# TEST REPORT

| | |
|---|---|
| **Reference No. :** | WTU16U0756453E |
| **Product Name :** | Switching Mode Power Supply |
| **Type / Model :** | GT-41132-WWVV-X.X-TZ Series (more details refer to 3.2 model list) |
| **Client :** | GlobTek, Inc. |
| **Test Type :** | Commissioned Test |

WALTEK Services Testing Group

WALTEK SERVICES (SUZHOU) CO., LTD.

2016/07/25

# C-TICK TEST REPORT

| | | |
|---|---|---|
| **Reference No.** | : | WTU16U0756453E |
| **Applicant** | : | GlobTek,Inc. |
| **Address** | : | 186 Veterans Dr. Northvale NJ 07647 USA |
| **Manufacturer** | : | GlobTek (Suzhou) Co., Ltd |
| **Address** | : | Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou,JiangSu 215021, China |
| **Product Name** | : | Switching Mode Power Supply |
| **Model No.** | : | GT-41132-WWVV-X.X-TZ Series (more details refer to 3.2 model list) |
| **Standards** | : | AS/NZS CISPR 22: 2009+A1:2010 |
| **Date of Receipt sample** | : | July 22, 2016 |
| **Date of Test** | : | July 22, 2016～July 25, 2016 |
| **Date of Issue** | : | July 25, 2016 |
| **Test Report Form No.** | : | AS/NZS CISPR22-2A |
| **Test Result** | : | **Pass** * |

Remarks:
*The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.
The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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| Compiled by: | Reviewed by: | Approved by: |
|---|---|---|
| Mathea.Zhang/Projector Engineer | Fish.Yu/Projector Supervisor | Wilson.Zhang/Test Manager |

## 1. Test Summary

| EMISSION | | | |
|---|---|---|---|
| **Test Item** | **Test Standard** | **Class / Severity** | **Result** |
| Mains Terminal Disturbance Voltage, 150kHz to 30MHz | AS/NZS CISPR 22: 2009+A1:2010 | Clause 5 | Pass |
| Radiated Emission, 30MHz to 1000MHz | AS/NZS CISPR 22: 2009+A1:2010 | Clause 6 | Pass |

Remark:

| | |
|---|---|
| Pass | Test item meets the requirement |
| N/A | Test case does not apply to the test object |

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# 3. General Information

## 3.1 General Description of E.U.T.

**Product Name** ..... : Switching Mode Power Supply

**Model No.** ..... : GT-41132-WWVV-X.X-TZ Series (more details refer to 3.2 model list)

**Remark** ..... : The models GT-41132-6013-1.0-T2, GT-41132-6048-T2 GT-41132-6024-T3 are the test samples.The test datas were shown below.

## 3.2 Details of E.U.T.

Technical Data..... : See the below table

| Model | AC I/P | DC O/P | Transformer |
|---|---|---|---|
| GT-41132-6013-1.0-T2 | 100-240V~,1.5A,50-60Hz | 12V,5A | XF00530 |
| GT-41132-6048-T2 | 100-240V~,1.5A,50-60Hz | 48V,1.25A | XF00543 |
| GT-41132-6024-T3 | 100-240V~,1.5A,50-60Hz | 24V,2.7A | XF00624 |

Remark: GT-41132-WWVV-X.X-TZ series:WW is the rated output wattage designation, with a maximum value of "60";VV is the standard rated output voltage designation, with a maximum value of "48";-X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments.Z presents different inlets, where "2" presents C8, "3" presents C14, "3A" presents C6.

## 3.3 Description of Support Units

The EUT has been tested as an independent unit. GT-41132-6013-1.0-T2, GT-41132-6048-T2, GT-41132-6024-T3 are the test samples. The tests were performed in the condition of AC 240V/ 50Hz input.

## 3.4 Standards Applicable for Testing

The tests were performed according to following standards:

| | |
|---|---|
| AS/NZS CISPR 22 : 2009+A1 : 2010 | Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement. |

## 3.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

Waltek Services (Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files.

- **FCC – Registration No.: 880581**

Waltek Services (Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

## 3.6 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test items: ---

Lab information: ---

## 3.7 Abnormalities from Standard Conditions

None.

## 4. Equipment Used during Test

| ☒Mains Terminal Disturbance Voltage (Conducted Emission) | | | | | |
|---|---|---|---|---|---|
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Calibration Date** |
| 1. | Test Receiver | ROHDE& SCHWARZ | ESCI | 101297 | 2016.04.06 |
| 2. | Two-Line V-Network | ROHDE& SCHWARZ | ENV216 | 101538 | 2016.04.06 |
| 3. | Manual RF SW | ESE | RSU-A41 | - | N/A |
| 4. | 3m,50 ohms Cable | HUBER SUHNER | 1016873 | - | N/A |
| ☒3m Semi-anechoic Chamber for Radiated Emission | | | | | |
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Calibration Date** |
| 1. | Test Receiver | ROHDE& SCHWARZ | ESCI | 101346 | 2016.04.06 |
| 2. | Trilog Broadband Antenna | SCHWARZBECK | VULB9163 | 580 | 2016.04.16 |
| 3. | Broad-band Horn Antenna | SCHWARZBECK | BBHA 9120 D | 1092 | 2016.04.16 |
| 4. | Broadband Preamplifier | SCHWARZBECK | BBV 9743 | 0069 | 2016.04.06 |
| 5. | 8m 50 Ohm Coaxial Cable with N-plug | HUBER SUHNER | 1016873 | - | N/A |
| 6. | 3m 50 Ohm Coaxial Cable with N-plug | HUBER SUHNER | 1016873 | - | N/A |

### 4.1 Measurement Uncertainty

| Test Item | Frequency Range | Uncertainty | Note |
|---|---|---|---|
| Conducted Emission | 150kHz~30MHz | ±2.66dB | (1) |
| Radiated Emission | 30MHz~1GHz | ±5.03dB | (1) |

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

# 5. Emission Test Results

## 5.1 Mains Terminals Disturbance Voltage, 150 kHz to 30MHz

**Test Requirement**..... : AS/NZS CISPR 22: 2009+A1: 2010

**Test Method**..... : AS/NZS CISPR 22: 2009+A1: 2010

**Test Result**..... : Pass

**Frequency Range**..... : 150kHz to 30MHz

**Class/Severity** ..... : Table 2 of AS/NZS CISPR 22: 2009+A1: 2010

### 5.1.1 E.U.T. Operation

**Operating Environment:**

**Temperature** ..... : 23°C

**Humidity**..... : 65%RH

**Atmospheric Pressure**..... : 100.3kPa

**EUT Operation:**

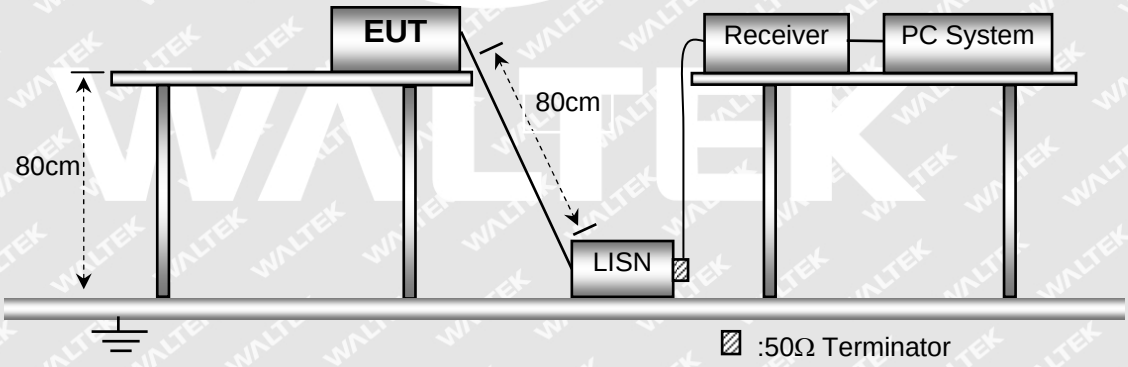
**Input Voltage** ..... : AC240V/50Hz

**Operating Mode**..... : Work mode

**Classification**..... : ClassB

### 5.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the AS/NZS CISPR 22: 2009+A1: 2010.



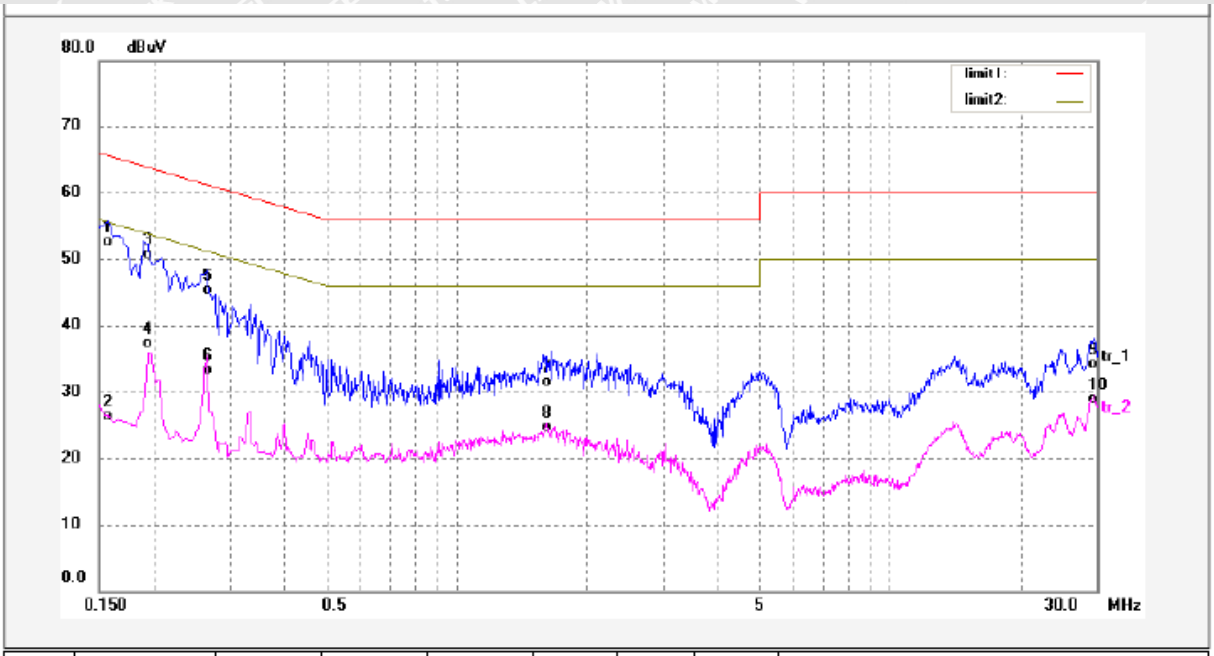
### 5.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

### 5.1.4 Mains Terminals Disturbance Voltage Test Data

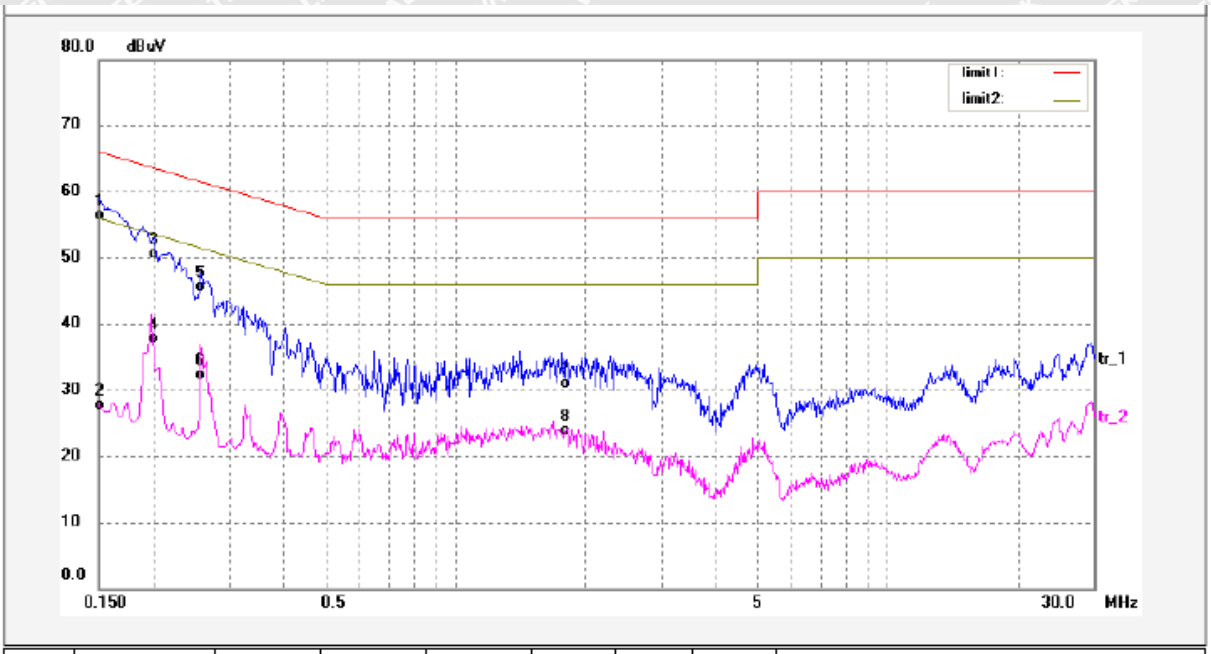
GT-41132-6013-1.0-T2

**Live Line :**




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1580 | 41.07 | 10.61 | 51.68 | 65.56 | -13.88 | QP | |
| 2 | 0.1580 | 14.91 | 10.61 | 25.52 | 55.56 | -30.04 | AVG | |
| 3 | 0.1945 | 39.14 | 10.67 | 49.81 | 63.84 | -14.03 | QP | |
| 4 | 0.1945 | 25.76 | 10.67 | 36.43 | 53.84 | -17.41 | AVG | |
| 5 | 0.2660 | 33.90 | 10.63 | 44.53 | 61.24 | -16.71 | QP | |
| 6 | 0.2660 | 21.80 | 10.63 | 32.43 | 51.24 | -18.81 | AVG | |
| 7 | 1.5900 | 18.51 | 12.20 | 30.71 | 56.00 | -25.29 | QP | |
| 8 | 1.5900 | 11.70 | 12.20 | 23.90 | 46.00 | -22.10 | AVG | |
| 9 | 29.4740 | 20.45 | 12.80 | 33.25 | 60.00 | -26.75 | QP | |
| 10 | 29.4740 | 15.37 | 12.80 | 28.17 | 50.00 | -21.83 | AVG | |

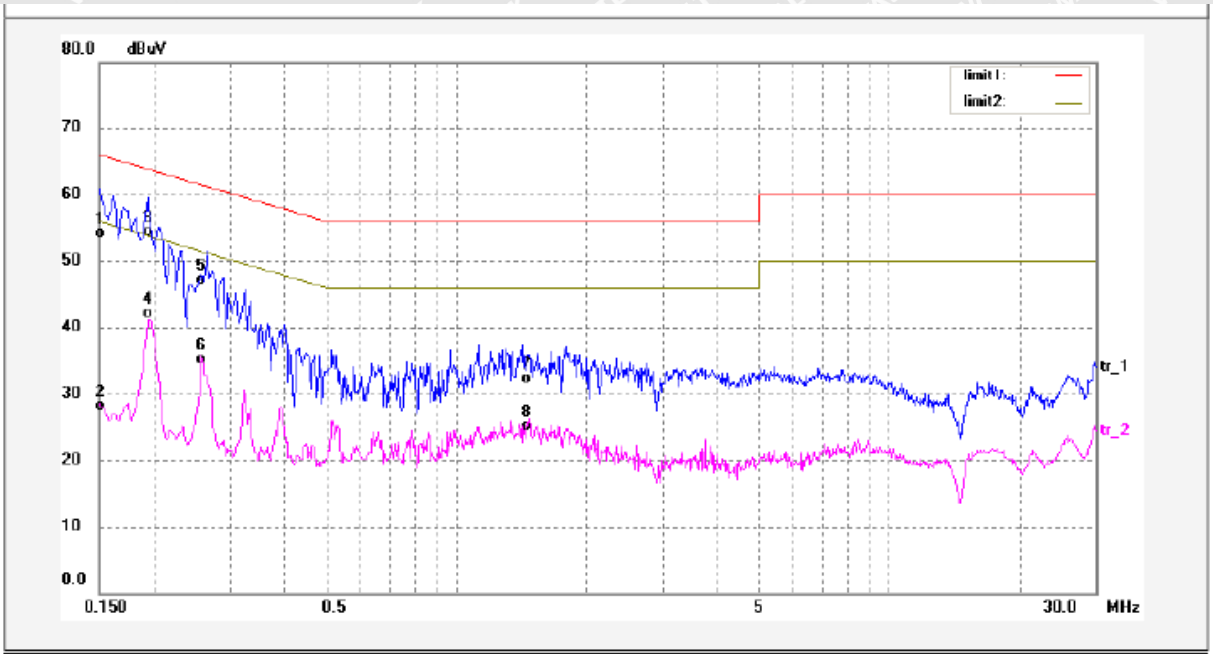
**Neutral Line:**




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 44.84 | 10.67 | 55.51 | 65.99 | -10.48 | QP | |
| 2 | 0.1500 | 16.23 | 10.67 | 26.90 | 55.99 | -29.09 | AVG | |
| 3 | 0.2020 | 39.09 | 10.67 | 49.76 | 63.52 | -13.76 | QP | |
| 4 | 0.2020 | 26.24 | 10.67 | 36.91 | 53.52 | -16.61 | AVG | |
| 5 | 0.2580 | 34.07 | 10.63 | 44.70 | 61.49 | -16.79 | QP | |
| 6 | 0.2580 | 20.83 | 10.63 | 31.46 | 51.49 | -20.03 | AVG | |
| 7 | 1.7660 | 17.85 | 12.22 | 30.07 | 56.00 | -25.93 | QP | |
| 8 | 1.7660 | 10.79 | 12.22 | 23.01 | 46.00 | -22.99 | AVG | |

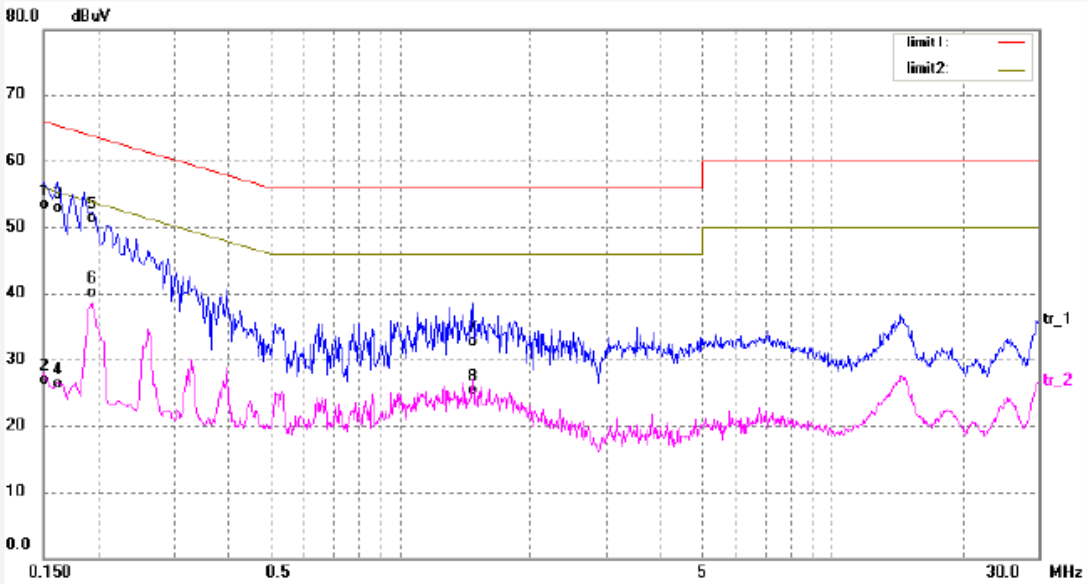
GT-41132-6048-T2

**Live Line :**




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 42.59 | 10.67 | 53.26 | 65.99 | -12.73 | QP | |
| 2 | 0.1500 | 16.63 | 10.67 | 27.30 | 55.99 | -28.69 | AVG | |
| 3 | 0.1940 | 42.82 | 10.67 | 53.49 | 63.86 | -10.37 | QP | |
| 4 | 0.1940 | 30.60 | 10.67 | 41.27 | 53.86 | -12.59 | AVG | |
| 5 | 0.2589 | 35.63 | 10.63 | 46.26 | 61.46 | -15.20 | QP | |
| 6 | 0.2589 | 23.73 | 10.63 | 34.36 | 51.46 | -17.10 | AVG | |
| 7 | 1.4299 | 19.26 | 12.19 | 31.45 | 56.00 | -24.55 | QP | |
| 8 | 1.4299 | 12.04 | 12.19 | 24.23 | 46.00 | -21.77 | AVG | |

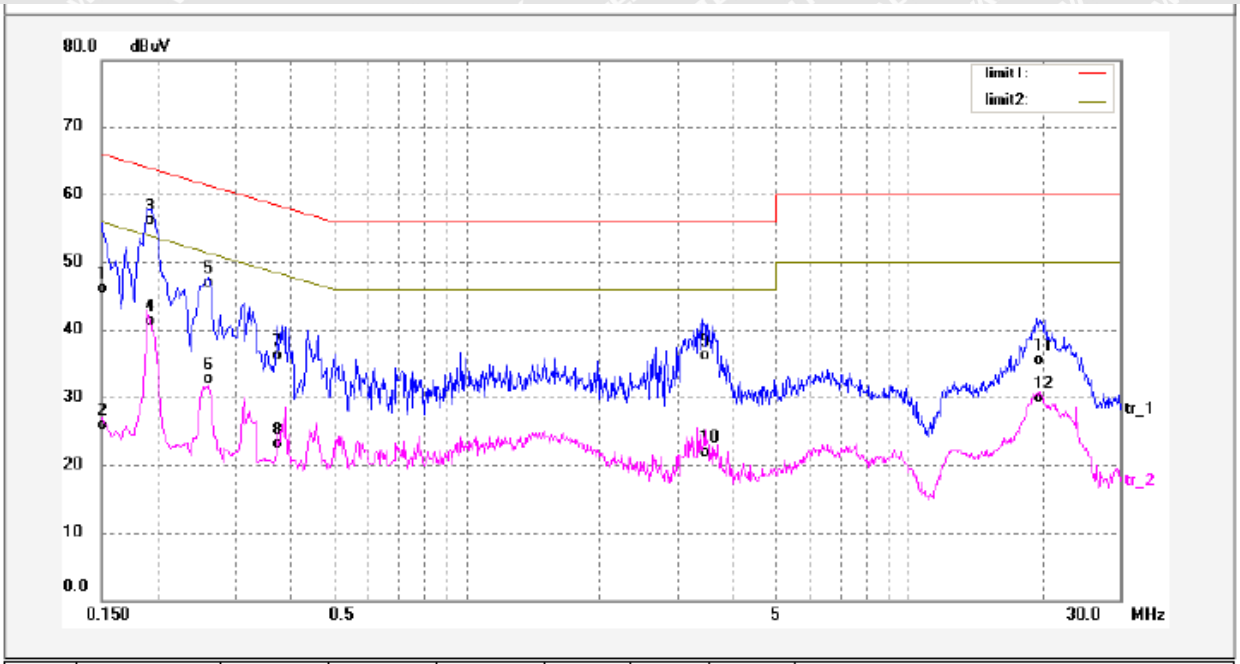
**Neutral Line:**




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 41.84 | 10.67 | 52.51 | 65.99 | -13.48 | QP | |
| 2 | 0.1500 | 15.49 | 10.67 | 26.16 | 55.99 | -29.83 | AVG | |
| 3 | 0.1620 | 41.43 | 10.62 | 52.05 | 65.36 | -13.31 | QP | |
| 4 | 0.1620 | 14.87 | 10.62 | 25.49 | 55.36 | -29.87 | AVG | |
| 5 | 0.1945 | 39.88 | 10.67 | 50.55 | 63.84 | -13.29 | QP | |
| 6 | 0.1945 | 28.54 | 10.67 | 39.21 | 53.84 | -14.63 | AVG | |
| 7 | 1.4780 | 19.73 | 12.19 | 31.92 | 56.00 | -24.08 | QP | |
| 8 | 1.4780 | 12.39 | 12.19 | 24.58 | 46.00 | -21.42 | AVG | |

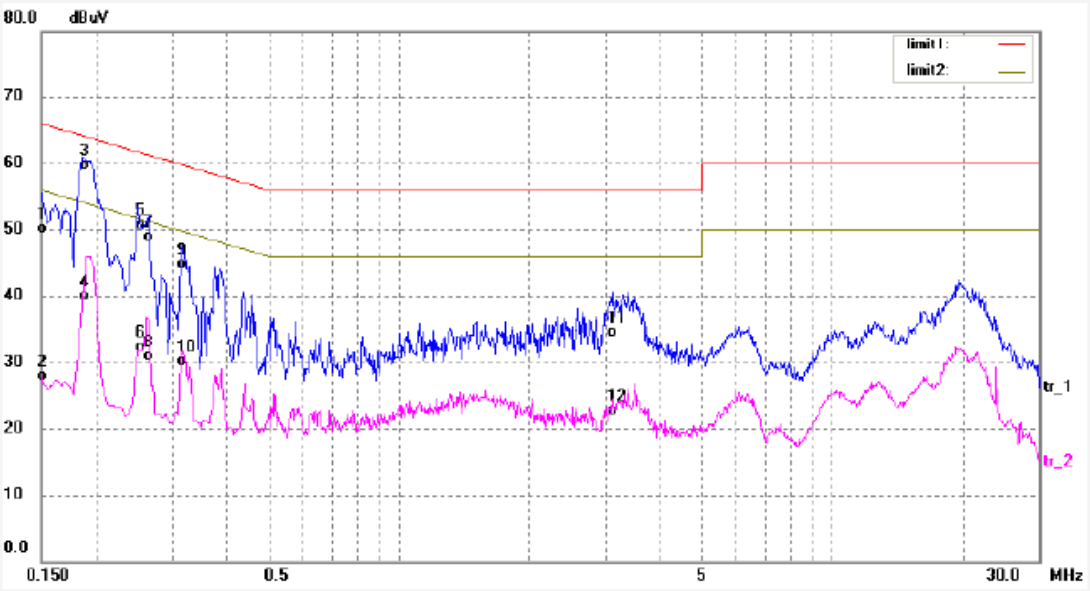
GT-41132-6024-T3

**Live Line :**




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 34.58 | 10.67 | 45.25 | 65.99 | -20.74 | QP | |
| 2 | 0.1500 | 14.36 | 10.67 | 25.03 | 55.99 | -30.96 | AVG | |
| 3 | 0.1940 | 44.63 | 10.67 | 55.30 | 63.86 | -8.56 | QP | |
| 4 | 0.1940 | 29.90 | 10.67 | 40.57 | 53.86 | -13.29 | AVG | |
| 5 | 0.2620 | 35.39 | 10.63 | 46.02 | 61.36 | -15.34 | QP | |
| 6 | 0.2620 | 21.21 | 10.63 | 31.84 | 51.36 | -19.52 | AVG | |
| 7 | 0.3740 | 24.65 | 10.72 | 35.37 | 58.41 | -23.04 | QP | |
| 8 | 0.3740 | 11.65 | 10.72 | 22.37 | 48.41 | -26.04 | AVG | |
| 9 | 3.4340 | 22.69 | 12.54 | 35.23 | 56.00 | -20.77 | QP | |
| 10 | 3.4340 | 8.58 | 12.54 | 21.12 | 46.00 | -24.88 | AVG | |
| 11 | 19.4700 | 22.34 | 12.27 | 34.61 | 60.00 | -25.39 | QP | |
| 12 | 19.4700 | 16.93 | 12.27 | 29.20 | 50.00 | -20.80 | AVG | |

**Neutral Line:**




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 38.56 | 10.67 | 49.23 | 65.99 | -16.76 | QP | |
| 2 | 0.1500 | 16.46 | 10.67 | 27.13 | 55.99 | -28.86 | AVG | |
| 3 | 0.1860 | 48.27 | 10.66 | 58.93 | 64.21 | -5.28 | QP | |
| 4 | 0.1860 | 28.42 | 10.66 | 39.08 | 54.21 | -15.13 | AVG | |
| 5 | 0.2500 | 39.26 | 10.64 | 49.90 | 61.75 | -11.85 | QP | |
| 6 | 0.2500 | 20.84 | 10.64 | 31.48 | 51.75 | -20.27 | AVG | |
| 7 | 0.2660 | 37.38 | 10.63 | 48.01 | 61.24 | -13.23 | QP | |
| 8 | 0.2660 | 19.53 | 10.63 | 30.16 | 51.24 | -21.08 | AVG | |
| 9 | 0.3180 | 33.33 | 10.65 | 43.98 | 59.76 | -15.78 | QP | |
| 10 | 0.3180 | 18.59 | 10.65 | 29.24 | 49.76 | -20.52 | AVG | |
| 11 | 3.1180 | 21.24 | 12.48 | 33.72 | 56.00 | -22.28 | QP | |
| 12 | 3.1180 | 9.49 | 12.48 | 21.97 | 46.00 | -24.03 | AVG | |

## 5.2 Radiated Emission, 30 MHz to 1GHz

**Test Requirement**..... : AS/NZS CISPR 22: 2009+A1: 2010

**Test Method**..... : AS/NZS CISPR 22: 2009+A1: 2010

**Test Result**..... : Pass

**Frequency Range**..... : 30MHz to 1GHz

**Class/Severity** ..... : Table 6 of AS/NZS CISPR 22: 2009+A1: 2010

### 5.2.1 E.U.T. Operation

**Operating Environment:**

**Temperature** ..... : 23°C

**Humidity**..... : 65%RH

**Atmospheric Pressure**..... : 100.3kPa

**EUT Operation:**

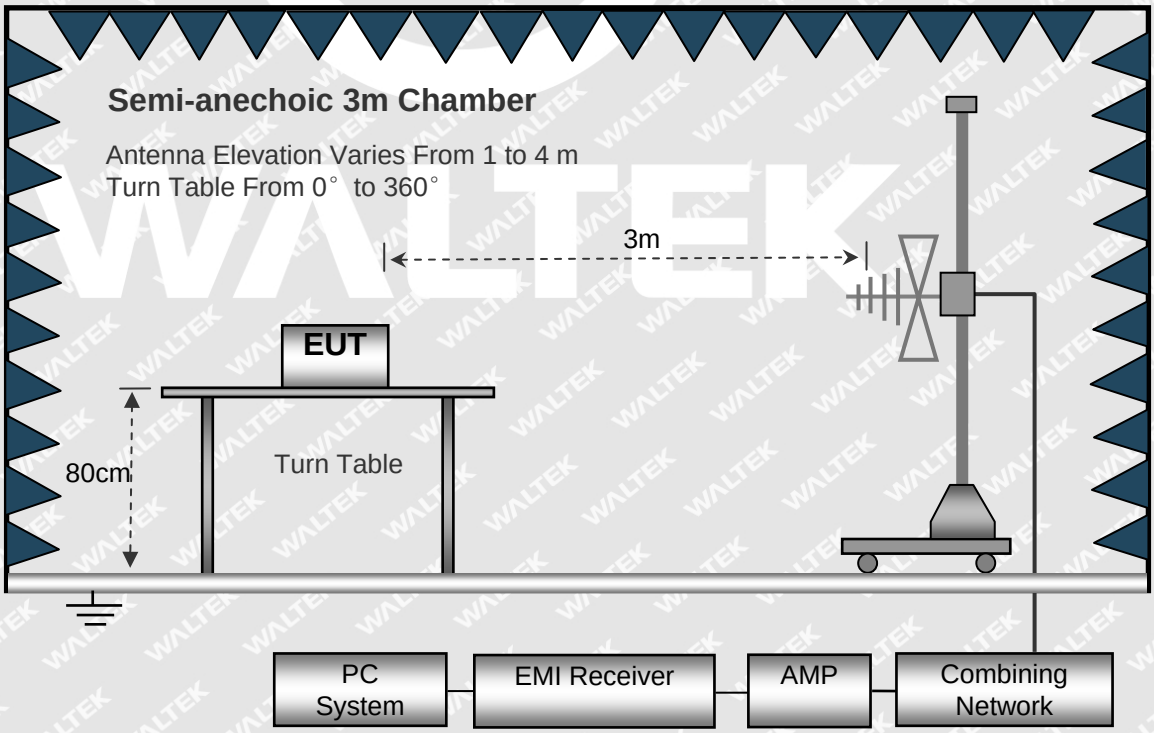
**Input Voltage** ..... : AC240V/50Hz

**Operating Mode**..... : Work mode

**Classification**..... : ClassB

### 5.2.2 Block Diagram of Test Setup

The Radiated Emission test was performed in the 3m Semi- Anechoic Chamber test site and accordance with EN 55022.



### 5.2.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for Horizontal & Vertical polarisation. Quasi-peak measurements were performed if peak emissions were within 6dB of the limit line.

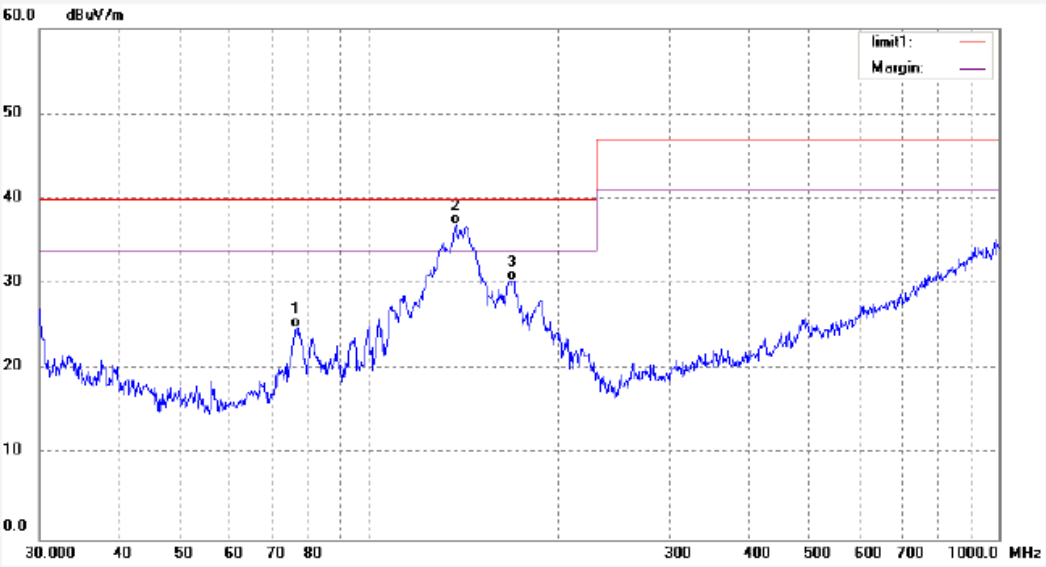
### 5.2.4 Radiated Emission Test Data

GT-41132-6013-1.0-T2

**Horizontal Polarization:**

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 30.3179 | 20.26 | 16.22 | 36.48 | 40.00 | -3.52 | QP | |
| 2 | 33.4520 | 19.52 | 16.56 | 36.08 | 40.00 | -3.92 | QP | |
| 3 | 140.2829 | 23.24 | 11.64 | 34.88 | 40.00 | -5.12 | QP | |

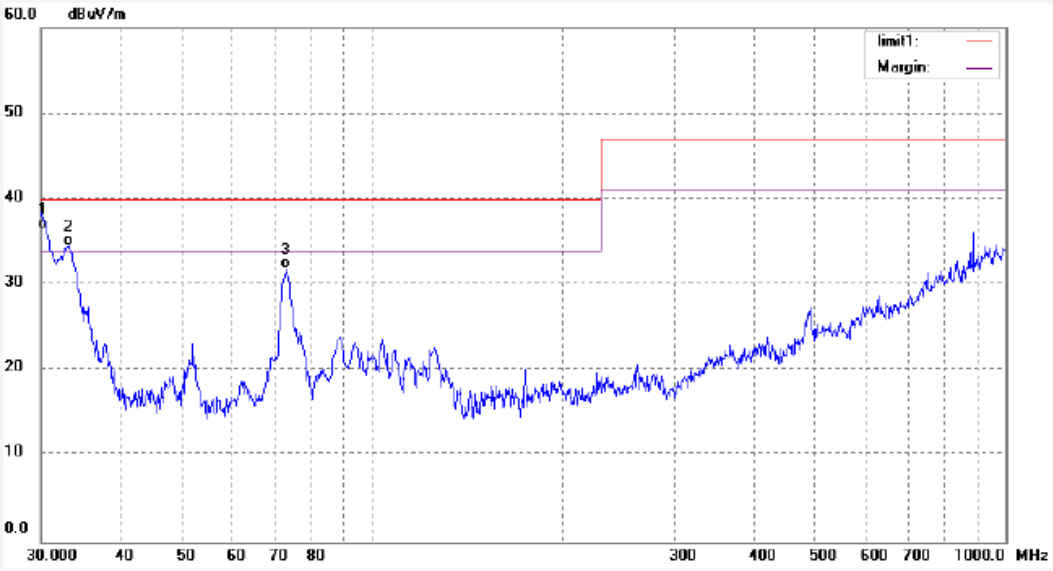
**Vertical Polarization :**




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 76.6556 | 15.61 | 9.17 | 24.78 | 40.00 | -15.22 | QP | |
| 2 | 137.3565 | 25.09 | 11.90 | 36.99 | 40.00 | -3.01 | QP | |
| 3 | 168.9970 | 18.39 | 12.05 | 30.44 | 40.00 | -9.56 | QP | |

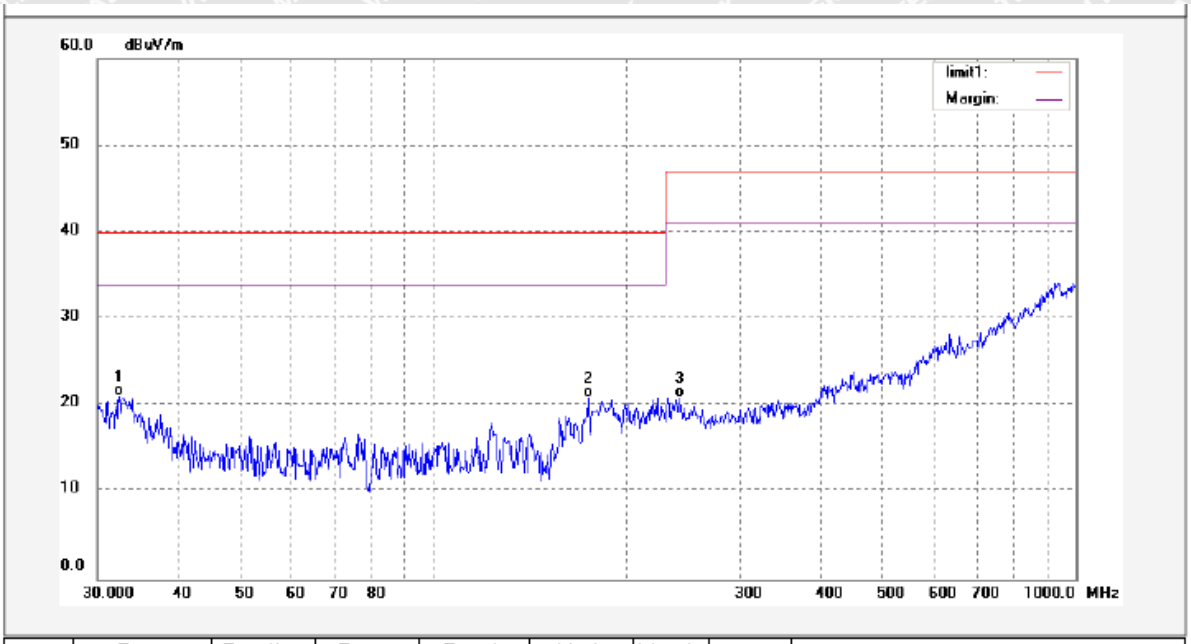
GT-41132-6048-T2

**Horizontal Polarization:**




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 30.0000 | 20.38 | 16.15 | 36.53 | 40.00 | -3.47 | QP | |
| 2 | 33.1015 | 17.95 | 16.56 | 34.51 | 40.00 | -5.49 | QP | |
| 3 | 73.2330 | 22.42 | 9.43 | 31.85 | 40.00 | -8.15 | QP | |

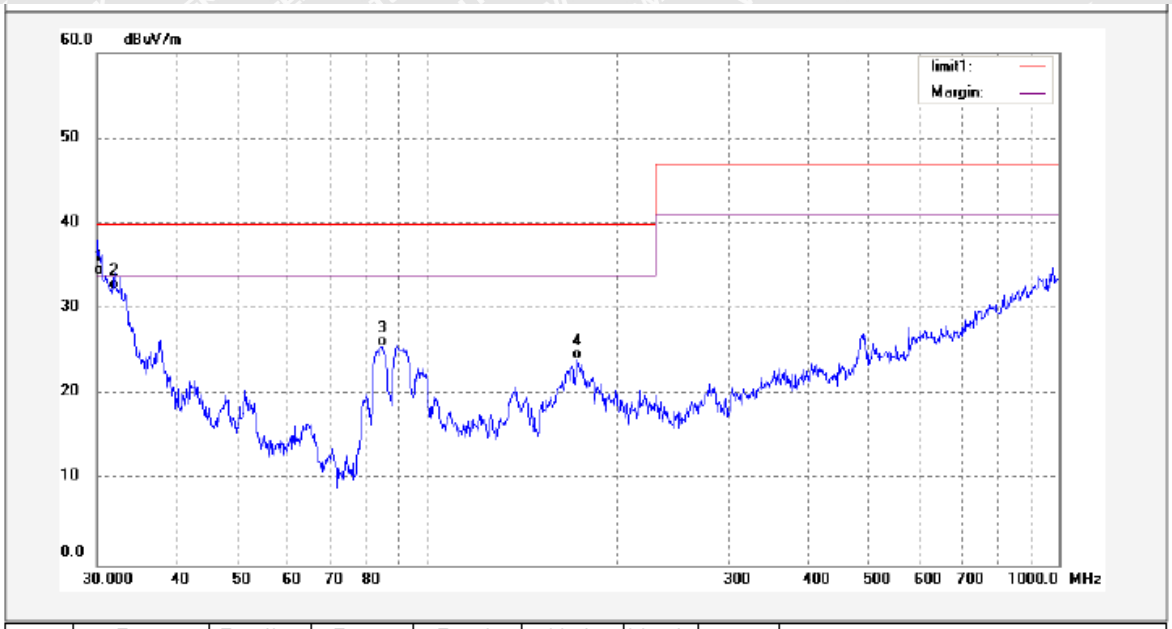
## Vertical Polarization :




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 32.4107 | 4.49 | 16.58 | 21.07 | 40.00 | -18.93 | QP | |
| 2 | 174.4265 | 8.55 | 12.31 | 20.86 | 40.00 | -19.14 | QP | |
| 3 | 241.8377 | 5.64 | 15.33 | 20.97 | 47.00 | -26.03 | QP | |

GT-41132-6024-T3

**Horizontal Polarization:**



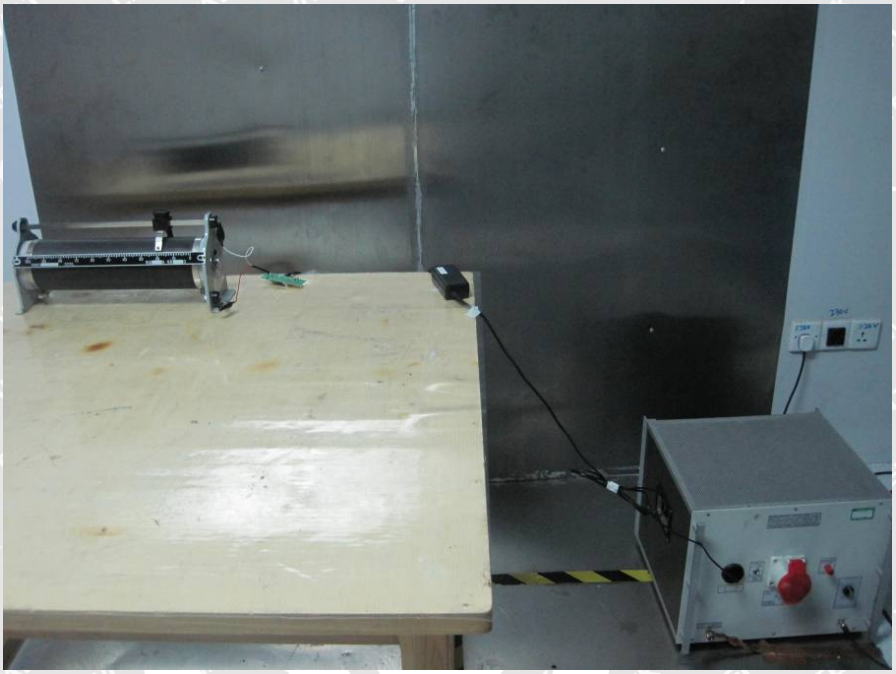

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 30.0000 | 17.90 | 16.15 | 34.05 | 40.00 | -5.95 | QP | |
| 2 | 31.9586 | 15.71 | 16.58 | 32.29 | 40.00 | -7.71 | QP | |
| 3 | 84.8783 | 15.55 | 9.98 | 25.53 | 40.00 | -14.47 | QP | |
| 4 | 172.5976 | 11.80 | 12.21 | 24.01 | 40.00 | -15.99 | QP | |

## Vertical Polarization :

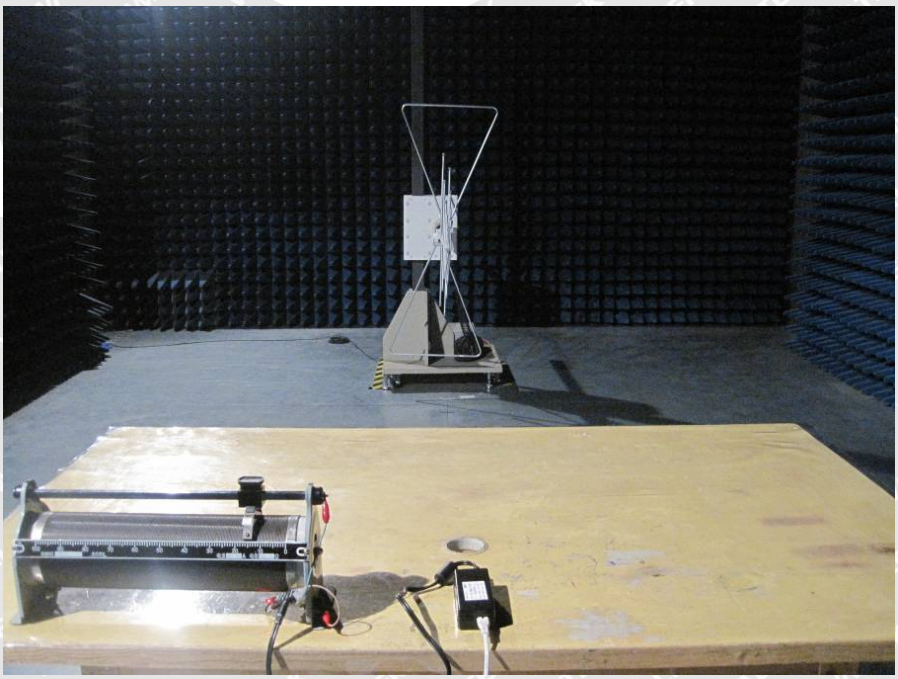
| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 30.1056 | 13.18 | 16.17 | 29.35 | 40.00 | -10.65 | QP | |
| 2 | 193.8163 | 11.55 | 14.69 | 26.24 | 40.00 | -13.76 | QP | |
| 3 | 227.8155 | 12.71 | 16.27 | 28.98 | 40.00 | -11.02 | QP | |

# 6 Photographs – Test Setup

## 6.1 Photograph – Mains Terminal Disturbance Voltage Test Setup



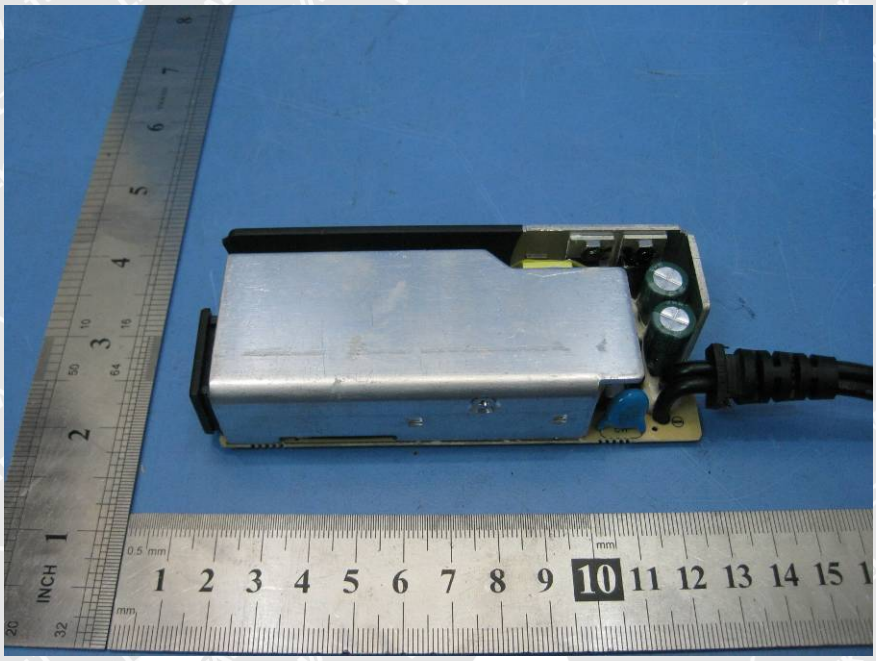
## 6.2 Photograph – Radiated Emission Test Setup



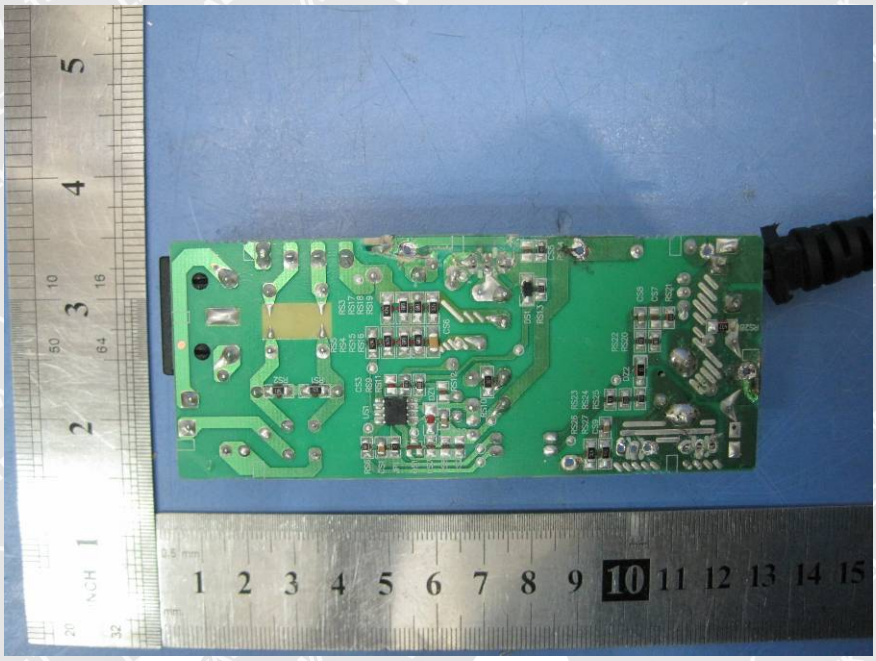
# 7 Photographs – Constructional Details

## 7.1 EUT -Front View

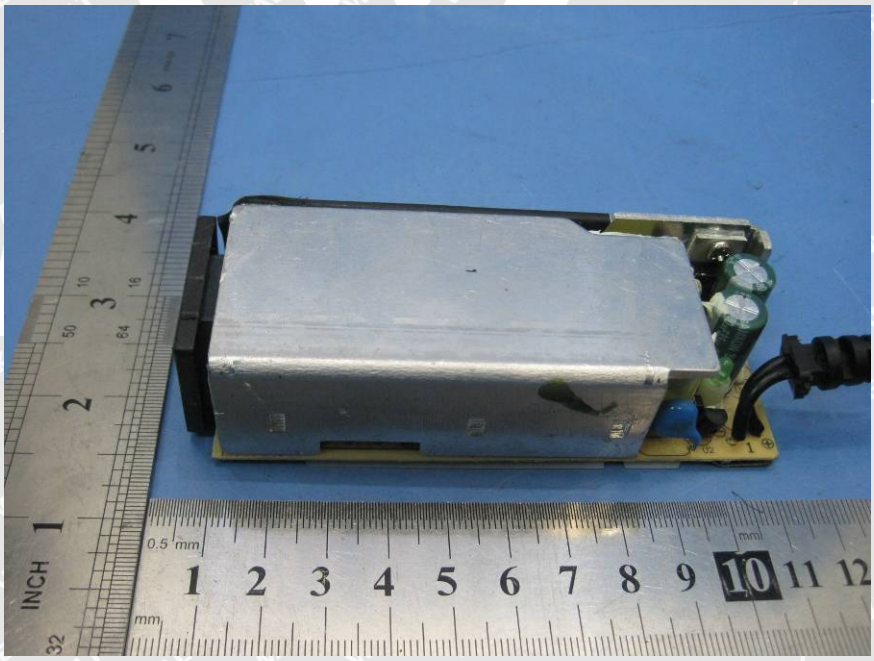
EUT 1

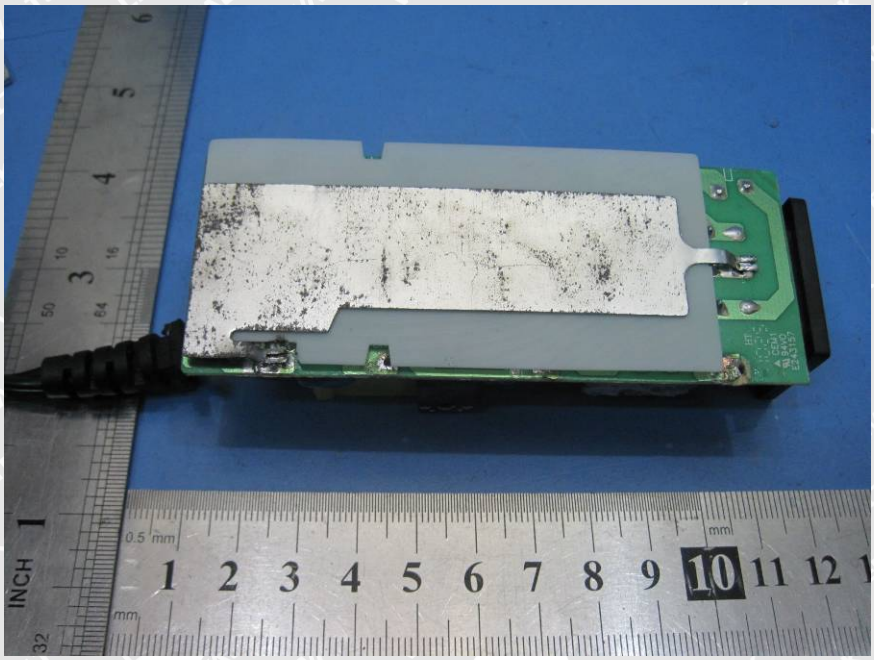


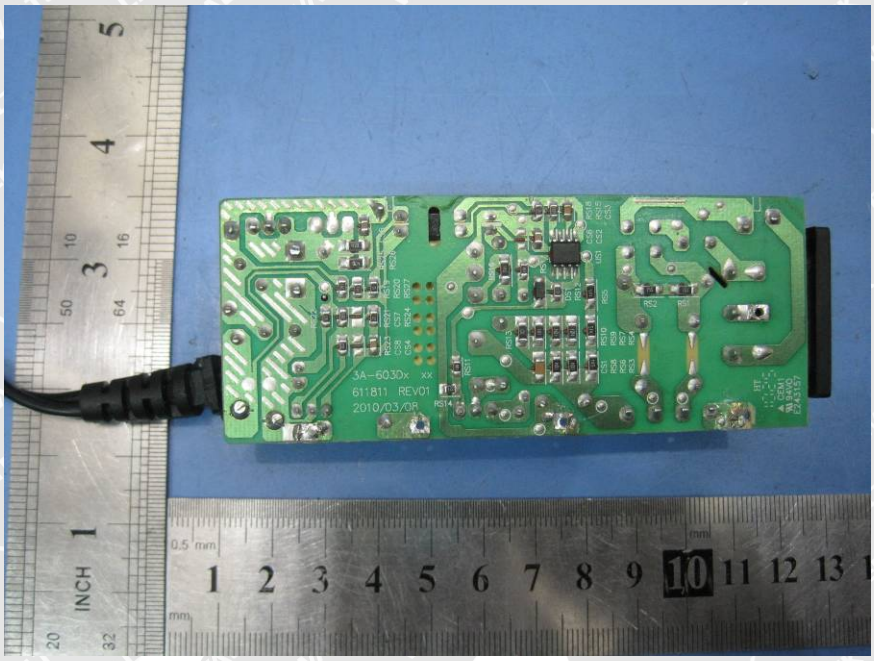
L4546805A



EUT 2








======End of Report======