

# USB-IF COMPLIANCE PROGRAM

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## USB 2.0 Test Report for Full Speed Device

TM

Company Name: Holtek Semiconductor

Model Name: HT46RB70(Joystick)

Product Type: HID Class

Product Receive Date: 2006/7/31

Test Start Date: 2006/8/2

Report Date: 2006/8/4

Test Result: **PASS**

Project ID : UNC-HOK-USB-004\_1



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## Company

Company Name: Holtek Semiconductor  
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: Chen Nan Chang (陳南強)  
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E-Mail: roney@holtek.com.tw  
FAX Number: 03-5641554

## 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. \*\*\*

- Retail Device       Device and Silicon       Silicon Only  
 Hi Power       Low Power  
 Bus Powered       Self Powered  
 Untethered B       Tethered

Highest capacity tested for Mass Storage Device: \_\_\_\_\_

Device Category: \_\_\_\_\_ Device Description: \_\_\_\_\_

VID: 04d9      PID: 0006

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**

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## Legacy USB Compliance Tests

**Frameworks Test Result:**  Pass  Fail

Chapter 9:  Pass  Fail

HID View:  Pass  Fail

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: 11 mA Unconfiguration Power: 10.6 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: 10.9 mA

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

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

Suspend Mode Power with Remote Wakeup: 336 uA

Suspend Mode Power without Remote Wakeup: 336 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. 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 |   |

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14. Active S3 Suspend and Resume:  Pass  Fail

## UHCI Controller: (Intel D865GLC Motherboard)

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. Warn 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 Adapter)

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. Warn 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 Adapter)

1. Enumeration and Driver installation:  Pass  Fail

2. Interoperability – Operate all device:  Pass  Fail

3. Active S3 Suspend and Resume:  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+: 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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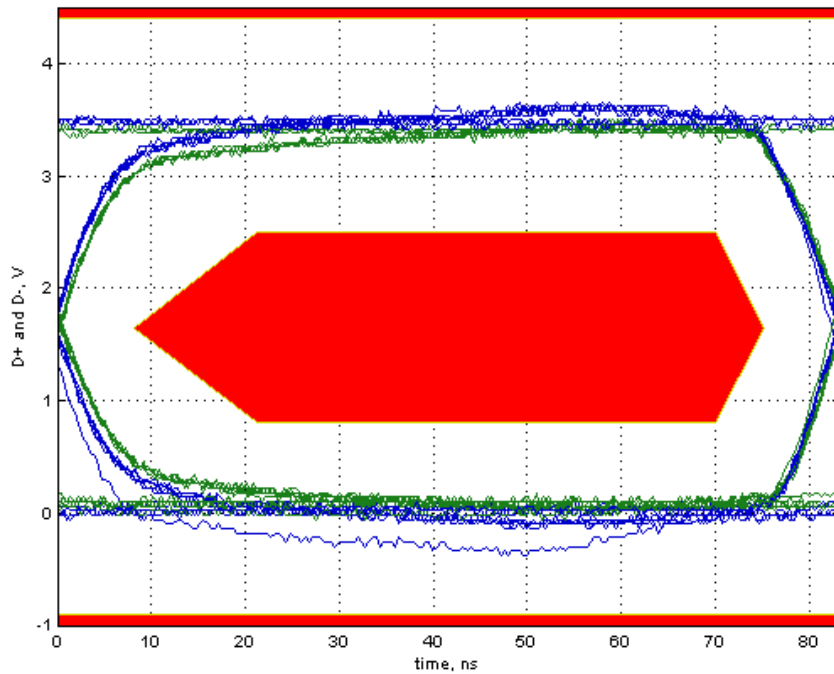
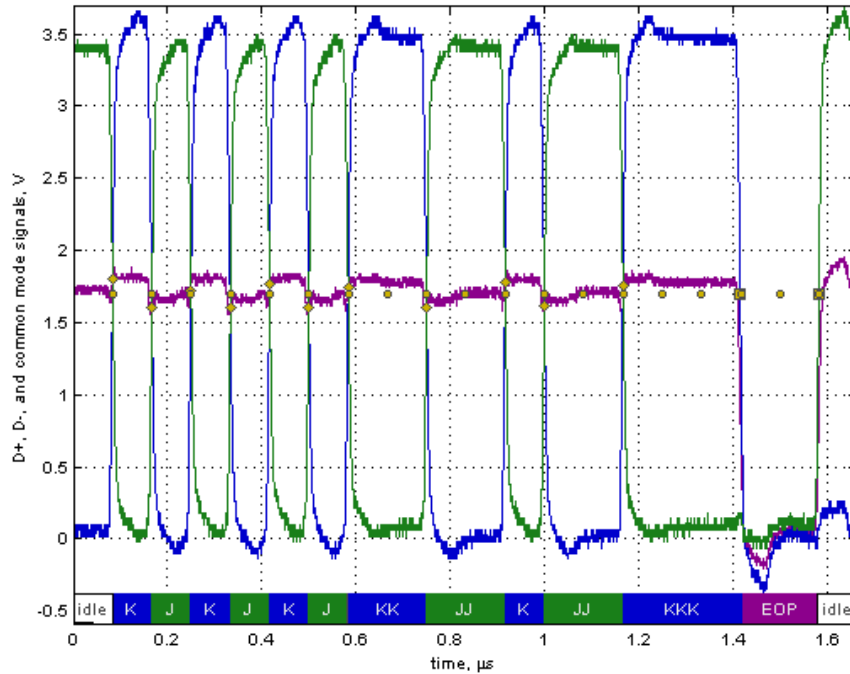
### 1. Full Speed Upstream Signal Quality Test: Pass

- Overall result: pass!
- Signal eye:  
eye passes
- EOP width: 167.02ns  
EOP width passes
- Receivers: reliable operation on tier 6  
receivers pass
- Measured signaling rate: 11.9980MHz  
signal rate passes
- Crossover voltage range: 1.60V to 1.80V, mean crossover 1.69V  
(first crossover at 1.80V, 10 other differential crossovers checked)  
crossover voltages pass
- Consecutive jitter range: -194.408ps to 108.131ps, RMS jitter 94.710ps  
Paired JK jitter range: -139.841ps to 81.111ps, RMS jitter 95.046ps  
Paired KJ jitter range: -63.095ps to 213.095ps, RMS jitter 113.864ps  
jitter passes

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## Signal Data and Eye



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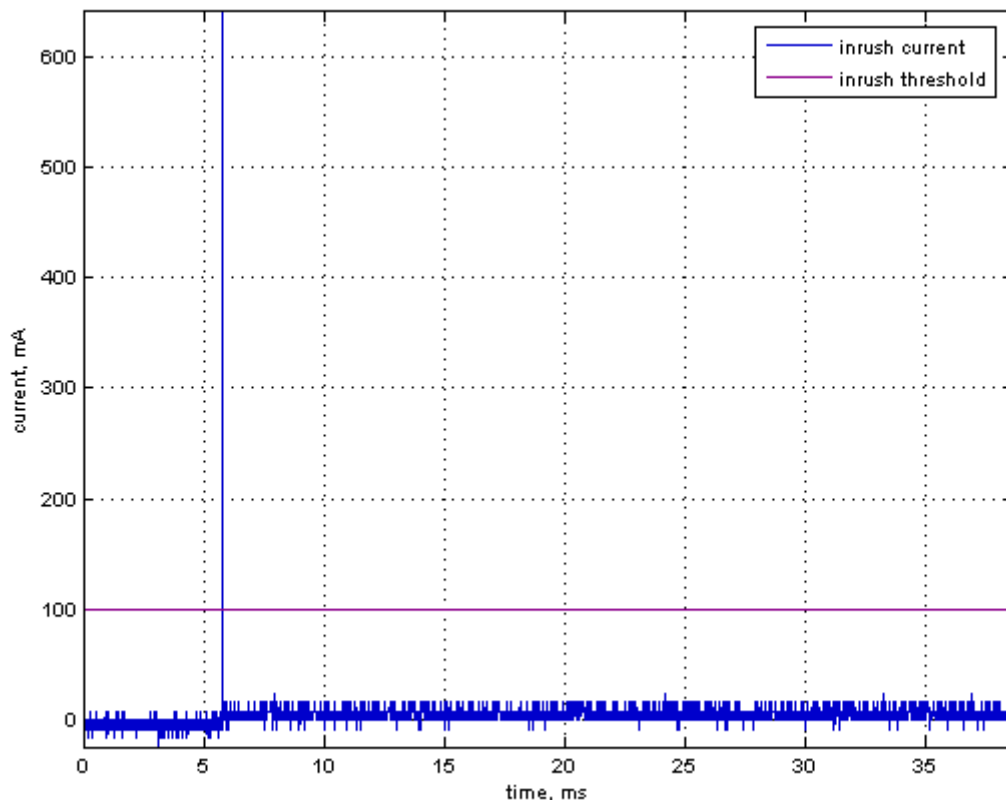
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## 2. Inrush Current Test: Pass

- Overall result: pass!
- Inrush at 5.100V: 5.399 $\mu$ 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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