Model UT-2003A 8 Ports RS-422/485 USB to Serial Converters

# **User Manual**



## Summary

With rapid development of computer industry, USB is taking the place of various kinds of traditional low speed peripheral interfaces. However, RS-422/485 interface designs are still used in many of the important facilities under current industrial environment, therefore, converter is used by many users to implement the data transmission from USB of a computer to RS-422/485 equipment.

UT-2003A is a universal USB/RS-422/485 interface converter. No external power supply needed. Compatible with USB and RS-422/485 standards, DB9 male connectors are used for connection from RS-422/485 interface. The unique I/O circuit of the internal zero delay auto transceiver contained in the converter controls the data stream direction automatically. The converter is plug-and-play. All these features ensure a universal application on all the existing communication software and hardware interfaces.

The data communication rate can be as high as 9600-128000 bps by the point-to-point communication by UT-2003A interface. Power indicator light and data traffic indicator light are also available with the converter for malfunction indication.

### **Technical specification:**

- 1. Standard: Comply with USB1.0,1.1, 2.0, EIA RS422/485
- 2. USB signal: VCC,DATA+,DATA-,GND,FG
- 3. RS485 signal: T/R+,T/R-,GND
- 4. RS422 signal: T/R+,T/R-,RXD+,RXD-,GND
- 5. Working modes: P2P, 4 lines, Full-duplex;
  - 1. P2P,2 lines, half-duplex
  - 2. Point to Multi, 4 lines, Full-duplex;
  - 3. Point to Multi, 2 lines, half-duplex
- 6. Direction: Auto-detect data flow, auto adapts.
- 7. Baud rates: 300m /128000Bps.2.4km/38400bps;5km/9600bps, Auto-adapts
- 8. Max. connection: 128 RS422/485 devices under point to multi mode
- 9. Distance: RS422/485 side: 5km(9600bps), USB side: 5m
- 10. Protection: 600w lightning strike, surging, +/-15kv ESD
- 11. Interface: USB-B type female, DB9 male;
- 12. Indicator: 9 lights, PWR, and status TXD,RXD
- 13. Transmission medium: STP,UTP
- 14. Measurement: 440mm\*201mm\*43mm
- 15. Power supply: 180-240V/AC
- 16. Supported system: Linux, Win98/2k/Vista/7.

## Hardware installment and application

Read the user manual carefully before installing the UT-2003A interface converter. Put the signal cable of the equipment into the USB socket.USB/DB9 male connectors are adopted for input/output interface connection for this product. For prevent interference, a  $120\Omega$ , 1/4w terminal resistor is required.

#### **Connector and signal:**

1. DB9 male: RS422/485 output signals and PIN assignment

	DB9 PIN : RS422/485 signal and pin definition							
DB9	Output	RS422 (Full	RS485 (Half					
DB9	signal	duplex)	duplex)					
1	T/R+	Transfer (A+)	(A+)					
2	T/R-	Transfer (B-)	(B-)	DB9				
3	RXD+	Receive(A+)	-					
4	RXD-	Receive(B-)	-					
5	GND	GND	BND					
6	N/A							
7	N/A							
8	N/A							
9	N/A							

2. USB-B female: USB output signals and PIN assignment



# **Communication Connection Chart**

- USB to RS422
- $1_{\times}$  RS422, Point to point/ 4 lines, full duplex





USB to RS485

1、 RS485 point to point,2 lines,half duplex



3、UT-2003A to UT-2003A, half duplex



2 x RS485 point to multi, 2 lines, half duplex



2 RS422, Point to multi/ 4 lines, full duplex

# **Problems and troubleshooting**

- 1. Data communication failure
  - A. Check to make sure USB cable is OK.
  - B. Make sure DB9 output interface connection is correct.
  - C. Make sure power supply is OK.
  - D. Make sure the wire terminal connection is OK.
  - E. Make sure the indicator lights flash when receiving.
  - F. Make sure the indicator lights flash when sending.
- 2. Data missing or incorrect

A. Check to see whether the data rate and format at both ends of the communication equipment are consistent.

# **VIII. Product image**



## **Driver installation**

Once a UT-2003A converter is connected with the USB port, the following window will pop up. Select Install from a list or specific location (Advanced), then click Next to continue.



Then a window pops up to choose search and installation options as the following, please select Don't search. I will choose the driver to install, and then click Next to continue.

Found New Hardware Wizard					
Please choose your search and installation options.					
O Search for the best driver in these locations.					
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.					
Search removable media (floppy, CD-ROM)					
Include this location in the search:					
F:\ Browse					
<ul> <li>Don't search. I will choose the driver to install.</li> </ul>					
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.					
< Back Next > Cancel					

Then a window pops up for Hardware Type listing, pull the scroll bar to select Universal Serial Bus Controllers and click Next to continue.



In the following Select the device driver you want to install for this hardware, click Have Disk to continue.

Found New Hardware Wizard					
Select the device driver you want to install for this hardware.					
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.					
(Unable to find any drivers for this device)					
Have Disk					
Kenter Cancel					

In the Install From Disk window, click Browse to select the path of the device driver.

Found New Hardware Wizard							
Select the device driver you want to install for this hardware.							
🚓 Install From Disk							
(Una	Insert the manufacturer's installation disk, and then OK make sure that the correct drive is selected below. Cancel	,					
	Copy manufacturer's files from:						
	Browse						
	< Back Next > Cancel						

In the Locate File window, select CD path, then choose the directory Driver and click the button Open or double click to open.

Locate File						?🛛
Look in:	冬 software (	H	~	0 🗊	12	
My Recent Documents Desktop	Driver Product User manual					
My Documents						
My Computer						
	File name:	FTDIBUS. INF			~	Open
My Network	Files of type:	Setup Information (".inf)			~	Cancel

Select the driver model as the following, then click the directory UT-2003A to open, select PC Driver directory.

Locate File							? 🔀
Look in:	Driver 📄		~	G	1	P	
My Recent Documents Desktop My Documents My Computer	PC1-32c PCL-85C PCL-88C VT-620 VT-630 VT-810 VT-810 VT-820 VT-830 VT-840 VT-850 VT-860 VT-861 VT-861 VT-880 VT-890	UT-2002					
	File name:	FTDIBUS. INF				*	Open
My Network	Files of type:	Setup Information (".inf)				~	Cancel

Select the applicable operation system, e.g. select and double click to open WINXP.2003.2000 for Windows XP.

Locate File						? 🛛
Look in:	🛅 PC Driver	8	~	00	P 🛄•	
My Recent Documents	WIN98. ME WINXP. 2003 WINXPx64	. 2000]				
My Documents						
My Computer						
	File name:	ftd2xx.inf			*	Open
My Network	Files of type:	Setup Information [".inf)				Cancel

Select the file FTDIBUS.INF, then click Open.

Locate File 🛛 💽 🔀							
Look in:	C WINXP. 20	03. 2000	~	0	1 🖻	····	
My Recent Documents Desktop	FTDIBUS FTDIPORT						
My Documents							
My Computer						1	
	File name:	FTDIBUS. INF			*	(	Open
My Network	Files of type:	Setup Information (".inf)			~	0	Cancel

In the following Install From Disk window, just click OK.



Installation information has been located by the system as the following, just click Next to continue.

Found New Hardware Wizard					
Select the device driver you want to install for this hardware.					
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.					
Model					
USB Serial Converter USB installation information.					
This driver is not digitally signed!     Have Disk Have Disk					
< Back Next > Cancel					

The following shows that the USB Serial Converter installation is finished, then the system wizard will detect USB Serial Port automatically.

Found New Hardware Wizard					
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: USB Serial Converter				
	< Back Finish Cancel				

The following is the Found New Hardware Wizard for USB Serial Port, click Next as for USB Serial Converter, the same steps are omitted here.



Installation information has been located by the system as the following, just click Next to continue.

Found New Hardware Wizard	
Select the device driver you want to in	stall for this hardware.
Select the manufacturer and model of you have a disk that contains the driver you	our hardware device and then click Next. If you want to install, click Have Disk.
Model WSB Serial Fort USB installation information.	
This driver is not digitally signed! <u>Tell me why driver signing is important</u>	Have Disk
	< Back Next > Cancel

The following shows the USB Serial Port installation is finished. Up to now, all the drivers for UT-2003A are installed.



After installation, you can open Device Manager to check it there are COM ports available now, if no USB drivers have been installed previously. System default COM ports are COM 3, 4, 5 and 6 as illustrated below. Now, all the installation is finished.

