



Changing your VID/PID in Windows

Introduction

To comply with the USB Mass Storage Bulk Only Transport (BOT) specification, vendors must have their own Vendor ID (VID), which is assigned by the USB Implementers Forum (USB-IF). Once you receive your own VID from the USB-IF (www.usb.org) and determine your own PID (Product ID), you will need to incorporate them into your product. To use the Cypress driver for your product, some minor modifications will be necessary to one of the driver files.

Background

For a mass storage device to function over USB one of the requirements is a device driver. Microsoft Windows ME, Windows 2000 and XP all have a Mass Storage Compliant driver included in the operating system and do not require the use of the Cypress driver. Windows 98SE on the other hand does not have a built in driver and so a driver must be supplied. The Cypress driver can be used on Window ME, 2000 and XP instead of the Microsoft driver, if desired.

Getting Started

Download plug and play driver: The first step in getting the OS to load the Cypress driver is to download the Cypress plug and play driver from the Support section of the Cypress web site, www.cypress.com. The file you will download is in a ZIP format and will have a naming convention such as CY_Win_x_xx_REL.zip where x_xx denotes the revision of the driver. Using a program such as WinZip™, extract the files into a directory of your choice.

Modify the correct .inf file:

- 1) Browse to the directory where the plug and play files were extracted using My Computer or File Explorer. In this directory you will find several files with a .inf extension. If you do not see any file extensions you may need to modify the options of My Computer or File Explorer to disable the option "Hide file extensions for known file types". In this example we will explain how to modify the file tpp300.inf, which is the .inf file for the ISD300A1 device. Other .inf files are modified in the same fashion. See the Release Notes for which .inf files are used by which Cypress chips.

The Cypress Windows driver now supports the range of Cypress storage solutions, including: ISD200, ISD300A1, EZ-USB FX2, EZ-USB FX, SL11R, and SL11RIDE. For the device to function properly, the VID/PID must be programmed into an EEPROM, or supplied to the USB chip in another appropriate fashion for the given chip. The programming of the EEPROM is beyond the scope of this document and is explained in other documents supporting each of our chips. During enumeration the USB device will report back to the operating system that it is a Mass Storage Compliant device and will return the VID/PID that is programmed into the EEPROM. From this information the OS will search through the Windows\inf directory for the VID/PID combination. If it finds a match, the .inf file will tell the OS which driver to use when communicating with this device. If it does not find a match, it will use the Microsoft Mass Storage Class driver, commonly referred to as the MSC. Windows 98SE does not have a MSC driver and requires the Cypress driver. This document is intended to aid you in making the modifications necessary for the operating system to recognize your VID/PID and use the Cypress driver instead of the MSC driver.

- 2) Open the file tpp300.inf with a text editor such as notepad. In this file you will find several sections separated with [section name]. For example the very first section is labeled [Version]. In this discussion you will only need to be concerned with a few key fields.
 - a. In the Version section you will see a line that looks like this:

```
Provider=%CY%
```

You will want to change this to your company's name instead of Cypress'. In this example we will create a new company named TEST. For our company TEST, we would modify the Provider line to:

```
Provider=%TEST%
```
 - b. The next section that will need to be modified is labeled [Manufacturer]
Here you will need to define the Manufacturer to be your company. You can delete all other manufacturers in this area. For Cypress we have used the following : %CYMFG%=CY
For our new company named TEST, we would use:

```
%TESTMFG%=TEST
```
 - c. Next you must add your VID and PID under a label you will create. For Cypress the label is CY. You can eliminate all other manufacturers VIDs and PIDs from this area since you are only concerned with yours. The following is an example of what the lines look like for Cypress:

```
[CY]  
%VID_05AB&PID_0060%=TPP300, USB\VID_05AB&PID_0060
```

For our new company we will pretend USB-IF gave us a hexadecimal VID of 1234 and we will choose a hexadecimal PID of 0001 for our product. If this were true our section would look like the following:

```
[TEST]  
%VID_1234&PID_0001%=TPP300, USB\VID_1234&PID_0001
```
 - d. The last step is to modify the strings that are defined in the .inf file. The strings are identified by the label [strings] and are at the end of the .inf file. This is the string that will be displayed when the driver is loaded and in the Device Manager. Once again you can delete all other manufactures in this area. You may choose to delete all manufactures except Cypress', copy it and modify it. The following is an example of the string for Cypress:

```
[Strings]  
CY="Cypress"  
TEST="TEST"  
  
CYMFG="Cypress"  
VID_05AB&PID_0060 = "USB Storage Adapter V3 (TPP)"
```

Again for our new company we could use the following example:

```
TESTMFG="TEST"  
VID_1234&PID_0001 = "TEST USB 2.0 Storage"
```
- 3) Save the file. A sample .inf file is included in Appendix A of this document. Note that the modified lines are highlighted in yellow.

Use the Cypress driver

You are now ready to use the Cypress driver. The procedure for this will vary slightly depending on the operating system you are using. If you are running Windows 98 SE[®], a Mass Storage Class driver is not included in the operating system and so the Cypress driver is required. These steps assume a USB 2.0 host controller is already installed and functional in your computer system. The following pictures are taken from a Windows 2000[®] system unless otherwise stated and will vary slightly with the various operating systems and with the user configuration.

A) Uninstall any previous installations of the driver:

If you have previously installed the Cypress or In-System Design driver using TPPINST.exe, you should first uninstall the driver. If your system does not already have a copy of the Cypress driver continue on step B).

To uninstall the driver:

1. Open Control Panel (Start – Settings – Control Panel – See Figure 1).

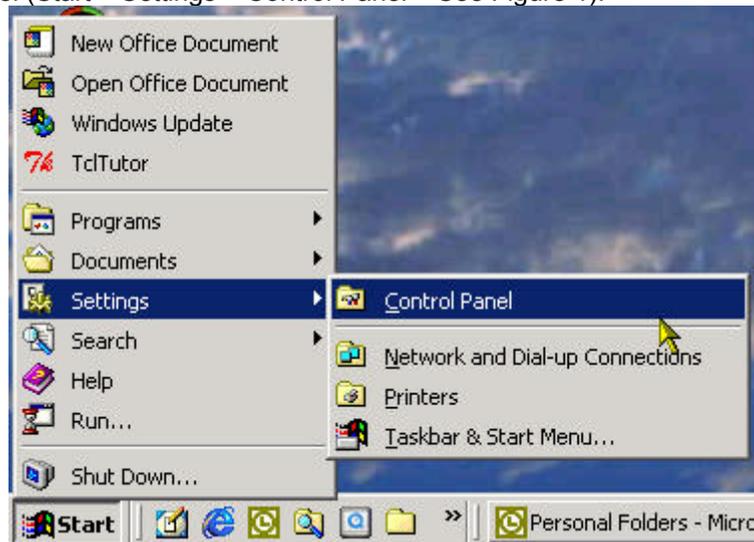


Figure 1: Open Control Panel

2. Double click on "Add/Remove Programs".

3. Select "TPP Storage Driver Installation" and follow the instructions on the screen (See Figure 2). If you do not see "TPP Storage Driver Installation" you can continue on to step B.

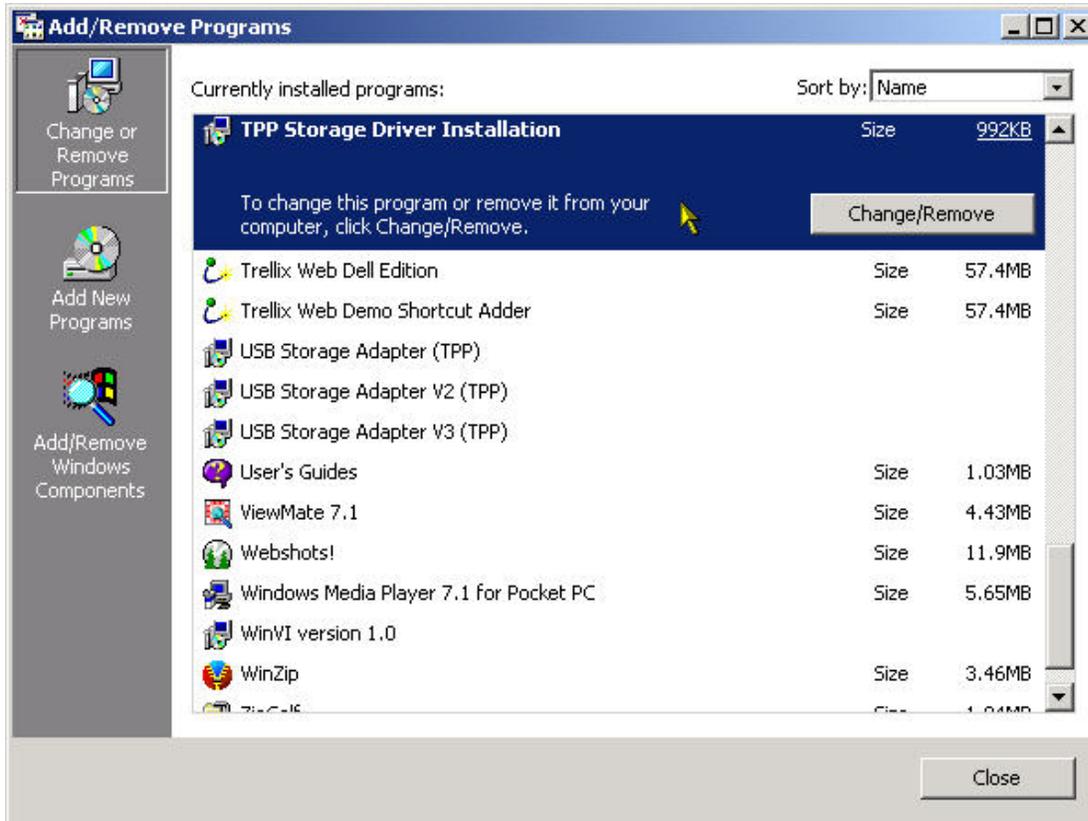


Figure 2: Add/Remove Program window

If you installed the driver using the Plug and Play driver (PnP) then uninstalling the driver is not required.

B) Windows 98SE:

When you plug your device into the USB 2.0 controller, the OS should determine a new device has been plugged in and will bring up the new hardware wizard window. From here you will need to specify the location of the driver and then browse to the location where you have modified the .inf file. The OS will search through the .inf file and find your VID/PID. From this information it will know how to load the Cypress driver. If the hardware is functioning properly the device should now be ready for use.

Windows ME, Windows 2000 and Windows XP:

These operating systems have the Microsoft Mass Storage Class (MSC) driver built into them and do not require the Cypress driver. On these operating systems the ISD-300A1 will report to the OS that it is mass storage compliant and will default to use the MSC driver. Switching to the Cypress driver is slightly different in the various operating systems, but the initial step in all cases will be to start the device manager. The instructions below are for a Windows 2000 system.

1. Start Device Manager: (See Figure 3)
 - a) Right-click on My Computer
 - b) Select Properties.
 - c) Select the Hardware tab
 - d) Click on the Device Manager button.

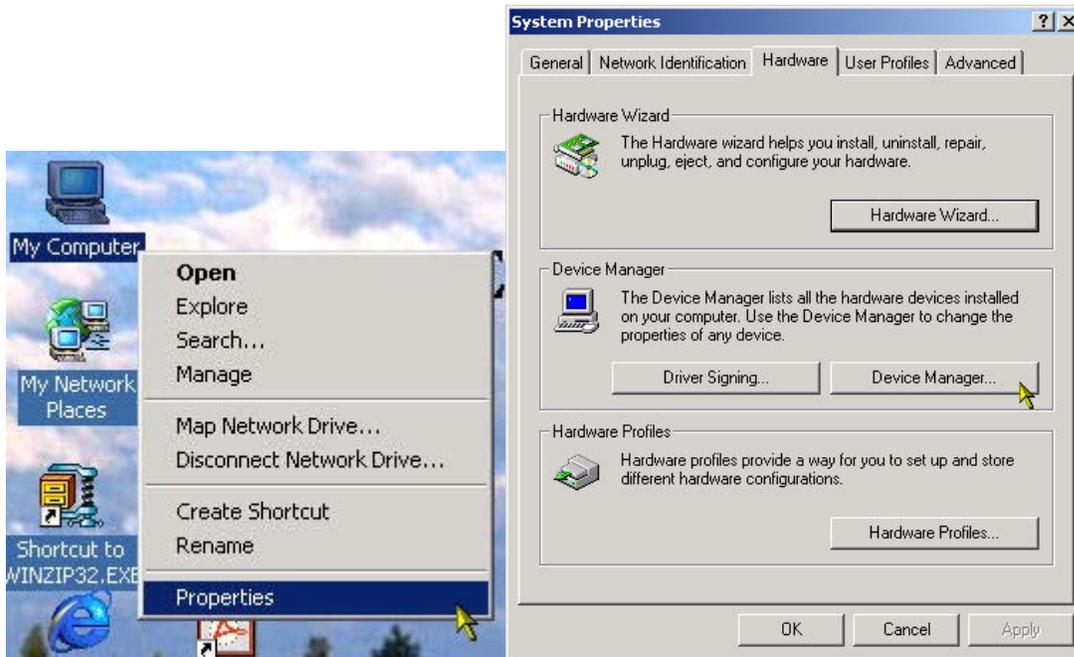


Figure 3: Opening Device Manager

2. Expand the Universal Serial Bus controllers folder by pressing the +. If the MSC is loaded you should see the line "USB Mass Storage Device". If this line is not displayed your device may not be functioning correctly. Note in Figure 4 that there are two devices connected to the USB bus. One is using the Microsoft Mass Storage Class driver (USB Mass Storage Device) and the other is using the Cypress driver (USB Storage Adapter V3(TPP)).

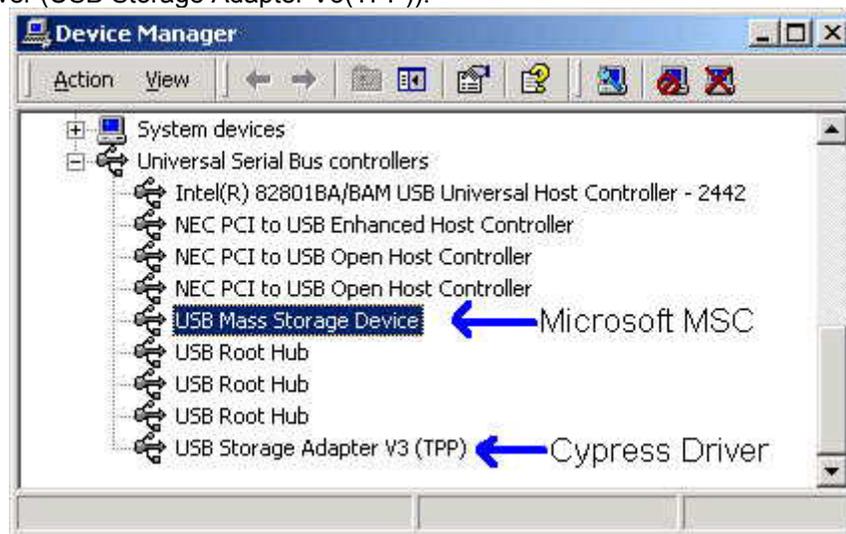


Figure 4: Device Manager - USB controllers

3. Right-click on "USB Mass Storage Device" and select Properties.

4. Select the Driver tab.
5. Select Update Driver (See Figure 5).



Figure 5: Update Driver

6. Select Next.
7. Select "Search for a suitable driver for my device (recommended)" and then press the Next button (See Figure 6).



Figure 6: Installing Hardware Device Driver

8. Select "Specify a location" so it is the only box checked as shown in Figure 7 and then press the Next button.

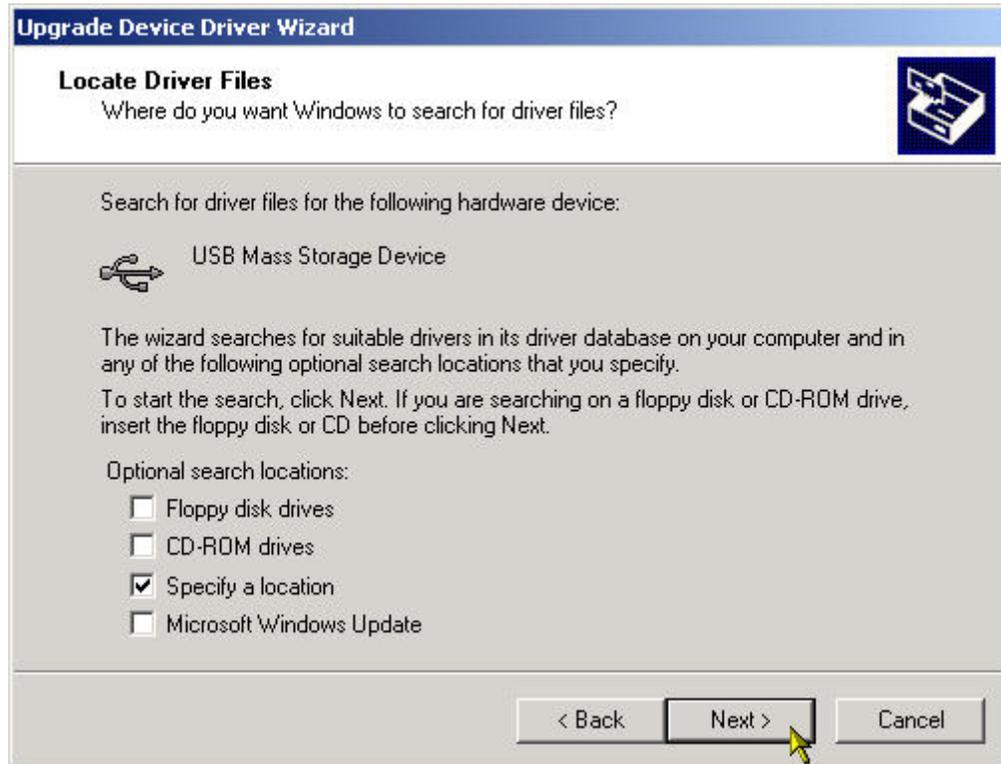


Figure 7: Locate Driver Files

9. Press the browse button and browse to the directory where you modified the .inf file.
10. Press the Open button and then the OK button and follow the instructions on the screen. You will experience a short delay while the operating system is updating its registry and re-enumerating the connected device.
11. You can now Close the driver update window. You may have to re-start your computer at this time depending on the current status of the OS when the driver was installed.

12. The device manager window should now show the new strings that you have chosen and placed in the inf file as shown in Figure 8.

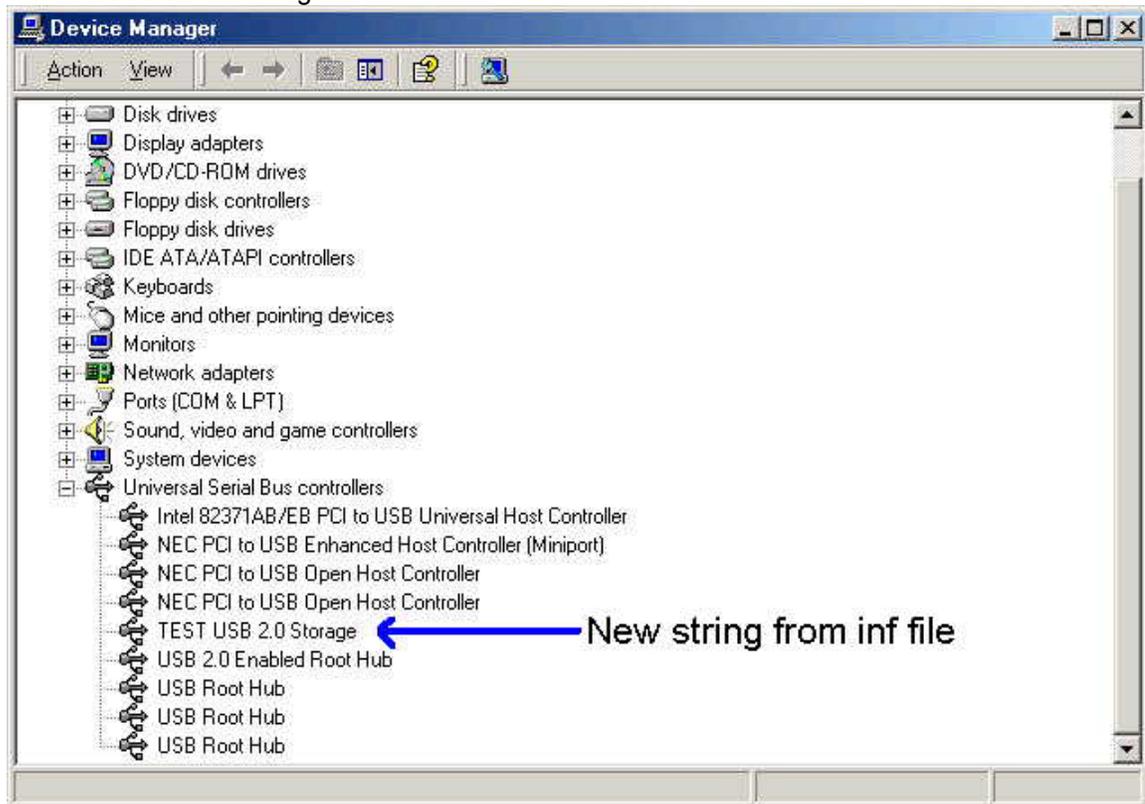


Figure 8: Updated Device Manager after re-enumeration

13. Once all of your modifications are verified you can redistribute the plug and play driver with your custom information to your users. You will simply need to place all of the appropriate files from the directory where you modified the inf file on your distribution media and give the user instructions on how to install the driver. In our example where we were using the ISD300A1 you can delete the files tpp200.inf, tpp200.sys, tppfx.inf, tppfx.sys, tpps11r.inf, and tpps11r.sys from your distribution disc.

Appendix A- Example of tpp300.inf

(For detailed information on inf files refer to Microsoft's web page)

```
[Version]
Signature="$CHICAGO$"
Class=USB
ClassGUID={36FC9E60-C465-11CF-8056-444553540000}
Provider=%TEST%
DriverVer=12/06/2001

[SourceDisksNames]
1=%DISK1%,,,

[SourceDisksFiles]
TPPIOSTB.INF=1
TPP300.SYS=1
TPPUN.EXE=1
TPPSTRAY.EXE=1
TPPNTRY.EXE=1
TPPALDR.EXE=1
TPPIOSMP.SYS=1
TPPIOSTB.PDR=1
TPPUI32.DLL=1
TPPUI16.DLL=1

[ControlFlags]
ExcludeFromSelect = *

[Manufacturer]
%CYMFG%=CY
%TESTMFG%=TEST

[CY]
%VID_05AB&PID_0060%=TPP300, USB\VID_05AB&PID_0060

[TEST]
%VID_1234&PID_0001%=TPP300, USB\VID_1234&PID_0001

[PreCopySection]
HKR,,NoSetupUI,,1

[DestinationDirs]
DefaultDestDir=11
TPP300.InfList = 17
TPP300.IoList = 12
TPP300.STray = 10
TPP300.STray.NT = 10
TPP300.AutoLoader = 10
TPP300.Filter = 10, system32\drivers
TPP300.CopyList32 = 10, system32\drivers

[TPP300]
CopyFiles=TPP300.CopyList, TPP300.Filter, TPP300.STray, TPP300.AutoLoader, TPP300.InfList,
TPP300.IoList, TPP300.CopyList32, TPP300.PropPage
```

AddReg=TPP300.AddReg, TPP300.AddReg.Flags, TPP300.AddReg.Uninstall,
TPP300.AddReg.PropPages
DriverVer=12/06/2001

[TPP300.NT]
CopyFiles=TPP300.CopyList, TPP300.CopyList32, TPP300.STray.NT, TPP300.AutoLoader,
TPP300.PropPage.NT
AddReg=TPP300.AddReg.Flags, TPP300.AddReg.Uninstall, TPP300.AddRegNT.PropPages
DriverVer=12/06/2001

[TPP300I]
CopyFiles=TPP300.CopyList, TPP300.Filter, TPP300.STray, TPP300.AutoLoader, TPP300.InfList,
TPP300.IoList, TPP300.CopyList32, TPP300.PropPage
AddReg=TPP300.AddReg, TPP300I.AddReg.Flags, TPP300.AddReg.Uninstall,
TPP300.AddReg.PropPages
DriverVer=12/06/2001

[TPP300I.NT]
CopyFiles=TPP300.CopyList, TPP300.CopyList32, TPP300.STray.NT, TPP300.AutoLoader,
TPP300.PropPage.NT
AddReg=TPP300I.AddReg.Flags, TPP300.AddReg.Uninstall, TPP300.AddRegNT.PropPages
DriverVer=12/06/2001

[TPP300.HW]
AddReg=TPP300.AddReg.Filter, TPP300.AddReg.AutoLoader

[TPP300.NT.HW]
AddReg=TPP300.AddRegNT.AutoLoader

[TPP300I.HW]
AddReg=TPP300.AddReg.Filter, TPP300.AddReg.AutoLoader

[TPP300I.NT.HW]
AddReg=TPP300.AddRegNT.AutoLoader

[TPP300.AddReg]
HKR,,DevLoader,,*NTKERN
HKR,,NTMPDriver,,TPP300.SYS

[TPP300.AddReg.Flags]
HKR,,TPPFlags,0x00010001,0x00000001

[TPP300I.AddReg.Flags]
HKR,,TPPFlags,0x00010001,0x00080001
HKR,,RemovalEventMask,0x00010001,0x00000001

[TPP300.AddReg.Filter]
HKR,,UpperFilters,,tppiosmp.sys

[TPP300.AddReg.Uninstall]
HKLM,SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\TPP300,DisplayName,0,%TPP300.Svc
Desc%



```
HKLM,SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\TPP300,UninstallString,0,"tppun.exe  
TPP300"
```

```
[TPP300.AddReg.AutoLoader]  
HKLM,%REGRUNONCE%,AutoLoaderSetup,"tppaldr.exe -setup"  
HKR,,AutoLoader,, "tppstray.exe"
```

```
[TPP300.AddRegNT.AutoLoader]  
HKLM,%REGRUNONCE%,AutoLoaderSetup,"tppaldr.exe -setup"  
HKR,,AutoLoader,, "tppntry.exe"
```

```
[TPP300.AddReg.PropPages]  
HKR,,EnumPropPages,, "tppui16.dll, EnumPropPages"
```

```
[TPP300.AddRegNT.PropPages]  
HKR,,EnumPropPages32,, "tppui32.dll, EnumPropPages"
```

```
[TPP300.NT.Services]  
Addservice = TPP300, 0x00000002, TPP300.AddService
```

```
[TPP300I.NT.Services]  
Addservice = TPP300, 0x00000002, TPP300.AddService
```

```
[TPP300.AddService]  
DisplayName = %TPP300.SvcDesc%  
ServiceType = 1  
StartType = 3  
ErrorControl = 1  
ServiceBinary = %12%\TPP300.SYS
```

```
[TPP300.CopyList]  
TPPUN.EXE
```

```
[TPP300.InfList]  
TPPIOSTB.INF
```

```
[TPP300.IoList]  
TPPIOSTB.PDR
```

```
[TPP300.Filter]  
TPPIOSMP.SYS
```

```
[TPP300.STray]  
TPPSTRAY.EXE,,,0x60 ;replace newer and suppress dialog
```

```
[TPP300.STray.NT]  
TPPNTRY.EXE,,,0x60 ;replace newer and suppress dialog
```

```
[TPP300.AutoLoader]  
TPPALDR.EXE,,,0x60 ;replace newer and suppress dialog
```

```
[TPP300.CopyList32]  
TPP300.SYS
```

[TPP300.CopyList32]
TPP300.SYS

[TPP300.PropPage]
TPPUI16.DLL
TPPUI32.DLL

[TPP300.PropPage.NT]
TPPUI32.DLL

[Strings]
CY="Cypress"

CYMFG="Cypress"
VID_05AB&PID_0060 = "USB Storage Adapter V3 (TPP)"

TESTMFG="TEST"
VID_1234&PID_0001 = "TEST USB 2.0 Storage"

REGRUNONCE="Software\Microsoft\Windows\CurrentVersion\RunOnce"

TPP300.SvcDesc = "USB Storage Adapter V3 (TPP)"

DISK1="USB Storage Adapter (TPP) Install Disk for Windows 98/2000 "



Document Revision History

Revision #	Date	Comments
2.1	2/27/2002	Added information for support of EZ and SL families of chips
2.0	1/31/2002	Initial Cypress revision