

USB-IF COMPLIANCE PROGRAM

USB 2.0 Test Report For Full 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: HT82A824R

Product Type: Audio Class

Report Date: 2011/08/09

Test Result: **PASS**

Tester: William Tsao

Authorized Signature: *Eric Chen*

Project ID : UNC-HOK-USB-032_1



© Allion Test Labs, Inc. All rights reserved.
9F, No. 3-1, Yuan Ku Street, Taipei, Taiwan, 11503, R.O.C.
Phone: +886-2-77228800 Fax: +886-2-26557879

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.



Project ID : UNC-HOK-USB-032_1

USB-IF COMPLIANCE PROGRAM

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: 2824

Chapter 9: Pass Fail

Interface: 3 MAX Power: 500 mA Remote Wakeup: N/A

MSC: Pass Fail N/A

UVC: Pass Fail N/A

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: 2824

Chapter 9: Pass Fail

Interface: 3 MAX Power: 500 mA Remote Wakeup: N/A

MSC: Pass Fail N/A

UVC: Pass Fail N/A

HID: Pass Fail N/A

Project ID : UNC-HOK-USB-032_1

USB-IF COMPLIANCE PROGRAM

Power Current Test Result: Pass Fail

Power Type: High Powered Device

Operating Power: 70.22 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: 27.33 mA

(\leq 100mA)

Configuration Power: 26.94 mA

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

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

Suspend Mode Power: 354.68 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: N/A uA

Suspend Mode Power without Remote Wakeup: N/A 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: 353.62 uA

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

(\leq 100mA for Supporting USB Battery Charging)

TM

USB-IF COMPLIANCE PROGRAM

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 type="checkbox"/> Pass | <input type="checkbox"/> Fail | <input checked="" 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 | |

USB-IF COMPLIANCE PROGRAM

Full Signal Quality Test Result: Pass Fail

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

Full 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)

TM

USB-IF COMPLIANCE PROGRAM

More Detail Test Result:

1. Full Speed Upstream Signal Quality: Pass

- Overall result: pass!
- Signal eye:
eye passes
- EOP width: 167.34 ns
EOP width passes
- Measured signaling rate: 12.0034 MHz
signal rate passes
- Edge Monotonicity: 68 mV
Monotonic Edge passes
- Crossover voltage range: 1.44 V to 1.65 V, mean crossover 1.54 V
(first crossover at 1.65 V, 10 other differential crossovers checked)
crossover voltages pass
- Consecutive jitter range: -161.436 ps to 266.980 ps, RMS jitter 143.289 ps
- Paired JK jitter range: -16.521 ps to 8.867 ps, RMS jitter 13.258 ps
- Paired KJ jitter range: -289.285 ps to 298.283 ps, RMS jitter 214.487 ps
jitter passes

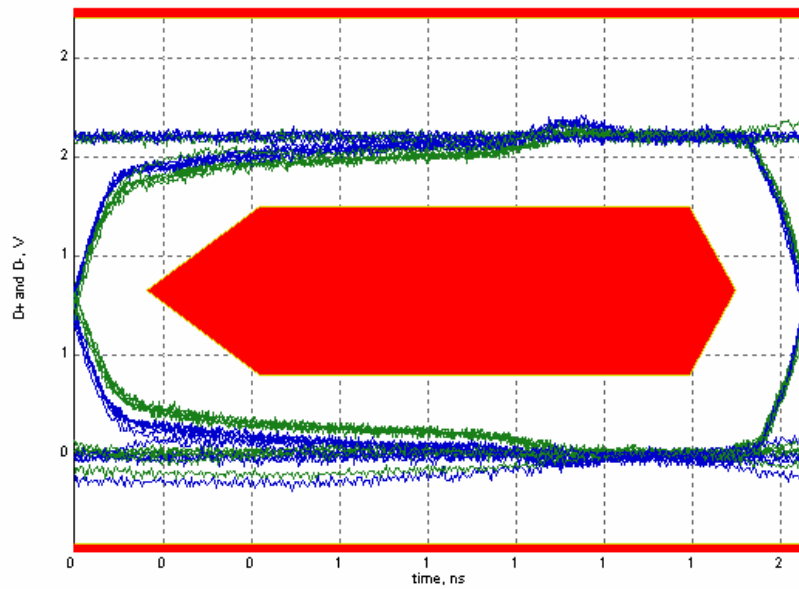
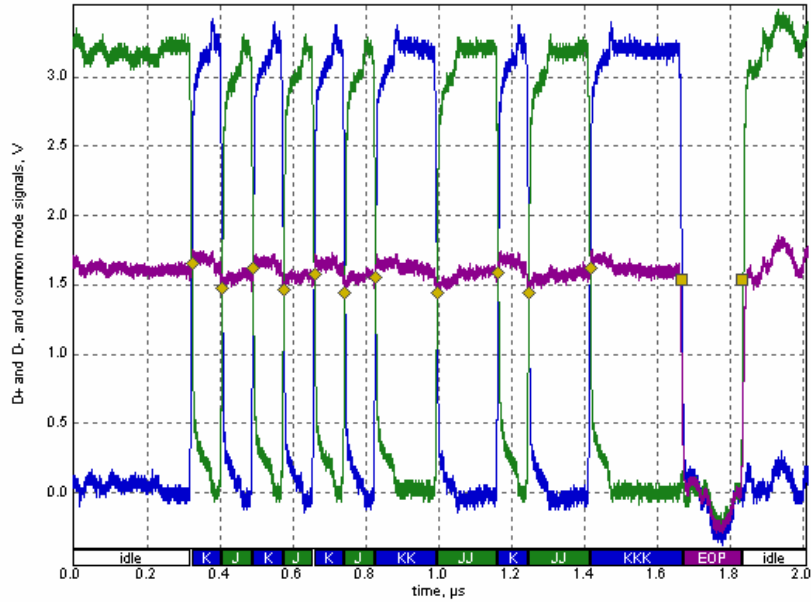
Additional Information

- Rising Edge Rate: 297.56 V/us (Equivalent risetime = 8.87 ns)
(minimum 132.00 V/us, maximum 660.00 V/us)
- Falling Edge Rate: 283.79 V/us (Equivalent falltime = 9.30 ns)
(minimum 132.00 V/us, maximum 660.00 V/us)
- Edge Rate Match: 4.85% (limit +/-10%)

Project ID : UNC-HOK-USB-032_1

USB-IF COMPLIANCE PROGRAM

SignalData and Eye



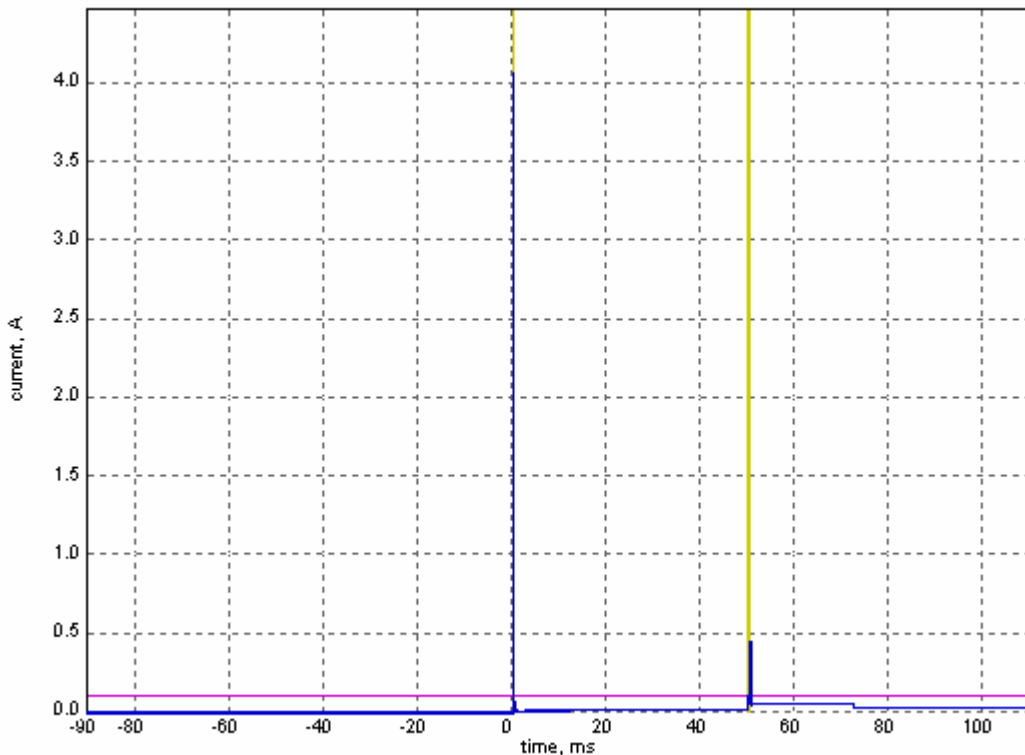
Project ID : UNC-HOK-USB-032_1

USB-IF COMPLIANCE PROGRAM

2. Inrush Current: Pass

- Overall result: pass!
- Inrush at 5.000 V: 25.9327 μC
Inrush passes
- **Region 1 Start: 0.00103 ms - End: 0.117 ms = 25.93 μC**
- Region 2 Start: 49.070 ms - End: 49.180 ms = 0.02928 μC
- Region 3 Start: 49.738 ms - End: 49.851 ms = 2.953 μC

Hot Plug (Attach) Current Draw



Project ID : UNC-HOK-USB-032_1

USB-IF COMPLIANCE PROGRAM

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

TM

