



## EMC TEST REPORT For VCCI

Test Report No. : KES-E1-18T0377

Date of Issue : Jun. 26, 2018

Product name : 5M LENS Module

Model/Type No. : SLA-5M7000Q

Variant Model : -

Applicant : Hanwha Techwin Co., Ltd.

Applicant Address : 6, Pangyo-ro 319 Beon-gil, Bundang-gu, Seongnam-si,  
Gyeonggi-do, 13488, KOREA

Manufacturer : 1. Hanwha Techwin (Tianjin) Co.,Ltd.  
2. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.  
3. D-TECH CO.,LTD.

Manufacturer Address : 1. No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin,  
300385, People's Republic of China  
2. Lot O-2, Que Vo Industrial Zone extended area,  
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam  
3. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do,  
Korea (Suwon Industrial Complex)

Equipment authorization : ☐ Declaration of Conformity  
☒ Verification  
☐ Certification

Date of Receipt : Jun. 12, 2018

Test date : Jun. 14, 2018

Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

Kang Hyeon, Kim  
EMC Test Engineer

Reviewed by

Dong-Hun, Jang  
EMC Technical Manager

This test report is not related to KOLAS.

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**REPORT REVISION HISTORY**

| Date          | Test Report No. | Revision History |
|---------------|-----------------|------------------|
| Jun. 26, 2018 | KES-E1-18T0377  | Issued           |
|               |                 |                  |
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## 1.0 General Product Description

**Main Specifications of EUT are:**

| SLA-5M7000Q                           |
|---------------------------------------|
|                                       |
| 1/1.8" 5M CMOS                        |
| 3096(H) x 2094(V)                     |
| 2616(H) x 1976(V)                     |
| Progressive Scan                      |
| Color : 0.16Lux(F1.6, 1/30sec, 30IRE) |
| B/W : 0.16Lux(F1.6, 1/30sec, 30IRE)   |
| 50dB                                  |
| 120dB                                 |
| Electrical                            |
|                                       |
| 7mm                                   |
| F1.6                                  |
| H:50.7°, V:37.8°, D:63.8°             |
| -                                     |
| -                                     |
| Fixed focal                           |
| M12 Lens module with main unit        |
|                                       |
| Black / Plastic                       |



## 1.1 Test Voltage & Frequency

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

Voltage ☐ 230 Vac ☒ 100 Vac ☐ 24 Vac ☐ 12 Vdc ☐ PoE

Frequency ☐ 50 Hz ☒ 60 Hz ☐ Hz

## 1.2 Variant Model Differences

Not applicable

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

| Description    | Model Number | Serial Number | Manufacturer                     | Remarks |
|----------------|--------------|---------------|----------------------------------|---------|
| 5M LENS Module | SLA-5M7000Q  | -             | Hanwha Techwin (Tianjin) Co.,Ltd | EUT     |

## 1.5 Support Equipments

| Description      | Model Number    | Serial Number | Manufacturer                               | Remarks |
|------------------|-----------------|---------------|--------------------------------------------|---------|
| Notebook         | ProBook4430s    | -             | HP                                         | -       |
| Notebook Adaptor | SeriesPPP0009H  | -             | CHICONY POWER TECHNOLOGY (SUZHOU) CO.,LTD, | -       |
| NETWORK CAMERA   | PNM-9000VQ      | -             | Hanwha Techwin (Tianjin) Co.,Ltd           | -       |
| 5M LENS Module   | SLA-5M3700Q     | -             | Hanwha Techwin (Tianjin) Co.,Ltd           | 1EA     |
| 5M LENS Module   | SLA-5M4600Q     | -             | Hanwha Techwin (Tianjin) Co.,Ltd           | 2EA     |
| POE Adaptor      | PT-PSE109GBRO-A | PT1817220025  | PROCET                                     | -       |



## 1.6 External I/O Cabling

| Start                |          | END            |          | Cable Spec. |        |
|----------------------|----------|----------------|----------|-------------|--------|
| Description          | I/O Port | Description    | I/O Port | Length      | Shield |
| 5M LENS Module (EUT) | -        | NETWORK CAMERA | -        | -           | -      |
| 5M LENS Module (EUT) | -        | NETWORK CAMERA | -        | -           | -      |
| NETWORK CAMERA       | -        | 5M LENS Module | -        | -           | -      |
|                      | -        | 5M LENS Module | -        | -           | -      |
|                      | RJ-45    | POE Adaptor    | RJ-45    | 4.0         | U      |
| Notebook             | RJ-45    | POE Adaptor    | RJ-45    | 4.0         | U      |

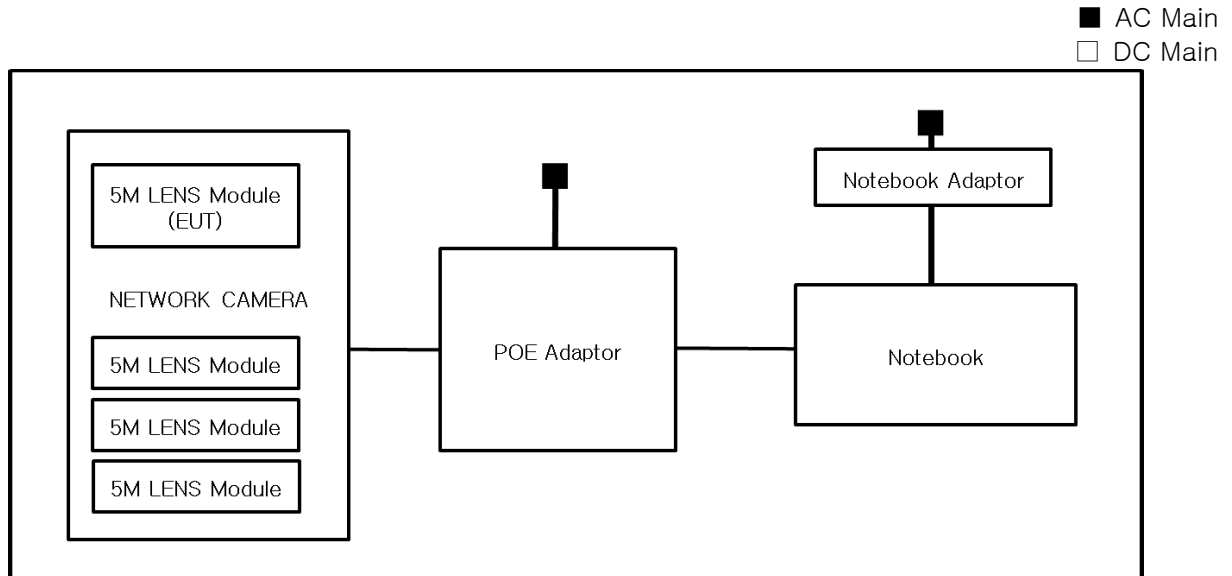
\* Unshielded=U, Shielded=S

## 1.7 EUT Operating Mode(s)

| Test mode | operating                 |
|-----------|---------------------------|
| PoE       | EUT Monitoring, Ping Test |

| EUT Test operating S/W |         |                          |
|------------------------|---------|--------------------------|
| Name                   | Version | Manufacture Company      |
| Webviewer              | -       | Hanwha Techwin Co., Ltd. |

## 1.8 Configuration



## 1.9 Remarks when standards applied

N/A

## 1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

## 1.11 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4:2014 and CISPR 16-1-4:2012

## 1.12 Laboratory Accreditations and Listings

| Country       | Agency  | Scope of Accreditation                                                                                                                                                                                     | Logo                                                                                                                      |
|---------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| KOREA         | RRA     | EMI (3 m & 10 m Semi-Aechoic Chamber ,<br>10 m Open Area and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>Magnetic, Dips and interruptions)                                              | <br>KR0100                             |
| International | KOLAS   | EMI (3 m & 10 m Semi-Aechoic Chamber ,<br>and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>Magnetic, Dips and interruptions)                                                             | <br>KT489                            |
| USA           | FCC     | 3 m & 10 m Semi-Aechoic Chamber, 10 m<br>Open Area and Conducted test site to<br>perform FCC Part 15/18 measurements.                                                                                      | <br>KR0100                           |
| Canada        | ISED    | 3 m & 10 m Semi-Aechoic Chamber and<br>Conducted test site                                                                                                                                                 | <br>23298-1                          |
| JAPAN         | VCCI    | Mains Ports Conducted Interference<br>Measurement, Telecommunication Ports<br>Conducted Disturbance Measurement and<br>Radiation 10 meter site, Facility for<br>measuring radiated disturbance above 1 GHz | <br>R-4308, C-4798,<br>T-2311, G-914 |
| Europe        | TÜV SÜD | EMI (3 m & 10 m Semi-Aechoic Chamber ,<br>10 m Open Area and conducted test<br>site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>Magnetic, Dips and interruptions)                                           | <br>CARAT 17 07 01633<br>001         |



## 2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1  
☐ Class A

☐ Group 2  
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 61547 :2009

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010 +A1:2015

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



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- |                                                               |                                             |                                  |
|---------------------------------------------------------------|---------------------------------------------|----------------------------------|
| <input checked="" type="checkbox"/> <b>VCCI V-3 / 2015.04</b> | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> <b>AS/NZS CISPR22:2009 +A1:2010</b>  | <input type="checkbox"/> Class A            | <input type="checkbox"/> Class B |
| <input type="checkbox"/> <b>47 CFR Part 15, Subpart B</b>     |                                             |                                  |
| <input type="checkbox"/> CISPR 22:2009 +A1:2010               | <input type="checkbox"/> Class A            | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2009                      |                                             |                                  |
| <input type="checkbox"/> <b>IC Regulation ICES-003 : 2016</b> |                                             |                                  |
| <input type="checkbox"/> CAN/CSA CISPR 22-10                  | <input type="checkbox"/> Class A            | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2014                      |                                             |                                  |
| <br>                                                          |                                             |                                  |
| <input type="checkbox"/> <b>RE- Directive 2014/53/EU</b>      |                                             |                                  |
| <input type="checkbox"/> EN 301 489-1 V1.9.2                  |                                             |                                  |
| <input type="checkbox"/> Equipment for fixed use              |                                             |                                  |
| <input type="checkbox"/> Equipment for vehicular use          |                                             |                                  |
| <input type="checkbox"/> Equipment for portable use           |                                             |                                  |
| <input type="checkbox"/> EN 301 489-3 V1.6.1                  |                                             |                                  |
| <input type="checkbox"/> EN 301 489-17 V2.2.1                 |                                             |                                  |
| <input type="checkbox"/> EN 60945:2002                        |                                             |                                  |

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## 2.1 Conducted Emissions Mains Power Ports

### Test Date

Jun. 14, 2018

### Test Location

Electro wave Shieldroom #3

### Test Equipment

| Used                                | Description       | Model Number | Manufacturer | Serial Number | Cal. Due     |
|-------------------------------------|-------------------|--------------|--------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W      | EMC32        | R & S        | 9.12.00       | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER | ESR3         | R & S        | 101783        | 04, 25, 2019 |
| <input checked="" type="checkbox"/> | LISN              | ENV216       | R & S        | 101137        | 01, 31, 2019 |
| <input checked="" type="checkbox"/> | LISN              | ENV216       | R & S        | 101786        | 04, 25, 2019 |

### Test Conditions

Temperature: 23,1 °C  
Relative Humidity: 48,7 % R.H.

### Frequency Range of Measurement

150 kHz to 30 MHz

### Instrument Settings

IF Band Width: 9 kHz

### Test Results

The requirements are:

- ☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.



## 2.2 Conducted Emissions at Telecommunication Ports

### Test Date

N/A

### Test Location

Electro wave Shieldroom #3

### Test Equipment

| Used                     | Description       | Model Number | Manufacturer | Serial Number | Cal. Due     |
|--------------------------|-------------------|--------------|--------------|---------------|--------------|
| <input type="checkbox"/> | EMI Test S/W      | EMC32        | R & S        | 9.12.00       | -            |
| <input type="checkbox"/> | EMI TEST RECEIVER | ESR3         | R & S        | 101783        | 04, 25, 2019 |
| <input type="checkbox"/> | LISN              | ENV216       | R & S        | 101137        | 01, 31, 2019 |
| <input type="checkbox"/> | LISN              | ENV216       | R & S        | 101786        | 04, 25, 2019 |
| <input type="checkbox"/> | 8-WIRE ISN CAT3   | CAT3 8158    | SCHWARZBECK  | 8158-0019     | 03, 22, 2019 |
| <input type="checkbox"/> | 8-WIRE ISN CAT5   | CAT5 8158    | SCHWARZBECK  | 8158-0030     | 03, 22, 2019 |
| <input type="checkbox"/> | 8-WIRE ISN CAT6   | NTFM 8158    | SCHWARZBECK  | 8158-0029     | 08, 10, 2018 |

### Test Conditions

Temperature: °C  
Relative Humidity: % R.H.

### Frequency Range of Measurement

150 kHz to 30 MHz

### Instrument Settings

IF Band Width: 9 kHz

### Test Results

The requirements are:

- ☐ PASS  
☐ NOT PASS  
☒ NOT APPLICABLE

### Remarks

N/A



## 2.3 Radiated Electric Field Emissions(Below 1 GHz)

### Test Date

Jun. 14, 2018

### Test Location

☐ OPEN AREA TEST SITE #2 ☒ SEMI ANECHOIC CHAMBER #4(10m)

### Test Equipment

| Used                                | Description              | Model Number | Manufacturer     | Serial Number | Cal. Due     |
|-------------------------------------|--------------------------|--------------|------------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W             | EP5/RE       | TOYO Corporation | 6.0.0         | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER        | ESU26        | R & S            | 100551        | 04, 11, 2019 |
| <input checked="" type="checkbox"/> | AMPLIFIER                | SCU 01       | R & S            | 100603        | 11, 27, 2018 |
| <input checked="" type="checkbox"/> | TRILOG-BROADBAND ANTENNA | VULB9163     | Schwarzbeck      | 714           | 11, 28, 2018 |

### Test Conditions

Temperature: 21,5 °C  
Relative Humidity: 57,4 % R.H.

### Frequency Range of Measurement

30 MHz to 1 GHz

### Instrument Settings

IF Band Width: 120 kHz

### Test Results

The requirements are:

☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.



## 2.4 Radiated Electric Field Emissions(Above 1 GHz)

### Test Date

Jun. 14, 2018

### Test Location

SEMI ANECHOIC CHAMBER #2

### Test Equipment

| Used                                | Description          | Model Number | Manufacturer | Serial Number | Cal. Due     |
|-------------------------------------|----------------------|--------------|--------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W         | e3           | AUDIX        | 8.083b        | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER    | ESU26        | R & S        | 100552        | 04, 18, 2019 |
| <input checked="" type="checkbox"/> | PREAMPLIFIER         | 8449B        | AGILENT      | 8008A01640    | 01, 11, 2019 |
| <input type="checkbox"/>            | ATTENUATOR           | 8491A        | HP           | 32173         | 03, 21, 2019 |
| <input checked="" type="checkbox"/> | LOG-PERIODIC ANTENNA | STLP 9149    | SCHWARZBECK  | 9149-255      | 05, 18, 2019 |

### Test Conditions

Temperature: 23,1 °C  
Relative Humidity: 48,7 % R.H.

### Frequency Range of Measurement

1 GHz to 6 GHz

### Instrument Settings

IF Band Width: 1 MHz

### Test Results

The requirements are:

- ☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.



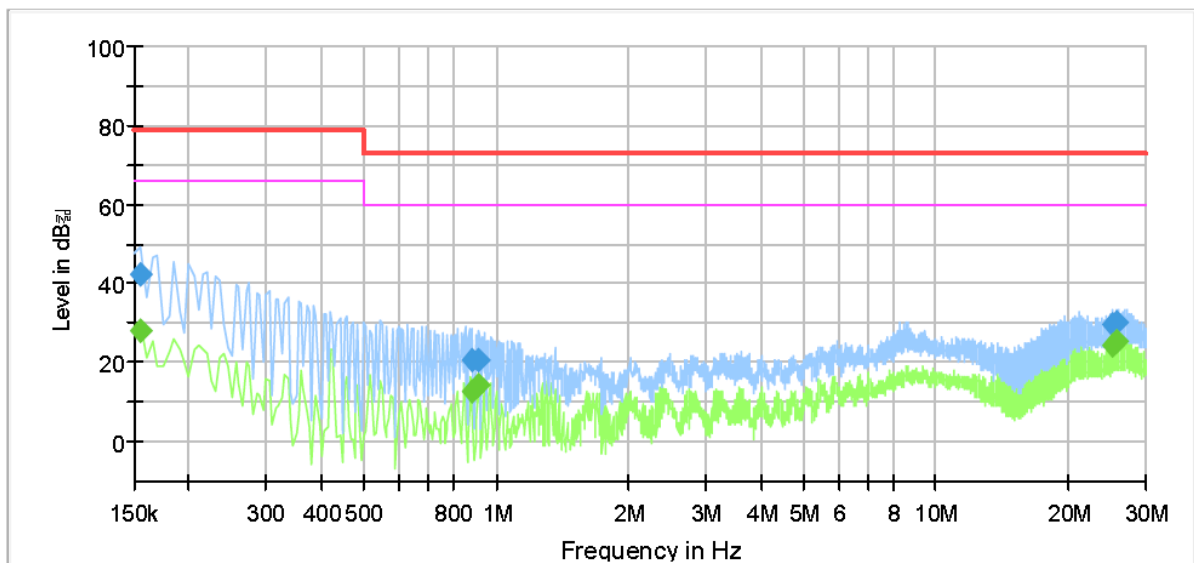
## APPENDIX A – TEST DATA

### Conducted Emissions at Mains Power Ports

HOT LINE

#### Common Information

Test Description: Conducted Emission  
Model No.: SLA-5M7000Q  
Mode: VCCI  
Operator Name: KES



#### Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---              | 28.41           | 66.00        | 37.59       | 1000.0          | 9.000           | L1   | 9.6        |
| 0.155000        | 43.25            | ---             | 79.00        | 35.75       | 1000.0          | 9.000           | L1   | 9.6        |
| 0.180000        | ---              | 26.50           | 66.00        | 39.50       | 1000.0          | 9.000           | L1   | 9.6        |
| 0.180000        | 40.67            | ---             | 79.00        | 38.33       | 1000.0          | 9.000           | L1   | 9.6        |
| 0.905000        | ---              | 15.64           | 60.00        | 44.36       | 1000.0          | 9.000           | L1   | 10.1       |
| 0.905000        | 21.07            | ---             | 73.00        | 51.93       | 1000.0          | 9.000           | L1   | 10.1       |
| 0.945000        | ---              | 6.55            | 60.00        | 53.45       | 1000.0          | 9.000           | L1   | 10.0       |
| 0.945000        | 19.82            | ---             | 73.00        | 53.18       | 1000.0          | 9.000           | L1   | 10.0       |
| 25.660000       | ---              | 24.64           | 60.00        | 35.36       | 1000.0          | 9.000           | L1   | 10.2       |
| 25.660000       | 29.77            | ---             | 73.00        | 43.23       | 1000.0          | 9.000           | L1   | 10.2       |
| 25.665000       | ---              | 25.27           | 60.00        | 34.73       | 1000.0          | 9.000           | L1   | 10.2       |
| 25.665000       | 30.23            | ---             | 73.00        | 42.77       | 1000.0          | 9.000           | L1   | 10.2       |



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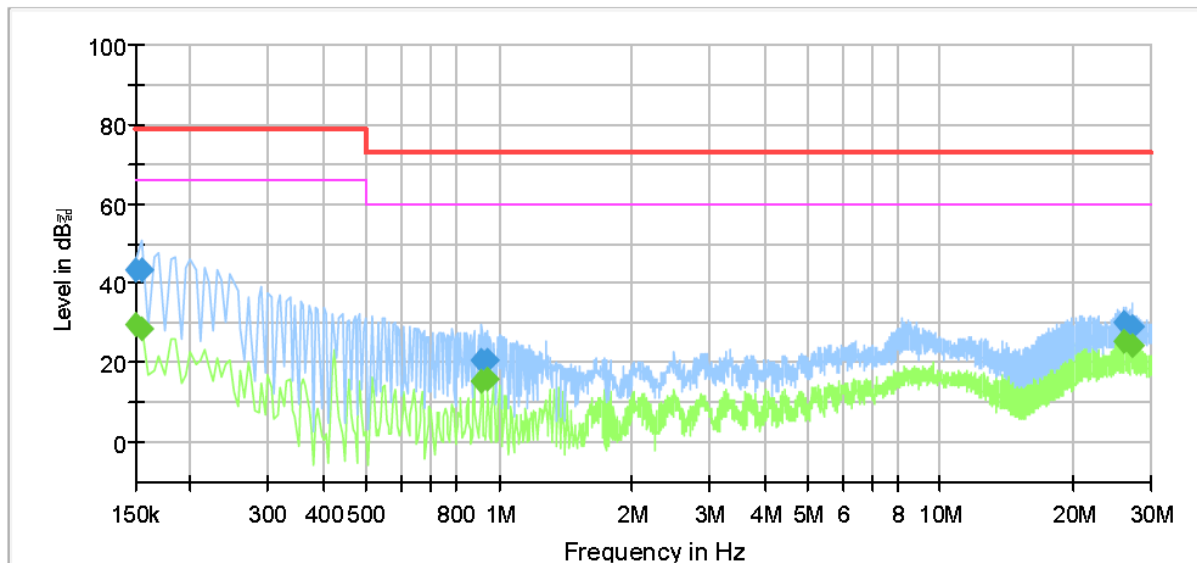
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### NEUTRAL LINE

## Common Information

Test Description: Conducted Emission  
Model No.: SLA-5M7000Q  
Mode: VCCI  
Operator Name: KES



## Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.150000        | ---              | 29.77           | 66.00        | 36.23       | 1000.0          | 9.000           | N    | 9.6        |
| 0.150000        | 43.34            | ---             | 79.00        | 35.66       | 1000.0          | 9.000           | N    | 9.6        |
| 0.155000        | ---              | 28.49           | 66.00        | 37.51       | 1000.0          | 9.000           | N    | 9.6        |
| 0.155000        | 43.59            | ---             | 79.00        | 35.41       | 1000.0          | 9.000           | N    | 9.6        |
| 0.910000        | ---              | 15.31           | 60.00        | 44.69       | 1000.0          | 9.000           | N    | 9.9        |
| 0.910000        | 20.67            | ---             | 73.00        | 52.33       | 1000.0          | 9.000           | N    | 9.9        |
| 0.940000        | ---              | 16.05           | 60.00        | 43.95       | 1000.0          | 9.000           | N    | 10.0       |
| 0.940000        | 20.78            | ---             | 73.00        | 52.22       | 1000.0          | 9.000           | N    | 10.0       |
| 26.050000       | ---              | 25.49           | 60.00        | 34.51       | 1000.0          | 9.000           | N    | 10.2       |
| 26.050000       | 30.44            | ---             | 73.00        | 42.56       | 1000.0          | 9.000           | N    | 10.2       |
| 27.230000       | ---              | 24.30           | 60.00        | 35.70       | 1000.0          | 9.000           | N    | 10.2       |
| 27.230000       | 29.35            | ---             | 73.00        | 43.65       | 1000.0          | 9.000           | N    | 10.2       |

### ◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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**Conducted Emissions at Telecommunication Ports**

**[10 Mbps]**

N/A

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**[100 Mbps]**

N/A

◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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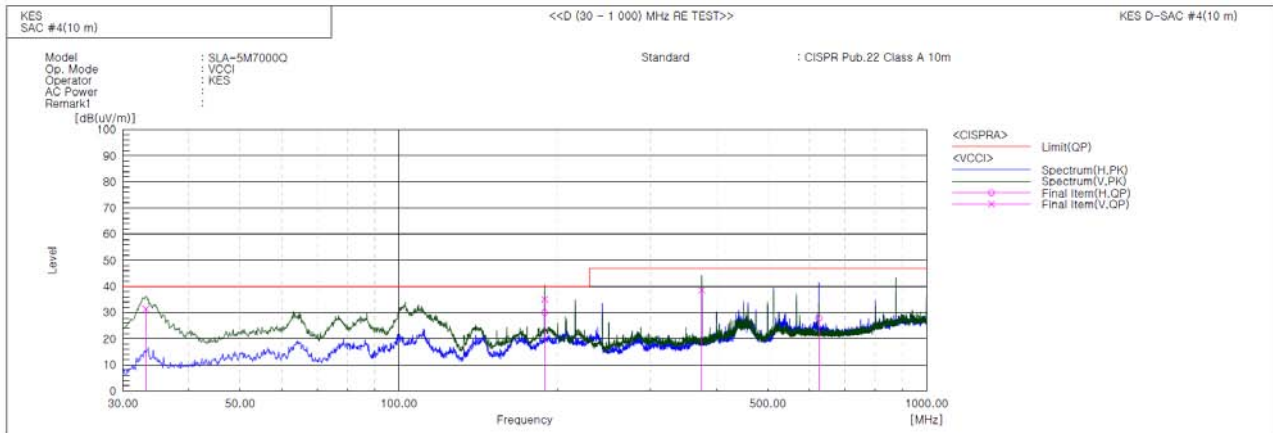


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### Radiated Electric Field Emissions(Below 1 GHz)



#### Final Result

| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(uV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(uV/m)] | Limit<br>QP<br>[dB(uV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|--------|
| 1   | 33.153             | V   | 64.0                      | -32.6            | 31.4                       | 40.0                      | 8.6                  | 100.0          | 328.0          |        |
| 2   | 188.959            | H   | 58.8                      | -28.8            | 30.0                       | 40.0                      | 10.0                 | 400.0          | 199.0          |        |
| 3   | 188.959            | V   | 63.9                      | -28.8            | 35.1                       | 40.0                      | 4.9                  | 100.0          | 49.0           |        |
| 4   | 374.956            | V   | 61.0                      | -22.4            | 38.6                       | 47.0                      | 8.4                  | 100.0          | 236.0          |        |
| 5   | 625.095            | H   | 43.5                      | -15.6            | 27.9                       | 47.0                      | 19.1                 | 100.0          | 201.0          |        |

#### ◆ Calculation

Corrected Amplitude [dBuV] = Amplitude[dBuV] + Correction Factor [dB]

Corrected Amplitude : The Final Value, Amplitude : Reading Value,

Correction Factor : ANT FACTOR + Cable loss

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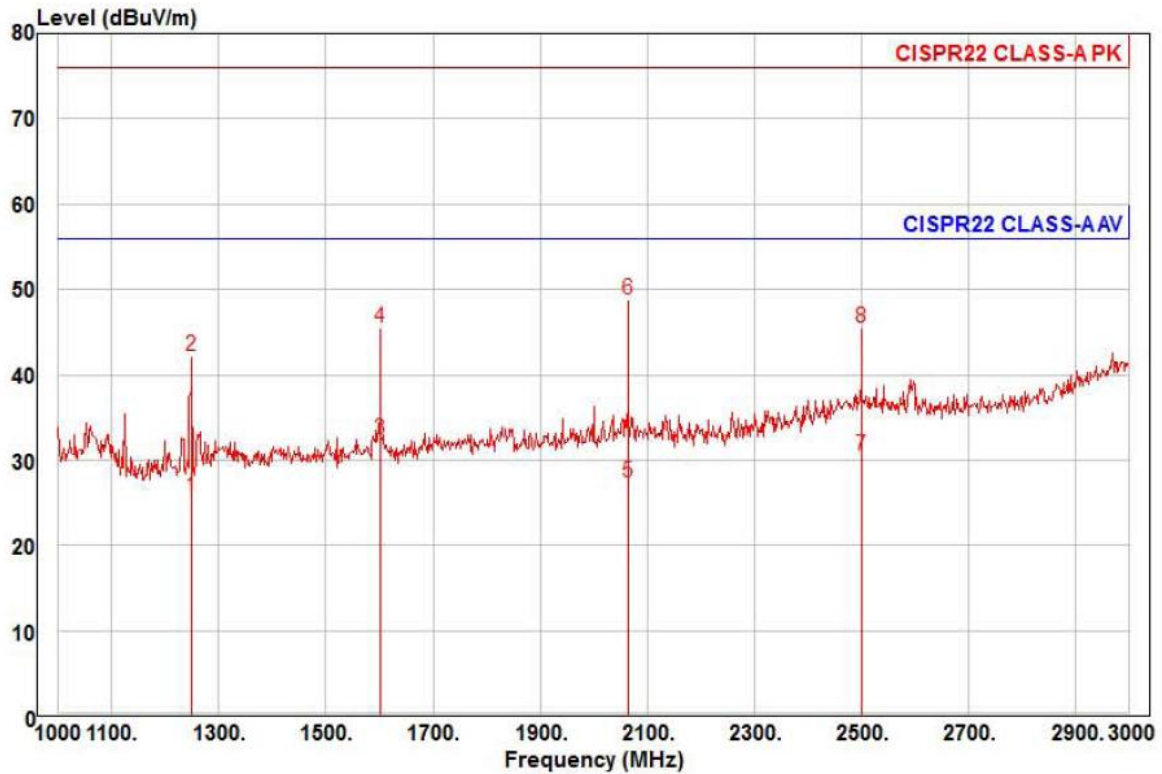


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### Radiated Electric Field Emissions(Above 1 GHz)



Site : YEOJU\_C 3 m SAC  
Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) horizontal  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : SLA-5M7000  
Mode : VCCI  
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    | 1250.00 | 34.61      | 23.26      | 6.67       | 39.00         | 306  | 56.00      | -30.46     | horizontal | Average |
| 2    | 1250.00 | 51.19      | 23.26      | 6.67       | 39.00         | 306  | 76.00      | -33.88     | horizontal | Peak    |
| 3 pp | 1600.00 | 38.59      | 24.42      | 7.55       | 38.11         | 134  | 56.00      | -23.55     | horizontal | Average |
| 4    | 1600.00 | 51.60      | 24.42      | 7.55       | 38.11         | 134  | 76.00      | -30.54     | horizontal | Peak    |
| 5    | 2064.00 | 30.96      | 26.20      | 8.62       | 38.32         | 13   | 56.00      | -28.54     | horizontal | Average |
| 6 pk | 2064.00 | 52.31      | 26.20      | 8.62       | 38.32         | 13   | 76.00      | -27.19     | horizontal | Peak    |
| 7    | 2500.00 | 31.38      | 27.53      | 9.63       | 38.04         | 22   | 56.00      | -25.50     | horizontal | Average |
| 8    | 2500.00 | 46.33      | 27.53      | 9.63       | 38.04         | 22   | 76.00      | -30.55     | horizontal | Peak    |

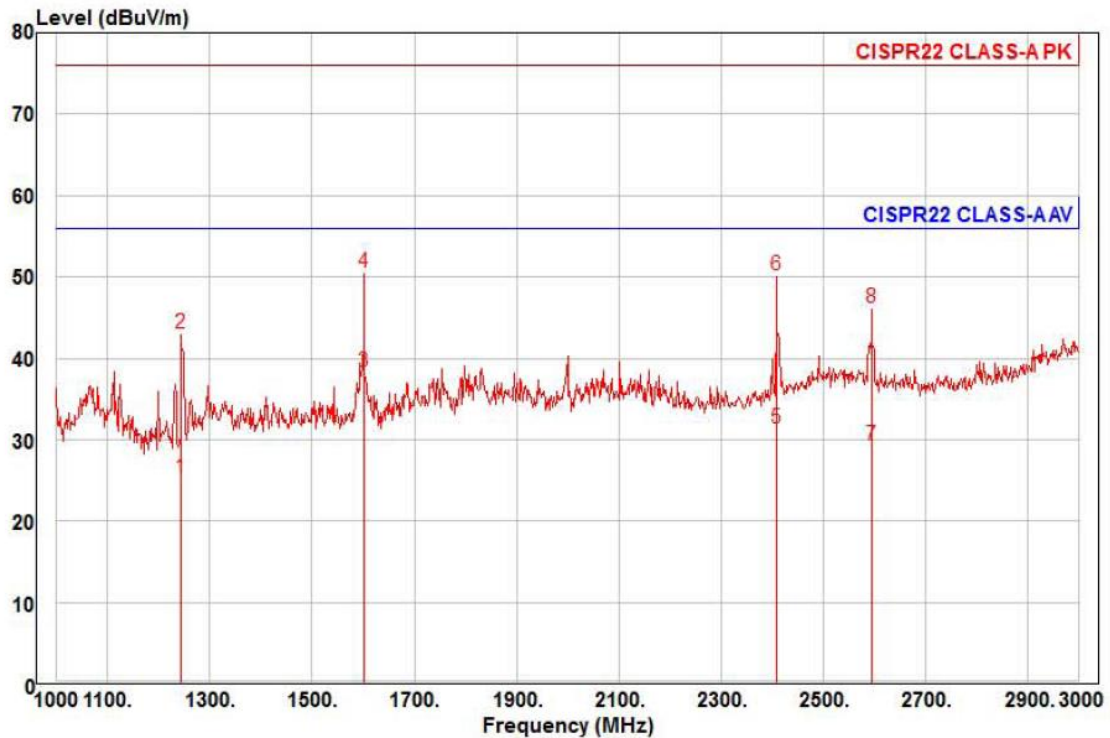
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Site : YEOJU\_C 3 m SAC  
Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) vertical  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : SLA-5M7000  
Mode : VCCI  
Memo : ( 1 ~ 3 ) GHz

|      | 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    | 1244.00 | 34.33      | 23.24      | 6.65       | 39.03         | 188  | 56.00      | -30.81     | vertical  | Average |
| 2    | 1244.00 | 52.24      | 23.24      | 6.65       | 39.03         | 188  | 76.00      | -32.90     | vertical  | Peak    |
| 3 pp | 1600.00 | 44.51      | 24.42      | 7.55       | 38.11         | 341  | 56.00      | -17.63     | vertical  | Average |
| 4 pk | 1600.00 | 56.73      | 24.42      | 7.55       | 38.11         | 341  | 76.00      | -25.41     | vertical  | Peak    |
| 5    | 2410.00 | 32.71      | 27.26      | 9.42       | 38.10         | 355  | 56.00      | -24.71     | vertical  | Average |
| 6    | 2410.00 | 51.70      | 27.26      | 9.42       | 38.10         | 355  | 76.00      | -25.72     | vertical  | Peak    |
| 7    | 2596.00 | 29.53      | 27.95      | 9.85       | 38.07         | 306  | 56.00      | -26.74     | vertical  | Average |
| 8    | 2596.00 | 46.53      | 27.95      | 9.85       | 38.07         | 306  | 76.00      | -29.74     | vertical  | Peak    |

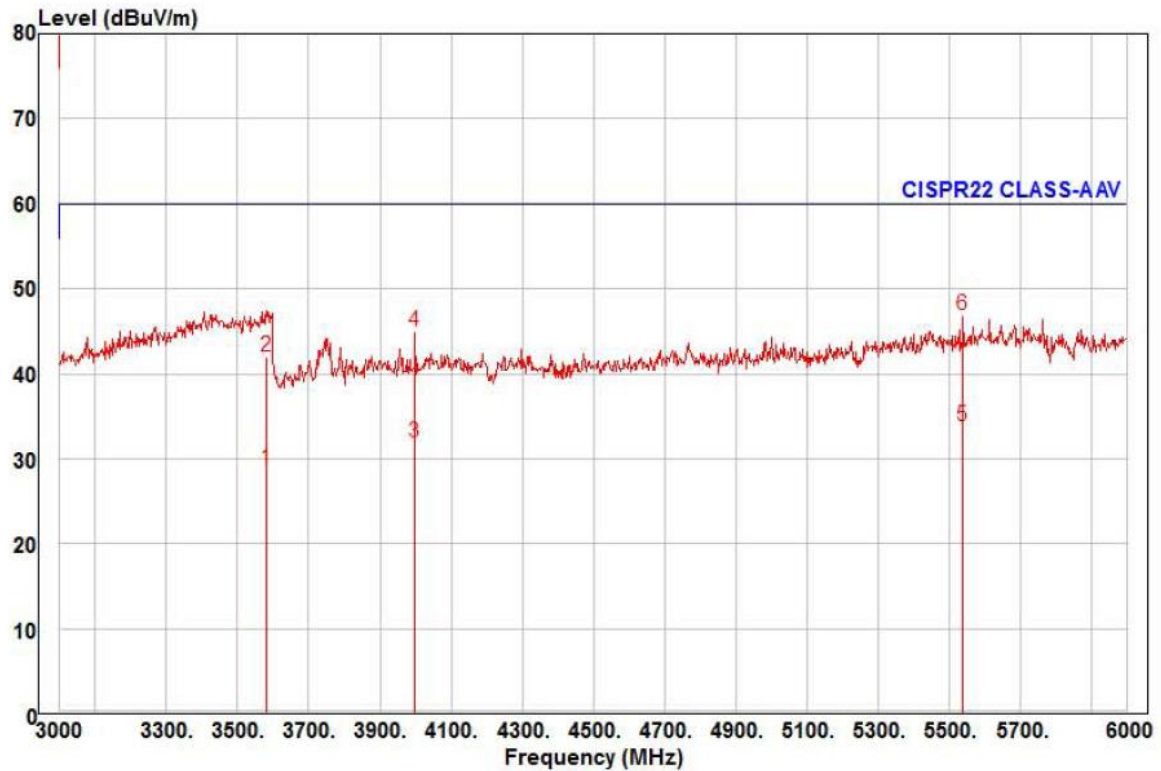
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Site : YEOJU\_C 3 m SAC  
Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) horizontal  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : SLA-5M7000  
Mode : VCCI  
Memo : ( 3 ~ 6 ) GHz

|      | Freq    | Read Level | Ant Factor | Cable Loss | Preamplifier Factor | TPos | Limit Line | Over Limit | Pol/Phase  | Remark  |
|------|---------|------------|------------|------------|---------------------|------|------------|------------|------------|---------|
|      | MHz     | dBuV       | dB/m       | dB         | dB                  | deg  | dBuV/m     | dB         |            |         |
| 1    | 3582.00 | 23.99      | 31.37      | 11.60      | 38.21               | 89   | 60.00      | -31.25     | horizontal | Average |
| 2    | 3582.00 | 37.30      | 31.37      | 11.60      | 38.21               | 89   | 80.00      | -37.94     | horizontal | Peak    |
| 3    | 3999.00 | 24.99      | 32.50      | 12.19      | 37.84               | 40   | 60.00      | -28.16     | horizontal | Average |
| 4    | 3999.00 | 38.19      | 32.50      | 12.19      | 37.84               | 40   | 80.00      | -34.96     | horizontal | Peak    |
| 5 pp | 5541.00 | 21.94      | 35.43      | 14.64      | 38.15               | 110  | 60.00      | -26.14     | horizontal | Average |
| 6 pk | 5541.00 | 35.01      | 35.43      | 14.64      | 38.15               | 110  | 80.00      | -33.07     | horizontal | Peak    |

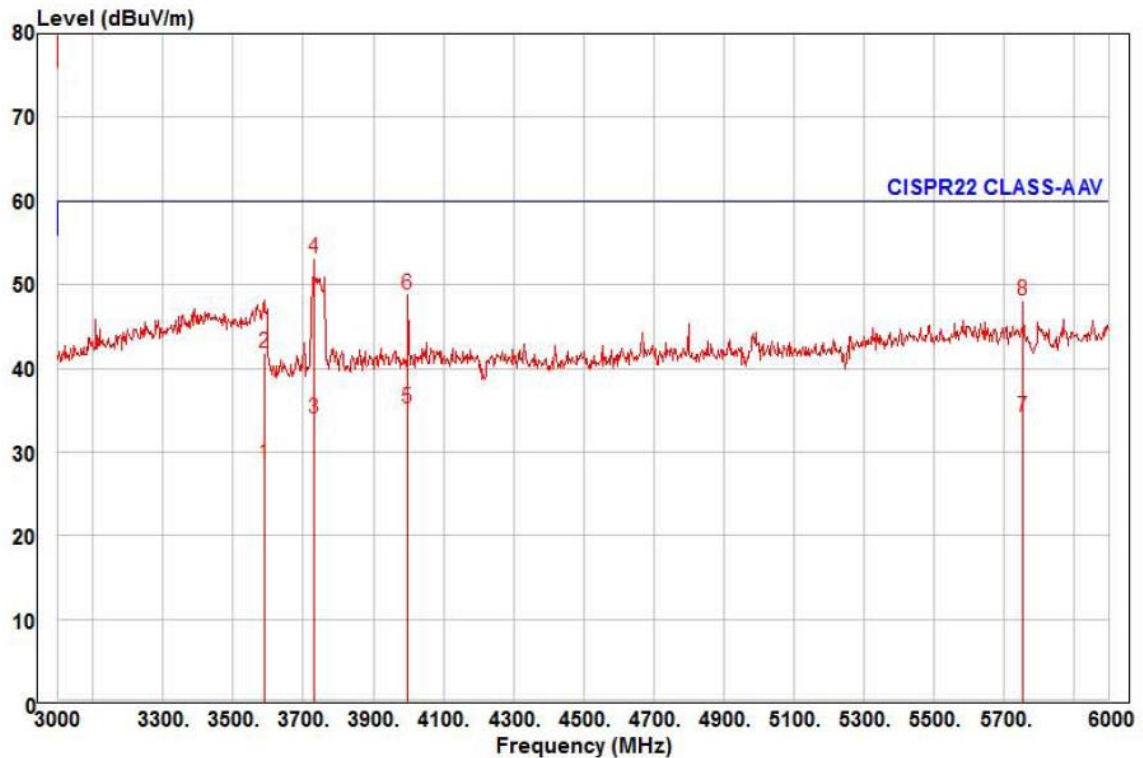
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Site : YEOJU\_C 3 m SAC  
Condition: CISPR22 CLASS-A PK 3m STLP9149(RRA CAL 2017-05-18) vertical  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : SLA-5M7000  
Mode : VCCI  
Memo : ( 3 ~ 6 ) GHz

|      | 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    | 3588.00 | 23.83      | 31.39      | 11.61      | 38.20         | 249  | 60.00      | -31.37     | vertical  | Average |
| 2    | 3588.00 | 37.03      | 31.39      | 11.61      | 38.20         | 249  | 80.00      | -38.17     | vertical  | Peak    |
| 3    | 3732.00 | 28.45      | 31.78      | 11.76      | 38.08         | 330  | 60.00      | -26.09     | vertical  | Average |
| 4 pk | 3732.00 | 47.77      | 31.78      | 11.76      | 38.08         | 330  | 80.00      | -26.77     | vertical  | Peak    |
| 5 pp | 3999.00 | 28.37      | 32.50      | 12.19      | 37.84         | 355  | 60.00      | -24.78     | vertical  | Average |
| 6    | 3999.00 | 41.94      | 32.50      | 12.19      | 37.84         | 355  | 80.00      | -31.21     | vertical  | Peak    |
| 7    | 5757.00 | 21.51      | 35.76      | 15.07      | 38.22         | 153  | 60.00      | -25.88     | vertical  | Average |
| 8    | 5757.00 | 35.59      | 35.76      | 15.07      | 38.22         | 153  | 80.00      | -31.80     | vertical  | Peak    |

## ◆ Calculation

Result(PK/CAV) [dB(μV/m)] = (Reading(PK/CAV)[dB(μV)] + c.f.[dB(1/m)])

Margin(PK/CAV)[dB] = Limit[dB(μV/m)] - Result(PK/CAV) [dB(μV/m)]

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

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## Test Setup Photos and Configuration

### Conducted Voltage Emissions



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## Conducted Telecommunication Emissions

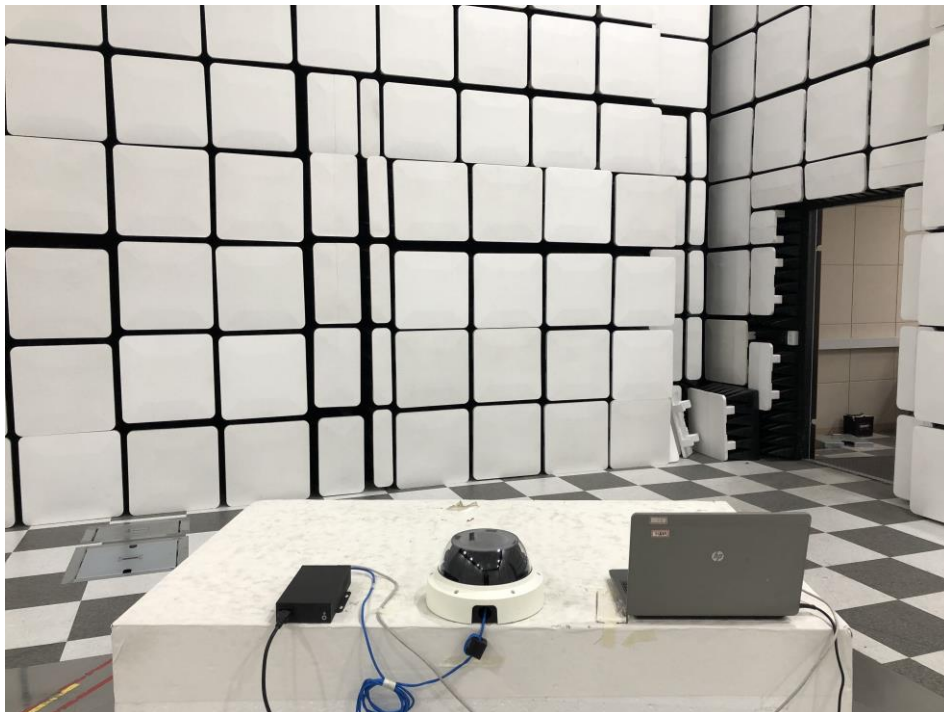
N/A

N/A

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## Radiated Electric Field Emissions(Below 1 GHz)



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## Radiated Electric Field Emissions(Above 1 GHz)



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## EUT External Photographs

(Top)



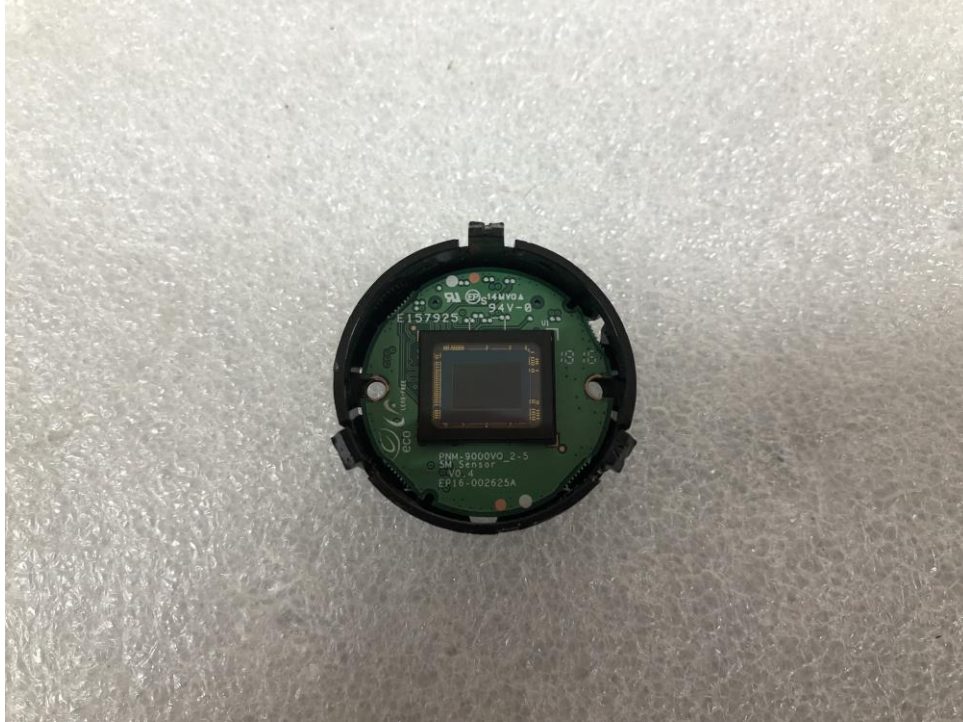
(Bottom)



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## EUT Internal Photographs

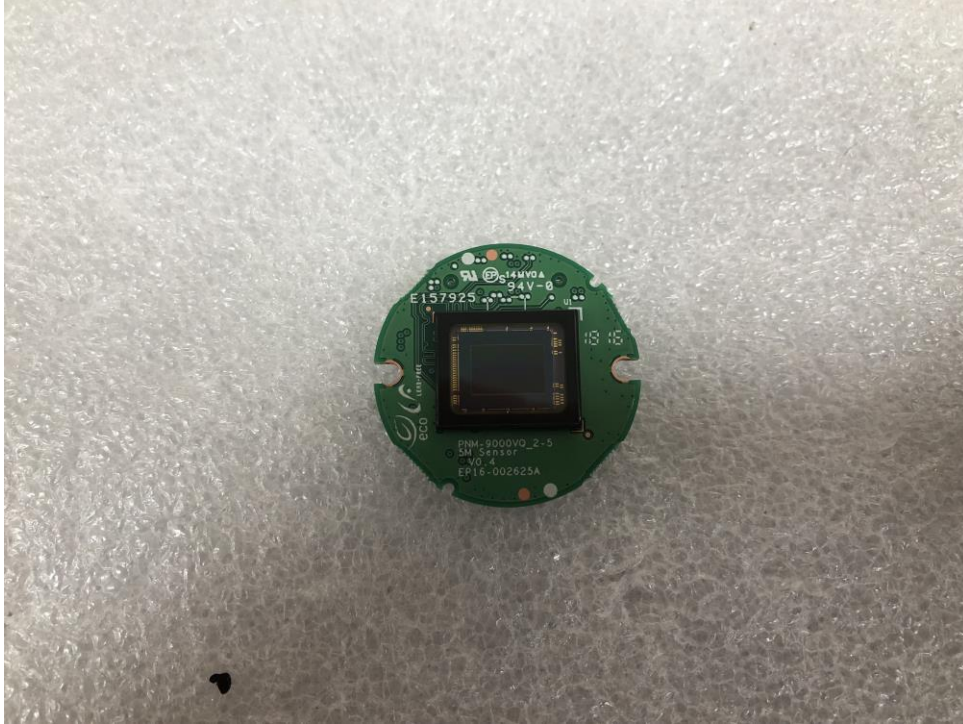
(Internal View)



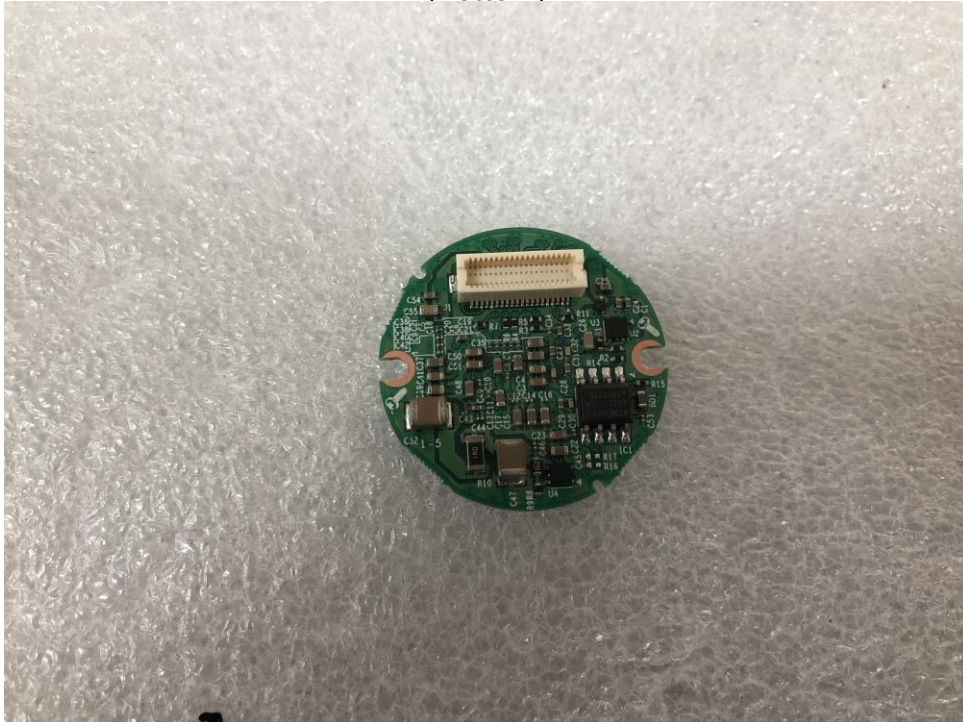
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## EUT Internal View – Board

(Top)



(Bottom)



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