# ESD (HUMAN BODY MODE) TEST REPORT

Company ：成都启英泰伦科技有限公司

Address ：成都市高新区孵化园 **6** 号楼 **1** 楼 **106** 室

Model Name ：CI1102

Date Received ：September 7, 2019

Date Tested ：September 7, 2019

## TESTING LABORATORY IS APPROVEDED BY:

IECQ Certificate of Approval No.: IECQ-L DEKRA 17.0004-01 For Independent Test Laboratory According to ISO/IEC 17025

ISO 9001 certificate is approved by TUV CERT certification body of TUV NORD Cert GmbH

## WE HEREBY CERTIFY THAT:

The test(s) shown in the attachment were conducted according to the indicating procedures. We assume full responsibility for the accuracy and completeness of these tests and vouch for the qualifications of all personnel performing them.

| | Name | Signature | Date |
|---|---|---|---|
| Testing Engineer | Peng Zhao | Peng_Zhao | 2019/9/7 |
| Approving Manager | Kimi Lai | Kimi_Lai | 2019/9/7 |

**Note：**

1. This report will be invalid if reproduced in whole or in part.
2. This report refers only to the specimen(s) submitted to test, and is invalid if used separately.
3. This report is ONLY valid with the examination seal and signature of this institute.
4. The tested specimen(s) will only be preserved for thirty days from the date issued, if not collected by the applicant.
5. The failure criteria of all ESD tests should be based on the result of parametric and functional testing conducted by the customer, which follows the statement of international standards. Thus, the judgment of the curve traces provided in this report is for reference ONLY.

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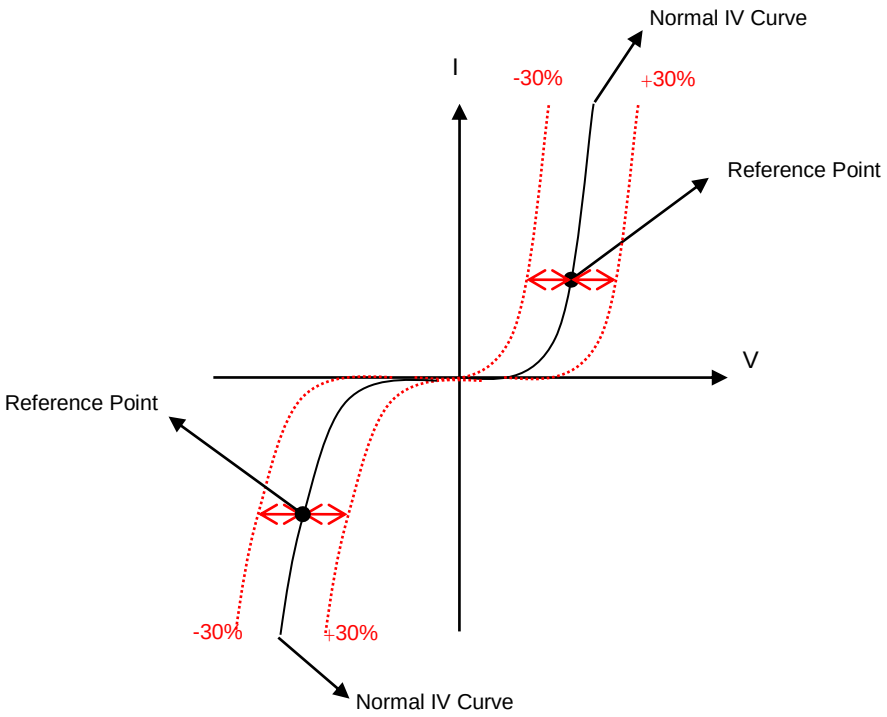
# 1. GENERAL INFORMATION

## 1.1 DESCRIPTION OF UNIT

| | |
|---|---|
| MANUFACTURER | ：成都启英泰伦科技有限公司 |
| DEVICE NAME | ：CI1102 |
| PACKAGED / PIN COUNT | ：QFN56 |
| REFERENCE DOCUMENT | ：ANSI/ESDA/JEDEC JS-001-2017 Zap **1** pulse(s), Interval: **0.3** Sec. |
| TEST VOLTAGE | ：2000V~8000V，step:1000V(±) |
| SAMPLE QUANTITY | ：3 pcs |
| FAILURE CRITERIA ( Reference Only ) | ：±30% voltage shift at reference point before/after zapping |

※Failure Judgment: Voltage shift over ±30% at reference point.



# 2. ESD (HUMAN BODY MODE) TEST

## 2.1 TEST EQUIPMENT

| Test Equipment | Equipment S/N | Calibration Date: | Recommended Due Date: |
|---|---|---|---|
| KEYTEK ZAPMASTER 7/4 | 9503392 | July 4, 2019 | July 3, 2020 |

## 2.2 LABORATORY AMBIENCE CONDITION

Temperature：25±5°C
Relative humidity：55%±10% (RH)

## 2.3 REFERENCE DOCUMENT

The test is based on ANSI/ESDA/JEDEC JS-001-2017

## 2.4 TEST CONDITION

ALL OTHER TO VSS (+/-)
ALL OTHER TO VSS_PLL (+/-)
ALL OTHER TO VSS_CODEC (+/-)
ALL OTHER TO VCC (+/-)
ALL OTHER TO AVDD_PLL (+/-)
ALL OTHER TO VDD_CODEC.A (+/-)
ALL OTHER TO VDD_CODEC.B (+/-)
ALL OTHER TO VDD12 (+/-)
IO TO IO (+/-)
2000V~8000V,step:1000V

## 2.5 SUMMARY OF TEST

| **Test Model : HBM** | **ESD Sensitivity Passed: +/-4000V** | | **ANSI/ESDA/JEDEC JS-001-2017 Class : 3A** |
|---|---|---|---|
| Test condition | Sample Quantity | Passed Volts | **Class 0Z : < 50V**<br>**Class 0A : ≧ 50V , <125V**<br>**Class 0B : ≧ 125V , <250V**<br>**Class 1A : ≧ 250V , <500V**<br>**Class 1B : ≧ 500V , <1000V**<br>**Class 1C : ≧1000V , <2000V**<br>**Class 2 : ≧2000V , <4000V**<br>**Class 3A : ≧4000V , <8000V**<br>**Class 3B : ≧8000V** |
| ALL OTHER TO VSS (+/-)<br>ALL OTHER TO VSS_PLL (+/-)<br>ALL OTHER TO VSS_CODEC (+/-)<br>ALL OTHER TO VCC (+/-)<br>ALL OTHER TO AVDD_PLL (+/-)<br>ALL OTHER TO VDD_CODEC.A (+/-)<br>ALL OTHER TO VDD_CODEC.B (+/-)<br>ALL OTHER TO VDD12 (+/-)<br>IO TO IO (+/-)<br>2000V~8000V,step:1000V | 3 | +/-4000V | |

| **Group** | **Pins** |
|---|---|
| AVDD_PLL | 1 |
| IO | 3-6,9-20,22-35,38-43,45,47,49,51,53-56 |
| VCC | 8,21,37,52 |
| VDD12 | 7,36 |
| VDD_CODEC.A | 44 |
| VDD_CODEC.B | 48 |
| VSS | 57 |
| VSS_CODEC | 46,50 |
| VSS_PLL | 2 |

## 2.6 CONTENTS OF TEST

| No | 1 |
|---|---|
| ALL OTHER TO VSS (+/-)<br>ALL OTHER TO VSS_PLL (+/-)<br>ALL OTHER TO VSS_CODEC (+/-)<br>ALL OTHER TO VCC (+/-)<br>ALL OTHER TO AVDD_PLL (+/-)<br>ALL OTHER TO VDD_CODEC.A (+/-)<br>ALL OTHER TO VDD_CODEC.B (+/-)<br>ALL OTHER TO VDD12 (+/-)<br>IO TO IO (+/-)<br>2000V~8000V,step:1000V | |

| Tested Pins | Sample No. & Failed Volt | | |
|---|---|---|---|
| | #01 | #02 | #03 |
| 1 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 2 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 3 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 4 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 5 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 6 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 7 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 8 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 9 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 10 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 11 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 12 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 13 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 14 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 15 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 16 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 17 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 18 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 19 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 20 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 21 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 22 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 23 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 24 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 25 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 26 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 27 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 28 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 29 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 30 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 31 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 32 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 33 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 34 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 35 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 36 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 37 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 38 | PASS(8000V) | PASS(8000V) | PASS(8000V) |

| | | | |
|---|---|---|---|
| 39 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 40 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 41 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 42 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 43 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 44 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 45 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 46 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 47 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 48 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 49 | FAIL(5000V) | FAIL(5000V) | FAIL(5000V) |
| 50 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 51 | FAIL(5000V) | PASS(8000V) | PASS(8000V) |
| 52 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 53 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 54 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 55 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 56 | PASS(8000V) | PASS(8000V) | PASS(8000V) |
| 57 | PASS(8000V) | PASS(8000V) | PASS(8000V) |