

USB-IF COMPLIANCE PROGRAM

USB 2.0 Test Report For Low Speed Device

TM

Company Name: Holtek Semiconductor

VID (Dec or Hex): 1241 The VID for the company who applies the USB-IF logo.

Model Name: HT82B42R

Product Type: HID

Report Date: 2011/12/09

Test Result: **PASS**

Tester: Caspar Lin

Authorized Signature: *Eric Chen*

Project ID : UNC-HOK-USB-034_2

USB-IF COMPLIANCE PROGRAM

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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Legacy USB Compliance Tests

Frameworks Test Result (USB20CV): Pass Fail

This test primarily covers USB-IF testing of devices and hubs for compliance with the standard commands in Chapters 9 and 11 of the USB 2.0 specification. This specification does not describe the full set of USB-IF tests and assertions for these devices.

VID: 04d9

PID: 0355

Chapter 9: Pass Fail

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

HID: Pass Fail N/A

Frameworks Test Result (USB30CV with Renesas xHCI Host Controller):

Pass Fail

All USB peripherals are required to enumerate on a SuperSpeed host controller and pass all applicable tests within USB30CV. Failure framework test in USB30CV will prevent certification.

VID: 04d9

PID: 0355

Chapter 9: Pass Fail

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

HID: Pass Fail N/A

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Power Current Test Result: Pass Fail

Power Type: Low Powered Device

Operating Power: 8.03 mA

(\leq Max Power \leq 100mA for Low Power)

(\leq Max Power \leq 100mA for Self Power)

(\leq Max Power \leq 500mA for High Power)

Unconfiguration Power: 8.03 mA

(\leq 100mA)

Configuration Power: 8.02 mA

(\leq Max Power \leq 100mA for Low Power)

(\leq Max Power \leq 500mA for High Power)

Suspend Mode Power: N/A uA

(Remote Wakeup Unsupported Device Only)

(Remote Wakeup Supported Device \Rightarrow Type "N/A")

(\leq 2500uA for Self Power Hub and Non Compound Device)

(\leq 12500uA for Bus Power Hub and Compound Device)

Suspend Mode Power with Remote Wakeup: 344 uA

Suspend Mode Power without Remote Wakeup: 344 uA

(Remote Wakeup Supported Device Only)

(Remote Wakeup Unsupported Device \Rightarrow Type "N/A")

(\leq 2500uA for Self Power Hub and Non Compound Device)

(\leq 12500uA for Bus Power Hub and Compound Device)

Suspend Port Power: 342 uA

(\leq 2500uA for not Supporting USB Battery Charging)

(\leq 100mA for Supporting USB Battery Charging)

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Interoperability Test Overall Result: Pass Fail

EHCI Host 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 devices: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 4. Hot plug test – A Plug | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 5. Hot plug test – B Plug | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail <input type="checkbox"/> N/A |
| 6. Warm Boot test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 7. Remote Wake-up Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail <input type="checkbox"/> N/A |
| 8. S3 Active Standby Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 9. S3 Active Standby Resume Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 10. Root Port Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 11. S4 Active Hibernate Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 12. S4 Active Hibernate Resume Test | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |

UHCI Host Controller:

- | | | |
|---|--|-------------------------------|
| 13. Interoperability – Operate all devices: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 14. System Suspend/Resume Test– Operate DUT | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 15. Warm Boot Test – Operate DUT | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |

OHCI Host Controller:

- | | | |
|--|--|-------------------------------|
| 16. Interoperability – Operate all devices: | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 17. System Suspend/Resume Test – Operate DUT | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |
| 18. Warm Boot Test – Operate DUT | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Fail |

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Low Signal Quality Test Result: Pass Fail

Connector Type: **Untethered** (Tethered means no standard B or special B connector)

Low Speed Upstream 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_{Bus}: 0 mV / 0 mV

(All values <= 400mV)

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More Detail Test Result:

1. Low Speed Upstream Signal Quality: Pass

- Overall result: pass!
- Signal eye:
eye passes
- EOP width: 1.33 us
EOP width passes
- Measured signaling rate: 1.5014 MHz
signal rate passes
- Edge Monotonicity: 60 mV
Monotonic Edge passes
- Crossover voltage range: 1.63 V to 1.75 V, mean crossover 1.69 V
(first crossover at 1.67 V, 10 other differential crossovers checked)
crossover voltages pass
- Consecutive jitter range: -1.959 ns to 2.642 ns, RMS jitter 1.798 ns
- Paired JK jitter range: -1.732 ns to 0.344 ns, RMS jitter 1.248 ns
- Paired KJ jitter range: -0.133 ns to 0.152 ns, RMS jitter 0.113 ns
jitter passes

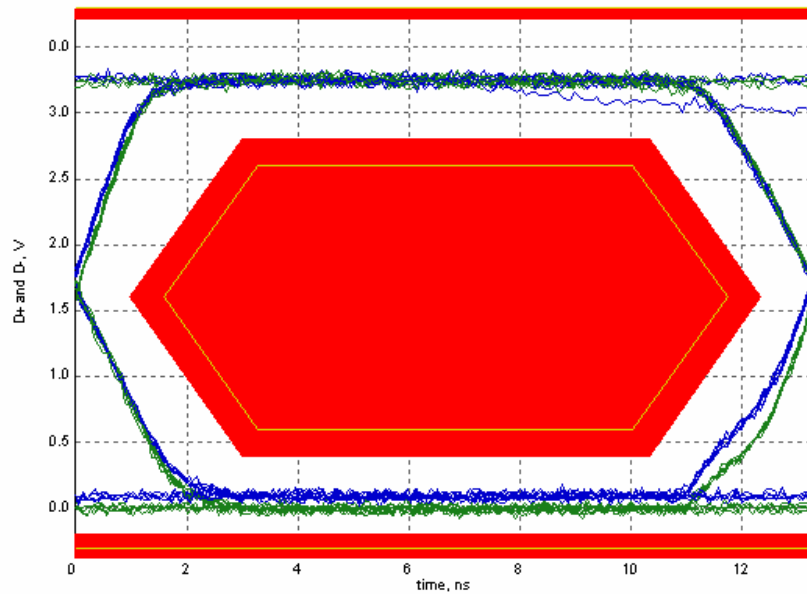
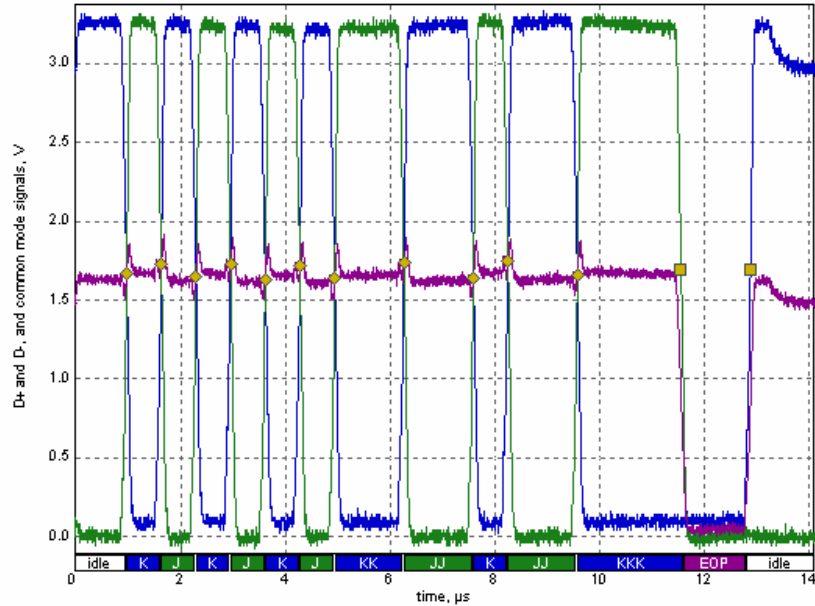
Additional Information

- Rising Edge Rate: 19.50 V/us (Equivalent risetime = 135.40 ns)
(minimum 8.80 V/us, maximum 35.20 V/us)
- Falling Edge Rate: 16.41 V/us (Equivalent falltime = 160.87 ns)
(minimum 8.80 V/us, maximum 35.20 V/us)
- Edge Rate Match: 18.81% (limit +/-20%)

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SignalData and Eye



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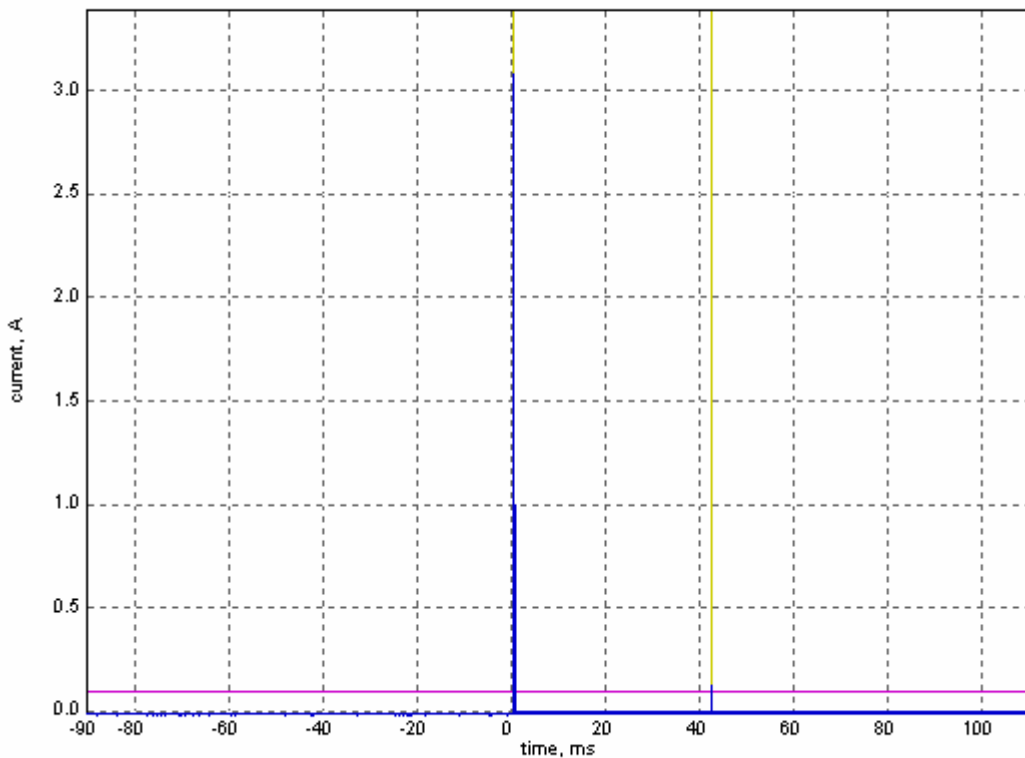
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2. Inrush Current: Pass

- Overall result: pass!
- Inrush at 5.000 V: 41.6795 μC
Inrush passes
- **Region 1 Start: 0.00126 ms - End: 0.156 ms = 41.68 μC**
- Region 2 Start: 41.716 ms - End: 41.816 ms = 0.01116 μC

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Hot Plug (Attach) Current Draw



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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. USB-IF Compliance Update Page---Interoperability Gold Tree Update
<http://compliance.usb.org/resources/GoldSuite%20Test%20Procedure.pdf>
2. Universal Serial Bus Implementers Forum Full and Low Speed Electrical and Interoperability Compliance Test Procedure, version: 1.3

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