Test Report issued under the responsibility of:

TÜVRheinland®

# TEST REPORT

## IEC 60950-1
## Information technology equipment – Safety –
## Part 1: General requirements

| | |
|---|---|
| **Report Number. .....:** | 11045282 002 |
| **Date of issue .....:** | Jan. 04, 2017 |
| **Total number of pages.....:** | 12 |
| **Applicant's name.....:** | Accton Technology Corporation |
| **Address .....:** | No. 1, Creation Rd. III, Science-Based Industrial Park, Hsinchu 300 Taiwan |
| **Test specification:** | |
| **Standard.....:** | IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 |
| **Test procedure.....:** | CB Scheme |
| **Non-standard test method.....:** | N/A |
| **Test Report Form No.....:** | IEC60950_1F |
| **Test Report Form(s) Originator.....:** | SGS Fimko Ltd |
| **Master TRF.....:** | Dated 2014-02 |

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**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.
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| | |
|---|---|
| **Test item description .....:** | Fiber Switch |
| **Trade Mark .....:** | facebook |
| **Manufacturer.....:** | Same as applicant |
| **Model/Type reference .....:** | 1) Wedge100-AC-F<br>2) Wedge100S-AC-F<br>3) Wedge100-12V-F, Wedge100S-12V-F |
| **Ratings .....:** | 1) AC 100-240V, 50-60Hz, 4A Max<br>2) AC 100-240V, 50-60Hz, 4.6A Max<br>3) DC 12V, 32.4A Max |

| **Testing procedure and testing location:** | | | |
|---|---|---|---|
| ☒ | **CB Testing Laboratory:** | TÜV Rheinland Taiwan Ltd., Taichung Laboratory | |
| **Testing location/ address ..... :** | | No. 9, Ln. 36, Sec. 3, Minsheng Rd., Daya District, Taichung City 428, Taiwan CHINESE TAIPEI | |
| ☐ | **Associated CB Testing Laboratory:** | | |
| **Testing location/ address ..... :** | | | |
| **Tested by (name + signature)..... :** | | | |
| **Approved by (name + signature)..... :** | | | |
| ☒ | **Testing procedure: TMP/CTF Stage 1:** | Accton Technology Corporation | |
| **Testing location/ address ..... :** | | No. 1, Creation Rd. III, Science-Based Industrial Park, Hsinchu 300 Taiwan | |
| **Tested by (name + signature)..... :** | | Simon Yu | |
| **Approved by (name + signature)..... :** | | | |
| ☐ | **Testing procedure: WMT/CTF Stage 2:** | | |
| **Testing location/ address ..... :** | | | |
| **Tested by (name + signature)..... :** | | | |
| **Witnessed by (name + signature) ..... :** | | | |
| **Approved by (name + signature)..... :** | | | |
| ☐ | **Testing procedure: SMT/CTF Stage 3 or 4:** | | |
| **Testing location/ address ..... :** | | | |
| **Tested by (name + signature)..... :** | | | |
| **Witnessed by (name + signature) ..... :** | | | |
| **Approved by (name + signature)..... :** | | | |
| **Supervised by (name + signature)..... :** | | | |

**List of Attachments (including a total number of pages in each attachment):**

- Photo Documentation

Total number of pages in each attachment is indicated in each individual attachment.

**Summary of testing:**

| **Tests performed (name of test and test clause):** | **Testing location:** |
|---|---|
| • All applicable tests as described in Test Case and Measurement Sections were performed.<br>• The load conditions used during testing: Equipment is unit communicated with devices via optical fibers and wires with highest transmitting speed, USB port loaded 0.5A.<br>• The test samples were pre-production sample without serial numbers.<br>• The maximum ambient temperature is specified as 45°C. | 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:**

EU Group Differences, EU Special National Conditions, CA, US.

Explanation of used codes: CA = Canada, US = United States of America.

☒ The product fulfils the requirements of EN 60950-1:2006 + A11:2009 + A1:2010+A12:2011+A2:2013

**List of countries addressed (for IEC 60950-1:2005+A1:2009):**

DE, FI, KR.

Explanation of used codes: DE = Germany, FI = Finland, KR = Republic of Korea.

**List of countries addressed (for IEC 60950-1:2005):**

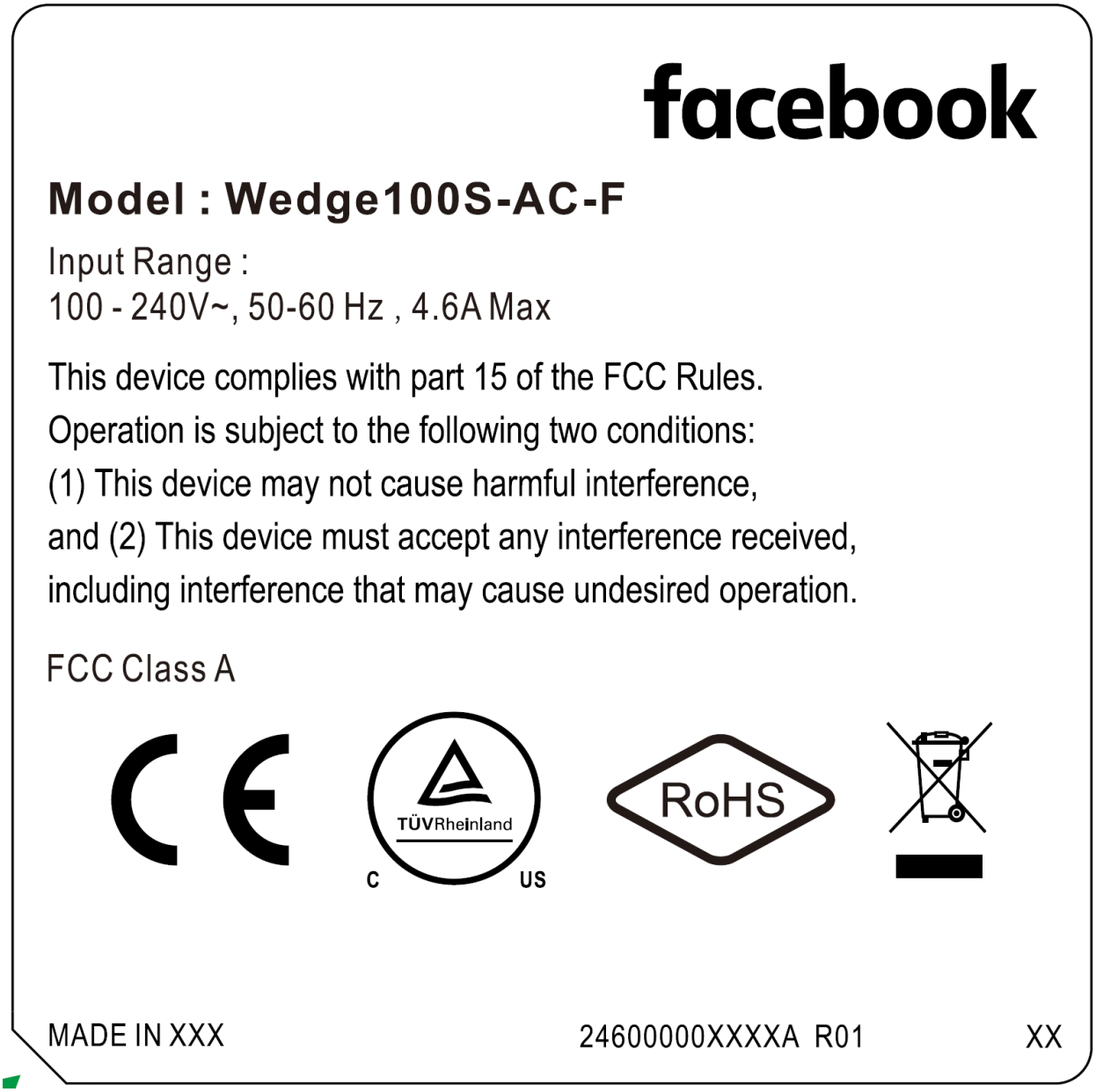
AU.

Explanation of used codes: AU=Australia.

**Copy of marking plate**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



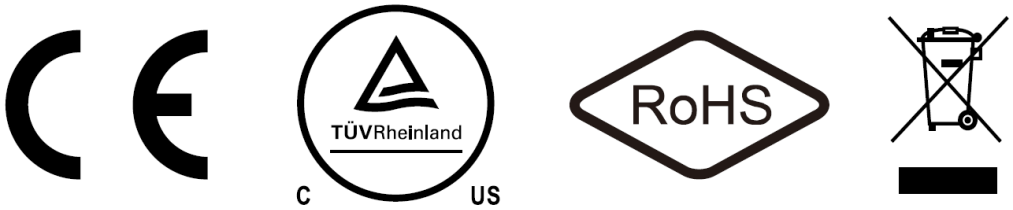
facebook

**Model : Wedge100S-12V-F**

Input Range :
12 ⎓ , 32.4A Max

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference,
and (2) This device must accept any interference received,
including interference that may cause undesired operation.

FCC Class A




MADE IN XXX 24600000XXXXA R01 XX

| | |
|---|---|
| **Test item particulars**.....: | |
| **Equipment mobility .....:** | [x] movable [] hand-held [] transportable<br>[] stationary [] for building-in [] direct plug-in |
| **Connection to the mains.....:** | [X] pluggable equipment [X] type A [] type B<br>[] permanent connection<br>[X] detachable power supply cord<br>[] non-detachable power supply cord<br>[] not directly connected to the mains |
| **Operating condition.....:** | [x] continuous<br>[] rated operating / resting time: |
| **Access location .....:** | [x] operator accessible<br>[] restricted access location |
| **Over voltage category (OVC) .....:** | [] OVC I [x] OVC II [] OVC III [] OVC IV<br>[] other: |
| **Mains supply tolerance (%) or absolute mains supply values .....:** | ±10 |
| **Tested for IT power systems .....:** | [X] Yes [] No |
| **IT testing, phase-phase voltage (V) .....:** | 230 |
| **Class of equipment .....:** | [x] Class I [] Class II [] Class III<br>[] Not classified |
| **Considered current rating of protective device as part of the building installation (A) .....:** | 16 (or 13 for UK, 20 for North America) |
| **Pollution degree (PD) .....:** | [] PD 1 [x] PD 2 [] PD 3 |
| **IP protection class .....:** | IPX0 |
| **Altitude during operation (m) .....:** | Up to 4000 |
| **Altitude of test laboratory (m) .....:** | Not over 500 |
| **Mass of equipment (kg) .....:** | 9.83 max. |
| **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 ..... :** | |
| **Date of receipt of test item ..... :** | Dec. 19, 2016 |
| **Date(s) of performance of tests ..... :** | Dec. 19, 2016 to Jan. 03, 2017 |
| | |
| **General remarks:** | |
| "(see Enclosure #)" refers to additional information appended to the report.<br>"(see appended table)" refers to a table appended to the report.<br><br>**Throughout this report a ☐ comma / ☒ point is used as the decimal separator.** | |

**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.....:

☒ **Yes**

☐ **Not applicable**

**When differences exist; they shall be identified in the General product information section.**

**Name and address of factory (ies) ..... :**

1. Joy Technology (Shen Zhen) Co., Ltd.

   Building A, B, C, D, Hengkeng Ind., Shangpai Shangwu, Aiqun Road Shiyan Town, Shenzhen 518108, P.R. China

2. Accton Technology Corporation Factory I

   No.1, Creation Rd. III Science-Based Industrial Park, East Dist., Hsinchu 300 Taiwan

**General product information:**

Description of change(s):

1. Correct the models name from Wedge 100-AC-F and Wedge 100-12V-F to Wedge100-AC-F and Wedge100-12V-F.
2. Remove sentence "per power supply unit" from AC current rating.
3. Add additional model Wedge100S-AC-F which is similar to previous model Wedge100-AC-F except for model name, rated current rating and CPU board.
4. Add additional model Wedge100S-12V-F which is similar to previous model Wedge100-12V-F except for model name and CPU board.
5. Add alternate small card (on the main board).

| Change | Testing | Comments |
|---|---|---|
| 1-5. | • Input test<br>• Heating test<br>• Abnormal test | For labels see copy of marking plates.<br>See appended tables for the test results. |

History of amendments and modifications:

Ref. No. 11045282 001, dated Apr. 21, 2016 (original test report)

Ref. No. 11045282 002, dated Jan. 04, 2017 (modification)

**Abbreviations used in the report:**

| | | | |
|---|---|---|---|
| - normal conditions | **N.C.** | - single fault conditions | **S.F.C** |
| - functional insulation | **OP** | - basic insulation | **BI** |
| - double insulation | **DI** | - supplementary insulation | **SI** |
| - between parts of opposite polarity | **BOP** | - reinforced insulation | **RI** |

Indicate used abbreviations (if any)

| IEC 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.1.1 | Power rating marking | See copy of marking plate, no direct mains connected. | P |
| | Multiple mains supply connections.....: | See copy of marking plate. | P |
| | Rated voltage(s) or voltage range(s) (V) ..... : | See copy of marking plate. | P |
| | Symbol for nature of supply, for d.c. only..... : | See copy of marking plate. | P |
| | Rated frequency or rated frequency range (Hz) ... : | See copy of marking plate. | P |
| | Rated current (mA or A) ..... : | See copy of marking plate. | P |
| 1.7.1.2 | Identification markings | See below. | P |
| | Manufacturer's name or trade-mark or identification mark ..... : | See copy of marking plate. | P |
| | Model identification or type reference ..... : | See copy of marking plate. | P |
| | Symbol for Class II equipment only ..... : | | N/A |
| | Other markings and symbols ..... : | Other markings and symbols do not give rise to misunderstanding. | P |

| IEC 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 1.6.2 | TABLE: Electrical data (in normal conditions) | | | | | P |
|---|---|---|---|---|---|---|
| U (V) | I (A) | Irated (A) | P (W) | Fuse # | Ifuse (A) | Condition/status |
| EUT was power supplied by one AC PSU which was located on left side of back. | | | | | | |
| 90 / 50Hz | 4.52 | -- | 418 | -- | -- | Wedge100S-AC-F |
| 90 / 60Hz | 4.55 | -- | 416 | -- | -- | See above. |
| 100 / 50Hz | 4.06 | 4.6 | 411 | -- | -- | See above. |
| 100 / 60Hz | 4.07 | 4.6 | 408 | -- | -- | See above. |
| 240 / 50Hz | 1.65 | 4.6 | 386 | -- | -- | See above. |
| 240 / 60Hz | 1.68 | 4.6 | 391 | -- | -- | See above. |
| 254 / 50Hz | 1.57 | -- | 385 | -- | -- | See above. |
| 254 / 60Hz | 1.58 | -- | 382 | -- | -- | See above. |
| 264 / 50Hz | 1.52 | -- | 384 | -- | -- | See above. |
| 264 / 60Hz | 1.53 | -- | 383 | -- | -- | See above. |
| EUT was power supplied by one DC input module | | | | | | |
| DC 12 | 30.8 | 32.4 | 370 | -- | -- | Wedge100S-12V-F |
| **Supplementary information:** | | | | | | |

| 4.5 | TABLE: Thermal requirements | | P |
|---|---|---|---|
| | Supply voltage (V) .....: | See below | — |
| | Ambient Tmin (°C)……..: | -- | — |
| | Ambient Tmax (°C)……..: | -- | — |

| Maximum measured temperature T of part/at: | T (°C) | | Allowed Tmax (°C) |
|---|---|---|---|
| Wedge100S-AC-F, EUT was power supplied by one AC PSU | | | |
| Supply voltage | 90Vac | 264Vac | -- |
| AC inlet (AC Power Supply) | 59.9 | 56.7 | 70 |
| C16 Body (AC Power Supply) | 64.1 | 60.2 | 85 |
| L4 Coil (AC Power Supply) | 63.4 | 57.6 | 105 |
| T2 Coil (AC Power Supply) | 64.1 | 63.9 | 130 |
| T2 Core (AC Power Supply) | 65.6 | 65.3 | 130 |
| CPU board of Heatsink | 76.8 | 77.1 | 105 |
| U1 Body (main board) | 77.5 | 77.8 | 105 |
| L10 Body (main board) | 75.3 | 75.5 | 105 |
| U6 Body (main board) | 59.5 | 59.7 | 105 |
| Heatsink of U900 (main board) | 66.3 | 66.4 | 105 |

| IEC 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | | | |
|---|---|---|---|
| J28000 Body (main board) | 62.5 | 62.6 | 105 |
| Enclosure outside | 47.3 | 47.5 | 70 |
| Tma | 45.0 | 45.0 | -- |
| Tamb | 23.3 | 23.4 | -- |
| Wedge100S-12V-F | | | |
| Supply voltage | 12Vdc | | -- |
| Q3 Body (DC input module) | 51.5 | | 105 |
| U1 Body (DC input module) | 56.1 | | 105 |
| U2 Body (DC input module) | 54.8 | | 105 |
| U3 Body (DC input module) | 52.7 | | 105 |
| CPU board of Heatsink | 75.6 | | 105 |
| U1 Body (main board) | 76.2 | | 105 |
| L10 Body (main board) | 72.1 | | 105 |
| U6 Body (main board) | 61.8 | | 105 |
| Heatsink of U900 (main board) | 67.1 | | 105 |
| J28000 Body (main board) | 63.6 | | 105 |
| Enclosure outside | 48.4 | | 70 |
| Tma | 45.0 | | -- |
| Tamb | 25.5 | | -- |

**Supplementary information:** All values for T (°C) are re-calculated from Tamb respectively.

| Temperature T of winding: | t1 (°C) | R1 (Ω) | t2 (°C) | R2 (Ω) | T (°C) | Allowed Tmax (°C) | Insulation class |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

**Supplementary information:**

| 5.3 | TABLE: Fault condition tests | | P |
|---|---|---|---|
| | Ambient temperature (°C) .....: | See below. | — |
| | Power source for EUT: Manufacturer, model/type, output rating .....: | See table 1.5.1 of report 11045282 001. | — |

| Component No. | Fault | Supply voltage (V) | Test time | Fuse # | Fuse current (A) | Observation |
|---|---|---|---|---|---|---|
| Wedge100S-AC-F, EUT was power supplied by one AC PSU | | | | | | |

| IEC 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | | | | | | |
|---|---|---|---|---|---|---|
| DC Fan 1 & 2 & 3 | Locked | 240 | 6hrs | -- | -- | Unit operated normally, no damaged, no hazards, T2 coil =75.1 °C , T2 core =74.5 °C , Tma= 45°C |
| DC Fan 4 & 5 | Locked | 240 | 2.1hrs | -- | -- | Unit operated normally, no damaged, no hazards, T2 coil =66.7 °C , T2 core =67.3 °C , Tma= 45°C |
| Ventilation Openings | Blocked | 240 | 3hrs | -- | -- | Unit operated normally, no damaged, no hazards, T2 coil =90.4 °C , T2 core =88.9 °C , Tma= 45°C |
| **Supplementary information:** | | | | | | |

**List of test equipment used:**

| Clause | Measurement / testing | Testing / measuring equipment / material used | Range used | Calibration date |
|---|---|---|---|---|
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No listing of test equipment used necessary for chosen test procedure.