

# CERTIFICATE of EMC Compliance

**Report No** : EMC-FCC-E2485  
**Type of equipment** : Network Camera  
**Model Name** : SNB-8000N  
**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

Tel: 82 70 5008 1021  
Fax: 82 505 299 8311



Beak, Jeong-Soo / Manager

## EMI TEST REPORT

**Test report No** : EMC-FCC-E2485  
**Type of Equipment** : Network Camera  
**Model Name** : SNB-8000N  
**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  
**Test Procedure and Items**  
- AC Power Line Conducted Emissions Measurement: ANSI C63.4-2009  
- 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. 10. 21

Date of testing: 2014. 11. 09 ~ 11.10

Issued date: 2014. 11. 12

Tested by:



JUNG, YONG-JUN

Approved by:



BEAK, JEONG-SOO

## Contents

|                                                |           |
|------------------------------------------------|-----------|
| <b>1. Applicant information .....</b>          | <b>3</b>  |
| <b>2. Laboratory information .....</b>         | <b>4</b>  |
| <b>3. Test system configuration.....</b>       | <b>5</b>  |
| 3.1 Operation environment .....                | 5         |
| 3.2 Measurement Uncertainty .....              | 6         |
| <b>4. Description of E.U.T. ....</b>           | <b>7</b>  |
| 4.1 General information.....                   | 7         |
| 4.2 Product description .....                  | 10        |
| 4.3 Auxiliary equipments.....                  | 10        |
| 4.4 Test configuration .....                   | 11        |
| 4.5 Operating conditions.....                  | 13        |
| <b>5. Summary of test results.....</b>         | <b>14</b> |
| 5.1 Summary of EMI emission test results ..... | 14        |
| <b>6. Test results .....</b>                   | <b>15</b> |
| 6.1 Conducted Emission .....                   | 15        |
| 6.2 Radiated Emission .....                    | 20        |
| <b>7. E.U.T. photographs.....</b>              | <b>32</b> |



## 1. Applicant information

**Applicant:** Samsung Techwin Co., Ltd.  
**Address:** 84, Jeongdong-ro, Seongsan-gu, Changwon-si,  
Gyeongsangnam-do, Korea  
**Telephone:** +82-70-7147-8361  
**Fax:** +82-31-277-2784  
**E-mail:** js2002.kang@samsung.com  
**Contact name:** **Kang Jei Soon**

**Manufacturer#1:** Samsung Techwin Co., Ltd.  
**Address:** 84, Jeongdong-ro, Seongsan-gu, Changwon-si,  
Gyeongsangnam-do, Korea  
**Telephone:** +82-70-7147-8361  
**Fax:** +82-31-277-2784  
**E-mail:** js2002.kang@samsung.com  
**Contact name:** **Kang Jei Soon**

**Manufacturer#2:** TIANJIN SAMSUNG TECHWIN OPTO-ELECTRONIC CO., LTD  
**Address:** No.11 Weiliu Road. Micro-Electronic Industrial Park  
Jingang Road Tianjin 300385, China

## 2. Laboratory information

### Address

#### **EMC compliance Ltd.**

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

Telephone Number: 82 70 5008 1021

Facsimile Number: 82 505 299 8311

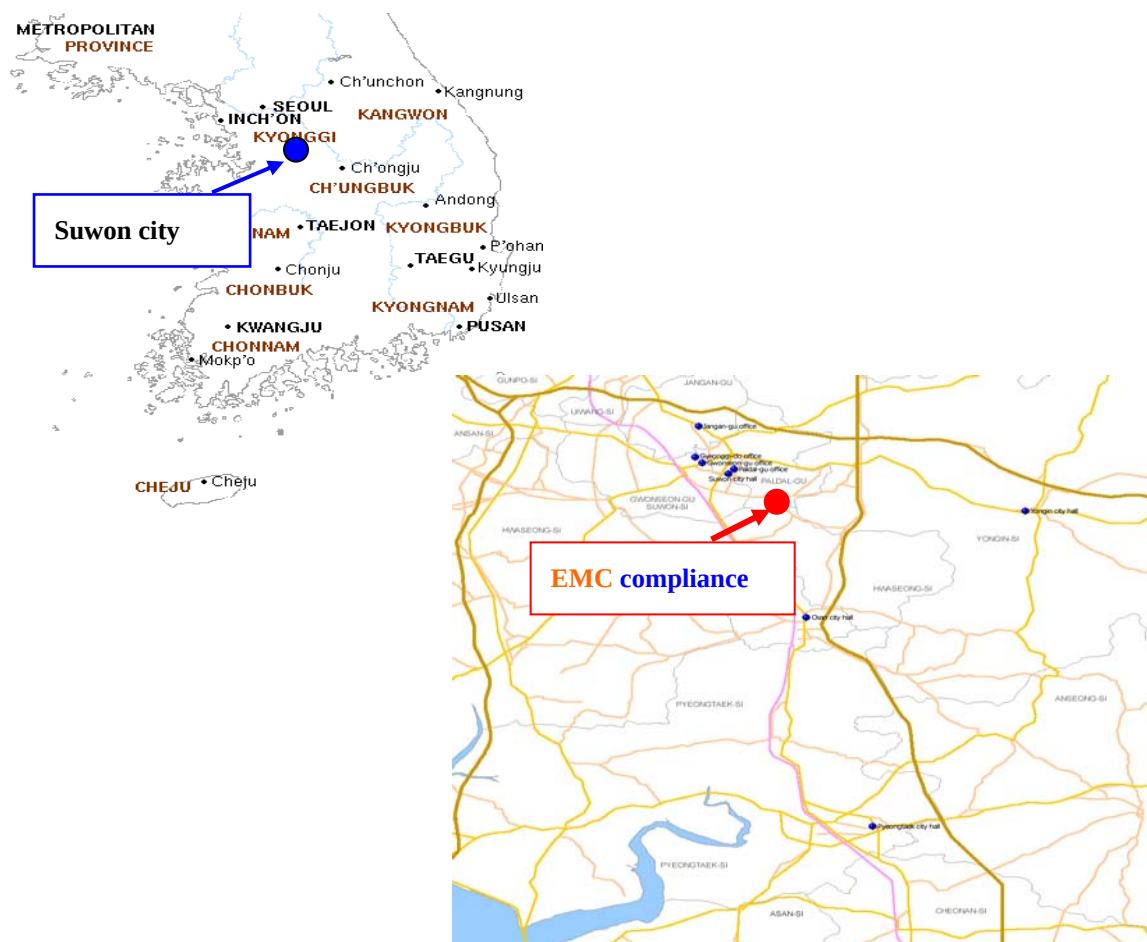
FCC Site Designation No: KR0040, FCC Site Registration No: 687132

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)     | : 28.4 °C   | 27.2 % R.H. | -        |
| Shielded room(CE) | : 22.4 °C   | 25.9 % 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: $\pm 3.75$ dB  |                                                         |
|                                                          | 150 kHz ~ 30 MHz: $\pm 3.36$ dB |                                                         |
| Shielded Room (CE#2)                                     | 9 kHz ~ 150 kHz: $\pm 3.79$ dB  |                                                         |
|                                                          | 150 kHz ~ 30 MHz: $\pm 3.42$ dB |                                                         |
| Radiated Emission measurement (C.L: Approx 95 %, k = 2)  |                                 |                                                         |
| 10 m Chamber (#F4)                                       | 30 MHz ~ 300 MHz                | 3 m: + 4.87 dB, - 4.99 dB<br>10 m: + 4.86 dB, - 4.98 dB |
|                                                          | 300 MHz ~ 1 000 MHz             | 3 m: + 5.04 dB, - 5.14 dB<br>10 m: + 4.91 dB, - 5.02 dB |
|                                                          | 1 GHz ~ 6 GHz                   | 3 m: + 6.03 dB, - 6.06 dB                               |
| 10 m Chamber (#F2)                                       | 30 MHz ~ 300 MHz                | 3 m: + 4.94 dB, - 5.06 dB<br>10 m: + 4.93 dB, - 5.05 dB |
|                                                          | 300 MHz ~ 1 000 MHz             | 3 m: + 4.97 dB, - 5.08 dB<br>10 m: + 4.84 dB, - 4.96 dB |
|                                                          | 1 GHz ~ 6 GHz                   | 3 m: + 6.03 dB, - 6.05 dB                               |
| 10 m Chamber                                             | 6 GHz ~ 18 GHz                  | 3 m: + 6.60 dB, - 6.78 dB                               |

## 4. Description of E.U.T.

### 4.1 General information

|                                              | <b>SNB-8000</b>                                                                                                                                                                                                                                                                        |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Video</b>                                 |                                                                                                                                                                                                                                                                                        |
| Imaging Device                               | 1/1.8" 6M CMOS                                                                                                                                                                                                                                                                         |
| Total Pixels                                 | 6M -> 3096 x 2094                                                                                                                                                                                                                                                                      |
| Effective Pixels                             | 2616(H) x 1976(V) (QXGA)                                                                                                                                                                                                                                                               |
| Scanning System                              | Progressive                                                                                                                                                                                                                                                                            |
| Min. Illumination                            | Color : 0.2 Lux (1/20, F1.2, 50IRE), 0.005 Lux (2sec, F1.2, 50IRE)<br>Color : 0.1 Lux (1/20, F1.2, 30IRE), 0.0025 Lux (2sec, F1.2, 30IRE)<br>B/W : 0.02 Lux (1/20, F1.2, 50IRE), 0.0005 Lux (2sec, F1.2, 50IRE)<br>B/W : 0.01 Lux (1/20, F1.2, 30IRE), 0.00025 Lux (2sec, F1.2, 30IRE) |
| S / N Ratio                                  | 50dB ↑                                                                                                                                                                                                                                                                                 |
| Video Out                                    | CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation<br>- DIP connector type                                                                                                                                                                                      |
| <b>Lens</b>                                  |                                                                                                                                                                                                                                                                                        |
| Focus Control                                | Simple Focus / Manual<br>- Remote control via network ,Button control (Manual, Simple Focus)                                                                                                                                                                                           |
| Lens Type                                    | Manual / DC Auto Iris, P-Iris                                                                                                                                                                                                                                                          |
| Mount Type                                   | C/CS Mount                                                                                                                                                                                                                                                                             |
| <b>Operational</b>                           |                                                                                                                                                                                                                                                                                        |
| Camera Title                                 | Off / On (Displayed up to 15 characters)                                                                                                                                                                                                                                               |
| Day & Night                                  | Auto (ICR) / Color / B/W / External / Schedule                                                                                                                                                                                                                                         |
| Backlight Compensation                       | Off / BLC                                                                                                                                                                                                                                                                              |
| Wide Dynamic Range<br>(contrast Enhancement) | 60dB                                                                                                                                                                                                                                                                                   |
| Contrast Enhancement                         | SSDR (Samsung Super Dynamic Range) (Off / On)                                                                                                                                                                                                                                          |
| Digital Noise Reduction                      | SSNRIII(2D+3D Noise Filter)                                                                                                                                                                                                                                                            |
| Digital Image Stabilization                  | -                                                                                                                                                                                                                                                                                      |
| Defog                                        | -                                                                                                                                                                                                                                                                                      |
| Motion Detection                             | Off / On (4ea, Rectangular zones)                                                                                                                                                                                                                                                      |
| Privacy Masking                              | Off / On ( 32ea, Rectangular zones)                                                                                                                                                                                                                                                    |
| Gain Control                                 | Off / Low / Middle / High                                                                                                                                                                                                                                                              |
| White Balance                                | ATW / AWC / Manual / Indoor / Outdoor (Include Mecury)                                                                                                                                                                                                                                 |
| Electronic Shutter Speed                     | Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)                                                                                                                                                                                                                                     |
| Digital PTZ                                  | 16x, Digital PTZ(Preset,Group)                                                                                                                                                                                                                                                         |
| Flip / Mirror                                | Off / On                                                                                                                                                                                                                                                                               |
| Intelligent Video Analytics                  | Tampering, Audio Detection, People Counting (coming '15.MAR)                                                                                                                                                                                                                           |
| Alarm I/O                                    | Input 1ea / Output 1ea                                                                                                                                                                                                                                                                 |
| Audio In                                     | Selectable (Mic IN/Line IN) (Built- IN Mic)<br>Supply voltage:2.5V DC(4mA), Input Impedance : approx 2K ohm                                                                                                                                                                            |
| Audio out                                    | Line out (3.5mm stereo mini jack)<br>Max output Level : 1Vrms                                                                                                                                                                                                                          |
| Serial Interface                             | RS-485<br>- Samsung-T/E, Pelco-D/P, Sungjin, Panasonic, vicon, Honewell, AD, GE, Bosch                                                                                                                                                                                                 |
| Alarm Triggers                               | Motion detection, Tampering, Audio Detection, Alarm Input, Network Disconnection                                                                                                                                                                                                       |
| Alarm events                                 | File upload via FTP and E-Mail<br>Notification via E-Mail, TCP and HTTP<br>local storage(SD/SDHC/SDXC) or NAS recording at Network disconnected & Event (Alarm Triggers)<br>External output                                                                                            |



|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Network</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ethernet                          | RJ-45 (10/100BASE-T)                                                                                                                                                                                                                                                                                                                                                                                                           |
| Video Compression Format          | H.264 (MPEG-4 Part 10/AVC), Motion JPEG                                                                                                                                                                                                                                                                                                                                                                                        |
| Resolution                        | 5M Mode<br>2592x1944 / 1920x1080 / 1600x1200 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 / 800x600 / 720x576 / 720x480 / 640x480 / 320x240<br><br>2M Mode<br>1920x1080 / 1600x1200 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 / 800x600 / 720x576 / 720x480 / 640x480 / 320x240                                                                                                                                             |
| Max. Framerate                    | 5M Mode<br>H.264: 20 fps for all resolution<br>MJPEG:<br>2592x1944 : 10 fps<br>1920x1080 / 1600x1200 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 : 15 fps<br>800x600 / 720x576 / 720x480 / 640x480 / 320x240 : 20 fps<br><br>2M Mode<br>H.264: 30 fps for all resolution<br>MJPEG:<br>1920x1080 / 1600x1200 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 : 15 fps<br>800x600 / 720x576 / 720x480 / 640x480 / 320x240 : 20 fps |
| Smart Codec                       | -                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Video Quality Adjustment          | H.264 : Compression Level, Target Bitrate Level Control<br>MJPEG : Quality Level Control                                                                                                                                                                                                                                                                                                                                       |
| Bitrate Control Method            | H.264 : CBR or VBR,<br>Motion JPEG : VBR                                                                                                                                                                                                                                                                                                                                                                                       |
| Streaming Capability              | Multiple Streaming (Up to 6 Profiles)                                                                                                                                                                                                                                                                                                                                                                                          |
| Audio Compression Format          | G.711 u-law /G.726 Selectable<br>G.726 (ADPCM) 8KHz, G.711 8KHz<br>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<br>Digest Login Authentication<br>IP Address Filtering<br>User access Log<br>802.1x Authentication                                                                                                                                                                                                                                                                                             |
| Streaming Method                  | Unicast / Multicast                                                                                                                                                                                                                                                                                                                                                                                                            |
| Max. User Access                  | 10 users at Unicast Mode                                                                                                                                                                                                                                                                                                                                                                                                       |
| Edge Storage                      | micro SD/SDHC/SDXC (64GB)<br>- motion Images recorded in the SDX/SDHC/SD memory card can be downloaded.<br>NAS(Network Attached Storage)                                                                                                                                                                                                                                                                                       |
| Application Programming Interface | ONVIF Profile S<br>SUNAPI(HTTP API)<br>SVNP 2.0<br>Samsung Camera Application Platform                                                                                                                                                                                                                                                                                                                                         |
| Webpage Language                  | English, French, German, Spanish, Italian, Chinese, Korean,<br>Russian, Japanese, Swedish, Danish, Portuguese, Turkish, Polish, Czech, Rumanian,<br>Serbian, Dutch, Croatia, Hungary, Greek, Finnish, Norwegian                                                                                                                                                                                                                |
| Web Viewer                        | Supported OS : Windows XP / VISTA / 7 / 8, MAC OS X 10.7<br>Supported Browser : Microsoft Internet Explorer (Ver. 8~11)<br>Mozilla Firefox (Ver. 9~19)<br>Google Chrome (Ver. 15~25)<br>Apple Safari (Ver. 6.0.2(Mac OS X 10.8, 10.7 Only), 5.1.7)<br>* Mac OS X Only                                                                                                                                                          |
| Central Management Software       | SmartViewer, SSM                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                  |                                                                  |
|----------------------------------|------------------------------------------------------------------|
| <b>Environmental</b>             |                                                                  |
| Operating Temperature / Humidity | -10°C ~ +55°C(+14°F ~ +131°F) / Less than 90% RH                 |
| Storage Temperature / Humidity   | -30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH                |
| <b>Electrical</b>                |                                                                  |
| Input Voltage / Current          | AC24V±10%, DC12V±10%,PoE(IEEE802.3af,Class3)                     |
| Power Consumption                | Max. 12.65W (AC 24V, 50~60Hz)                                    |
|                                  | Max. 10.68W (DC 12V)                                             |
|                                  | Max. 12.14W (PoE, Class3)                                        |
| <b>Mechanical</b>                |                                                                  |
| Color / Material                 | FRONT (BLACK) , BODY (IVORY) / FRONT(Aluminium), BODY(Aluminium) |
| Dimension (WxHxD)                | W73.1 x H66.6 x D147.0                                           |
| Weight                           | 566g                                                             |

## 4.2 Product description

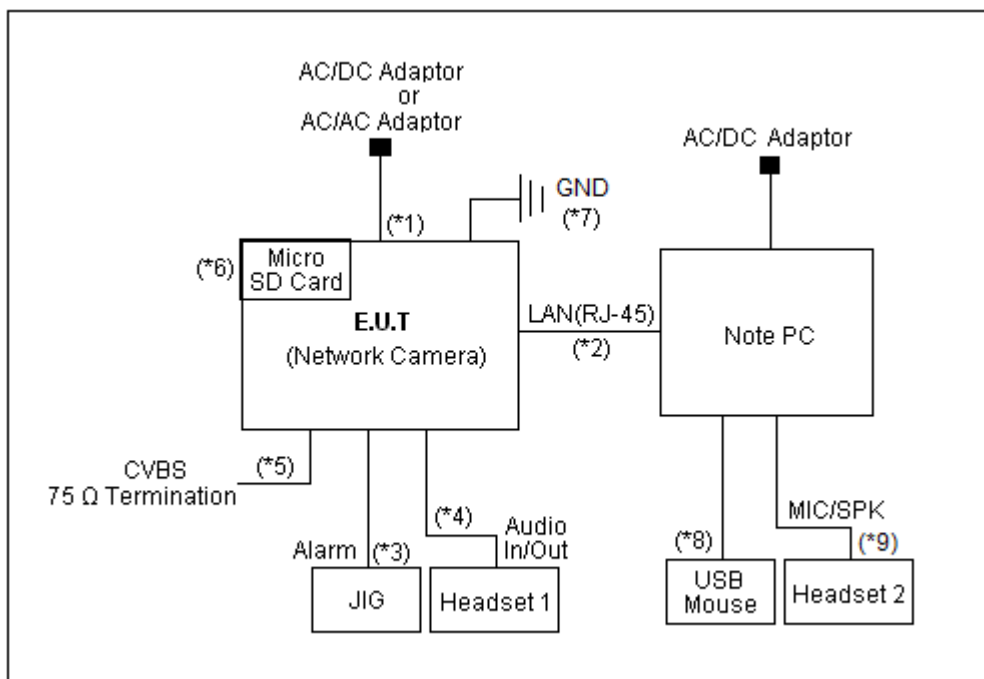
|                          |                                                                                                                                                                                                                               |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of product          | Network Camera                                                                                                                                                                                                                |
| Model name (Basic)       | SNB-8000N                                                                                                                                                                                                                     |
| Model name (Variant)     | -                                                                                                                                                                                                                             |
| Difference               | -                                                                                                                                                                                                                             |
| Trade name               | -                                                                                                                                                                                                                             |
| Serial no                | -                                                                                                                                                                                                                             |
| Testing voltage          | 120 V , 60 Hz, PoE                                                                                                                                                                                                            |
| Product rating           | *AC/DC Adaptor#1 (DSA-60W-12 1 12048)<br>Input: AC 100 - 240 V , 50 / 60 Hz, 1.5 A<br>Output: DC 12 V , 4 A<br>*AC/AC Adaptor#2 (DRL-241500AC)<br>Input: AC 100 - 240 V , 50 / 60 Hz, 0.2 A<br>Output: AC 24 V , 1.5A<br>*PoE |
| Internal clock frequency | Above 108 MHz                                                                                                                                                                                                                 |
| Note                     | * AC/DC adaptor was provided by the manufacturer.<br>* AC/AC adaptor was provided by the manufacturer.<br>* PoE Switch was not provided by the manufacturer.                                                                  |

## 4.3 Auxiliary equipments

| Type                | Model / Part # | Serial number   | Manufacturer |
|---------------------|----------------|-----------------|--------------|
| Note PC             | NT271B5E       | JGFE91DF600046D | SAMSUNG      |
| USB Mouse           | 1088           | 8165900112700   | Microsoft    |
| Headset 1           | ES-303         | -               | inkel        |
| Headset 2           | SHS-250V       | -               | SAMSUNG      |
| JIG                 | -              | -               | -            |
| Micro SD Card (4GB) | -              | -               | -            |

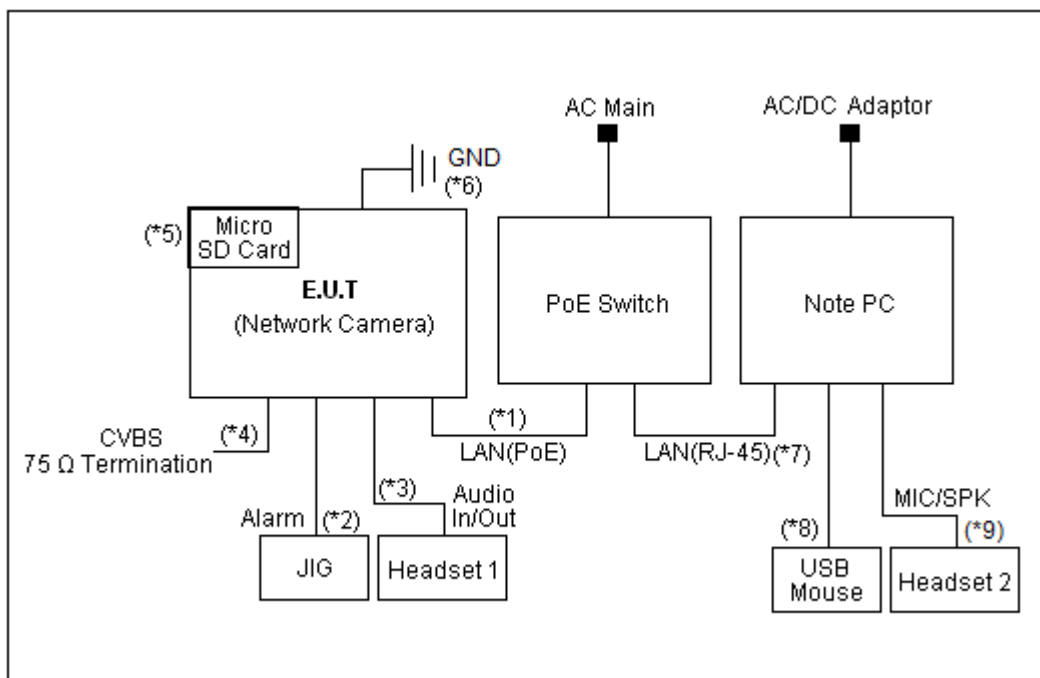
## 4.4 Test configuration

#1- AC/DC Adaptor, #2-AC/AC Adaptor



| 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         | 1.6        | Non-Shield |
| 2    |                      | LAN(RJ-45)    | Note PC                        | LAN(RJ-45)    | 3.0        | Non-Shield |
| 3    |                      | Alarm         | JIG                            | Alarm         | 3.0        | Non-Shield |
| 4    |                      | Audio In/Out  | Headset 1                      | Audio In/Out  | 3.0        | Non-Shield |
| 5    |                      | CVBS          | 75 Ω Termination               | -             | 0.5        | Non-Shield |
| 6    |                      | Micro SD Card | Micro SD Card                  | Micro SD Card | Direct     | -          |
| 7    |                      | GND           | GND                            | GND           | 1.6        | Non-Shield |
| 8    | Note PC              | USB           | USB Mouse                      | USB           | 1.8        | Shield     |
| 9    |                      | MIC/SPK       | Headset 2                      | MIC/SPK       | 2.0        | Non-Shield |

### #3- PoE



\* Power supplied from PoE Switch

| Note<br>* | Start                   |               | End              |               | Cable      |            |
|-----------|-------------------------|---------------|------------------|---------------|------------|------------|
|           | Name                    | I/O port      | Name             | I/O port      | Length (m) | Spec.      |
| 1         | EUT<br>(Network Camera) | LAN(PoE)      | PoE Switch       | LAN(PoE)      | 3.0        | Non-Shield |
| 2         |                         | Alarm         | JIG              | Alarm         | 3.0        | Non-Shield |
| 3         |                         | Audio In/Out  | Headset 1        | Audio In/Out  | 3.0        | Non-Shield |
| 4         |                         | CVBS          | 75 Ω Termination | -             | 0.5        | Non-Shield |
| 5         |                         | Micro SD Card | Micro SD Card    | Micro SD Card | Direct     | -          |
| 6         |                         | GND           | GND              | GND           | 1.6        | Non-Shield |
| 7         | Note PC                 | LAN(RJ-45)    | PoE Switch       | LAN(RJ-45)    | 3.0        | Non-Shield |
| 8         |                         | USB           | USB Mouse        | USB           | 1.8        | Shield     |
| 9         |                         | 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. |
|           | Audio In/Out Test.          |
|           | Alarm Test.                 |
|           | Ping Test.                  |
|           | Recording Test.             |

\* Note: 3 types of powers are available for the product, that are AC/DC Adaptor(DC 12 V),  
AC/AC Adaptor(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   |
|-------------------------------------|--------------------|-------------------|----------|
| <input checked="" type="checkbox"/> | Conducted Emission | ANSI C63.4 – 2009 | Complied |
| <input checked="" type="checkbox"/> | Radiated Emission  | ANSI C63.4 – 2009 | Complied |

## 6. Test results

### 6.1 Conducted Emission

|                    |                                         |                   |             |
|--------------------|-----------------------------------------|-------------------|-------------|
| Test specification | FCC Part 15, Section 15.107(b), Class A |                   |             |
| Testing voltage    | 120 V, 60 Hz                            |                   |             |
| Test facility      | Shielded room (CE#1)                    |                   |             |
| Date               | 2014. 11. 09                            |                   |             |
| Temperature (°C)   | 22.4 °C                                 | Humidity (% R.H.) | 25.9 % R.H. |
| Software Program   | EP5/CE Ver 5.4.0(Toyo)                  |                   |             |
| Remarks            | Complied                                |                   |             |

#### 6.1.1 Limits of conducted emission measurement

| Frequency<br>[MHz] | Class A (dB( $\mu$ V)) |         | Class B (dB( $\mu$ V)) |          |
|--------------------|------------------------|---------|------------------------|----------|
|                    | Quasi-peak             | Average | Quasi-peak             | Average  |
| 0.15 ~ 0.5         | 79                     | 66      | 66 ~ 56 *              | 56 ~ 46* |
| 0.5 ~ 5            | 73                     | 60      | 56                     | 46       |
| 5 ~ 30             | 73                     | 60      | 60                     | 50       |

\*The limit decreases linearly with the logarithm of frequency.

### 6.1.2 Measurement procedure

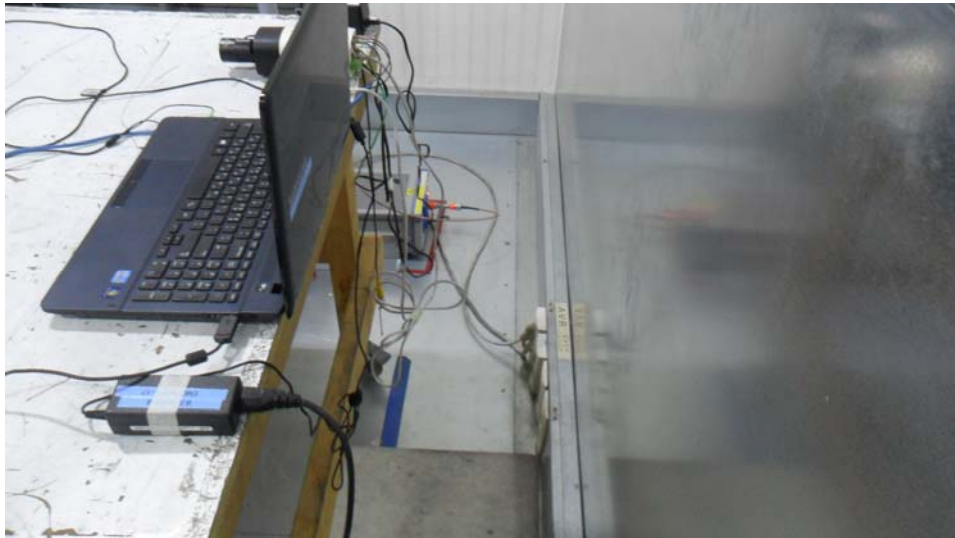
The measurements were performed in a shielded room. EUT was setup as shown in photograph and placed on a non-metallic table height of 0.8 m above the reference ground plane. The rear of table was located 0.4 m to the vertical conducted plane. EUT was power through the LISN, which was bonded to the ground plane. The LISN power was filtered. Each EUT power lead, except ground (safety) lead was individually connected through a LISN to input power source. EUT signal cables that hung closer than 0.4 m to the Horizontal metal ground 0.3 m ~ 0.4 m long. The power cord was bundles in the center. All peripheral equipment was powered from a sub LISN. The LISN and ISN were positioned 0.8 m from the EUT. Peak and Average detection were used in preliminary testing and Quasi-peak and Average detections were used at final measurement.

### 6.1.3 Used equipments

| Equipment             | Model   | Serial No. | Makers | Next Cal. Date | Used                                |
|-----------------------|---------|------------|--------|----------------|-------------------------------------|
| Test Receiver         | ESCI7   | 100732     | R&S    | 2015.01.27     | <input type="checkbox"/>            |
| Test Receiver         | ESCI    | 100001     | R&S    | 2015.07.14     | <input checked="" type="checkbox"/> |
| Test Receiver         | ESCI    | 100710     | R&S    | 2015.10.13     | <input type="checkbox"/>            |
| TWO-LINE<br>V-NETWORK | ENV216  | 101358     | R&S    | 2015.10.02     | <input checked="" type="checkbox"/> |
| TWO-LINE<br>V-NETWORK | ESH3-Z5 | 100267     | R&S    | 2015.06.24     | <input checked="" type="checkbox"/> |

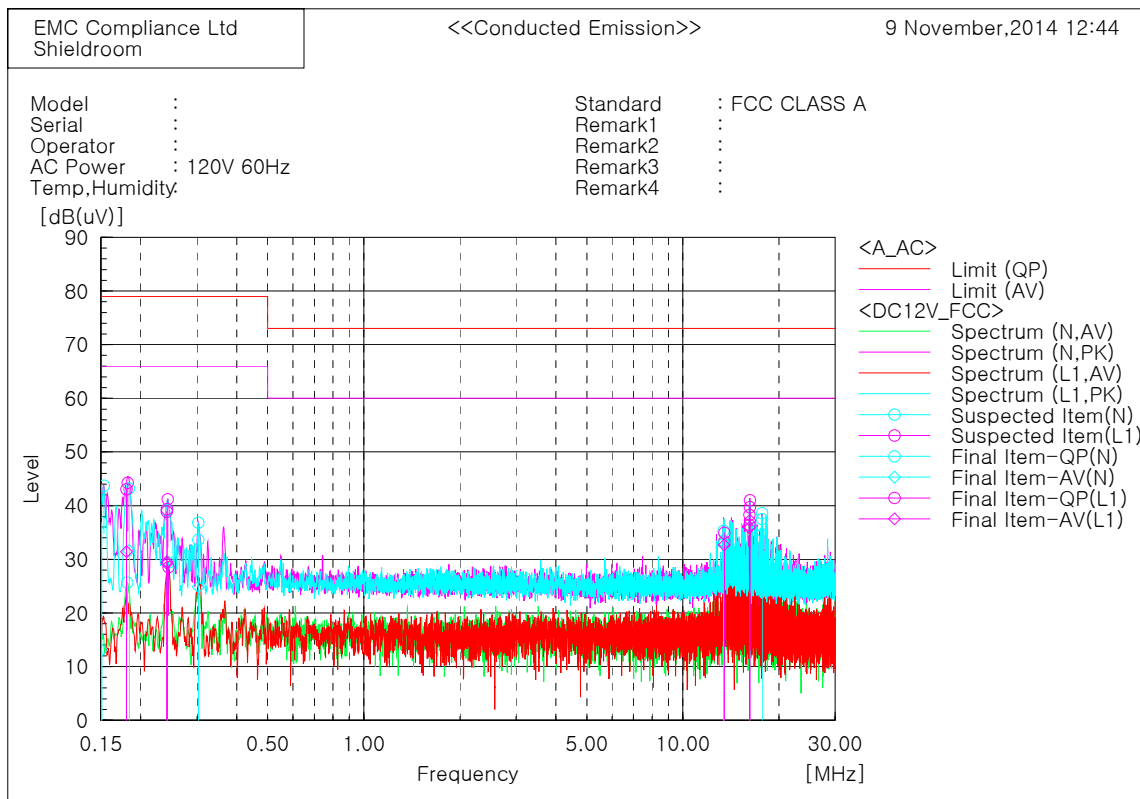
#### 6.1.4 Photographs of test setup

\* AC Main (#1- AC/DC Adaptor, #2- AC/AC Adaptor)



## 6.1.5 Conducted emission measurement result

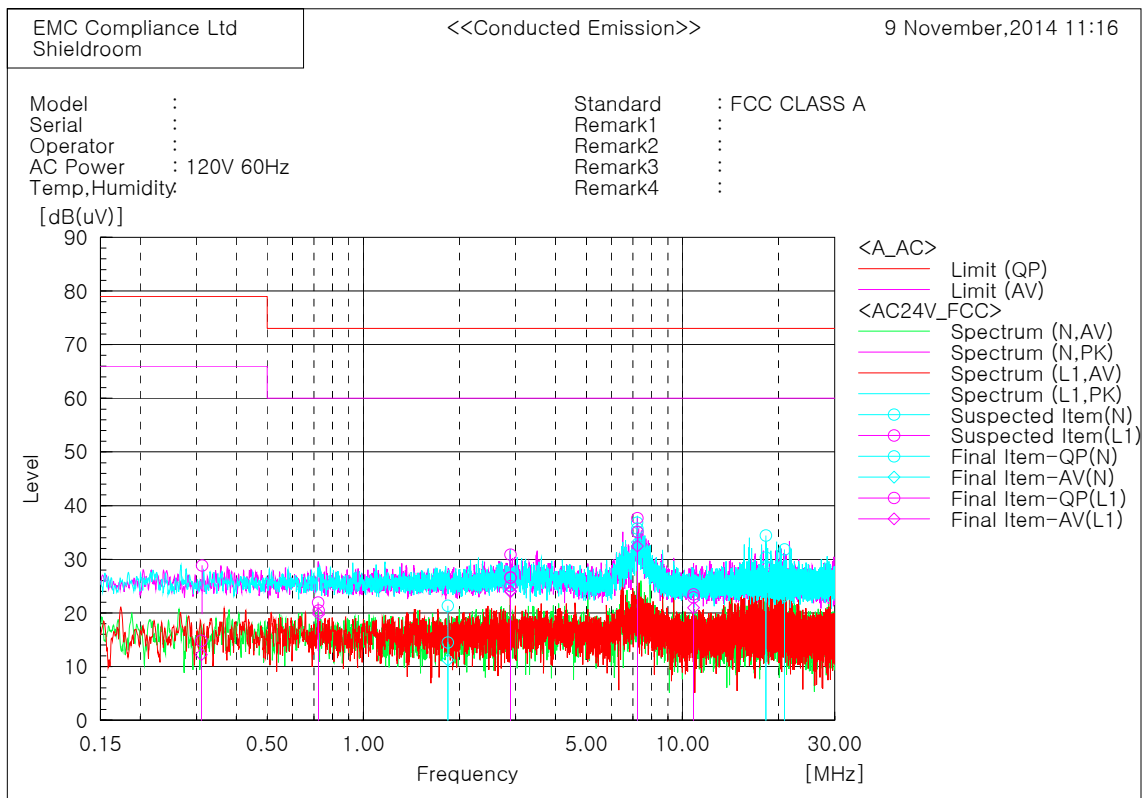
\* AC Main (SNB-8000N)\_#1- AC/DC Adaptor



### Final Result

| --- N Phase ---  |                 |                     |                      |          |                    |                     |                   |                   |                |                 |
|------------------|-----------------|---------------------|----------------------|----------|--------------------|---------------------|-------------------|-------------------|----------------|-----------------|
| No.              | Frequency [MHz] | Reading QP [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB] | Result QP [dB(uV)] | Result CAV [dB(uV)] | Limit QP [dB(uV)] | Limit AV [dB(uV)] | Margin QP [dB] | Margin CAV [dB] |
| 1                | 0.15084         | 27.1                | 3.3                  | 9.8      | 36.9               | 13.1                | 79.0              | 66.0              | 42.1           | 52.9            |
| 2                | 0.18356         | 33.3                | 21.7                 | 9.9      | 43.2               | 31.6                | 79.0              | 66.0              | 35.8           | 34.4            |
| 3                | 0.24184         | 29.5                | 19.9                 | 9.6      | 39.1               | 29.5                | 79.0              | 66.0              | 39.9           | 36.5            |
| 4                | 0.30271         | 23.9                | 15.2                 | 9.7      | 33.6               | 24.9                | 79.0              | 66.0              | 45.4           | 41.1            |
| 5                | 13.42013        | 25.5                | 23.3                 | 9.8      | 35.3               | 33.1                | 73.0              | 60.0              | 37.7           | 26.9            |
| 6                | 17.69378        | 27.6                | 25.0                 | 9.9      | 37.5               | 34.9                | 73.0              | 60.0              | 35.5           | 25.1            |
| --- L1 Phase --- |                 |                     |                      |          |                    |                     |                   |                   |                |                 |
| No.              | Frequency [MHz] | Reading QP [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB] | Result QP [dB(uV)] | Result CAV [dB(uV)] | Limit QP [dB(uV)] | Limit AV [dB(uV)] | Margin QP [dB] | Margin CAV [dB] |
| 1                | 0.18038         | 33.2                | 21.6                 | 9.8      | 43.0               | 31.4                | 79.0              | 66.0              | 36.0           | 34.6            |
| 2                | 0.24121         | 29.3                | 19.6                 | 9.6      | 38.9               | 29.2                | 79.0              | 66.0              | 40.1           | 36.8            |
| 3                | 0.24186         | 29.7                | 19.9                 | 9.6      | 39.3               | 29.5                | 79.0              | 66.0              | 39.7           | 36.5            |
| 4                | 13.48082        | 25.1                | 22.9                 | 9.8      | 34.9               | 32.7                | 73.0              | 60.0              | 38.1           | 27.3            |
| 5                | 16.16706        | 28.5                | 26.1                 | 9.8      | 38.3               | 35.9                | 73.0              | 60.0              | 34.7           | 24.1            |
| 6                | 16.22803        | 29.9                | 27.4                 | 9.8      | 39.7               | 37.2                | 73.0              | 60.0              | 33.3           | 22.8            |

\* AC Main (SNB-8000N)\_#2- AC/AC Adaptor



Final Result

--- N Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB] | Result QP [dB(μV)] | Result CAV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin CAV [dB] |
|-----|-----------------|---------------------|----------------------|----------|--------------------|---------------------|-------------------|-------------------|----------------|-----------------|
| 1   | 1.83797         | 4.8                 | 1.5                  | 9.7      | 14.5               | 11.2                | 73.0              | 60.0              | 58.5           | 48.8            |
| 2   | 2.88765         | 16.9                | 14.2                 | 9.8      | 26.7               | 24.0                | 73.0              | 60.0              | 46.3           | 36.0            |
| 3   | 7.22031         | 26.0                | 23.5                 | 9.7      | 35.7               | 33.2                | 73.0              | 60.0              | 37.3           | 26.8            |
| 4   | 7.22338         | 25.5                | 22.8                 | 9.7      | 35.2               | 32.5                | 73.0              | 60.0              | 37.8           | 27.5            |
| 5   | 18.24472        | 20.4                | 19.0                 | 9.9      | 30.3               | 28.9                | 73.0              | 60.0              | 42.7           | 31.1            |
| 6   | 20.86998        | 15.8                | 13.2                 | 9.9      | 25.7               | 23.1                | 73.0              | 60.0              | 47.3           | 36.9            |

--- L1 Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB] | Result QP [dB(μV)] | Result CAV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin CAV [dB] |
|-----|-----------------|---------------------|----------------------|----------|--------------------|---------------------|-------------------|-------------------|----------------|-----------------|
| 1   | 0.31087         | 5.0                 | 2.4                  | 9.8      | 14.8               | 12.2                | 79.0              | 66.0              | 64.2           | 53.8            |
| 2   | 0.72369         | 10.6                | 10.0                 | 9.8      | 20.4               | 19.8                | 73.0              | 60.0              | 52.6           | 40.2            |
| 3   | 2.88908         | 16.9                | 14.4                 | 9.7      | 26.6               | 24.1                | 73.0              | 60.0              | 46.4           | 35.9            |
| 4   | 2.88929         | 16.9                | 14.3                 | 9.7      | 26.6               | 24.0                | 73.0              | 60.0              | 46.4           | 36.0            |
| 5   | 7.22208         | 25.3                | 22.6                 | 9.8      | 35.1               | 32.4                | 73.0              | 60.0              | 37.9           | 27.6            |
| 6   | 10.82713        | 13.1                | 11.2                 | 9.8      | 22.9               | 21.0                | 73.0              | 60.0              | 50.1           | 39.0            |



## 6.2 Radiated Emission

|                    |                                         |                   |             |
|--------------------|-----------------------------------------|-------------------|-------------|
| Test specification | FCC Part 15, Section 15.109(g), Class A |                   |             |
| Testing voltage    | 120 V, 60 Hz, PoE                       |                   |             |
| Test facility      | 10 m Chamber (#F2)                      |                   |             |
| Test distance      | 10 m, 3 m                               |                   |             |
| Date               | 2014. 11. 10                            |                   |             |
| Temperature (°C)   | 28.4 °C                                 | Humidity (% R.H.) | 27.2 % R.H. |
| Software Program   | EP5/RE Ver 4.6.0(Toyo)                  |                   |             |
| Remarks            | Complied                                |                   |             |

### 6.2.1 Limits of radiated emission measurement

| Frequency<br>[MHz] | Class A (dB( $\mu$ V/m)) @ 10 m | Class B (dB( $\mu$ 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 \***

### 6.2.2 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.

### 6.2.3 Used equipments

| Equipment         | Model no.  | Serial no. | Makers               | Next Cal. Date | Used                                |
|-------------------|------------|------------|----------------------|----------------|-------------------------------------|
| Test Receiver     | ESCI7      | 100732     | R&S                  | 2015.01.27     | <input checked="" type="checkbox"/> |
| Test Receiver     | ESCI       | 100001     | R&S                  | 2015.07.14     | <input type="checkbox"/>            |
| Test Receiver     | ESCI       | 100710     | R&S                  | 2015.10.13     | <input type="checkbox"/>            |
| Test Receiver     | ESR        | 101078     | R&S                  | 2015.02.24     | <input type="checkbox"/>            |
| Bi-Log Antenna    | VULB 9168  | 440        | SCHWARZBECK          | 2016.08.28     | <input checked="" type="checkbox"/> |
| Amplifier         | 310N       | 284608     | SONOMA<br>INSTRUMENT | 2015.04.16     | <input checked="" type="checkbox"/> |
| 3 dB Attenuator   | 8491B      | 22981      | HP                   | 2015.03.04     | <input checked="" type="checkbox"/> |
| Antenna Mast      | MA4000-EP  | 303        | Innco Systems        | -              | <input checked="" type="checkbox"/> |
| Turn Table        | DT2000S-1t | 079        | Innco Systems        | -              | <input checked="" type="checkbox"/> |
| Preamplifier      | 8449B      | 3008A02343 | AGILENT              | 2015.10.13     | <input checked="" type="checkbox"/> |
| Horn ANT          | 3115       | 00155772   | ETS                  | 2015.02.26     | <input checked="" type="checkbox"/> |
| Spectrum Analyzer | E4407B     | US39010142 | AGILENT              | 2015.10.13     | <input type="checkbox"/>            |

### 6.2.4 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

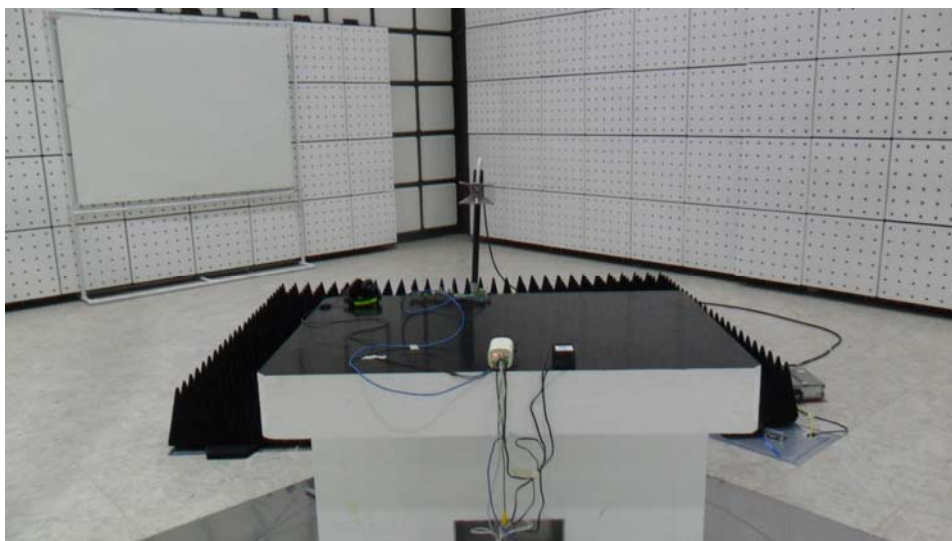
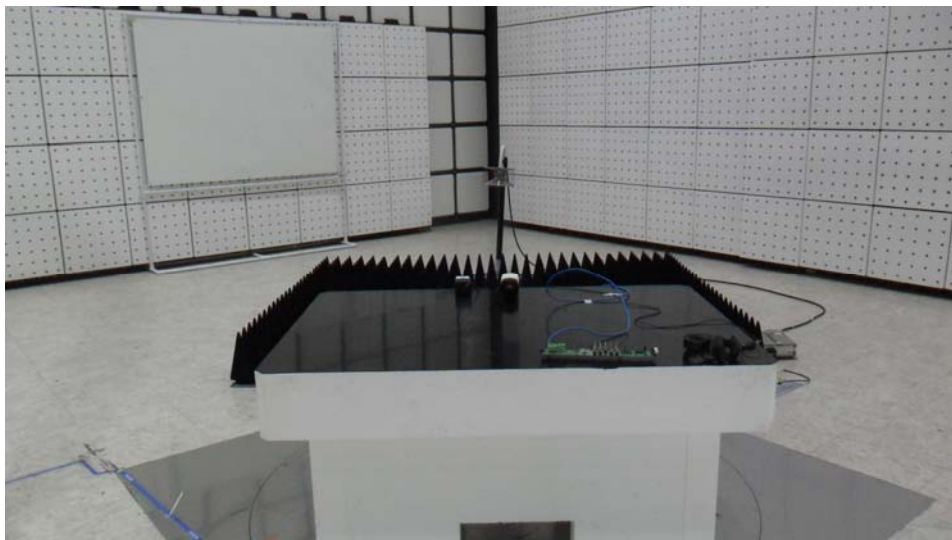
The result is  $30 + 12 + 5 + 3 - 35 = 15 \text{ dB}(\mu\text{V/m})$

### 6.2.5 Photographs of test setup

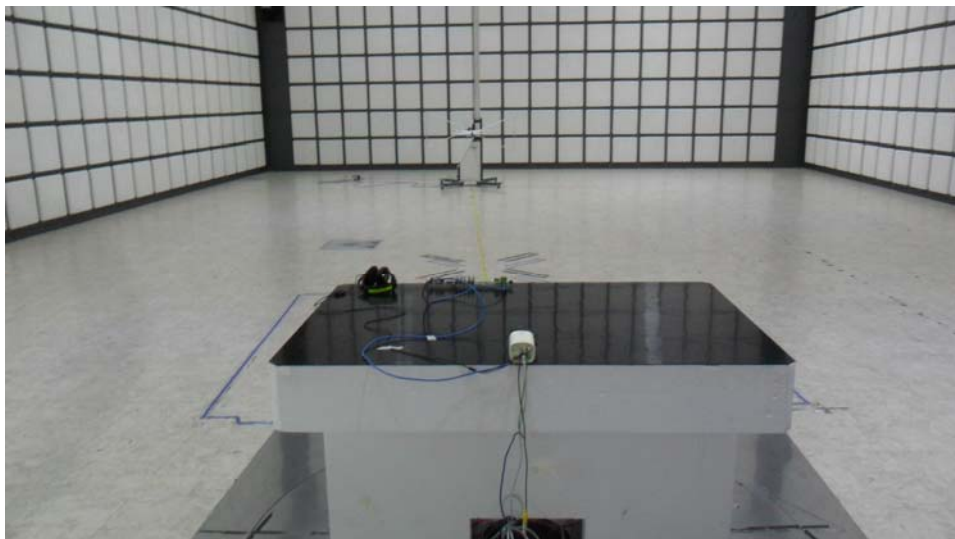
\* 30 MHz ~ 1 GHz (#1-AC/DC Adaptor, #2-AC/AC Adaptor)



\* 1 GHz ~ 6 GHz(#1-AC/DC Adaptor, #2-AC/AC Adaptor)

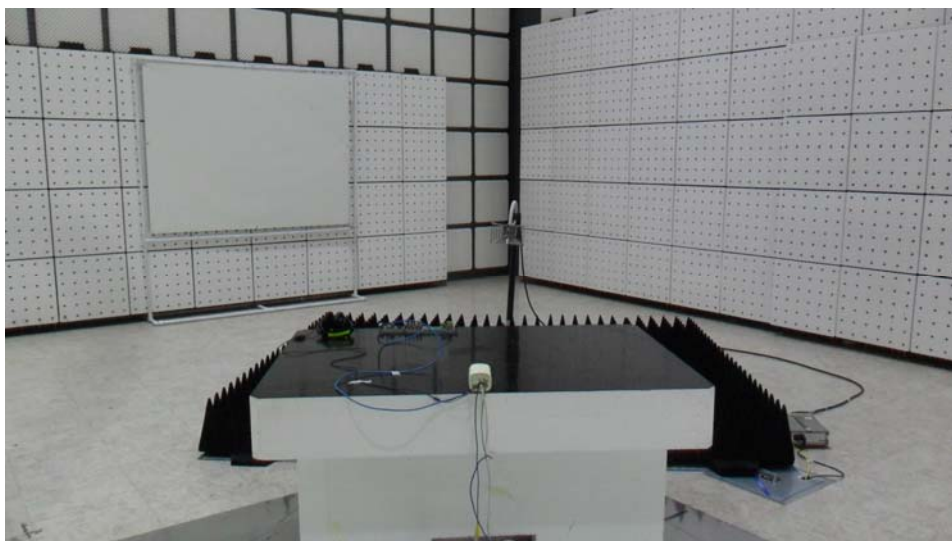


\* 30 MHz ~ 1 GHz(#3-PoE)





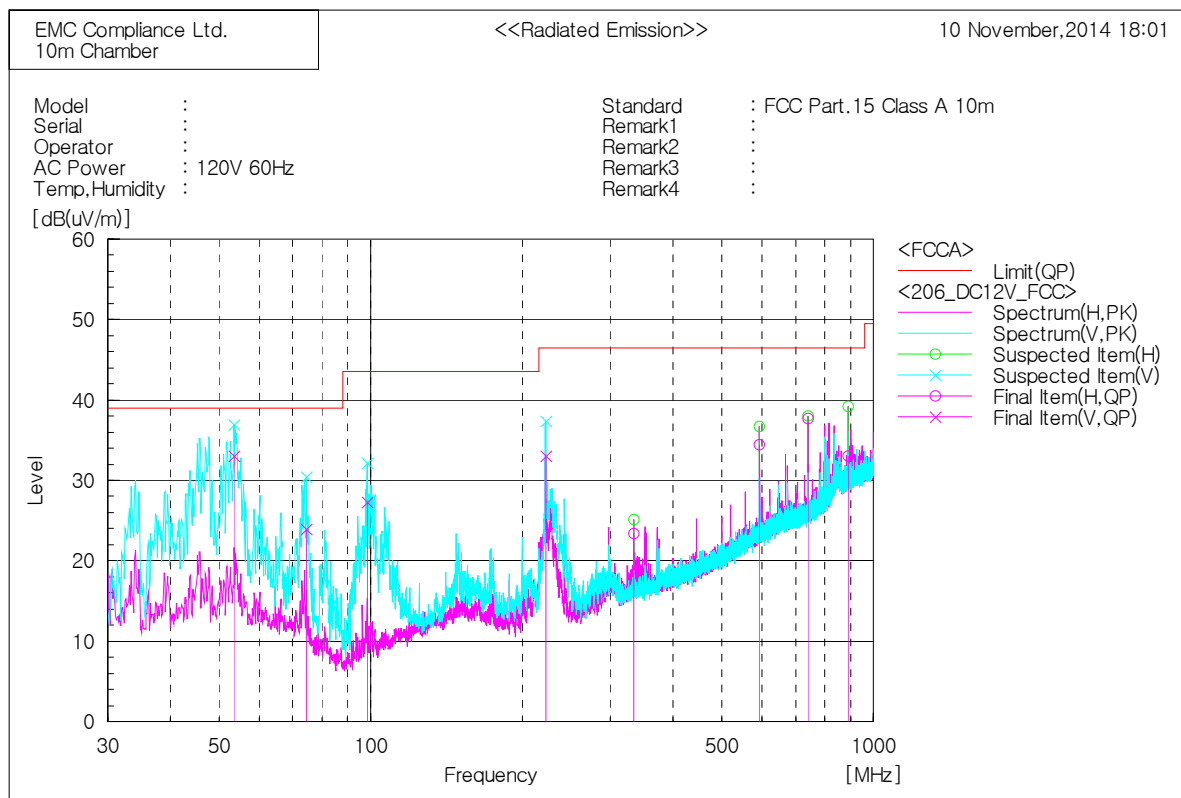
\* 1 GHz ~ 6 GHz(#3-PoE)



## 6.2.6 Radiated emission measurement result

### \* Graph and Data

\* 30 MHz ~ 1 GHz (SNB-8000N)\_#1-AC/DC Adaptor

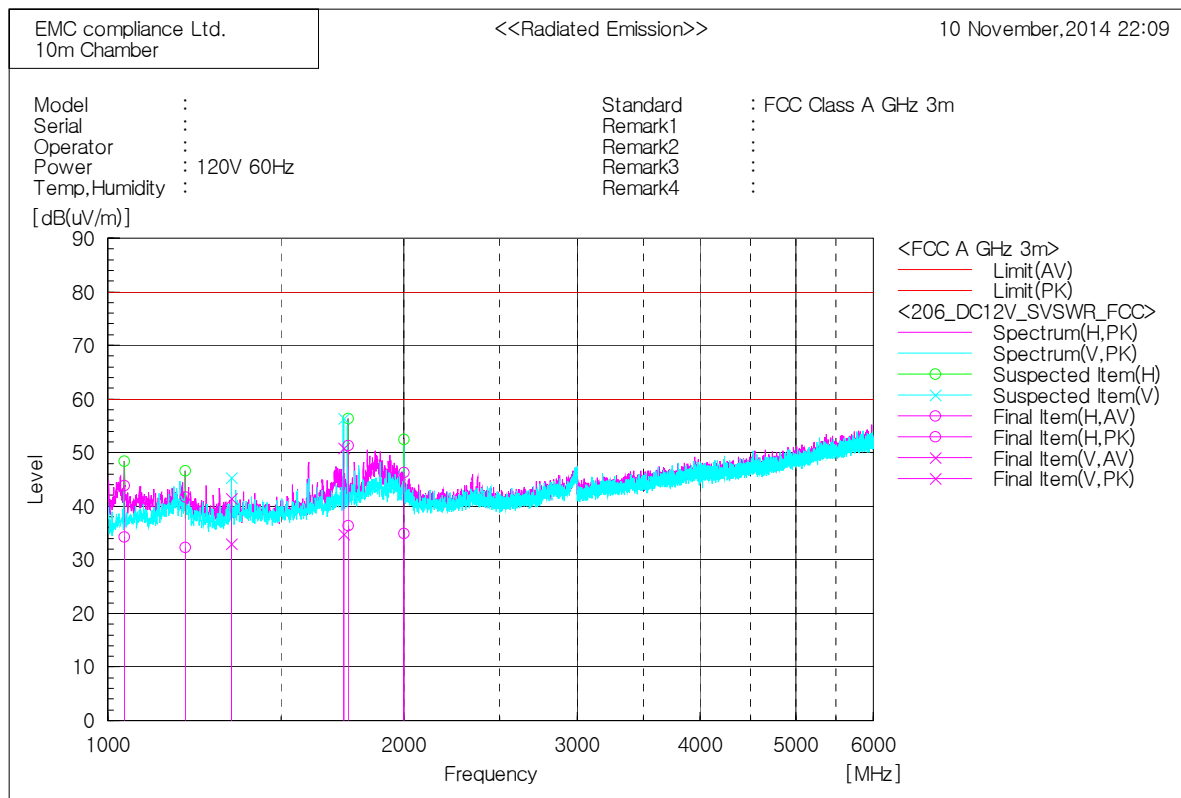


### Final Result

| 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   | 53.523          | V   | 45.9                | -12.9         | 33.0                 | 39.0                | 6.0            | 100.0       | 254.2       |
| 2   | 74.499          | V   | 39.4                | -15.5         | 23.9                 | 39.0                | 15.1           | 199.0       | 103.5       |
| 3   | 98.385          | V   | 44.4                | -17.1         | 27.3                 | 43.5                | 16.2           | 199.0       | 138.2       |
| 4   | 222.788         | V   | 46.6                | -13.6         | 33.0                 | 46.5                | 13.5           | 100.0       | 264.8       |
| 5   | 334.095         | H   | 32.3                | -8.9          | 23.4                 | 46.5                | 23.1           | 301.0       | 107.8       |
| 6   | 593.934         | H   | 35.6                | -1.2          | 34.4                 | 46.5                | 12.1           | 100.0       | 151.8       |
| 7   | 742.465         | H   | 36.5                | 1.2           | 37.7                 | 46.5                | 8.8            | 100.0       | 276.7       |
| 8   | 890.996         | H   | 28.6                | 4.4           | 33.0                 | 46.5                | 13.5           | 100.0       | 324.9       |



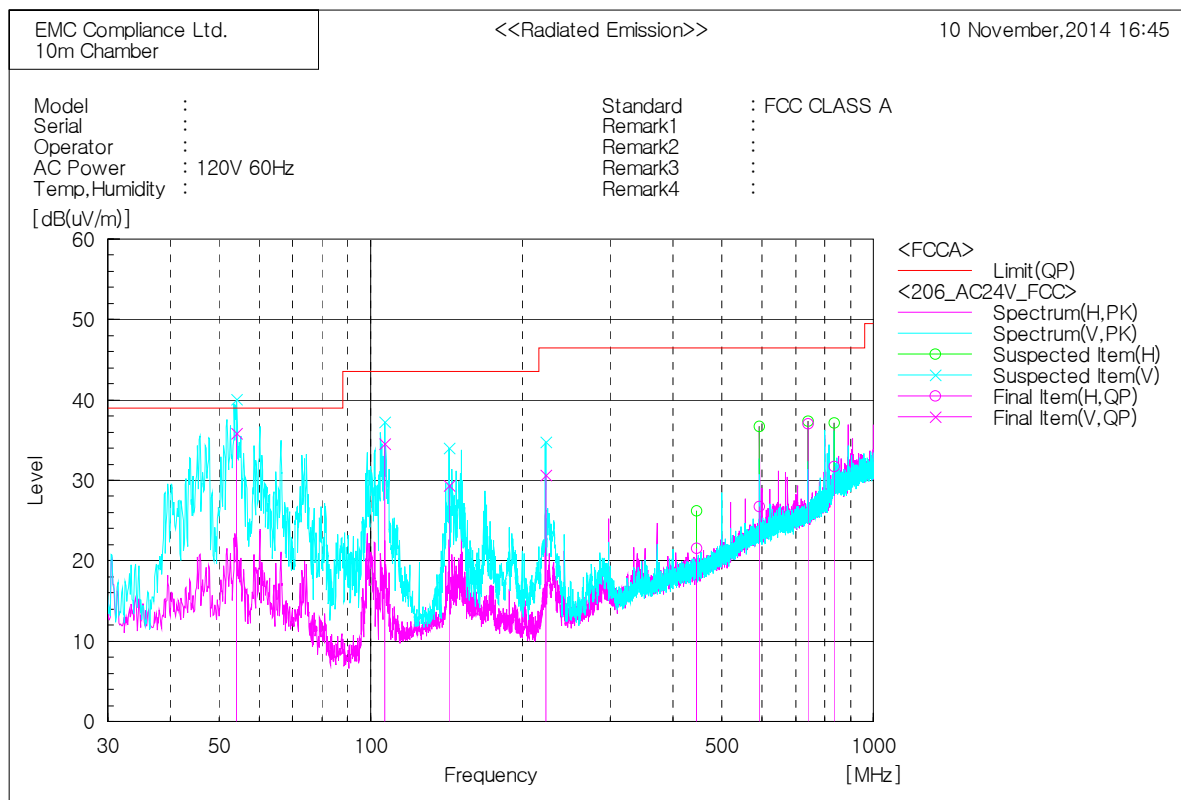
\* 1 GHz ~ 6 GHz (SNB-8000N)\_#1-AC/DC Adaptor



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   | 1040.000        | H   | 40.2                | 49.8                | -5.9          | 34.3                 | 43.9                 | 60.0                | 80.0                | 25.7           | 36.1           | 100.0       | 224.1       |
| 2   | 1199.375        | H   | 37.1                | 46.5                | -4.8          | 32.3                 | 41.7                 | 60.0                | 80.0                | 27.7           | 38.3           | 100.0       | 11.4        |
| 3   | 1336.250        | V   | 36.6                | 45.2                | -3.7          | 32.9                 | 41.5                 | 60.0                | 80.0                | 27.1           | 38.5           | 100.0       | 318.9       |
| 4   | 1736.250        | V   | 34.3                | 50.4                | 0.4           | 34.7                 | 50.8                 | 60.0                | 80.0                | 25.3           | 29.2           | 100.0       | 249.5       |
| 5   | 1754.375        | H   | 35.8                | 50.7                | 0.6           | 36.4                 | 51.3                 | 60.0                | 80.0                | 23.6           | 28.7           | 100.0       | 356.2       |
| 6   | 2000.000        | H   | 33.0                | 44.3                | 2.0           | 35.0                 | 46.3                 | 60.0                | 80.0                | 25.0           | 33.7           | 100.0       | 200.0       |

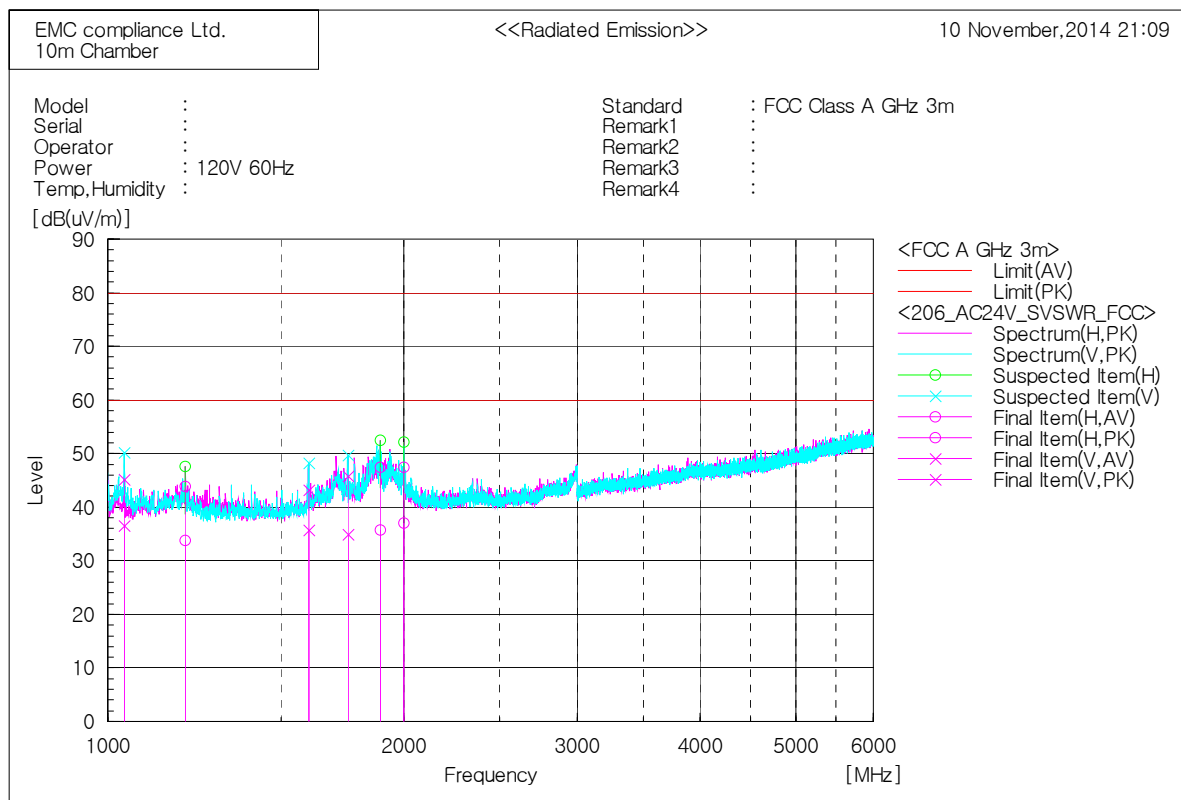
\* 30 MHz ~ 1 GHz (SNB-8000N)\_#2-AC/AC Adaptor



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   | 54.129          | V   | 48.9                | -13.0         | 35.9                 | 39.0                | 3.1            | 100.0       | 113.2       |
| 2   | 106.630         | V   | 50.3                | -15.8         | 34.5                 | 43.5                | 9.0            | 198.0       | 83.3        |
| 3   | 143.248         | V   | 41.5                | -12.2         | 29.3                 | 43.5                | 14.2           | 100.0       | 322.2       |
| 4   | 222.788         | V   | 44.2                | -13.6         | 30.6                 | 46.5                | 15.9           | 100.0       | 95.1        |
| 5   | 445.524         | H   | 27.0                | -5.5          | 21.5                 | 46.5                | 25.0           | 201.0       | 196.9       |
| 6   | 594.055         | H   | 27.9                | -1.2          | 26.7                 | 46.5                | 19.8           | 201.0       | 231.6       |
| 7   | 742.465         | H   | 35.8                | 1.2           | 37.0                 | 46.5                | 9.5            | 100.0       | 257.6       |
| 8   | 837.040         | H   | 28.4                | 3.3           | 31.7                 | 46.5                | 14.8           | 301.0       | 266.6       |

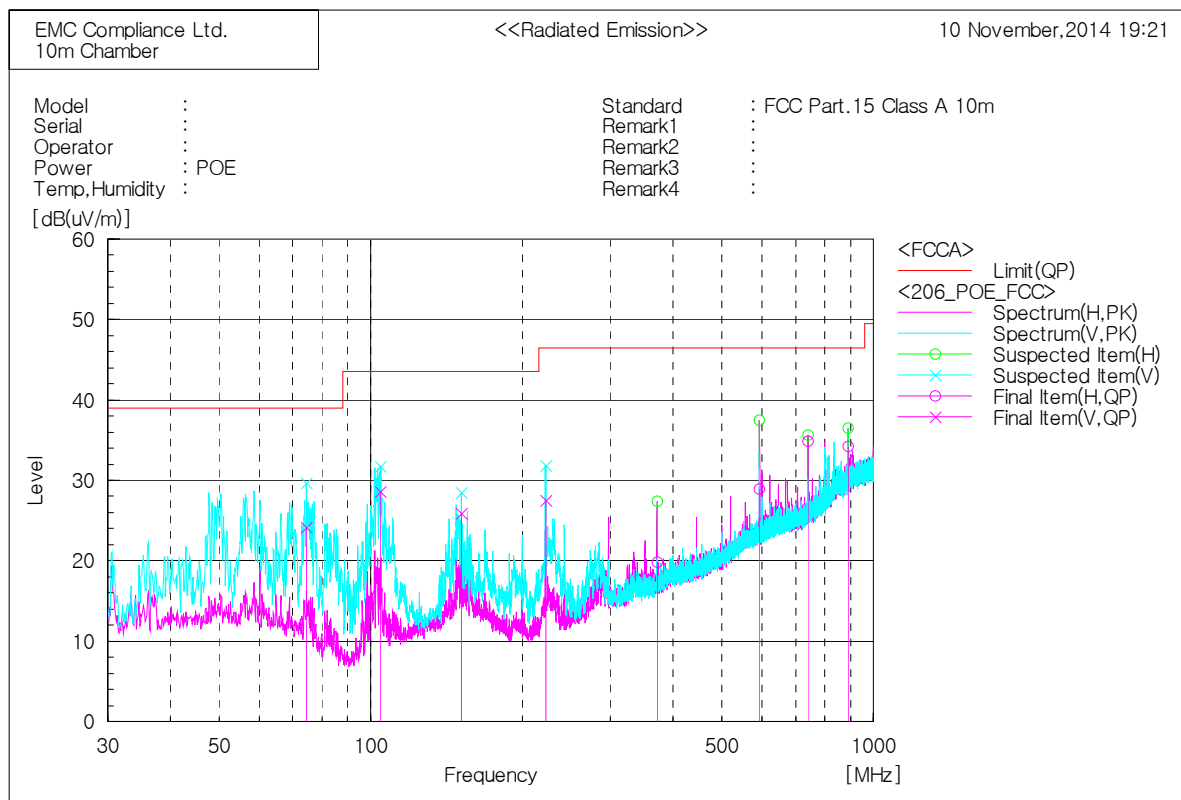
\* 1 GHz ~ 6 GHz (SNB-8000N)\_#2-AC/AC Adaptor



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   | 1039.375        | V   | 42.5                | 51.1                | -5.9          | 36.6                 | 45.2                 | 60.0                | 80.0                | 23.4           | 34.8           | 100.0       | 225.0       |
| 2   | 1200.000        | H   | 38.6                | 48.7                | -4.8          | 33.8                 | 43.9                 | 60.0                | 80.0                | 26.2           | 36.1           | 100.0       | 144.7       |
| 3   | 1600.000        | V   | 36.9                | 44.3                | -1.1          | 35.8                 | 43.2                 | 60.0                | 80.0                | 24.2           | 36.8           | 100.0       | 198.0       |
| 4   | 1754.375        | V   | 34.3                | 45.2                | 0.6           | 34.9                 | 45.8                 | 60.0                | 80.0                | 25.1           | 34.2           | 100.0       | 155.9       |
| 5   | 1893.750        | H   | 34.1                | 45.8                | 1.7           | 35.8                 | 47.5                 | 60.0                | 80.0                | 24.2           | 32.5           | 100.0       | 204.7       |
| 6   | 2000.000        | H   | 35.1                | 45.5                | 2.0           | 37.1                 | 47.5                 | 60.0                | 80.0                | 22.9           | 32.5           | 100.0       | 4.7         |

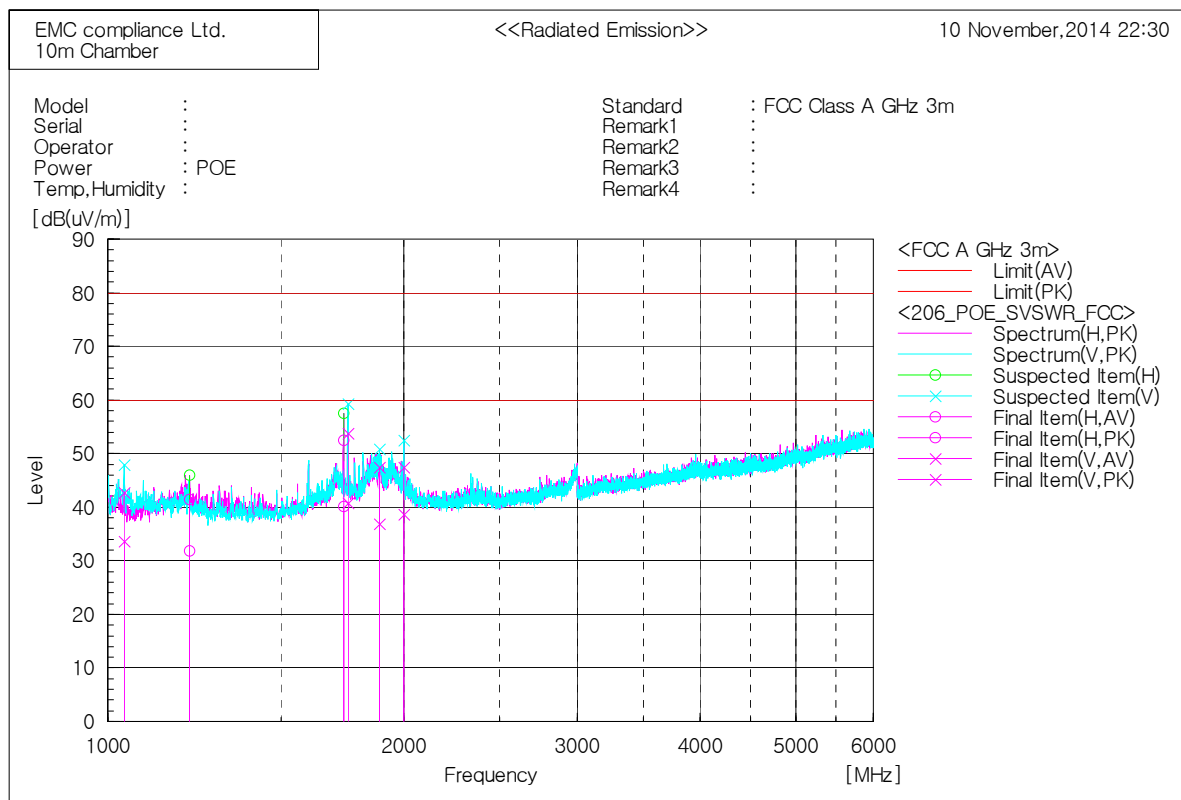
\* 30 MHz ~ 1 GHz (SNB-8000N)\_# 3-PoE



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   | 74.499          | V   | 39.6                | -15.5         | 24.1                 | 39.0                | 14.9           | 100.0       | 190.8       |
| 2   | 104.690         | V   | 44.7                | -16.1         | 28.6                 | 43.5                | 14.9           | 199.0       | 149.0       |
| 3   | 151.493         | V   | 37.8                | -11.9         | 25.9                 | 43.5                | 17.6           | 100.0       | 312.9       |
| 4   | 222.788         | V   | 41.1                | -13.6         | 27.5                 | 46.5                | 19.0           | 100.0       | 166.8       |
| 5   | 371.319         | H   | 27.4                | -7.6          | 19.8                 | 46.5                | 26.7           | 201.0       | 231.4       |
| 6   | 594.055         | H   | 30.1                | -1.2          | 28.9                 | 46.5                | 17.6           | 201.0       | 290.1       |
| 7   | 742.465         | H   | 33.7                | 1.2           | 34.9                 | 46.5                | 11.6           | 100.0       | 282.5       |
| 8   | 890.996         | H   | 29.8                | 4.4           | 34.2                 | 46.5                | 12.3           | 100.0       | 219.2       |

\* 1 GHz ~ 6 GHz (SNB-8000N)\_#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   | 1039.375        | V   | 39.5                | 48.7                | -5.9          | 33.6                 | 42.8                 | 60.0                | 80.0                | 26.4           | 37.2           | 100.0       | 212.2       |
| 2   | 1211.875        | H   | 36.6                | 46.2                | -4.7          | 31.9                 | 41.5                 | 60.0                | 80.0                | 28.1           | 38.5           | 100.0       | 167.4       |
| 3   | 1736.875        | H   | 39.7                | 52.0                | 0.4           | 40.1                 | 52.4                 | 60.0                | 80.0                | 19.9           | 27.6           | 100.0       | 272.6       |
| 4   | 1753.750        | V   | 40.2                | 53.1                | 0.6           | 40.8                 | 53.7                 | 60.0                | 80.0                | 19.2           | 26.3           | 100.0       | 105.1       |
| 5   | 1888.750        | V   | 35.1                | 45.8                | 1.7           | 36.8                 | 47.5                 | 60.0                | 80.0                | 23.2           | 32.5           | 100.0       | 215.2       |
| 6   | 1999.375        | V   | 36.7                | 45.4                | 2.0           | 38.7                 | 47.4                 | 60.0                | 80.0                | 21.3           | 32.6           | 100.0       | 201.7       |

## 7. E.U.T. photographs

### Front View



### Rear View



Left View



Right View





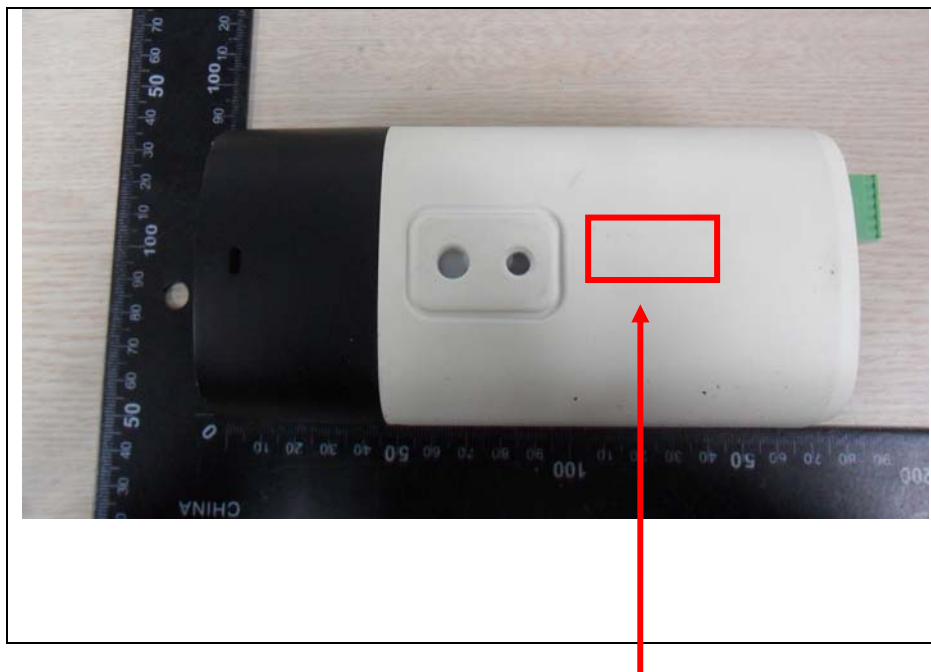
Top View



Bottom View



Label



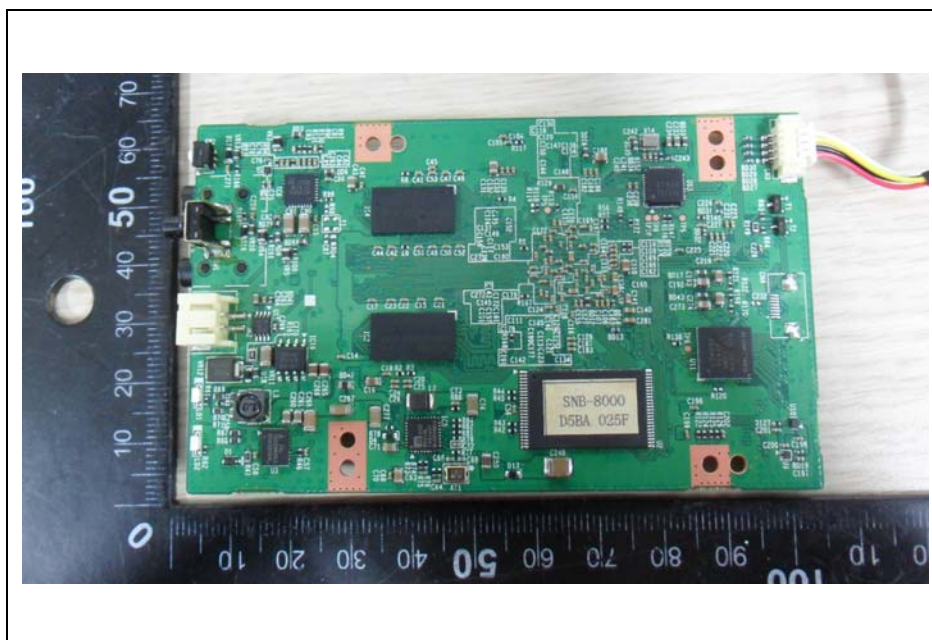
**FCC Label Location**

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.

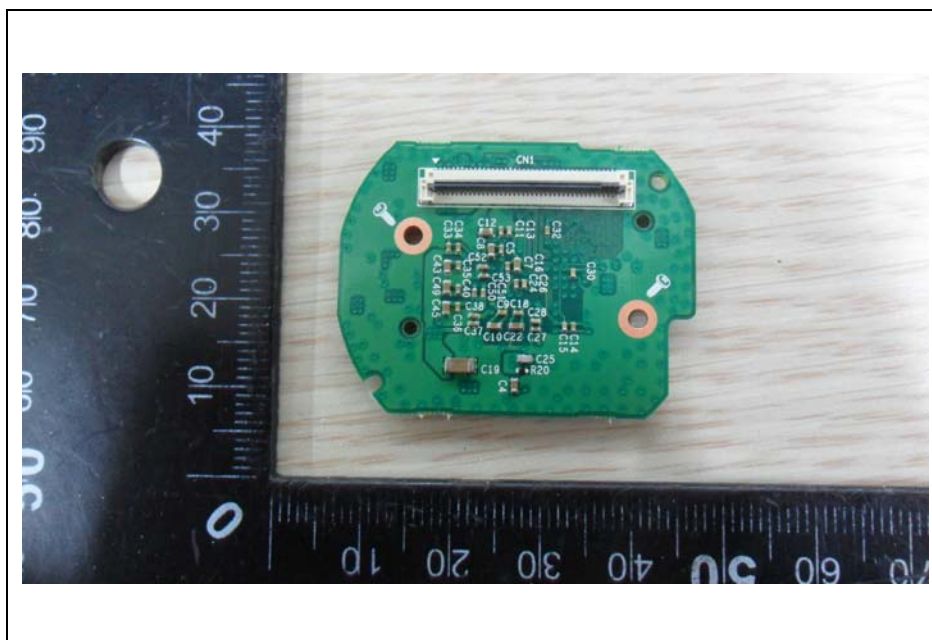
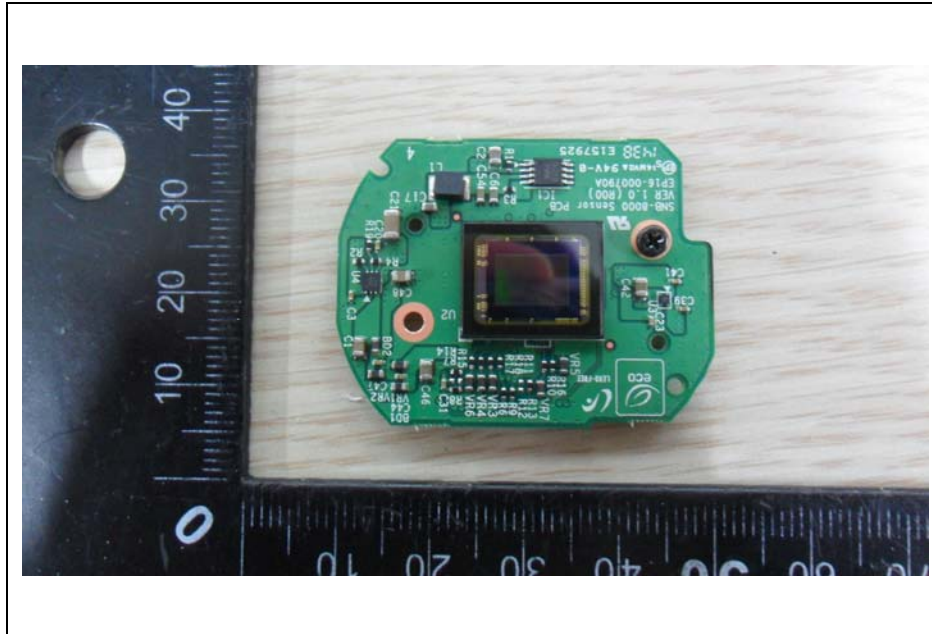
Inside



Main Board

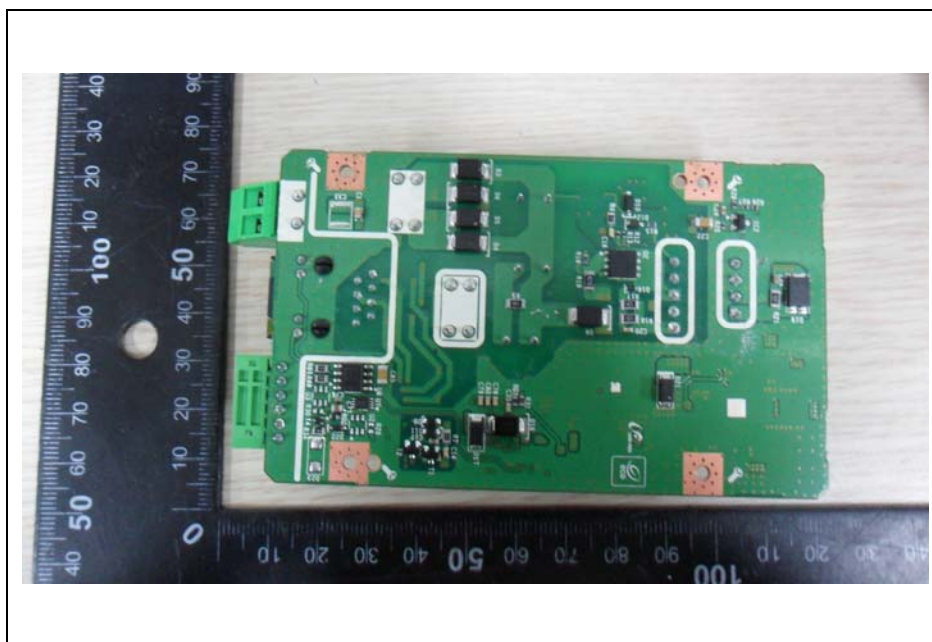
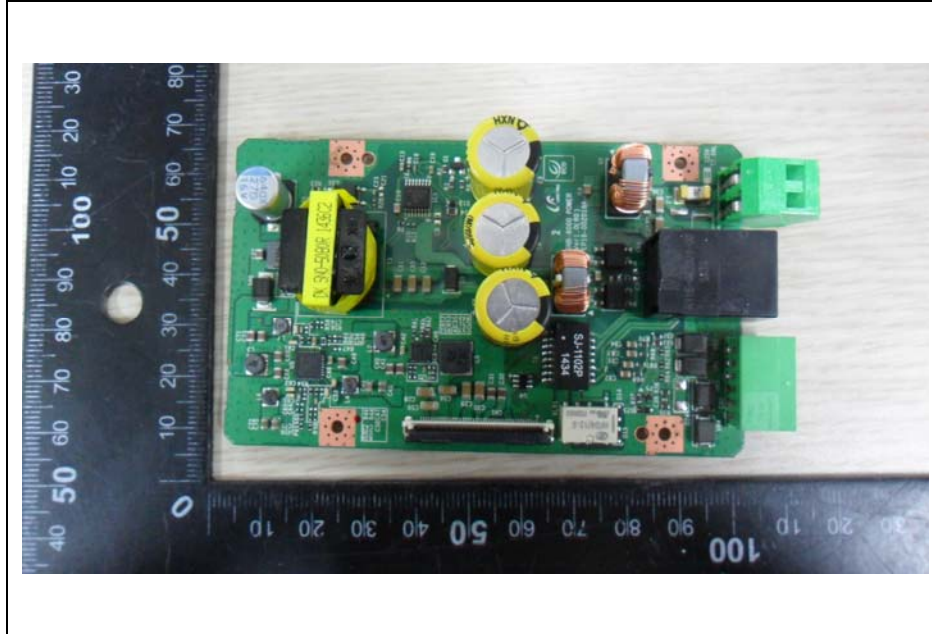


CCD Board





Power Board



AC/DC Adaptor





AC/AC Adaptor

