






Test Report issued under the responsibility of:



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| TEST REPORT | |
| IEC 62368-1 | |
| Audio/video, information and communication technology equipment | |
| Part 1: Safety requirements | |
| Report Number | CN22TDJS 002 |
| Date of issue | January 05, 2023 |
| Total number of pages | 9 |
| Name of Testing Laboratory preparing the Report | TÜV Rheinland Taiwan Ltd., Taoyuan Testing Laboratories 4F-1, No. 38, Huaya 1st Road, Guishan District, Taoyuan City 333, Taiwan |
| Applicant's name | Billion Electric Co., Ltd. |
| Address | 8F., No. 192, Sec. 2, Chung Hsing Road, Hsin Tien Dist., New Taipei City 231 Taiwan |
| Test specification: | |
| Standard | IEC 62368-1: 2018 |
| Test procedure | CB Scheme |
| Non-standard test method | N/A |
| TRF template used | IECEE OD-2020-F1:2021, Ed.1.4 |
| Test Report Form No. | IEC62368_1E |
| Test Report Form(s) Originator | UL(US) |
| Master TRF | Dated 2022-04-14 |
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| If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. | |
| This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02. | |
| General disclaimer: | |
| The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report. | |

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|---|---|---|
| Test item description | Power Adapter | |
| Trade Mark |  | |
| Manufacturer | Same as Applicant | |
| Model/Type reference | BA090-vvyyyMzx (vvv= 120-150, 180-239, 240-319, 420-560; yyy= 750-600, 500-377, 375-282, 214-161; z= A or B; x= 0-9, A-Z or blank) | |
| Ratings | IP: 100-240 or 220-240 V~, 50/60 Hz, 2.0A O/P: 1) 12.0-15.0Vdc, 7.5-6A, 90.0W max. (for vvv= 120-150, yyy= 750-600) 2) 18.0-23.9Vdc, 5.0-3.77A, 90.0W max. (for vvv= 180-239, yyy= 500-377) 3) 24.0-31.9Vdc, 3.75-2.82A, 90.0W max. (for vvv= 240-319, yyy= 375-282) 4) 42.0-56.0Vdc, 2.14-1.61A, 90.0W max. (for vvv= 420-560, yyy= 214-161) | |
| Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): | | |
| <input checked="" type="checkbox"/> | CB Testing Laboratory: | TUV Rheinland Taiwan Ltd., Taoyuan Testing Laboratories |
| Testing location/ address | 4F-1, No. 38, Huaya 1st Road, Guishan District, Taoyuan City 333, Taiwan | |
| Tested by (name, function, signature) | Jason Liu / Project handler |  |
| Approved by (name, function, signature) .. | Jerry Yang / Reviewer |  |
| <input type="checkbox"/> | Testing procedure: CTF Stage 1: | |
| Testing location/ address | | |
| Tested by (name, function, signature) | | |
| Approved by (name, function, signature) .. | | |
| <input type="checkbox"/> | Testing procedure: CTF Stage 2: | |
| Testing location/ address | | |
| Tested by (name + signature) | | |
| Witnessed by (name, function, signature) .. | | |
| Approved by (name, function, signature) .. | | |
| <input type="checkbox"/> | Testing procedure: CTF Stage 3: | |
| <input type="checkbox"/> | Testing procedure: CTF Stage 4: | |
| Testing location/ address | | |
| Tested by (name, function, signature) | | |
| Witnessed by (name, function, signature) .. | | |
| Approved by (name, function, signature) .. | | |
| Supervised by (name, function, signature) : | | |

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| List of Attachments (including a total number of pages in each attachment): | |
| - N/A | |
| Summary of testing: See below for details. | |
| Tests performed (name of test and test clause): | Testing location: |
| All applicable tests as described in Test Case and Measurement Sections were performed. • The test samples are pre-production without serial numbers. | All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2. |
| Summary of compliance with National Differences (List of countries addressed): | |
| <u>Summary of compliance with National Differences to IEC 62368-1:2018 and EN IEC 62368-1:2020+A11:2020 (for explanation of codes see below):</u> | |
| EU Group Differences, EU Special National Conditions, CA, SG, US. Explanation of used codes: CA= Canada, SG= Singapore, US= United States of America. | |
| <input checked="" type="checkbox"/> The product fulfils the requirements of <u>EN IEC 62368-1:2020+A11:2020 and BS EN IEC 62368-1:2020+A11:2020.</u> | |
| For National Differences see corresponding Attachment. | |

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| Use of uncertainty of measurement for decisions on conformity (decision rule) : |
| <input checked="" type="checkbox"/> No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method"). |
| <input type="checkbox"/> Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply) |
| Information on uncertainty of measurement: |
| The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. |
| IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer. |
| Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing. |

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| Copy of marking plate: |
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| Possible test case verdicts: | |
| - test case does not apply to the test object ... : | N/A |
| - test object does meet the requirement | P (Pass) |
| - test object does not meet the requirement ... : | F (Fail) |
| Testing: | (yyyy-mm-dd) |
| Date of receipt of test item | December 28, 2022 |
| Date (s) of performance of tests | December 28, 2022 – January 3, 2023 |
| General remarks: | |
| <p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> | |

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| Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02: | | |
| The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... : | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable | |
| When differences exist; they shall be identified in the General product information section. | | |
| Name and address of factory (ies)..... : | EG-Billion Electronics (Dongguan) Co., Ltd. The Scientific & Technologic Industry Zone, Shijie Town, Dongguan City, 523290 Guangdong, P.R. China | |
| General product information and other remarks: | | |
| See previous test report for details. | | |
| <u>Description of change(s):</u> | | |
| 1. Change varistor (D101) source of and set it as optional used. | | |
| For the above described change(s) the following was considered to be necessary: | | |
| Change | Testing | Comments |
| 1. | - Varistor overload test | <ul style="list-style-type: none"> - See appended table 4.1.2 for the new source in bold type lettering. - Overload test is conducted on all new sources. - See appended sub-clause for test result. |
| <u>History of amendments and modifications:</u> | | |
| Ref. No. CN22TDJS 001, dated June 07, 2022 (original test report) | | |
| Ref. No. CN22TDJS 002, dated January 05, 2023 (modification) | | |

| <u>Definition of variable(s):</u> | | |
|-----------------------------------|---------------------------------------|--|
| Variable: | Range of variable: | Content: |
| vvv | 120-150, 180-239, 240-319, 420-560 | To denote the output voltage step by 0.1V. For example: 120= 12.0Vdc, 560= 56.0Vdc. |
| yyy | 750-600, 500-377, 375-282, 214-161 | To denote the output current and step by 0.01A. For example: 750= 7.50A, 161= 1.61A. |
| z | A or B | To denote the different appliance inlet type. A to denote C14 type, B to denote C6 type. |
| x | 0-9, A-Z or blank | For marketing purpose only, no technical difference. |

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|-------------|----------------------------|---|----------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| G.8 | Varistors | | P |
| G.8.1 | General requirements | The varistor connected across the mains provided within the equipment (See appended table 4.1.2). | P |
| G.8.2 | Safeguards against fire | | P |
| G.8.2.1 | General | See below. | P |
| G.8.2.2 | Varistor overload test | No risk of fire and equipment safeguards remained effective. | P |
| G.8.2.3 | Temporary overvoltage test | | N/A |

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|-------------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 4.1.2 | TABLE: Critical components information | | | | | P |
|---|---|-------------------|---|--|--|---|
| Object / part No. | Manufacturer/ trademark | Type / model | Technical data | Standard | Mark(s) of conformity ¹⁾ | |
| Varistor (D101) (Optional) | Joyin Co., Ltd. | JVZ10S681K | 420Vac, coating V-1 or better, 105°C | IEC 61051-1: 2007, IEC 61051-2: 1991+A1, IEC 61051-2-2: 1991, IEC 62368-1: 2018 annex G.8.1, ANSI/UL 1449 | VDE, UL | |
| | Thinking Electronic Industrial Co., Ltd. | TVR10681-D | 420Vac, 560Vdc, coating V-1 or better, 105°C | IEC 61051-1: 2007, IEC 61051-2: 1991+A1, IEC 61051-2-2: 1991, IEC 62368-1: 2018 annex G.8.1, ANSI/UL 1449 | VDE, UL | |
| Supplementary information: | | | | | | |
| 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. | | | | | | |

List of test equipment used:

“No listing of test equipment used necessary for chosen test procedure.”