

ALLION USB Low Speed Device Test Report

Project ID:	MOE-HOK-USB-001
Company Name:	HOLTEK SEMICONDUCTOR INC.
Model Name:	HT82M99E/A LOW SPEED USB MCU
Device Type:	HT82M99E/A
Issue Date:	09/30/2005
Test Result:	PASS

ALLION COMPUTER INC.

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USB-IF Test Report

Company

Company Name: HOLTEK SEMICONDUCTOR INC.
Company Address: NO.3 Creation Rd. 2, Science Park, Hsinchu, Taiwan, R.O.C.
VID (Dec): 1241 *The VID for the company who apply the USB-IF logo.*

Technical Contact

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Marketing Contact

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Device 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: PC Device Description: MOUSE IC

VID: 1241 PID: 1177

Tested O.S. Windows 2000 Windows XP **(Standard test fee will cover 1 OS only.)**

Tester: Gavin Chen Authorized Signature: _____

Over All Test Result: Pass

Frameworks Test Result: Pass Fail

Chapter 9: Pass Fail HID View: Pass Fail N/A

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

Power Current Test Result: Pass Fail

Operating Power: 47.2 mA Unconfiguration Power: 39.1 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: 36.1 mA

(≤ Max Power ≤ 100mA for Low Power)

(≤ Max Power ≤ 500mA for High Power)

Suspend Mode Power with Remote Wakeup: 330.4 uA

Suspend Mode Power without Remote Wakeup: 330.4 uA

(≤ 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 type="checkbox"/> Pass | <input type="checkbox"/> Fail | <input checked="" type="checkbox"/> N/A |
| 4. Install Additional Software: | <input type="checkbox"/> Pass | <input type="checkbox"/> Fail | <input checked="" type="checkbox"/> N/A |
| 5. DUT Demonstrates Operation: | <input type="checkbox"/> Pass | <input type="checkbox"/> Fail | <input checked="" 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. Warm 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)

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- 1. Enumeration and Driver installation: Pass Fail
- 2. Interoperability – Operate all device: Pass Fail
- 3. Hot Detach & Reattach: Pass Fail
- 4. Topology Change: Pass Fail
- 5. Warm Boot: Pass Fail
- 6. Cold Boot: Pass Fail
- 7. Active S1 Suspend and Resume: Pass Fail
- 8. Inactive S1 Suspend and Resume: Pass Fail
- 9. Active S3 Suspend and Resume: Pass Fail

OHCI Controller: (PCI Add-on Card)

- 1. Enumeration and Driver installation: Pass Fail
- 2. Interoperability – Operate all device: Pass Fail
- 3. Hot Detach & Reattach: Pass Fail
- 4. Topology Change: Pass Fail
- 5. Warm Boot: Pass Fail
- 6. Cold Boot: Pass Fail
- 7. Active S1 Suspend and Resume: Pass Fail
- 8. Inactive S1 Suspend and Resume: Pass Fail
- 9. Active S3 Suspend and Resume: Pass Fail

EHCI Controller: (PCI Add-on Card)

- 1. Enumeration and Driver installation: Pass Fail
- 2. Active S3 Suspend and Resume: Pass Fail

Signal Quality Test Result: Pass Fail

Low Speed UP Stream Signal Quality: Pass Fail

Inrush Current Test: Pass Fail

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

D+: 0V / 0V

D- : 0V / 0V

V_{Bus}: 0V / 0V

(All values <= 400mV)

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More Detail Test Result:

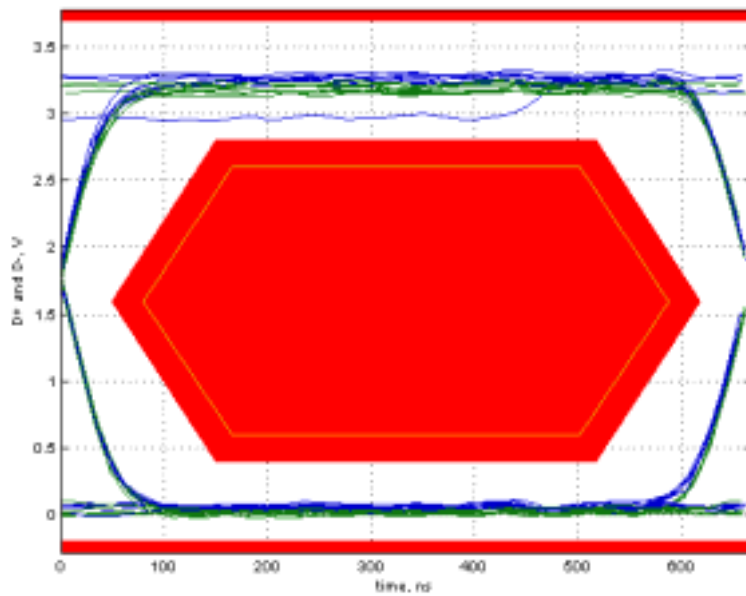
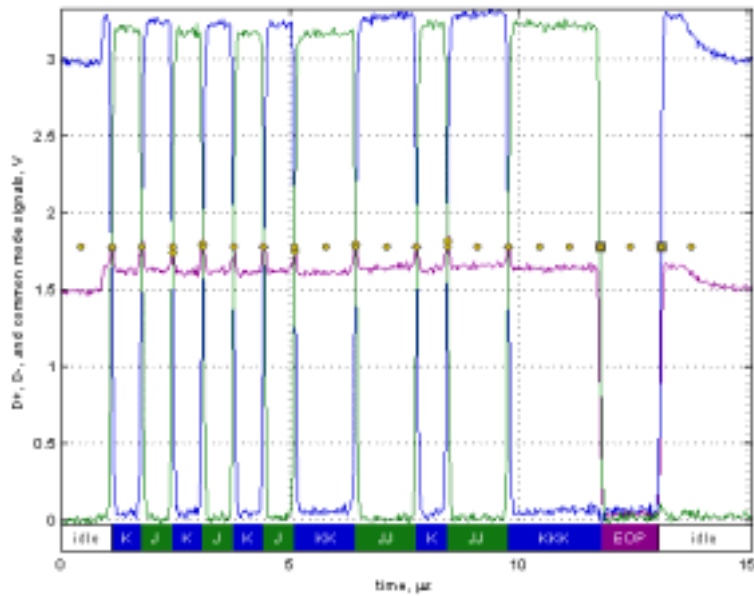
1. Low Speed Upstream Signal Quality Test: Pass

- 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: 1.4997MHz
signal rate passes
- Crossover voltage range: 1.73V to 1.82V, mean crossover 1.78V
(first crossover at 1.77V, 8 other differential crossovers checked)
crossover voltages pass
- Consecutive jitter range: -0.732ns to 0.585ns, RMS jitter 0.345ns
Paired JK jitter range: -0.640ns to 0.481ns, RMS jitter 0.472ns
Paired KJ jitter range: -0.684ns to 0.835ns, RMS jitter 0.624ns
jitter passes

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Signal Data and Eye



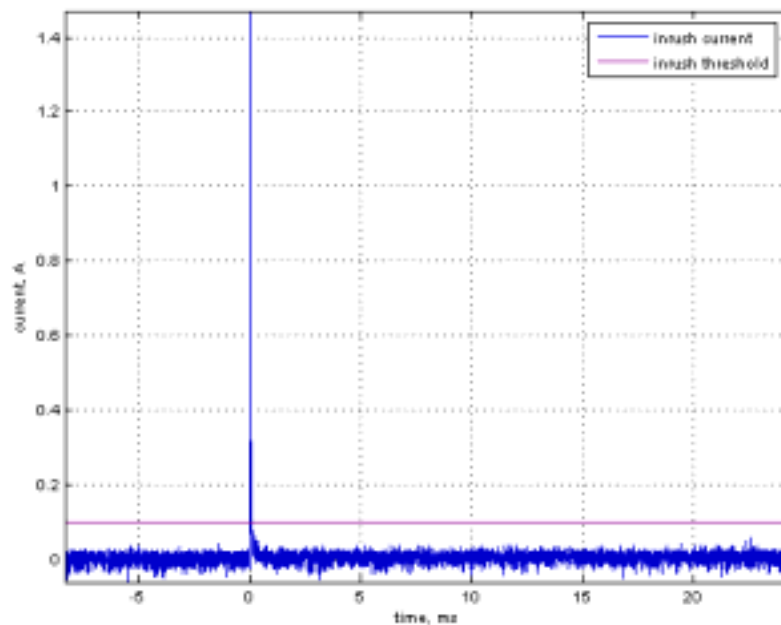
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2. Inrush Current Test: Pass

- Overall result: pass!
- Inrush at 5.150V: 25.79 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

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