



Certificate No.: **E/EC4123151207061**

This certificate is hereby to confirm that the following equipment conform to the requirements of 2004/108/EC-Electromagnetic Compatibility (EMC) Directive and 93/68/EEC-CE Marking Directive.

Product Description: **Binoculars With illuminated compass**

Model No: **150758,150757,150755,150732,151758,153758,153757**

Rating(s): **3Vdc**

Trademark: **/**

Applicant: **KUNMING YUANDA OPTICAL CO., LTD.
KUNYANG, KUNMING, YUNNAN PROVINCE, CHINA**

Manufacture: **KUNMING YUANDA OPTICAL CO., LTD.
KUNYANG, KUNMING, YUNNAN PROVINCE, CHINA**

Factory: **KUNMING YUANDA OPTICAL CO., LTD.
KUNYANG, KUNMING, YUNNAN PROVINCE, CHINA**

Test standards: **EN61000-6-1:2007, EN61000-6-3:2007
EN 61000-3-2:2006+A1:2009+A2:2009, EN 61000-3-3:2008**

This certificate is only valid in conjunction with the test report(s) below.

Test report No.: **E1511CE8888-00066**

Date of issue: **2015-12-07**



CEPREI

Yang Lin(杨林)
Director






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| TEST REPORT | | |
|--|---|---|
| (According to 2004/108/EC Directive) | | |
| EMC of residential,commercial and light-industrial environments products | | |
| Report reference No | E1511CE8888-00066 | |
| Date of issue | 2015.12.04 | |
| Total number of pages | 35 | |
| Applicant's Name | KUNMING YUANDA OPTICAL CO.,LTD. | |
| Address | KUNYANG, KUNMING, YUNNAN PROVINCE, CHINA | |
| Manufacture's Name | KUNMING YUANDA OPTICAL CO.,LTD. | |
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| Factory's Name | KUNMING YUANDA OPTICAL CO.,LTD. | |
| Address | KUNYANG, KUNMING, YUNNAN PROVINCE, CHINA | |
| Testing Laboratory Name | China CEPREI Laboratory | |
| Address | No. 110 Dongguanzhuang Rd., Tianhe District, Guangzhou, Guangdong, 510610, China | |
| Testing location | China CEPREI Laboratory | |
| Test specification | | |
| Standard..... | EN61000-6-1:2007, EN61000-6-3:2007 EN 61000-3-2:2006+A1:2009+A2:2009,EN 61000-3-3:2008 | |
| Test procedure | Entrusted Test | |
| Procedure deviation | N/A | |
| Non-standard test method | N/A | |
| Test Report Form | | |
| Test Report Form No..... | EMC/CE | |
| TRF originator | CEPREI | |
| Master TRF | N/A | |
| This report is based on a blank test report that was prepared by China CEPREI Laboratory using information obtained from the TRF originator (see below). | | |
| Copyright reserved to China CEPREI Laboratory. | | |
| Test item description | Binoculars With illuminated compass | |
| Trademark | / | |
| Model and/or type reference | 150758 | |
| Rating(s) | 3Vdc | |
| Test items particulars: | N/A | |
| Tested by (printed name and signature)..... | Song Jun (宋俊) |  |
| Reviewed by (printed name and signature)..... | Yu Haitao (余海涛) |  |
| Approved by (printed name and signature)..... | Yang Lin (杨林) |  |

| |
|---|
| Test case verdicts Test case does not apply to the test object: N/A Test item does meet the requirement.....: P(Pass) Test item does not meet the requirement.....: F(Fail) |
| Testing Date of receipt of test item: 2015.11.18 Date(s) of performance of test.....: 2015.11.18~2015.12.04 |
| General remarks This report shall not be reproduced, except in full, without the written approval of the testing laboratory. The test results presented in this report relate only to the item(s) tested. Throughout this report a point is used as the decimal separator. |
| Summary of Testing and Conclusions The sample(s) tested complies with the principal requirements of 2004/108/EC directive. |
| General product information: The application models are 150758,150757,150755,150732,151758,153758,153757.The applicant models are identical except model name . All testing are taken on the model of 150758. This product is a dc power supply, only Radiated Emission(30-1000MHz)、Electrostatic Discharge Immunity、Radio-frequency Electromagnetic Fields Immunity should be tested in this report. |

EMC Standards Compliance List / Test Summary:

The following standards have been applied to ensure the product conforms with the protection requirements of the council directive 2004/108/EC.

| Electromagnetic Emissions | | | |
|--|--------------|----------------------------------|---------------|
| Test Item | Class | Standard | Result |
| Conducted Emission(0.15-30MHz) | / | EN61000-6-3:2007 | N/A |
| Conducted Emission at telecommunication port(0.15-30MHz) | / | | N/A |
| Radiated Emission(30-1000MHz) | B | | PASS |
| Radiated Emission(Above 1GHz) | / | | N/A |
| Harmonic Current Emission | / | EN61000-3-2:2006+A1:2009+A2:2009 | N/A |
| Voltage fluctuation and flicker | / | EN61000-3-3:2008 | N/A |

| Electromagnetic Immunity | | | | |
|---|-----------------------------|------------------|---|---------------|
| Test Item | Performance Criteria | Standard | Test Level | Result |
| Electrostatic Discharge Immunity | B | EN61000-6-1:2007 | 4 kV(Contact/indirect Discharge) 8 kV(Air discharge) | PASS |
| Electrical Fast Transient/Burst Immunity | / | | 1 kV (peak)-AC in 0.5kV(peak)-DC in, signal or TE port 5/50 Tr/Th ns 5kHz Repetition frequency | N/A |
| Radio-frequency Electromagnetic Fields Immunity | A | | 80-1000 MHz 3 V/m (unmodulated, r.m.s) 80 % AM (1kHz) | PASS |
| Radio-frequency Conducted Disturbance Immunity | / | | 0.15-80 MHz 3 V (unmodulated, r.m.s) 80% AM (1kHz) | N/A |
| Surge immunity | / | | Power:1kV L-N; 2kV L:N-GND TE port: 1kV Line-GND 1.2/50 (8/20) Tr/Th μ s | N/A |
| Voltage dips, short interruptions immunity | / | | >95% reduction0.5 periods 30% reduction25 periods >95% reduction250 periods | N/A |

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Section 1 General Information

1.1 Introduction

This report documents the emission and immunity test results for the EUT.

1.2 EUT General and Technical Descriptions

| | |
|---------------------------|-------------------------------------|
| EUT Name: | Binoculars With illuminated compass |
| EUT Model: | 150758 |
| EUT Trademark: | / |
| Input Voltage: | 3Vdc |
| Frequency: | / |
| Input Current: | / |
| Power Cable Description: | / |
| Other Cables Description: | / |
| I/O Ports: | / |
| Function(s) Description: | / |
| Accessories information: | / |

1.3 Support Equipment(s) and Test Configuration

1.3.1 Details of Support Equipment(s)

/

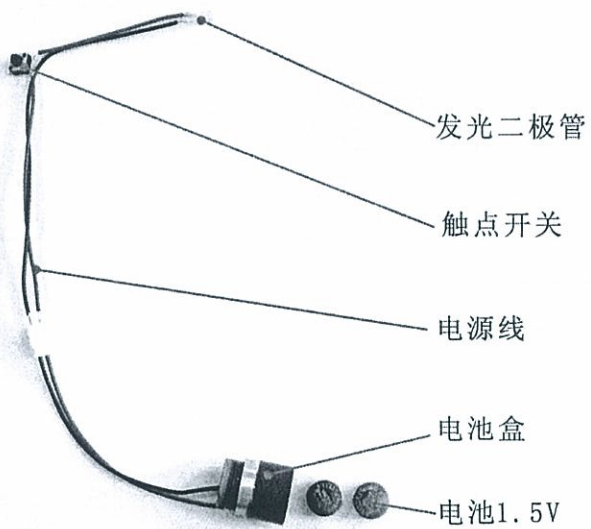
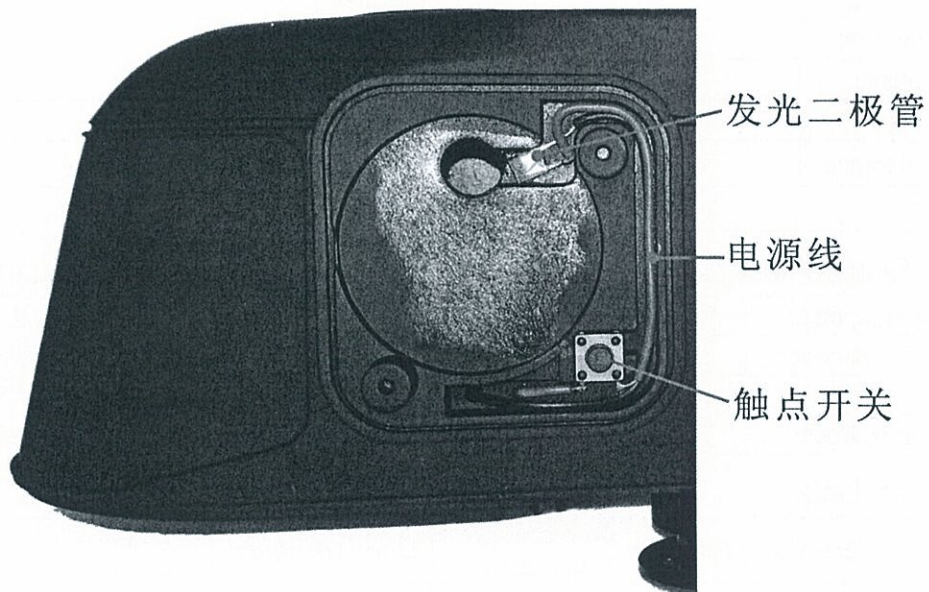
1.3.2 Working State of EUT

1. Power Supply of EUT: 3Vdc
2. EUT Status: Normal work

1.3.3 Block Diagram of Test Configuration

/

1.3 EUT Photographs



Section 2 Electromagnetic Emissions

2.1 Conducted Emission at Mains Terminals

2.1.1 Conducted Emission Test Information (mains terminal)

| | | | |
|-----------------|--|---------------|--|
| Temperature: | | Humidity: | |
| ATM Pressure: | | Grounding: | |
| Test Voltage: | | Tested Range: | |
| Tested by: | | Date of test: | |
| Test Reference: | | | |
| Results: | | | |

2.1.2 Measurement Equipments Used for Conducted Emission (mains terminal)

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|-------------------|--------------|---------|--------------|------------|------------|
| EMI Test Receiver | R&S | ESCS30 | 640201042 | 2015-06-08 | 2016-06-07 |
| LISN | R&S | ESH2-Z5 | 640201028-02 | 2015-06-08 | 2016-06-07 |
| Shielded Room | Lindgren | 8*5*3 | 640101037-01 | 2015-06-08 | 2016-06-07 |

2.1.3 Test Data

| No. | Frequency (MHz) | Corrected QP Level (dBµV) | Limits QP (dBµV) | Corrected AVE Level (dBµV) | Limits AVE (dBµV) |
|-----|-----------------|---------------------------|------------------|----------------------------|-------------------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| No. | Frequency (MHz) | Corrected QP Level (dBµV) | Limits QP (dBµV) | Corrected AVE Level (dBµV) | Limits AVE (dBµV) |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Note: The Corrected QP Level and Corrected AVE Level included The Cable attenuation.

2.1.4 Test curves

/

Line L Conducted Emission Graph

/

Line N Conducted Emission Graph

Note: The curves included The Cable attenuation.

2.1.5 Test Setup

/

Conducted Emission at mains terminal Test Set-up Front View

/

2.2 Conducted Emission at Telecommunication port

2.2.1 Conducted Emission Test Information (TE port)

| | | | |
|------------------------|--|----------------------|--|
| Temperature: | | Humidity: | |
| ATM Pressure: | | Grounding: | |
| Test Voltage: | | Tested Range: | |
| Tested by: | | Date of test: | |
| Test Reference: | | | |
| Results: | | | |

2.2.2 Measurement Equipments Used for Conducted Emission (TE port)

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|--------------------------------------|--------------|---------|--------------|------------|------------|
| EMI Test Receiver | R&S | ESCS30 | 640201042 | 2015-06-08 | 2016-06-07 |
| LISN | R&S | ESH2-Z5 | 640201028-02 | 2015-06-08 | 2016-06-07 |
| Shielded Room | Lindgren | 8*5*3 | 640101037-01 | 2015-06-08 | 2016-06-07 |
| Telecommunication ports coupling net | TESEQ | ISN-T8 | 24821 | 2015-06-08 | 2016-06-07 |

2.2.3 Test Data

| No. | Frequency (MHz) | Corrected QP Level (dBµV) | Limits QP (dBµV) | Corrected AVE Level (dBµV) | Limits AVE (dBµV) |
|-----|-----------------|---------------------------|------------------|----------------------------|-------------------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| | | | | | |
| | | | | | |
| No. | Frequency (MHz) | Corrected QP Level (dBµV) | Limits QP (dBµV) | Corrected AVE Level (dBµV) | Limits AVE (dBµV) |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

2.2.4 Test curves

/

Conducted emission at telecommunication port Graph(100M)

/

Conducted emission at telecommunication port Graph(1000M)

2.2.5 Test Setup

/

Conducted emission at telecommunication port Test Set-Up – Front View

/

2.3 Radiated Emission (30-1000MHz)

2.3.1 Radiated Emission Test Information

| | | | |
|------------------------|------------------|----------------------|------------------|
| Temperature: | 23 °C | Humidity: | 57% RH |
| ATM Pressure: | 101 k Pa | Grounding: | / |
| Test Voltage: | 230VAC / 50Hz | Tested Range: | 30MHz to 1000MHz |
| Tested by: | Song Jun | Date of test: | 2015-11-23 |
| Test Reference: | EN61000-6-3:2007 | | |
| Results: | PASS | | |

2.3.2 Measurement Equipments Used for Radiated emission

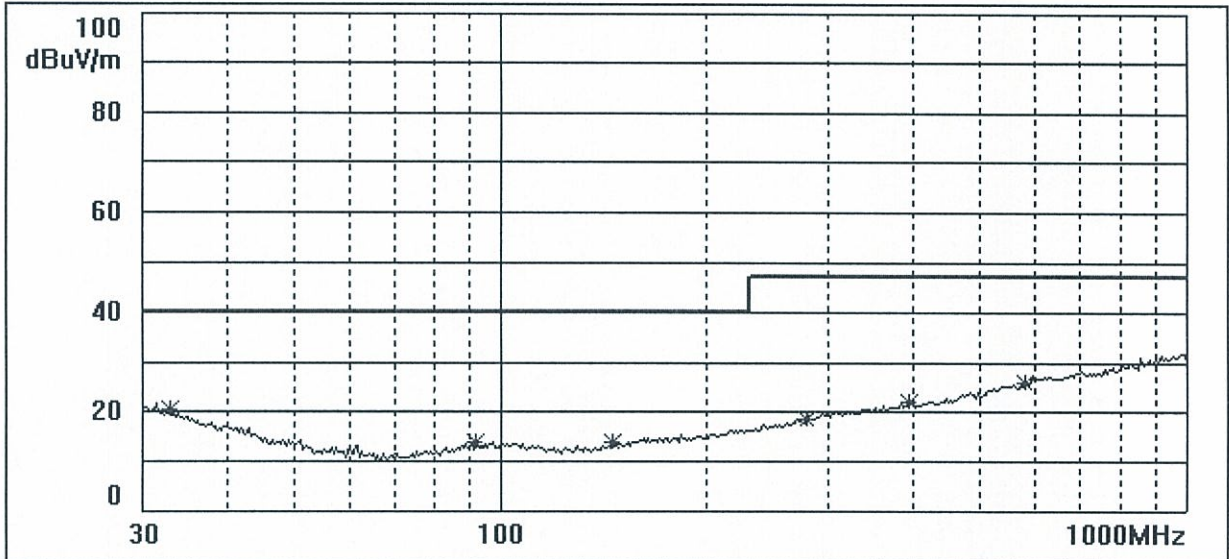
| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|-------------------|--------------|----------|------------|------------|------------|
| EMI Test Receiver | R&S | ESCS 30 | 7561010005 | 2015-06-08 | 2016-06-07 |
| Bi-Log antenna | SCHAFFNER | CBL6112B | 2877 | 2015-06-08 | 2016-06-07 |
| Anechoic Chamber | Lindgren | FACT- 4 | 640101037 | 2015-06-08 | 2016-06-07 |

2.3.3 Test Data

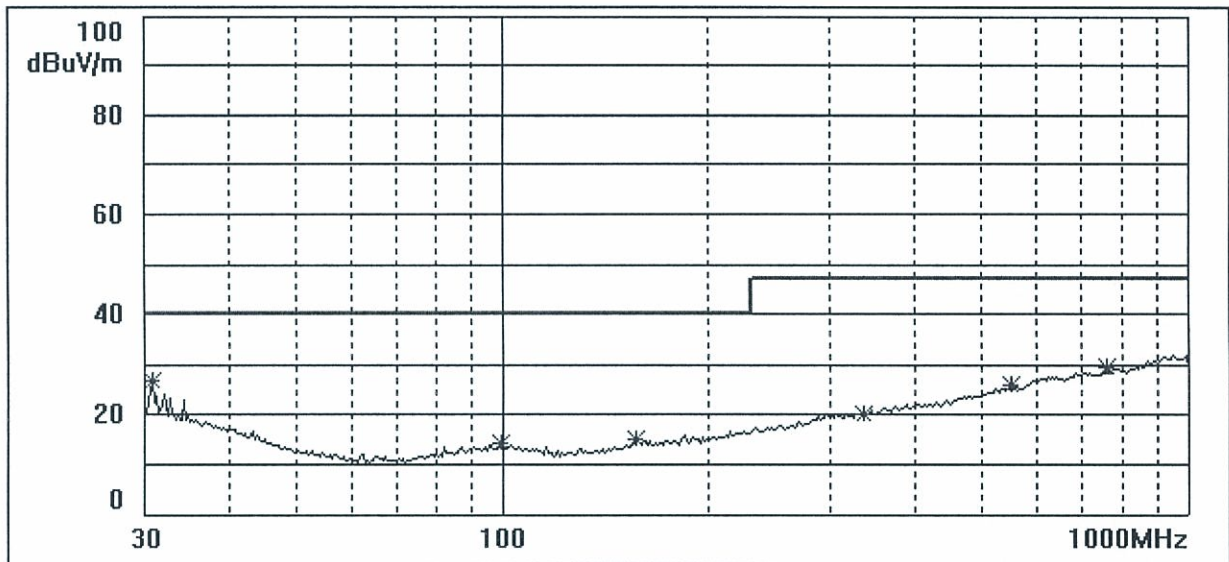
| Horizontal | | | | | | |
|------------|-----------------|------------------------------|--------------------------|-------------|--------------------------|----------------------|
| No. | Frequency (MHz) | Corrected QP Level dB (μV/m) | 3 Meter Limits dB (μV/m) | Margin (dB) | Angle of Turner (degree) | Height of Tower (cm) |
| 1 | 32.9 | 20.3 | 40 | -19.7 | 27 | 112 |
| 2 | 91.5 | 13.7 | 40 | -26.3 | 70 | 107 |
| 3 | 145.6 | 13.7 | 40 | -26.3 | 210 | 120 |
| 4 | 278.5 | 18.5 | 47 | -28.5 | 118 | 102 |
| 5 | 393.0 | 21.9 | 47 | -25.1 | 350 | 130 |
| 6 | 579.9 | 25.8 | 47 | -21.2 | 41 | 134 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Vertical | | | | | | |
| No. | Frequency (MHz) | Corrected QP Level dB(μV/m) | 3 Meter Limits dB (μV/m) | Margin (dB) | Angle of Turner (degree) | Height of Tower (cm) |
| 1 | 31 | 26.7 | 40 | -13.3 | 54 | 130 |
| 2 | 99.1875 | 14.1 | 40 | -25.9 | 89 | 120 |
| 3 | 156.375 | 14.9 | 40 | -25.1 | 135 | 114 |
| 4 | 335.9375 | 20.3 | 47 | -26.7 | 115 | 102 |
| 5 | 552.5 | 25.8 | 47 | -21.2 | 52 | 141 |
| 6 | 761.125 | 29.3 | 47 | -17.7 | 185 | 123 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note: The Corrected QP Level included The Cable attenuation and The Antenna Factor.

2.3.4 Test Curves



Horizontal Radiated Emission Graph (Peak, Max Hold Mode)



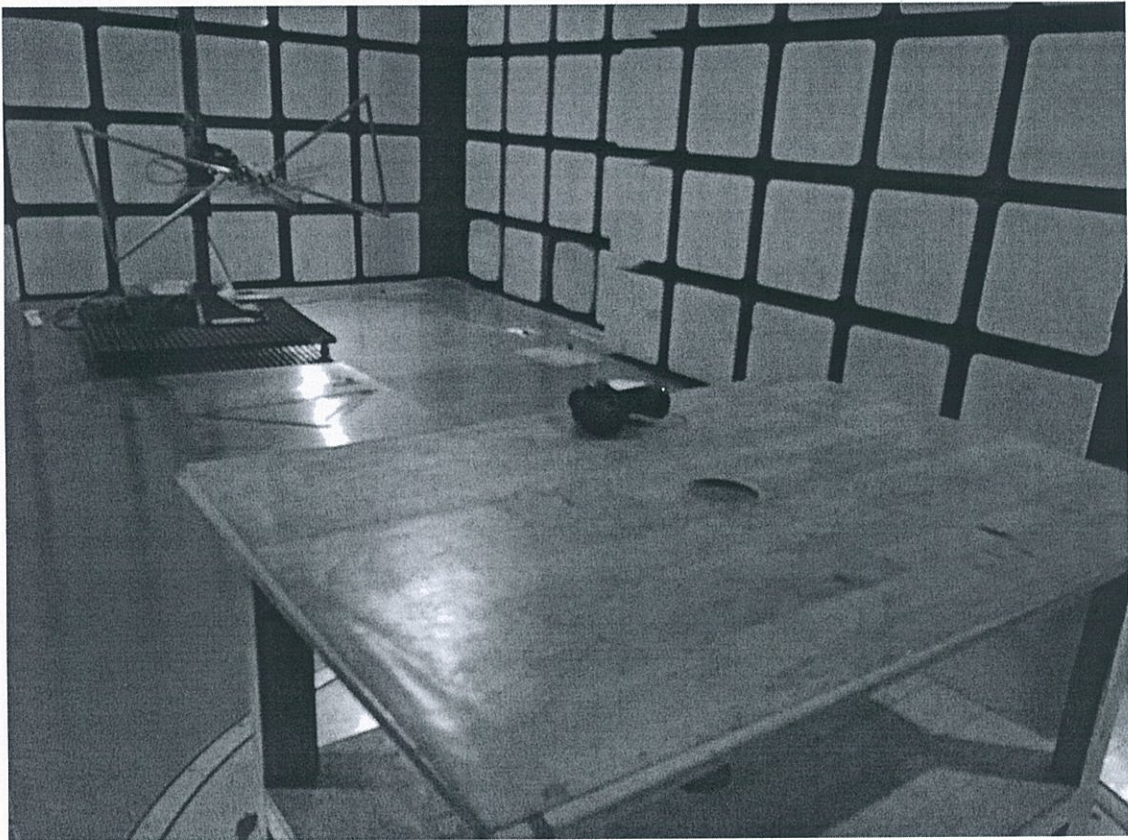
Vertical Radiated Emission Graph (Peak, Max Hold Mode)

Note: The Curves included The Cable attenuation and The Antenna Factor.

TRF No: EMC/CE

TRF originator CEPREI

2.3.5 Test Setup



Radiated Emission Test Set-Up – Front View

/

2.4 Radiated Emission (Above 1GHz)

2.4.1 Radiated Emission Test Information

| | | | |
|-----------------|--|---------------|--|
| Temperature: | | Humidity: | |
| ATM Pressure: | | Grounding: | |
| Test Voltage: | | Tested Range: | |
| Tested by: | | Date of test: | |
| Test Reference: | | | |
| Results: | | | |

2.4.2 Measurement Equipments Used for Radiated emission

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|-------------------|--------------|------------|--------------|------------|------------|
| EMI Test Receiver | R&S | ESU | 7561010010 | 2015-06-08 | 2016-06-07 |
| Anechoic Chamber | Lindgren | RFSD-F-100 | 2693 | 2015-06-08 | 2016-06-07 |
| antenna | EMCO | 3115 | 640201028-08 | 2015-06-08 | 2016-06-07 |
| Pre-amplifier | MITEQ | AFS44 | 1381096 | 2015-06-08 | 2016-06-07 |

2.4.3 Test Data

| No. | Frequency (MHz) | Corrected Level dB ($\mu\text{V/m}$) | | 3 Meter Limits dB ($\mu\text{V/m}$) | | Angle of Turner (degree) | Height of Tower (cm) |
|-----|-----------------|--|----|---------------------------------------|----|--------------------------|----------------------|
| | | PK | AV | PK | AV | | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| | | | | | | | |
| No. | Frequency (MHz) | Corrected Level dB ($\mu\text{V/m}$) | | 3 Meter Limits dB ($\mu\text{V/m}$) | | Angle of Turner (degree) | Height of Tower (cm) |
| | | PK | AV | PK | AV | | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |

Note: The Corrected QP Level included The Cable attenuation and The Antenna Factor.

2.4.4 Test Curves

/

Horizontal Radiated Emission Graph (Peak, Max Hold Mode)

/

Vertical Radiated Emission Graph (Peak, Max Hold Mode)

Note: The Curves included The Cable attenuation and The Antenna Factor.

TRF No: EMC/CE

TRF originator CEPREI

2.4.5 Test Setup

/

Radiated Emission Test Set-Up – Front View

/

2.5 Harmonic current emission

2.5.1 Harmonic current emission test information

| | | | |
|-----------------|--|-----------------|--|
| Temperature: | | Humidity: | |
| ATM Pressure: | | Grounding: | |
| Test Voltage: | | Classification: | |
| Tested by: | | Date of test: | |
| Test Reference: | | | |
| Results: | | | |

2.5.2 Measurement Equipments Used for Harmonic Current Emission

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|----------------|--------------|-----------|-------------|------------|------------|
| Power analyzer | EM TEST | DPA 503 | 640101055 | 2015-06-08 | 2016-06-07 |
| Power | EM TEST | NetWave 7 | V0938105152 | 2015-06-08 | 2016-06-07 |

2.5.3 Test Data

| Average harmonic current results | | | | | Power Factor: | | Power: | | |
|----------------------------------|----------------------|---------------|----------------|--------|---------------|----------------------|---------------|----------------|--------|
| Hn | I _{eff} [A] | Low limit [A] | High limit [A] | Result | Hn | I _{eff} [A] | Low limit [A] | High limit [A] | Result |
| 1 | | | | | 21 | | | | |
| 2 | | | | | 22 | | | | |
| 3 | | | | | 23 | | | | |
| 4 | | | | | 24 | | | | |
| 5 | | | | | 25 | | | | |
| 6 | | | | | 26 | | | | |
| 7 | | | | | 27 | | | | |
| 8 | | | | | 28 | | | | |
| 9 | | | | | 29 | | | | |
| 10 | | | | | 30 | | | | |
| 11 | | | | | 31 | | | | |
| 12 | | | | | 32 | | | | |
| 13 | | | | | 33 | | | | |
| 14 | | | | | 34 | | | | |
| 15 | | | | | 35 | | | | |
| 16 | | | | | 36 | | | | |
| 17 | | | | | 37 | | | | |
| 18 | | | | | 38 | | | | |
| 19 | | | | | 39 | | | | |
| 20 | | | | | 40 | | | | |

Low limit: Maximum permissible harmonic current according to power;
 High limit: Maximum permissible harmonic current.

2.5.4 Test setup

/

Harmonic current emission Test Set-Up – Front View

/

2.6 Voltage fluctuations and flicker

2.6.1 Voltage fluctuations and flicker test information

| | | | |
|-----------------|--|---------------|--|
| Temperature: | | Humidity: | |
| ATM Pressure: | | Grounding: | |
| Test Voltage: | | | |
| Tested by: | | Date of test: | |
| Test Reference: | | | |
| Results: | | | |

2.6.2 Measurement Equipments Used for Voltage fluctuations and flicker test

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|----------------|--------------|-----------|-------------|------------|------------|
| Power analyzer | EM TEST | DPA 503 | 640101055 | 2015-06-08 | 2016-06-07 |
| Power | EM TEST | NetWave 7 | V0938105152 | 2015-06-08 | 2016-06-07 |

2.6.3 Test Data

| Maximum Flicker results | | | |
|-------------------------|------------|-------|--------|
| | EUT values | Limit | Result |
| Pst | | 1.00 | PASS |
| Plt | | 0.65 | PASS |
| dc [%] | | 3.30 | PASS |
| dmax [%] | | 4.00 | PASS |
| dt [s] | | 0.50 | PASS |

2.6.4 Test Setup

Voltage Fluctuations and Flicker Test Set-Up – Front View

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Section 3 Electromagnetic Immunity

3.1 Electrostatic Discharge Immunity

3.1.1 Electrostatic Discharge Immunity Test Information

| | | | |
|------------------------------|------------------|----------------------|------------|
| Temperature: | 23 °C | Humidity: | 57% RH |
| ATM Pressure: | 101 k Pa | Grounding: | / |
| Test Voltage: | 230VAC / 50Hz | | |
| Tested by: | Song Jun | Date of test: | 2015-11-23 |
| Test Reference: | EN61000-6-1:2007 | | |
| Performance Criteria: | B | | |
| Results: | PASS | | |

3.1.2 Measurement Equipment Used for Electrostatic Discharge Immunity

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|----------------|--------------|--------|------------|------------|------------|
| ESD Generator | SCHAFFNER | NSG438 | 640101065 | 2015-06-08 | 2016-06-07 |

3.1.3 Test Data

| Test position | Test voltage (kV) | Test mode | Test number | Result | Criterion | Verdict |
|-----------------|-------------------|-------------------|-------------|--------|-----------|---------|
| HCP | ±1,±2,±4 | Contact discharge | 10 × 6 | A | B | PASS |
| VCP | ±1,±2,±4 | Contact discharge | 10 × 6 | A | B | PASS |
| Metal port | ±2,±4,±8 | Air discharge | 10 × 6 | A | B | PASS |
| The keys | ±2,±4,±8 | Air discharge | 10 × 6 | A | B | PASS |
| aperture | ±2,±4,±8 | Air discharge | 10 × 6 | A | B | PASS |
| Indicator light | ±2,±4,±8 | Air discharge | 10 × 6 | A | B | PASS |
| | | | | | | |
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| | | | | | | |
| | | | | | | |
| | | | | | | |

Note: The test results of the ESD are classified into four groups:

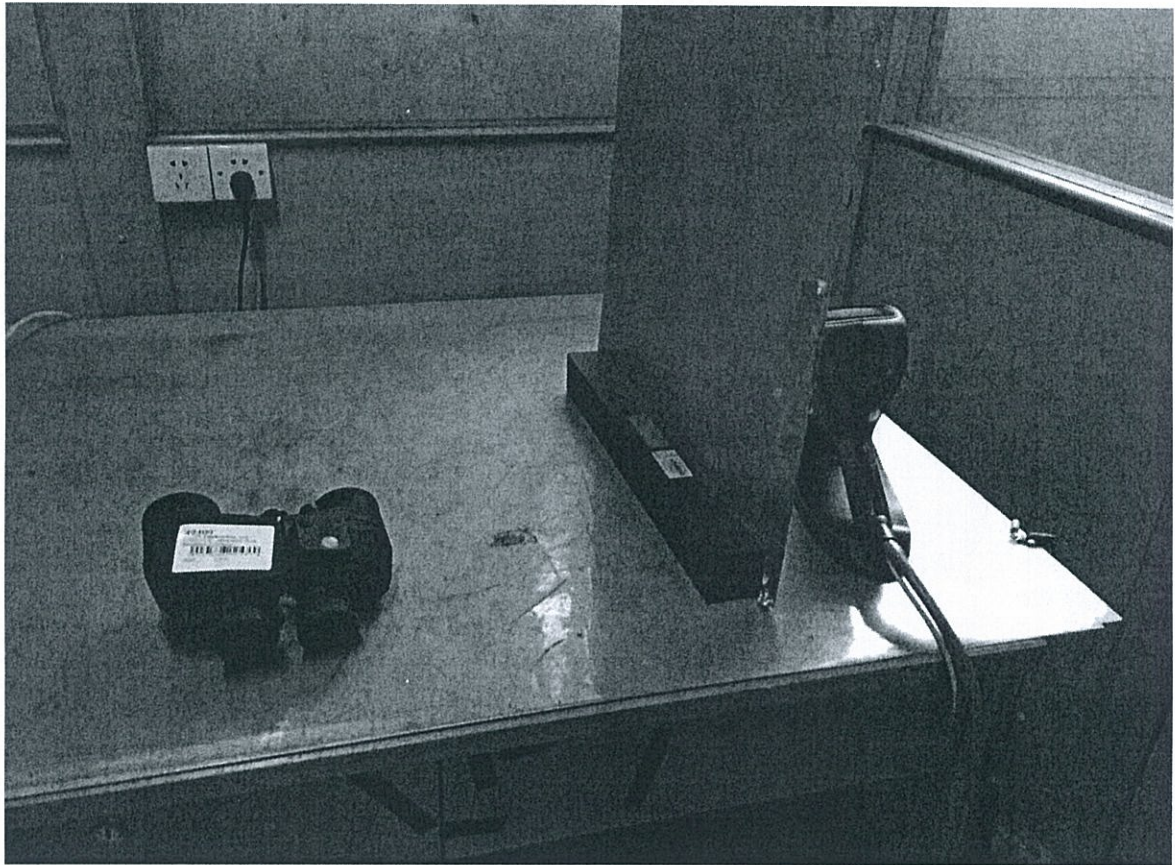
A ---- Normal performance within the specification limits;

B ---- Temporary degradation or loss of function or performance which is self-recoverable;

C ---- Temporary degradation or loss of function or performance which requires operator intervention or system reset;

D---- Degradation or loss of function which is not recoverable due to damage of equipment (components) or software, or loss of data.

3.1.4 Test Setup



Electromagnetic Immunity Test Set-Up –Front View

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3.2.4 Test Setup

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Electrical Fast Transient/Burst Immunity Test Set-Up –Front View

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3.3 Radio-frequency Electromagnetic Fields Immunity

3.3.1 Radio-frequency Electromagnetic Fields Immunity test information

| | | | |
|-----------------------|------------------|---------------|------------|
| Temperature: | 23 °C | Humidity: | 57% RH |
| ATM Pressure: | 101 k Pa | Grounding: | / |
| Test Voltage: | 230VAC / 50Hz | | |
| Tested by: | Song Jun | Date of test: | 2015-11-23 |
| Test Reference: | EN61000-6-1:2007 | | |
| Performance Criteria: | A | | |
| Results: | PASS | | |

3.3.2 Measurement Equipment Used for Radio-frequency Electromagnetic Fields Immunity test

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|---------------------------------|--------------|-----------|------------|------------|------------|
| Signal Generator | R&S | SMB100A | 102984 | 2015-06-08 | 2016-06-07 |
| RF power Amplifier | AR | 500W1000A | 0326103 | 2015-06-08 | 2016-06-07 |
| Electrical field monitor system | EMCO | 7122 | 640101030 | 2015-06-08 | 2016-06-07 |

3.3.3 Test Data

| Frequency Range (MHz) | Strength (V/m) | 1kHz AM Mod. % | EUT Tuned degree | EUT performance comply to criteria | Result |
|-----------------------|----------------|----------------|------------------|------------------------------------|--------|
| 80~1000 | 3 | 80 | 0° | A | PASS |
| 80~1000 | 3 | 80 | 90° | A | PASS |
| 80~1000 | 3 | 80 | 180° | A | PASS |
| 80~1000 | 3 | 80 | 270° | A | PASS |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Note:

The performance criteria are classified into four groups:

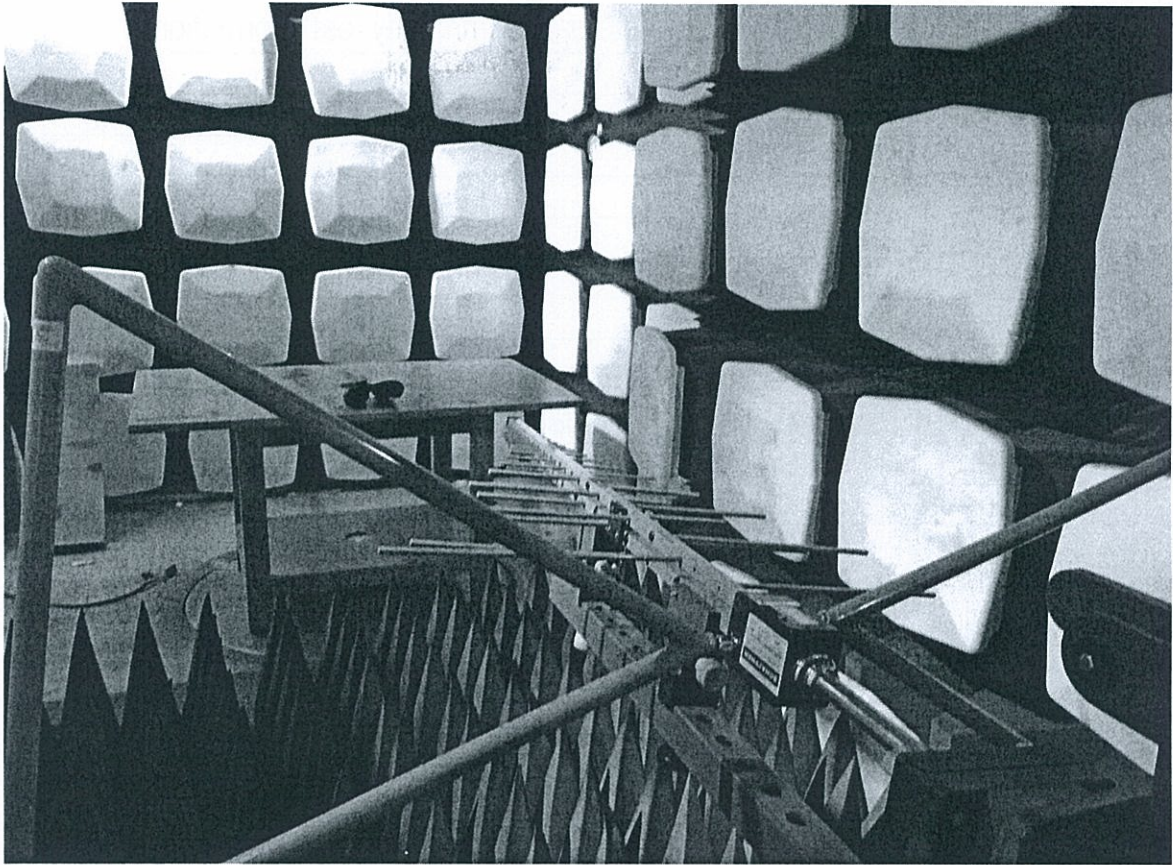
A ---- Normal performance within the specification limits;

B ---- Temporary degradation or loss of function or performance which is self-recoverable;

C ---- Temporary degradation or loss of function or performance which requires operator intervention or system reset;

D ---- Degradation or loss of function which is not recoverable due to damage of equipment (components) or software, or loss of data.

3.3.4 Test Setup



Radio-frequency Electromagnetic Fields Immunity Test Set-Up –Front View

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3.4 Radio-frequency Conducted Disturbance Immunity

3.4.1 Radio-frequency Conducted Disturbance Immunity test information

| | | | |
|-----------------------|--|---------------|--|
| Temperature: | | Humidity: | |
| ATM Pressure: | | Grounding: | |
| Test Voltage: | | | |
| Tested by: | | Date of test: | |
| Test Reference: | | | |
| Performance Criteria: | | | |
| Results: | | | |

3.4.2 Measurement Equipment Used for Radio-frequency Conducted Disturbance Immunity test

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|----------------|--------------|----------|--------------|------------|------------|
| EM TEST | EM | CWS 500C | 640101047 | 2015-06-08 | 2016-06-07 |
| EM TEST CDN | EM | M3 | 640101047-03 | 2015-06-08 | 2016-06-07 |

3.4.3 Test Data

| Injected position | Frequency Range (MHz) | Strength (r m s) (unmodulated) | 1kHz AM Mod. % | EUT performance comply to criteria | Result |
|-------------------|-----------------------|--------------------------------|----------------|------------------------------------|--------|
| AC Power Line | 0.15~80 | 3V | 80 | | |
| | | | | | |
| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |

Note:

The performance criteria are classified into four groups:

A ---- Normal performance within the specification limits;

B ---- Temporary degradation or loss of function or performance which is self-recoverable;

C ---- Temporary degradation or loss of function or performance which requires operator intervention or system reset;

D ---- Degradation or loss of function which is not recoverable due to damage of equipment (components) or software, or loss of data.

3.4.4 Test Setup

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Radio-frequency Conducted Disturbance Immunity Test Set-Up –Front View

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3.5 Surge immunity

3.5.1 Surge immunity test information

| | | | |
|-----------------------|--|---------------|--|
| Temperature: | | Humidity: | |
| ATM Pressure: | | Grounding: | |
| Test Voltage: | | | |
| Tested by: | | Date of test: | |
| Test Reference: | | | |
| Performance Criteria: | | | |
| Results: | | | |

3.5.2 Measurement Equipment Used for Surge immunity test

| Test Equipment | Manufacturer | Model | Serial No. | Last Cal. | Cal. Due |
|-----------------------------|--------------|----------|--------------|------------|------------|
| High Energy Pulse Generator | SCHAFFNER | NSG 2050 | 640101035 | 2015-06-08 | 2016-06-07 |
| Impulse Network | SCHAFFNER | PNW 2050 | 640101035-02 | 2015-06-08 | 2016-06-07 |

3.5.3 Test Data

| Test position | Waveform Tr/Td μ s | Test voltage kV | | | | Test times at each polarity | Coupling phase | EUT performance comply to criteria | Result |
|---------------|------------------------|-----------------|-----|-----|-----|-----------------------------|----------------|------------------------------------|--------|
| | | 0.5 | 1 | 2 | 4 | | | | |
| | | +/- | +/- | +/- | +/- | | | | |
| L-N | | | | | | | | | |
| L-N | | | | | | | | | |
| L-N | | | | | | | | | |
| L-N | | | | | | | | | |
| L-PE | | | | | | | | | |
| L-PE | | | | | | | | | |
| L-PE | | | | | | | | | |
| L-PE | | | | | | | | | |
| N-PE | | | | | | | | | |
| N-PE | | | | | | | | | |
| N-PE | | | | | | | | | |
| N-PE | | | | | | | | | |
| L+ N-PE | | | | | | | | | |
| L+ N-PE | | | | | | | | | |
| L+ N-PE | | | | | | | | | |
| L+ N-PE | | | | | | | | | |

Note:

The performance criteria are classified into four groups:

A ---- Normal performance within the specification limits;

B ---- Temporary degradation or loss of function or performance which is self-recoverable;

C ---- Temporary degradation or loss of function or performance which requires operator intervention or system reset;

D ---- Degradation or loss of function which is not recoverable due to damage of equipment (components) or software, or loss of data.

3.5.4 Test Setup

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Surge immunity Test Set-Up –Front View

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3.6.4 Test Setup

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Voltage dips, Short Interruptions Immunity Test Set-Up –Front View

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END OF THE TEST REPORT
