

# USB-IF COMPLIANCE PROGRAM

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## USB 2.0 Test Report for Low Speed Device

TM

Company Name: Holtek Semiconductor Inc.

Model Name: HT82M9BE

Product Type: Mouse

Product Receive Date: 2007/1/22

Test Start Date: 2007/1/22

Report Date: 2007/1/24

Test Result: **PASS**

Project ID : MOE-HOK-USB-008\_1



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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

Name: 易德璉  
Phone Number: 03-5631999 分機 1397  
E-Mail: dlyi@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: Mouse      Device Description: \_\_\_\_\_

VID: 04d9      PID: 119b

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

Tester: Eric Chen

Authorized Signature: James O

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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: 50 mA Unconfiguration Power: 6.6 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: 24 mA

Suspend Mode Power: 387 uA

(≤ Max Power ≤ 100mA for Low Power)

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

(≤ Max Power ≤ 500mA for High Power)

(≤ 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 |
| 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<sub>Bus</sub>: 0 mV / 0 mV

(All values <= 400mV)

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## More Detail Test Result:

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### 1. Note

The VID of DUT is 0x4d9 on the system.

The PID of DUT is 0x119b on the system.

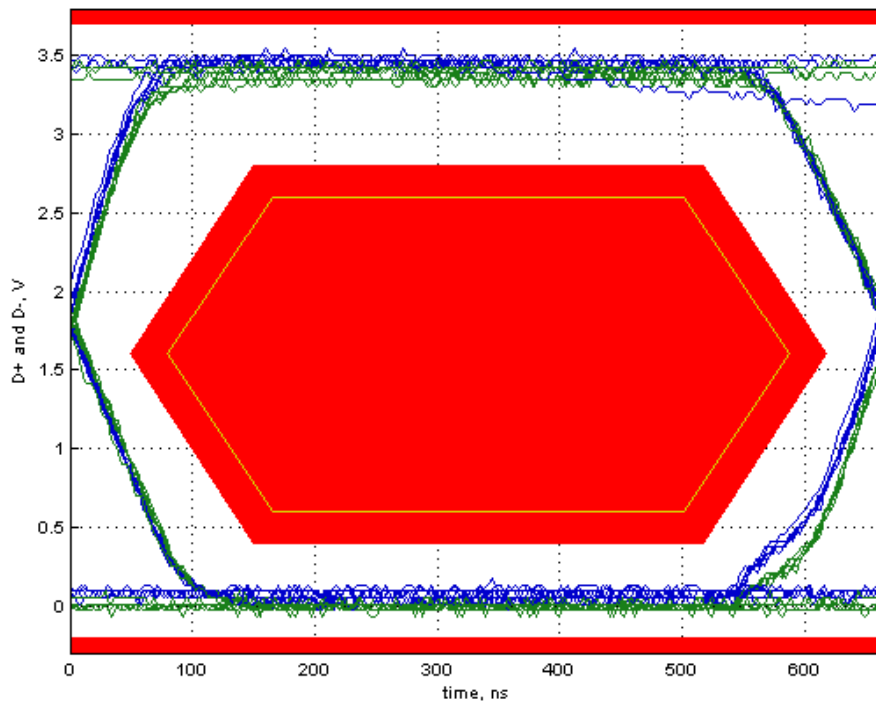
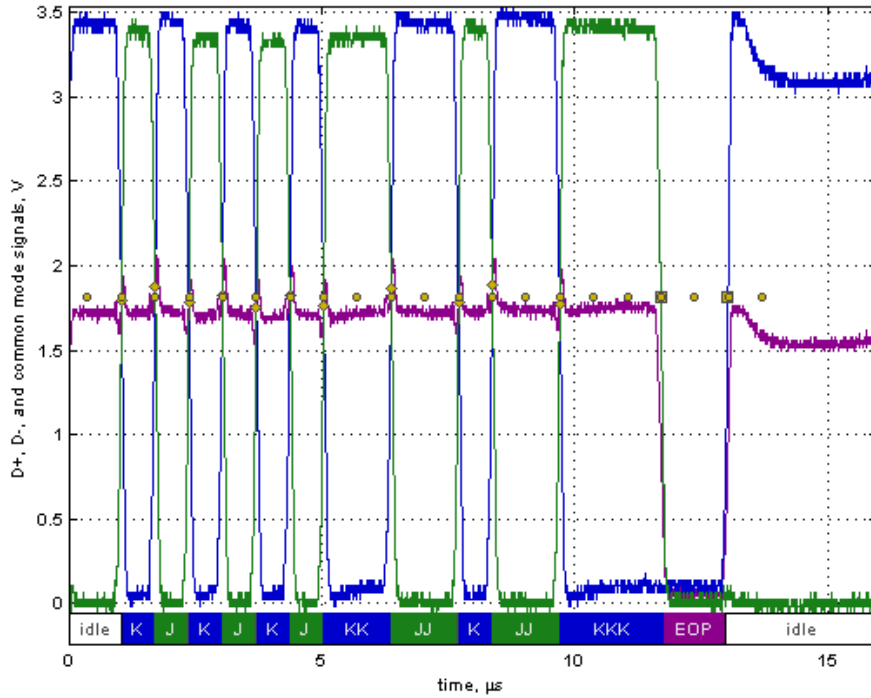
### 2. Low Speed Upstream Signal Quality: Pass

- Overall result: pass!
- Signal eye:  
eye passes
- EOP width: 1.33 $\mu$ s  
EOP width passes
- Receivers: reliable operation on tier 6  
receivers pass
- Measured signaling rate: 1.4999MHz  
signal rate passes
- Crossover voltage range: 1.75V to 1.89V, mean crossover 1.81V  
(first crossover at 1.80V, 10 other differential crossovers checked)  
crossover voltages pass
- Consecutive jitter range: -2.470ns to 2.247ns, RMS jitter 1.452ns  
Paired JK jitter range: -0.800ns to 2.100ns, RMS jitter 1.283ns  
Paired KJ jitter range: -2.567ns to 2.550ns, RMS jitter 2.228ns  
jitter passes

[Signal Data and Eye](#)

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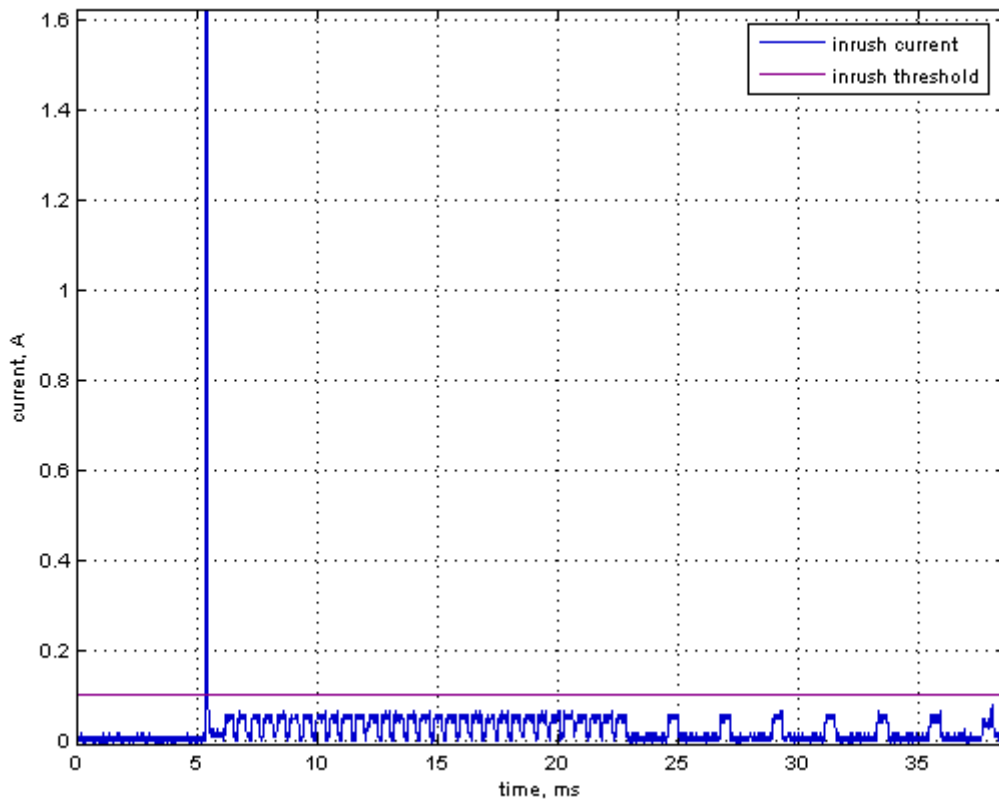
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## 3. Inrush Current: Pass with waiver

- Overall result: pass!
- Inrush at 5.150V: 55.31 $\mu$ C  
\*\*\* inrush failure! \*\*\* (at 5.150V, maximum compliant inrush is 51.5 $\mu$ C)  
\*\*\* waiver granted \*\*\*

### 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

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