

CERTIFICATE of EMC Compliance

Report No : EMC-FCC-2331
Type of equipment : Network Camera
Model Name : SNV-5084RN
Applicant : Samsung Techwin Co., Ltd.
84, Jeongdong-ro, Seongsan-gu,
Changwon-si, Gyeongsangnam-do, Korea
Manufacturer#1 : Samsung Techwin Co., Ltd.
84, Jeongdong-ro, Seongsan-gu,
Changwon-si, Gyeongsangnam-do, Korea
Manufacturer#2 : TIANJIN SAMSUNG TECHWIN
OPTO-ELECTRONIC CO., LTD
No.11 Weiliu Road. Micro-Electronic Industrial
Park Jingang Road Tianjin 300385, China
Test standards : FCC part 15 subpart B, Class A
Classification : Verification

The above equipment was tested by EMC compliance Testing Laboratory for with the requirements of FCC Rules and Regulations. The results of testing in this report apply to the product / system which was tested only.

These results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulations.

Laboratory

EMC compliance Ltd.
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 443-390, Korea

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Yeom, Han-Seok/ Manager

EMI TEST REPORT

Test report No : EMC-FCC-2331
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OPTO-ELECTRONIC CO., LTD
No.11 Weiliu Road. Micro-Electronic Industrial
Park Jingang Road Tianjin 300385, China
Test standards : FCC part 15 subpart B, Class A
Classification : Verification
Test Procedure and Items
- Radiated Emissions Measurement : ANSI C63.4-2009
Testing Laboratory : EMC Compliance Ltd.
Test result : Complied

The above equipment was tested by EMC compliance Testing Laboratory for compliance with the requirements of FCC Rules and Regulations. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

These results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulations.

Date of receipt: 2014. 05. 09

Date of testing: 2014. 05. 15 ~ 05. 16

Issued date: 2014. 05. 21

Tested by:

BEAK, JEONG-SOO

Approved by:

YEOM, HAN-SEOK

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1. Applicant information

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Manufacturer#1: Samsung Techwin Co., Ltd.
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Contact name: **Kang Jei Soon**

Manufacturer#2: TIANJIN SAMSUNG TECHWIN OPTO-ELECTRONIC CO., LTD
Address: No.11 Weiliu Road. Micro-Electronic Industrial Park
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2. Laboratory information

Address

EMC compliance Ltd.

65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-390, Korea

Telephone Number: 82 31 336 9919

Facsimile Number: 82 505 299 8311

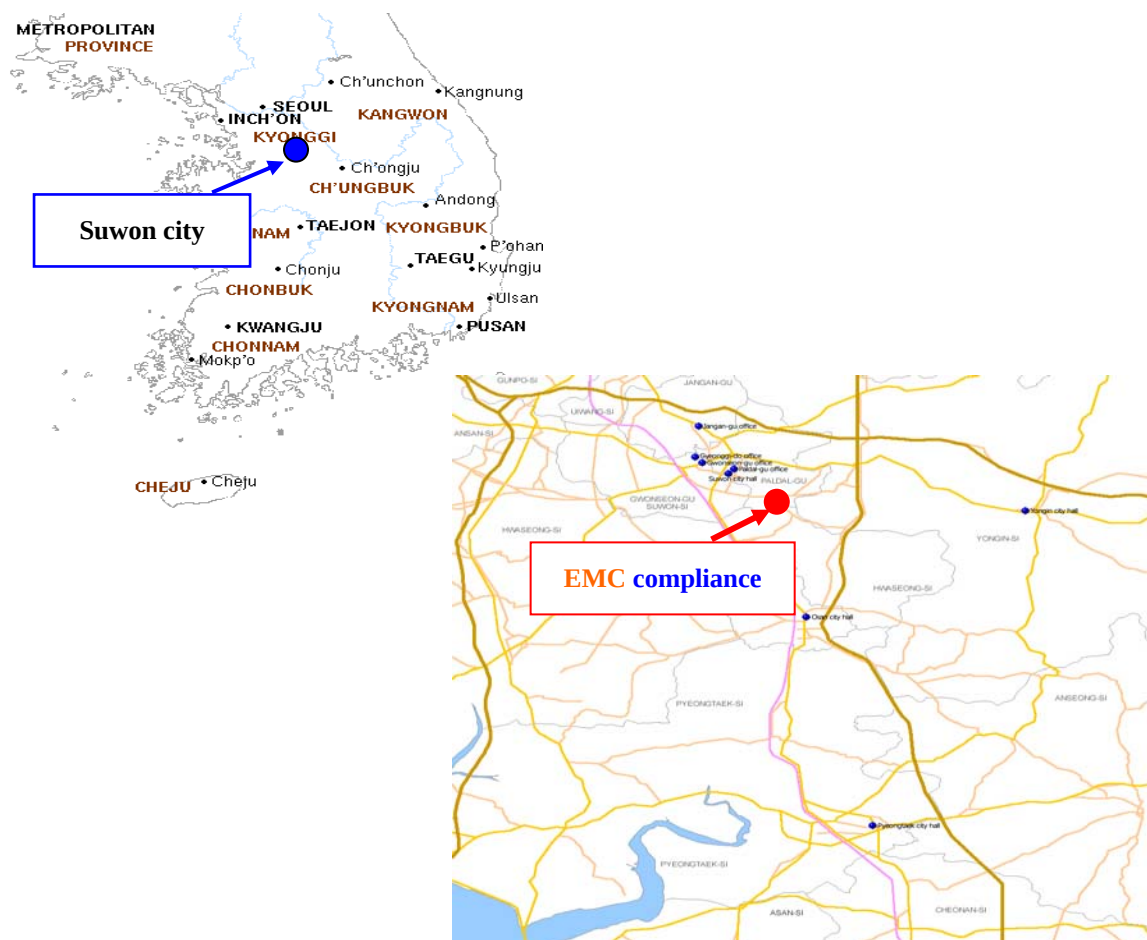
FCC CAB.: KR0040

VCCI Registration No. : R-3327, G-198, C-3706, T-1849

Industry Canada Registration No.: 8035A

KOLAS NO.: 231

SITE MAP



3. Test system configuration

3.1 Operation environment

	Temperature	Humidity	Pressure
Chamber(10 m)	: 21.4 °C	41.2 % R.H.	-

Test site

These testing items were performed following locations;

Test item	Test site
Conducted Emission	Shielded Room
Radiated Emission	10 m Chamber

3.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC.

The factors contributing to uncertainties are test receiver, cable loss, antenna factor calibration, Antenna directivity, antenna factor variation with height, antenna phase center variation, antenna frequency interpolation, measurement distance variation, site imperfection, mismatch, and system repeatability. Based on CISPR 16-4-2, the measurement uncertainty level with a 95 % confidence level was applied.

Conducted emission measurement (C.L: Approx 95 %, k = 2)		
Shielded Room (CE#1)	9 kHz ~ 150 kHz: ± 3.82 dB 150 kHz ~ 30 MHz: ± 3.43 dB	
Shielded Room (CE#2)	9 kHz ~ 150 kHz: ± 3.82 dB 150 kHz ~ 30 MHz: ± 3.43 dB	
Shielded Room (CE#3)	9 kHz ~ 150 kHz: ± 4.00 dB 150 kHz ~ 30 MHz: ± 3.63 dB	
Radiated Emission measurement (C.L: Approx 95 %, k = 2)		
10 m Chamber (#F4)	30 MHz ~ 300 MHz	3 m: + 4.56 dB, - 4.58 dB 10 m: + 4.56 dB, - 4.56 dB
	300 MHz ~ 1 000 MHz	3 m: + 4.84 dB, - 4.85 dB 10 m: + 4.71 dB, - 4.72 dB
	1 GHz ~ 6 GHz	3 m: + 6.19 dB, - 6.20 dB
	6 GHz ~ 18 GHz	3 m: + 6.41 dB, - 6.53 dB
10 m Chamber (#F2)	30 MHz ~ 300 MHz	3 m: + 4.86 dB, - 4.88 dB 10 m: + 4.86 dB, - 4.86 dB
	300 MHz ~ 1 000 MHz	3 m: + 4.98 dB, - 4.99 dB 10 m: + 4.85 dB, - 4.87 dB
	1 GHz ~ 6 GHz	3 m: + 6.19 dB, - 6.20 dB
	6 GHz ~ 18 GHz	3 m: + 6.41 dB, - 6.53 dB

4. Description of E.U.T.

4.1 General information

Video	
Imaging Device	1/3" PS Exmor 1.37M CMOS (IMX238)
Total Pixels	1,312(H) x 1,069(V)
Effective Pixels	1,305(H) x 1,049(V)
Scanning System	Progressive
Min. Illumination	Color : 0.05 Lux (1/30sec, F1.2, 50IRE), 0.0008Lux (2sec, 50IRE) B/W : 0 Lux(IR LED on)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 704x480(N), 704x576(P), for installation - DIP connector type
Lens	
Focal Length (Zoom Ratio)	3~8.5mm (2.8X) Motorized Vari-focal
Max. Aperture Ratio	F1.2
Angular Field of View	H: 93.4°(Wide)~33.1°(Tele), V: 73.8°(Wide)~26.5°(Tele)
Min. Object Distance	0.5m
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 Range	0 ° ~ +354 °
Tilt Range	0 ° ~ +67 °
Rotate Range	0 ° ~ +355 °
Operational	
IR LED	12 ea
Viewable Length	15m
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	130dB ↑
Contrast Enhancement	SSDR (Samsung Super Dynamic Range) (Off / On)
Digital Noise Reduction	SSNR III (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
Flip / 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 Detecton, Video Analytics, Network Disconnection, Alarm Input
Alarm events	File upload via FTP and E-Mail Notification via E-Mail, TCP local storage(microSD/SDHC/SDXC) recording at Network disconnected & Event (Alarm Triggers) External output

Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.264(MPEG-4 Part 10/AVC), Motion JPEG
Resolution	1280x1024, 1280x720P(HD), 1024x768, 800x600, 640x480, 320x240
Max. Framerate	H.264 : Max 60fps at all resolutions Motion JPEG : 1280x1024 / 1280x720 / 1024x768 : Max. 15 fps 800x600 / 640x480 / 320x240 : Max. 30fps
Smart Codec	-
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
Memory Slot	micro SD/SDHC/SDXC - motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded.
Application Programming Interface	ONVIF Profile S HTTP API v2.0 SVNP 1.2
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, MAC OS X 10.7 Supported Browser : Microsoft Internet Explorer (Ver. 7~10), Mozilla Firefox (Ver. 9~19), Google Chrome (Ver. 15~25), Apple Safari (Ver. 6.0.2(Mac OS X 10.8, 10.7 Only), 5.1.7) * Mac OS X Only
Central Management Software	SmartViewer 4.0
Environmental	
Operating Temperature / Humidity	-40°C to +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 Grade
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	AC24V, DC12V, PoE(IEEE802.3af)
Power Consumption	Max. 10.5W (Heater Off) Max. 12.95W (Heater On)
Mechanical	
Color / Material	Ivory / Aluminum
Dimension (WxHxD)	160 x H118.5
Weight	960g

4.2 Product description

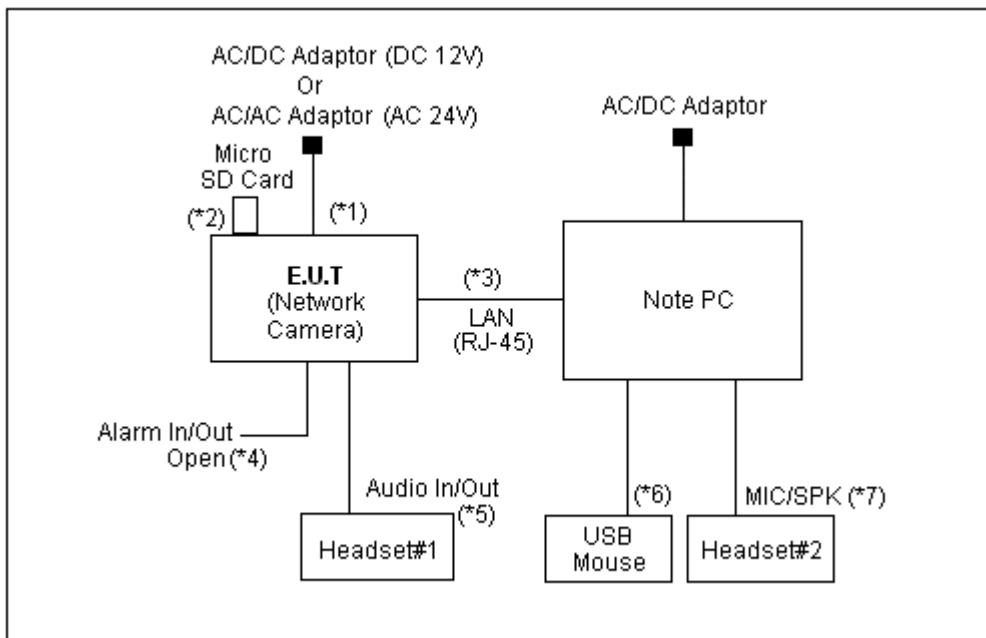
Type of product	Network Camera
Model name (Basic)	SNV-5084RN
Model name (Variant)	-
Difference	-
Trade name	-
Serial no	Engineering Sample
Testing voltage	DC 12 V , AC 24 V , PoE
Product rating	DC 12 V , AC 24 V , PoE
Internal clock frequency	Above 108 Mhz
Note	* AC/DC adaptor was not provided by the manufacturer. * AC/AC adaptor was not provided by the manufacturer. * PoE Switch was not provided by the manufacturer.

4.3 Auxiliary equipments

Type	Model / Part #	Serial number	Manufacturer
Note PC	NT271B5E	JGFE919DB00025Z	SAMSUNG
USB Mouse	M-BZ96C	DZL-M-BZ96C	FUJITSU
Headset#1	SHS-250V	-	SAMSUNG
Headset#2	SHS-250V	-	SAMSUNG
Micro SD Card(4GB)	-	-	LG
AC/DC Adaptor (DC 12V)	DAD12050DKA	-	Samsung Techwin
AC/AC Adaptor (AC 24V)	DRL-241500AC	-	Dream Electronics
PoE Switch	FS110P	2HK1283T50C33	NETGEAR

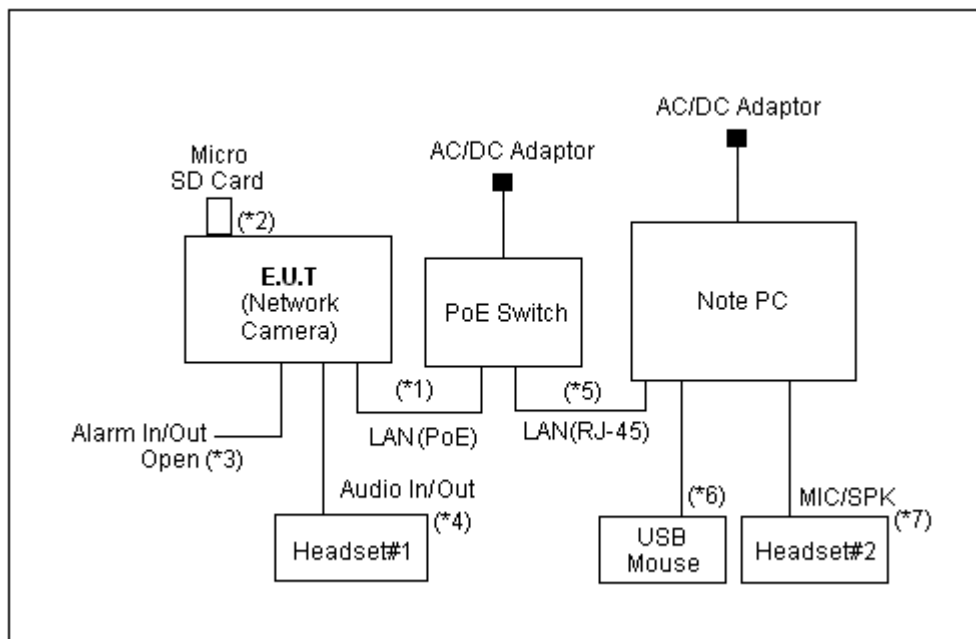
4.4 Test configuration

#1- DC 12V, #2- AC 24V



Note *	Start		End		Cable	
	Name	I/O port	Name	I/O port	Length (m)	Spec.
1	EUT (Network Camera)	Power	AC/DC Adaptor Or AC/AC Adaptor	Power	2.0	Non-Shield
2		Micro SD	Micro SD Card	Micro SD	Direct	-
3		LAN(RJ-45)	Note PC	LAN(RJ-45)	3.0	Non-Shield
4		Alarm In/Out	Open	-	3.0	Non-Shield
5		Audio In/Out	Headset#1	Audio In/Out	2.0	Non-Shield
6	Note PC	USB	USB Mouse	USB	1.8	Shield
7		MIC/SPK	Headset#2	MIC/SPK	2.0	Non-Shield

#3- PoE



* Power supplied from PoE Switch

Note *	Start		End		Cable	
	Name	I/O port	Name	I/O port	Length (m)	Spec.
1	EUT (Network Camera)	LAN(PoE)	PoE Switch	LAN(PoE)	3.0	Non-Shield
2		Micro SD	Micro SD Card	Micro SD	Direct	-
3		Alarm In/Out	Open	-	3.0	Non-Shield
4		Audio In/Out	Headset#1	Audio In/Out	2.0	Non-Shield
5	Note PC	LAN(RJ-45)	PoE Switch	LAN(RJ-45)	1.0	Non-Shield
6		USB	USB Mouse	USB	1.8	Shield
7		MIC/SPK	Headset#2	MIC/SPK	2.0	Non-Shield

4.5 Operating conditions

The EUT was configured as normal intended use.

Test mode	Normal operating
1	Web Viewer Monitoring Test.
	Alarm Test.
	Ping Test.

* Note: 3 types of powers are available for the product, that are DC 12 V , AC 24 V , PoE.

Therefore, tests were performed for 3 different types of powers.

5. Summary of test results

In the above configuration tested, The EUT complied with the requirement of the specification

5.1 Summary of EMI emission test results

FCC Part 15 Subpart B (Class A)

ANSI C63.4 – 2009

Applied	Test items	Test method	Result
☐	Conducted Emission	ANSI C63.4 – 2009	N/A
☒	Radiated Emission	ANSI C63.4 – 2009	Complied

6. Test results

6.1 Radiated Emission

Test specification	FCC Part 15, Section 15.109(g), Class A		
Testing voltage	DC 12 V, AC 24 V, PoE		
Test facility	10 m Chamber (#F2)		
Test distance	10 m, 3 m		
Date	2014. 05. 15 ~05. 16		
Temperature (°C)	21.4 °C	Humidity (% R.H.)	41.2 % R.H.
Remarks	Complied		

6.1.1 Limits of radiated emission measurement

Frequency [MHz]	Class A (dB(μ V/m)) @ 10 m	Class B (dB(μ V/m)) @ 3 m
30-88	39	40
88-216	43.5	43.5
216-960	46.4	46
Above 960	49.5	54

*** Note- Alternative standard: CISPR, Pub. 22 ***

6.1.2 Measurement procedure

The test was done at a 10 m chamber with a quasi-peak detector. EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. Cables were folded back and forth forming a bundle 0.3 m to 0.4 m long and were hanged at a 0.4 m height to the ground plane.

Cables connected to EUT were fixed to cause maximum emission. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

6.1.3 Used equipments

Equipment	Model no.	Serial no.	Makers	Next Cal. Date	Used
Test Receiver	ESCI7	100732	R&S	2015.01.27	☐
Test Receiver	ESCI	100001	R&S	2014.07.25	☐
Test Receiver	ESCI	100710	R&S	2014.10.28	☐
Test Receiver	ESR	101078	R&S	2015.02.24	☒
Bi-Log Antenna	VULB 9168	440	SCHWARZBECK	2015.10.16	☒
Amplifier	310N	293004	SONOMA INSTRUMENT	2014.10.31	☒
3 dB Attenuator	8491B	22981	HP	2015.03.04	☒
Antenna Mast	MA4000-EP	303	Innco Systems	-	☒
Turn Table	DT2000S-1t	079	Innco Systems	-	☒
Amplifier	8449B	3008A02343	AGILENT	2014.10.31	☒
Horn ANT	3115	00155772	ETS	2015.02.26	☒
Spectrum Analyzer	FSP7	100289	R&S	2014.11.25	☐

6.1.4 Sample calculation

The field strength is calculated adding the antenna Factor, cable loss and, Antenna pad adding, subtracting the amplifier gain from the measured reading.

The sample calculation is as follow:

$$\text{Result} = \text{M.R} + \text{C.F}(\text{A.F} + \text{C.L} + 3 \text{ dB Att} - \text{A.G})$$

M.R = Meter Reading

C.F = Correction Factor

A.F = Antenna Factor

C.L = Cable Loss

A.G= Amplifier Gain

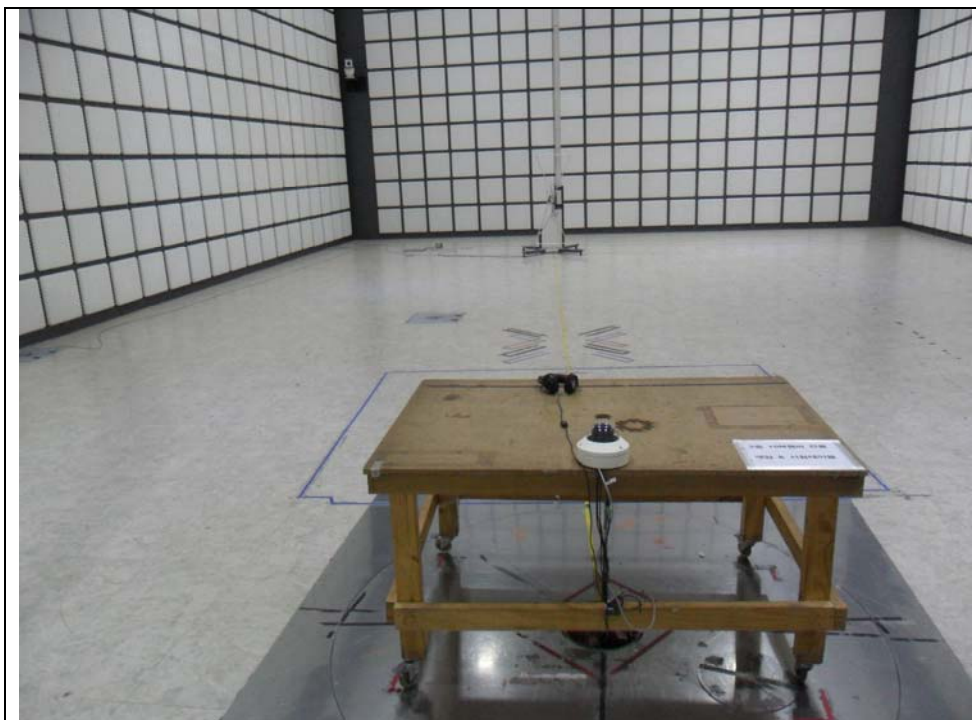
3 dB Att = 3 dB Attenuator

If M.R is 30 dB, A.F 12 dB, C.L 5 dB, 3 dB, A.G 35 dB

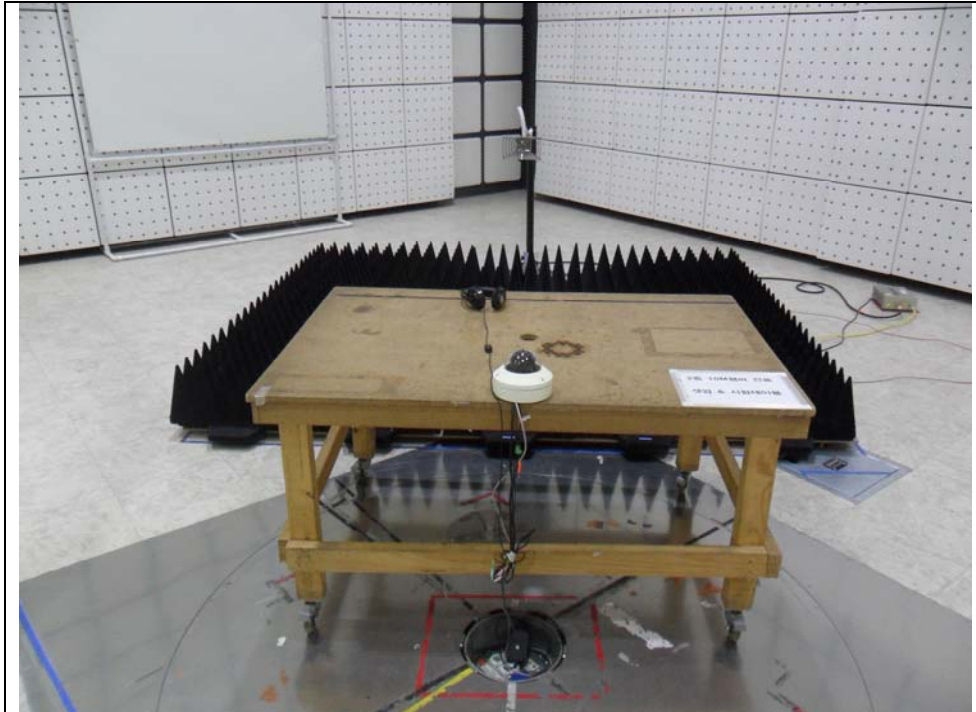
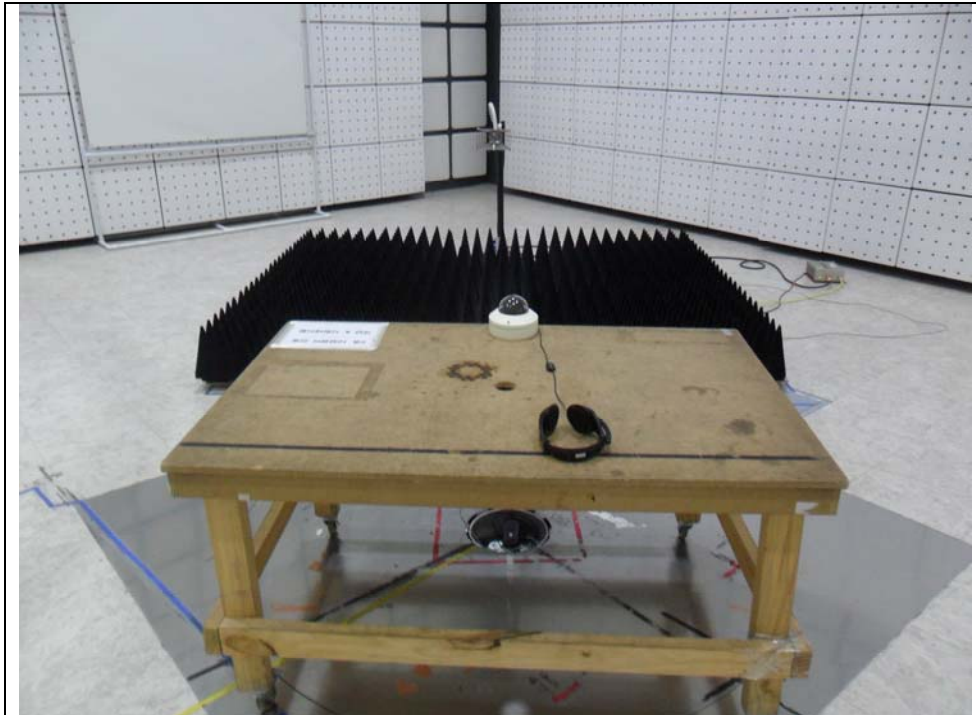
The result is $30 + 12 + 5 + 3 - 35 = 15 \text{ dB}(\mu\text{V/m})$

6.1.5 Photographs of test setup

* 30 MHz ~ 1 GHz (#1- DC 12V, #2- AC 24V, #3-PoE)



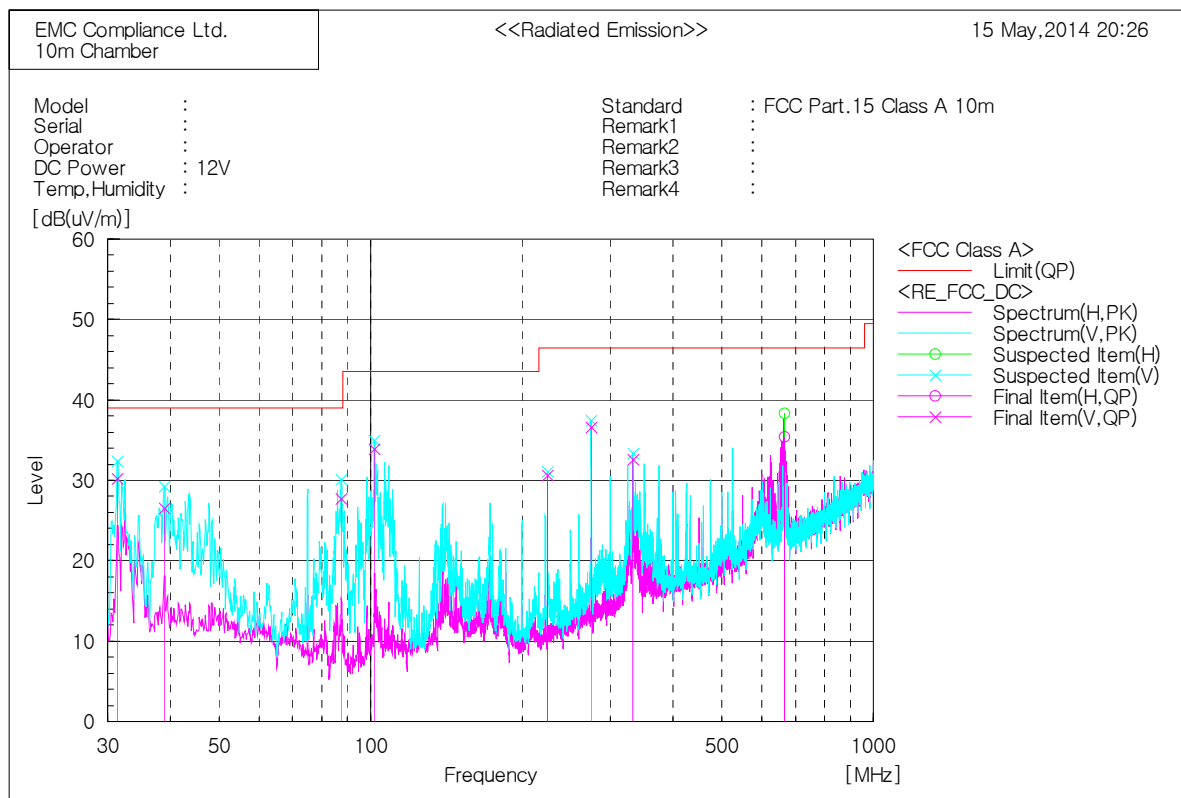
* 1 GHz ~ 6 GHz (#1- DC 12V, #2- AC 24V, #3-PoE)



6.1.6 Radiated emission measurement result

* Graph and Data

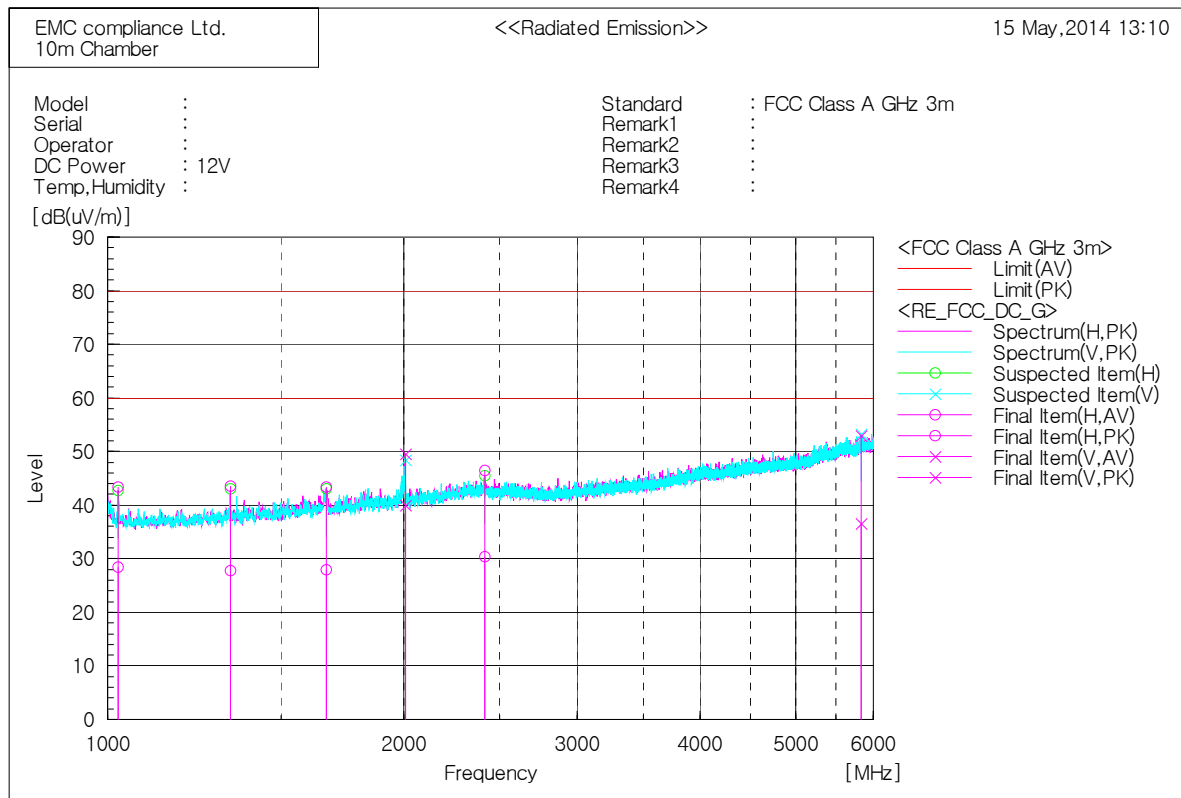
* 30 MHz ~ 1 GHz (SNV-5084RN)_#1- DC 12V



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	31.334	V	45.2	-15.0	30.2	39.0	8.8	400.0	142.7
2	38.851	V	40.6	-14.1	26.5	39.0	12.5	400.0	294.8
3	87.473	V	46.1	-18.4	27.7	39.0	11.3	100.0	139.1
4	101.780	V	51.2	-17.3	33.9	43.5	9.6	100.0	136.1
5	224.970	V	44.5	-13.9	30.6	46.5	15.9	100.0	68.0
6	274.925	V	47.8	-11.2	36.6	46.5	9.9	100.0	152.7
7	333.004	V	42.0	-9.4	32.6	46.5	13.9	100.0	45.4
8	666.078	H	36.5	-1.1	35.4	46.5	11.1	100.0	274.9

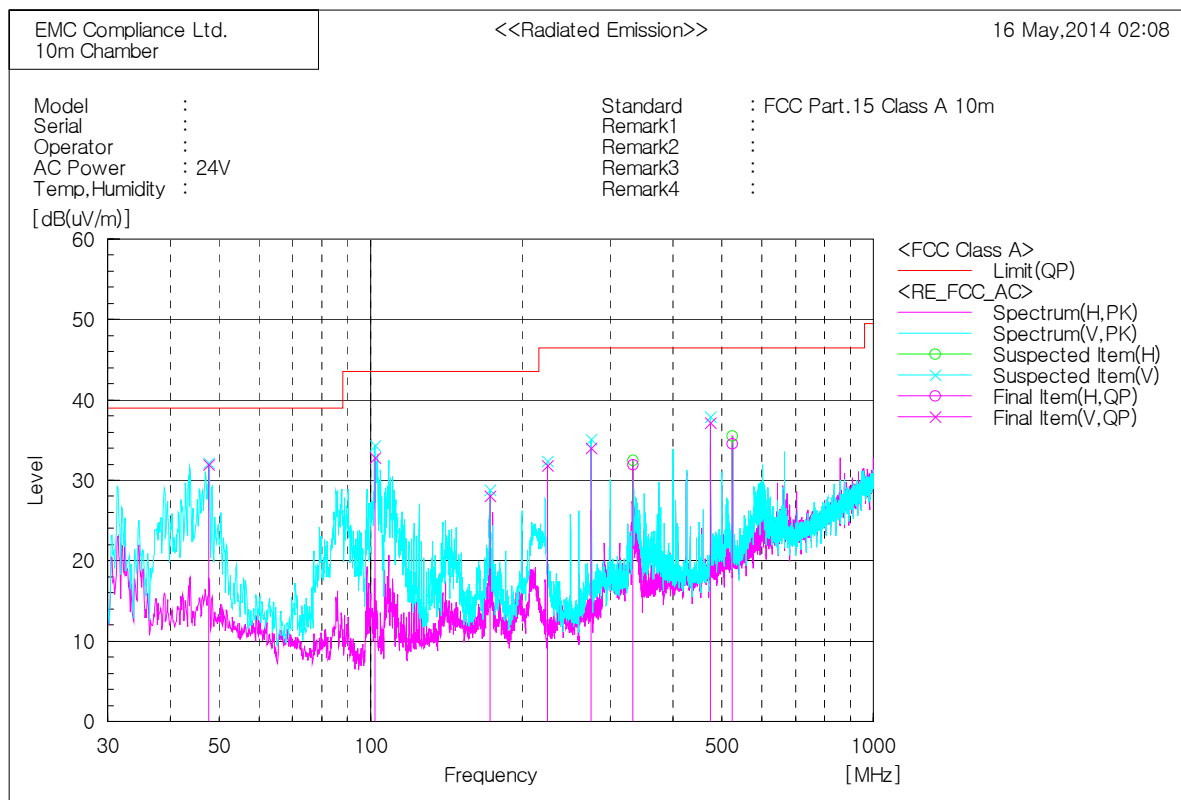
* 1 GHz ~ 6 GHz (SNV-5084RN)_#1- DC 12V



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]
1	1025.000	H	35.2	50.2	-6.8	28.4	43.4	60.0	80.0	31.6	36.6	100.0	122.7
2	1331.875	H	32.6	48.4	-4.9	27.7	43.5	60.0	80.0	32.3	36.5	100.0	358.0
3	1668.750	H	30.7	46.1	-2.7	28.0	43.4	60.0	80.0	32.0	36.6	100.0	341.2
4	2006.250	V	40.6	50.3	-0.7	39.9	49.6	60.0	80.0	20.1	30.4	100.0	163.5
5	2415.625	H	28.9	45.1	1.4	30.3	46.5	60.0	80.0	29.7	33.5	100.0	72.7
6	5826.250	V	25.6	42.0	11.0	36.6	53.0	60.0	80.0	23.4	27.0	100.0	8.4

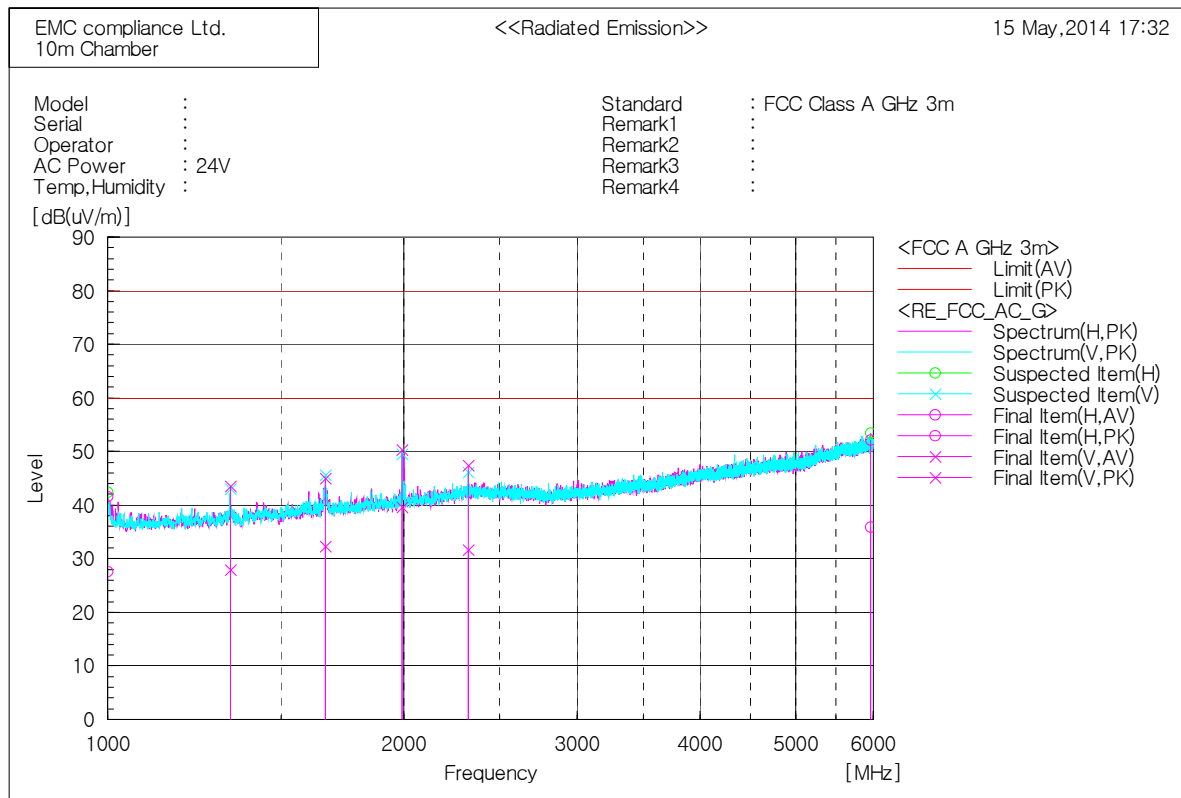
* 30 MHz ~ 1 GHz (SNV-5084RN)_#2- AC 24V



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	47.703	V	45.2	-13.3	31.9	39.0	7.1	100.0	6.9
2	101.901	V	50.1	-17.3	32.8	43.5	10.7	100.0	293.6
3	172.711	V	41.2	-13.2	28.0	43.5	15.5	100.0	266.5
4	224.970	V	45.7	-13.9	31.8	46.5	14.7	100.0	343.4
5	274.925	V	45.2	-11.2	34.0	46.5	12.5	100.0	145.7
6	333.004	H	41.4	-9.4	32.0	46.5	14.5	400.0	128.1
7	474.987	V	42.6	-5.4	37.2	46.5	9.3	100.0	195.5
8	524.943	H	38.7	-4.1	34.6	46.5	11.9	100.0	156.6

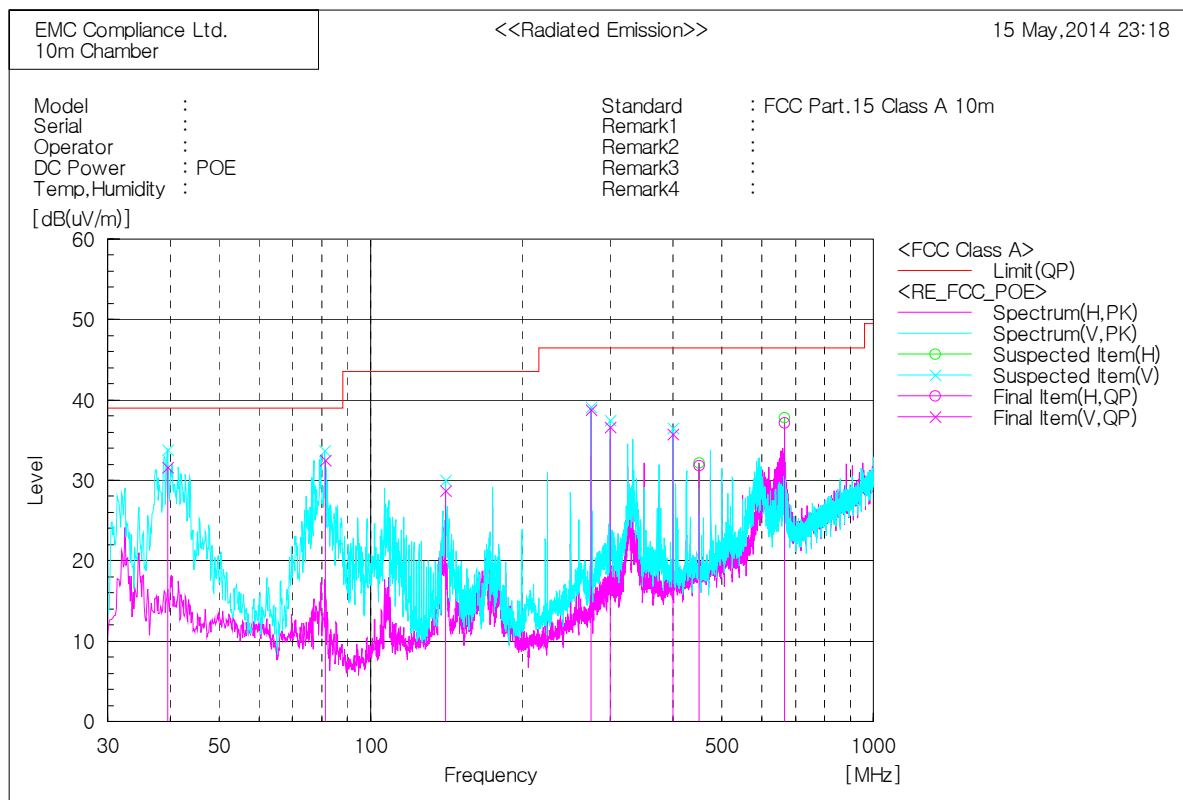
* 1 GHz ~ 6 GHz (SNV-5084RN)_#2- AC 24V



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]
1	1000.000	H	34.6	48.6	-7.0	27.6	41.6	60.0	80.0	32.4	38.4	100.0	62.6
2	1332.500	V	32.8	48.4	-4.9	27.9	43.5	60.0	80.0	32.1	36.5	100.0	156.4
3	1665.625	V	35.1	47.8	-2.8	32.3	45.0	60.0	80.0	27.7	35.0	100.0	1.9
4	1992.500	V	40.4	51.2	-0.8	39.6	50.4	60.0	80.0	20.4	29.6	100.0	203.2
5	2325.625	V	30.6	46.4	1.0	31.6	47.4	60.0	80.0	28.4	32.6	100.0	93.1
6	5961.250	H	24.3	40.6	11.6	35.9	52.2	60.0	80.0	24.1	27.8	100.0	357.5

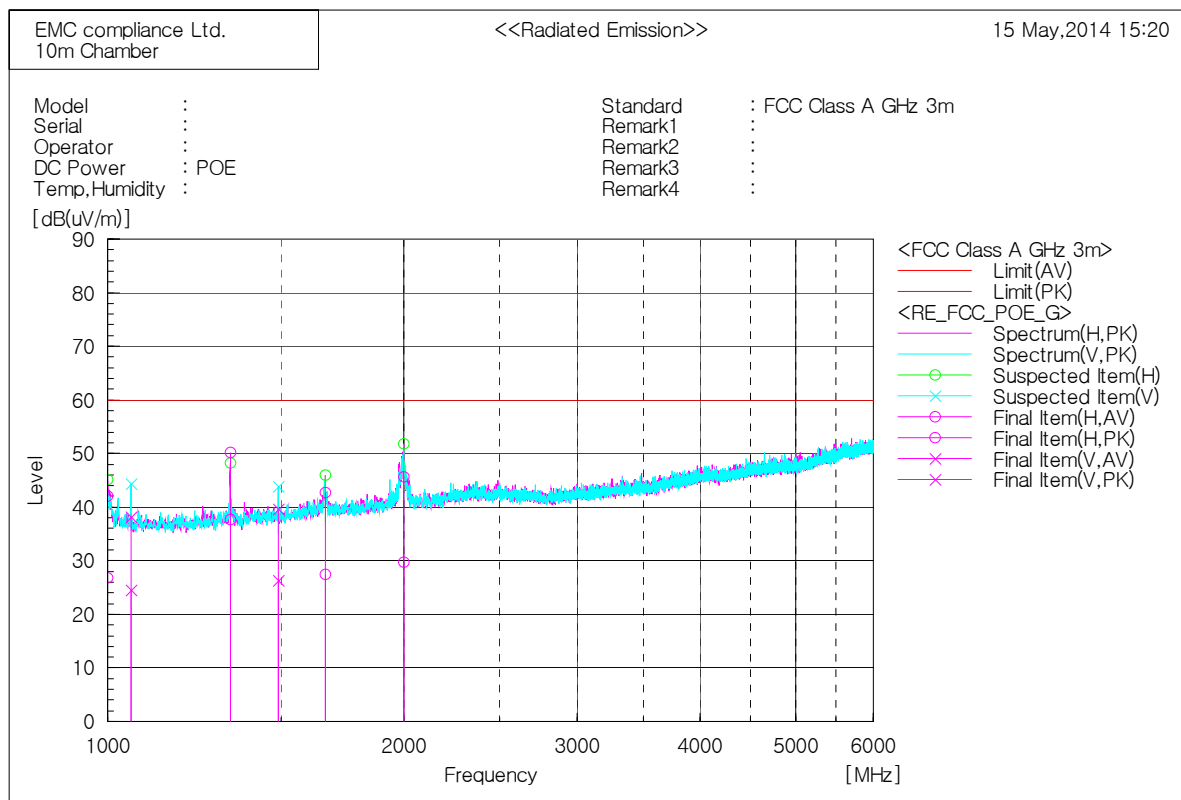
* 30 MHz ~ 1 GHz (SNV-5084RN)_#3- PoE



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	39.458	V	45.6	-14.0	31.6	39.0	7.4	400.0	140.3
2	81.168	V	50.1	-17.6	32.5	39.0	6.5	100.0	23.3
3	141.186	V	42.2	-13.5	28.7	43.5	14.8	100.0	111.1
4	274.925	V	50.0	-11.2	38.8	46.5	7.7	100.0	225.9
5	300.024	V	47.0	-10.4	36.6	46.5	9.9	100.0	4.0
6	399.934	V	43.0	-7.3	35.7	46.5	10.8	400.0	147.9
7	450.010	H	37.8	-6.0	31.8	46.5	14.7	400.0	40.7
8	666.078	H	38.3	-1.1	37.2	46.5	9.3	100.0	149.9

* 1 GHz ~ 6 GHz (SNV-5084RN)_#3- PoE



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]
1	1000.625	H	33.8	49.1	-7.0	26.8	42.1	60.0	80.0	33.2	37.9	100.0	116.1
2	1055.625	V	31.2	44.8	-6.6	24.6	38.2	60.0	80.0	35.4	41.8	100.0	143.4
3	1331.875	H	42.6	55.1	-4.9	37.7	50.2	60.0	80.0	22.3	29.8	100.0	352.2
4	1490.625	V	43.5	30.2	-3.9	39.6	26.3	60.0	80.0	20.4	53.7	100.0	342.6
5	1664.375	H	30.2	45.5	-2.8	27.4	42.7	60.0	80.0	32.6	37.3	100.0	17.4
6	2001.250	H	30.5	46.5	-0.8	29.7	45.7	60.0	80.0	30.3	34.3	100.0	197.5

7. E.U.T. photographs

Front View



Rear View



Left View



Right View



Top View



Bottom View

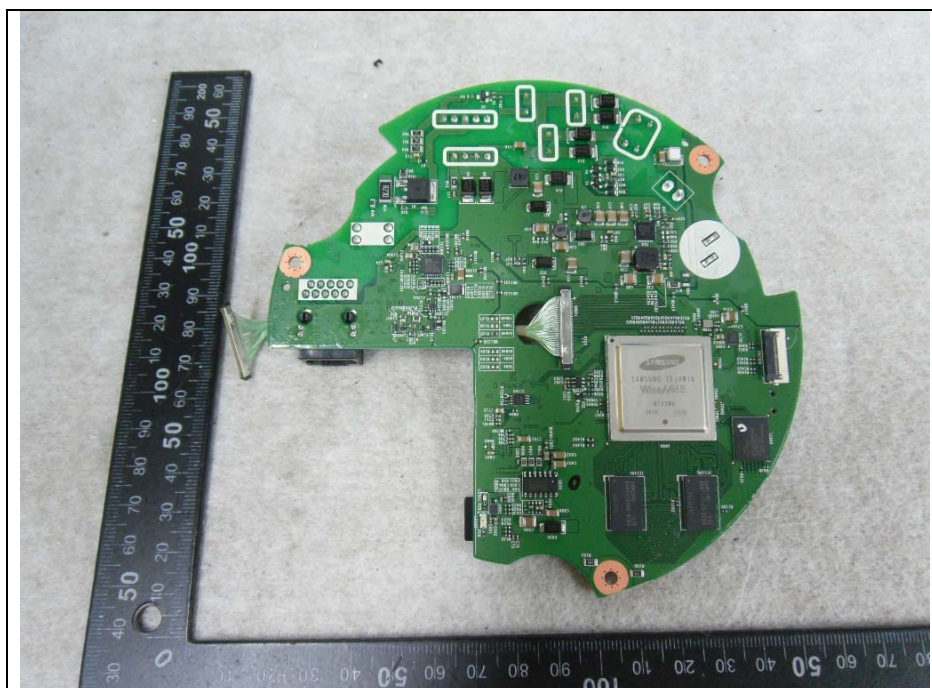
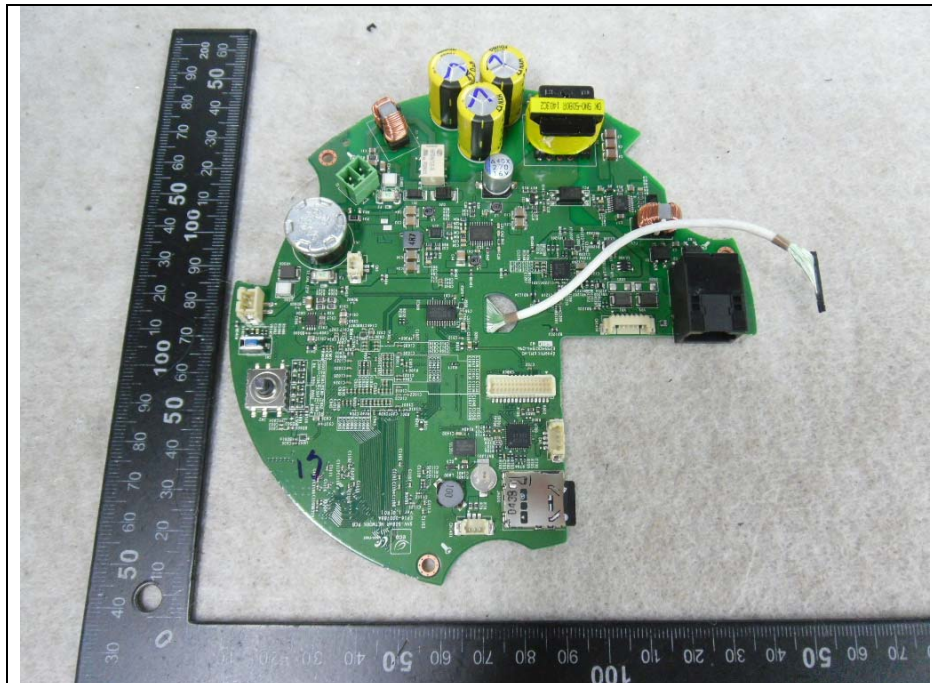


This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Inside



Main Board



LED Board

