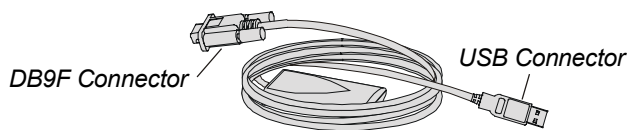# SMART
Technologies Inc.

TECHNICAL BULLETIN

In this issue: • **Using the SMART USB Adapter Cable**

SMART Technologies Inc. has designed a USB adapter cable specifically for use with the SMART Board interactive whiteboard. If your computer has a USB port and an operating system that can support a USB Human Interface Device (HID), you can use the SMART USB adapter cable (part # USB-FRU) to connect your SMART Board to your computer.

DB9F Connector   USB Connector

Note: *The SMART USB adapter cable is not plenum-rated. Also, it is specifically designed for the SMART Board interactive whiteboard and should not be used to connect any other device.*

This bulletin explains how to use the SMART USB adapter cable with a Windows ® or Macintosh ® computer running SMART Board driver 6.0.x. It doesn't describe third-party USB adapters. For that information, refer to *Bulletin 2001 – 17, Using Third-Party USB Adapters with SMART Board Driver 6.0*.

System Requirements

Before you begin, make sure you have an operating system that supports USB HID. Windows 98, ME and 2000 support USB HID, but Windows 95 and NT 4.0 do not.

For Macintosh, you need a Power PC with a USB port running OS 9.x. The USB adapter cable will not work with Macintosh 68K CPU hardware.

Activating the USB Connection

To activate the USB connection, connect the DB9F end of the cable to the SMART Pen Tray on your SMART Board interactive whiteboard and connect the USB end to your computer. Power for the interactive whiteboard is drawn directly from the USB port.

If you're using a Windows computer, you may need to also install the USB HID driver and enable USB support. Although you'll be automatically prompted to install the USB HID driver if it's not on your system when you connect the USB adapter cable, you may prefer to check for this driver before you connect the cable.

You can assume the USB HID driver has been installed if you find the following files on your system:
- hidclass.sys
- hidparse.sys
- hidusb.sys
- hid.dll
- pid.dll

If you're using a Macintosh computer, you may have to activate your USB Device Extension. Refer to page 2 for instructions.

Installing the USB HID Driver for Windows

The USB HID driver is a separate driver provided by Windows, not to be confused with the SMART Board driver. If a USB HID driver hasn't already been installed, Windows will prompt you for one as soon as you connect the USB adapter cable. When the *Found New Hardware* wizard appears, direct Windows to search for the driver on your hard drive. If Windows is not successful, you'll need to insert your Windows 98/2000/ME CD in your CD-ROM to provide the appropriate USB HID driver.

When the search for the driver is complete, the Ready Light on the Pen Tray will turn red. This indicates that the Pen Tray is receiving power from the USB port, and you can proceed with installing the SMART Board software.
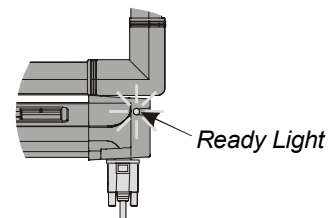

Ready Light

The Ready Light in older Pen Trays – model PT8 and earlier – will not turn red to indicate the presence of power. In older Pen Trays, the Ready Light only turns green. This normally indicates active software communication. However, you can also confirm the presence of power on some PT8 and older Pen Trays by pressing both Pen Tray buttons at the same time and watching for the Ready Light to flash green.

Enabling USB Support for Windows 98, ME and 2000

If you're running Windows 98, ME or 2000 and your USB adapter cable isn't detected, you may need to enable USB support on your computer.

To find out if this is necessary, hold the Alt key on your keyboard while double-clicking the My Computer icon on your desktop. Then select the Device Manager tab in the *System Properties* dialog box. If USB is listed with entries similar to the ones shown below, then USB support has already been enabled.
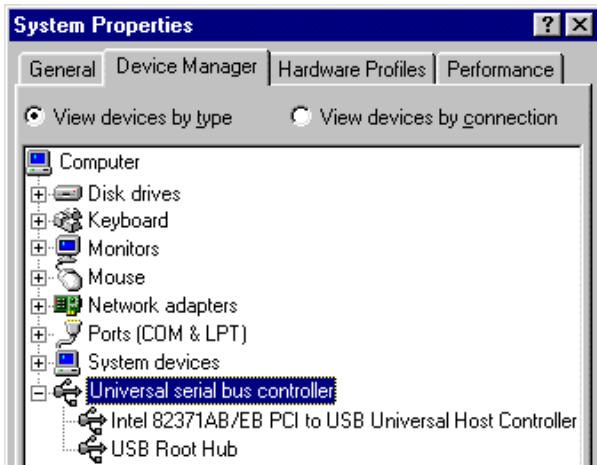
If USB is not listed in the Device Manager, USB support may not be enabled in your computer's BIOS. Refer to your computer manual or contact the computer manufacturer for instructions on enabling USB in the BIOS.

Activating the USB Device Extension for Macintosh

If the Ready Light on your Pen Tray doesn't turn red after you connect the USB adapter cable to a Macintosh computer, it's possible your USB Device Extension is not active. To remedy this, click the Apple icon, point to **Control Panels** and select **Extensions Manager**. Scroll through the list until you find **USB Device Extension**. Click to remove the **X** in the On/Off box and then click Restart. You may have to download the appropriate extension from Apple. When the extension is active and the Ready Light turns red, install the SMART Board software for Macintosh.

Checking the Status of a USB Connection

Click the 🖼 icon and select Control Panel. The *SMART Board Control Panel* will appear, with your USB ports prominently displayed under the Boards tab.

To check the status of a port, click on its icon and review the message displayed under **Status** at the bottom of the tab. For more information about the operations of the port, click the Log button and the Status Log will appear.

Extending the USB Adapter Cable

The SMART USB adapter cable is 21.5' (6.55 m) long. If you need to extend this length, we recommend that you use one of three options explained below.

Option 1: Extending Cable Less Than 30' (9.14 m)

To extend the USB adapter cable by less than 30' (9.14 m), you can insert a DB9M/DB9F serial cable into the DB9F-end of the USB adapter cable and connect the other end of the serial cable to the Pen Tray. The serial cable must be a minimum of 24 AWG.
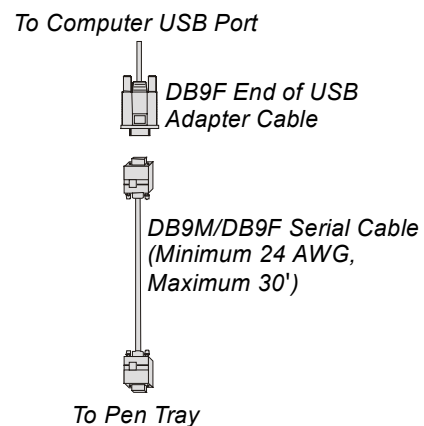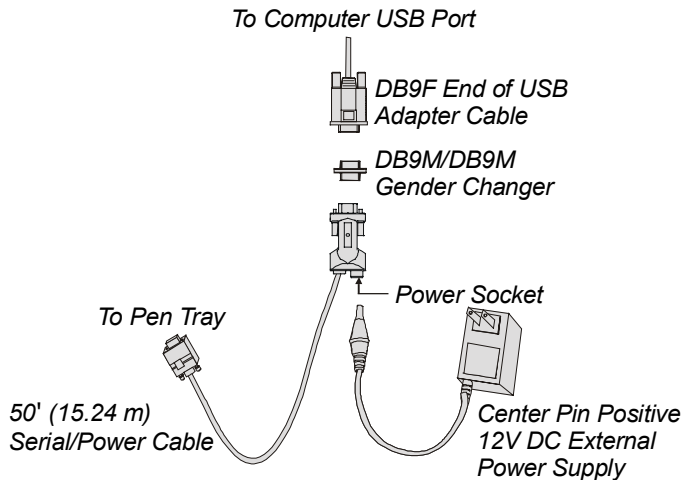

The USB adapter cable (USB-FRU) is available from SMART, but you'll have to purchase the DB9M/DB9F serial cable from a different source.

Option 2: Extending Cable 50' (15.24 m)

To extend the length of the USB adapter cable by 50' (15.24 m), you can connect a 50' (15.24 m) SMART serial/power cable to the DB9F end of the USB adapter cable. You'll need to use a DB9M/DB9M gender changer from SMART or one with a disabled Pin 1 to enable this connection.

You'll also need to connect an external 12V DC power supply to the power socket in the long DB9 end of the serial/power cable to provide sufficient power for the Pen Tray.

To Computer USB Port

DB9F End of USB Adapter Cable

DB9M/DB9M Gender Changer

Power Socket

To Pen Tray

50' (15.24 m) Serial/Power Cable

Center Pin Positive 12V DC External Power Supply

WARNINGS: *Use the DB9M/DB9M gender changer available from SMART, or a gender changer with Pin 1 removed. Otherwise, the USB adapter cable could be damaged when power is connected.*

Also, it's critical that the 12V DC power supply be center pin positive and have a minimum output of 200 mA. Reversed polarity will open the internal fuse in the serial cable, thus destroying the cable.

All cables required for Option 2 are available from SMART:

Cable	Part Number
USB adapter cable	USB-FRU
DB9M/DB9M gender changer	MA-506
50' (15.24 m) serial/power cable	FRU-93-067-00
NEMA 12V DC power supply, center pin positive, 500 mA output	60-001

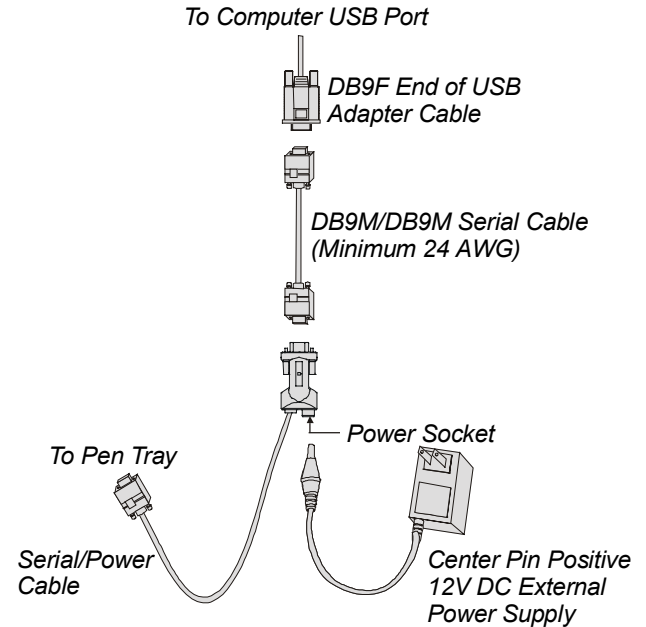## Option 3: Extending Cable By a Maximum of 79' (24.08 m)

To extend the USB adapter cable by a maximum of 79' (24.08 m), you can insert a DB9M/DB9M serial cable between the DB9F-end of the USB adapter cable and a SMART serial/power cable. You'll also need to connect an external 12V DC power supply to the power socket in the long DB9-end of the serial/power cable to provide sufficient power for the Pen Tray.

The DB9M/DB9M serial cable must be a minimum of 24 AWG. Pin 1 should also be absent to ensure that the USB Adapter cable is protected from damage if the SMART serial cable is connected improperly. The SMART serial/power cable comes in varying lengths. You may use any length you like, but *the total overall length cannot exceed 100' (30.48 m).*

WARNINGS: The DB9M/DB9M serial cable should not have a pin 1. Otherwise, the USB adapter cable

could be destroyed if the serial/power cable is improperly connected.

it's critical that you use a 12V DC power supply that is center pin positive with a minimum output of 200 mA. Reversed polarity will open the internal fuse in the serial cable, thus destroying the cable.

To Computer USB Port

DB9F End of USB Adapter Cable

DB9M/DB9M Serial Cable (Minimum 24 AWG)

Power Socket

To Pen Tray

Serial/Power Cable

Center Pin Positive 12V DC External Power Supply

All cables required for Option 3, except the DB9M/DB9M serial cable, are available from SMART:

Cable	Part Number
USB adapter cable	USB-FRU
6' (1.83 m) serial/power cable	93-079-01
20' (6.09 m) serial/power cable	93-059-00
50' (15.24 m) serial/power cable	FRU-93-067-00
NEMA 12V DC power supply center pin positive, 500 mA output	60-001

Using the USB Adapter Cable with Older SMART Boards

The USB adapter cable is compatible with SB2 and SB3 Boards that have a PT5 Pen Tray (those without a bottom-mounted gold box) and a SC4 or SC5 controller.

The USB adapter cable is not compatible with:

- SB2 interactive whiteoards with an early PT5 Pen Tray (with a bottom-mounted gold box) or a PT3 and older Pen Tray
- *Rear Projection* SMART Board (RPSB) interactive whiteboard 585 and older RPSB 420's with the PT4 Pen Tray

- SMART Board *for Plasma Display* interactive whiteboards (formerly SMART Matisse) with the SC4KP controller that was shipped with a MOD6 cable and external power supply

NOTE: The procedures on this page for integrating the USB Adapter cable with older SMART Board interactive whiteboards can also be used with PT7, PT8 and PT11 Pen Trays.

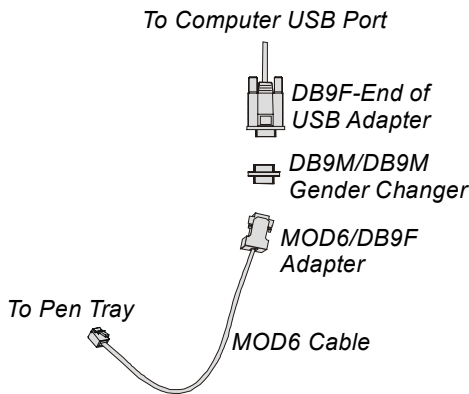## Integrating the USB Adapter Cable with a Windows Computer and a PT5 Pen Tray

To integrate the USB adapter cable with a Windows computer and a PT5 Pen Tray, you must use the original MOD6 cable with the MOD6/DB9F adapter and purchase a DB9M/DB9M gender changer.

WARNING: *Use the DB9M/DB9M gender changer available from SMART, or a gender changer with Pin 1 removed. Otherwise, the USB adapter cable could be damaged when power is connected.*

1. Disconnect the MOD6/DB9F adapter from your computer, leaving the MOD6 cable attached to the adapter.
2. Connect the MOD6/DB9F adapter to a DB9M/DB9M gender changer.

    NOTE: If you're using a MOD6/DB25F adapter, you can replace it with the MOD6/DB9F adapter or purchase a suitable DB9M/DB25M adapter.
3. Connect the DB9M/DB9M gender changer to the DB9F-end of the USB adapter cable.
4. Connect the other end of the USB adapter cable to a USB port on your computer.

To Computer USB Port

DB9F-End of USB Adapter

DB9M/DB9M Gender Changer

MOD6/DB9F Adapter

To Pen Tray

MOD6 Cable

To integrate the USB adapter cable with a Windows computer and a PT5 Pen Tray, you'll need to order the following from SMART:

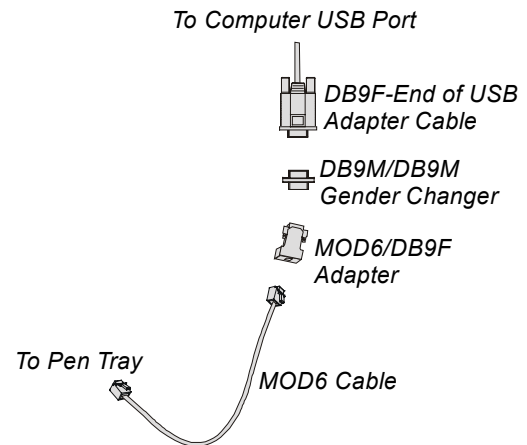| Cable	Part Number
USB adapter cable	USB-FRU
DB9M/DB9M gender changer	MA-506

Integrating the USB Adapter Cable with a Macintosh and a PT5 Pen Tray

To use the USB adapter cable with a Macintosh computer and a PT5 Pen Tray, you'll need three additional components: a MOD6 cable, a MOD6/DB9F adapter, and a DB9M/DB9M gender changer.

WARNING: *Use the DB9M/DB9M gender changer available from SMART, or a gender changer with a disabled Pin 1. Otherwise, the USB Adapter Cable could be damaged when power is connected.*

1. Disconnect the RJ11/MiniDIN8 cable and discard it.
2. Insert the MOD6 cable into the Pen Tray.
3. Connect the MOD6 cable to the MOD6/DB9F adapter.
4. Connect the MOD6/DB9F adapter to the DB9M/DB9M gender changer.
5. Connect the DB9M/DB9M gender changer to the DB9F end of the USB adapter cable.
6. Connect the other end of the USB adapter cable into the USB port on your computer.

To Computer USB Port

DB9F-End of USB Adapter Cable

DB9M/DB9M Gender Changer

MOD6/DB9F Adapter

To Pen Tray

MOD6 Cable

To integrate the USB adapter cable with a Macintosh computer and a PT5 Pen Tray, you'll need to order the items listed below from SMART:

Cable	Part Number
USB adapter cable	USB-FRU
DB9M/DB9M gender changer	MA-506
MOD6/DB9F adapter	PT5-025
MOD6 cable	PT3-012