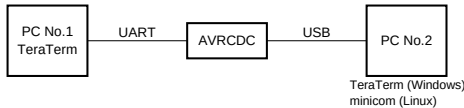


The AVR-CDC Evaluation Report (ATtiny45)

1. Test Scheme
1.1 Connection



4800bps, 8N1, FlowControl: none
No other USB devices connected to the target Host Controller on PC No.2.

- 1.2 Procedure
- (1) Transmit text data (40kB) from PC1 to PC2.
 - (2) Transmit the received text on PC2 back to PC1.
 - (3) Compare the returned text.
 - (4) Repeat (1)-(3) 3 times.

2. Result
PC No.1: NT-5000 (EPSON DIRECT) Mobile Pentium4 2GHz, RAM512MB, Windows2000 SP4

Model (PC No.2)	Vendor	PC Spec.	OS / Driver (Version)	USB Host Controller Driver	USB Interface		USB Host Controller	Result	Cause
MX4GER	AOpen	Pentium4 2.4GHz RAM 512MB	KNOPPIX 3.7 Kernel 2.4.27 acm.c : v0.21	usb-uhci.c Rev 1.275	on-board	SouthBridge	Intel 845G(ICH4)	OK	
				usb-ohci.c v5.3	RATOC REX-PCIU3	PCI	NEC uPD720101	OK	
				usb-uhci.c Rev 1.275	KurotoShiko USB2.0V3-PCI	PCI	VIA VT6202	OK	
				usb-uhci.c Rev 1.275	KurotoShiko USB2.0V5-PCI	PCI	VIA VT6212L	OK	
				usb-ohci.c v5.3	ALI USB2AL11-B01	PCI	ALI M5273	OK	
				uhci.c v1.1	IODATA CBUS2L	CardBus	VIA VT6212L	OK	
				usb-ohci.c v5.3	UnionBros UBH004	CardBus	OPTi 82C861	OK	
				usb-ohci.c v5.3	RATOC REX-CBU2X	CardBus	NEC uPD720101	OK	
				usb-ohci.c v5.3	BUFFALO IFC-USB2CB	CardBus	NEC uPD720100A	OK	
			KNOPPIX 5.0.1 Kernel 2.6.17 usb-acm : v0.25	uhci_hcd.c v3.0	on-board	SouthBridge	Intel 845G(ICH4)	NG *1	Low speed bulk transfer prohibited in uhci_hcd.c.
				ohci_hcd.c 2005 April 22	RATOC REX-PCIU3	PCI	NEC uPD720101	OK	
				uhci_hcd.c v3.0	KurotoShiko USB2.0V3-PCI	PCI	VIA VT6202	NG *1	Low speed bulk transfer prohibited in uhci_hcd.c.
				uhci_hcd.c v3.0	KurotoShiko USB2.0V5-PCI	PCI	VIA VT6212L	NG *1	Low speed bulk transfer prohibited in uhci_hcd.c.
				ohci_hcd.c 2005 April 22	ALI USB2AL11-B01	PCI	ALI M5273	OK	
				uhci_hcd.c v3.0	IODATA CBUS2L	CardBus	VIA VT6212L	NG *1	Low speed bulk transfer prohibited in uhci_hcd.c.
				ohci_hcd.c 2005 April 22	UnionBros UBH004	CardBus	OPTi 82C861	OK	
				ohci_hcd.c 2005 April 22	RATOC REX-CBU2X	CardBus	NEC uPD720101	OK	
				ohci_hcd.c 2005 April 22	BUFFALO IFC-USB2CB	CardBus	NEC uPD720100A	OK	
			Debian 3.1_rc2 Kernel 2.6.9-2-386 usb-acm : v0.23	uhci_hcd.c with Patch	on-board	SouthBridge	Intel 845G(ICH4)	OK *2	
				ohci_hcd.c 2004 Feq 02	RATOC REX-PCIU3	PCI	NEC uPD720101	OK	
				uhci_hcd.c with Patch	KurotoShiko USB2.0V3-PCI	PCI	VIA VT6202	OK *2	
				uhci_hcd.c with Patch	KurotoShiko USB2.0V5-PCI	PCI	VIA VT6212L	OK *2	
				ohci_hcd.c 2004 Feq 02	ALI USB2AL11-B01	PCI	ALI M5273	OK	
				uhci_hcd.c with Patch	IODATA CBUS2L	CardBus	VIA VT6212L	OK *2	
				ohci_hcd.c 2004 Feq 02	UnionBros UBH004	CardBus	OPTi 82C861	OK	
				ohci_hcd.c 2004 Feq 02	RATOC REX-CBU2X	CardBus	NEC uPD720101	OK	
				ohci_hcd.c 2004 Feq 02	BUFFALO IFC-USB2CB	CardBus	NEC uPD720100A	OK	
			Windows 2000 SP4	[UHCI]	on-board	SouthBridge	Intel 845G(ICH4)	OK	
				[OHCI]	RATOC REX-PCIU3	PCI	NEC uPD720101	OK	
				[UHCI]	KurotoShiko USB2.0V3-PCI	PCI	VIA VT6202	OK	
				[UHCI]	KurotoShiko USB2.0V5-PCI	PCI	VIA VT6212L	OK	
				[OHCI]	ALI USB2AL11-B01	PCI	ALI M5273	OK	
				[UHCI]	IODATA CBUS2L	CardBus	VIA VT6212L	OK	
				[OHCI]	UnionBros UBH004	CardBus	OPTi 82C861	OK	
				[OHCI]	RATOC REX-CBU2X	CardBus	NEC uPD720101	OK	
				[OHCI]	BUFFALO IFC-USB2CB	CardBus	NEC uPD720100A	OK	
			Windows XP SP2	[UHCI]	on-board	SouthBridge	Intel 845G(ICH4)	OK	
				[OHCI]	RATOC REX-PCIU3	PCI	NEC uPD720101	OK	
				[UHCI]	KurotoShiko USB2.0V3-PCI	PCI	VIA VT6202	OK	
				[UHCI]	KurotoShiko USB2.0V5-PCI	PCI	VIA VT6212L	OK	
				[OHCI]	ALI USB2AL11-B01	PCI	ALI M5273	OK	
				[UHCI]	IODATA CBUS2L	CardBus	VIA VT6212L	OK	
				[OHCI]	UnionBros UBH004	CardBus	OPTi 82C861	OK	
				[OHCI]	RATOC REX-CBU2X	CardBus	NEC uPD720101	OK	
				[OHCI]	BUFFALO IFC-USB2CB	CardBus	NEC uPD720100A	OK	
WL2120	SOTEC	Mobile Celeron 1.2GHz RAM:384MB	Windows XP SP2	[OHCI]	on-board		SiS7001	OK	
				[UHCI]	IODATA CBUS2L	CardBus	VIA VT6212L	NG	Data corrupts at 4800bps, correct at 2400bps.
				[OHCI]	UnionBros UBH004	CardBus	OPTi 82C861	OK	
				[OHCI]	RATOC REX-CBU2X	CardBus	NEC uPD720101	OK	
				[OHCI]	BUFFALO IFC-USB2CB	CardBus	NEC uPD720100A	OK	
Thinkpad X20	IBM	Pentium3 700MHz RAM:384MB	Windows 2000 SP4	[UHCI]	on-board	SouthBridge	Intel 4402XM	(OK)	IN request stops at 4800bps very rarely.

- *1 : may work if uhci_q.c is modified (not tested).
*2 : usb_uhci.c (v2.2) has been modified to enable bulk transfer.

3. Comment
(1) Baudrate

* Data corrupts at 4,800bps in Full-duplex transfer. No problem at 2400bps.
* One-way transfer (USB -> RS232C) succeeds at 9600bps.

(2) Windows Driver and its Version

Windows 2000 SP4

[OHCI Host Driver]
openhci.sys 5.00.2195.6675
usbd.sys 5.00.2195.6658
usbhub.sys 5.00.2195.6689
usbui.dll 5.00.2134.1

[UHCI Host Driver]
uhcd.sys 5.00.2195.6655
usbd.sys 5.00.2195.6658
usbhub.sys 5.00.2195.6689
usbui.dll 5.00.2134.1

[Serial Port Driver]
usbser.sys 5.00.2195.6655

Windows XP SP2

[OHCI Host Driver]
usbhub.sys 5.1.2600.2180
usbhci.sys 5.1.2600.2180
usbport.sys 5.1.2600.2180
usbui.dll 5.1.2600.2180

[UHCI Host Driver]
usbhub.sys 5.1.2600.2180
usbport.sys 5.1.2600.2180
usbhci.sys 5.1.2600.2180
usbui.dll 5.1.2600.2180

[Serial Port Driver]
usbser.sys 5.1.2600.2180

(3) Linux: CDC device is recognized as /dev/ttyACM0