

Model: <u>GM-FTDI2X</u> 2 Port USB to RS-232 Commercial Interface Converter Instruction Manual

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Overview

The USB interface is gradually replacing the old-fashioned, lowspeed peripheral interfaces with the continuous development of the PC industry. Many vital devices in current industrial environments are still designed using an RS-232 interface, so the <u>USB to RS-232 converters</u> are needed to transfer data between PC and RS-232 devices.

<u>GM-FTDI2X</u> is a universal USB 2 port RS-232 converter which doesn't need external power supply and is compatible with USB and RS-232 standards. It can convert single-end USB signal to RS-232 signal, and it has built-in automatic transmit-receive switch without time delay. The unique I/O circuit can be used to automatically control the direction of data flow so as to make it plug-and-play and applicable to all existing communication software and interface hardware.



<u>GM-FTDI2X</u> supports point-to-point communication with data rate of 300-921,600bps. The power indicator and data traffic indicator LED's can be used for fault indication. USB to RS-232 conversion is supported.

Main Features

Following communication modes are supported by GM-FTDI2X interface converter:

1) Point-to-point communication mode.

Hardware Installation and Application



Please read this manual thoroughly and connect the USB cable to the USB port of the computer BEFORE the installation of GM-FTDI2X interface converter. USB to DB9M connectors are adopted for the input/output terminal and twisted cable or screened cable can be used. RS-232 communication mode can be implemented without any configuration and the connection and disassembly are very convenient. The converter uses 9 wires which are; DCD, RXD, TXD, DTR, GND, DSR, RTS, CTS, and RI with all signal connections.

Performance Parameters

- 1. Standards: Conforming to USB 1.1, 1.0 and 2.0 standards and EIA RS-232 standard.
- 2. USB signals: VCC, DATA-, DATA+, GND, FG
- 3. RS-232 signals: DCD, RXD, TXD, DTR, GND, DSR, RTS, CTS, RI
- 4. Operating mode: Asynchronous mode, point-to-point mode.
- 5. Data flow control: Automatic data flow control technique is adopted to automatically determine and control the data flow.
- 6. Baud rate: 300-921,600bps, automatically detecting the data rate.
- 7. Load capacity: point-to-point communication mode is supported.
- 8. Communication distance: 5 meters for RS-232 interface and no more than 5 meters for the USB port.
- 9. Interface protection: surge protection, ±15KV ESD protection.
- 10. Interface connection: A type male connector at USB side and DB9 male connector at RS-232 side.
- 11. Signal indication: 2 signal indicators transmit (TXD) receive (RXD) 1 power indicator (POWER.)
- 12. Transmission media: twisted-pair cable or shielded cable.
- 13. Cable length: 1500mm
- 14. Working environment: -40°C to 85°C, relative humidity of 5% to 95%
- 15. Supports Win98, 2000, 2003, 2008, XP, Vista, 7, 8, CE, Mac, Linux.

Connector and Signals

1) Pin assignment of RS-232C

DB9M (PIN)	RS-232C
1	Protective Earth
2	Receive Data SIN (RXD)
3	Transmit Data SOUT (TXD)
4	Data Terminal Ready (DTR)
5	Signal Ground (GND)
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	Ring Indicator (RI)



2) USB-A type: USB signal input and pin assignment



- 1. VCC
- 2. DATA-(DM)
- 3. DATA+(DP)
- 4. GND

Product Dimension and Connection Diagram



- 1. Standard USB A-type male connector
- 2. Filter magnetic ring
- 3. Screened black standard USB 2.0 cable
- 4. Aesthetic shell (black)
- 5. Standard DB9 male connector
- 6. Master chip of FTDT company in England

1. DCD 2, RXD 3, TXD 4, DTR 5, GND 6, DSR 7, RTS 8, CTS 9, RI









Faults and Trouble-Shooting

- 1. Data Communication Failure
 - a. Check the USB cable connection
 - b. Check the RS-232 connection
 - c. Check the power supply
 - d. Check terminal connection
 - e. Check receive indicator and see if it flashes
 - f. Check send indicator and see if it flashes

2. Data loss or error

a. Check consistency between data communication device rate and format

Driver Installation Procedure

The following dialogue box will pop up automatically when the <u>GM-FTDI2X</u> is connected to PC. Please select install from list or specified location (For advanced user) and click "Next".



The following dialogue box for path selection will be shown, and please select "Don't search. I'll select the driver to be installed by myself" (D) and click "Next".

dware Update Wizard	
Please choose your search and instal	llation options.
\odot Search for the best driver in these los	cations.
Use the check boxes below to limit or paths and removable media. The best	expand the default search, which includes local t driver found will be installed.
🔽 Search removable <u>m</u> edia (flop;	ру, CD-ROM)
\square Include this location in the sea	arch:
FN	T Biowse
Don't search. I will choose the driver	to install.
Choose this option to select the devic the driver you choose will be the best	e driver from a list. Windows does not guarantee t match for your hardware.

Then the hardware type dialogue box will be shown and please scroll to (Universal serial bus controller) and click "Next".

From the list below, select the type of	hardware you are in	istalling
Select a hardware type, then click "Nex	ť .	
Common <u>h</u> ardware types:		
Show All Devices Display adapters DIDE ATA/ATAPI controllers		<u>_</u>
Infrared devices		
Universal Serial Bus Controllers		•
	< <u>B</u> ack	Next > Cancel

The dialogue box named "select the driver to be installed for this hardware" will be shown and please click "install from hard disk" (H)

ırdwar	re Update Wizard				
Selec	ct the device driver you	u want to inst	all for this har	dware.	E.
¢	Select the manufacturer a have a disk that contains	nd model of you the driver you w	ir hardware devic rant to install, clic	e and then click k Have Disk.	t Next. If you
Show	w compatible hardware				
(No dri	ve for this device is found)	7			
					Have Disk
			- · · [1	-

Then the dialogue box named "install form hard disk" will be shown, please click (browse) to select the path of driver.

lardware l	Jpdate Wizard he device driver you want to insl	all for this har	dware	
U U U U			unuu.	S)
S Install Fr	elect the manufacturer and model of you om Disk	ur hardware devic	e and then click N	ext. If you
H	Insert the manufacturer's installation d make sure that the correct drive is sel	isk, and then ected below.	OK Cancel	
	Copy manufacturer's files from:	×	Browse	Disk
		< <u>B</u> ack	<u>N</u> ext >	Cancel

The dialogue box for "Find files" will pop up, and then select the CD path. Select (USB 2.0 TO Rs232 Cable) and open or just double click it as shown in the following figure.

Locate File						<u>? ×</u>
Look <u>i</u> n:	DVD-RAM (Drive (F:)	•	00	• 📰 🍽	
My Recent Documents	058 1.1 TO	BS232 Cable BS232 Cable				
My Documents						
My Computer						
		1				
My Network Places	File <u>n</u> ame: Files of type:	Setup Information (* inf)	6			Open Cancel

Select the appropriate operating system (such as Windows XP), and select (Win2000, XP64, Server2003, 2008 x64, Vista x64, Win7 x64) and click to open it or double click it.

Locate File		? ×
Look in	🔁 USB 2.0 TO RS232 Cable 💽 🔇 🤣 📂 🖽 -	
My Recent Documents Desktop My Documents My Computer	Linux x86_64 Mac OS 8 9 Mac OS X win98 ME win2000 xp64 server2003 2008x64 Vista x64 win7 x64 Windows CE 4.2-5.2 Mobile 5 6 PocketPC 2003 ARM XScale Processor Windows CE 4.2-5.2 Mobile 5 6 PocketPC 2003 x86 Processor Windows CE 6.0 ARM XScale Processor Windows CE 6.0 x86 Processor	
My Network	File name: ftd2xx.inf Q	ben
Places	Files of type: Setup Information (".inf)	ncel

In the popped up dialogue select FTDIBUS.INF and click it to open it, then a new dialogue with selected FTDIBUS file will be shown.



Below is the driver path and then please click (OK).

Select the	device driver you want to install for this hardware.
	the manufacturer and model of your hardware device and then click. Next. If you from the disk
Moc	Insert the Installation disk from the Manufacuturer, then make sure to choose the right drive below.
	Copy source of the files from the manufacturer (C):
	H:\software\USB_Serial\USB 2.0 TO ES232 S Browse (B)
	< Back Next > Cancel

The system has found the hardware installation information of the USB Serial Converter as shown in the figure below, then click "Next".

rdware Update Wizard		
Select the device driver you want	to install for this hardwa	re.
Select the manufacturer and mode have a disk that contains the drive	el of your hardware device and er you want to install, click Ha	d then click Next. If you ve Disk.
Show compatible hardware		
USB Serial Converter		
This driver is digitally signed. <u>Tell me why driver signing is important</u>		Have Disk

The USB Serial Converter installation wizard is completed just as shown in the following figure. Then the system will detect the USB Serial Port automatically and show the "New hardware found" wizard.

Hardware Update Wizard	
	Completing the Hardware Update Wizard The wizard has finished installing the software for: USB Root Hub
	< <u>B</u> ack. Finish Cancel

The following dialogue shows the new hardware wizard of USB Serial Port. Please click "Next" and the following steps are just the same as the wizard of USB Serial Converter, so we won't describe it in detail here.

Hardware Update Wizard	
	Welcome to the Hardware Update Wizard This wizard helps you install software for: USB Serial Port
	or floppy disk, insert it now.
	What do you want the wizard to do? O Install the software automatically (Recommended) O Install from a list or specific location (Advanced)
	Click Next to continue.

The system has found the hardware installation information of the USB Serial Port as shown in the figure below, then click "Next".



The USB Serial Port installation wizard is completed just as shown in the following figure. Now the driver of <u>GM-FTDI2X</u> has been installed completely.



After the driver has been installed correctly please have a look at the device manager to make sure whether there is virtual COM port. If it's the first time to install the USB driver on this system then the default COM ports are COM3 and COM4 as shown in the following figure. Up to now the driver of <u>GM-FTDI2X</u> has been installed successfully.

🖳 Device Manager	
File Action View Help	
E 🖳 CV0012150D0	
🗄 🖳 😼 Computer	
🗄 🐲 Disk drives	
🗄 🥞 Display adapters	
🗄 🥝 DVD/CD-ROM drives	
🗄 🗃 Floppy disk controllers	
🗄 🖾 Human Interface Devices	
😟 🗃 IDE ATA/ATAPI controllers	
🗄 🦢 Keyboards	
Mice and other pointing devices	
🗄 🧕 Monitors	
E Betwork adapters	
🖻 🍠 Ports (COM & LPT)	
J ECP Printer Port (LPT1)	
USB Serial Port (COM3)	
USB Serial Port (COM4)	
Communication Port (COM1)	
🖻 🛲 Processors	
🗄 🏀 SCSI and RAID controllers	
Sound, video and game controllers	
🗄 📲 🧕 System devices	
🕂 🖨 Universal Serial Bus controllers	