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Report No.: SHEM170901029701
Page: 1 of 33

TEST REPORT

Application No.: SZEM1709010297IT(SHEM1709006504IT)
Applicant: Zhejiang Dahua Vision Technology Co., Ltd.
Address of Applicant: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
Manufacturer: Zhejiang Dahua Vision Technology Co., Ltd.
Address of Manufacturer: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
Factory: 1, ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.
 2, ZHEJIANG DAHUA ZHILIAN CO.,LTD.
Address of Factory: 1, No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
 2, No.28, Dongqiao Road, Dongzhou Street, Fuyang District, Hangzhou, P.R. China.

Equipment Under Test (EUT):

EUT Name: IP CAMERA
Model No.: Refer to page 2nd
 ☐ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Standards: 47 CFR Part 15,Subpart B:2016
Date of Receipt: 2017-07-18
Date of Test: 2017-07-19 to 2017-07-20
Date of Issue: 2017-09-28

| | |
|----------------------|--------------|
| Test Result : | Pass* |
|----------------------|--------------|

* In the configuration tested, the EUT complied with the standards specified above.



Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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Add Model No.:

DH-IPC-HFW5831EP-ZE, DH-IPC-HFW5231EP-ZE-27135, DH-IPC-HFW5231EN-ZE-27135, IPC-HFW5231EP-ZE-27135, IPC-HFW5231EN-ZE-27135, DH-IPC-HFW5231EP-ZE-0735, DH-IPC-HFW5231EN-ZE-0735, IPC-HFW5231EP-ZE-0735, IPC-HFW5231EN-ZE-0735, DH-IPC-HFW5231EP-ZHE-27135, DH-IPC-HFW5231EN-ZHE-27135, DH-IPC-HFW5231EP-ZE, DH-IPC-HFW5231EN-ZE, IPC-HFW5231EP-ZE, IPC-HFW5231EN-ZE, DH-IPC-HFW5231EP-Z5E, DH-IPC-HFW5231EN-Z5E, IPC-HFW5231EP-Z5E, IPC-HFW5231EN-Z5E, DH-IPC-HFW5231EP-ZHE, DH-IPC-HFW5231EN-ZHE, IPC-HFW5231EP-ZHE, IPC-HFW5231EN-ZHE, DH-IPC-HFW5231EP-ZE-0560, DH-IPC-HFW5231EN-ZE-0560, IPC-HFW5231EP-ZE-0560, IPC-HFW5231EN-ZE-0560, DH-IPC-HFW5231EP-Z12E, DH-IPC-HFW5231EN-Z12E, IPC-HFW5231EP-Z12E, IPC-HFW5231EN-Z12E, DH-IPC-HFW5431EP-ZE-27135, DH-IPC-HFW5431EN-ZE-27135, IPC-HFW5431EP-ZE-27135, IPC-HFW5431EN-ZE-27135, DH-IPC-HFW5431EP-ZE-0735, DH-IPC-HFW5431EN-ZE-0735, IPC-HFW5431EP-ZE-0735, IPC-HFW5431EN-ZE-0735, DH-IPC-HFW5431EP-ZHE-27135, DH-IPC-HFW5431EN-ZHE-27135, DH-IPC-HFW5431EP-ZE, DH-IPC-HFW5431EN-ZE, IPC-HFW5431EP-ZE, IPC-HFW5431EN-ZE, DH-IPC-HFW5431EP-Z5E, DH-IPC-HFW5431EN-Z5E, IPC-HFW5431EP-Z5E, IPC-HFW5431EN-Z5E, DH-IPC-HFW5431EP-ZHE, DH-IPC-HFW5431EN-ZHE, IPC-HFW5431EP-ZHE, IPC-HFW5431EN-ZHE, DH-IPC-HFW5631EP-ZE-27135, DH-IPC-HFW5631EN-ZE-27135, IPC-HFW5631EP-ZE-27135, IPC-HFW5631EN-ZE-27135, DH-IPC-HFW5631EP-ZHE-27135, DH-IPC-HFW5631EP-ZE-0735, DH-IPC-HFW5631EN-ZE-0735, IPC-HFW5631EP-ZE-0735, IPC-HFW5631EN-ZE-0735, DH-IPC-HFW5631EP-ZHE-0735, DH-IPC-HFW5631EP-ZE, DH-IPC-HFW5631EN-ZE, IPC-HFW5631EP-ZE, IPC-HFW5631EN-ZE, DH-IPC-HFW5631EP-ZHE, DH-IPC-HFW5631EN-ZHE, IPC-HFW5631EP-ZHE, IPC-HFW5631EN-ZHE, DH-IPC-HFW5631EP-Z5E, DH-IPC-HFW5631EN-Z5E, IPC-HFW5631EP-Z5E, IPC-HFW5631EN-Z5E, DH-IPC-HFW5631EP-Z5HE, DH-IPC-HFW5631EN-Z5HE, IPC-HFW5631EP-Z5HE, IPC-HFW5631EN-Z5HE, DH-IPC-HFW5831EP-ZE-2712, DH-IPC-HFW5831EN-ZE-2712, IPC-HFW5831EP-ZE-2712, IPC-HFW5831EN-ZE-2712, DH-IPC-HFW5831EP-ZE-0735, DH-IPC-HFW5831EN-ZE-0735, IPC-HFW5831EP-ZE-0735, IPC-HFW5831EN-ZE-0735, DH-IPC-HFW5831EP-ZHE-0735, DH-IPC-HFW5831EN-ZHE-0735, IPC-HFW5831EP-ZHE-0735, IPC-HFW5831EN-ZHE-0735, DH-IPC-HFW5831EP-ZHE-2712, DH-IPC-HFW5831EN-ZHE-2712, IPC-HFW5831EP-ZHE-2712, IPC-HFW5831EN-ZHE-2712, DH-IPC-HFW5831EP-ZE, DH-IPC-HFW5831EN-ZE, IPC-HFW5831EP-ZE, IPC-HFW5831EN-ZE, DH-IPC-HFW5831EP-Z5E, DH-IPC-HFW5831EN-Z5E, IPC-HFW5831EP-Z5E, IPC-HFW5831EN-Z5E, DH-IPC-HFW5831EP-Z5HE, DH-IPC-HFW5831EN-Z5HE, IPC-HFW5831EP-Z5HE, IPC-HFW5831EN-Z5HE, DH-IPC-HFW5831EP-ZHE, DH-IPC-HFW5831EN-ZHE, IPC-HFW5831EP-ZHE, IPC-HFW5831EN-ZHE, N65CB5Z, N25CB5Z, N45CB5Z



| Revision Record | | | | |
|------------------------|----------------|-------------|-----------------|---|
| Version | Chapter | Date | Modifier | Remark |
| 00 | Add Models | 2017-09-28 | / | Copy Based on SZEM170700797701 (SHEM170700472201) |
| | | | | |
| | | | | |

| | | | |
|---------------------------------|---|-------------------------------------|-------------|
| Authorized for issue by: | | | |
| Tested By |  | | 2017-07-26 |
| | <hr/> | Foray Chen /Project Engineer | Date |
| Checked By |  | | 2017-07-26 |
| | <hr/> | Eric Fu /Reviewer | Date |



2 Test Summary

| Emission Part | | | | |
|---|-------------------------------|------------|-------------|--------|
| Item | Standard | Method | Requirement | Result |
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | 47 CFR Part 15,Subpart B:2016 | ANSI C63.4 | Class B | Pass |
| Radiated Emissions (30MHz-1GHz) | 47 CFR Part 15,Subpart B:2016 | ANSI C63.4 | Class B | Pass |
| Radiated Emissions (above 1GHz) | 47 CFR Part 15,Subpart B:2016 | ANSI C63.4 | Class B | Pass |

| InternalSource | UpperFrequency |
|--------------------|--|
| Below 1.705MHz | 30MHz |
| 1.705MHz to 108MHz | 1GHz |
| 108MHz to 500MHz | 2GHz |
| 500MHz to 1GHz | 5GHz |
| Above 1GHz | 5th harmonic of the highest frequency or 40GHz, whichever is lower |

Declaration of EUT Family Grouping:

Note1: There are series models mentioned in this report and they are the similar in electrical and electronic characters. Only the model DH-IPC-HFW5831EP-ZE was tested since their differences are pixels and sales.

Mote2: The report is copied from SZEM170700797701

(SHEM170700472201) to add models N65CB5Z, N25CB5Z, N45CB5Z which are the same as the original tested model DH-IPC-HFW5831EP-ZE in electrical and electronic characters. So the new models in this report are deemed to fulfill the EMC requirements without testing



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4 General Information

4.1 Details of E.U.T.

Power supply: DC12V/1A; /POE: 48V/260mA(max)
Cable: signal cable: about 0.3m
Internal source: 840MHz

4.2 Description of Support Units

| Description | Manufacturer | Model No. |
|---------------------|--------------|-----------------|
| Laptop 1 | LENOVO | R400 |
| Switching Adapter 1 | Aoepower | BSW0127-1210002 |
| PoE Adapter | PowerDsine | PD-9001GR/AC |

4.3 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|---------------------|-------------------------|
| 1 | Conduction emission | 3.0dB (150kHz to 30MHz) |
| 2 | Radiated emission | 4.5dB (30MHz-1GHz) |
| 3 | Temperature test | 1 °C |
| 4 | Humidity test | 3% |



4.4 Standards Applicable for Testing

Table 1 : Tests Carried Out Under 47 CFR Part 15,Subpart B:2016

| Item | Status |
|---|---------------|
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | √ |
| Radiated Emissions (30MHz-1GHz) | √ |
| Radiated Emissions (above 1GHz) | √ |

- × Indicates that the test is not applicable
- √ Indicates that the test is applicable



4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None



5 Equipment List

| Conducted Emissions at Mains Terminals (150kHz-30MHz) | | | | | |
|--|---------------------|-----------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| EMI test receiver | Rohde & Schwarz | ESR7 | SHEM162-1 | 2016-12-29 | 2017-12-28 |
| Line impedance stabilization network | SCHWARZBECK | NSLK8127 | SHEM061-1 | 2016-12-29 | 2017-12-28 |
| Line impedance stabilization network | EMCO | 3816/2 | SHEM019-1 | 2016-12-29 | 2017-12-28 |
| Pulse limiter | Rohde & Schwarz | ESH3-Z2 | SHEM029-1 | 2016-08-12 | 2017-08-11 |
| Shielding Room | ZHONGYU | 8*4*3M | SHEM079-2 | 2016-08-17 | 2017-08-16 |

| Radiated Emissions (30MHz-1GHz) | | | | | |
|--|---------------------|-------------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| EMI test receiver | Rohde & Schwarz | ESU40 | SHEM051-1 | 2016-08-12 | 2017-08-11 |
| CONTROLLER | INNCO | CO200 | SHEM047-1 | N/A | N/A |
| ANTENNA MAST | INNCO | MA400-EP | SHEM047-2 | N/A | N/A |
| TURN DEVICE | INNCO | DE 3600-RH | SHEM047-3 | N/A | N/A |
| Broadband UHF-VHF ANTENNA | SCHWARZBECK | VULB9168 | SHEM048-1 | 2016-12-29 | 2017-12-28 |
| Low Frequency Amplifier | CLAVIO | BDLNA-0001-412010 | SHEM164-1 | 2016-08-12 | 2017-08-11 |
| Semi/Fully Anechoic | ST | 11*6*6M | SHEM078-2 | 2016-08-17 | 2017-08-16 |

| Radiated Emissions (above 1GHz) | | | | | |
|--|---------------------|----------------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| EMI test receiver | Rohde & Schwarz | ESU40 | SHEM051-1 | 2016-08-12 | 2017-08-11 |
| CONTROLLER | INNCO | CO200 | SHEM047-1 | N/A | N/A |
| ANTENNA MAST | INNCO | MA400-EP | SHEM047-2 | N/A | N/A |
| TURN DEVICE | INNCO | DE 3600-RH | SHEM047-3 | N/A | N/A |
| Double ridged broadband horn ANTENNA | SCHWARZBECK | BBHA9120D | SHEM050-1 | 2017-01-16 | 2018-01-15 |
| High-amplifier | SCHWARZBECK | SCU-F0118-G40-BZ4-CS | SHEM050-2 | 2017-01-14 | 2018-01-13 |
| Semi/Fully Anechoic | ST | 11*6*6M | SHEM078-2 | 2016-08-17 | 2017-08-16 |

| General used equipment | | | | | |
|-------------------------------|-----------------------------|-----------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| Digital pressure meter | YONGZHI | DYM3-01 | SHEM082-1 | 2017-03-03 | 2018-03-02 |
| Temperature&humidity recorder | ShangHai weather meter work | ZJ 1-2B | SHEM042-1~6 | 2016-08-19 | 2017-08-18 |
| Digital Multimeter | FLUKE | 17B | SHEM043-5 | 2016-08-15 | 2017-08-14 |
| Autofomer regulator | Guangzhou bao de | TDGC2-5KVA | SHEM150-1 | N/A | N/A |
| Multi-purpose tong tester | FLUKE | 316 | SHEM001-1 | 2017-01-29 | 2018-01-28 |

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

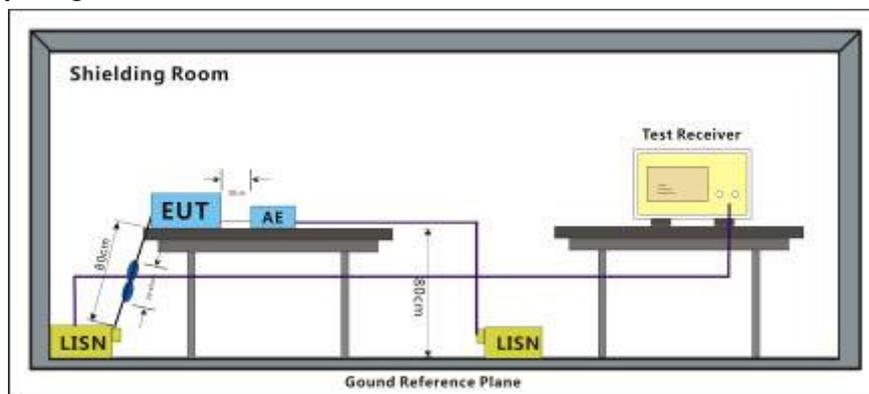
| | |
|-------------------|--|
| Test Requirement: | 47 CFR Part 15, Subpart B:2016 |
| Test Method: | ANSI C63.4 |
| Frequency Range: | 150kHz to 30MHz |
| Limit: | |
| 0.15M-0.5MHz | 66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average |
| 0.5M-5MHz | 56dB(μV) quasi-peak, 46dB(μV) average |
| 5M-30MHz | 60dB(μV) quasi-peak, 50dB(μV) average |
| Detector: | Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz |

6.1.1 E.U.T. Operation

Operating Environment:

| | | | | | |
|--------------|---|-----------|---------|-----------------------|-----------|
| Temperature: | 22 °C | Humidity: | 50 % RH | Atmospheric Pressure: | 1005 mbar |
| Test Mode: | a: DC12V supply : supply by DC12V adapter , keep EUT monitoring continual . | | | | |
| | b: PoE supply : supply by PoE adapter , keep EUT monitoring continual . | | | | |

6.1.2 Test Setup Diagram

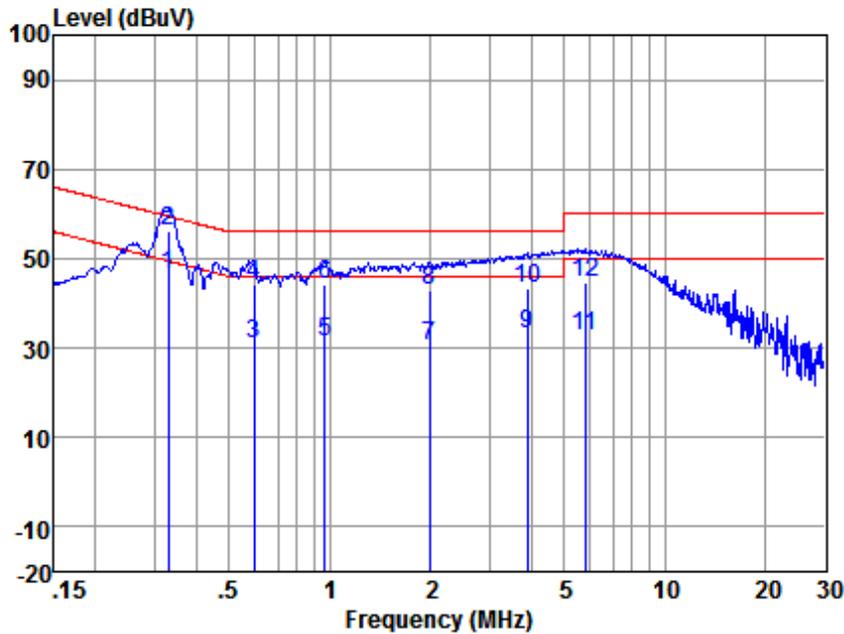


6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



Mode:a; Line:Live Line

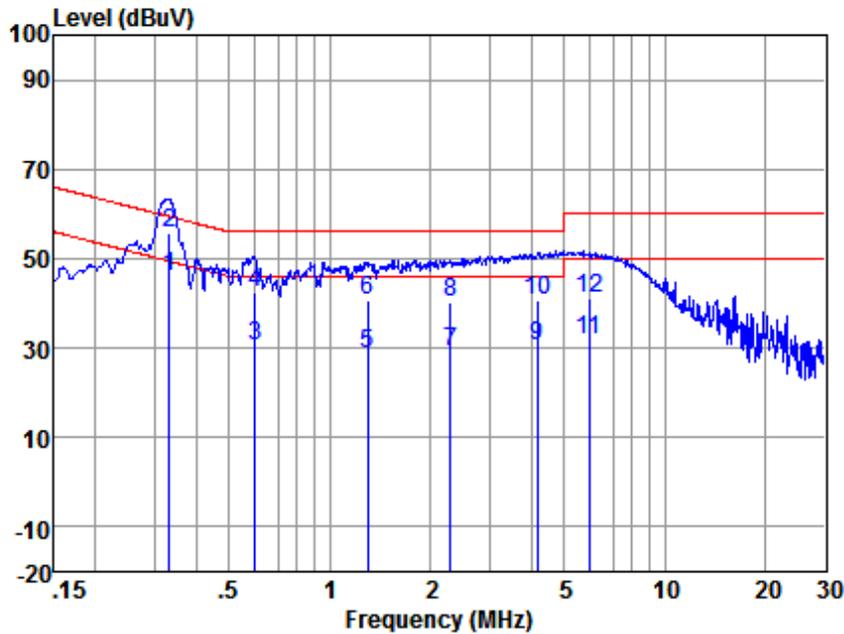


Site : chamber
Condition : LISN-L-2016
Project No: 4722IT
Test mode : a

| | Freq | Read Level | LISN Factor | Cable Loss | Limit Level | Over Limit | Remark |
|----|-------|------------|-------------|------------|-------------|------------|----------------|
| | MHz | dBuV | dB | dB | dBuV | dB | |
| 1 | 0.329 | 36.36 | 0.09 | 9.81 | 46.26 | 49.49 | -3.23 Average |
| 2 | 0.329 | 46.32 | 0.09 | 9.81 | 56.22 | 59.49 | -3.27 QP |
| 3 | 0.595 | 21.16 | 0.10 | 9.82 | 31.08 | 46.00 | -14.92 Average |
| 4 | 0.595 | 34.36 | 0.10 | 9.82 | 44.28 | 56.00 | -11.72 QP |
| 5 | 0.968 | 21.25 | 0.08 | 9.84 | 31.17 | 46.00 | -14.83 Average |
| 6 | 0.968 | 34.39 | 0.08 | 9.84 | 44.31 | 56.00 | -11.69 QP |
| 7 | 1.991 | 20.40 | 0.08 | 9.85 | 30.33 | 46.00 | -15.67 Average |
| 8 | 1.991 | 32.77 | 0.08 | 9.85 | 42.70 | 56.00 | -13.30 QP |
| 9 | 3.881 | 23.12 | 0.13 | 9.85 | 33.10 | 46.00 | -12.90 Average |
| 10 | 3.881 | 33.41 | 0.13 | 9.85 | 43.39 | 56.00 | -12.61 QP |
| 11 | 5.805 | 22.62 | 0.16 | 9.86 | 32.64 | 50.00 | -17.36 Average |
| 12 | 5.805 | 34.48 | 0.16 | 9.86 | 44.50 | 60.00 | -15.50 QP |



Mode:a; Line:Neutral Line

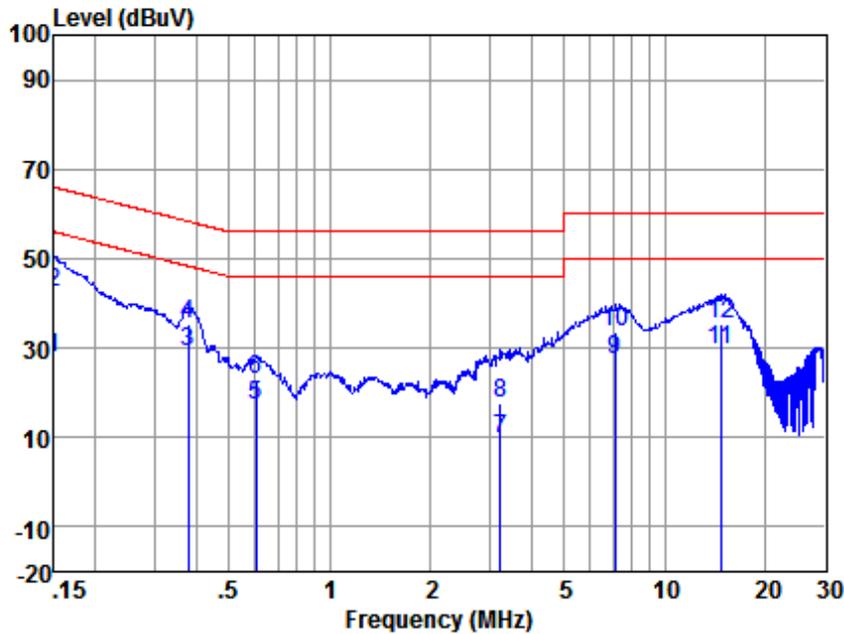


Site : chamber
Condition : LISN-N-2016
Project No: 4722IT
Test mode : a

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|----|-------|------------|-------------|------------|-------|------------|------------|---------|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.332 | 36.08 | 0.04 | 9.81 | 45.93 | 49.40 | -3.47 | Average |
| 2 | 0.332 | 45.66 | 0.04 | 9.81 | 55.51 | 59.40 | -3.89 | QP |
| 3 | 0.598 | 20.50 | 0.05 | 9.82 | 30.37 | 46.00 | -15.63 | Average |
| 4 | 0.598 | 32.35 | 0.05 | 9.82 | 42.22 | 56.00 | -13.78 | QP |
| 5 | 1.303 | 18.89 | 0.05 | 9.84 | 28.78 | 46.00 | -17.22 | Average |
| 6 | 1.303 | 30.96 | 0.05 | 9.84 | 40.85 | 56.00 | -15.15 | QP |
| 7 | 2.297 | 19.31 | 0.08 | 9.85 | 29.24 | 46.00 | -16.76 | Average |
| 8 | 2.297 | 30.29 | 0.08 | 9.85 | 40.22 | 56.00 | -15.78 | QP |
| 9 | 4.158 | 20.57 | 0.16 | 9.85 | 30.58 | 46.00 | -15.42 | Average |
| 10 | 4.158 | 30.63 | 0.16 | 9.85 | 40.64 | 56.00 | -15.36 | QP |
| 11 | 5.961 | 21.74 | 0.19 | 9.86 | 31.79 | 50.00 | -18.21 | Average |
| 12 | 5.961 | 31.03 | 0.19 | 9.86 | 41.08 | 60.00 | -18.92 | QP |



Mode:b; Line:Live Line

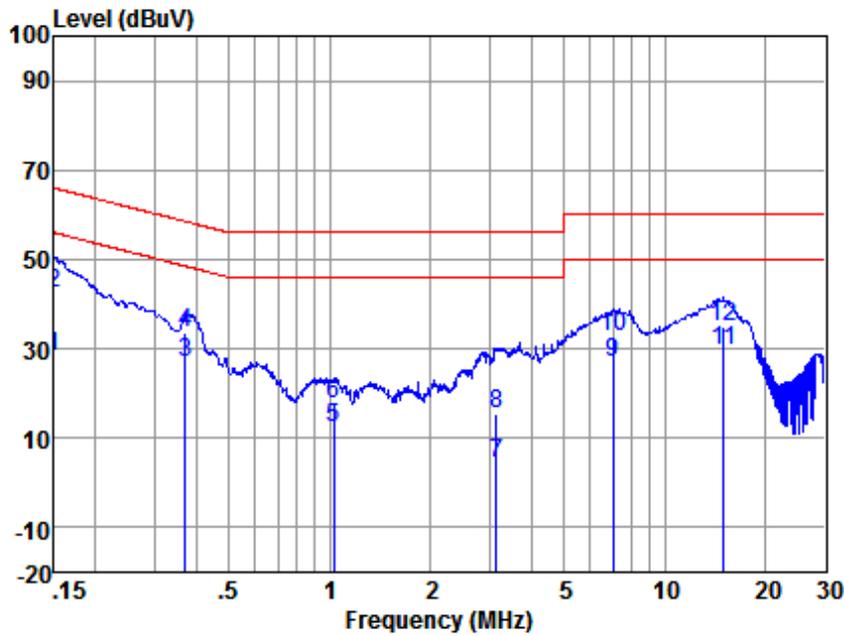


Site : chamber
Condition : LISN-L-2016
Project No: 4722IT
Test mode : b

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|----|--------|------------|-------------|------------|-------|------------|------------|---------|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.150 | 18.17 | 0.05 | 9.81 | 28.03 | 56.00 | -27.97 | Average |
| 2 | 0.150 | 32.53 | 0.05 | 9.81 | 42.39 | 66.00 | -23.61 | QP |
| 3 | 0.377 | 19.24 | 0.10 | 9.81 | 29.15 | 48.34 | -19.19 | Average |
| 4 | 0.377 | 25.54 | 0.10 | 9.81 | 35.45 | 58.34 | -22.89 | QP |
| 5 | 0.604 | 7.26 | 0.10 | 9.82 | 17.18 | 46.00 | -28.82 | Average |
| 6 | 0.604 | 13.01 | 0.10 | 9.82 | 22.93 | 56.00 | -33.07 | QP |
| 7 | 3.224 | -0.42 | 0.12 | 9.85 | 9.55 | 46.00 | -36.45 | Average |
| 8 | 3.224 | 7.81 | 0.12 | 9.85 | 17.78 | 56.00 | -38.22 | QP |
| 9 | 7.137 | 17.48 | 0.17 | 9.86 | 27.51 | 50.00 | -22.49 | Average |
| 10 | 7.137 | 23.35 | 0.17 | 9.86 | 33.38 | 60.00 | -26.62 | QP |
| 11 | 14.750 | 19.56 | 0.22 | 10.01 | 29.79 | 50.00 | -20.21 | Average |
| 12 | 14.750 | 25.09 | 0.22 | 10.01 | 35.32 | 60.00 | -24.68 | QP |



Mode:b; Line:Neutral Line



Site : chamber
Condition : LISN-N-2016
Project No: 4722IT
Test mode : b

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|----|--------|------------|-------------|------------|-------|------------|------------|---------|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.150 | 18.54 | 0.05 | 9.81 | 28.40 | 56.00 | -27.60 | Average |
| 2 | 0.150 | 32.65 | 0.05 | 9.81 | 42.51 | 66.00 | -23.49 | QP |
| 3 | 0.371 | 17.11 | 0.04 | 9.81 | 26.96 | 48.47 | -21.51 | Average |
| 4 | 0.371 | 23.52 | 0.04 | 9.81 | 33.37 | 58.47 | -25.10 | QP |
| 5 | 1.027 | 2.48 | 0.05 | 9.84 | 12.37 | 46.00 | -33.63 | Average |
| 6 | 1.027 | 7.81 | 0.05 | 9.84 | 17.70 | 56.00 | -38.30 | QP |
| 7 | 3.140 | -5.49 | 0.12 | 9.85 | 4.48 | 46.00 | -41.52 | Average |
| 8 | 3.140 | 5.65 | 0.12 | 9.85 | 15.62 | 56.00 | -40.38 | QP |
| 9 | 7.025 | 17.03 | 0.19 | 9.86 | 27.08 | 50.00 | -22.92 | Average |
| 10 | 7.025 | 22.81 | 0.19 | 9.86 | 32.86 | 60.00 | -27.14 | QP |
| 11 | 14.986 | 19.21 | 0.26 | 10.01 | 29.48 | 50.00 | -20.52 | Average |
| 12 | 14.986 | 24.68 | 0.26 | 10.01 | 34.95 | 60.00 | -25.05 | QP |

6.2 Radiated Emissions (30MHz-1GHz)

| | |
|-----------------------|---|
| Test Requirement: | 47 CFR Part 15, Subpart B:2016 |
| Test Method: | ANSI C63.4 |
| Frequency Range: | 30MHz to 1GHz |
| Measurement Distance: | 3m |
| Limit: | |
| 30MHz -88MHz | 40.0(dBμV/m) quasi-peak |
| 88MHz-216MHz | 43.5(dBμV/m) quasi-peak |
| 216MHz-960MHz | 46.0(dBμV/m) quasi-peak |
| 960MHz-1000MHz | 54.0(dBμV/m) quasi-peak |
| Detector: | Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz |

6.2.1 E.U.T. Operation

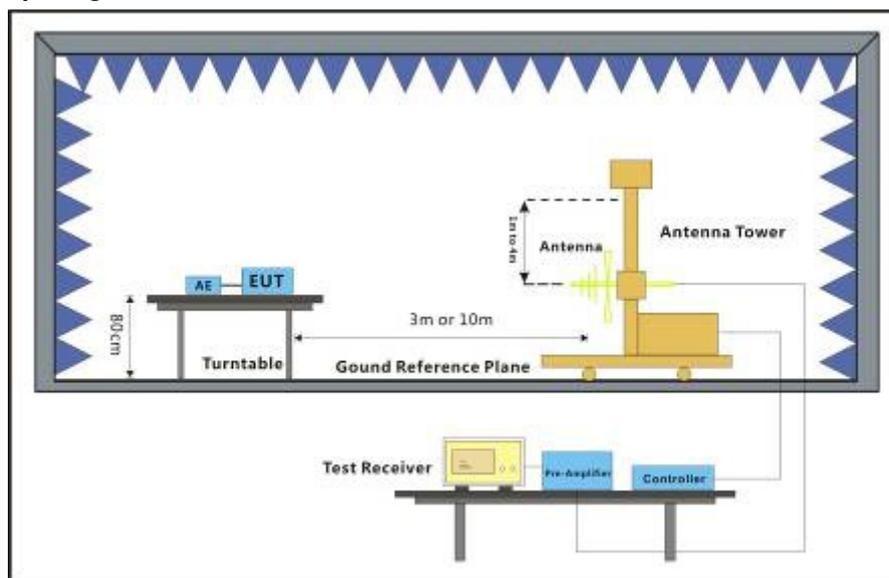
Operating Environment:

Temperature: 20 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Test Mode: a: DC12V supply : supply by DC12V adapter , keep EUT monitoring continual .

b: PoE supply : supply by PoE adapter , keep EUT monitoring continual .

6.2.2 Test Setup Diagram

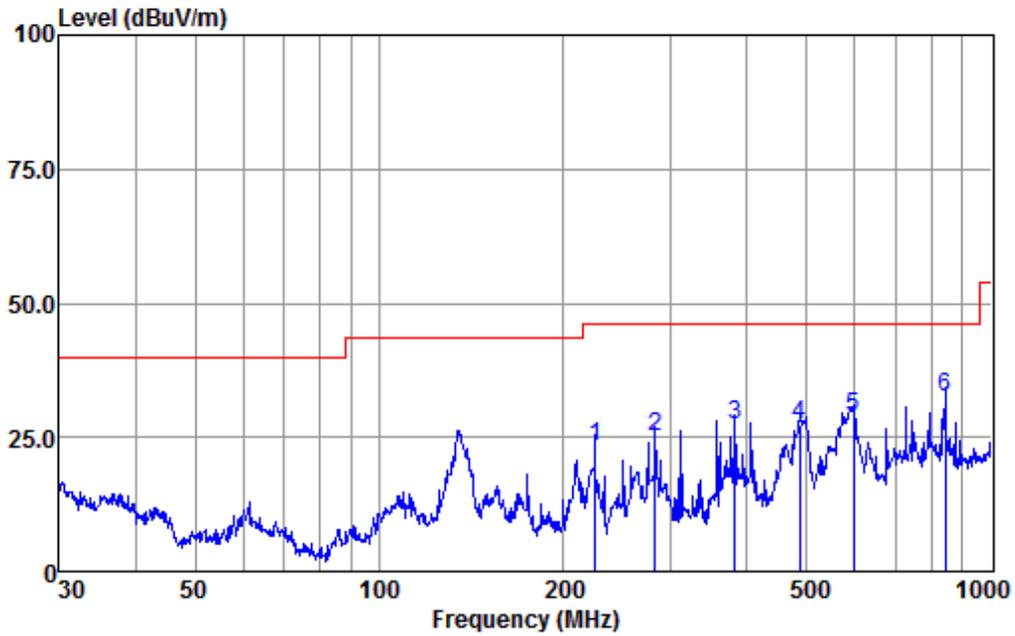


6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



Mode:a; Polarization:Horizontal

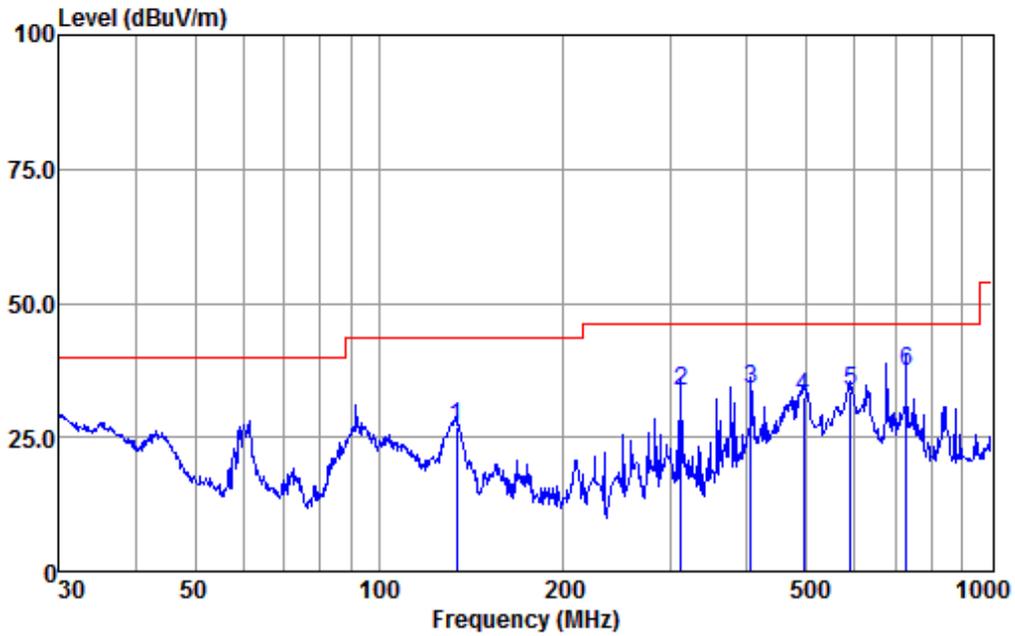


Condition : HORIZONTAL
EUT/Project: 4722IT
Test mode : a

| | ReadAntenna | Cable | Preamp | Limit | Over | | | |
|------|-------------|--------|--------|--------|--------|--------|-------|-----------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 225.31 | 54.50 | 10.51 | 0.73 | 42.46 | 23.28 | 46.00 | -22.72 QP |
| 2 | 282.99 | 53.98 | 12.64 | 0.82 | 42.37 | 25.07 | 46.00 | -20.93 QP |
| 3 | 381.25 | 53.72 | 14.78 | 0.96 | 42.14 | 27.32 | 46.00 | -18.68 QP |
| 4 | 487.32 | 51.27 | 16.97 | 1.16 | 42.12 | 27.28 | 46.00 | -18.72 QP |
| 5 | 597.22 | 50.32 | 19.36 | 1.36 | 42.19 | 28.85 | 46.00 | -17.15 QP |
| 6 q | 842.13 | 50.28 | 22.25 | 2.21 | 42.28 | 32.46 | 46.00 | -13.54 QP |



Mode:a; Polarization:Vertical

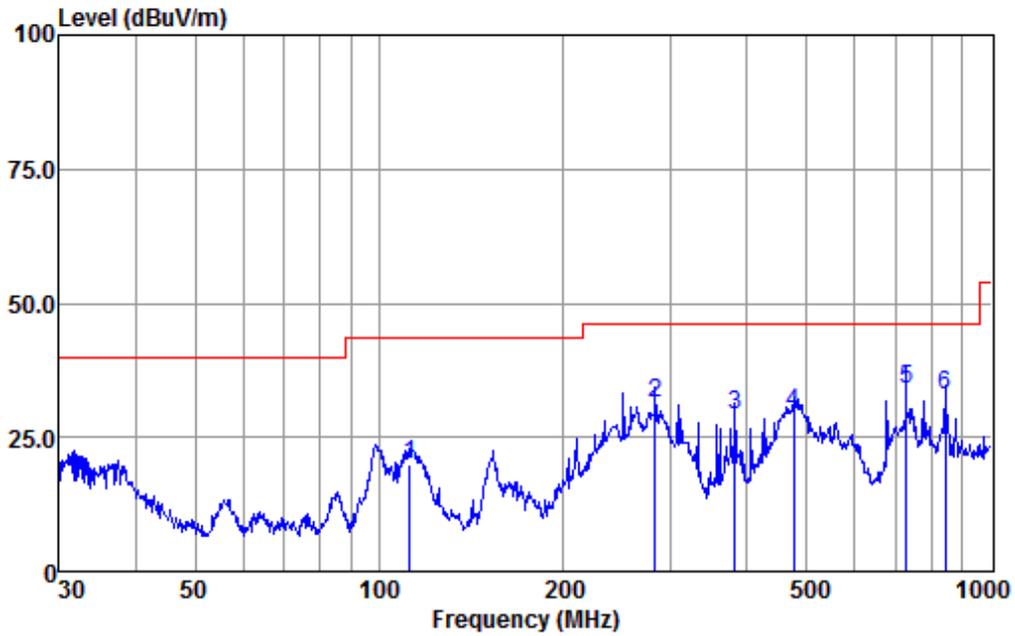


Condition : VERTICAL
EUT/Project: 4722IT
Test mode : a

| | ReadAntenna | Cable | Preamp | Limit | Over | | | |
|------|-------------|--------|--------|--------|--------|--------|-------|-----------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 134.09 | 56.85 | 12.16 | 0.59 | 42.61 | 26.99 | 43.50 | -16.51 QP |
| 2 | 312.18 | 61.68 | 13.45 | 0.86 | 42.31 | 33.68 | 46.00 | -12.32 QP |
| 3 | 406.09 | 59.84 | 15.23 | 1.01 | 42.07 | 34.01 | 46.00 | -11.99 QP |
| 4 | 494.20 | 56.24 | 17.10 | 1.17 | 42.12 | 32.39 | 46.00 | -13.61 QP |
| 5 | 588.91 | 55.19 | 19.19 | 1.35 | 42.18 | 33.55 | 46.00 | -12.45 QP |
| 6 q | 726.81 | 57.20 | 20.69 | 1.81 | 42.43 | 37.27 | 46.00 | -8.73 QP |



Mode:b; Polarization:Horizontal

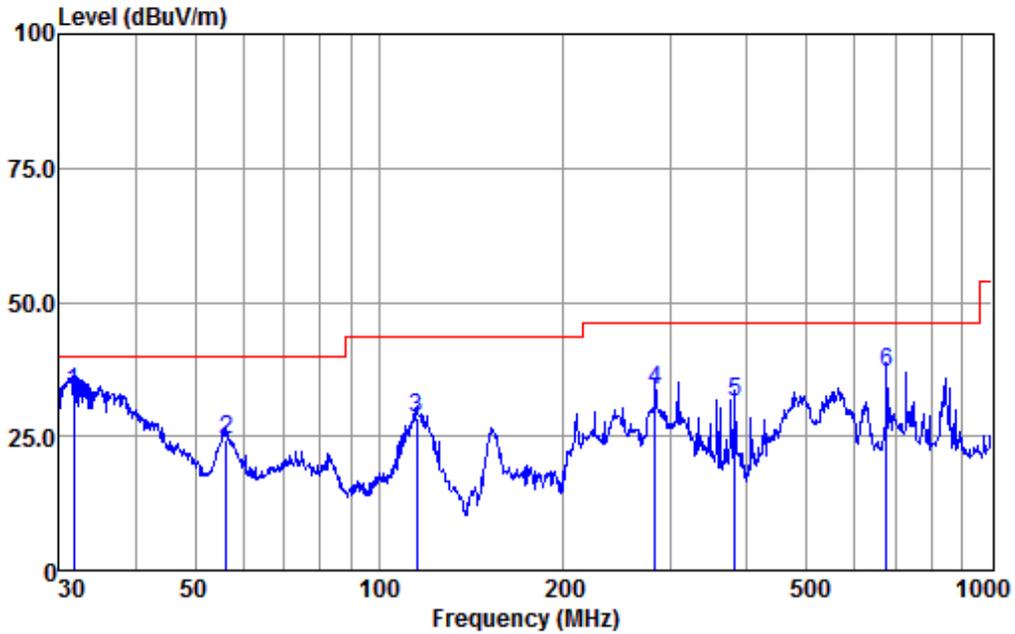


Condition : HORIZONTAL
EUT/Project: 4722IT
Test mode : b

| | ReadAntenna | Cable | Preamp | Limit | Over | | | |
|------|-------------|--------|--------|--------|--------|--------|-------|-----------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 112.13 | 52.55 | 9.68 | 0.51 | 42.70 | 20.04 | 43.50 | -23.46 QP |
| 2 | 282.99 | 60.37 | 12.64 | 0.82 | 42.37 | 31.46 | 46.00 | -14.54 QP |
| 3 | 381.25 | 55.66 | 14.78 | 0.96 | 42.14 | 29.26 | 46.00 | -16.74 QP |
| 4 | 475.50 | 53.85 | 16.73 | 1.15 | 42.11 | 29.62 | 46.00 | -16.38 QP |
| 5 q | 726.81 | 53.93 | 20.69 | 1.81 | 42.43 | 34.00 | 46.00 | -12.00 QP |
| 6 | 842.13 | 50.58 | 22.25 | 2.21 | 42.28 | 32.76 | 46.00 | -13.24 QP |



Mode:b; Polarization:Vertical



Condition : VERTICAL
EUT/Project: 4722IT
Test mode : b

| | Freq | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|-----|--------|----------------------|-------------------|---------------|------------------|--------|---------------|---------------|--------|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 q | 31.73 | 60.24 | 15.50 | 0.19 | 42.67 | 33.26 | 40.00 | -6.74 | QP |
| 2 | 56.20 | 54.94 | 11.87 | 0.28 | 42.69 | 24.40 | 40.00 | -15.60 | QP |
| 3 | 115.32 | 60.91 | 9.82 | 0.52 | 42.69 | 28.56 | 43.50 | -14.94 | QP |
| 4 | 282.99 | 62.65 | 12.64 | 0.82 | 42.37 | 33.74 | 46.00 | -12.26 | QP |
| 5 | 381.25 | 57.88 | 14.78 | 0.96 | 42.14 | 31.48 | 46.00 | -14.52 | QP |
| 6 | 675.21 | 57.54 | 20.02 | 1.61 | 42.24 | 36.93 | 46.00 | -9.07 | QP |

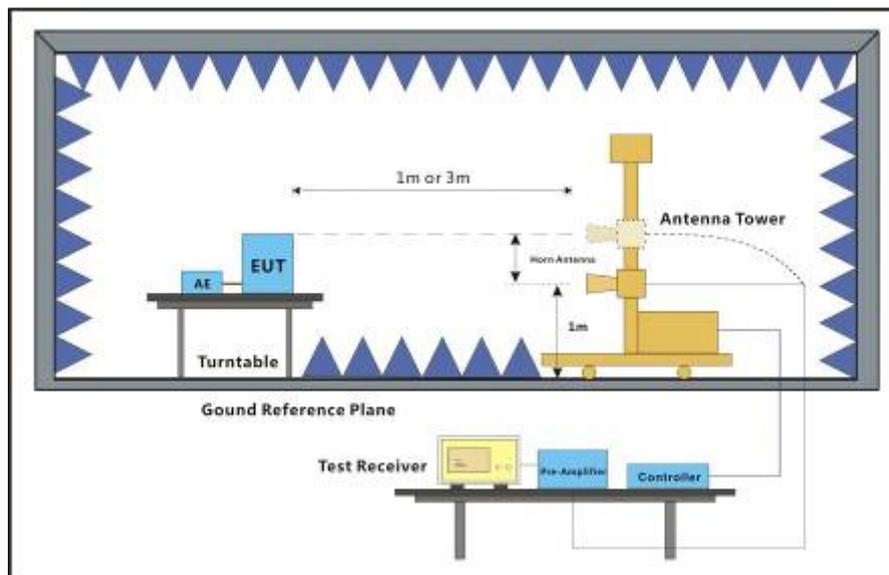
6.3 Radiated Emissions (above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B:2016
 Test Method: ANSI C63.4
 Frequency Range: Above 1GHz
 Measurement Distance: 3m
 Limit:
 Above 1GHz 74(dB μ V/m) peak, 54(dB μ V/m) average
 Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to 18000MHz

6.3.1 E.U.T. Operation

Operating Environment:
 Temperature: 20 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar
 Test Mode:
 a: DC12V supply : supply by DC12V adapter , keep EUT monitoring continual .
 b: PoE supply : supply by PoE adapter , keep EUT monitoring continual .

6.3.2 Test Setup Diagram

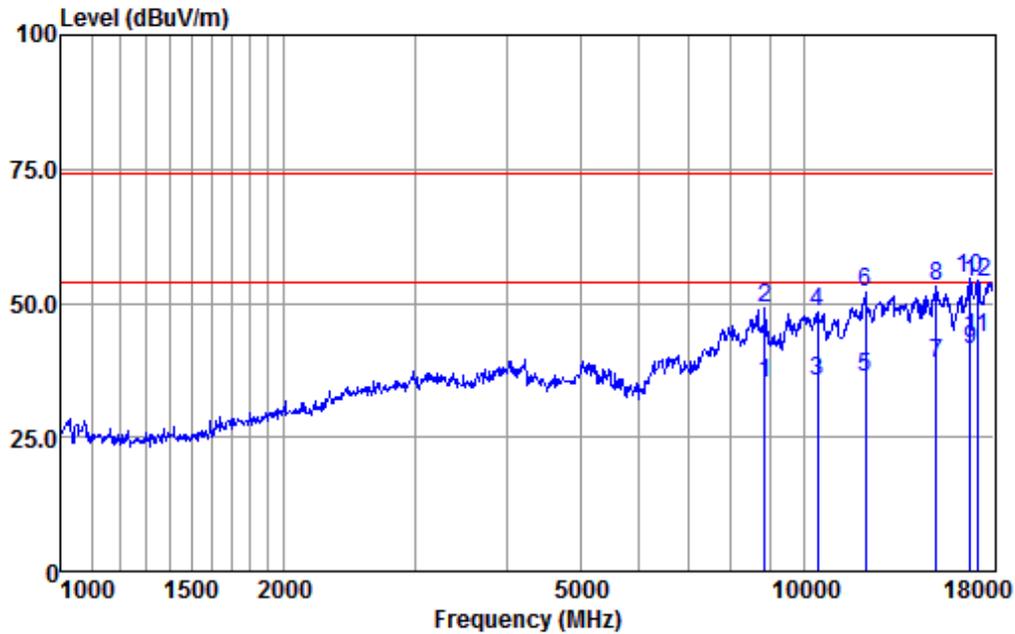


6.3.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



Mode:a; Polarization:Horizontal

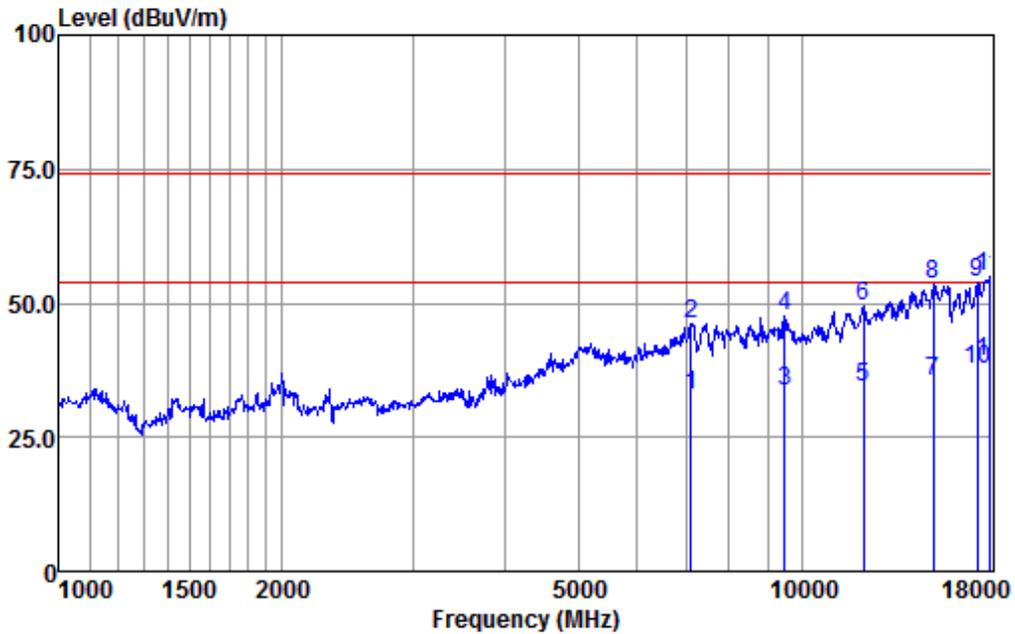


Condition : HORIZONTAL
EUT/Project: 4722IT
Test Mode : a

| | ReadAntenna | Cable | Preamp | Limit | Over | | | | |
|------|-------------|--------|--------|--------|--------|--------|-------|----------------|--|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark | |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | | |
| 1 | 8866.06 | 30.75 | 37.17 | 9.43 | 42.35 | 35.00 | 54.00 | -19.00 Average | |
| 2 | 8866.06 | 44.85 | 37.17 | 9.43 | 42.35 | 49.10 | 74.00 | -24.90 Peak | |
| 3 | 10453.97 | 28.17 | 39.63 | 9.63 | 42.14 | 35.29 | 54.00 | -18.71 Average | |
| 4 | 10453.97 | 41.09 | 39.63 | 9.63 | 42.14 | 48.21 | 74.00 | -25.79 Peak | |
| 5 | 12114.35 | 29.31 | 38.97 | 9.92 | 41.98 | 36.22 | 54.00 | -17.78 Average | |
| 6 | 12114.35 | 45.03 | 38.97 | 9.92 | 41.98 | 51.94 | 74.00 | -22.06 Peak | |
| 7 | 15090.40 | 28.97 | 40.92 | 10.18 | 41.41 | 38.66 | 54.00 | -15.34 Average | |
| 8 | 15090.40 | 43.44 | 40.92 | 10.18 | 41.41 | 53.13 | 74.00 | -20.87 Peak | |
| 9 | 16793.68 | 31.66 | 39.76 | 11.35 | 41.31 | 41.46 | 54.00 | -12.54 Average | |
| 10 p | 16793.68 | 44.77 | 39.76 | 11.35 | 41.31 | 54.57 | 74.00 | -19.43 Peak | |
| 11 | 17136.92 | 31.93 | 41.32 | 11.74 | 41.30 | 43.69 | 54.00 | -10.31 Average | |
| 12 | 17136.92 | 42.18 | 41.32 | 11.74 | 41.30 | 53.94 | 74.00 | -20.06 Peak | |



Mode:a; Polarization:Vertical

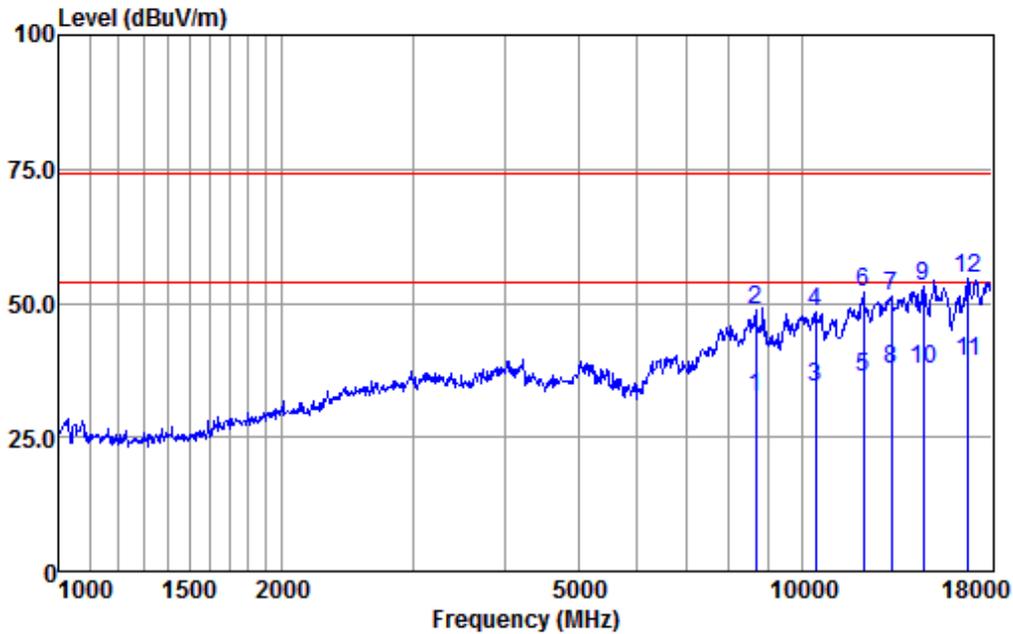


Condition : VERTICAL
EUT/Project: 4722IT
Test Mode : a

| | ReadAntenna | Cable | Preamp | Limit | Over | | | | |
|------|-------------|--------|--------|--------|--------|--------|-------|----------------|--|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark | |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | | |
| 1 | 7097.00 | 30.87 | 35.67 | 8.69 | 42.29 | 32.94 | 54.00 | -21.06 Average | |
| 2 | 7097.00 | 44.19 | 35.67 | 8.69 | 42.29 | 46.26 | 74.00 | -27.74 Peak | |
| 3 | 9502.93 | 27.93 | 38.50 | 9.62 | 42.33 | 33.72 | 54.00 | -20.28 Average | |
| 4 | 9502.93 | 41.71 | 38.50 | 9.62 | 42.33 | 47.50 | 74.00 | -26.50 Peak | |
| 5 | 12114.35 | 27.37 | 38.97 | 9.92 | 41.98 | 34.28 | 54.00 | -19.72 Average | |
| 6 | 12114.35 | 42.67 | 38.97 | 9.92 | 41.98 | 49.58 | 74.00 | -24.42 Peak | |
| 7 | 15046.85 | 25.69 | 41.11 | 10.18 | 41.39 | 35.59 | 54.00 | -18.41 Average | |
| 8 | 15046.85 | 43.60 | 41.11 | 10.18 | 41.39 | 53.50 | 74.00 | -20.50 Peak | |
| 9 | 17236.28 | 41.47 | 41.80 | 11.74 | 41.28 | 53.73 | 74.00 | -20.27 Peak | |
| 10 | 17236.28 | 25.51 | 41.80 | 11.74 | 41.28 | 37.77 | 54.00 | -16.23 Average | |
| 11 p | 17896.25 | 34.57 | 49.32 | 12.83 | 41.74 | 54.98 | 74.00 | -19.02 Peak | |
| 12 | 17896.25 | 18.78 | 49.32 | 12.83 | 41.74 | 39.19 | 54.00 | -14.81 Average | |



Mode:b; Polarization:Horizontal

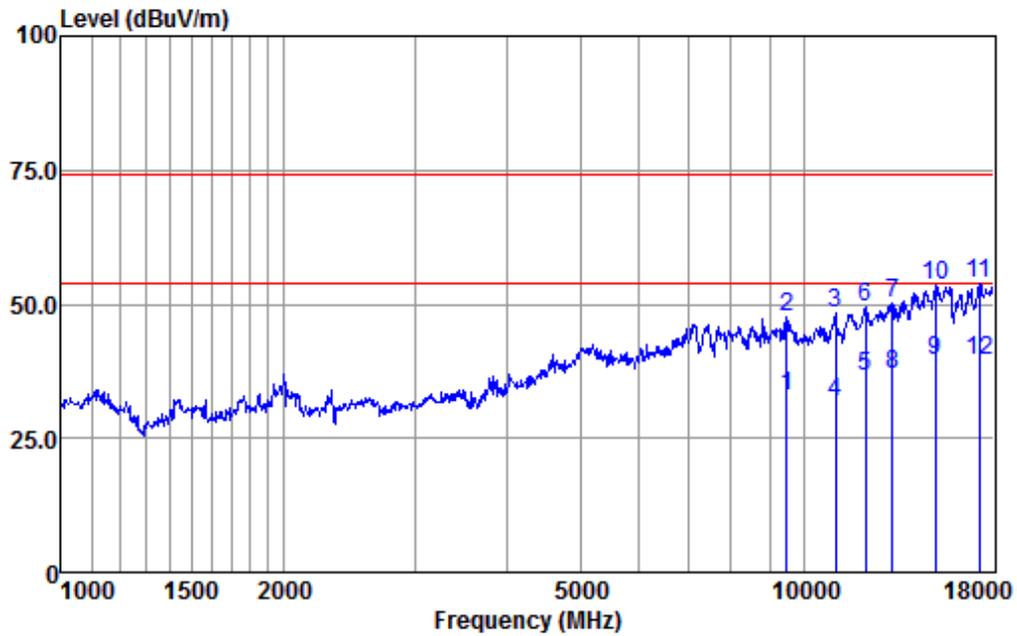


Condition : HORIZONTAL
EUT/Project: 4722IT
Test Mode : b

| | ReadAntenna | Cable | Preamp | Limit | Over | | | | |
|------|-------------|--------|--------|--------|--------|--------|-------|----------------|--|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark | |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | | |
| 1 | 8688.48 | 28.33 | 37.00 | 9.34 | 42.21 | 32.46 | 54.00 | -21.54 Average | |
| 2 | 8688.48 | 44.61 | 37.00 | 9.34 | 42.21 | 48.74 | 74.00 | -25.26 Peak | |
| 3 | 10453.97 | 27.17 | 39.63 | 9.63 | 42.14 | 34.29 | 54.00 | -19.71 Average | |
| 4 | 10453.97 | 41.09 | 39.63 | 9.63 | 42.14 | 48.21 | 74.00 | -25.79 Peak | |
| 5 | 12114.35 | 29.31 | 38.97 | 9.92 | 41.98 | 36.22 | 54.00 | -17.78 Average | |
| 6 | 12114.35 | 45.03 | 38.97 | 9.92 | 41.98 | 51.94 | 74.00 | -22.06 Peak | |
| 7 | 13211.69 | 43.30 | 39.67 | 10.18 | 41.94 | 51.21 | 74.00 | -22.79 Peak | |
| 8 | 13211.69 | 29.75 | 39.67 | 10.18 | 41.94 | 37.66 | 54.00 | -16.34 Average | |
| 9 | 14618.17 | 42.59 | 41.75 | 10.24 | 41.35 | 53.23 | 74.00 | -20.77 Peak | |
| 10 | 14618.17 | 27.13 | 41.75 | 10.24 | 41.35 | 37.77 | 54.00 | -16.23 Average | |
| 11 | 16793.68 | 29.37 | 39.76 | 11.35 | 41.31 | 39.17 | 54.00 | -14.83 Average | |
| 12 p | 16793.68 | 44.77 | 39.76 | 11.35 | 41.31 | 54.57 | 74.00 | -19.43 Peak | |



Mode:b; Polarization:Vertical



Condition : VERTICAL
EUT/Project: 4722IT
Test Mode : b

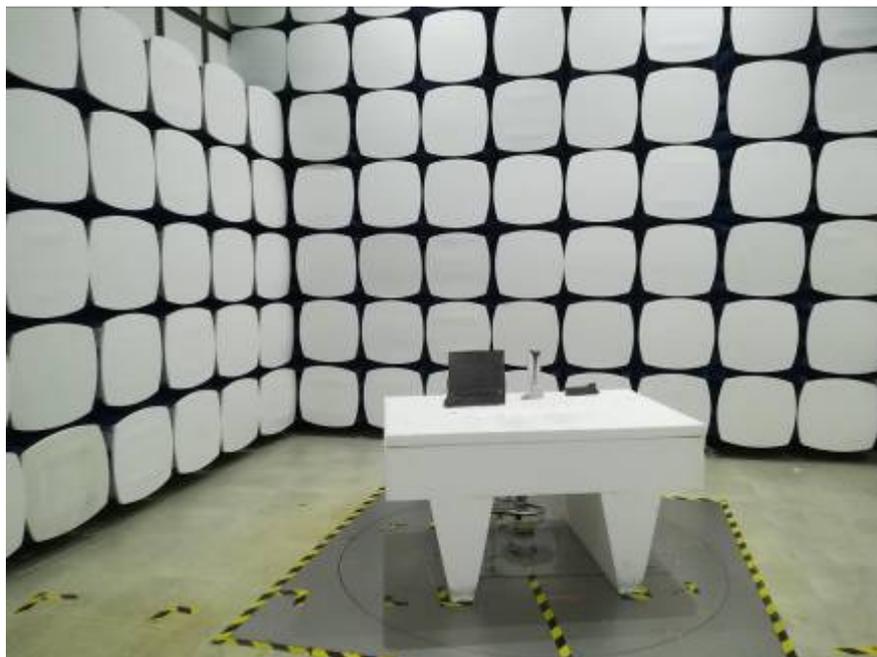
| | Freq | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|----|----------|----------------------|-------------------|---------------|------------------|--------|---------------|---------------|---------|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 9502.93 | 26.93 | 38.50 | 9.62 | 42.33 | 32.72 | 54.00 | -21.28 | Average |
| 2 | 9502.93 | 41.71 | 38.50 | 9.62 | 42.33 | 47.50 | 74.00 | -26.50 | Peak |
| 3 | 11044.13 | 39.87 | 40.48 | 9.64 | 41.65 | 48.34 | 74.00 | -25.66 | Peak |
| 4 | 11044.13 | 23.42 | 40.48 | 9.64 | 41.65 | 31.89 | 54.00 | -22.11 | Average |
| 5 | 12114.35 | 29.67 | 38.97 | 9.92 | 41.98 | 36.58 | 54.00 | -17.42 | Average |
| 6 | 12114.35 | 42.67 | 38.97 | 9.92 | 41.98 | 49.58 | 74.00 | -24.42 | Peak |
| 7 | 13173.56 | 42.17 | 39.61 | 10.14 | 41.92 | 50.00 | 74.00 | -24.00 | Peak |
| 8 | 13173.56 | 29.02 | 39.61 | 10.14 | 41.92 | 36.85 | 54.00 | -17.15 | Average |
| 9 | 15046.85 | 29.69 | 41.11 | 10.18 | 41.39 | 39.59 | 54.00 | -14.41 | Average |
| 10 | 15046.85 | 43.60 | 41.11 | 10.18 | 41.39 | 53.50 | 74.00 | -20.50 | Peak |
| 11 | 17236.28 | 41.47 | 41.80 | 11.74 | 41.28 | 53.73 | 74.00 | -20.27 | Peak |
| 12 | 17236.28 | 27.23 | 41.80 | 11.74 | 41.28 | 39.49 | 54.00 | -14.51 | Average |

7 Photographs

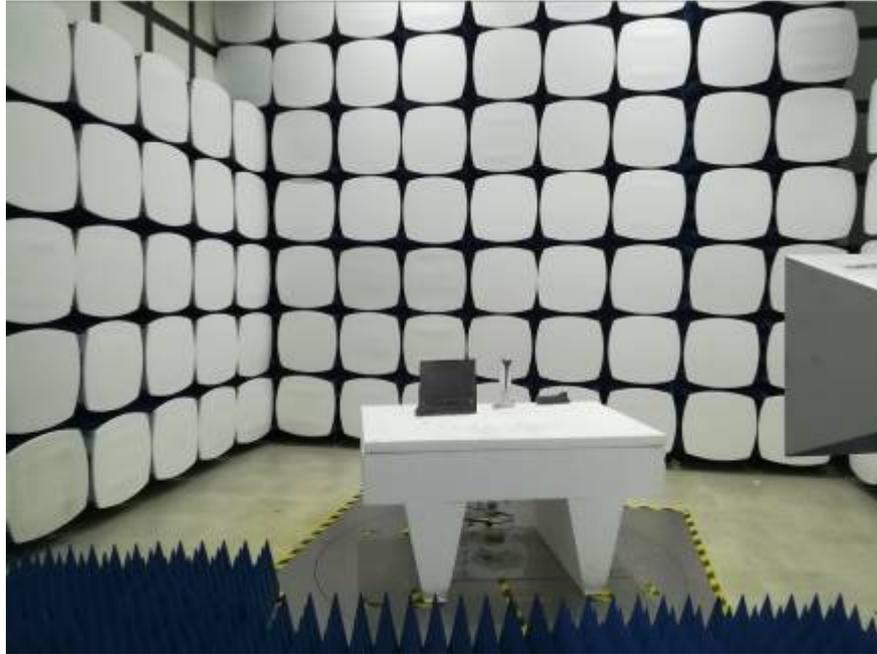
7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup



7.2 Radiated Emissions (30MHz-1GHz) Test Setup



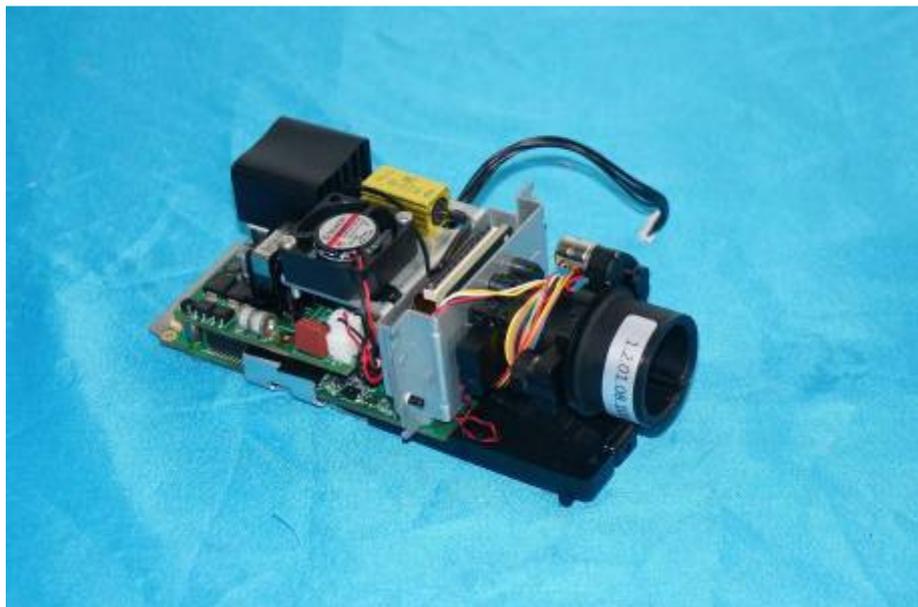
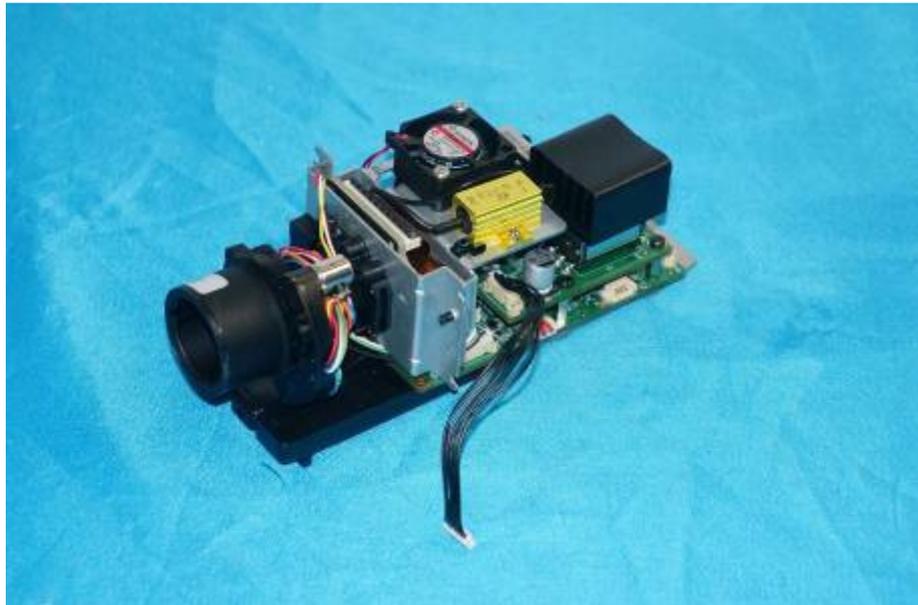
7.3 Radiated Emissions (above 1GHz) Test Setup

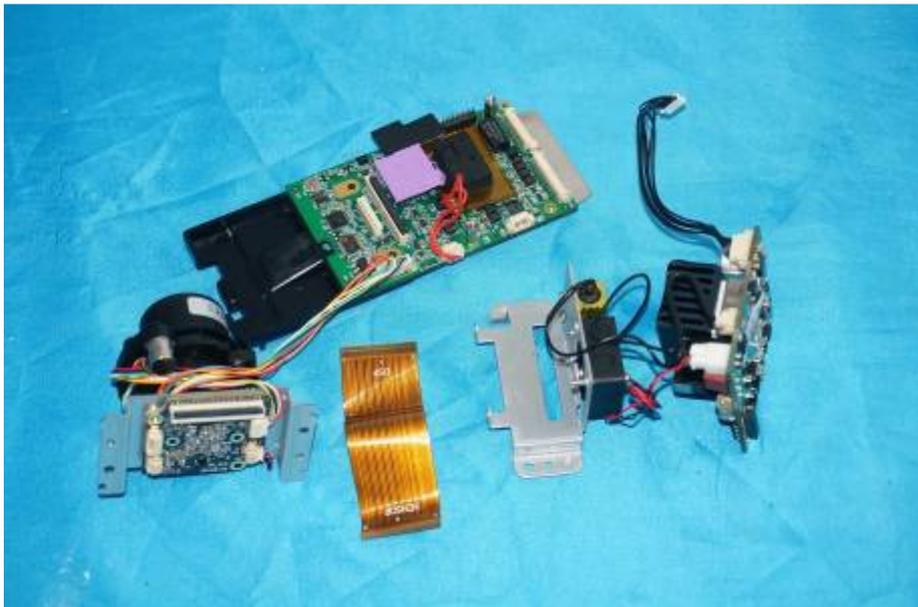


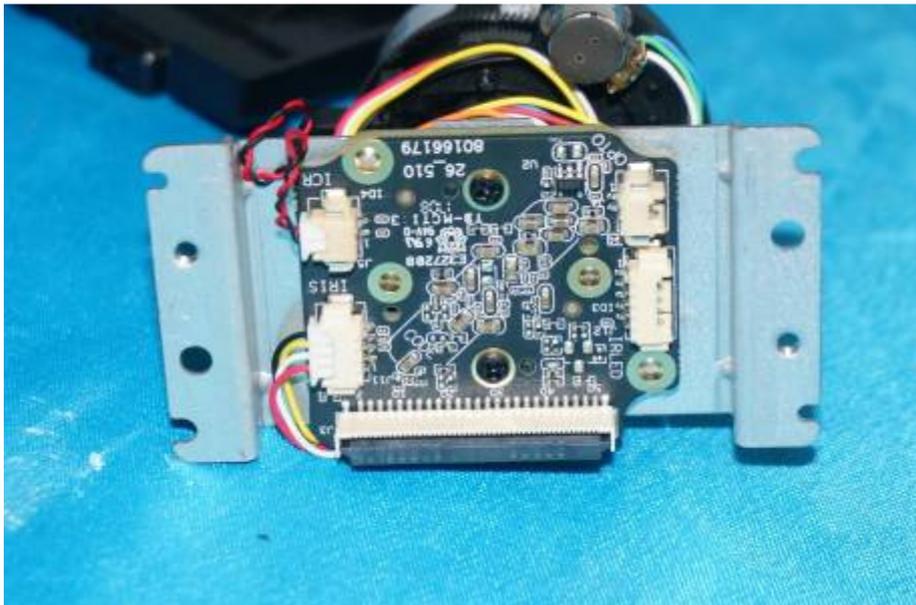
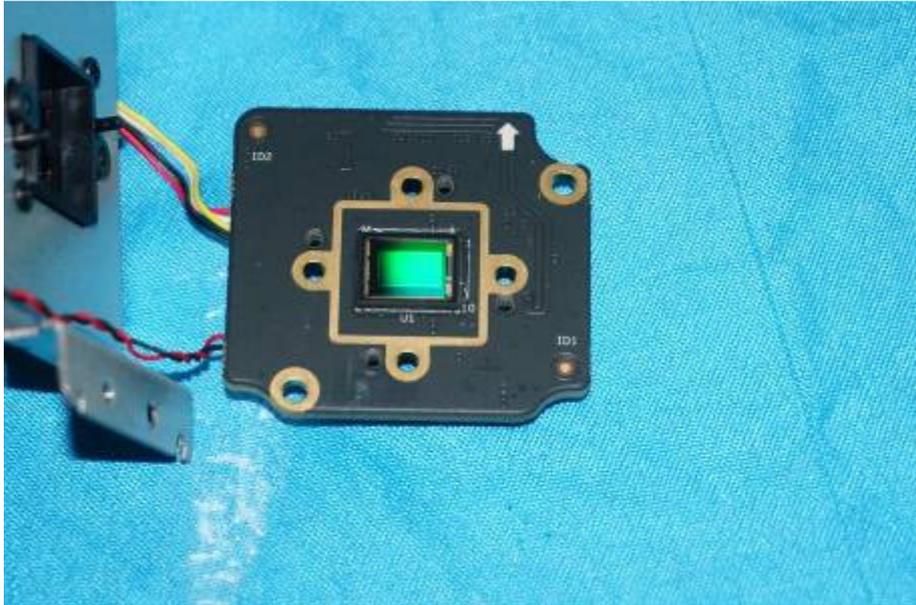
7.4 EUT Constructional Details



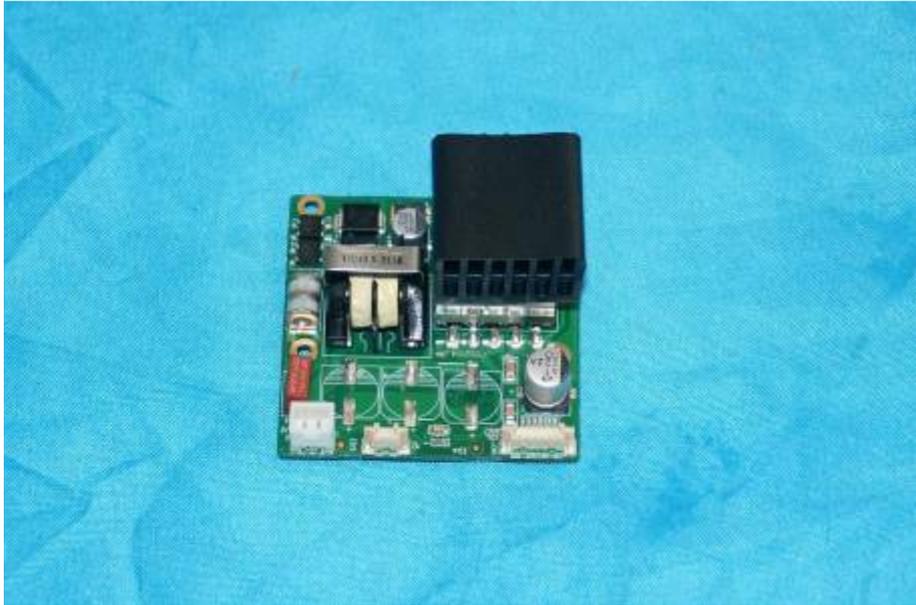












--End of the Report--