DMC Co., Ltd.
Interface with Touch

Mouse Emulation Software

TSC-10/DD v4.01.06R

User's Guide

DMC Co., Ltd.

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Introduction

This guide provides the information about using the TSC-10/DD mouse emulation software. Read this guide completely so you can fully utilize the functions of this software.

Features

The TSC-10/DD mouse emulation software lets you use our touch panel controller, the TSC series, just as though you were using a mouse by operating the touch panel on Windows.

1. This touch screen software can implement an operating environment equivalent to the mouse function through operating the touch panel.

2. Because you can use the touch screen software together with a mouse, you can change between the touch panel and the mouse without needing a special setting.

3. Whether you connect the touch panel controller wit a serial port or USB, you can select the necessary driver at installation.

4. The software lets you customize such functions as changing over the use of mouse's right and left button, details related to clicking, and event customization for touch input, as well as precise calibration function to insure excellent operability in a wide range of applications

Conventions used in this guide

This user's guide uses the following symbols and symbols to represent specific names and displays of the operating systems and the TSC-10/DD software.

"****"   Represents an icon or buttons. e.g. the floppy disk drive icon specifically refers to "3.5-inch FD(A:).

<***>   Represents a key on the keyboard. For example, <Enter> is used to represent the Enter key.

'***'   Represents the window title name, for example, "Add the button mode."

[***]   Represents a character string other than the above. For example, a program in the [Start Menu] is represented as [Program].

When Windows is mentioned in this guide it means all supported operating systems.

This software   represents the TSC-10/DD.

Supported models

Supported model: IBM PC/AT or its compatibles

Supported operating system: Windows 2000 SP4, Windows XP SP2/SP3, Windows Vista SP1 32 bit/64bit*
                            64 bit systems require the runtime components of Visual C++ Libraries. Please refer to a notice_e.pdf for the details.

Remarks

1. The TSC-10/DD mouse emulation software is for our touch-panel controller TSC series IC. It is not intended for operation with the other touch-panel controllers and the products similar to them.

2. For how to use TSC-10/DD, read this guide well. Do not use any other methods with the TSC-10/DD software.

3. TSC-10/DD is not intended for the model of computer and operating system other than the supported ones.

4. Avoid using this software with other mouse emulation software or with similar functions installed. In such a problematic environment the software may malfunction.

5. Read the about the driver after executing the installer program (setup.exe). You cannot read about the driver before executing the installer program or operating the touch panel.

   And, please do not execute an installation program twice (or more) at the same time.

6. When the previous version is already installed, please be sure to install this software after uninstalling it. If overwrite installation is carried out, the software may malfunction.

7. There is the case does not work normally in the extended serial port. If so, please use on board serial port.

8. When this software is installing, uninstalling or starting up of system, please do not touch.

9. DMC will not be liable for any loss caused by the use/install of this software. Please back up your system beforehand.

Installation

Installation of TSC-10/DD differs, depending on whether a serial port or USB port, has been connected to the touch-panel controller TSC series IC.

This section describes the procedures for installation and the parts that you need to set individually depending on whether you have a serial or USB port connected.

If you use a USB controller, please do not connect it to a host computer till installation completes.
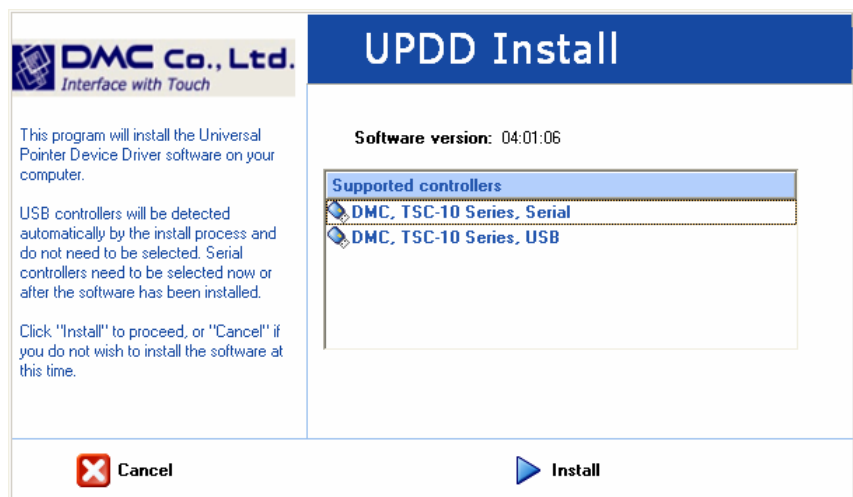
A Regular installation steps

1. Turn on the computer's power.

   Turn on the power to boot Windows.

2. Start the Installer.

   Please start "Setup.exe" which is an installer. The below window are displayed.

   When the User Account Control pop-ups appear, you then authorize user accounts control by clicking the continue button.

B Selecting the controller

During the installation sequence, the screen for selecting the controller will appear. Then, you must select whether you want to connect your touch-panel controller to the serial port or USB. To connect the controller with a serial port, choose [DMC TSC-10 Series, Serial]. Alternatively, to connect the controller with the USB port, choose [DMC TSC-10 Series, USB].
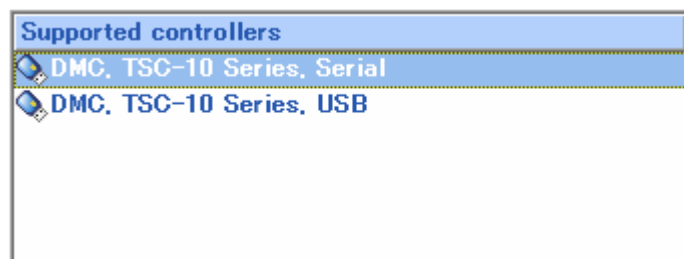

If you choose [DMC TSC-10 Series, Serial], then go to [Serial port connection].

If you choose [DMC TSC-10 Series, USB], click "Install" to proceed. Then go to [Complete installation].
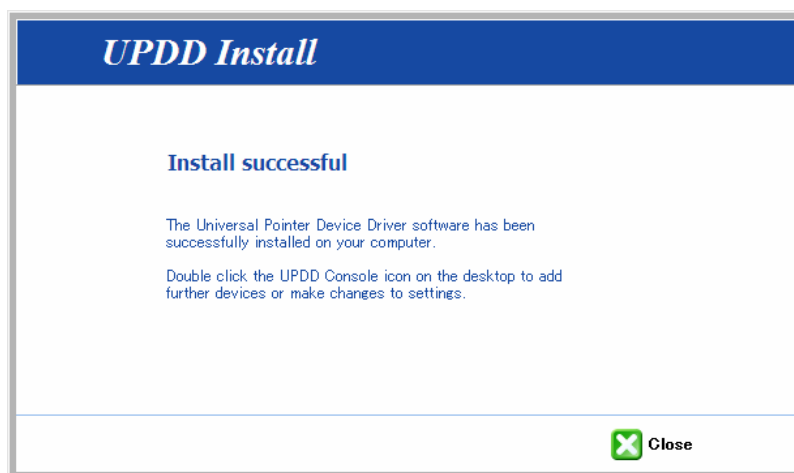
C Serial port connection

If you choose [DMC TSC-10 Series, Serial], the 'serial port' window appears. If you want to use is COM1 as the serial port, If you want to use COM2 or any other part, choose a port from the Popup menu, click on "Install, and go to [Complete installation].
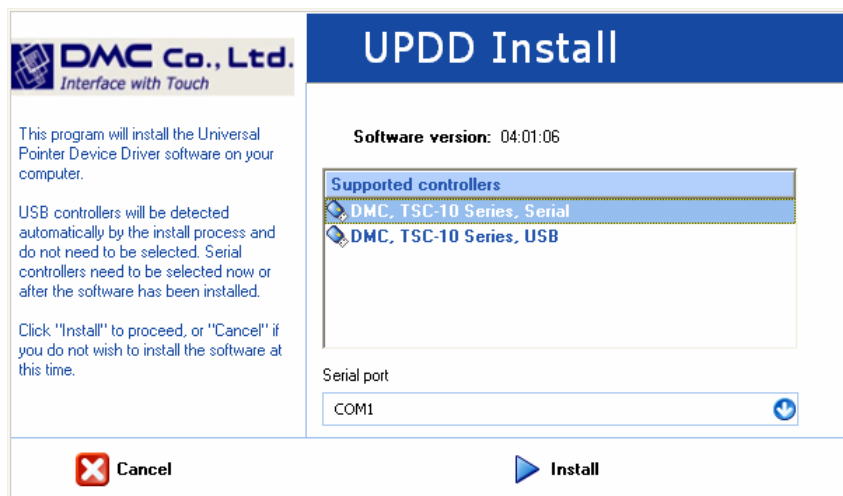
D Complete installation
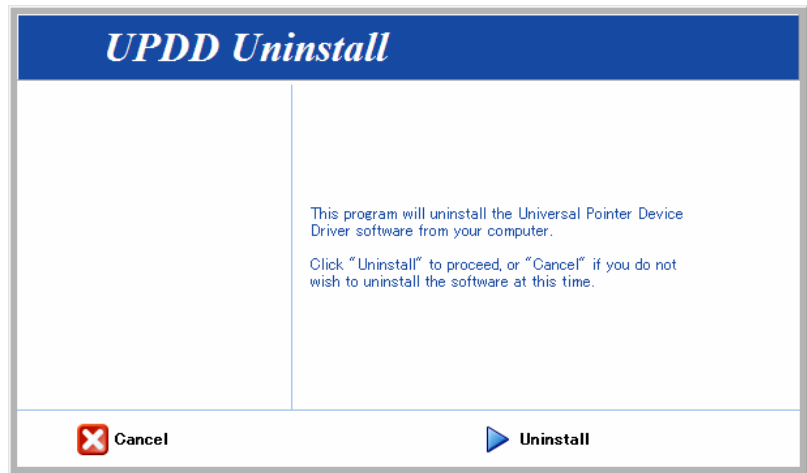
You complete the installation. Click on "Close".

Touch operation is enabled after a "Detecting" window disappeared.

E Uninstalling the software

To uninstall the TSC-10/DD software, run "Control Panel" and select "Uninstall" to choose the "Universal Pointer Device Driver - 04.01.06." Finally click "Uninstall", after activating the Uninstaller, follow the instructions on the screen to the software.

If USB controller, please take it off the computer before uninstalling.

UPDD Uninstall

This program will uninstall the Universal Pointer Device Driver software from your computer.

Click "Uninstall" to proceed, or "Cancel" if you do not wish to uninstall the software at this time.

Cancel   Uninstall

Before use

Calibration

Before you begin to use the touch panel, you need to adjust (calibrate) it. Calibration is a very important so you can align the position where you touch the touch panel with the Windows cursor position. This calibration adjustment lets you operate the touch panel; with ease.

<If an EEPROM calibration function is not used.>
Once you perform the calibration, the calibration information is stored in Windows. You need not make the calibration every time you boot Windows.

To make the calibration, click the touch panel's icon at the task tray of the Windows desktop, and select [Adjust settings]. Or, select [Start] -. [All Program] -> [UPDD], then [Settings]. Then, click "Calibrate" from the "UPDD Console" displayed. Then use your finger to touch a cross (or arrow) at the screen. Touching the section makes a cross appear at another location. Similarly, touch that location too.

Use finger to touch the center of cross
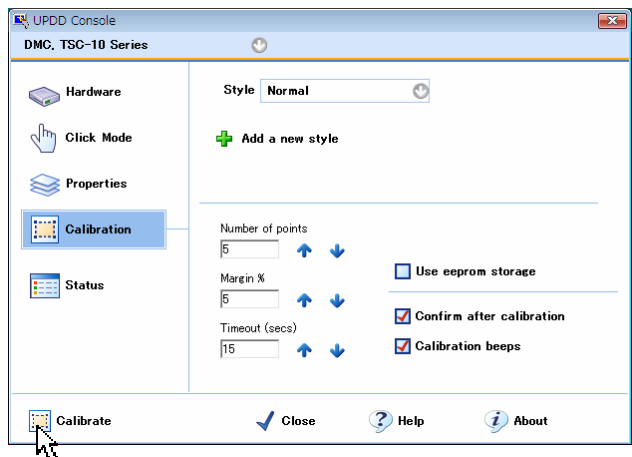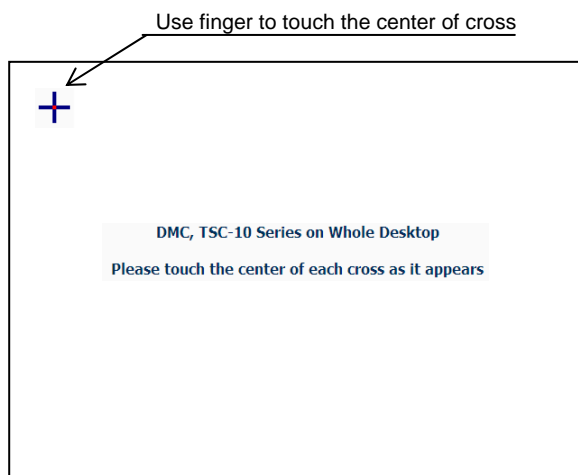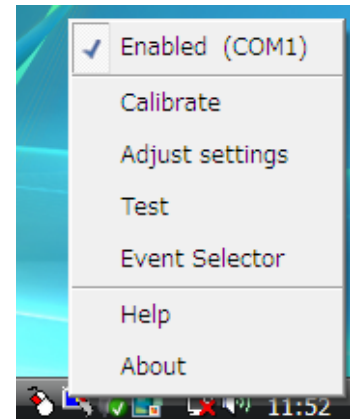
When you have selected all the calibration points, a message "Confirm" appears to request you save the calibration data. When you are able to make a touch respond to every mark + you have been made without any trouble, click the "Confirm" button. If you touch a place other than the calibration points by mistake, leave it alone for 15 seconds (Timeout). If you do not make any action for 15 seconds (Timeout), the calibration you made is discarded and is not saved in Windows.

<If an EEPROM calibration function is used.>
If this function is enabled, operation which performs a calibration is the same as that of the case that the function of EEPROM calibration above mentioned is not used. However, the save place of calibration data is in EEPROM. And, when this function is enabled, the position (position of + mark) of a calibration cannot be changed. And you cannot confirm after calibration.

*An EEPROM must be implemented on a controller board.
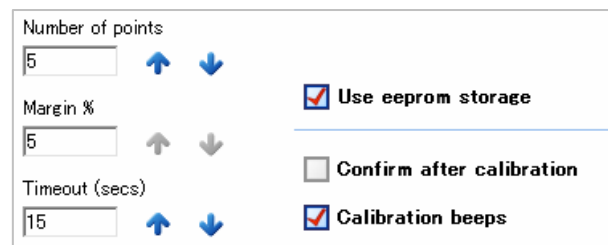
The touch panel coordinates may slip from those at installation with time change. In such a case, it is recommended to make calibration again.

Using the touch panel for mouse operation

A Clicking and dragging
You can use the touch panel to perform such basic operations as mouse click, double-click and drag as follows:

Click: Touch the touch panel swiftly.

Double-click: Touch the touch panel twice swiftly.

Drag: Drag your finger (or stylus) on the screen.
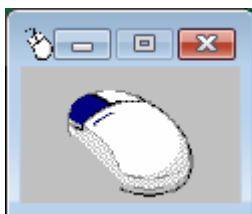
B Right-clicking the mouse
The touch panel does not provide two buttons unlike a mouse. When you want to perform the right-button operation using the touch panel, do the following:

Click the icon at the task tray, and select the [Event selector]. A small window with a computer mouse appears. Every time you touch the mouse picture, a dark blue mouse button becomes active. Touching the touch panel just after the active button appears; operate it like a mouse button.

In initial setting, after performing right-click operation once, it will return to a left button automatically.

You use clicking the right button and can change the setting of the UPDD console, but it is not applied. Please use clicking the left button to apply it.

Left-button   Right-button
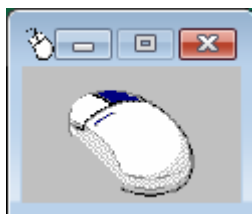
C Event selector
Using the Event Selector allows you to classify the left and right clicking of the mouse button.

1. Activating the Event Selector

Select "Start" -> [All Programs] -> [UPDD] -> [Event Selector].

Or click the icon at the system tray (see the right picture), and select and activate the Event Selector].

2. Settings

To select the Event Selector, click a small mouse picture at the left top of the window, and select a menu displayed.

One hit:
Enables only once touch in the right-click setting.

Small icon:
Displays a smaller size mouse picture in Windows.

Medium icon:
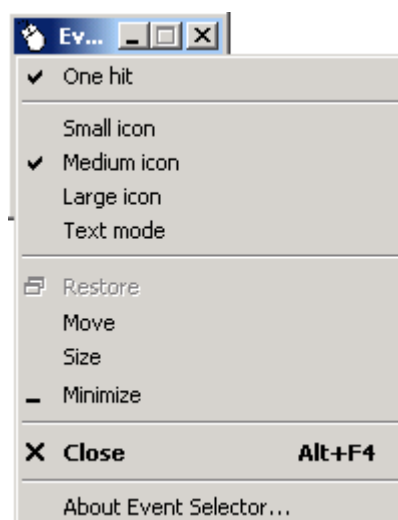Displays the standard size mouse picture in Windows.

Large Icon:
Displays a larger size mouse picture in Windows.

Text mode:
Provides text display in Windows. One hit:
Enables only once touch in the right-click setting.

Function Setting

By the default, this software provides the environment similar to the ordinary mouse-operating environment.

Its flexible customize function facilitates the operating environment which meets a specific application. This section describes [UPDD console] which allows you to make various setting.

Activating the Adjust setting screen
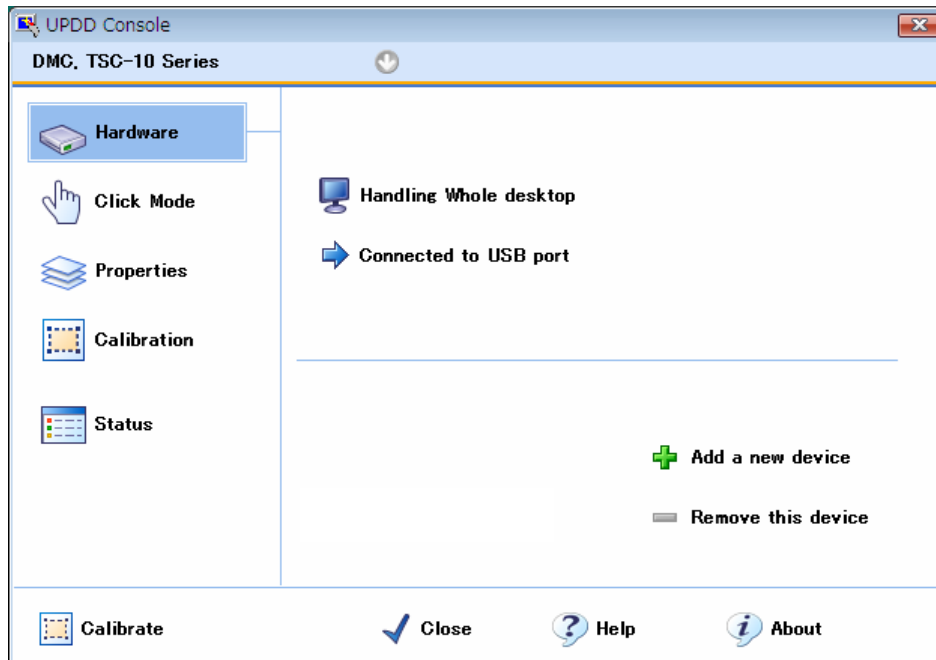
Use one of the following methods:

1. Select and activate "START" -> [All Programs] -> [UPDD] -> [Settings]

2. Click the icon at the system tray (see the right picture), and select and activate the [Adjust settings].

The 'UPDD console' window appears. The screen is divided by several tabs. These tabs are classified for each purpose of setting. They are gathered into one screen for each content respectively; The controller addition is in the [Hardware] tab, the controller status confirmation is in the [Status] tab, and the contents related to calibration is in the [Calibration] tab.

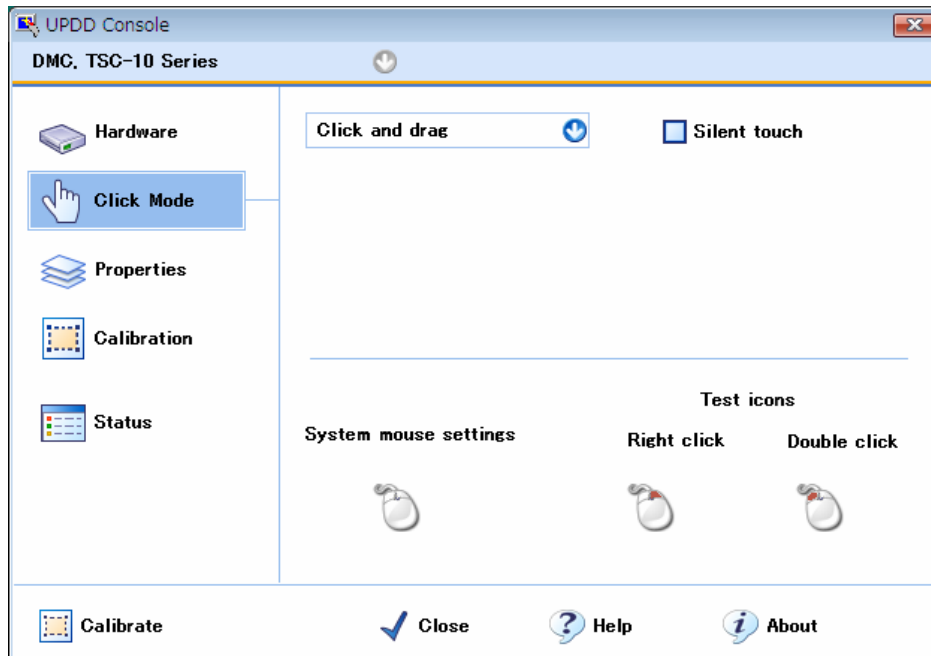# Defines hardware and device settings

The hardware dialog is used to associate the pointer device with the monitor / desktop area that is controlled by the device. It also shows hardware port information.

Function	Description
Handling	Shows the desktop area controller by the pointer device. This is normally set to the whole desktop. In multi-monitor environment this option is used to associate the device to a specific monitor. A custom desktop area can also be defined to restrict the cursor movement to a specific desktop area. You have to carry out calibrate again if you change the desktop area. It is necessary to carry out calibration again if you change the desktop area. When you chose an area except "Whole desktop", please change a calibration point to 2/4/5/9/25. The custom desktop area is effective only with a primary monitor.
Connected to	Shows the port connected to the device. In the case of USB, this shows connection information. In the case of serial this option can be used to configure serial port settings. Please do not change the advanced setting of the serial controller.
Add a new device	In a multi-device environment this option is used to add additional devices, specifically non PnP devices, such as serial devices. In the case of a USB controller, it is added automatically when connected to the computer.
Remove this device	Used to remove the current device.

Click Mode settings

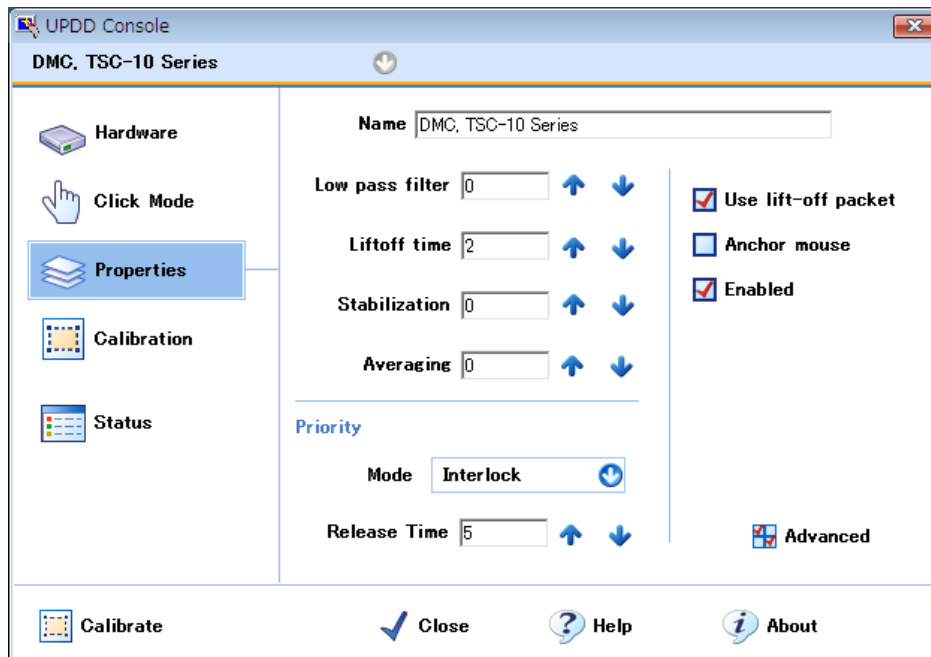The Click Mode dialog defines the click mode emulation and links to the click mode settings within the operating system.

Function	Description
Interactive touch	Shows the current click mode emulation.
	A full mouse click is the action of a pen down followed by a pen up. In the following click emulations, where pen down is specified but with no indication if it's a left or right click, then the Event Selector setting will dictate the pen (Left or Right) selected.
Click and drag	Pen down then drag. Pen up at lift off
Drag then click	Drag then click at lift off.
Point and click	Pen down and pen up at point of touch. No movement.
Interactive touch	Left pen down then drag, left pen up at lift off. Stationary stylus invokes right click. Interactive switch delay determines right click delay. Visual notification indicates if visual feedback is shown during right click countdown.
System mouse settings	Adjust the mouse pointer settings defined within the operating systems. Settings should be set to compliment touch usage, especially the double click speed.

Test icons	**Right click**	**Double click**	Used to test right and double clicks. A green tick is shown if the click test is successful

Event Selector

Some click mode emulations can generate one of two events, known as the primary or secondary event. The Event Selector is used to indicate which event is being generated. The primary event is normally set to Left pen and the secondary event is normally set to right pen.

Controller properties
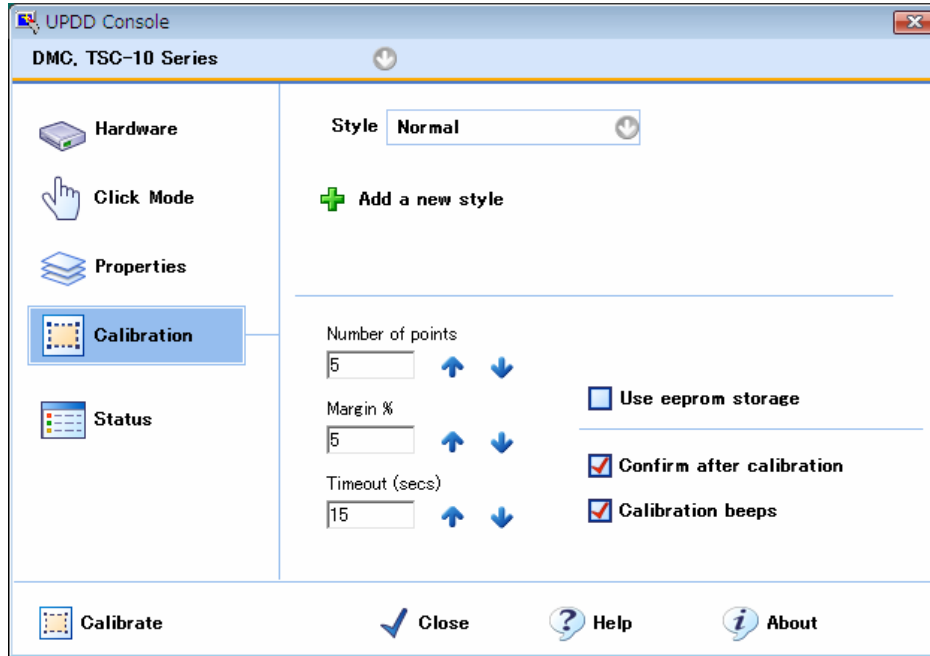
The Properties dialog defines device properties.

Function	Description
Name	Associates a name to the device. By default the name is the driver's controller device name.
Low pass filter 3	Applies a filter to produce smoother drawing. Software implementation of a low pass filter algorithm to remove jitter. This is a more advanced approach to filtering that can improve drawing but will affect the speed of drawing the higher the value used.
Liftoff time 5	The Lift off Time value specifies the time interval required to register a stylus lift after the last touch packet is received. Lift off time is defined in units of 20ms. This value is used to perform a pen up if the 'Use Lift off' packet is disabled otherwise Pen ups are generated as soon as the stylus leaves the pointer device display.
	However, because this timer is triggered after each received touch packet it is important to Ensure the value is greater than the time interval between data packets otherwise pen up events will constantly be generated.
	If this value is set to zero pen ups based on time are disabled. This is a useful setting for controllers working in Delta mode, that is, data is not generated unless the x or y co-ordinates change.

Stabilization `0` ⬆ ⬇	Stabilization causes small movements to be ignored.
Averaging `0` ⬆ ⬇	Applies a filter to produce smoother drawing. Averaging takes the average of the last N co-ordinates. This is a very basic approach to filtering that can improve drawing and not affect drawing speed.
Priority	
Mode `Interlock` 🔽	In a multi pointer device environment this setting indicates the priority given to the device: **Interlock:** The device can only be used if no other device is in use (i.e. touch screen being touched) and the time since the last use of another device exceeds the 'Release time' period. Release time is defined in units of 20ms and defaults to 20ms. **Admin:** Any device currently in use is forced into a 'pen up' state and the device is given immediate priority.
Release Time `1` ⬆ ⬇	Defines the interlock release time, as described above.
☑ **Use lift-off packet**	Only shown if a pen up data packet is generated by the device on stylus lift off. If enabled the pen up data packet is used to invoke pen up otherwise the pen up processing will generate a pen up event at the lift off time threshold as described above.
☐ **Anchor mouse**	The Anchor Mouse option is set if the mouse cursor is to return to its original position after the pointer device has been used. Normally used in multi-monitor configurations where the cursor is to return to another monitor.
☑ **Enabled**	Indicates if the device is enabled. If the device is disabled the hardware port's resources are available for use by another device or process. This is a way of freeing up the resources without having to uninstall the driver. One example of this is where a serial to USB converter is used and the device needs to be 'stopped' before it can be safely unplugged from the system. If UPDD has a connection to the device it cannot be 'stopped' until disabled by UPDD.
🔳 **Advanced**	Less common, advance features, enabled as required:
Edge Acceleration	Settings whereby cursor accelerates towards the edge of the screen when stylus moves towards the edge. Useful if cursor needs to slide off desktop to invoke a system function, such as hidden task bar that is shown when cursor is pushed off edge. The Height and Width settings are based on a 65535 x 65535 logical desktop area (3000 works well). The gain value is the movement accelerator (20 works well). Only works for primary monitor.

	In some environments the edge acceleration function may result in the cursor moving beyond the calibration area in which case the 'Ignore touches outside the calibrated area' should not be set.
Ignore touches outside Calibrated area	Touches generated outside a calibrated area can be ignored e.g. a touch screen is larger than the video display area which may be used for UPDD Toolbars only. If set, when this area of the screen is touched the touch is ignored. When you use an EEPROM calibration function, this function is disabled.

Calibration settings

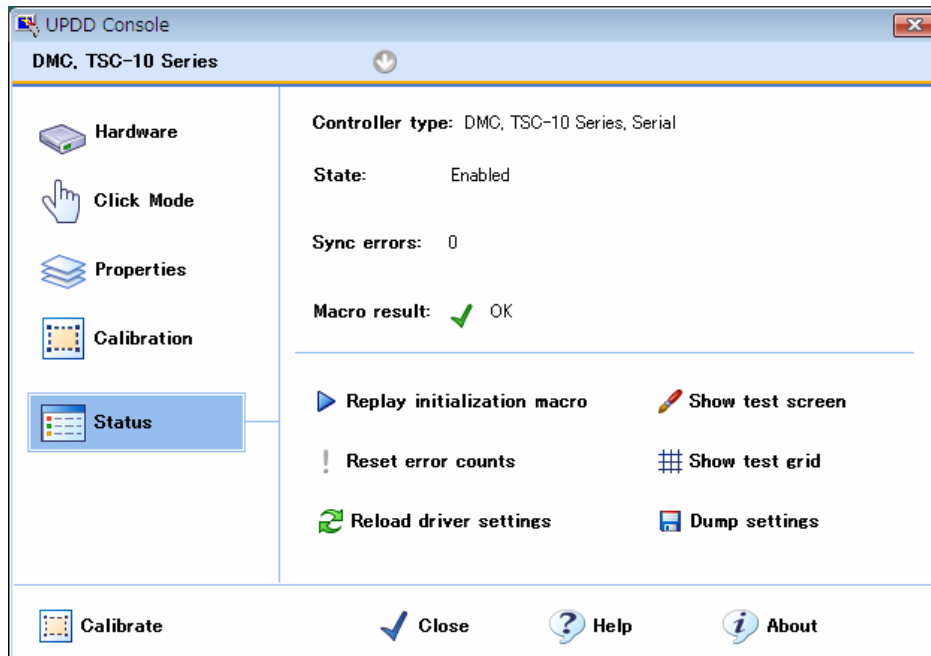The calibration dialog is used to set the calibration settings for the current device.

Function	Description
Style Normal	Shows/selects the current calibration style. Each device can have more that one calibration style which can be calibrated independently. Calibration styles can be invoked/switched from an application, a toolbar or the UPDD activator.
Add a new style	Add a new calibration style.
Remove this style	Remove the selected calibration style.
Number of points 4	Indicates the number of calibration points. The number of points determines the calibration pattern used. 2 points uses the raw pointer device data, 4, 9 and 25 uses a calibration algorithm best suited to non-linear data whereas the other patterns are best suited to linear data. Using 4 points or more allows the driver to automatically determine the orientation of the touch screen and caters for rotated video in cases where the driver has not automatically adjusted for rotation and for these reasons it is ***highly recommended*** that 4 points or more are used.
Margin % 12	Indicates the percentage margin in from the edge of the visual display area from which to draw the

	calibration points.
Timeout (secs) 10 ↑ ↓	Specifies the number of seconds to wait for a calibration touch before canceling the calibration procedure. If it sets 0, it is no timeout (no limit).
☐ Use eeprom storage	If you want to save calibration data to an EEPROM, you should enable this function. Please set a calibration points to 4/5/6/9 if you enabled this.
☐ Confirm after calibration	If enabled a calibration check dialog is shown at the end of the calibration procedure. The calibration confirm button must be selected (with the touch screen!) if the new calibration data is to be used. Even if there are some devices, this is common setting.
☐ Calibration beeps	If enabled a beep will be generated on calibration touch. Even if there are some devices, this is common setting.

Once the calibration settings have been defined as required the device can be calibrated by invoking the calibrate option from the UPDD Console control area, as shown below:

⬚ Calibrate	Invoke calibration procedure for the current device. Calibration points are shown to be touched. The ESC key can be used to cancel calibration if required. Calibration will timeout if calibration points are not touched within the specific timeout period.

Device diagnostics and status information

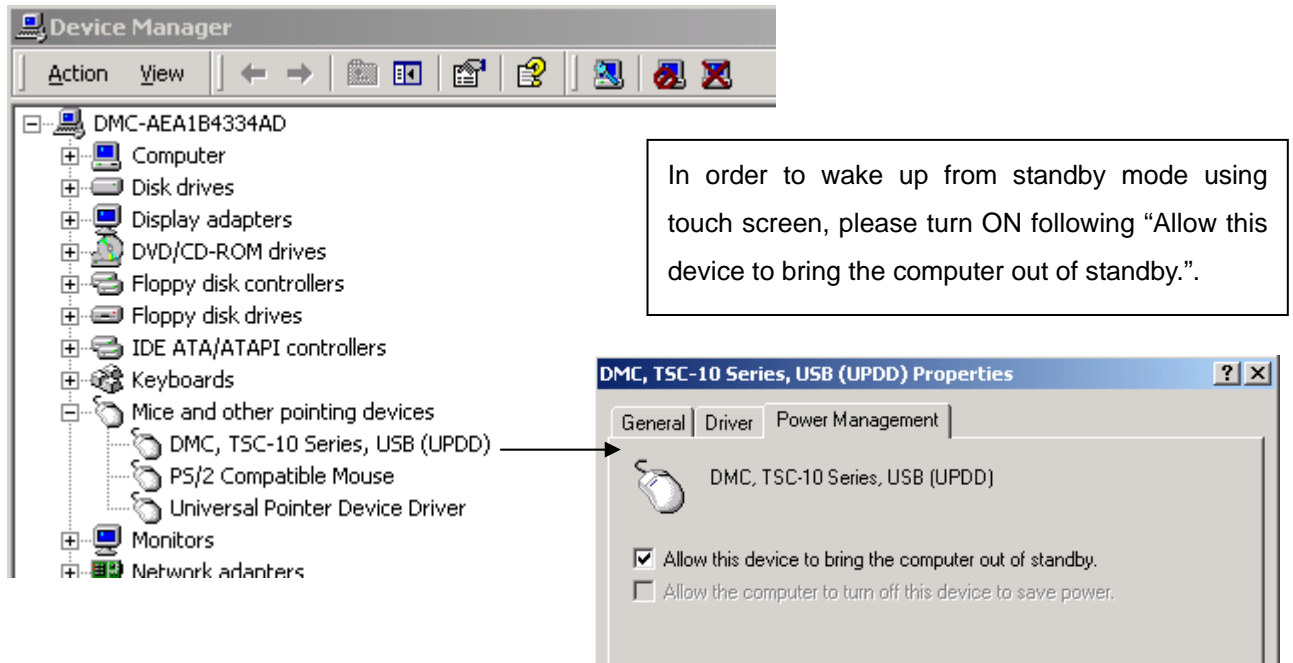Shows device status and allows for driver and controller re-initialization along with test functions.

Function	Description
Controller type:	Shows the actual controller type in use.
State:	Indicates, as best as possible, if the device is connected. For serial controllers this may be difficult to determine.
Macro result:	A device may need the driver to send firmware commands to the device to be initialized and ready for use. The macro is shown, and can be edited, in the UPDD Advance Console. The status of the macro processing is shown as follows:
✓ Not required	No macro is defined.
✓ Unknown	Indicates the macro was sent to the device but the driver is not expecting a response so cannot indicate the success of the macro transmission
⚠ Timed out	The init macro contains an ACK statement but a valid acknowledgement was not seen from the device within the specified time.
✗ Unavailable	A red cross indicates that the driver is not loaded or an error was encountered during controller

	initialization. If the driver is loaded but the device is not functioning the most likely cause is that the specified port resource(s) are already in use by another process or the port is not available.
Sync errors:	Sync errors indicate that the driver is experiencing some form of error with the hardware port or received data packets. This value should be zero or very low. Any high counts will imply an error is occurring that may affect performance of the pointer device. This could indicate the controller is running at a different baud rate to that defined in UPDD settings or the controller is transmitting some data packets not recognized by the driver.
▶ Replay initialization macro	This function reinitializes the controller. The macro, if defined, is sent to the controller. At USB controller, you do not use this function.
! Reset error counts	This option resets the sync error count. This function becomes effective if a sync error is counted. At USB controller, you do not use this function.
⟳ Reload driver settings	This function reloads the driver. This could take a number of seconds to perform.
✎ Show test screen	Invoke the test screen.
⊞ Show test grid	Invoke the test grid.
▤ Dump settings	Dump driver settings to a file. The file is useful for support purposes but can also be used in subsequent installs to define the initial settings.

Others

1. Waking up from Sleep mode.

"Universal Pointer Device Driver" is installed as a system driver and can be located in the "Mice and other pointing devices" entry of the Window's device manager, as shown in the following examples. When using a USB controller, "DMC TSC-10 Series, USB (UPDD)" is added there, after plugging it to computer.


> In order to wake up from standby mode using touch screen, please turn ON following "Allow this device to bring the computer out of standby.".

If Windows Vista, please turn off "Hybrid sleep".

2. USB controller reconnect

When the USB controller is reconnected in different ports, it is recognized as another device (new device). Therefore, it is necessary to carry out calibrate again.

Sample
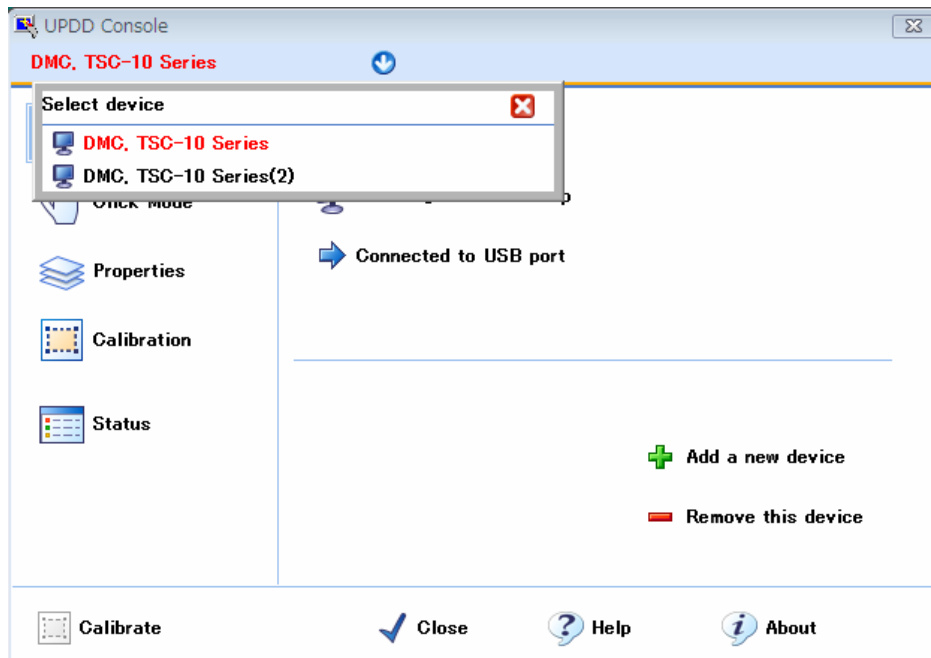
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