Dual RS232 Serial to USB Adapter Issue Fix

June 2009

In May-July of 2009, there is was an issue with some of the C2000 kits with onboard USB JTAG emulation being recognized by Windows as "Dual RS232 USB Serial Bridge" instead of the TI XDS100 JTAG emulator. The USB emulation is based on an FTDI USB Serial adapter chip that can act as a JTAG emulator when connected to an external EEPROM containing the emulation parameters. If the EEPROM is not programmed then the FTDI chip appears as a "Dual RS232 USB Serial Bridge". We believe there was an issue with some of the initial USB docking stations and controlSTICKs not getting programmed properly. We now have the issue resolved in our test procedure.

This issue can potentially affect the following kits:

- Piccolo controlSTICK TMDX28027USB
- USB Docking Station found in the:
  - TMDXDOCK28027
  - TMDSDOCK2808
  - TMDSDOCK28335
- Motor control plus PFC kits
  - TMDS1MTRPFCKIT
  - TMDS2MTRPFCKIT
- Resonant DC/DC Developer's Kit TMDSRESDCKIT

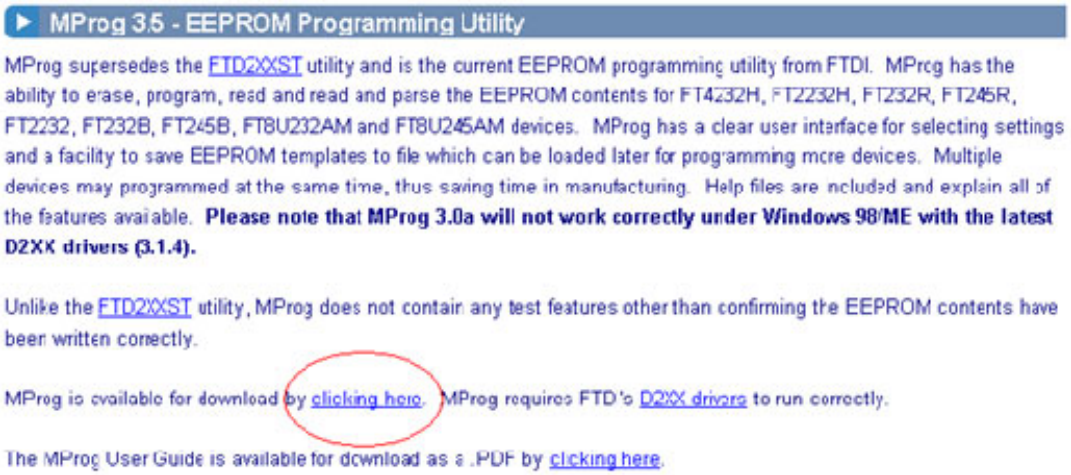
Here's how to program the EEPROM on the XDS100 emulator:

This will also give you the ability to use the FTDI chip as the XDS100 emulator and a USB to serial adapter at the same time. The FTDI USB to serial adapter is connected to the controlCARD's serial port (SCI) on the USB docking station and the F28027's SCI port on the controlSTICK.

1) Download and install the FTDI D2XX Drivers found here. (scroll down, the link for the driver is in the center column of the table on the page)

Operating System	Devices Supported	Driver Version	Release Date	Comments
Windows Server 2008 Windows Server 2008 x64 Windows Vista Windows Vista x64 Windows XP Windows XP x64 Windows 2000 Windows Server 2003 Windows Server 2003 x64	FT2232H, FT4232H, FT232R, FT245R, FT2232, FT232B, FT245B, FT8U232AM, FT8U245AM	2.04.16	25th February 2009	Microsoft WHQL certified. Also available as a setup executable For custom VID and PID combinations see AN232R-03. Combined driver model (D2XX and VCP). Devices programmed as VCP will expose a COM port, as will AM and BM devices. Release Notes

2) Download and install the MProg program found here.



MProg 3.5 - EEPROM Programming Utility

MProg supersedes the FTD2XXST utility and is the current EEPROM programming utility from FTDI. MProg has the ability to erase, program, read and read and parse the EEPROM contents for FT4232H, FT2232H, FT232R, FT245R, FT2232, FT232B, FT245B, FT8U232AM and FT8U245AM devices. MProg has a clear user interface for selecting settings and a facility to save EEPROM templates to file which can be loaded later for programming more devices. Multiple devices may programmed at the same time, thus saving time in manufacturing. Help files are included and explain all of the features available. **Please note that MProg 3.0a will not work correctly under Windows 98/ME with the latest D2XX drivers (3.1.4).**

Unlike the FTD2XXST utility, MProg does not contain any test features other than confirming the EEPROM contents have been written correctly.

MProg is available for download by clicking here. MProg requires FTD's D2XX drivers to run correctly.

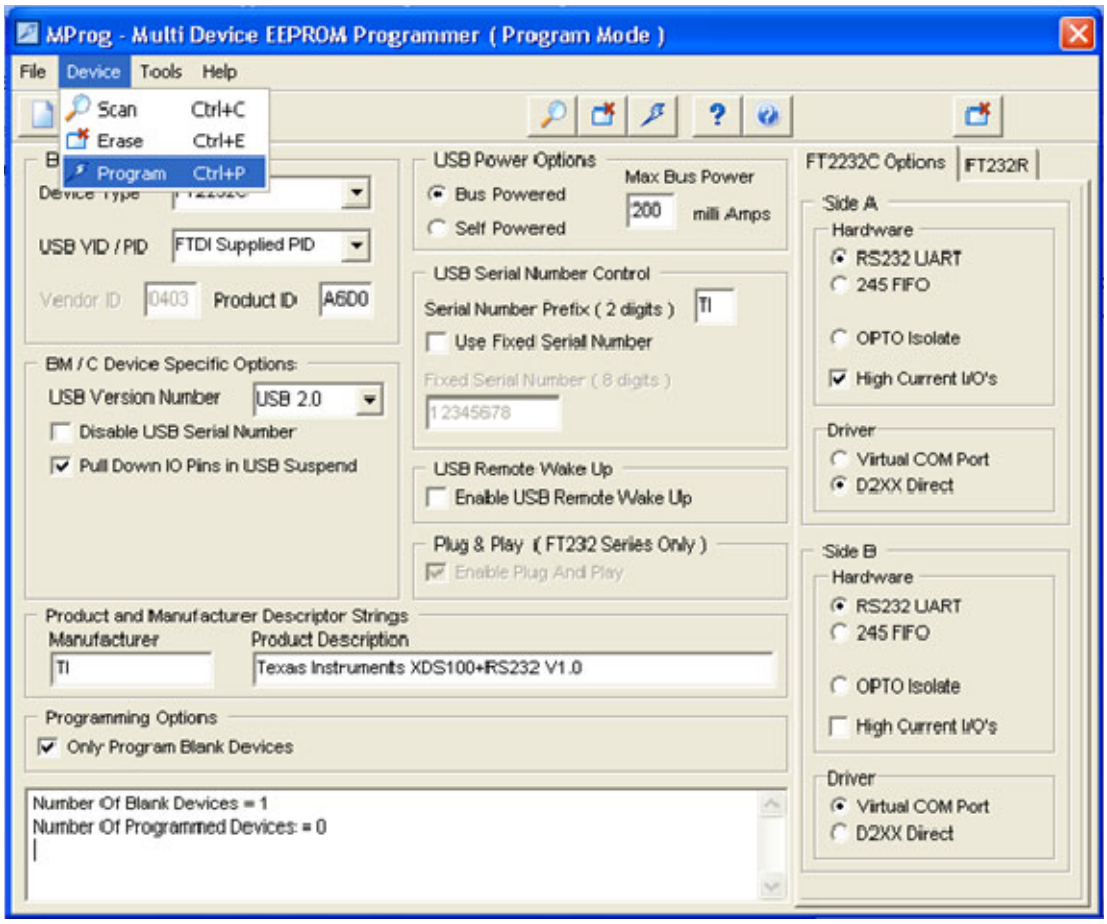
The MProg User Guide is available for download as a .PDF by clicking here.

3) Locate XDS100_wUART.ept file included with this document. It can also be downloaded here.

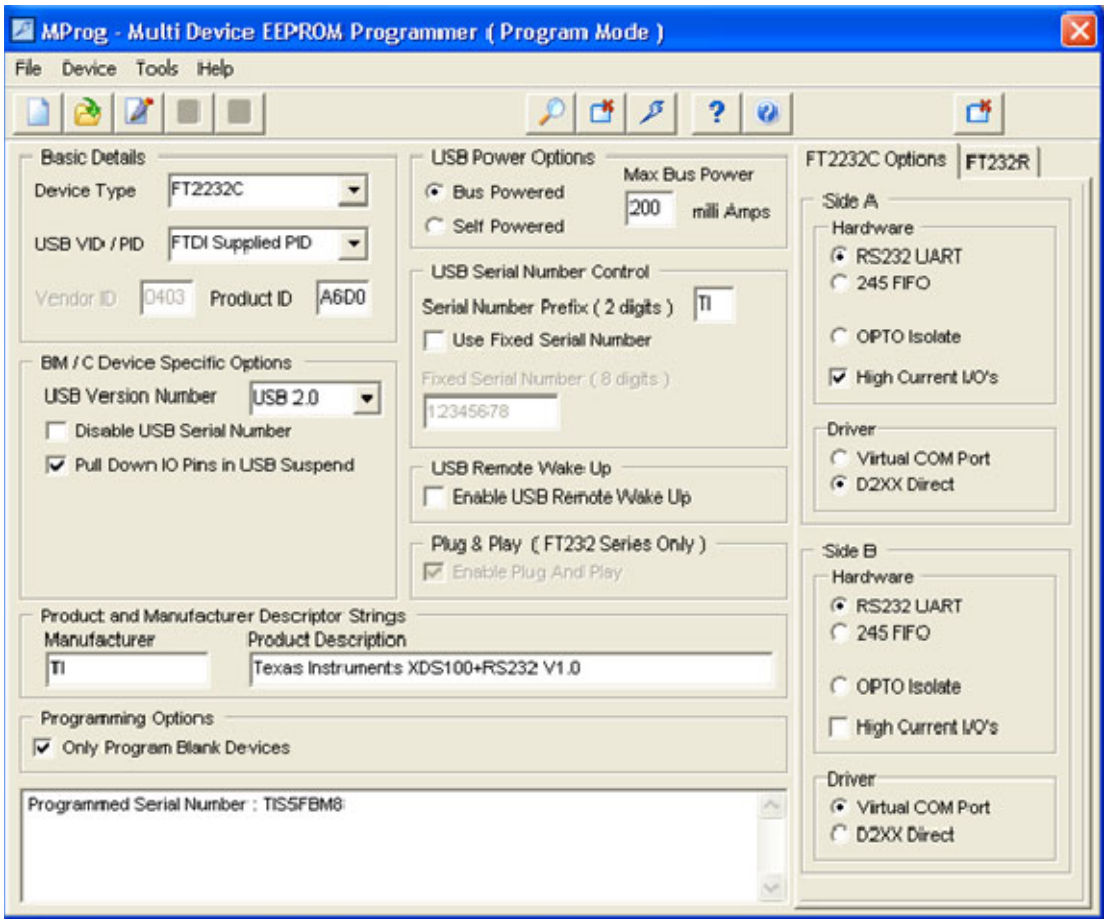
4) Connect the USB docking station switch SW1 to the USB position or connect your controlSTICK

5) Open MProg. Under the File menu select Open and then select the XDS100_wUART.ept file.

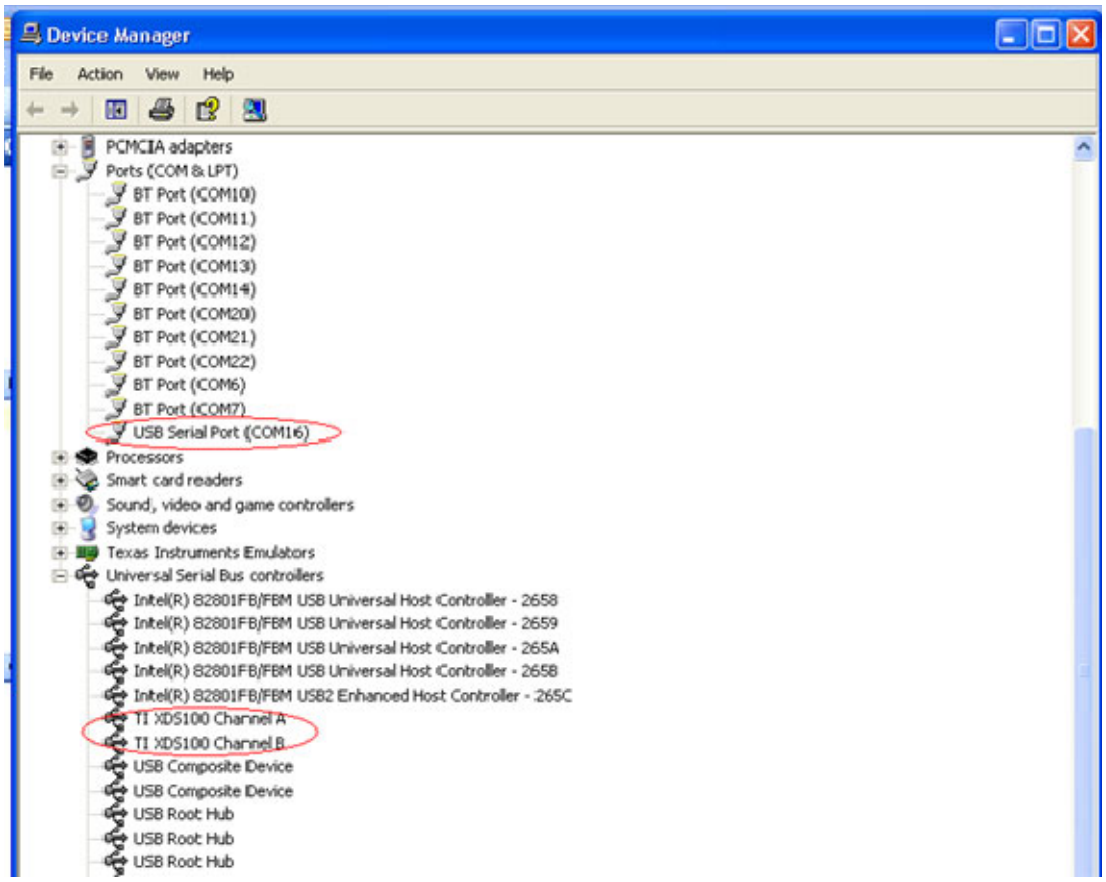
6) Under the Device menu select Scan. MProg should give the result below, showing that there is one blank device.



7) As the above picture shows, select Program under the Device menu. MProg will program the EEPROM on the board and should give a result similar to the one below.



Now your XDS100 emulator is programmed and ready be used! This will also give you the advantage of allowing the FTDI chip to act as both a JTAG emulator AND a USB to serial adapter which is tied to the serial port on the controlCARD. As shown in the below picture, there is the XDS100 emulator and the USB to serial bridge.


Device Manager
File
Action
View
Help
PCMCIA adapters
Ports (COM & LPT)
BT Port (COM10)
BT Port (COM11)
BT Port (COM12)
BT Port (COM13)
BT Port (COM14)
BT Port (COM20)
BT Port (COM21)
BT Port (COM22)
BT Port (COM6)
BT Port (COM7)
USB Serial Port (COM16)
Processors
Smart card readers
Sound, video and game controllers
System devices
Texas Instruments Emulators
Universal Serial Bus controllers
Intel(R) 82801FB/FBM USB Universal Host Controller - 2658
Intel(R) 82801FB/FBM USB Universal Host Controller - 2659
Intel(R) 82801FB/FBM USB Universal Host Controller - 265A
Intel(R) 82801FB/FBM USB Universal Host Controller - 265B
Intel(R) 82801FB/FBM USB2 Enhanced Host Controller - 265C
TI XDS100 Channel A
TI XDS100 Channel B
USB Composite Device
USB Composite Device
USB Root Hub
USB Root Hub
USB Root Hub