

## NSTL USB Low Speed Device Test Report

Company Name:	HOLTEK SEMICONDUCTOR INC.
Model Name:	HT82K629A
Device Type:	HT82K95A
Issue Date:	02/22/2005
Test Result:	<b>PASS</b>

**USB-IF Test Report**

**Company**

Company Name: HOLTEK SEMICONDUCTOR INC.  
VID (Dec) 1241 The VID for the company who apply the USB-IF logo.

**Technical Contact**

Name: 馬伯文  
Phone Number: 03-5631999  
E-Mail: horse@holtek.com.tw  
FAX Number: 03-5641557

**Marketing Contact**

Name: 林鴻坤  
Phone Number: 03-5631999  
E-Mail: henrytop@holtek.com.tw  
FAX Number: 03-5641557

**Device Information:**

- Retail Device       Device and Silicon       Silicon Only  
 Hi Power       Low Power  
 Bus Powered       Self Powered  
 Low Speed  
 Tethered       Un-tethered with specified "B" connector  
**(All of low speed devices must use captive cable)**

Device Category: PC      Device Description: KEYBOARD IC

VID: 1241      PID: 1203

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

Tester: Sam Chen  
Review: James Ou  
Date: 02/22/2005

**Over All Test Result: Pass**

**Frameworks Test Result:**  Pass  Fail

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

Interface: 2 MAX Power: 100 mA Remote Wakeup: Yes

**Power Current Test Result:**  Pass  Fail

Operating Power: 22.1 mA Unconfiguration Power: 4.8 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: 4.8 mA

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

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

Suspend Mode Power with Remote Wakeup: 327 uA

Suspend Mode Power without Remote Wakeup: 327 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)**

- |   |  |                               |
|---|--|-------------------------------|
| 1. Enumeration and Driver installation: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> 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

( $\leq 100\text{mA}$  and  $200\mu\text{C}$ )

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

D+:  $0\text{V} / 0\text{V}$

D- :  $0\text{V} / 0\text{V}$

V<sub>Bus</sub>:  $0\text{V} / 0\text{V}$

(All values  $\leq 400\text{mV}$ )

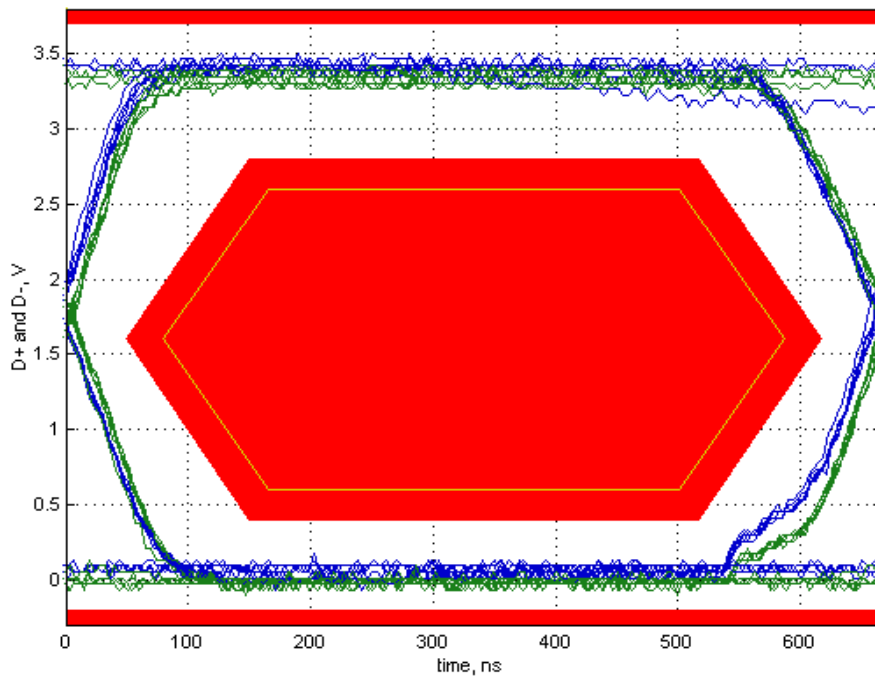
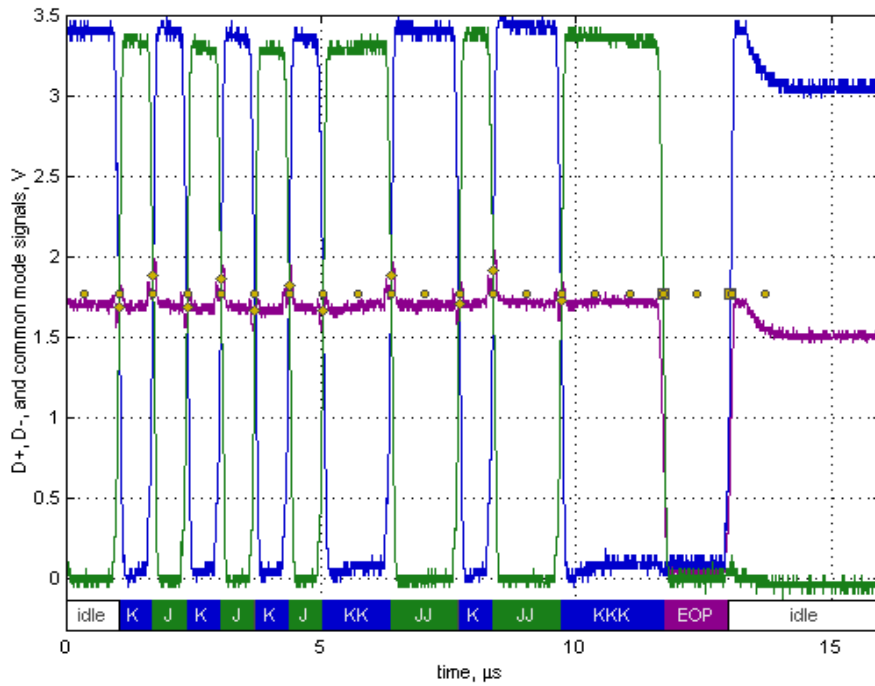
**More Detail Test Result:**

---

**1. 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: 1.5000MHz  
signal rate passes
- Crossover voltage range: 1.66V to 1.92V, mean crossover 1.77V  
(first crossover at 1.68V, 10 other differential crossovers checked)  
crossover voltages pass
- Consecutive jitter range: -1.7ns to 1.3ns, RMS jitter 0.9ns  
Paired JK jitter range: -1.4ns to 1.3ns, RMS jitter 0.9ns  
Paired KJ jitter range: -0.6ns to 1.3ns, RMS jitter 0.6ns  
jitter passes

[Signal Data and Eye](#)



**2. Inrush Current: Pass with Warning**

- Overall result: pass!
- Inrush at 5.150V: 69.8 $\mu$ C  
\*\*\* inrush failure! \*\*\* (at 5.150V, maximum compliant inrush is 51.5 $\mu$ C)  
\*\*\* waiver granted \*\*\*

Hot Plug (Attach) Current Draw

