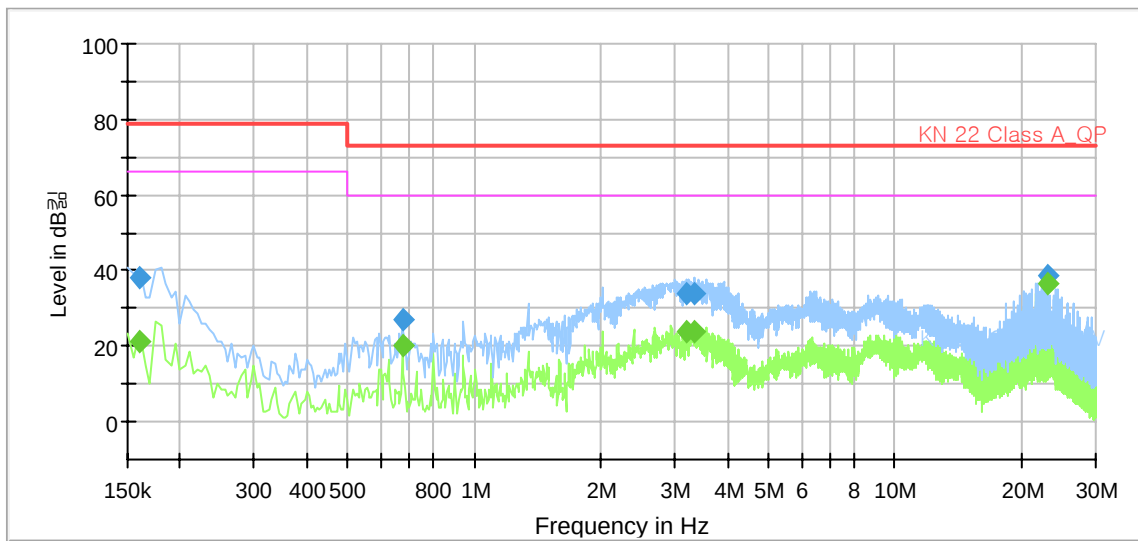
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Polarization: NEUTRAL

Test Description: Conducted Emission
Model No.: SNV-6085RN
Mode: AC Mode
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	21.29	66.00	44.71	1000.0	9.000	N	9.6
0.160000	38.31	---	79.00	40.69	1000.0	9.000	N	9.6
0.675000	---	20.09	60.00	39.91	1000.0	9.000	N	9.7
0.675000	27.11	---	73.00	45.89	1000.0	9.000	N	9.7
3.195000	---	23.91	60.00	36.09	1000.0	9.000	N	9.8
3.195000	34.02	---	73.00	38.98	1000.0	9.000	N	9.8
3.345000	---	23.92	60.00	36.08	1000.0	9.000	N	9.8
3.345000	33.96	---	73.00	39.04	1000.0	9.000	N	9.8
23.130000	---	36.48	60.00	23.52	1000.0	9.000	N	10.0
23.130000	38.64	---	73.00	34.36	1000.0	9.000	N	10.0

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2.2 Radiated Emission Measurements

2.2.1 Test Methods

The radiated emission measurements were performed in a Open Area Test Site (OATS) and 3 m full chamber, using the setup in accordance with ANSI C63.4-2009 radiated emission measurement procedure.

2.2.2 Test Equipments

Description	Manufacturer	Model Number	Serial Number	Cal. Due
EMI TEST Receiver	R & S	ESR3	101781	05. 06. 2016
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9163	9163-713	05. 15. 2017
OATS	KES	-	-	-
Antenna Mast	DAEIL EMC	-	-	-
Turn Table	DAEIL EMC	-	-	-
EMI TEST Receiver	R & S	ESU26	100552	05. 06. 2016
BroadbandCoaxial Preamplifier	A-H-SYSTEM,INC	SAS-571	871	05. 07. 2017
Double Ridged Horn Antenna	Schwarzbeck Mess - Elektronik	BBV 9718	9718-246	10. 23. 2016
Semi Anachoic Chamber #2	SEMITEC	-	-	-
Antenna Mast	AUDIX	-	-	-
Turn Table	AUDIX	-	-	-

2.2.3 Test Environments

Ambient Temperatures	Relative Humidity
see the data	see the data

2.2.4 Test Limits

Frequency (MHz)	15.109 Radiated emission limits			
	Class B @ 3 m		Class A @ 10 m	
	(dB μ V/m)	(μ V/m)	(dB μ V/m)	(μ V/m)
30 to 88	40.0	100	39.0	90
88 to 216	43.5	150	43.5	150
216 to 960	46.0	200	46.4	210
above 960	54.0	500	49.5	300

Frequency (MHz)	15.109 Radiated emission limits			
	Class B @ 3 m (dB μ V/m)		Class A @ 3 m (dB μ V/m)	
	PK	AV	PK	AV
above 1 000	74	54	80	60

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2.2.5 Test Procedure

Before final measurements of radiated emission were made at the OATS, the E.U.T was scanned in semi-anechoic chamber in order to determine its emission spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the E.U.T's emission in amplitude, direction and frequency. This process was repeated during final radiated emission measurements at the OATS range, at each frequency, in order to ensure that maximum emissions amplitudes were attained.

The radiated emission test was performed with E.U.T exercise program loaded, and the emissions were scanned between 30 MHz to 1 000 MHz using a R&S ESVS10 EMI TEST Receiver and 1 000 MHz to 5 000 MHz using a spectrum analyzer. The EMI TEST Receiver's 6 dB bandwidth was set to 120 kHz and 1 MHz, and EMI TEST Receiver was operated in the CISPR quasi-peak detection mode. At each frequency, the E.U.T was rotated 360 degrees, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum emission levels. Measurements were taken using both HORIZONTAL and VERTICAL antenna polarization, herein referred to as H and V, respectively.

- above 1 GHz : Antenna height is fixed to 1.00 m

2.2.6 Field Strength Calculation

F.S = Field Strength

M.R = Meter Reading

A.F = Antenna Factor

C.L = Cable Loss

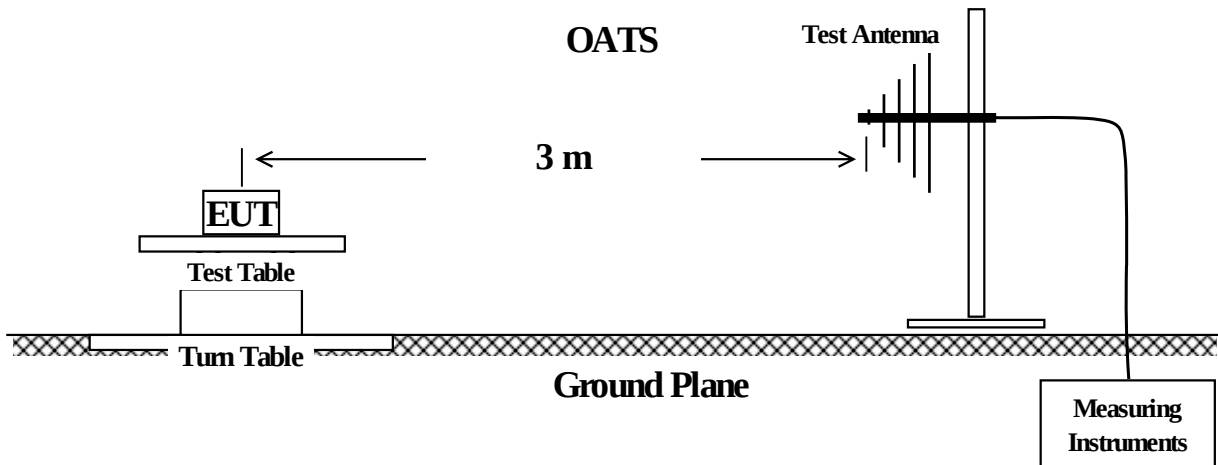
A.G= Amplifier Gain

* Below 1 GHz : $F.S(dB\mu V/m) = M.R(dB\mu V) + [A.F(dB/m) + C.L(dB)]$

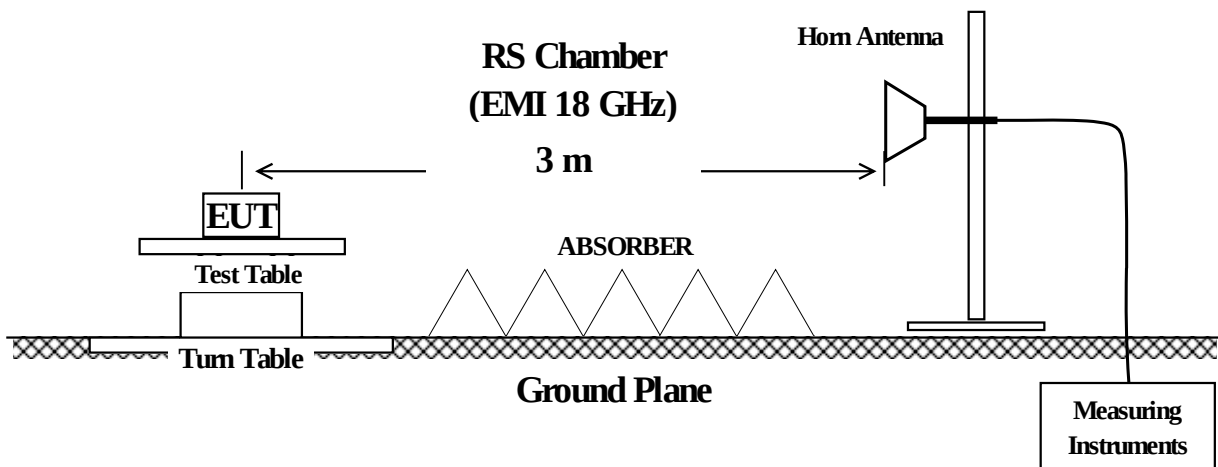
* Above 1 GHz : $F.S(dB\mu V/m) = M.R(dB\mu V) + [A.F(dB/m) + C.L(dB)] - A.G(dB)$

2.2.7 Test Configuration

* Below 1 GHz



* Above 1 GHz



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2.2.8 Test Results

Below 1 GHz : According to the data in section 2.2.9, the E.U.T complied with the FCC 15.109 limits.

Above 1 GHz :According to the data in section 2.2.9, the E.U.T complied with the FCC 15.109 limits.

2.2.9 Test Data

* Below 1 GHz

Temperature: 12.7 °C Humidity: 76.0 % R.H. Test Date: 11. 10. 2015 Tested by: Dae Hyun, Kim

- AC Mode

Frequency (MHz)	Amplitude (dB μ V/m)	Antenna		Correction Factor		Corrected Amplitude (dB μ V/m)	Applicable Limit (dB μ V/m)	Margin (dB)
		Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)			
50.18	16.44	V	1.00	13.93	1.75	32.12	39.00	6.88
56.42	11.86	V	1.00	13.14	1.86	26.86	39.00	12.14
74.51	18.14	V	1.00	8.50	2.19	28.83	39.00	10.17
183.05	19.22	H	4.00	9.70	3.65	32.57	43.50	10.93
225.75	17.76	H	4.00	11.87	4.10	33.73	46.40	12.67
666.18	13.59	H	3.80	19.56	7.80	40.95	46.40	5.45
668.26	15.09	V	1.20	19.57	7.81	42.47	46.40	3.93

- DC Mode

Frequency (MHz)	Amplitude (dB μ V/m)	Antenna		Correction Factor		Corrected Amplitude (dB μ V/m)	Applicable Limit (dB μ V/m)	Margin (dB)
		Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)			
53.14	8.42	V	1.00	13.55	1.80	23.77	39.00	15.23
225.76	9.88	H	4.00	11.87	4.10	25.85	46.40	20.55
225.76	12.73	V	1.00	11.87	4.10	28.70	46.40	17.70
525.47	10.04	H	4.00	17.66	6.79	34.49	46.40	11.91
587.69	7.40	V	1.00	19.03	7.29	33.72	46.40	12.68
668.32	14.60	V	1.00	19.57	7.81	41.98	46.40	4.42

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- PoE Mode

Frequency (MHz)	Amplitude (dB μ V/m)	Antenna		Correction Factor		Corrected Amplitude (dB μ V/m)	Applicable Limit (dB μ V/m)	Margin (dB)
		Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)			
81.18	21.34	V	1.00	7.37	2.29	31.00	39.00	8.00
225.71	13.02	V	1.00	11.87	4.10	28.99	46.40	17.41
225.71	17.52	H	4.00	11.87	4.10	33.49	46.40	12.91
400.19	13.66	V	2.00	15.70	5.78	35.14	46.40	11.26
556.24	12.81	V	1.70	18.34	7.04	38.19	46.40	8.21
666.25	11.19	H	3.84	19.57	7.80	38.56	46.40	7.84
668.32	15.52	V	2.00	19.57	7.81	42.90	46.40	3.50

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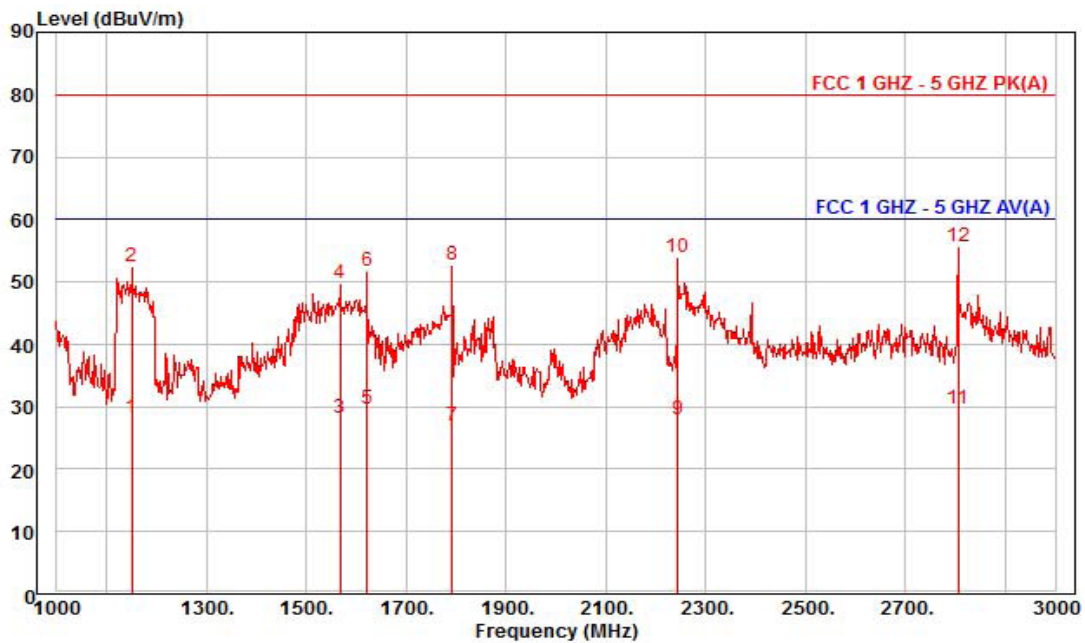
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*** Above 1 GHz**

Temperature: 19.9 °C Humidity: 45.9 % R.H. Test Date: 11. 09. 2015 Tested by: Dae Hyun, Kim

- AC Mode



Site : chamber
Condition: FCC 1 GHz - 5 GHz PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : AC
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	1150.00	37.33	24.51	6.48	40.05	40	60.00	-31.73	horizontal	Average
2	1150.00	61.51	24.51	6.48	40.05	40	80.00	-27.55	horizontal	Peak
3	1568.00	34.09	26.16	7.68	39.84	49	60.00	-31.91	horizontal	Average
4	1568.00	55.81	26.16	7.68	39.84	49	80.00	-30.19	horizontal	Peak
5	1622.00	35.26	26.38	7.84	39.82	23	60.00	-30.34	horizontal	Average
6	1622.00	57.37	26.38	7.84	39.82	23	80.00	-28.23	horizontal	Peak
7	1792.00	31.45	27.05	8.32	39.73	64	60.00	-32.91	horizontal	Average
8	1792.00	57.06	27.05	8.32	39.73	64	80.00	-27.30	horizontal	Peak
9	2244.00	29.66	28.48	9.60	39.77	59	60.00	-32.03	horizontal	Average
10	2244.00	55.54	28.48	9.60	39.77	59	80.00	-26.15	horizontal	Peak
11 av	2806.00	28.87	29.85	11.16	40.10	59	60.00	-30.22	horizontal	Average
12 pp	2806.00	54.72	29.85	11.16	40.10	59	80.00	-24.37	horizontal	Peak

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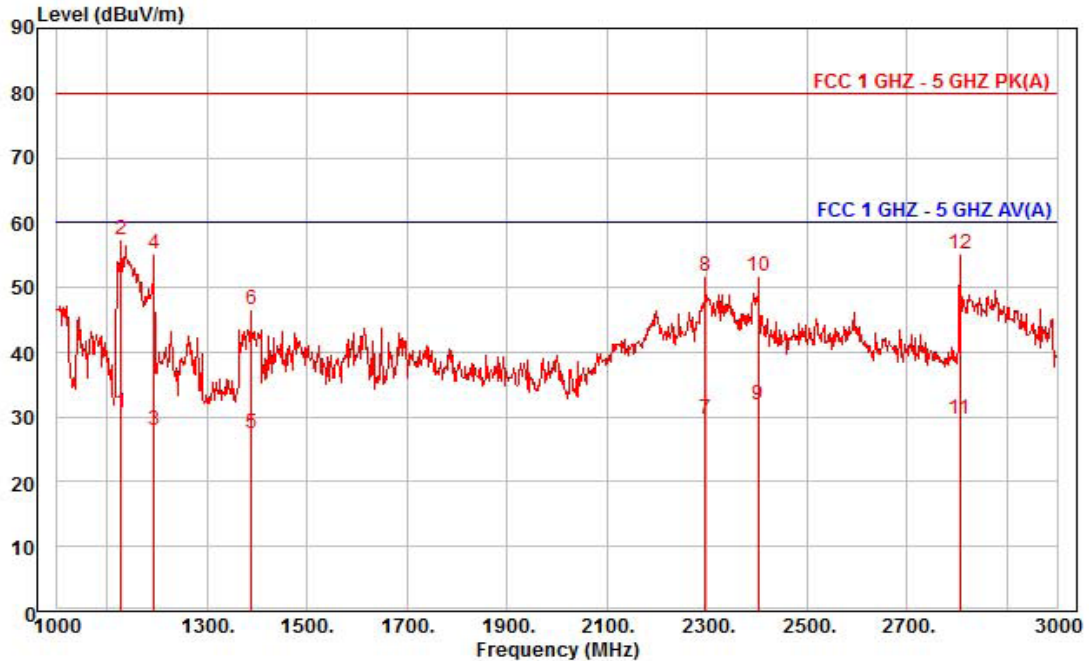
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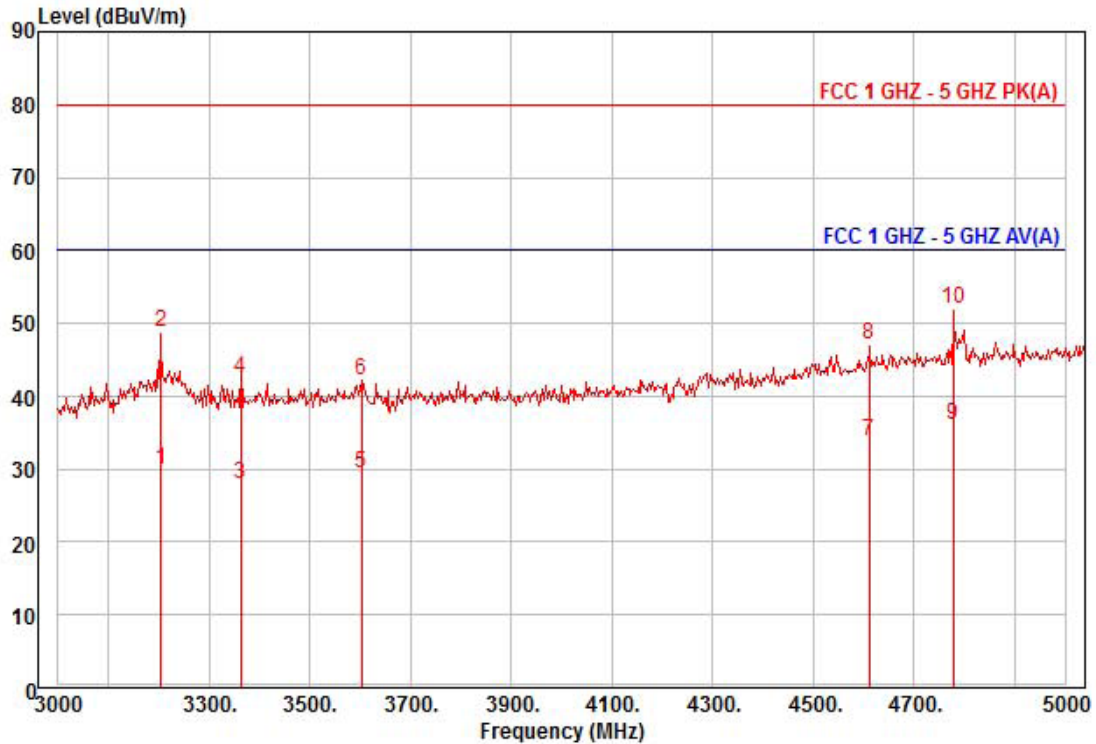


Site : chamber
Condition: FCC 1 GHz - 5 GHz PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : AC
Memo : 1 ~ 3 GHz

	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	1128.00	39.81	24.42	6.42	40.06	13	60.00	-29.41	vertical	Average
2 pp	1128.00	66.67	24.42	6.42	40.06	13	80.00	-22.55	vertical	Peak
3	1194.00	36.72	24.68	6.61	40.02	19	60.00	-32.01	vertical	Average
4	1194.00	63.99	24.68	6.61	40.02	19	80.00	-24.74	vertical	Peak
5	1388.00	34.84	25.45	7.16	39.93	33	60.00	-32.48	vertical	Average
6	1388.00	54.03	25.45	7.16	39.93	33	80.00	-33.29	vertical	Peak
7	2296.00	31.06	28.61	9.74	39.80	19	60.00	-30.39	vertical	Average
8	2296.00	53.21	28.61	9.74	39.80	19	80.00	-28.24	vertical	Peak
9 av	2402.00	32.93	28.86	10.04	39.86	140	60.00	-28.03	vertical	Average
10	2402.00	52.65	28.86	10.04	39.86	140	80.00	-28.31	vertical	Peak
11	2806.00	28.81	29.85	11.16	40.10	30	60.00	-30.28	vertical	Average
12	2806.00	54.31	29.85	11.16	40.10	30	80.00	-24.78	vertical	Peak

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Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : AC
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	3204.00	27.44	30.67	11.97	40.25	65	60.00	-30.17	horizontal	Average
2	3204.00	46.50	30.67	11.97	40.25	65	80.00	-31.11	horizontal	Peak
3	3363.00	25.02	30.94	12.18	40.28	65	60.00	-32.14	horizontal	Average
4	3363.00	39.62	30.94	12.18	40.28	65	80.00	-37.54	horizontal	Peak
5	3603.00	25.82	31.34	12.50	40.33	50	60.00	-30.67	horizontal	Average
6	3603.00	38.63	31.34	12.50	40.33	50	80.00	-37.86	horizontal	Peak
7	4611.00	24.62	35.50	14.15	40.41	119	60.00	-26.14	horizontal	Average
8	4611.00	37.85	35.50	14.15	40.41	119	80.00	-32.91	horizontal	Peak
9 pp	4779.00	25.48	36.46	14.46	40.41	250	60.00	-24.01	horizontal	Average
10 pk	4779.00	41.59	36.46	14.46	40.41	250	80.00	-27.90	horizontal	Peak

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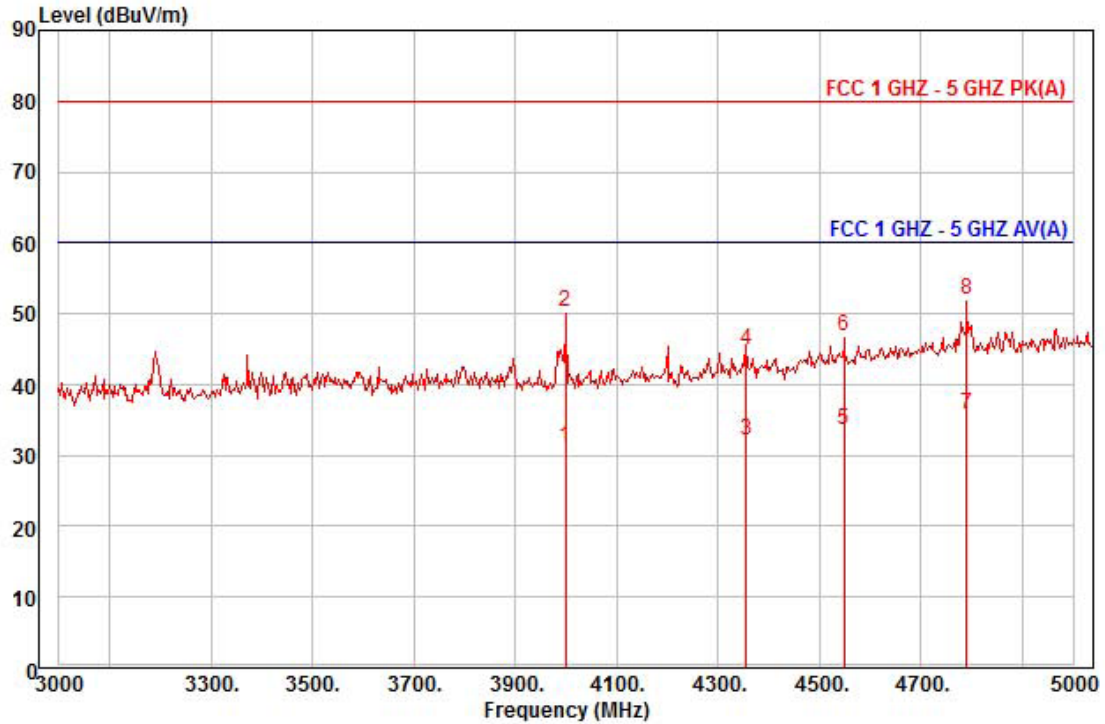
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Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : AC
Memo : 3 ~ 6 GHz

	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	3999.00	26.59	32.01	13.03	40.41	205	60.00	-28.78	vertical	Average
2	3999.00	45.68	32.01	13.03	40.41	205	80.00	-29.69	vertical	Peak
3	4356.00	24.74	34.04	13.69	40.41	21	60.00	-27.94	vertical	Average
4	4356.00	37.44	34.04	13.69	40.41	21	80.00	-35.24	vertical	Peak
5	4548.00	24.78	35.14	14.04	40.41	101	60.00	-26.45	vertical	Average
6	4548.00	38.18	35.14	14.04	40.41	101	80.00	-33.05	vertical	Peak
7 pp	4791.00	25.31	36.53	14.49	40.41	205	60.00	-24.08	vertical	Average
8 pk	4791.00	41.41	36.53	14.49	40.41	205	80.00	-27.98	vertical	Peak

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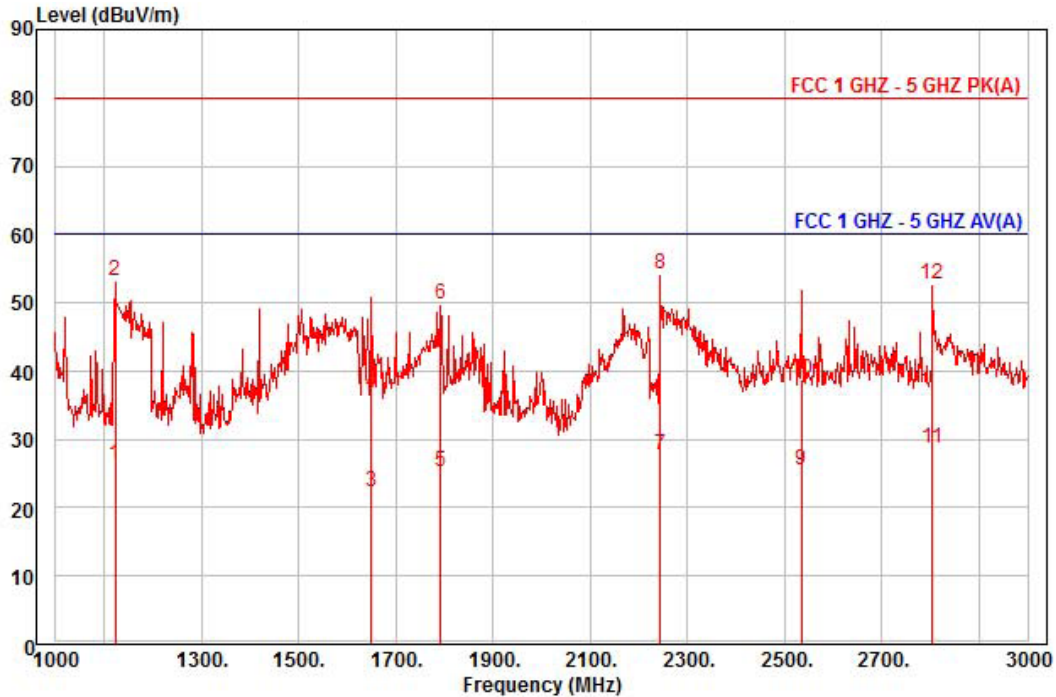


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- DC Mode



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : DC
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	1122.00	35.63	24.39	6.40	40.06	44	60.00	-33.64	horizontal	Average
2	1122.00	62.51	24.39	6.40	40.06	44	80.00	-26.76	horizontal	Peak
3	1650.00	27.80	26.49	7.92	39.80	228	60.00	-37.59	horizontal	Average
4	1650.00	42.10	26.49	7.92	39.80	228	80.00	-43.29	horizontal	Peak
5	1792.00	29.61	27.05	8.32	39.73	21	60.00	-34.75	horizontal	Average
6	1792.00	54.11	27.05	8.32	39.73	21	80.00	-30.25	horizontal	Peak
7	2244.00	29.41	28.48	9.60	39.77	61	60.00	-32.28	horizontal	Average
8 pp	2244.00	55.95	28.48	9.60	39.77	61	80.00	-25.74	horizontal	Peak
9	2534.00	25.97	29.19	10.40	39.94	208	60.00	-34.38	horizontal	Average
10	2534.00	39.00	29.19	10.40	39.94	208	80.00	-41.35	horizontal	Peak
11 av	2804.00	27.89	29.85	11.16	40.10	50	60.00	-31.20	horizontal	Average
12	2804.00	51.78	29.85	11.16	40.10	50	80.00	-27.31	horizontal	Peak

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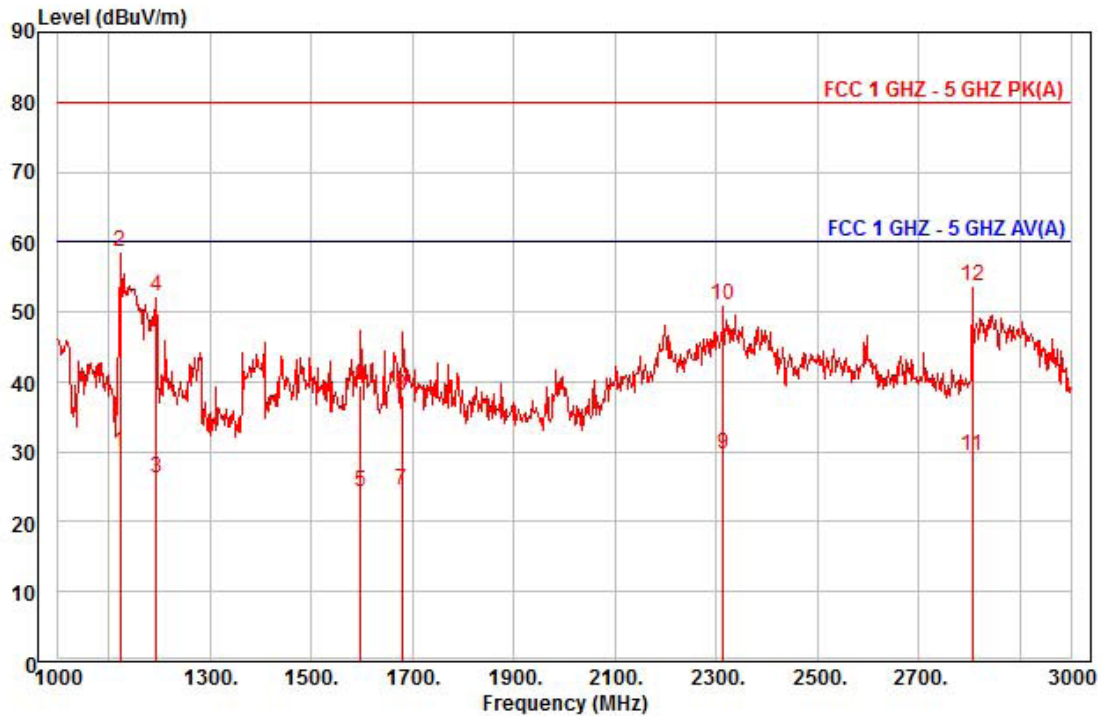
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Site : chamber
Condition: FCC 1 GHz - 5 GHz PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : DC
Memo : 1 ~ 3 GHz

		Read Freq	Ant Level	Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	av	1122.00	39.13	24.39	6.40	40.06	13	60.00	-30.14	vertical	Average
2	pp	1122.00	67.81	24.39	6.40	40.06	13	80.00	-21.46	vertical	Peak
3		1194.00	35.00	24.68	6.61	40.02	25	60.00	-33.73	vertical	Average
4		1194.00	61.07	24.68	6.61	40.02	25	80.00	-27.66	vertical	Peak
5		1598.00	29.96	26.28	7.77	39.83	140	60.00	-35.82	vertical	Average
6		1598.00	45.27	26.28	7.77	39.83	140	80.00	-40.51	vertical	Peak
7		1680.00	29.73	26.61	8.00	39.79	154	60.00	-35.45	vertical	Average
8		1680.00	43.10	26.61	8.00	39.79	154	80.00	-42.08	vertical	Peak
9		2314.00	31.16	28.65	9.79	39.81	7	60.00	-30.21	vertical	Average
10		2314.00	52.46	28.65	9.79	39.81	7	80.00	-28.91	vertical	Peak
11		2806.00	28.43	29.85	11.16	40.10	19	60.00	-30.66	vertical	Average
12		2806.00	52.80	29.85	11.16	40.10	19	80.00	-26.29	vertical	Peak

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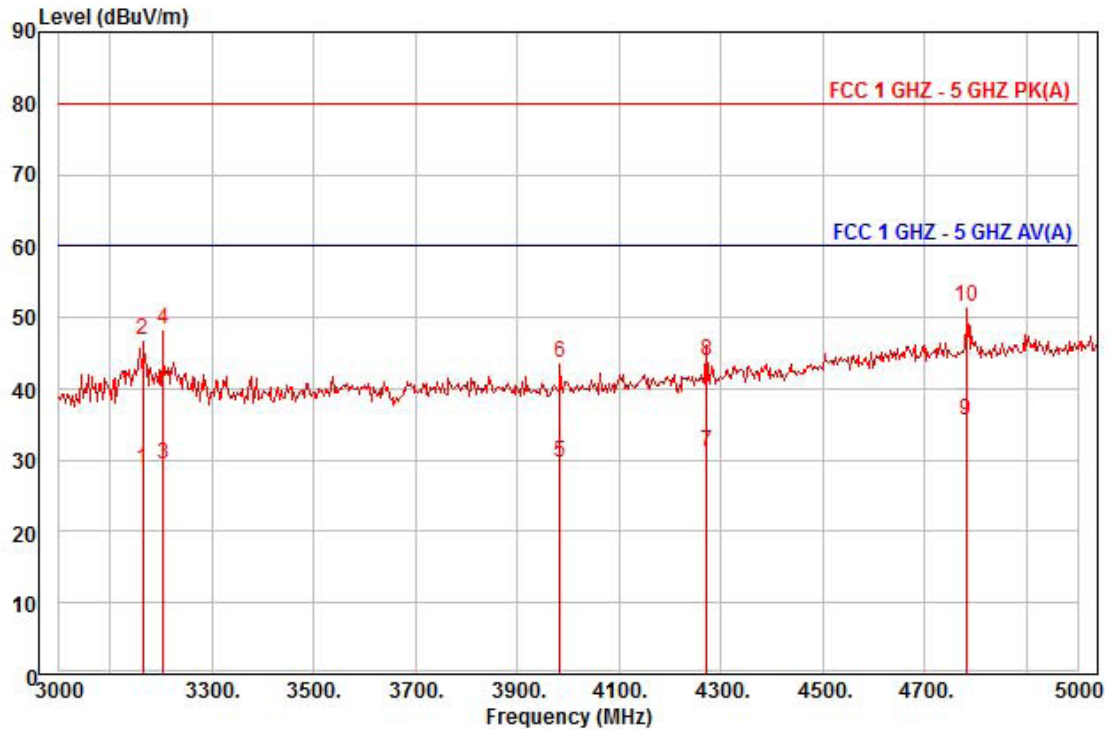
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Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : DC
Memo : 3 ~ 6 GHz

	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	3165.00	26.31	30.61	11.92	40.24	64	60.00	-31.40	horizontal	Average
2	3165.00	44.66	30.61	11.92	40.24	64	80.00	-33.05	horizontal	Peak
3	3204.00	27.02	30.67	11.97	40.25	73	60.00	-30.59	horizontal	Average
4	3204.00	45.87	30.67	11.97	40.25	73	80.00	-31.74	horizontal	Peak
5	3984.00	24.97	31.98	13.01	40.41	275	60.00	-30.45	horizontal	Average
6	3984.00	39.07	31.98	13.01	40.41	275	80.00	-36.35	horizontal	Peak
7	4272.00	24.57	33.56	13.53	40.41	283	60.00	-28.75	horizontal	Average
8	4272.00	37.18	33.56	13.53	40.41	283	80.00	-36.14	horizontal	Peak
9 pp	4782.00	25.12	36.48	14.47	40.41	251	60.00	-24.34	horizontal	Average
10 pk	4782.00	41.01	36.48	14.47	40.41	251	80.00	-28.45	horizontal	Peak

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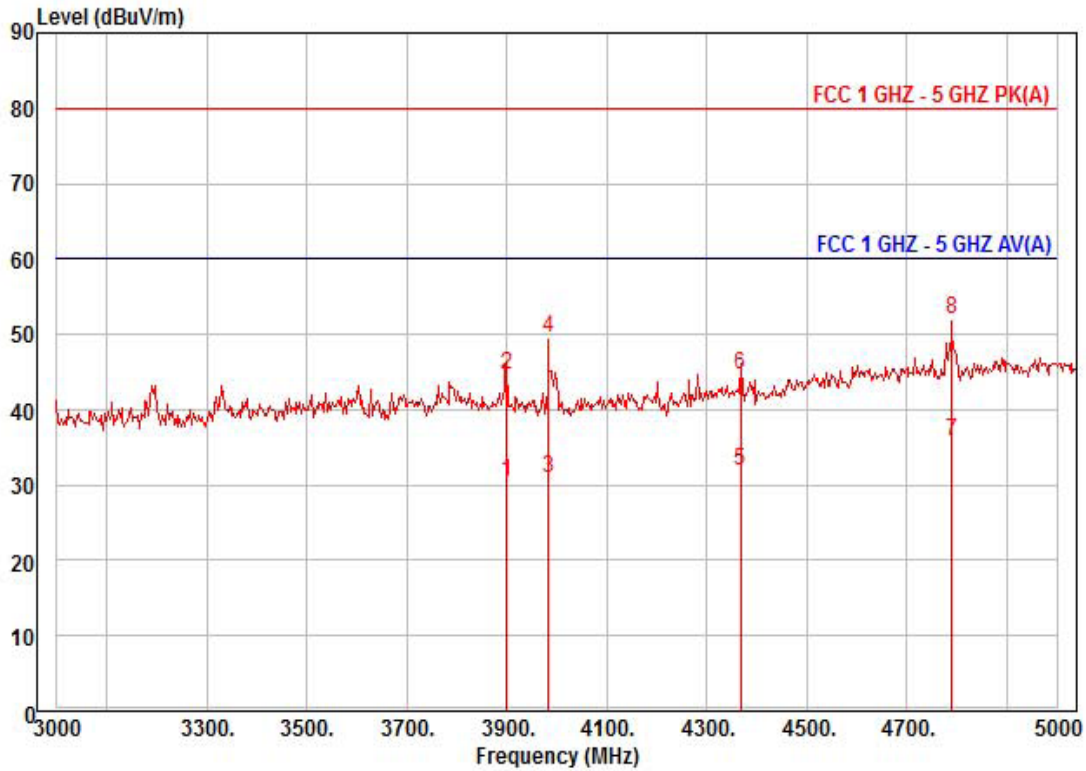
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Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : DC
Memo : 3 ~ 6 GHz

		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	3900.00	26.16	31.84	12.90	40.39	339	60.00	-29.49	vertical	Average
2	3900.00	40.37	31.84	12.90	40.39	339	80.00	-35.28	vertical	Peak
3	3984.00	26.40	31.98	13.01	40.41	158	60.00	-29.02	vertical	Average
4	3984.00	45.06	31.98	13.01	40.41	158	80.00	-30.36	vertical	Peak
5	4368.00	24.39	34.11	13.71	40.41	347	60.00	-28.20	vertical	Average
6	4368.00	37.16	34.11	13.71	40.41	347	80.00	-35.43	vertical	Peak
7 pp	4791.00	25.22	36.53	14.49	40.41	199	60.00	-24.17	vertical	Average
8 pk	4791.00	41.39	36.53	14.49	40.41	199	80.00	-28.00	vertical	Peak

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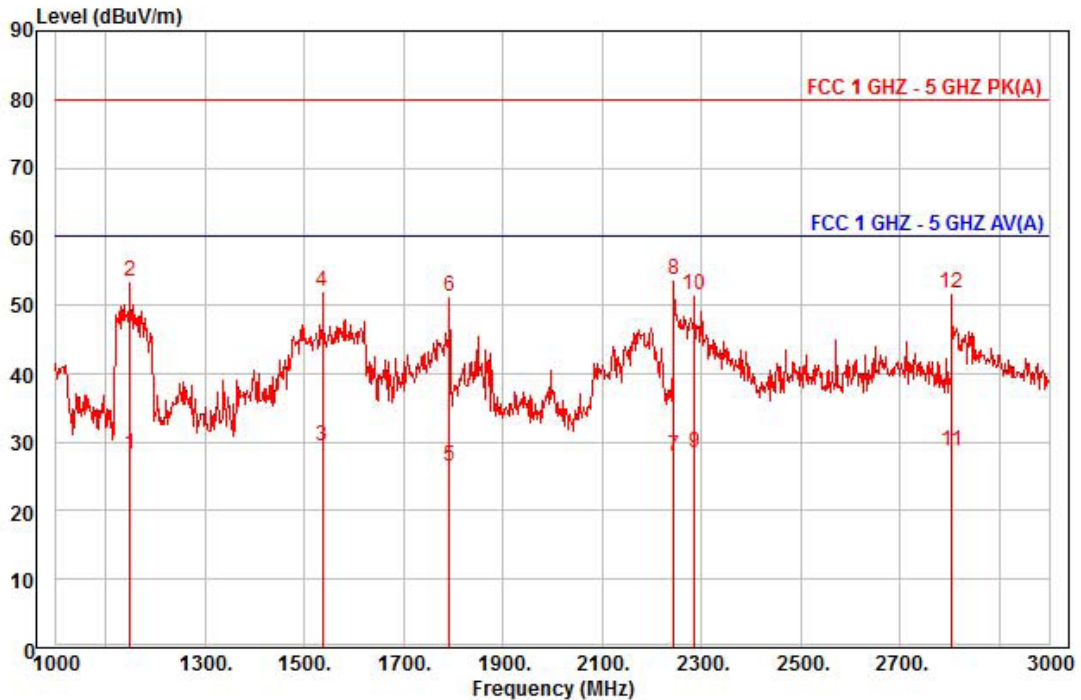


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- PoE Mode



Site : chamber
Condition: FCC 1 GHz - 5 GHz PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
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	37.33	24.50	6.47	40.05	42	60.00	-31.75	horizontal	Average
2	1148.00	62.49	24.50	6.47	40.05	42	80.00	-26.59	horizontal	Peak
3 av	1536.00	35.60	26.04	7.59	39.86	54	60.00	-30.63	horizontal	Average
4	1536.00	58.29	26.04	7.59	39.86	54	80.00	-27.94	horizontal	Peak
5	1792.00	30.79	27.05	8.32	39.73	57	60.00	-33.57	horizontal	Average
6	1792.00	55.69	27.05	8.32	39.73	57	80.00	-28.67	horizontal	Peak
7	2244.00	29.63	28.48	9.60	39.77	54	60.00	-32.06	horizontal	Average
8 pp	2244.00	55.34	28.48	9.60	39.77	54	80.00	-26.35	horizontal	Peak
9	2286.00	29.94	28.58	9.72	39.80	54	60.00	-31.56	horizontal	Average
10	2286.00	53.01	28.58	9.72	39.80	54	80.00	-28.49	horizontal	Peak
11	2804.00	27.66	29.85	11.16	40.10	28	60.00	-31.43	horizontal	Average
12	2804.00	50.93	29.85	11.16	40.10	28	80.00	-28.16	horizontal	Peak

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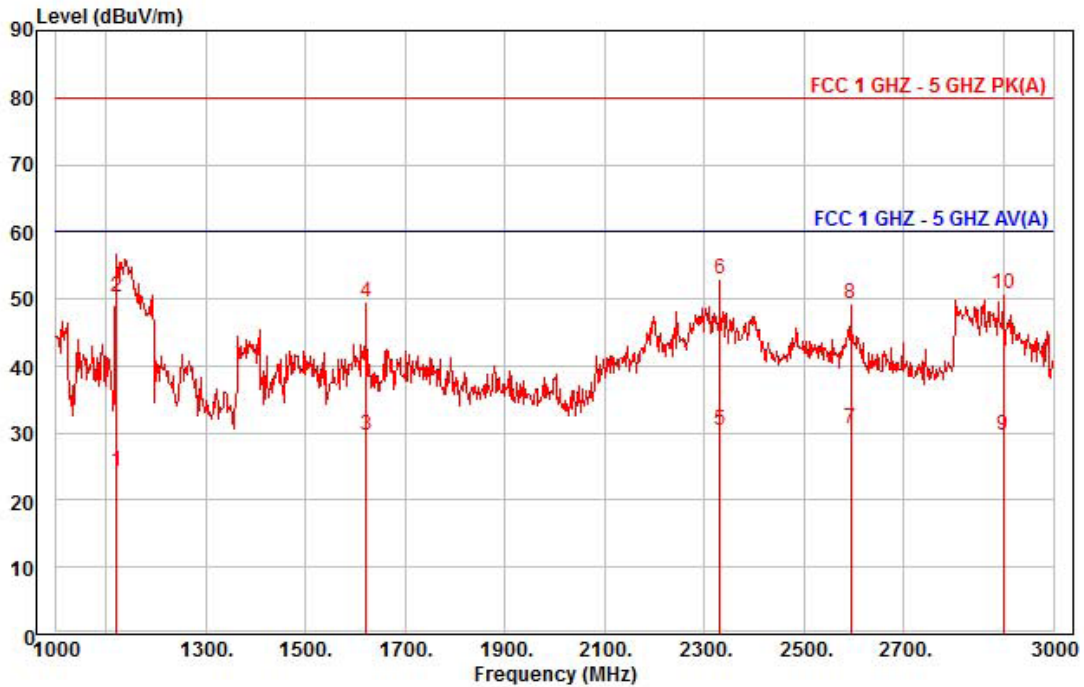
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Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : PoE
Memo : 1 ~ 3 GHz

		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	1120.00	33.58	24.39	6.39	40.06	19	60.00	-35.70	vertical	Average
2	1120.00	59.56	24.39	6.39	40.06	19	80.00	-29.72	vertical	Peak
3	1622.00	35.38	26.38	7.84	39.82	348	60.00	-30.22	vertical	Average
4	1622.00	55.23	26.38	7.84	39.82	348	80.00	-30.37	vertical	Peak
5	2332.00	31.75	28.69	9.84	39.82	16	60.00	-29.54	vertical	Average
6 pp	2332.00	54.29	28.69	9.84	39.82	16	80.00	-27.00	vertical	Peak
7 av	2594.00	30.68	29.34	10.57	39.97	126	60.00	-29.38	vertical	Average
8	2594.00	49.35	29.34	10.57	39.97	126	80.00	-30.71	vertical	Peak
9	2900.00	28.23	30.08	11.42	40.15	43	60.00	-30.42	vertical	Average
10	2900.00	49.32	30.08	11.42	40.15	43	80.00	-29.33	vertical	Peak

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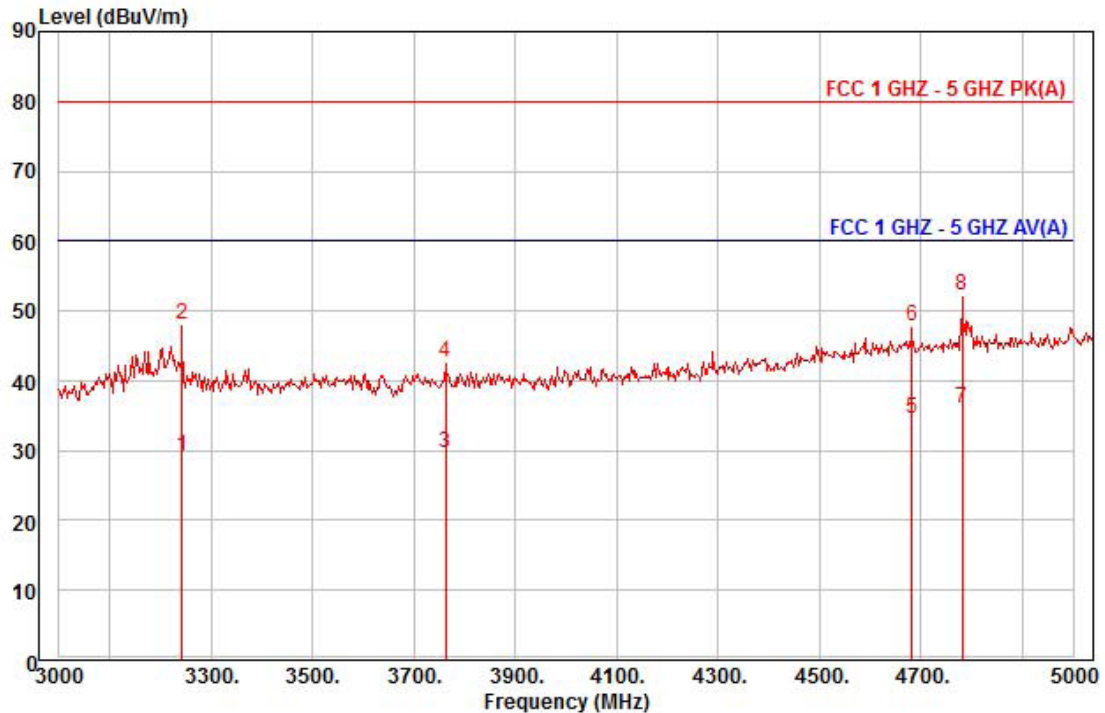
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Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : PoE
Memo : 3 ~ 6 GHz

	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	3243.00	26.59	30.74	12.02	40.26	68	60.00	-30.91	horizontal	Average
2	3243.00	45.62	30.74	12.02	40.26	68	80.00	-31.88	horizontal	Peak
3	3762.00	25.63	31.61	12.71	40.36	1	60.00	-30.41	horizontal	Average
4	3762.00	38.75	31.61	12.71	40.36	1	80.00	-37.29	horizontal	Peak
5	4683.00	24.67	35.91	14.29	40.41	12	60.00	-25.54	horizontal	Average
6	4683.00	38.03	35.91	14.29	40.41	12	80.00	-32.18	horizontal	Peak
7 pp	4782.00	25.42	36.48	14.47	40.41	255	60.00	-24.04	horizontal	Average
8 pk	4782.00	41.59	36.48	14.47	40.41	255	80.00	-27.87	horizontal	Peak

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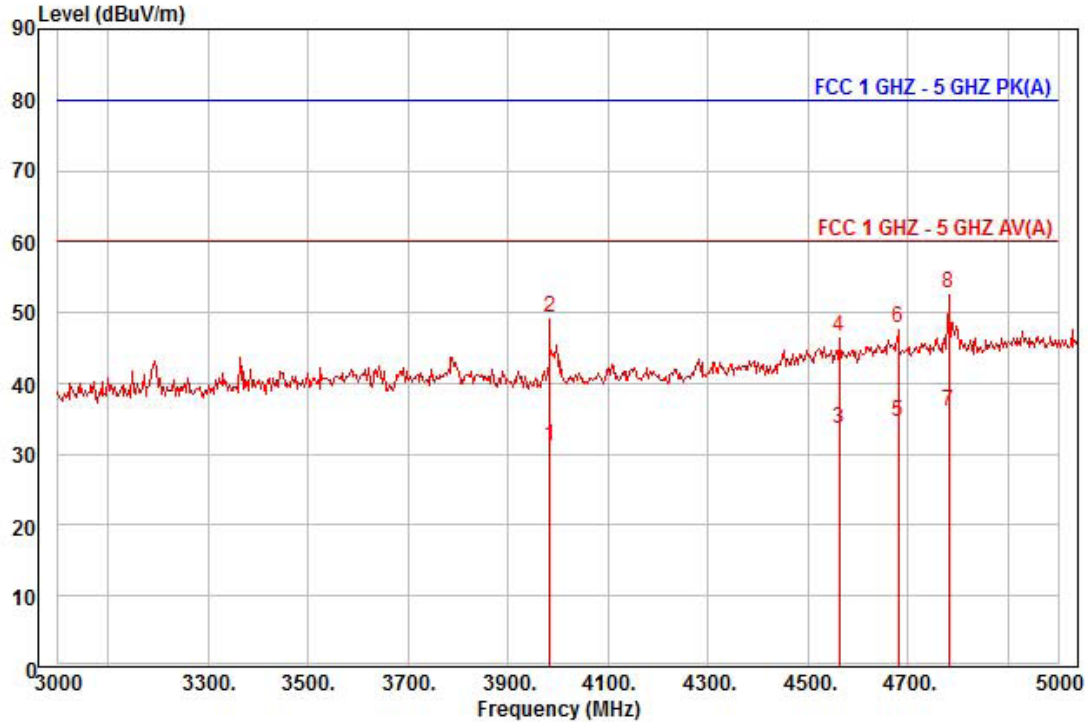
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Site : chamber
Condition: FCC 1 GHZ - 5 GHZ AV(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : NETWORK CAMERA
Model : SNV-6085RN
Mode : PoE
Memo : 3 ~ 6 GHz

	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	3984.00	26.57	31.98	13.01	40.41	152	80.00	-48.85	vertical	Average
2	3984.00	44.76	31.98	13.01	40.41	152	60.00	-10.66	vertical	Peak
3	4563.00	24.74	35.22	14.07	40.41	310	80.00	-46.38	vertical	Average
4	4563.00	37.68	35.22	14.07	40.41	310	60.00	-13.44	vertical	Peak
5	4680.00	24.80	35.89	14.28	40.41	62	80.00	-45.44	vertical	Average
6	4680.00	38.01	35.89	14.28	40.41	62	60.00	-12.23	vertical	Peak
7 av	4782.00	25.51	36.48	14.47	40.41	200	80.00	-43.95	vertical	Average
8 pp	4782.00	42.23	36.48	14.47	40.41	200	60.00	-7.23	vertical	Peak

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3. Product Labelling Requirements

3.1 FCC Statement

Product shall be labelled the following statement on the user's manual:

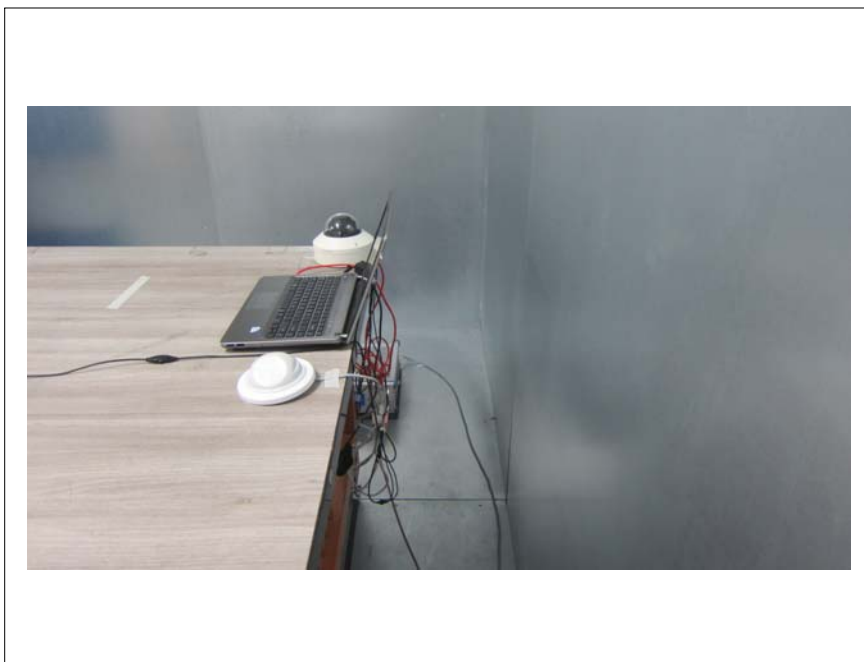
This device complies with part 15 of the FCC Rules. Operation in subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note : When the device is so small or for such use that it is not practicable to place the statement on it, the information shall be placed in prominent location in the instruction manual or pamphlet supplied to the user. However, the FCC identifier or unique identifier, as appropriate, must be displayed on the device.

4. Test Setup Photographs

4.1 Conducted Emission

- AC Mode



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4.2 Radiated Emission

- Below 1 GHz

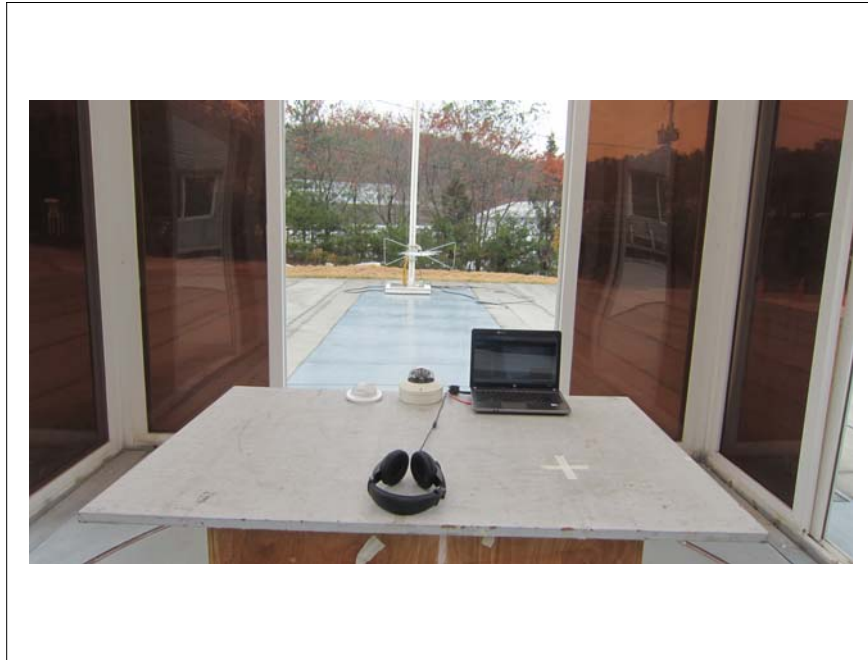
- AC Mode



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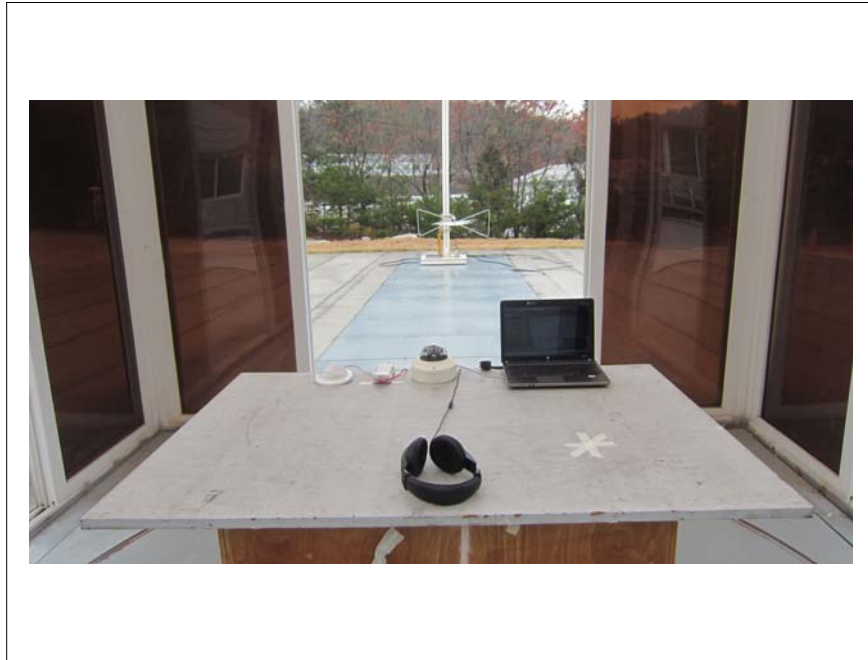
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- DC Mode



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- PoE Mode

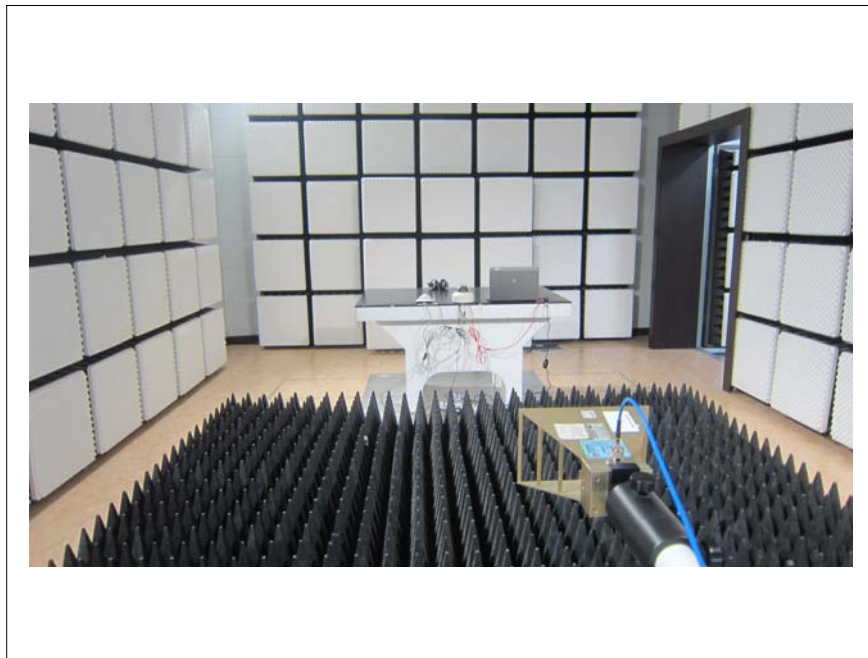
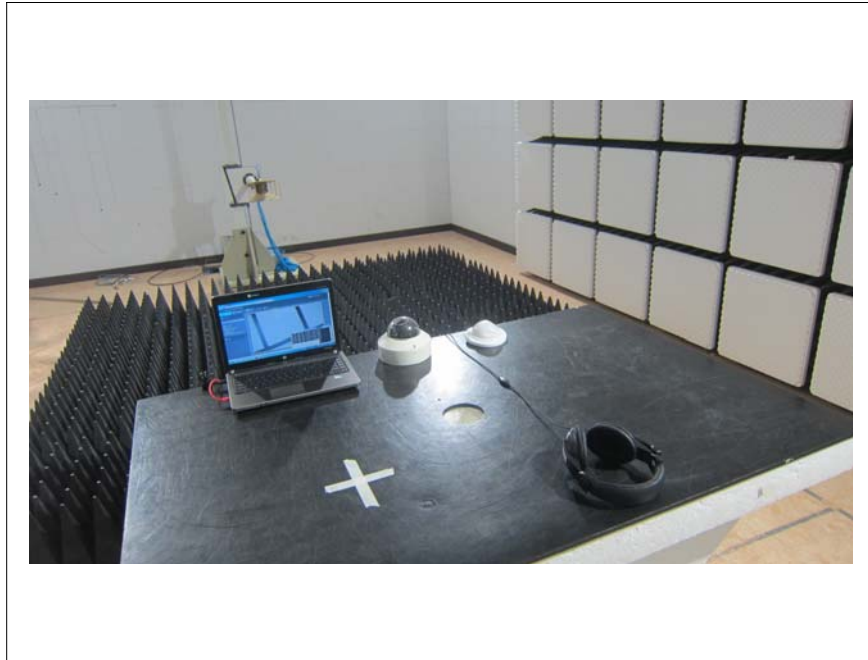


- Above 1 GHz
- AC Mode



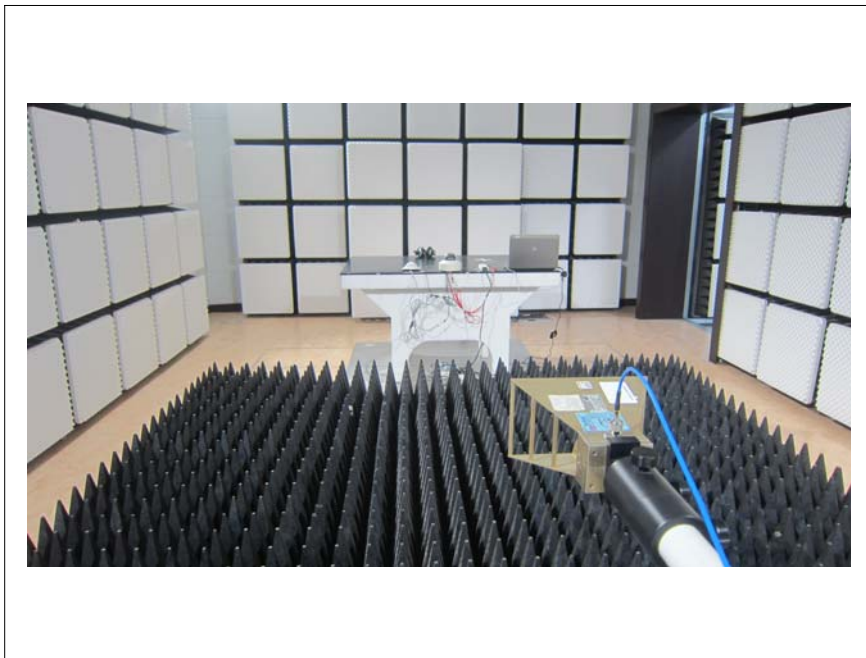
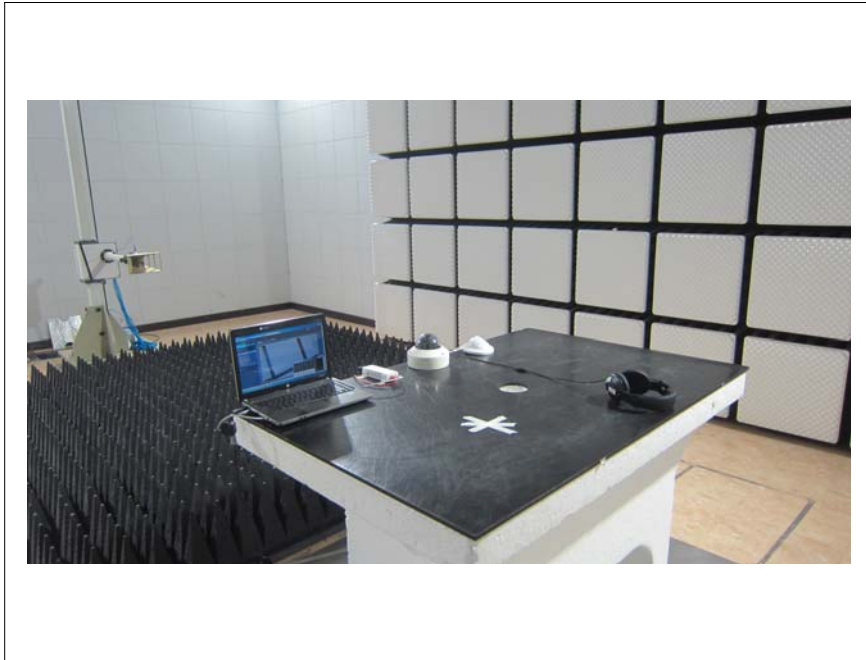
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- DC Mode



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- PoE Mode



5. External Photographs

5.1 E.U.T: Front View



5.2 E.U.T: Rear View



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5.3 E.U.T: Label View (Location)



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

6. Internal Photographs

6.1 E.U.T: Internal View



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6.2 E.U.T: Internal View(Top) - Main Board



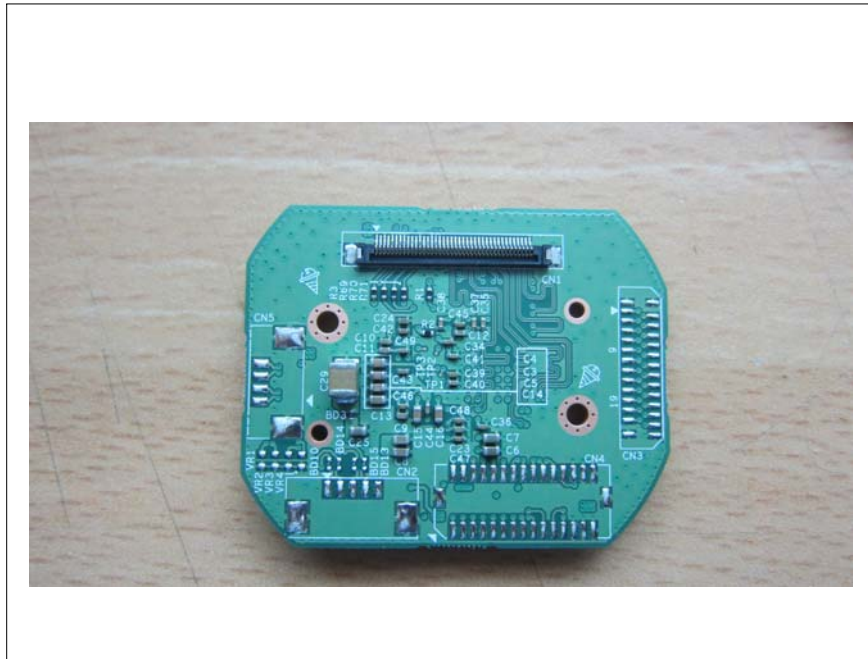
E.U.T: Internal View(Bottom) - Main Board



E.U.T: Internal View(Top) - Sub Board 1



E.U.T: Internal View(Bottom) - Sub Board 1



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E.U.T: Internal View(Top) - Sub Board 2



E.U.T: Internal View(Bottom) - Power Board





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Appendix A - Schematics/Block Diagram

Please see attached document(s).

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Appendix B - User's Manual

Please see attached document(s).

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