



NSTL USB-IF PROGRAM

Test Report

USB-IF Pretest Report

Company

Company Name: Topro Technology Inc.
VID (Dec) 1698 The VID for the company who apply the USB-IF logo

Technical Contact

Name: Arken Wu
Phone Number: 886-3-5632515 ext. 233
E-Mail: jcwu@topro.com.tw
FAX Number: 886-3-5641728

Marketing Contact

Name: Julie Kuo
Phone Number: 886-2-25856858 ext. 16
E-Mail: smkuo@topro.com.tw
FAX Number: 886-3-5641728

Device Information:

☐ Retail HUB ☐ HUB Chipset ☒ Retail Device ☐ Device Chipset

☐ Hi Power ☒ Low Power

☒ Bus Powered ☐ Self Powered ☐ Both

☐ Full Speed ☒ Low Speed ☐ High Speed

☐ Untethered B ☒ Tethered

☐ Up w/ Internal USB ☐ Up w/ External ☒ USB No Up

Device Name: TP88X5/X3

Device Class: Mouse

Embedded Function: N/A

Other: N/A

VID: 06A2

PID: 0033

Tested O.S. ☒ Win98SE and/or ☐ Win2000 (Standard test fee will cover 1 OS only.)

Tester: James Ou

Review: James Ou

Date: 02/22/2002

Over All Test Result: Pass



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Frameworks Test Result: ☒ Pass ☐ Fail

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

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

Chapter 11: ☐ Pass ☐ Fail ☒ N/A HUB Port #: _____

Power Current Test Result: ☒ Pass ☐ Fail

Operating Power: 50 mA **Unconfiguration Power: 22.6 mA (<100mA)**

(≤ Max Power ≤ 100mA for Low Power)

(≤ Max Power ≤ 100mA)

(≤ Max Power ≤ 500mA for High Power)

Configuration Power: 22.7 mA Suspend Mode Power: 440 uA

(≤ Max Power ≤ 100mA for Low Power)

(≤ 2500uA for High Power /w Remote Wake Up)

(≤ Max Power ≤ 500mA for High Power)

(≤ 500uA x Port# for HUB) (≤ 500uA for others)

Interoperability Test Result: ☒ Pass ☐ Fail OS: ☒ 98SE ☐ W2k

UHCI Controller: ☒ Pass ☐ Fail OHCI Controller: ☒ Pass ☐ Fail

Signal Quality Test Result: ☒ Pass ☐ Fail

Up Stream SQ: ☒ Pass ☐ Fail Inrush Current: ☒ Pass ☐ Fail

(≤ 100mA and 200uC)

Down Stream SQ: ☐ Pass ☐ Warning ☒ N/A

Drop/ Droop Test Result: ☐ Pass ☐ Fail ☒ N/A

For Self Powered HUB:

V_{non-load}: _____ V V_{load}: _____ V

V_{drop}: _____ V

V_{droop}: _____ mV

(≤500mV)

(≤330mV)

For BUS Powered HUB

V_{upstream}: _____ V V_{downstream}: _____ V V_{drop}: _____ V V_{droop}: _____ mV

(≤100mV or 350mV "Tethered")

(≤330mV)

Back Voltage Test (For Self-Powered Device): ☐ Pass ☐ Fail ☒ N/A

D+: _____ / _____ V

D-: _____ / _____ V

V_{bus}: _____ / _____ V

(All values ≤ 400mV)



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More Detail Test Result:

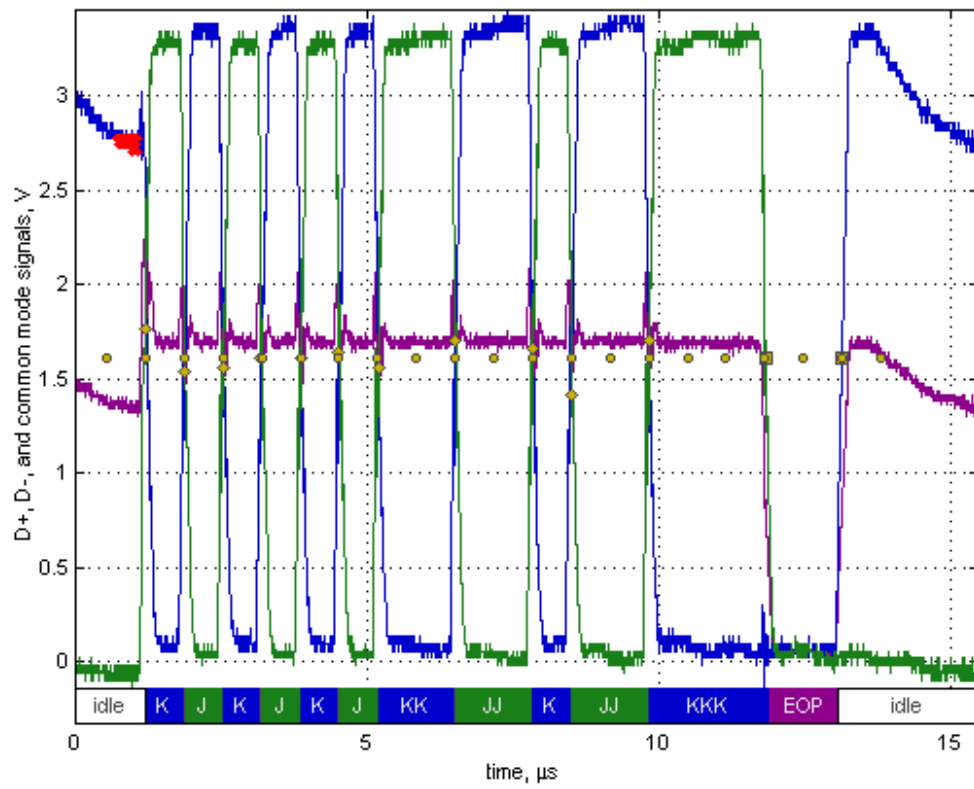
Up Stream Signal Quality: Pass with warning

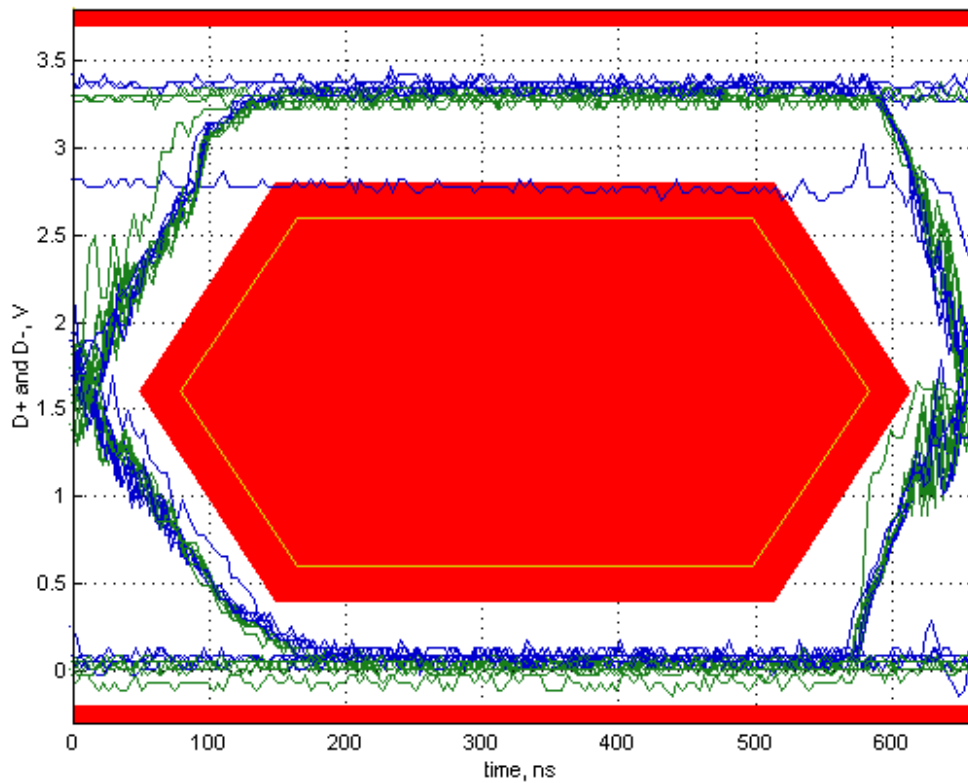
- Overall result: pass!
- Signal eye:
*** eye failure! (81 data points violate eye) ***
*** waiver granted. ***
- EOP width: 1.30 μ s
EOP width passes
- Receivers: reliable operation on tier 6
receivers pass
- Measured signaling rate: 1.5103MHz
signal rate passes
- Crossover voltage range: 1.41V to 1.76V, mean crossover 1.61V
(first crossover at 1.76V, 10 other differential crossovers checked)
crossover voltages pass
- Consecutive jitter range: -12.9ns to 11.2ns, RMS jitter 9.5ns
Paired JK jitter range: -5.3ns to 2.1ns, RMS jitter 2.5ns
Paired KJ jitter range: -9.5ns to 2.4ns, RMS jitter 4.0ns
jitter passes



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Inrush Current: Pass

- Overall result: pass!
- Inrush at 5.150V: 24.74 μ C
inrush passes



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