

EMC TEST Report

FCC ID: N96120332ISMPF

This report concerns (check one) : Original Grant Class II Change

Issued Date : May 23, 2006

Report No. : 0605040

Equipment : ELECTRONIC BALLAST

Model No. : 120-3/32IS MPF

Applicant : SUNPARK ELECTRONICS CORP.

Address : 6F-2, No. 135, Sec. 4, Pa-Teh Rd., Taipei,
Taiwan, R.O.C.

Tested by:

Neutron Engineering Inc. EMC Laboratory

Data of Test:

May 10, 2006 ~ May 23, 2006

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NVLAP[®]
Lab Code: 200145-0



Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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1. CERTIFICATION

Equipment: ELECTRONIC BALLAST

Trade Name : SUNPARK

Model No.: 120-3/32IS MPF

Applicant: SUNPARK ELECTRONICS CORP.

Data of Test: May 10, 2006 ~ May 23, 2006

Test Item: ENGINEERING SAMPLE

Standards: FCC Part 18 , Section 18.305(C) and 18.307(C) , Consumer Equipment Limits

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCE-1-0605040) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and CNLA according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| FCC Part18, Subpart C | | | |
|-----------------------|--------------------|----------|--------------------|
| Standard Section | Test Item | Judgment | Remark |
| 18.307(C) | Conducted Emission | PASS | Consumer Equipment |

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **C01** at the location of No.132-1, Lane 329, Sec. 2, Palain Road, Shijr City, Taipei, Taiwan. A description of this test facilities is already on file with the FCC as registration number of 95335.

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95 %** .

A. Conducted Measurement :

| Test Site | Method | Measurement Frequency Range | U , (dB) | NOTE |
|-----------|--------|-----------------------------|----------|------|
| C01 | ANSI | 150 KHz ~ 30MHz | 1.94 | |

B. Radiated Measurement :

| Test Site | Method | Measurement Frequency Range | Ant. H / V | U , (dB) | NOTE |
|-----------|--------|-----------------------------|---------------|----------|------|
| OS-01 | ANSI | 30MHz ~ 200MHz | V | 3.82 | |
| | | 30MHz ~ 200MHz | H | 3.60 | |
| | | 200MHz ~ 1,000MHz | V | 3.86 | |
| | | 200MHz ~ 1,000MHz | H | 3.94 | |
| OS-02 | ANSI | 30MHz ~ 200MHz | V | 2.48 | |
| | | 30MHz ~ 200MHz | H | 2.16 | |
| | | 200MHz ~ 1,000MHz | V | 2.50 | |
| | | 200MHz ~ 1,000MHz | H | 2.66 | |

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

| | | |
|------------------------|--|--------------------|
| Equipment | ELECTRONIC BALLAST | |
| Trade Name | SUNPARK | |
| Model No. | 120-3/32IS MPF | |
| Product Description | ISM Equipment Category: | Consumer Equipment |
| | Open Circuit Voltage: | 600V |
| | Nominal Operating Frequency: | 26 KHz |
| | Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as a consumer ISM equipment (RF lighting device). More details of EUT technical specification, please refer to the User's Manual. | |
| Power Supply | AC I/P 120V, 60Hz, 1.23A | |
| Connecting I/O Port(s) | Please refer to the User's Manual | |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

3.2 DESCRIPTION OF TEST MODES

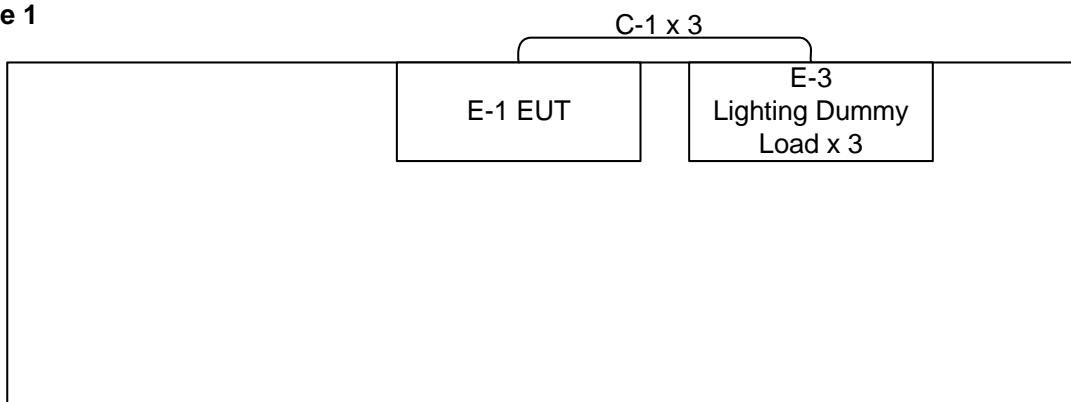
To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Pretest Test Mode | Description |
|-------------------|-------------------|
| Mode 1 | T8 32W x 3 / 85W |
| Mode 2 | T8 25W x 3 / 65W |
| Mode 3 | T8 18W x 3 / 48W |
| Mode 4 | T8 17W x 3 / 46W |
| Mode 5 | T8 15W x 3 / 38W |
| Mode 6 | T12 40W x 3 / 72W |
| Mode 7 | T12 34W x 3 / 60W |
| Mode 8 | T12 25W x 3 / 67W |

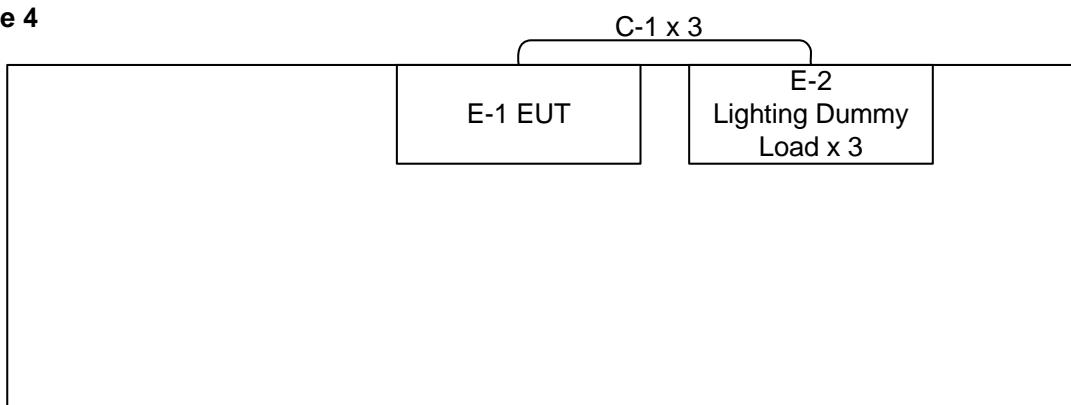
| For Conducted / Radiated Test | |
|-------------------------------|------------------|
| Final Test Mode | Description |
| Mode 1 | T8 32W x 3 / 85W |
| Mode 4 | T8 17W x 3 / 46W |

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 1



Mode 4



C-1 Power Cable

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment | Mfr/Brand | Model/Type No. | FCC ID | Series No. | Note |
|------|--------------------|-----------|----------------|----------------|------------|------|
| E-1 | ELECTRONIC BALLAST | SUNPARK | 120-3/32IS MPF | N96120332ISMPF | N/A | EUT |
| E-2 | Light Dummy Load | PHILIPS | 631503 | N/A | N/A | |
| E-3 | Light Dummy Load | PHILIPS | TL-D/840 | N/A | N/A | |

| Item | Shielded Type | Ferrite Core | Length | Note |
|------|---------------|--------------|--------|------|
| C-1 | NO | NO | 1M | |

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

4. RFI EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 450KHz-30MHz)

| Frequency Range (MHz) | Non-consumer Equipment | | Frequency Range (MHz) | consumer Equipment | |
|--------------------------|------------------------|------|--------------------------|--------------------|------|
| | dBuV | uV | | dBuV | uV |
| 0.45 - 1.60 | 60.00 | 1000 | 0.45 - 2.51 | 48 | 250 |
| 1.60 - 30.0 | 69.50 | 3000 | 2.51 - 3.00 | 69.5 | 3000 |
| | | | 3.00 - 30.0 | 48 | 250 |

Note:

- (1) The tighter limit applies at the band edges.

4.1.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------|-----------------|-----------|------------|------------------|
| 1 | LISN | Rolf Heine | NNB-2/16Z | 98053 | Dec. 19, 2006 |
| 2 | Pulse Limiter | Electro-Metrics | EM-7600 | 112644 | Nov. 29, 2006 |
| 3 | Test Cable | N/A | C01 | N/A | Nov. 29, 2006 |
| 4 | EMI Test Receiver | R&S | ESCI | 100082 | Feb. 01, 2007 |

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

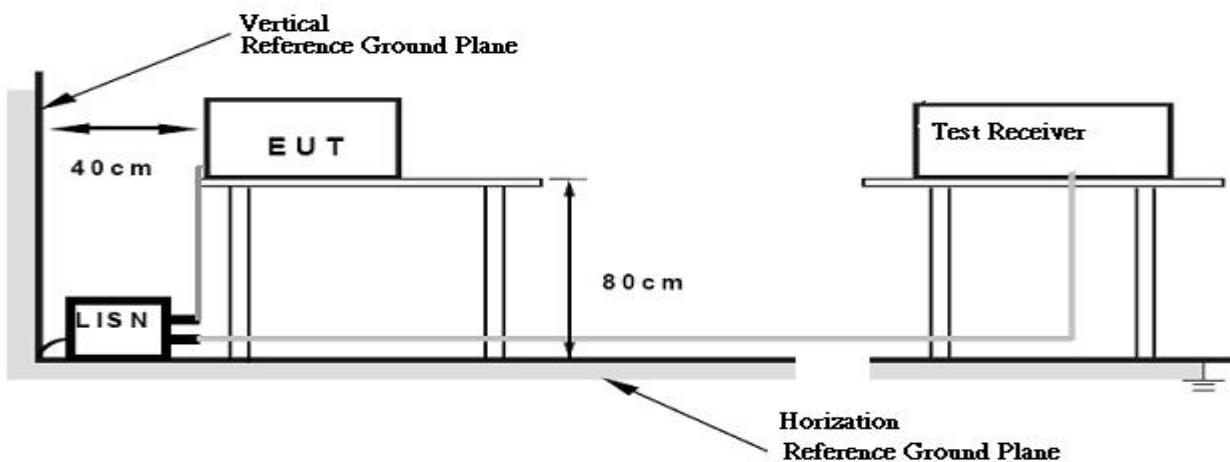
4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



4.1.6 EUT OPERATING CONDITIONS

The system was configured for testing in a typical fashion (as a customer would normally use it). The EUT was connected to support equipment-Lamp. This operating condition was tested and used to collect the included data.

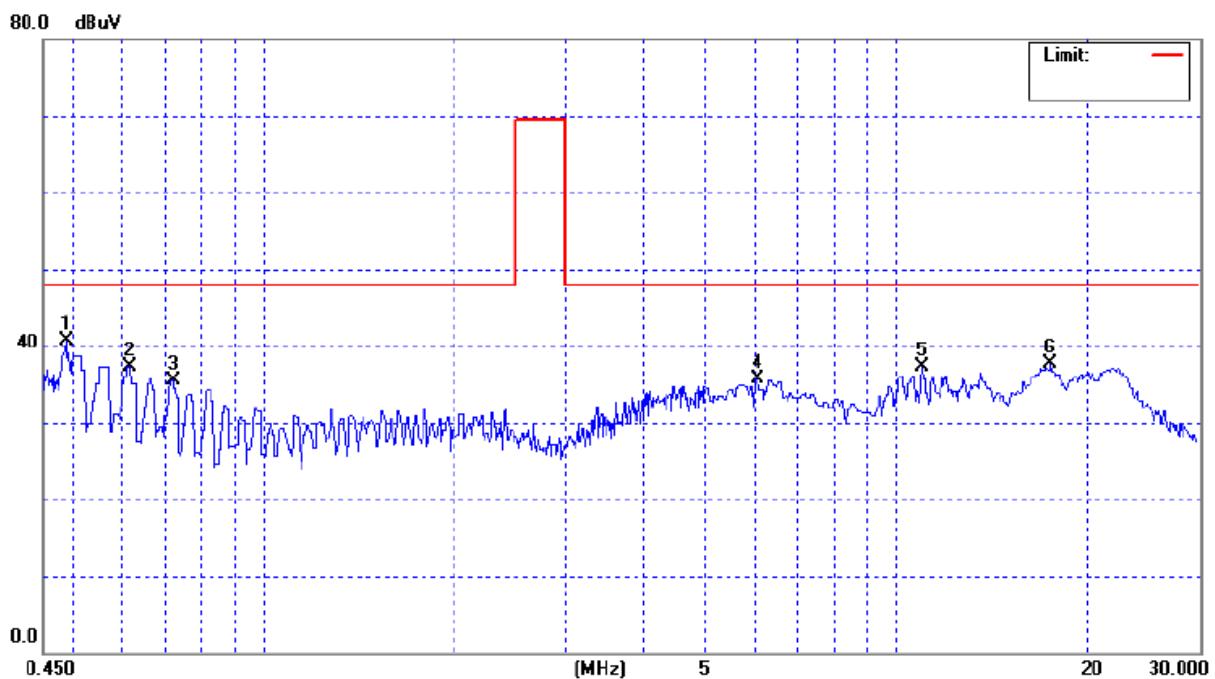
4.1.7 TEST RESULTS

| | | | |
|---------------|--------------------|---------------------|----------------|
| EUT : | ELECTRONIC BALLAST | Model No. : | 120-3/32IS MPF |
| Temperature : | 22 °C | Relative Humidity : | 58 % |
| Pressure : | 1014 hPa | Test Power : | AC 120V/60Hz |
| Test Mode : | T8 32W x 3 / 85W | | |

| Freq. (MHz) | Terminal L/N | Measured (dBuV) | Limits | | Margin (dBuV) | Note | Remark C |
|----------------|-----------------|--------------------|--------|--------|------------------|------|-------------|
| | | | (dBuV) | (uV) | | | |
| 0.49 | Line | 40.71 | 48.00 | 250.00 | -7.29 | | |
| 0.62 | Line | 37.35 | 48.00 | 250.00 | -10.65 | | |
| 0.72 | Line | 35.56 | 48.00 | 250.00 | -12.44 | | |
| 6.04 | Line | 35.73 | 48.00 | 250.00 | -12.27 | | |
| 11.04 | Line | 37.29 | 48.00 | 250.00 | -10.71 | | |
| 17.57 | Line | 37.70 | 48.00 | 250.00 | -10.30 | | |

Remark

- (1) Reading was measured by using are Quasi-Peak Mode with Detector BW=9KHz ; SPA setting in RBW=10KHz,VBW =10KHz, SWP Time = 0.3 sec./ MHz .
- (2) All readings are QP Mode value unless otherwise stated Peak in column of 『 Note 』 .
- (3) Measuring frequency range from 450KHz to 30MHz .
- (4) Remark C denotes the Consumer Equipment limitation used for judgment.
- (5) Remark NC denotes the Non-Consumer Equipment limitation used for judgment.

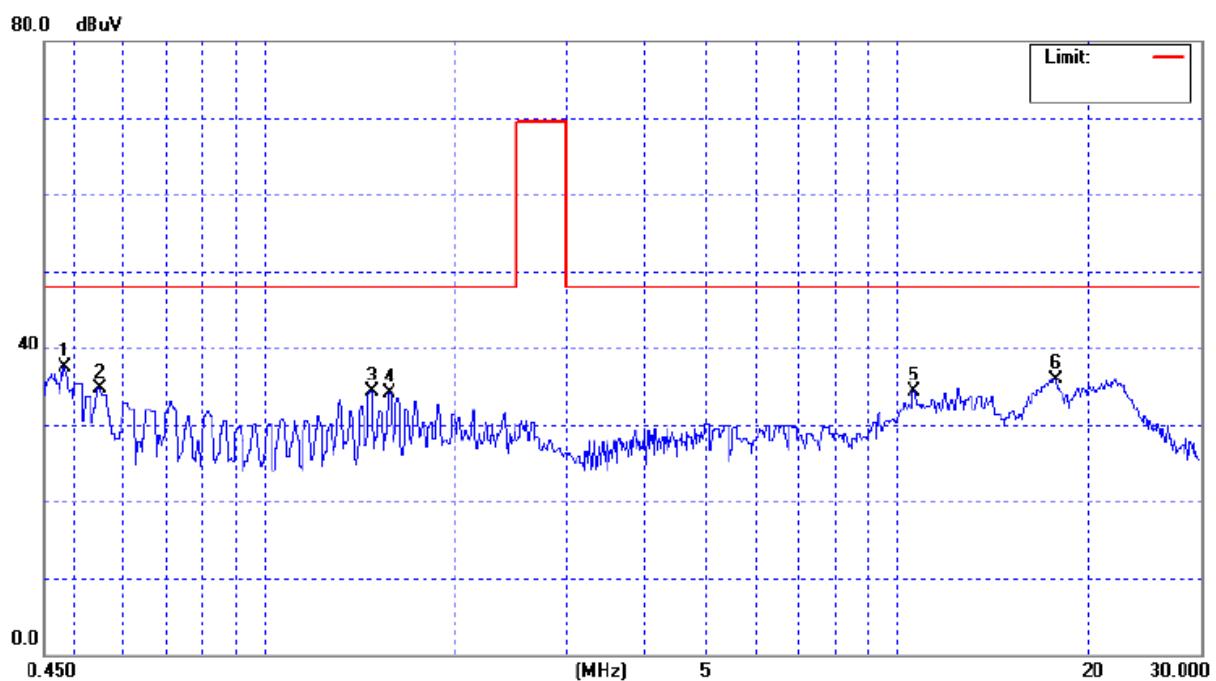


| | | | |
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| Freq. (MHz) | Terminal L/N | Measured (dBuV) | Limits | | Margin (dBuV) | Note | Remark C |
|----------------|-----------------|--------------------|--------|--------|------------------|------|-------------|
| | | | (dBuV) | (uV) | | | |
| 0.48 | Neutral | 37.50 | 48.00 | 250.00 | -10.50 | | |
| 0.55 | Neutral | 34.72 | 48.00 | 250.00 | -13.28 | | |
| 1.48 | Neutral | 34.26 | 48.00 | 250.00 | -13.74 | | |
| 1.57 | Neutral | 34.07 | 48.00 | 250.00 | -13.93 | | |
| 10.64 | Neutral | 34.30 | 48.00 | 250.00 | -13.70 | | |
| 17.75 | Neutral | 35.94 | 48.00 | 250.00 | -12.06 | | |

Remark

- (1) Reading was measured by using are Quasi-Peak Mode with Detector BW=9KHz ; SPA setting in RBW=10KHz,VBW =10KHz, SWP Time = 0.3 sec./ MHz.
- (2) All readings are QP Mode value unless otherwise stated Peak in column of 『 Note 』.
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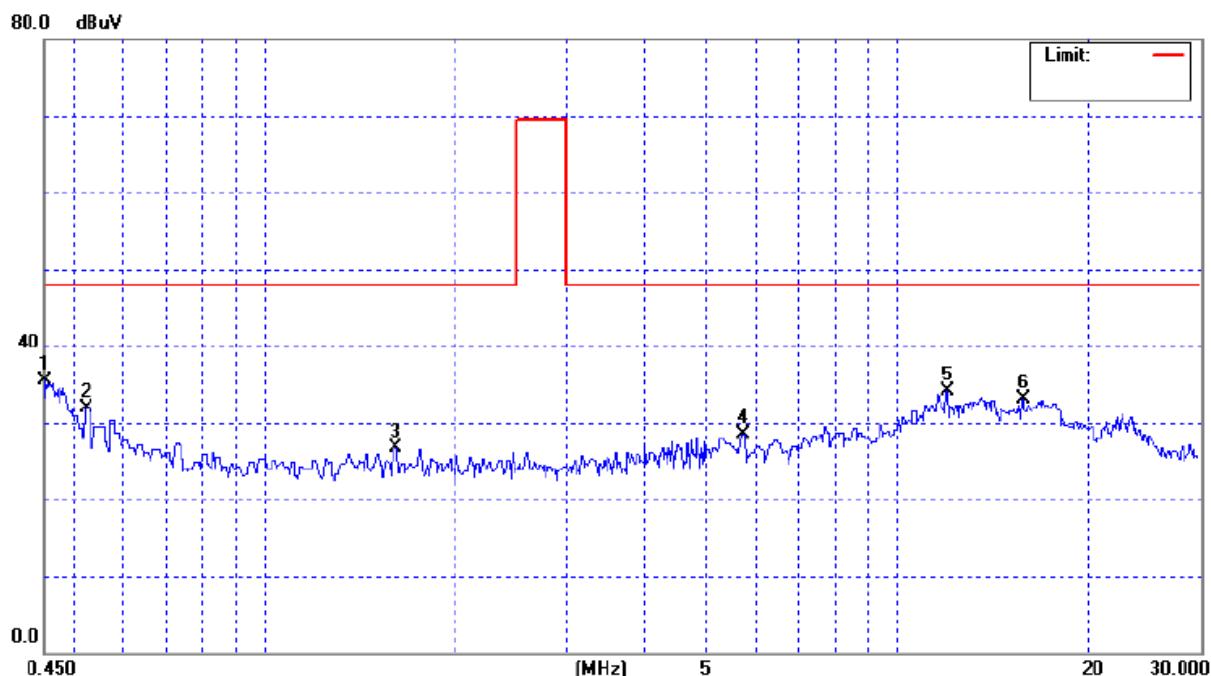


| | | | |
|---------------|--------------------|---------------------|----------------|
| EUT : | ELECTRONIC BALLAST | Model No. : | 120-3/32IS MPF |
| Temperature : | 22 °C | Relative Humidity : | 58 % |
| Pressure : | 1014 hPa | Test Power : | AC 120V/60Hz |
| Test Mode : | T8 17W x 3 / 46W | | |

| Freq. (MHz) | Terminal L/N | Measured (dBuV) | Limits | | Margin (dBuV) | Note | Remark C |
|----------------|-----------------|--------------------|--------|--------|------------------|------|-------------|
| | | | (dBuV) | (uV) | | | |
| 0.45 | Line | 35.52 | 48.00 | 250.00 | -12.48 | | |
| 0.53 | Line | 31.93 | 48.00 | 250.00 | -16.07 | | |
| 1.62 | Line | 26.69 | 48.00 | 250.00 | -21.31 | | |
| 5.71 | Line | 28.51 | 48.00 | 250.00 | -19.49 | | |
| 12.04 | Line | 34.13 | 48.00 | 250.00 | -13.87 | | |
| 15.79 | Line | 33.02 | 48.00 | 250.00 | -14.98 | | |

Remark

- (1) Reading was measured by using are Quasi-Peak Mode with Detector BW=9KHz ; SPA setting in RBW=10KHz,VBW =10KHz, SWP Time = 0.3 sec./ MHz .
- (2) All readings are QP Mode value unless otherwise stated Peak in column of 『 Note 』 .
- (3) Measuring frequency range from 450KHz to 30MHz .
- (4) Remark C denotes the Consumer Equipment limitation used for judgment.
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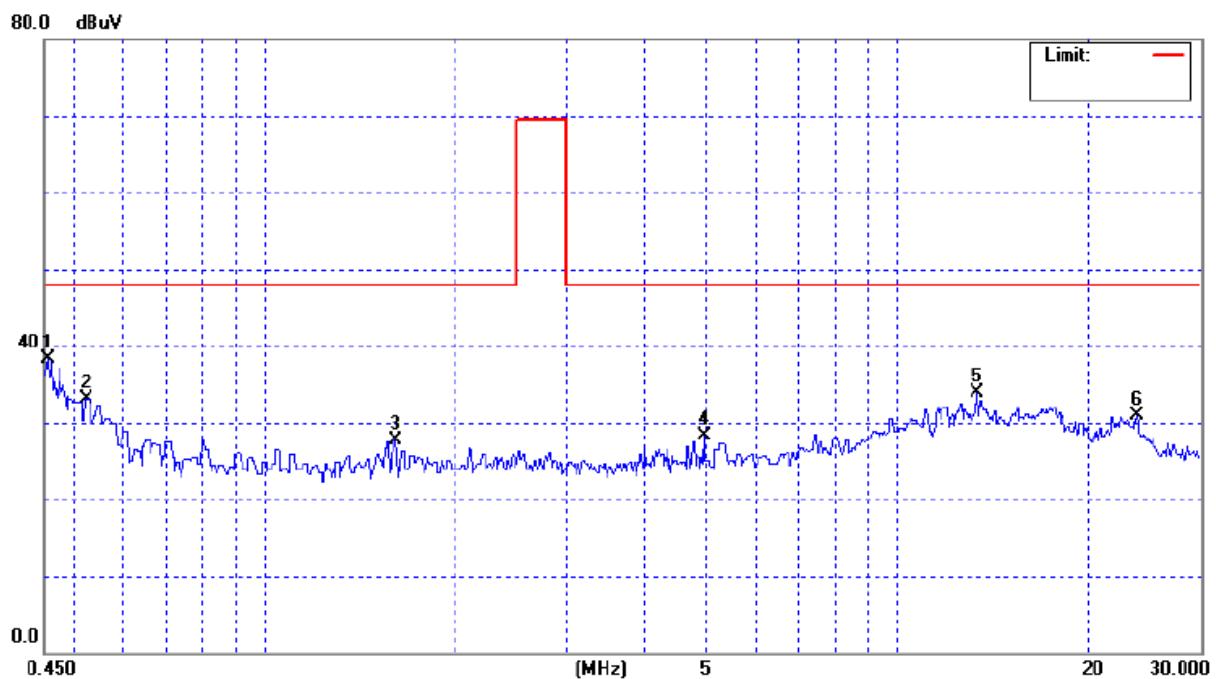


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|---------------|--------------------|---------------------|----------------|
| EUT : | ELECTRONIC BALLAST | Model No. : | 120-3/32IS MPF |
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| Pressure : | 1014 hPa | Test Power : | AC 120V/60Hz |
| Test Mode : | T8 17W x 3 / 46W | | |

| Freq. (MHz) | Terminal L/N | Measured (dBuV) | Limits | | Margin (dBuV) | Note | Remark C |
|----------------|-----------------|--------------------|--------|--------|------------------|------|-------------|
| | | | (dBuV) | (uV) | | | |
| 0.46 | Neutral | 38.32 | 48.00 | 250.00 | -9.68 | | |
| 0.53 | Neutral | 33.12 | 48.00 | 250.00 | -14.88 | | |
| 1.62 | Neutral | 27.69 | 48.00 | 250.00 | -20.31 | | |
| 4.97 | Neutral | 28.26 | 48.00 | 250.00 | -19.74 | | |
| 13.43 | Neutral | 33.95 | 48.00 | 250.00 | -14.05 | | |
| 23.96 | Neutral | 30.93 | 48.00 | 250.00 | -17.07 | | |

Remark

- (1) Reading was measured by using are Quasi-Peak Mode with Detector BW=9KHz ; SPA setting in RBW=10KHz,VBW =10KHz, SWP Time = 0.3 sec./ MHz.
- (2) All readings are QP Mode value unless otherwise stated Peak in column of 『 Note 』.
- (3) Measuring frequency range from 450KHz to 30MHz.
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ATTACHMENT

PHOTOGRAPHS OF EUT