

USB-IF COMPLIANCE PROGRAM

USB 2.0 Test Report for Low Speed Device

TM

Company Name: Holtek Semiconductor Inc.

Model Name: HT82M99A

Product Type: USB mouse

Product Receive Date: 2008/05/15

Test Start Date: 2008/05/15

Report Date: 2008/05/19

Test Result: **PASS**

Project ID : MOE-HOK-USB-012_1

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Legal Disclaimer

1. TEST RESULT IS VALID ONLY TO THE ORIGINAL TESTED DEVICE MODEL. ALLION RESERVES THE RIGHT TO PROHIBIT OTHERS TO DISTORT, ISOLATE, FALSIFY, COPIED AND/OR BY ANY PROCESS TO CHANGE THE CONTENT OF THIS TEST REPORT UNLESS IT IS PRIOR APPROVED BY ALLION.



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Company

Company Name: Holtek Semiconductor Inc.
Company Address: No.3,Creation Rd. II Science Park, Hsinchu 300, Taiwan, R.O.C.
VID (Dec) 04D9 The VID for the company who apply the USB-IF logo.

Technical Contact

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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: Mouse Device Description: _____

VID: _____ PID: _____

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

Tester: Alex Chuang

Authorized Signature: *Eric Chen*

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Legacy USB Compliance Tests

Frameworks Test Result: Pass Fail

Chapter 9: Pass Fail

HID View: Pass Fail

Interface: 1 MAX Power: 100 mA Remote Wakeup: Yes

Power Current Test Result: Pass Fail

Operating Power: 43.6 mA Unconfiguration Power: 6.37 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: 20.52 mA

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

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

Suspend Mode Power with Remote Wakeup: 358.6 uA

Suspend Mode Power without Remote Wakeup: 358.8 uA

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

(<= 500uA for others)

Interoperability Test Overall Result: Pass Fail OS: W2k XP

EHCI Controller:

- | | | |
|---|--|--|
| 1. Enumeration and Driver installation: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 2. Check operation of device | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 3. Interoperability – Operate all device: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 4. Hot plug test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 5. Warm Boot test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 6. Remote Wake-up test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail <input type="checkbox"/> N/A |
| 7. S3 Active Standby Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 8. S3 Active Standby Resume Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 9. Topology change | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 10. S4 Active Hibernate Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 11. S4 Active Hibernate Resume Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |

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UHCI Controller:

12. Interoperability – Operate all device: Pass Fail

OHCI Controller:

13. Interoperability – Operate all device: Pass 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)

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More Detail Test Result:

1. Low Speed Upstream Signal Quality: Pass

- Overall result: pass!
- Signal eye:
eye passes
- EOP width: 1.32 μ s
EOP width passes
- Measured signaling rate: 1.5184 MHz
signal rate passes
- Crossover voltage range: 1.57 V to 1.72 V, mean crossover 1.65 V
(first crossover at 1.72 V, 10 other differential crossovers checked)
crossover voltages pass
- Consecutive jitter range: -2.184 ns to 1.530 ns, RMS jitter 1.385 ns
Paired JK jitter range: 0.667 ns to 0.952 ns, RMS jitter 0.822 ns
Paired KJ jitter range: -0.571 ns to 1.143 ns, RMS jitter 0.670 ns
jitter passes

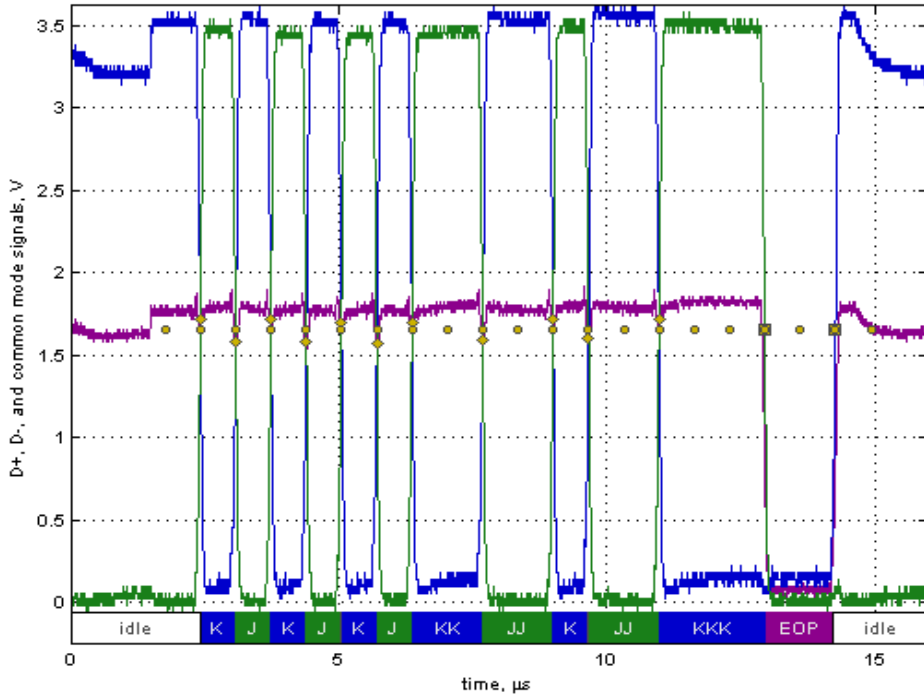
Additional Information

- Rising Edge Rate: 23.45 V/us (Equivalent risetime = 112.56 ns)
(minimum 8.80 V/us, maximum 35.20 V/us)
- Falling Edge Rate: 27.11 V/us (Equivalent risetime = 97.37 ns)
(minimum 8.80 V/us, maximum 35.20 V/us)
- Edge Rate Match: 13.49% (limit +/-20%)

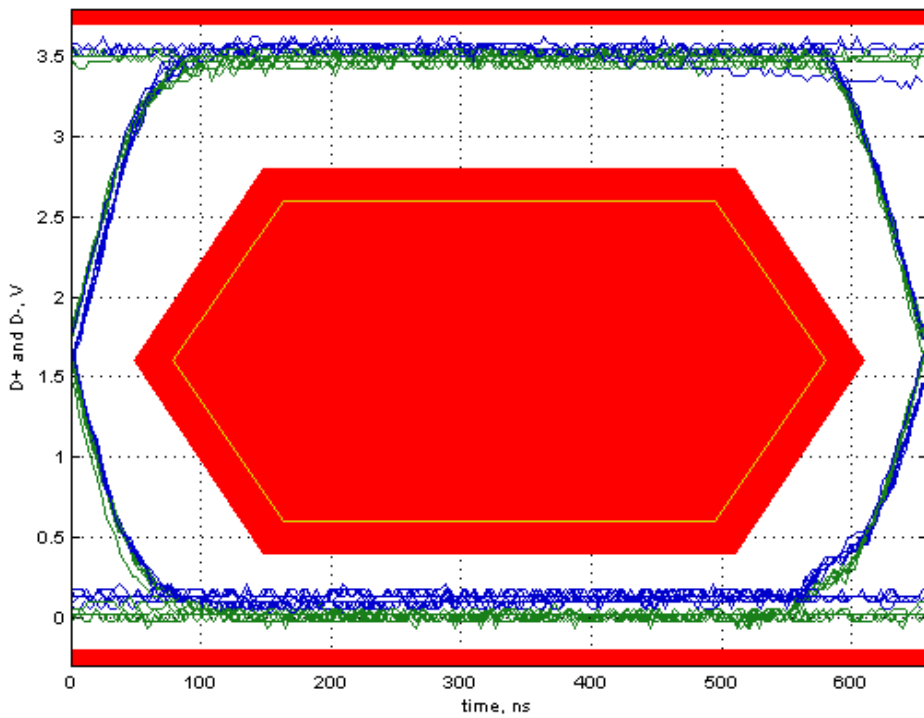
Signal Data and Eye

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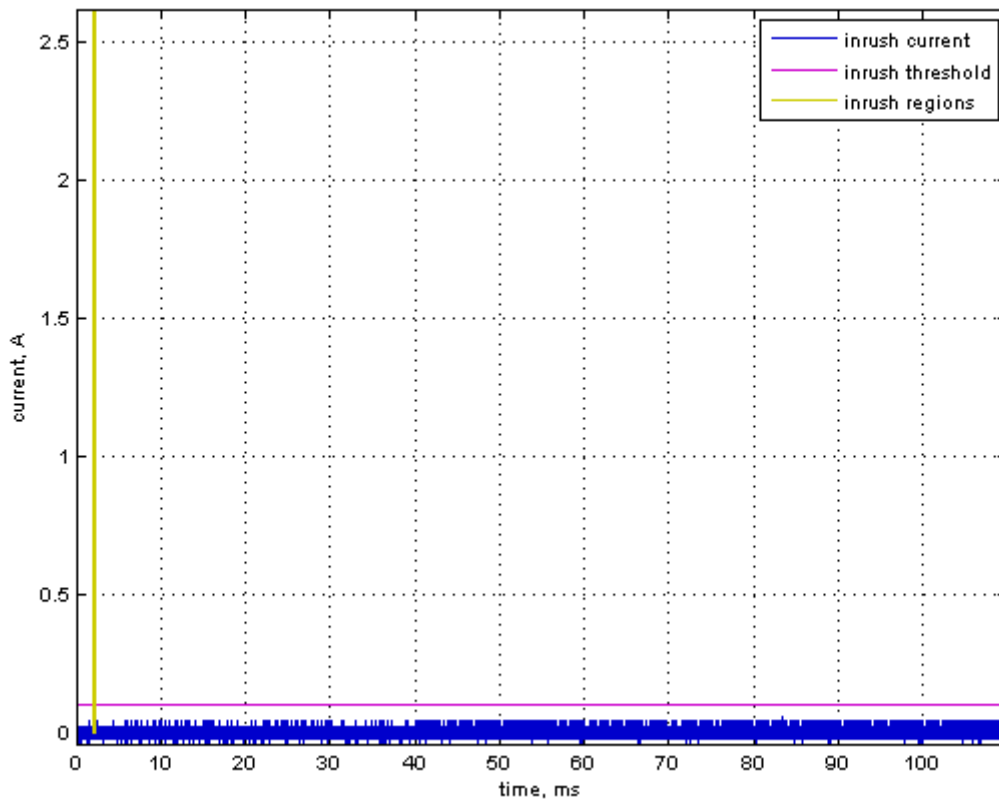
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2. Inrush Current: Pass

- Overall result: pass!
- Inrush at 5.000 V: 40.5 μC
inrush passes
- Region 1 Start: 2 ms - End: 2.16 ms = 40.5 μC

Hot Plug (Attach) Current Draw

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Test Procedure Reference:

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

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