

USB-IF COMPLIANCE PROGRAM

USB 2.0 Test Report for Low Speed Device

TM

Company Name: Holtek Semiconductor Inc.

Model Name: HT82K94E

Product Type: Keyboard

Product Receive Date: 2006/7/20

Test Start Date: 2006/7/20

Report Date: 2006/7/25

Test Result: **PASS**

USB-IF COMPLIANCE PROGRAM

Company

Company Name: Holtek Semiconductor Inc.
Company Address: No.3,Creation Rd. II Science Park, Hsinchu 300,Taiwan, R.O.C.
VID (Dec) 1241 The VID for the company who apply the USB-IF logo.

Technical Contact

Name: 溫植燁
Phone Number: 03-5631999 分機 1397
E-Mail: jackal@holtek.com.tw
FAX Number: 03-5641557

Marketing Contact

Name: _____
Phone Number: _____
E-Mail: _____
FAX Number: _____

Product Information:

- Retail Device Device and Silicon Silicon Only
 Hi Power Low Power
 Bus Powered Self Powered
 Tethered Un-tethered with specified "B" connector

(All of low speed devices must use captive cable)

Device Category: _____ Device Description: _____

VID: 04D9 PID: 1300

Tested OS: Win 2000 Win XP **(Standard test fee will cover 1 OS only.)**

Tester: Gavin Chen

Authorized Signature: James O

Over All Test Result: Pass

Project ID : KB-HOK-USB-005_1



© Allion Computer Inc. All rights reserved.
9F, No. 3-1, Yuan Ku Street, Taipei, Taiwan, 11543, R.O.C.
Phone: +886-2-77228800 Fax: +886-2-26557879

USB-IF COMPLIANCE PROGRAM

Legacy USB Compliance Tests

Frameworks Test Result: Pass Fail

Chapter 9: Pass Fail

HID View: Pass Fail

Interface: 2 MAX Power: 100 mA Remote Wakeup: N/A

Power Current Test Result: Pass Fail

Operating Power: 6.64 mA Unconfiguration Power: 6.2 mA (<100mA)
(=< Max Power <= 100mA for Low Power) (<=Max Power <= 100mA)
(=< Max Power <= 100mA for Self Power)
(=< Max Power <= 500mA for High Power)

Configuration Power: 6.2 mA

(=< Max Power <= 100mA for Low Power)
(=< Max Power <= 500mA for High Power)

Suspend Mode Power with Remote Wakeup: 420 uA

Suspend Mode Power without Remote Wakeup: 421uA

(=< 2500uA for High Power /w Remote Wake Up)
(=< 500uA for others)

Interoperability Test Overall Result: Pass Fail OS: W2k XP

EHCI Controller: (Intel D865GLC Motherboard)

- | | | | |
|---|--|-------------------------------|------------------------------|
| 1. Enumeration and Driver installation: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 2. Operation with Default Driver: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 3. Update Driver: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | <input type="checkbox"/> N/A |
| 4. Install Additional Software: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | <input type="checkbox"/> N/A |
| 5. DUT Demonstrates Operation: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | <input type="checkbox"/> N/A |
| 6. DUT Operation Speed: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 7. Interoperability – Operate all device: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 8. Hot Detach & Reattach: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 9. Topology Change: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 10. Warn Boot: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 11. Cold Boot: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 12. Active S1 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 13. Inactive S1 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |
| 14. Active S3 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail | |

UHCI Controller: (Intel D865GLC Motherboard)

Project ID : KB-HOK-USB-005_1

USB-IF COMPLIANCE PROGRAM

- | | | |
|---|--|-------------------------------|
| 1. Enumeration and Driver installation: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 2. Interoperability – Operate all device: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 3. Hot Detach & Reattach: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 4. Topology Change: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 5. Warn Boot: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 6. Cold Boot: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 7. Active S1 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 8. Inactive S1 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 9. Active S3 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |

OHCI Controller: (PCI Adapter)

- | | | |
|---|--|-------------------------------|
| 1. Enumeration and Driver installation: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 2. Interoperability – Operate all device: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 3. Hot Detach & Reattach: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 4. Topology Change: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 5. Warn Boot: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 6. Cold Boot: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 7. Active S1 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 8. Inactive S1 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 9. Active S3 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |

EHCI Controller: (PCI Adapter)

- | | | |
|---|--|-------------------------------|
| 1. Enumeration and Driver installation: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 2. Interoperability – Operate all device: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 3. Active S3 Suspend and Resume: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |

Signal Quality Test Result: Pass Fail

Low Speed UP Stream Signal Quality: Pass Fail

Inrush Current Test: Pass Fail

Back Voltage Test Result: (Enumerate before/after) Pass Fail

D+: 0 mV / 0 mV

D- : 0 mV / 0 mV

V_{Bus}: 0 mV / 0 mV

(All values <= 400mV)

Project ID : KB-HOK-USB-005_1

USB-IF COMPLIANCE PROGRAM

More Detail Test Result:

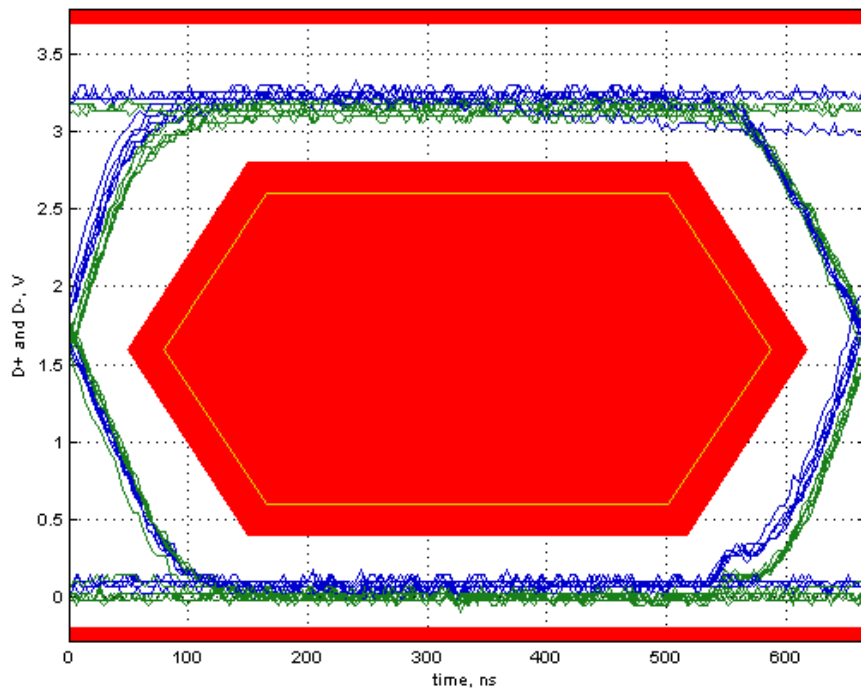
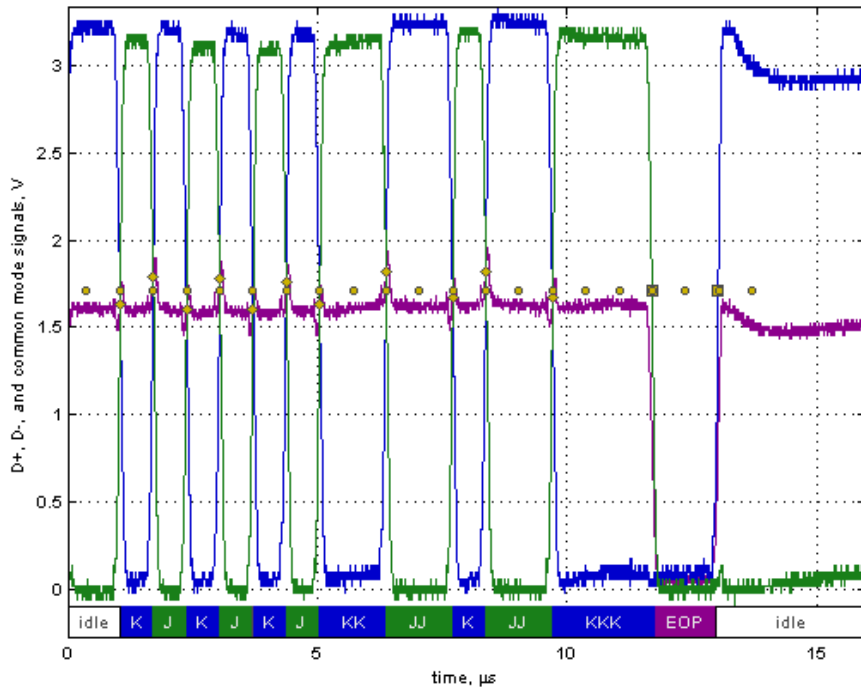
1. Low Speed Upstream Signal Quality: Pass

- Overall result: pass!
- Signal eye:
eye passes
- EOP width: 1.33 μ s
EOP width passes
- Receivers: reliable operation on tier 6
receivers pass
- Measured signaling rate: 1.4995MHz
signal rate passes
- Crossover voltage range: 1.60V to 1.82V, mean crossover 1.71V
(first crossover at 1.63V, 10 other differential crossovers checked)
crossover voltages pass
- Consecutive jitter range: -4.136ns to 2.814ns, RMS jitter 2.215ns
Paired JK jitter range: 0.383ns to 1.400ns, RMS jitter 0.868ns
Paired KJ jitter range: 0.650ns to 1.450ns, RMS jitter 1.006ns
jitter passes

TM

USB-IF COMPLIANCE PROGRAM

Signal Data and Eye



Project ID : KB-HOK-USB-005_1



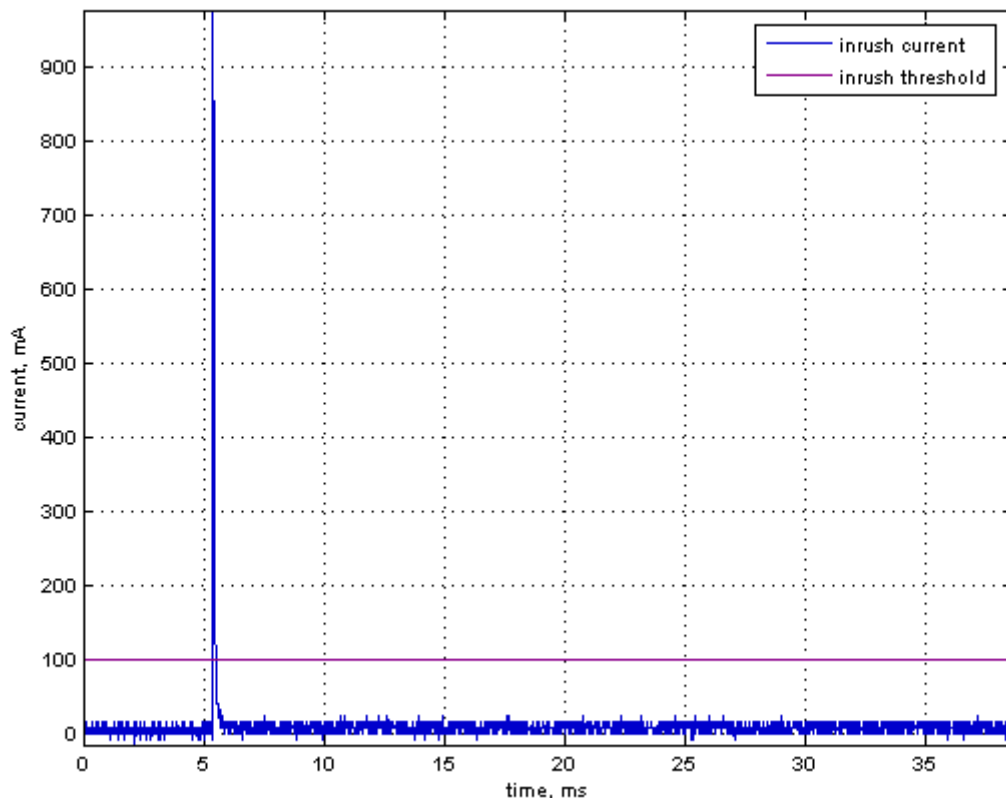
© Allion Computer Inc. All rights reserved.
9F, No. 3-1, Yuan Ku Street, Taipei, Taiwan, 11543, R.O.C.
Phone: +886-2-77228800 Fax: +886-2-26557879

USB-IF COMPLIANCE PROGRAM

2. Inrush Current: Pass

- Overall result: pass!
- Inrush at 5.100V: 31.39 μ C
inrush passes

Hot Plug (Attach) Current Draw



Notice: Test result is valid only to the original tested device model. The content of test report may not be copied or re-transmitted (except for the entire report) unless it is prior approved by Allion.

Test Procedure Reference:

1. Universal Serial Bus Implementers Forum Full and Low Speed Electrical and Interoperability Compliance Test Procedure, version: 1.3

Project ID : KB-HOK-USB-005_1



© Allion Computer Inc. All rights reserved.
9F, No. 3-1, Yuan Ku Street, Taipei, Taiwan, 11543, R.O.C.
Phone: +886-2-77228800 Fax: +886-2-26557879