

USB-IF COMPLIANCE PROGRAM

USB 2.0 Test Report for Full Speed Device

TM

Company Name: Holtek Semiconductor Inc.

Model Name: HT82A6216

Product Type: HID device

Product Receive Date: 2009/08/26

Test Start Date: 2009/08/27

Report Date: 2009/08/31

Test Result: **PASS**

Project ID : UNC-HOK-USB-022_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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E-Mail: cyhuang@holtek.com.tw
FAX Number: 03-5641557

Marketing Contact

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

Product Information:

Silicon Model Name: _____ TID (If you know): _____

*** These are requirement fields. All testing will be held until information is completed. ***

- | | | |
|---|---|---------------------------------------|
| <input checked="" type="checkbox"/> Retail Device | <input type="checkbox"/> Device and Silicon | <input type="checkbox"/> Silicon Only |
| <input type="checkbox"/> Hi Power | <input checked="" type="checkbox"/> Low Power | |
| <input checked="" type="checkbox"/> Bus Powered | <input type="checkbox"/> Self Powered | |
| <input type="checkbox"/> Untethered B | <input type="checkbox"/> Tethered | |

Highest capacity tested for Mass Storage Device: _____

Device Category: HID device Device Description: _____

VID: _____ PID: _____

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

Tester: Dash Liu

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 N/A

MSC Test: Pass Fail N/A

UVC Test: Pass Fail N/A

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

Power Current Test Result: Pass Fail

Operating Power: 13.4 mA Unconfiguration Power: 13.3 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: 13.4 mA

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

Suspend Mode Power with Remote Wakeup: 536 uA

Suspend Mode Power without Remote Wakeup: 536 uA
(=< 2500uA)

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

Full Speed UP Stream Signal Quality: Pass Fail

Inrush Current Test: Pass Fail

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

D+: mV / mV

D- : mV / mV

V_{Bus}: mV / mV

(All values <= 400mV)

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More Detail Test Result:

1. Full Speed Upstream Signal Quality: Pass

- Overall result: pass!
- Signal eye:
eye passes
- EOP width: 166.98 ns
EOP width passes
- Measured signaling rate: 11.9983 MHz
signal rate passes
- Crossover voltage range: 1.76 V to 1.91 V, mean crossover 1.83 V
(first crossover at 1.82 V, 10 other differential crossovers checked)
crossover voltages pass
- Consecutive jitter range: -228.148 ps to 152.761 ps, RMS jitter 141.241 ps
Paired JK jitter range: -13.734 ps to 48.917 ps, RMS jitter 35.927 ps
Paired KJ jitter range: -113.123 ps to 189.486 ps, RMS jitter 113.602 ps
jitter passes

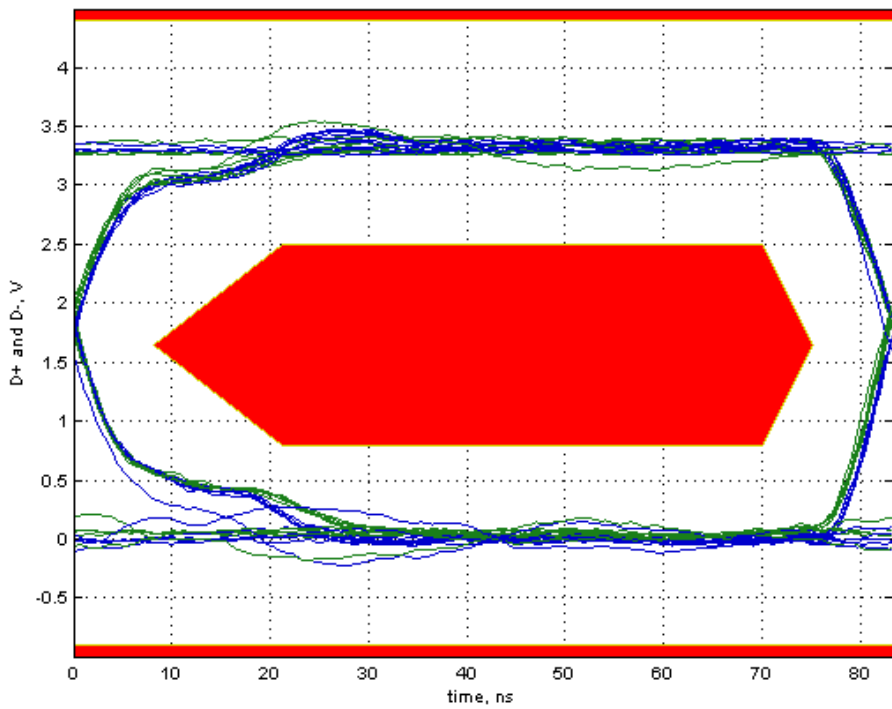
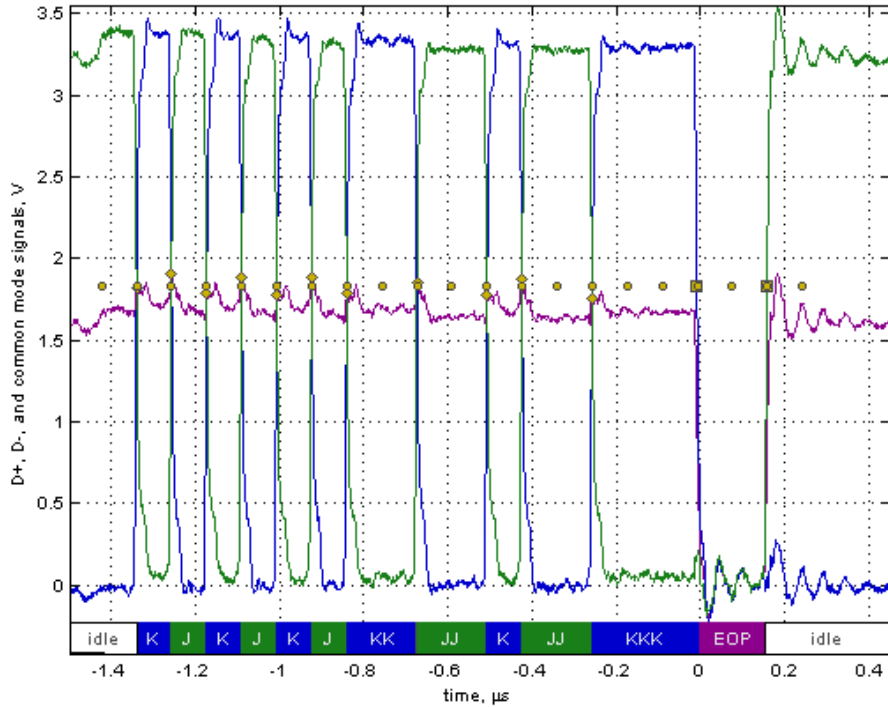
Additional Information

- Rising Edge Rate: 282.78 V/us (Equivalent risetime = 9.34 ns)
(minimum 132.00 V/us, maximum 660.00 V/us)
- Falling Edge Rate: 237.08 V/us (Equivalent risetime = 11.14 ns)
(minimum 132.00 V/us, maximum 660.00 V/us)
- Edge Rate Match: 19.28% (limit +/-10%)

Signal Data and Eye

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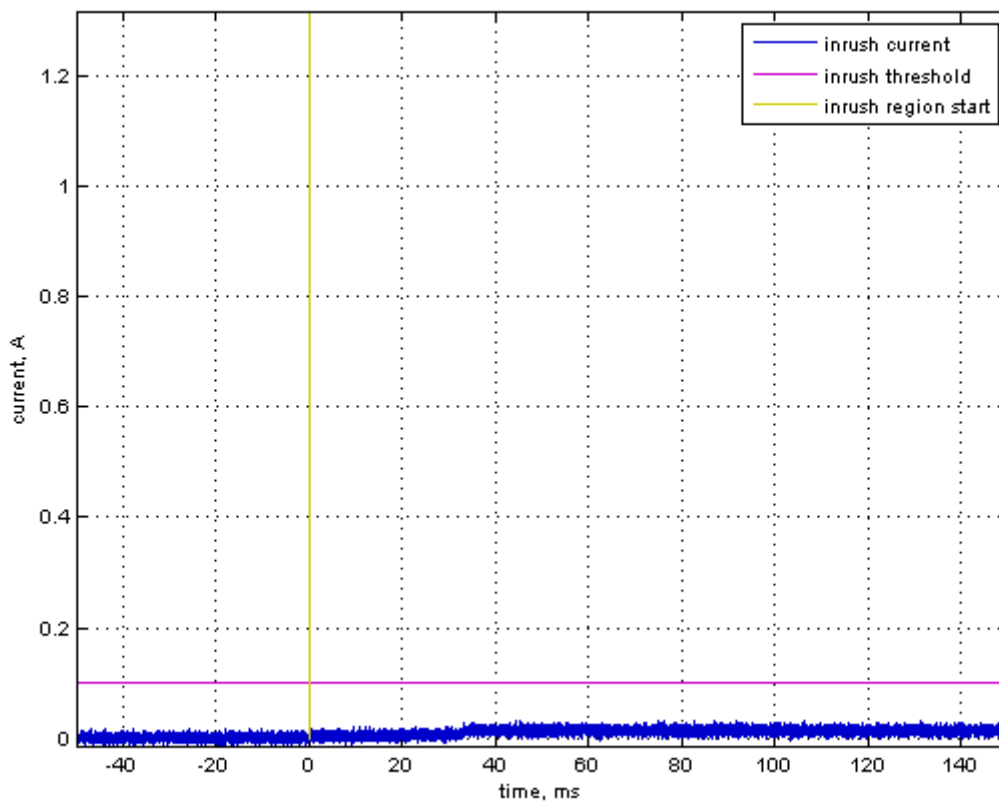
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2. Inrush Current Test: Pass

- Overall result: pass!
- Inrush at 5.000 V: 38.25 μC
inrush passes
- Region 1 Start: -0.00537 ms - End: 0.189 ms = 38.25 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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