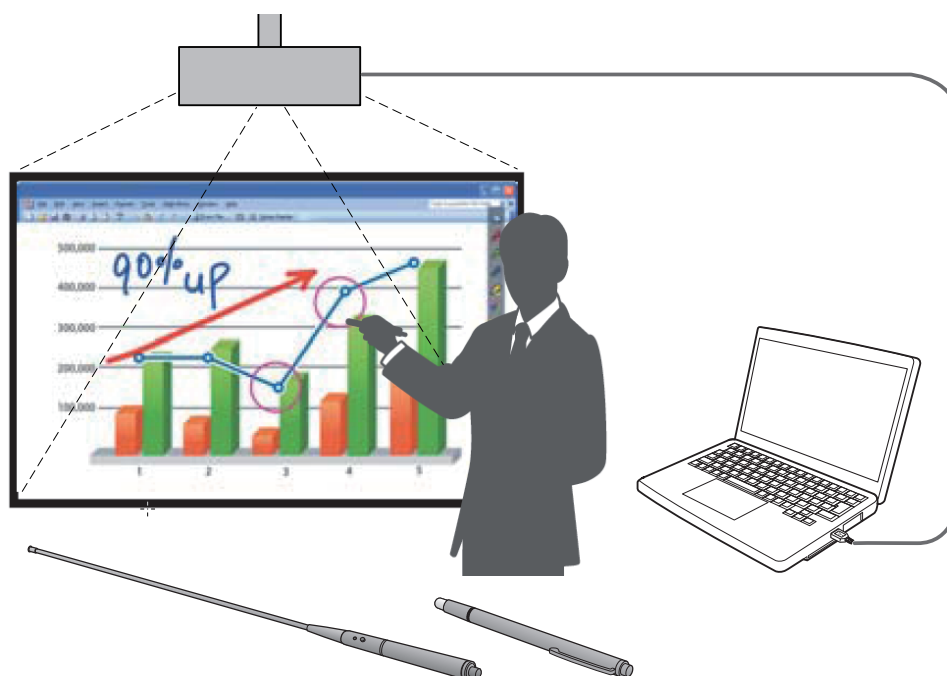


Operating Instructions

Interactive Software

LightPen3

Windows / Mac OS



Thank you for purchasing this Panasonic Product.

- This manual is intended for corresponding the following projectors:
PT-CW331R / PT-CW241R / PT-CX301R / PT-TW331R / PT-TX301R
- Before operating this product, please read these instructions carefully.





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Note

The illustrations and screenshots in this manual may be different from those on your computer.
In addition, the specification of this software is subject to change without notice.

- Since the icons in this manual are based on the examples of PT-CW331R series, when using PT-TW331R series, the icons may be different from those on your computer.

		PT-CW331R series	PT-TW331R series
Driver file name		SPDriver	SPDriver5
Driver icon	USB connected		
	USB disconnected		

Page references

- In these instructions, references to pages are indicated as: (➡page 00).

Term

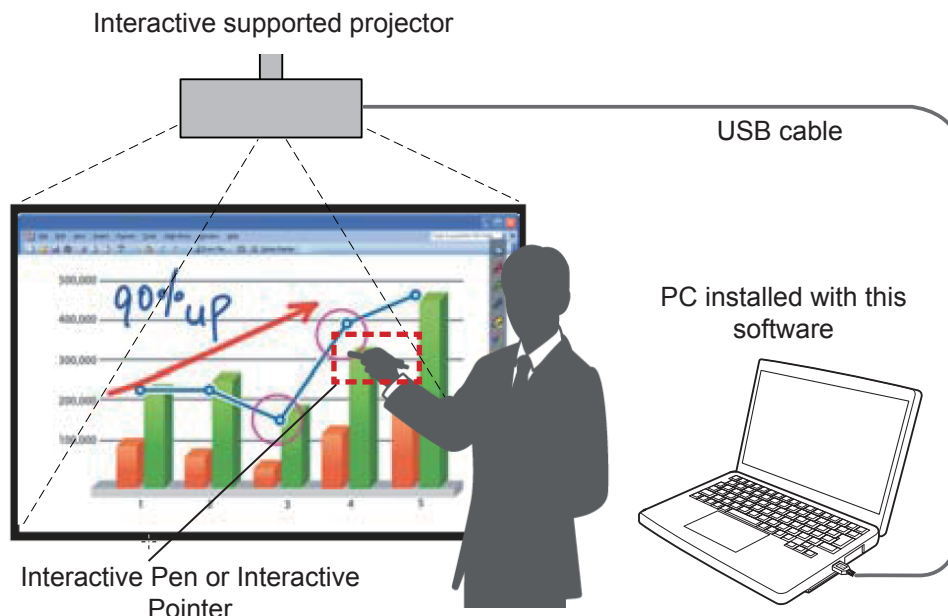
- In these instructions, the "Interactive Pen" and the "Interactive Pointer" accessories are referred to as the "Pen" and "Pointer".

Introduction

These instructions are for "LightPen3" software of the Interactive function.

■ Features

This software enables you to write or draw on the projection screen under circumstances such as schools, educational events or meetings with the Interactive Pen or the Interactive Pointer.



● Mouse function

- You can use the Pen or the Pointer as a PC mouse on the projection screen.

● Pen function

- You can use the Pen or the Pointer to draw directly on the projection screen and save it in the PC.

● Dual Pen function (Only for Windows LightPen3 software)

- When 2 Pens or 2 Pointers are in use together, you can draw on the projection screens.

● PowerPoint® Tool bar function (For Windows only)

- During the PowerPoint slide show mode, you can use the Pen or the Pointer to draw directly on the projection screen and save it in the PC.

■ The Contents of the CD-ROM

The following table contents are included in the "LightPen3" CD-ROM.

	SPDriver (SPDriver5)	LightPen3 Software	LightPen3_Lite software
For Windows	○	○	○
For Mac OS	○	○	×
For Linux	○	×	×

Note

- When using PT-TW331R series, "SPDriver" will show as "SPDriver5".
- When using some kinds of low performance computers, it is recommended to use LightPen3_Lite software. (➡ page 18)
- LightPen3 Software (Drawing application) dedicated for Linux is not included in the CD-ROM contents and the "Pen function" does not work. You can use the Pen or the Pointer as a PC mouse function on the projection screen.

For Windows

System requirements

In order for the SPDriver and the LightPen3 software to work properly, the computer system must meet the following requirements.

OS	Microsoft Windows Vista 32 bit Windows 7 32/64 bit Windows 8.1 32/64 bit Windows 10 32/64 bit
CPU	Intel Core 2 Duo 2.0 GHz or more (dedicated GPU is recommended)
Memory	2 GB or more
Free space on the hard disk	100 MB or more

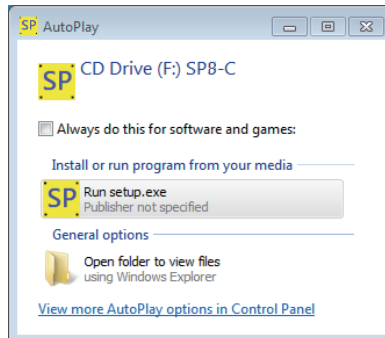
Note

- Please notice that it is not guaranteed of the proper operations for system requirements other than the above mentioned requirements or for the self-made computers.
- If the USB port monitor software is working, the LightPen3 software or the SPDriver may not work properly. In this case, please exit the monitor software before using the LightPen3 software or the SPDriver.
- It is recommended to set the output resolution from the computer to the same as the panel resolution of the projector.
- Download the latest versions of "LightPen3" software from the following URL.
<https://docs.connect.panasonic.com/projector/download/application>
- The LightPen3 software may not work properly for some computers.

Even all the requirements are met, there is not guaranteed operations for all computers.

Note

- For Windows system, do not use the supplied CD-ROM. Connect the computer to the projector via a USB cable, installation screen of "SPDriver" will appear automatically and follow the installation instructions on the screen.
Auto play screen display appears depending on the setting of the personal computer. In this case, please select "Execute the setup.exe".



Screen display example

Installation of the Driver and Software

Note

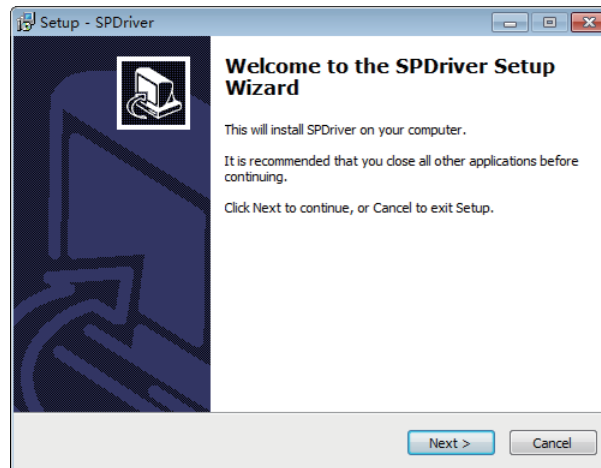
- When using some kinds of low performance computers, it is recommended to use LightPen3_Lite software. (➡ page 18)

1) Insert the software recorded CD-ROM into the CD drive.

- The application launcher will launch automatically when the supplied CD-ROM is inserted into the CD drive. If the application launcher does not launch, double-click "Launcher.exe" in the CD-ROM.
- When the auto play screen is displayed, select the relevant option to run "Launcher.exe".

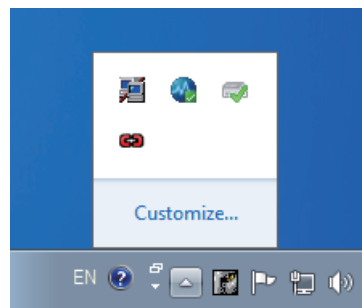
2) Click "Install SPDriver".

- Setup image displays.



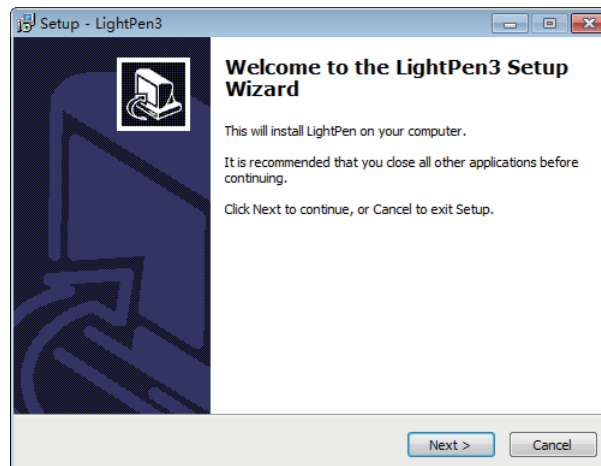
3) Follow the on-screen instructions to install.

- SPDriver icon (red) will be created on the task bar when installation finished.



4) Click "Install LightPen3".

- Setup image displays.



5) Follow the on-screen instructions to install.

- Shortcut icon will be created on the desktop when installation finished.



For Windows (continued)

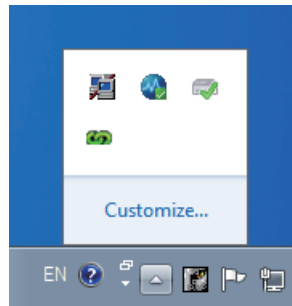
Interactive functions initial settings

First, carry out the calibration for the projector sensor to accurately recognize the position of the projected screen.

■ Start the Software

1) Connect the computer to the projector via a USB cable.

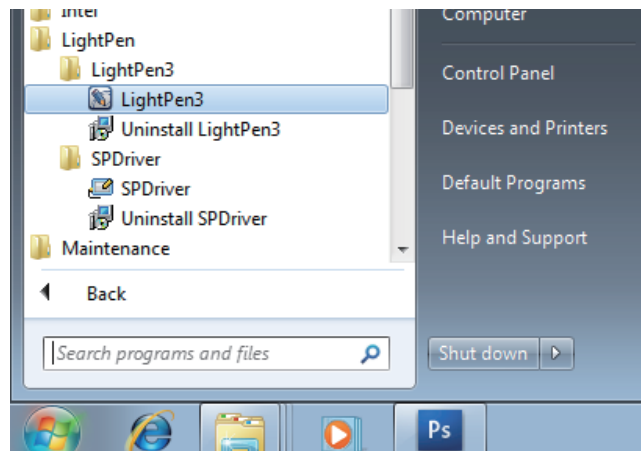
- The SPDriver icon in the taskbar turns from red into green.



Note

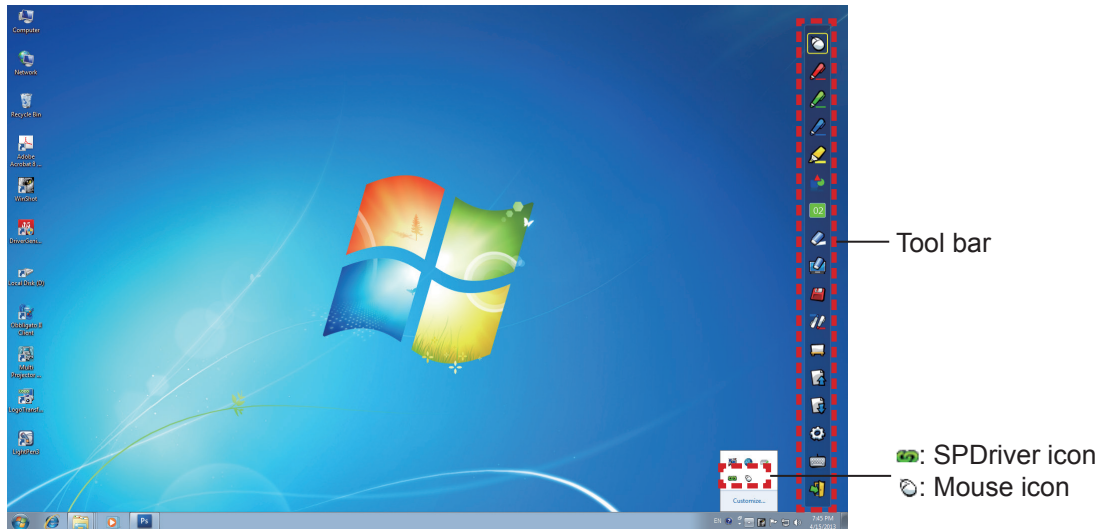
- The execution confirmation screen of "SP8C2Hotfix.exe" may appear depending on the setting of the personal computer. In this case, please select "OK".

2) Click "Start"→"All Programs"→"LightPen"→"LightPen3"→"LightPen3" from the desktop.



Or double click the shortcut icon of "LightPen3" from the desktop.

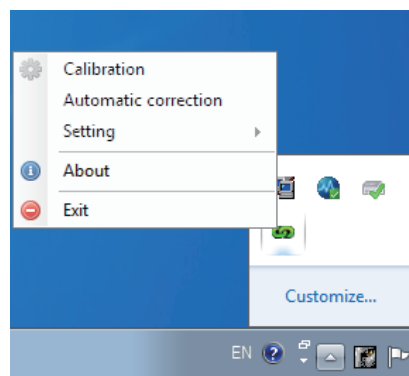
- Tool bar appears on the right of the screen.



■ Select the operation mode of cursor

- 3) Click the SPDriver icon on the taskbar and select "Mouse" or "Touch" from the pop-up "Setting".

Mouse	Cursor acts as a computer mouse.
Touch	Mode for touch display, and available for dual touch.



Note

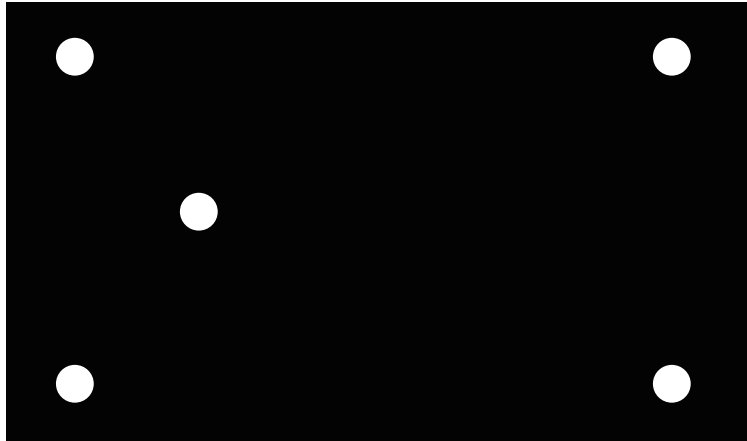
- Windows Vista supports only "Mouse" mode. Windows 7 supports "Touch" mode and "Mouse" mode. Windows 8.1 or later supports only "Touch" mode.

■ Perform the Calibration of the camera

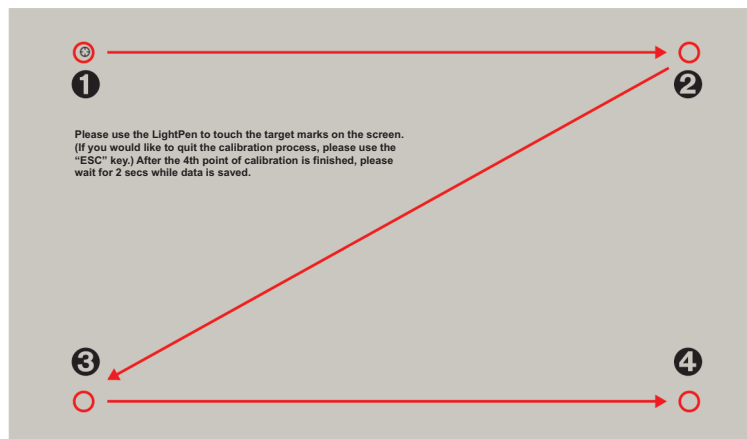
- 4) Click the SPDriver icon on the taskbar and select "Automatic correction" from the pop-up menu.

- Display the auto calibration screen and perform the auto adjustment. During the adjustment, do not block the projection image with any object or figure.

For Windows (continued)



- If auto calibration fails, a confirmation screen for manual calibration will appear and select "Confirm" or "Cancel" to continue.
- Select "Cancel" to perform the auto calibration again.
- Before performing the auto calibration again, please check the following situations.
 1. Turn off the lights to darken the surroundings and reduce the reflection of external light to the projection screen.
 2. Readjust the focus again.
- Select "Confirm" to display the manual calibration screen.
- Click the SPDriver icon on the taskbar and select the pop-up "Calibration" to display the manual calibration screen.



5) Press the target mark ❶ in the screen with the Pen.

- Each time you press the target mark, the moving order is ❶ → ❷ → ❸ → ❹.

6) Press the target mark ❷ → ❸ → ❹.

- The "Please wait..." message appears, and after completing the process the message will disappear.

Attention

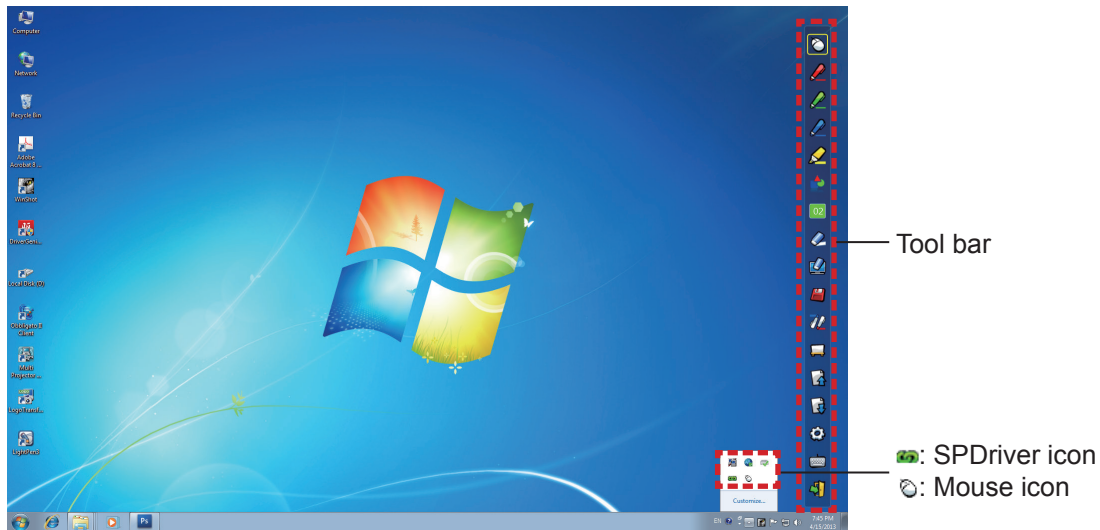
- When carrying out the "Automatic correction", make sure to project image onto a smooth screen.
- If the projector detects the resolution be modified, the message "Resolution changed, please modify" will display, please carry out the Calibration again.
- If the calibration screen is expanded and does not fit the projected image, click "Start" → "Control Panel" → "Appearance and Personalization" → "Display" and make the setting of the text size to 100 %. If the setting value is over 100 %, the calibration may be failed.

Note

- When the position of the screen and the projector is fixed, there is no need for calibration again next time if you use the same computer at the same resolution.

How to use the Interactive functions

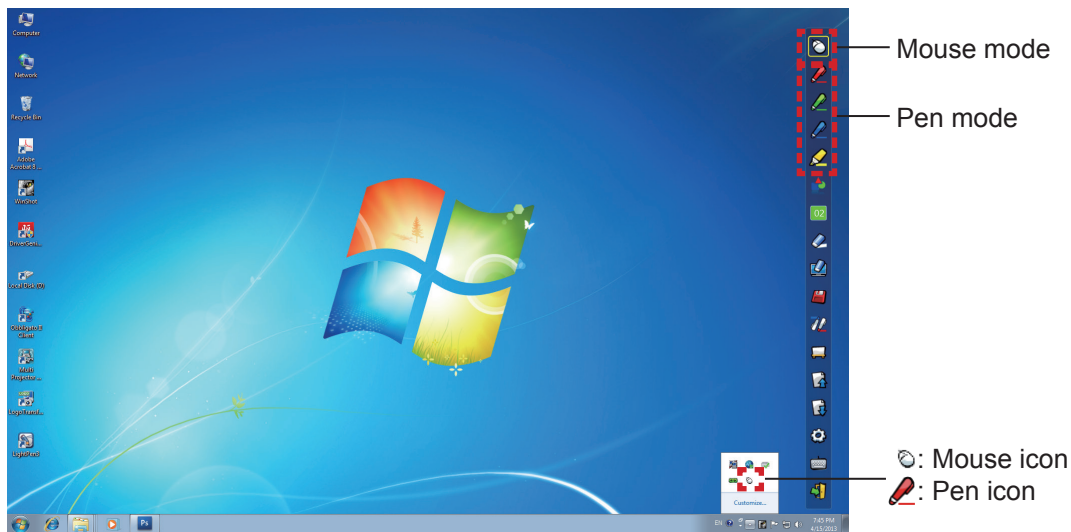
■ Tool bar functions



Icon	Name	Description	Page
	Mouse	To perform as a PC mouse.	-
	Red pen	To draw as a red pen.	-
	Green pen	To draw as a green pen.	-
	Blue pen	To draw as a blue pen.	-
	Marker pen	To draw as a half-transparent yellow pen.	-
	Shape tool	To draw a circle, a square, a triangle or a straight line.	11
	Line thickness and color change tool	To change the color and the thickness of the Pen.	11
	Eraser	To partially erase the pictures or lines.	-
	Erase all	To erase all the pictures and lines.	-
	Save	To save the displaying screen to the computer.	-
	Dual Pen	To draw a picture in the "Full-screen mode" or "Divided-screen mode" with the 2 Pens.	11
	Whiteboard tool	To change the background to the whiteboard mode.	13
	Previous page	To return to the previous page.	-
	Next page	To go to the next page.	-
	Editing tool	To edit the drawn pictures or lines.	14
	On-Screen Keyboard	To display the On-Screen Keyboard.	15
	Exit	To exit LightPen3.	17

For Windows (continued)

■ For "Mouse mode" and "Pen mode"



● Mouse mode

The "Mouse mode" is active immediately after Startup. Use a Pen or a Pointer to move the mouse cursor.

- When using the Pen, press the tip of the Pen to the screen as the use of a normal pen.
 - When using the Pointer (Optional accessories), press and hold down the button during use.
- During mouse mode, press and hold the Pointer button or the tip of the Pen for about 2-3 seconds to do right-click.

● Pen mode

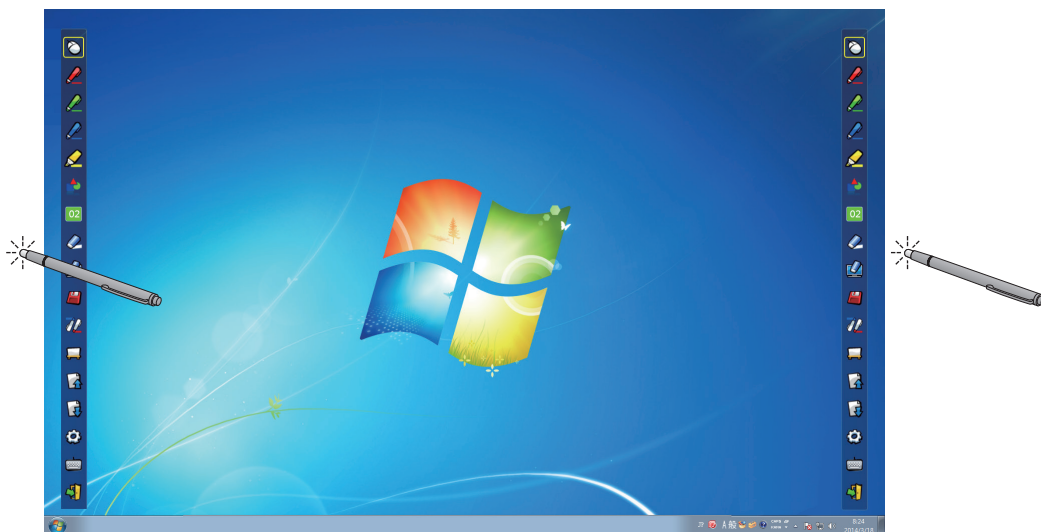
Select the Pen icon (Red pen/Green pen/Blue pen/Marker pen) from the tool bar and draw a line with a Pen or a Pointer. You can set the thickness and the color of the line.

- When using the Pen, press the tip of the Pen to the screen to draw a line as the use of a normal pen.
- When using the Pointer, press and hold down the button to draw a line.

Note

- Press the icon on the taskbar to switch the "Mouse mode" or the "Pen mode".

■ Position changing and Displaying / Hiding of the tool bar



You can change the position of the tool bar, or switch the displaying / hiding of the tool bar.


- If you use the Pen or the Pointer to click a little space left to the projection screen edge, the tool bar will move to the left.
- If you use the Pen or the Pointer to click a little space right to the projection screen edge, the tool bar will move to the right.
- To switch the displaying or hiding of the tool bar, use the Pen or the Pointer to click a little space outside of the projection screen with the tool bar side.

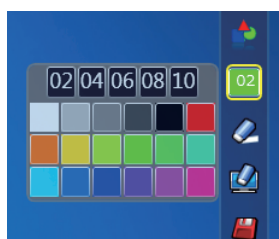
■ Shape tool

Click the "Shape tool" icon  to display the following menu and select the shape you want to draw.



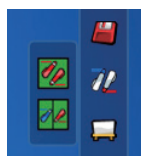
■ Line thickness and color change tool

Click the "Line thickness and color change tool" icon  to display the following menu and choose the thickness or color of the line.





■ Dual Pen tool

Click the "Dual Pen tool" icon  to display the following menu and select the mode you want to draw.

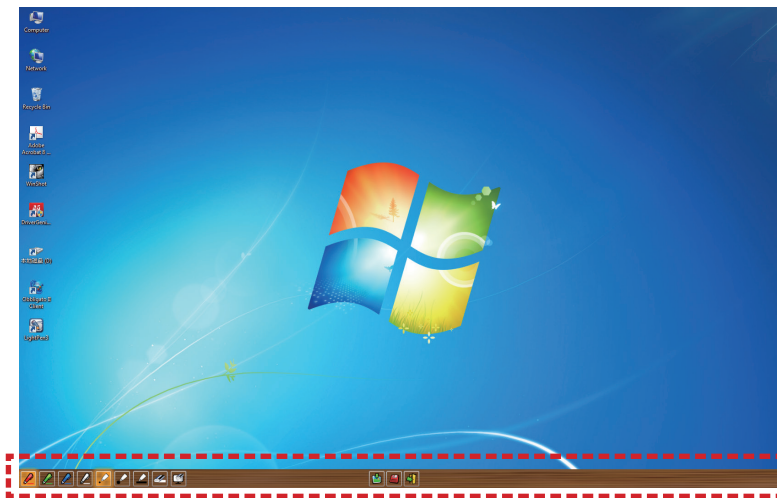


● Functions of Dual Pen

Icon	Name	Description
	Full-screen mode	To draw on the entire screen with two same color Pens.
	Divided-screen mode	To draw on the equally-divided screen with two same or different color Pens.

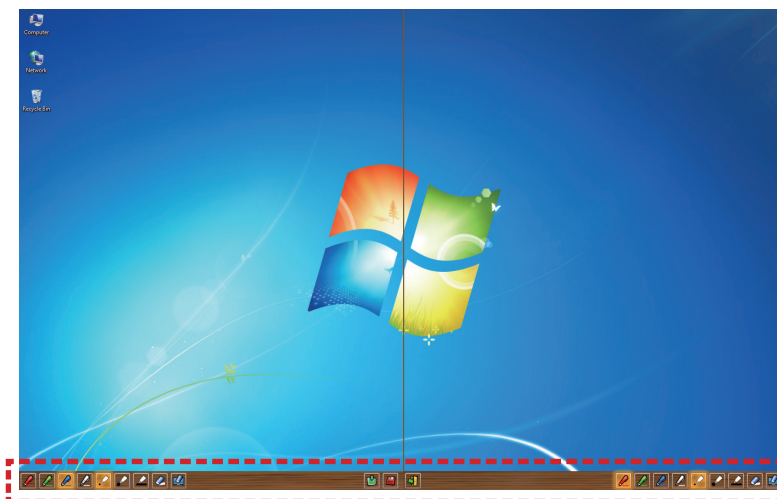
For Windows (continued)

Full-screen mode















Tool bar

Divided-screen mode



Tool bar






● Function of the tool bar for dual Pen


Icon	Name	Description
	Red Pen	To draw with a red pen.
	Green Pen	To draw with a green pen.
	Blue Pen	To draw with a blue pen.
	White Pen	To draw with a white pen.
	Thin circular stroke	To draw with a thin circular stroke.
	Thick circular stroke	To draw with a round thick stroke.
	Square stroke	To draw with a square stroke.
	Eraser	To partially erase the pictures and lines.
	Erase all	To erase all the pictures and lines.
	Wallpaper select tool	To change the background to any wallpaper.
	Save	To save the displaying screen to your computer.
	Exit	To exit "Full-screen mode" or "Divided-screen mode".

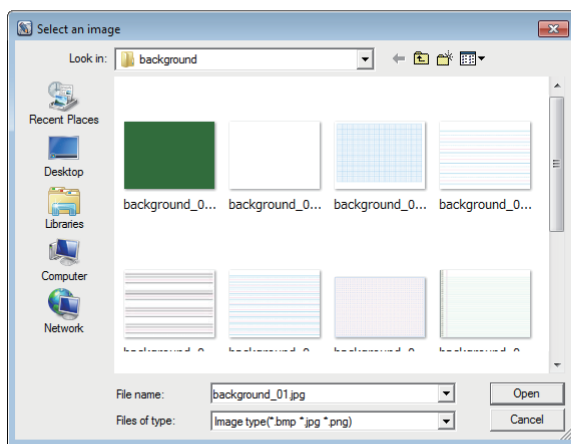
Note

- You can draw with a combination of the color and thickness of the Pen. In the tool bar, the background of the color and thickness of the selected Pen displays bright.

Whiteboard tool



Select the "Whiteboard tool"  icon to make the wallpaper of the PC screen white. The  (previous page) and the  (next page) icons are replaced by the  (wallpaper selection) and the  (white wallpaper) icons.

- (1) Select the  icon to open the following window where you can choose the wallpaper that you want to use.




Related
whiteboard tools












- (2) Select the  icon to change the wallpaper to white.
- (3) To exit the Whiteboard mode, select the  icon.

For Windows (continued)

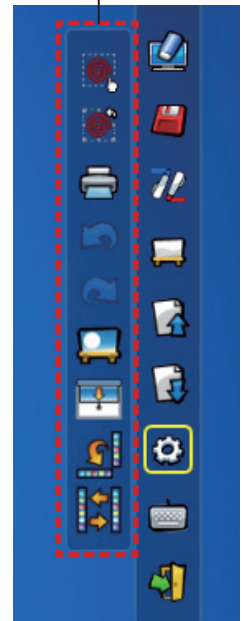
■ Editing tool

Select the  icon to display the following "Editing tool" bar and select the necessary functions of the editing work.

● Functions of Editing bar

Icon	Name	Description
	Object selecting, moving, scaling	To select, to move, to scale the object that you draw.
	Object rotating	To rotate the object that you draw.
	Print	To print the screen you drew.
	Undo	To return to the last action.
	Undo canceling	To cancel the returning of the last action.
	Spotlight	To display the part you want to emphasize.
	Curtain	To cover the part you want to hide.
	Vertical and horizontal shifting	To array the tool bar vertically or horizontally.
	Left and right shifting	To move the tool bar left or right.

Editing tool bar

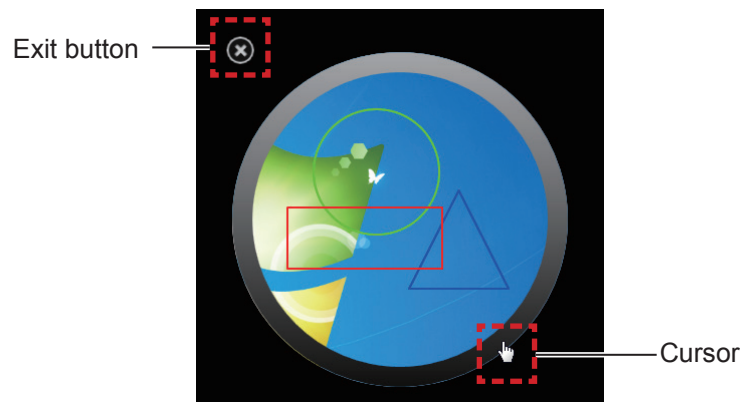


Note

- Select the drawn object first and start to rotate with the "Object rotation" function. If you do not select the object, a message "Select the picture first" will display.

● Spotlight mode

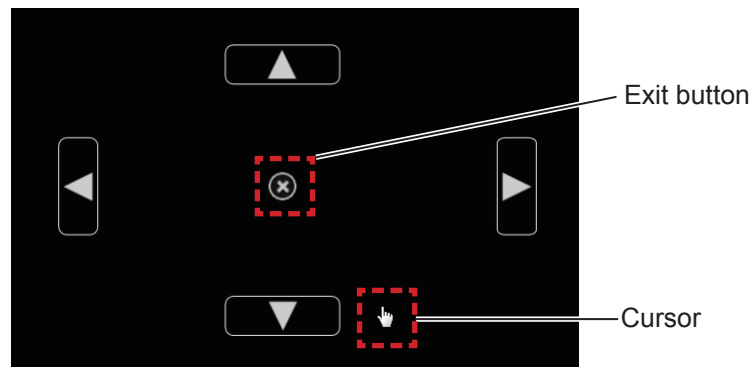
Select the  icon to display the below spotlight image.



When the cursor becomes a cross, you can change the position of the spotlight and drag.
When the cursor becomes a hand, you can change the size of the spotlight and drag.
When you finish viewing the spotlight, press the exit button on the top left to exit.

● Curtain mode

Select the  icon to change the entire screen to black.




Place the cursor on the up, down, left or right button and the cursor will change to an arrow, drag the arrows to adjust the black curtain size.

When the cursor become a hand, you can drag it to move the black curtain.

When you finish viewing the curtain, press the button in the center to exit.

■ On-screen keyboard

Select the  icon to display the below On-Screen Keyboard. You can write text to a document via the "Mouse mode".

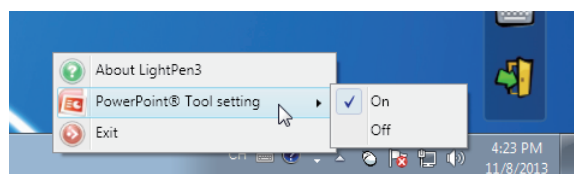


Note

- When using the On-screen keyboard in Windows 7, please make sure to set the security level of User Accounts to "Never notify". For changing the security level, click "Start" -> "Control Panel" -> "User Accounts" -> "User Account Control Settings".
- For Windows Vista, this function cannot be used.

How to use the PowerPoint® Tool

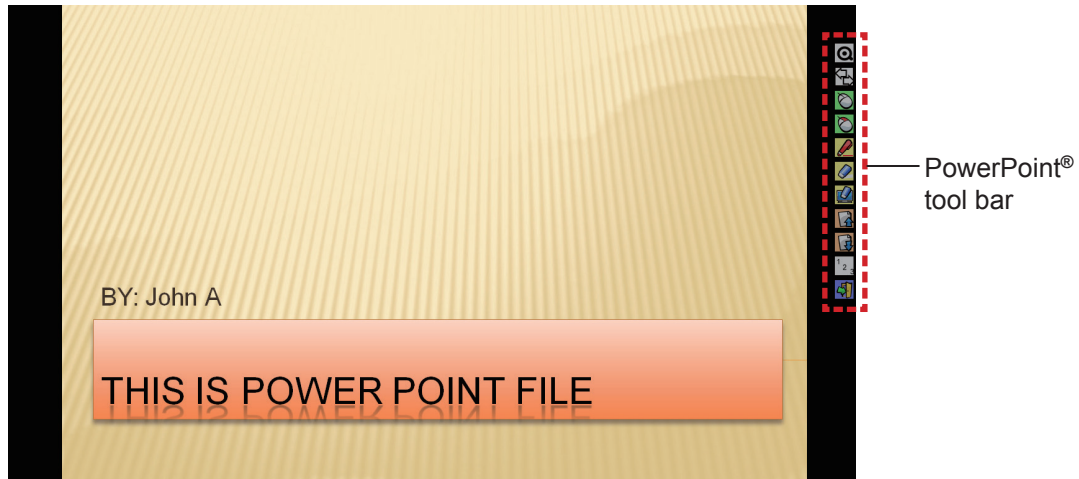
1) Click the mouse icon in the taskbar and set the "PowerPoint® Tool setting" to [On].



2) Start projection of the PowerPoint file with the "Slide Show Mode".

- The PowerPoint® Tool appears on the right side of the screen and you can draw during the slide.

For Windows (continued)



● Functions of the PowerPoint® Tool bar


Icon	Name	Description
	Tool bar minimize	To switch displaying / hiding of the other icons.
	Tool bar position change	To move the tool bar to the left or right.
	Mouse	To perform the mouse mode.
	Mouse right button	To perform as the right button of the mouse.
	Red Pen	To draw with a red pen.
	Eraser	To partially erase the pictures or lines.
	Erase all	To erase all the pictures or lines.
	Previous page	To return to the previous page.
	Next page	To go to the next page.
	Page selecting	To select the page you want to project from the list of slide show page.
	Exit	To exit the slide show mode.

Note



- When you exit "Slide show mode", the PowerPoint® Tool will automatically disappear.
- The LightPen3 PowerPoint® Tool will work when the PowerPoint 2003, the PowerPoint 2007 or the PowerPoint 2010 is installed in your computer.

To exit the Software

■ If you want to exit the LightPen3 from the tool bar

Select the  icon (exit icon) from the tool bar.

■ If you want to exit the LightPen3 from the taskbar

Click the  icon (Mouse icon) from the taskbar and select  Exit .

About SPDriver

It is no need to exit the SPDriver under normal use.

■ To exit SPDriver

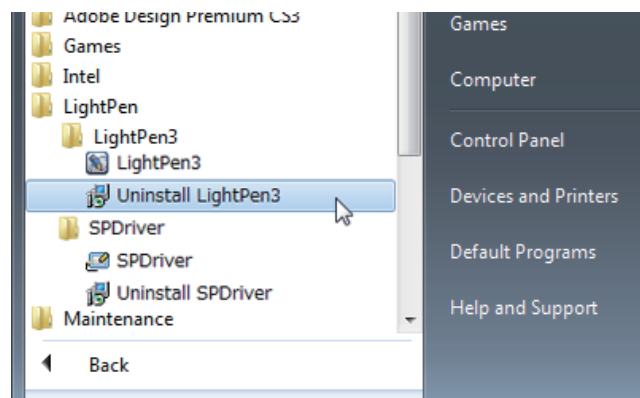
Click the  icon (SPDriver icon) from the taskbar and select  Exit .

■ To restart SPDriver

Select "Start" → "All Programs" → "LightPen" → "SPDriver" → "SPDriver" on the desktop.

To uninstall the Software and Driver

- 1) Select "Start" → "All Programs" → "LightPen" → "LightPen3" → "Uninstall LightPen3" on the desktop.



- 2) Follow the uninstallation steps on the screen.
- 3) Select "Start" → "All Programs" → "LightPen" → "SPDriver" → "Uninstall SPDriver" on the desktop.
- 4) Follow the uninstallation steps on the screen.

For Windows (continued)

About LightPen3_Lite

If the interactive function does not work smoothly when using LightPen3 software, please use the LightPen3_Lite.

However, there is a limit to some features to the LightPen3_Lite software and please note the following table.

Function Name		LightPen3	LightPen3_Lite
Mouse		○	○
Red pen		○	○
Green pen		○	○
Blue pen		○	○
Marker pen		○	○
Shape tool		○	○
Line thickness and color change tool		○	○
Eraser		○	○
Erase all		○	○
Save		○	○
Dual Pen		○	×
Whiteboard tool		○	○
Previous page		○	○
Next page		○	○
Editing tool	Object selecting, moving, scaling	○	×
	Object rotating	○	×
	Print	○	○
	Undo	○	○ (Only once)
	Undo canceling	○	×
	Spotlight	○	×
	Curtain	○	×
	Vertical and horizontal shifting	○	×
	Left and right shifting	○	×
On-Screen Keyboard		○ *1	○ *1
PowerPoint® tool		○	○

*1:Excluding Windows Vista

LightPen3_Lite System requirements

In order for the LightPen3_Lite software to work properly, the computer system must meet the following requirements.

OS	Microsoft Windows Vista 32 bit Windows 7 32/64 bit Windows 8 32/64 bit
CPU	Intel Pentium-M 1.5 GHz or more (dedicated GPU is recommended)
Memory	2 GB or more
Free space on the hard disk	100 MB or more

Note

- Please notice that it is not guaranteed of the proper operations for system requirements other than the above mentioned requirements or for the self-made computers.

Even all the requirements are meet, there is not guaranteed operations for all computers.

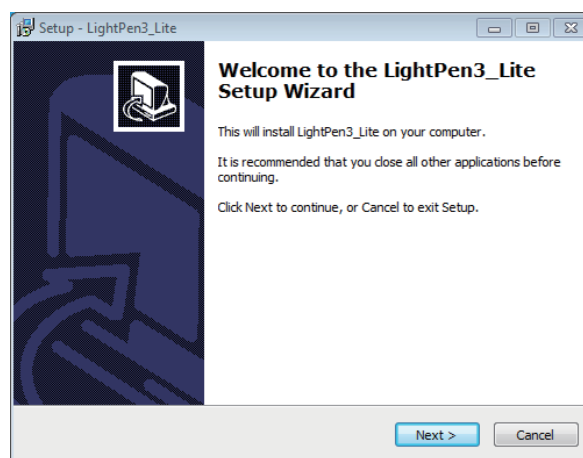
LightPen3_Lite software installation

1) Insert the software recorded CD-ROM into the CD drive.

- Application Launcher will start automatically, press the "Close" button to close the window.
- If the auto play screen appears, please select "Open folder to view files".

2) Double-click the "Setup_Lite.exe" within the "WIN" folder.

- Setup image displays.



3) Follow the on-screen instructions to install.

- Shortcut icon will be created on the desktop when installation finished.



Note

- Download the latest versions of "LightPen3_Lite" software from the following URL.
<https://docs.connect.panasonic.com/projector/download/application>
- The LightPen3_Lite software may not work properly for some computers.

LightPen3_Lite Interactive functions initial settings

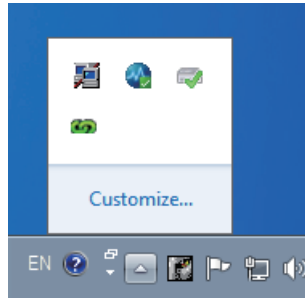
First, carry out the calibration for the projector sensor to accurately recognize the position of the projected screen.

■ Start the Software

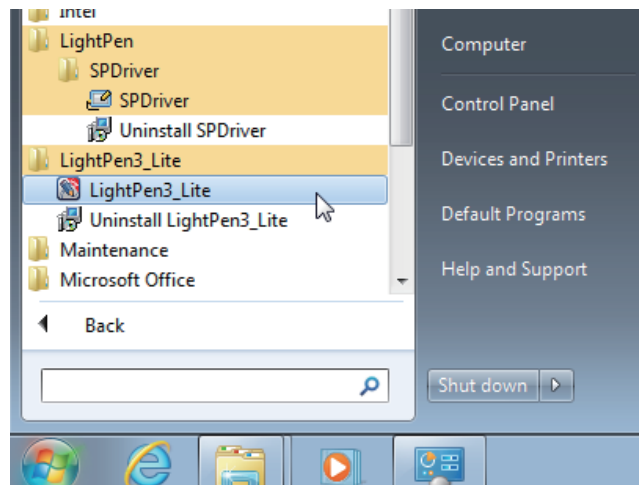
1) Connect the computer to the projector via a USB cable.

- The SPDriver icon in the taskbar turns from red into green.

For Windows (continued)

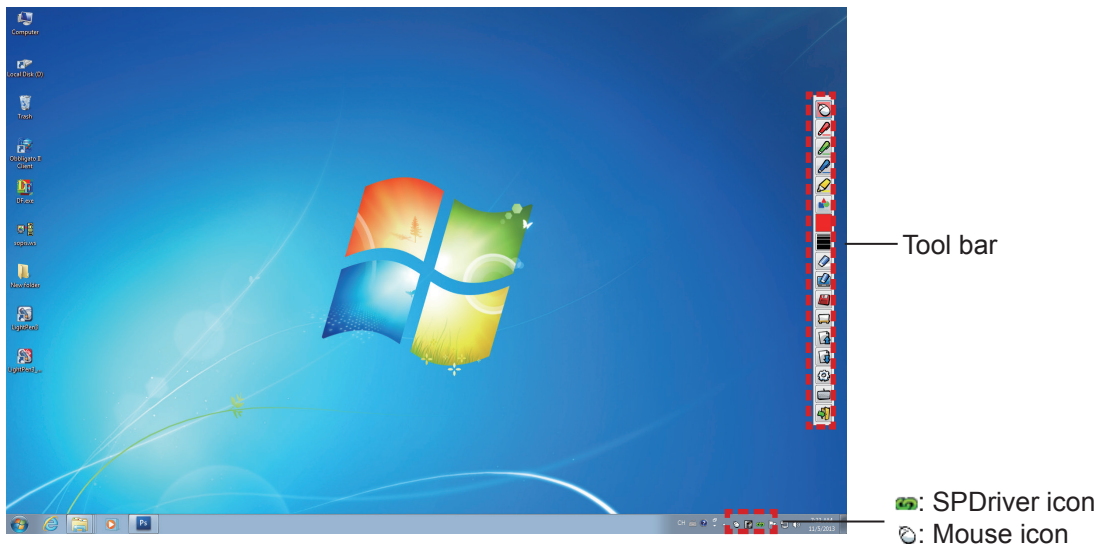


2) Click "Start"→"All Programs"→"LightPen3_Lite"→"LightPen3_Lite" from the desktop.



Or double click the shortcut icon of "LightPen3_Lite" from the desktop.

- Tool bar appears on the right of the screen.

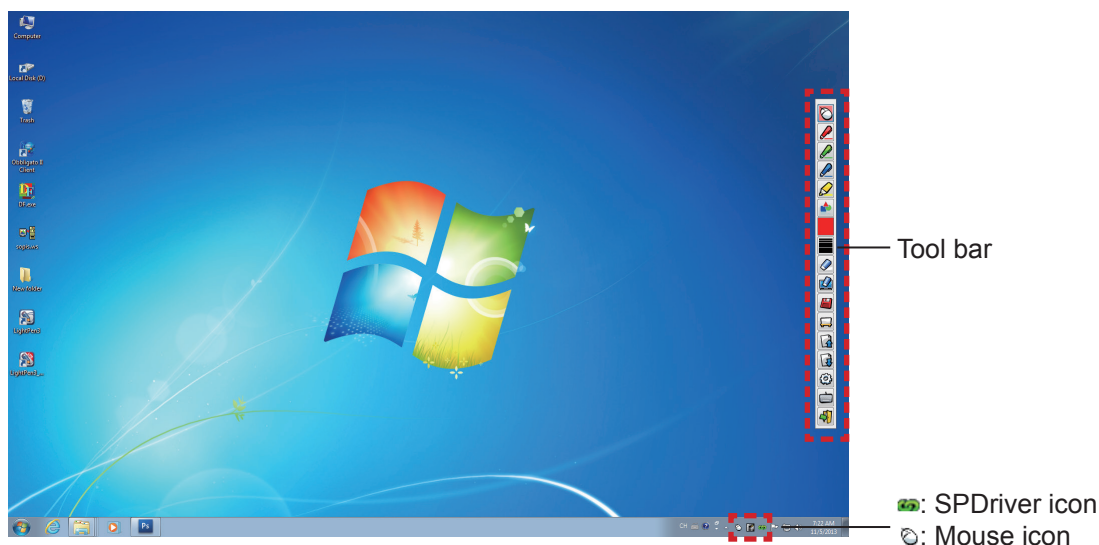


■ Perform the Calibration of the camera

For the method of performing the Calibration of the camera, please see LightPen3 software. (► pages 7-8)

How to use the Interactive functions

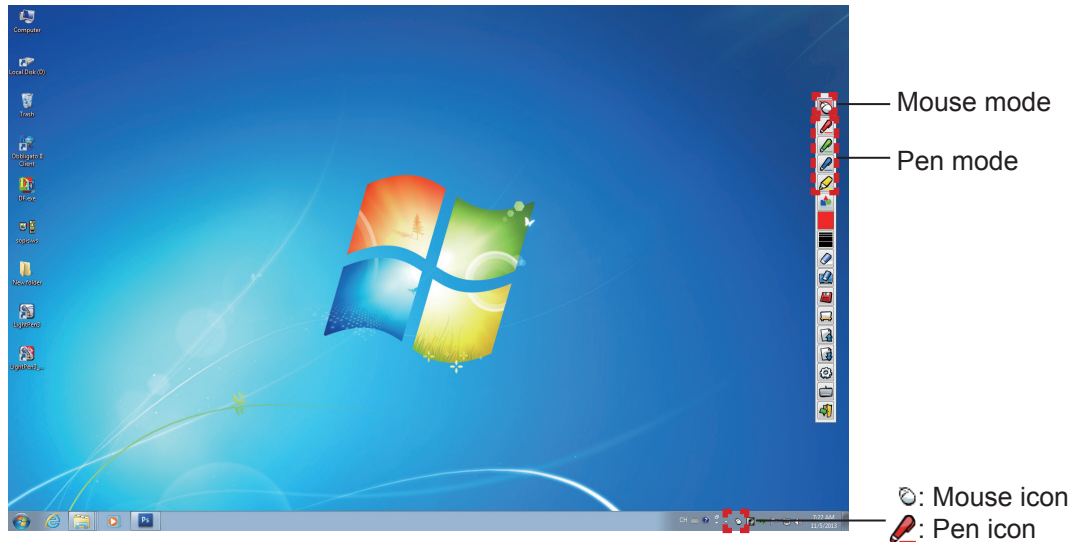
■ Tool bar functions



Icon	Name	Description	Page
	Mouse	To perform as a PC mouse.	-
	Red pen	To draw as a red pen.	-
	Green pen	To draw as a green pen.	-
	Blue pen	To draw as a blue pen.	-
	Marker pen	To draw as a half-transparent yellow pen.	-
	Shape tool	To draw a circle, a square, a triangle or a straight line.	23
	Line color change tool	To change the color of the Pen.	23
	Line thickness change tool	To change the thickness of the Pen.	23
	Eraser	To partially erase the pictures or lines.	-
	Erase all	To erase all the pictures and lines.	-
	Save	To save the displaying screen to the computer.	-
	Whiteboard tool	To change the background to the whiteboard mode.	24
	Previous page	To return to the previous page.	-
	Next page	To go to the next page.	-
	Editing tool	To edit the drawn pictures or lines.	24
	On-Screen Keyboard	To display the On-Screen Keyboard.	25
	Exit	To exit LightPen3_Lite.	25

For Windows (continued)

■ For "Mouse mode" and "Pen mode"



● Mouse mode

The "Mouse mode" is active immediately after Startup. Use a Pen or a Pointer to move the mouse cursor.

- When using the Pen, press the tip of the Pen to the screen as the use of a normal pen.
 - When using the Pointer (Optional accessories), press and hold down the button during use.
- During mouse mode, press and hold the Pointer button or the tip of the Pen for about 2-3 seconds to do right-click.

● Pen mode

Select the Pen icon (Red pen/Green pen/Blue pen/Marker pen) from the tool bar and draw a line with a Pen or a Pointer. You can set the thickness and the color of the line.

- When using the Pen, press the tip of the Pen to the screen to draw a line as the use of a normal pen.
- When using the Pointer, press and hold down the button to draw a line.

Note

- Press the icon on the taskbar to switch the "Mouse mode" or the "Pen mode".

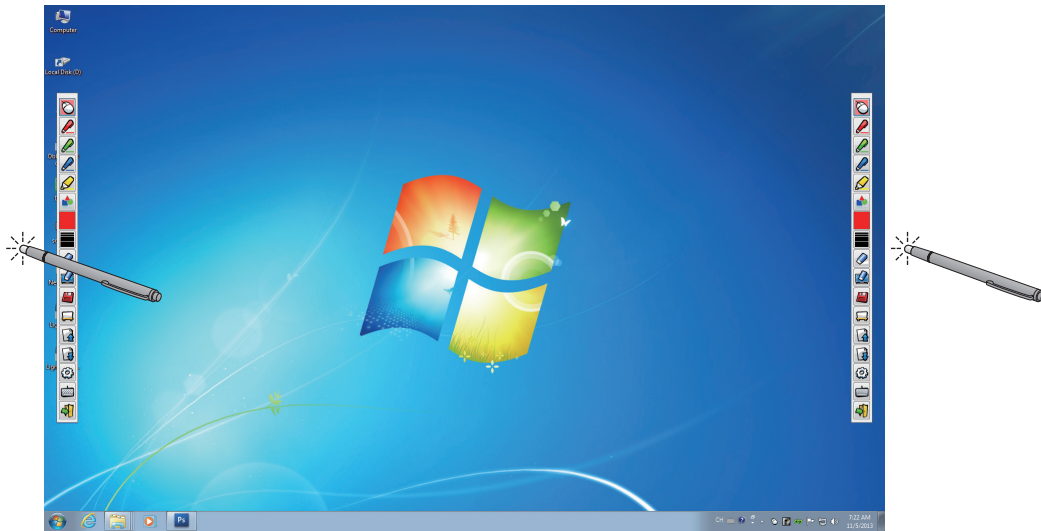
● "Mouse mode" and "Pen mode" Switching



If you use the Pen or the Pointer to click a little space above or below to the projection screen edge, you can easily switch the "Mouse mode" and the "Pen mode" (Red pen / Green pen / Blue pen / Marker pen).

- The Pen color was the last selected color when using "Pen mode".

■ Position changing and Displaying / Hiding of the tool bar



You can change the position of the tool bar, or switch the displaying / hiding of the tool bar.


- If you use the Pen or the Pointer to click a little space left to the projection screen edge, the tool bar will move to the left.
- If you use the Pen or the Pointer to click a little space right to the projection screen edge, the tool bar will move to the right.
- To switch the displaying or hiding of the tool bar, use the Pen or the Pointer to click a little space outside of the projection screen with the tool bar side.

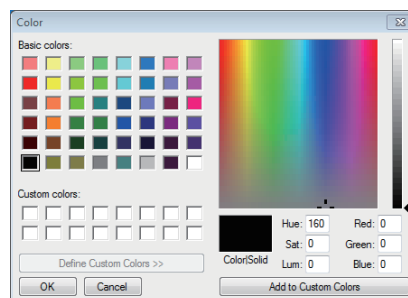
■ Shape tool

Click the "Shape tool" icon  to display the following menu and select the shape you want to draw.




■ Line color change tool

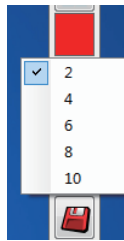
Click the "Line color change tool" icon  to display the following "Color setting" menu and choose the color of the line.








■ Line thickness change tool


Click the "Line thickness change tool" icon  to display the following "Line thickness change tool" submenu and choose the thickness of the line.

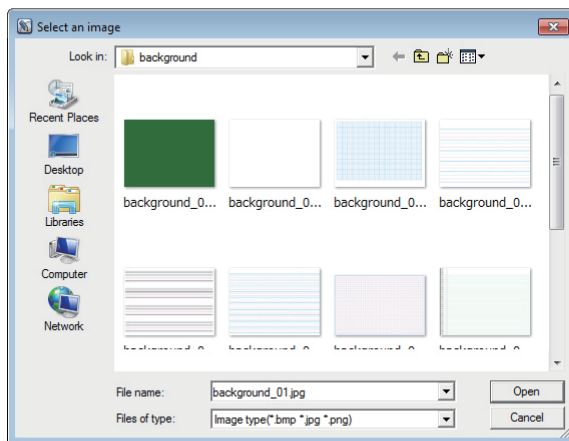
For Windows (continued)



■ Whiteboard tool


Select the "Whiteboard tool"  icon to make the wallpaper of the PC screen white. The  (previous page) and the  (next page) icons are replaced by the  (wallpaper selection) and the  (white wallpaper) icons.


(1) Select the  icon to open the following window where you can choose the wallpaper that you want to use.



Related
whiteboard tools





(2) Select the  icon to change the wallpaper to white.

(3) To exit the Whiteboard mode, select the  icon.

■ Editing tool

Select the  icon to display the following "Editing tool" bar and select the necessary functions of the editing work.


• Functions of Editing bar

Icon	Name	Description
	Undo	To return to the last action.
	Print	To print the screen you drew.

Editing tool bar



■ On-screen keyboard

Select the  icon to display the below On-Screen Keyboard. You can write text to a document via the "Mouse mode".



Note


- For Windows Vista, this function cannot be used.

How to use the LightPen3_Lite PowerPoint® tool


For PowerPoint® tool function, please refer to LightPen3 software. (➔ page 16)

To exit the LightPen3_Lite software

■ If you want to exit the LightPen3_Lite from the tool bar

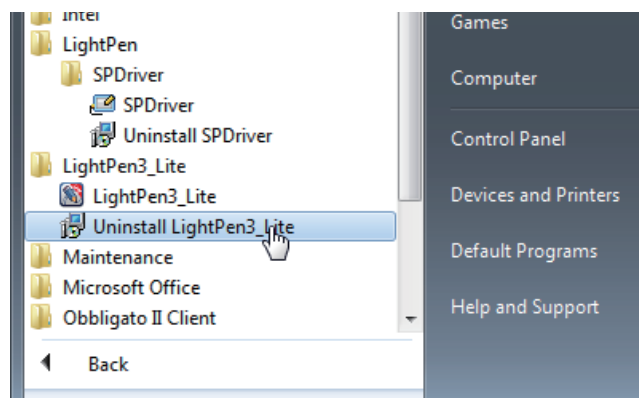
Select the  icon (exit icon) from the tool bar.

■ If you want to exit the LightPen3_Lite from the taskbar

Click the  icon (Mouse icon) from the taskbar and select  Exit.

To uninstall the LightPen3_Lite software

1) Select "Start" → "All Programs" → "LightPen3_Lite" → "Uninstall LightPen3_Lite" on the desktop.



2) Follow the uninstallation steps on the screen.

For Mac OS

System requirements

In order for the SPDriver and the LightPen3 software to work properly, the computer system must meet the following requirements.

OS	Mac OS X v10.9 ~ v10.11
CPU	Intel processor
Memory	2 GB or more
Free space on the hard disk	100 MB or more

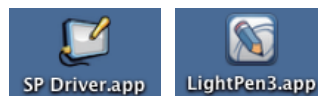
Note

- Please notice that it is not guaranteed of the proper operations for system requirements other than the above mentioned requirements or for the self-made computers.
- The LightPen3 software may not work properly depending on the Mac OS version.

Even all the requirements are meet, there is not guaranteed operations for all computers.

Installation of the Driver and Software

- 1) Insert the software recorded CD-ROM into the CD drive.
- 2) Open the "MAC" folder, copy the "SP Driver.app" and "LightPen3.app" onto your desktop.
 - The "SP Driver.app" and "LightPen3.app" icons appear on the desktop as below pictures shown.



- 3) Take the CD-ROM out from the CD drive.
- 4) Double click "SP Driver.app".

- The SPDriver icon (red) appears in the menu bar.



Attention

- Please do not start the software directly from the CD-ROM.

Note

- Download the latest versions of "LightPen3" software from the following URL.
<https://docs.connect.panasonic.com/projector/download/application>

Interactive function initial settings

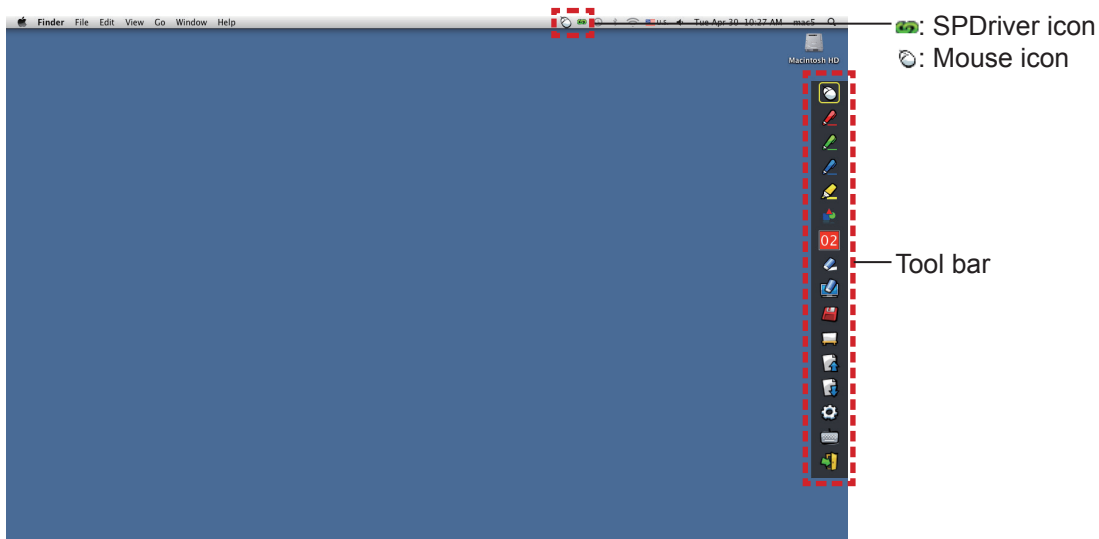
First, carry out the calibration for the projector sensor to accurately recognize the position of the projected screen.

■ Start the Software

- 1) Connect the computer and the projector via a USB cable.
 - The SPDriver icon in the menu bar turns from red into green.

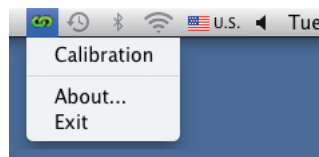
2) Double click the "LightPen3.app" on the desktop.

- Tool bar appears at the right of the screen.



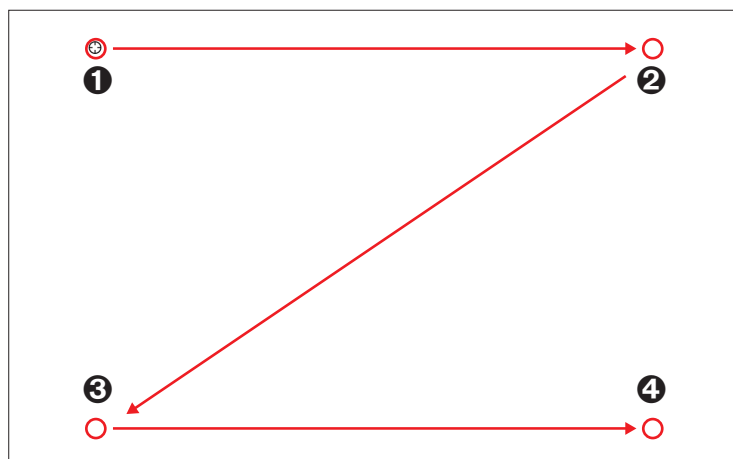
■ Perform the Calibration of the camera

3) Click the SPDriver icon on the menu bar.



4) Select the pop-up "Calibration".

- Manual calibration screen displays.



5) Press the target mark ① in the screen with the Pen.

- Each time you press the target mark, the moving order is ① → ② → ③ → ④.

6) Press the target mark ② → ③ → ④.

- The "Please wait..." message appears, and after completing the process the message will disappear.

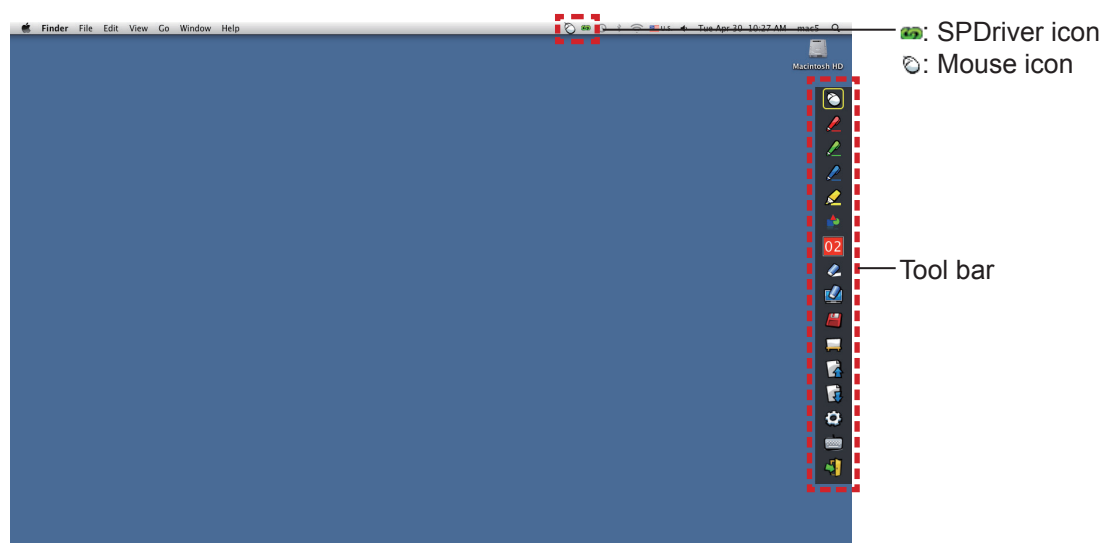
Note

















- When the position of the screen and the projector is fixed, there is no need for calibration again next time if you use the same computer at the same resolution.

For Mac OS (continued)

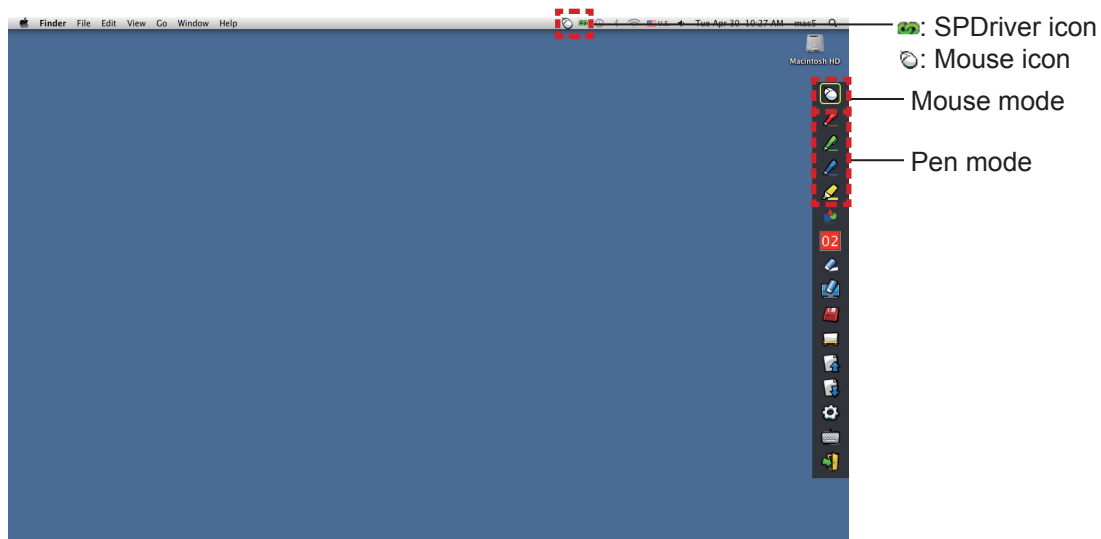
How to use the Interactive function

■ Tool bar functions



Icon	Name	Description	Page
	Mouse	To perform as a PC mouse.	-
	Red pen	To draw as a red pen.	-
	Green pen	To draw as a green pen.	-
	Blue pen	To draw as a blue pen.	-
	Marker pen	To draw as a half-transparent yellow pen.	-
	Shape tool	To draw a circle, a square, a triangle or a straight line.	30
	Line thickness and color change tool	To change the color and the thickness of the Pen.	30
	Eraser	To partially erase the pictures or lines.	-
	Erase all	To erase all the pictures or lines.	-
	Save	To save the displaying screen to the computer.	-
	Whiteboard tool	To change the background to the whiteboard mode.	31
	Previous page	To return to the previous page.	-
	Next page	To go to the next page.	-
	Editing tool	To edit the drawn pictures or lines.	32
	On-Screen Keyboard	To display the On-Screen Keyboard.	32
	Exit	To exit LightPen3.	32

■ For "Mouse mode" and "Pen mode"



● Mouse mode

The "Mouse mode" is active immediately after Startup. Use a Pen or a Pointer to move the mouse cursor.

- When using the Pen, press the tip of the Pen to the screen as the use of a normal pen.
 - When using the Pointer (Optional accessories), press and hold down the button during use.
- During mouse mode, press and hold the Pointer button or the tip of the Pen for about 2-3 seconds to do right-click.

● Pen mode

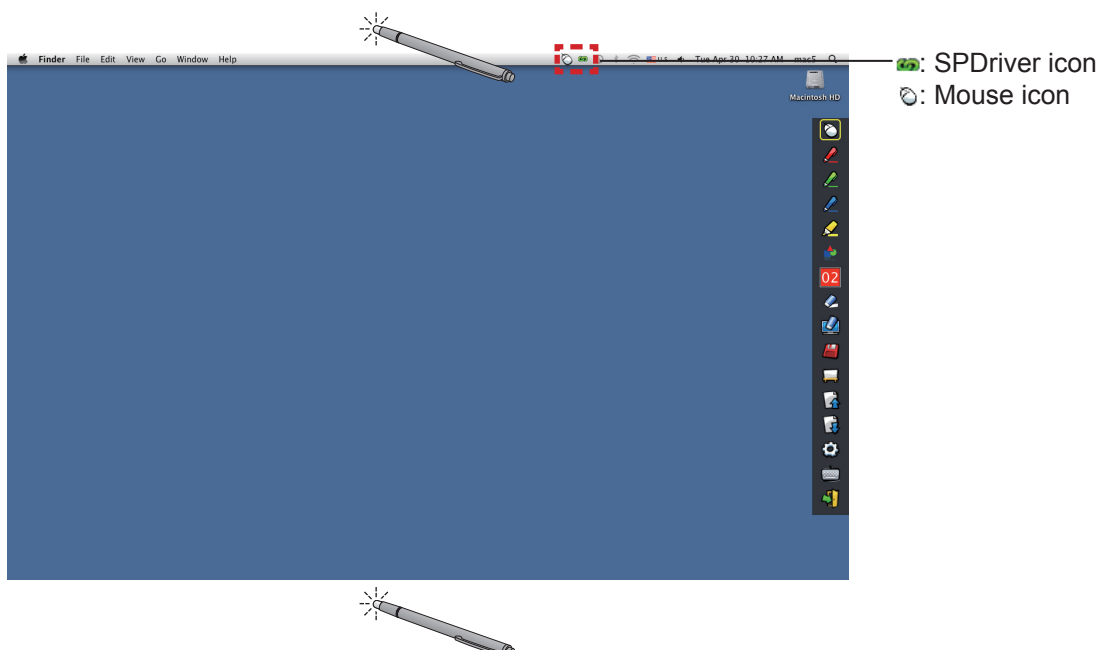
Select the Pen icon (Red pen/Green pen/Blue pen/Marker pen) from the tool bar and draw a line with a Pen or a Pointer. You can set the thickness and the color of the line.

- When using the Pen, press the tip of the Pen to the screen to draw a line as the use of a normal pen.
- When using the Pointer, press and hold down the button to draw a line.

Note

- Press the icon on the menu bar to switch the "Mouse mode" or the "Pen mode".

● Quick switch of the "Mouse mode" or the "Pen mode"

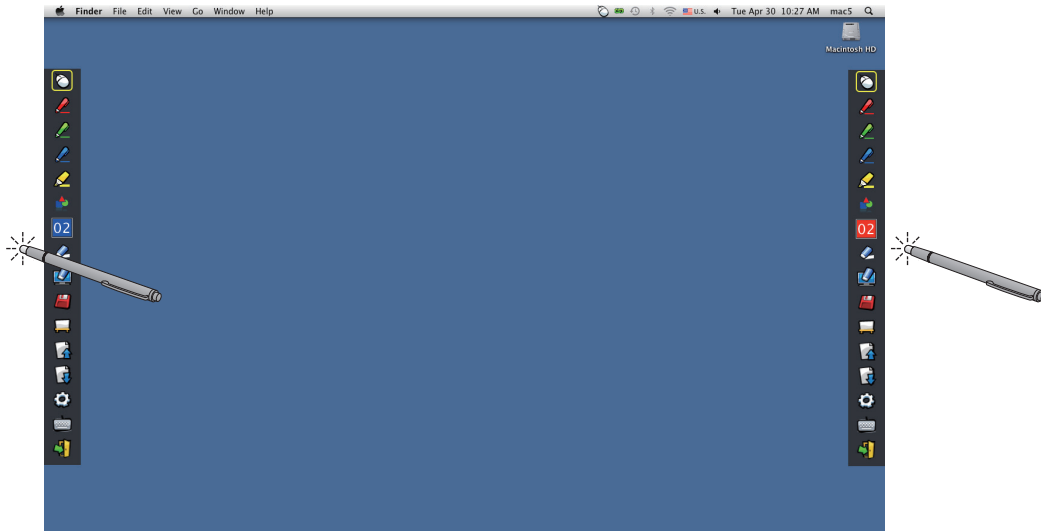


You can switch the "Mouse mode" or the "Pen mode" (Red pen/Green pen/Blue pen/Marker pen) function by simply using the Pen or the Pointer to click a little space up above or below the projection screen edge.

For Mac OS (continued)

- The Pen color is the last selected color when using "Pen mode".

■ Position changing and Displaying / Hiding of the tool bar

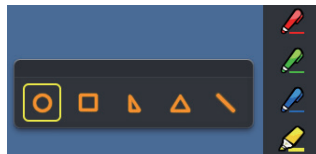


You can change the position of the tool bar or switch to display or hide of the tool bar.

- If you use the Pen or the Pointer to click a little space left to the projection screen edge, the tool bar will move to the left. To move the tool bar to the right, use the Pen or the Pointer to click a little space right to the projection screen edge.
- To switch the displaying or hiding of the tool bar, use the Pen or the Pointer to click a little space outside of the projection screen with the tool bar side.

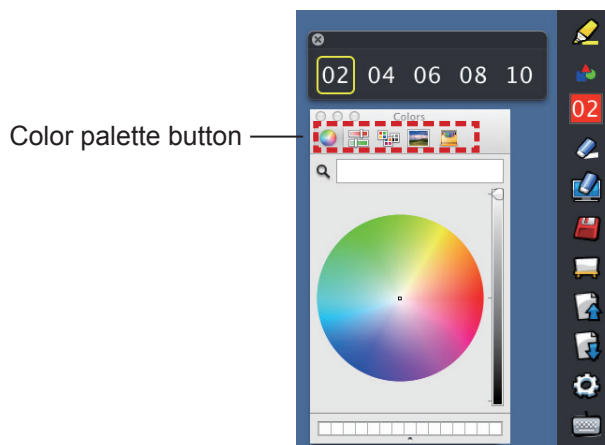
■ Shape tool

Click the "Shape tool" icon  to display the following menu and select the shape you want to draw.



■ Line thickness and color change tool

Click the "Line thickness and color change tool" icon  to display the following menu and choose the thickness or color of the line.









You can select rich color palette from the following picture in the Mac OS system.

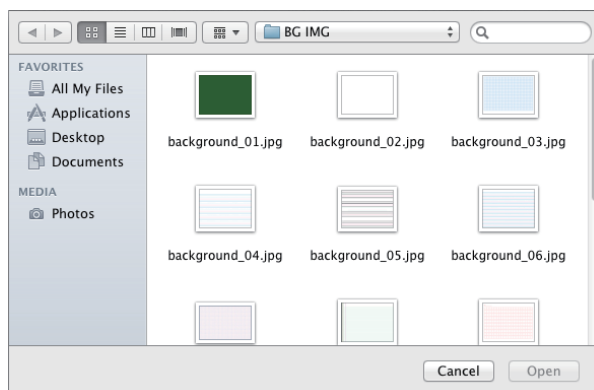
- Set the switching of the 5 types of color palette button.



■ Whiteboard tool

Select the "Whiteboard tool"  icon to make the wallpaper of the PC screen white. The  (previous page) and the  (next page) icons are replaced by the  (wallpaper selection) and the  (white wallpaper) icons.


(1) Select the  icon to open the following window where you can choose the wallpaper that you want to use.



Related whiteboard tools




(2) Select the  icon to change the wallpaper to white.





(3) To exit the Whiteboard mode, select the  icon.

For Mac OS (continued)

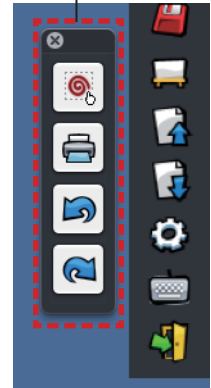
■ Editing tool

Select the  icon to display the following "Editing tool" bar and select the necessary functions of the editing work.


● Functions of Editing bar

Icon	Name	Description
	Object selecting, moving, scaling, rotating	To select, to move, to scale or to rotate the object that you draw.
	Print	To print the screen that you drew.
	Undo	To return to the last action.
	Undo canceling	To cancel the returning of the last action.

Editing tool bar




■ On-screen keyboard

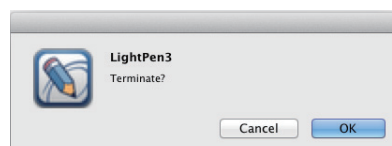
Select  icon to display the below on-screen keyboard. You can write text to a document via the "Mouse mode".




To exit the Software

■ If you want to exit the LightPen3 from the tool bar

- 1) Select the  icon (exit icon) from the tool bar.
- 2) The confirmation screen displays and press "OK" to select.



■ If you want to exit the LightPen3 from the menu bar

- 1) Click the  icon (Mouse icon) from the task bar and select **Exit**.
- 2) The confirmation screen displays and press "OK" to select.

About SP Driver

It is no need to exit the SP Driver under normal use.

■ To exit SP Driver

Click the  icon (SPDriver icon) from the menu bar and select .

■ To restart SP Driver

Double-click the "SP Driver.app" on the desktop.

To uninstall the Software and Driver

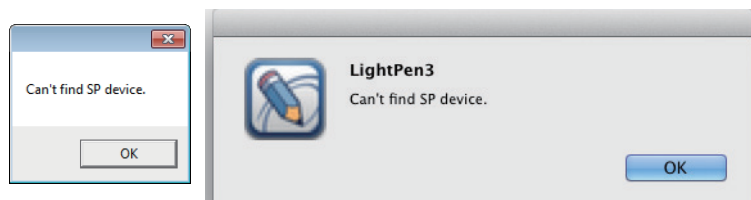
- 1) Drag or drop the "SP Driver.app" and the "LightPen3.app" from the desktop to the recycle bin.
- 2) Select the "Empty trash" for the "Finder" menu.

Troubleshooting

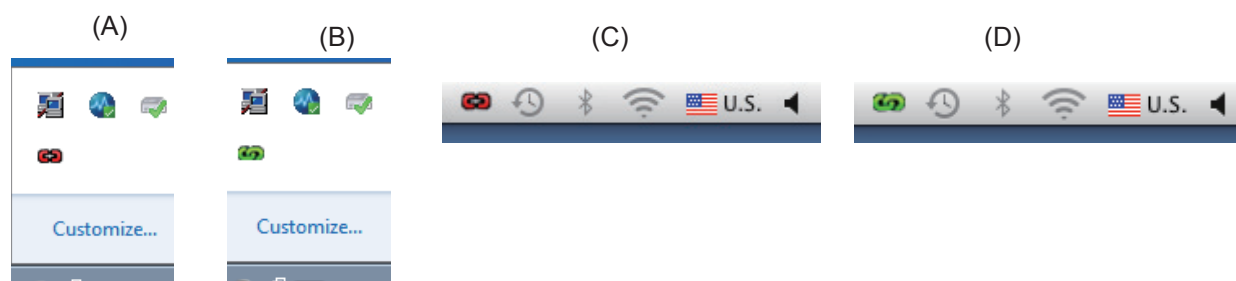
"Can't find SP device." message displays.

In this case, please check the followings.

- (1) Confirm that the USB cable is connected securely and that the USB port is functioning properly.
 - If the following warning appears, connect the projector and the computer using the supplied USB cable, and then restart the program.



If the SPDriver icon appears in red as figures (A)/(C), the USB function is not working. In this case, confirm that the USB cable is connected securely and that the USB port is functioning properly. The USB function performs normally when the icon becomes green as figures (B)/(D).



Attention:

Some antivirus softwares may disable the USB ports. Set such software to support the USB ports.

- (2) Use the supplied USB cable together with the projector. If a longer USB cable is needed, contact your dealer for details.
- (3) Confirm the USB port is functioning normally. Consult a qualified technician when it does not work.

Note:

When using a notebook computer, reduced battery capacity can result in USB ports not working. If this should occur, use AC power. Moreover, some notebook computers are unable to supply the standard current level of 500 mA from USB ports. In addition, some USB converters will not work properly. In such cases, use the supplied USB cable.

When the computer is restarted from standby mode, LightPen3 does not work.

When a computer is put into standby mode, its USB ports might be shut down. Quit the LightPen3 program once and then restart it.

The tip of the Pointer and the mouse cursor position are not the same.

This may be caused by one of the followings.

- (1) Calibration was not conducted accurately.
 - (2) After calibration, the projector or screen was moved.
 - (3) The computer resolution was changed.
- Recalibrate in any of these cases.

The mouse cursor jumps around regardless of the movement of the Pointer tip.


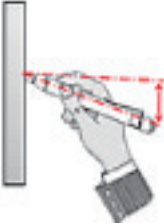
This may be caused by one of the followings.

- (1) There might be interference from a strong light nearby. Block nearby light from reaching the screen.
- (2) Since the use of remote control and infrared instruments can cause malfunction, do not use the remote control or infrared instruments when using the interactive functions within the projection range.

Under manual calibration, you can not proceed to next step even by clicking the cross mark.

(1) Check the followings.

- Is the Pen or Pointer have enough battery charge?
- Is the tip of the Pointer or Pen in shadow on the screen? If the sensor cannot detect the LED in the tip of the Pointer or Pen, it will not function.

Do not put the Pen tip in shadow.	The recommended angle is 25°.
	

(2) The surrounding light might be too bright. Move light sources further away from the projector and screen.
It often happens in the following cases.

- Sunlight is entering through a window near the screen
- There is a light source near the sensor or screen

(3) When using Windows Vista or Windows 7, the + mark at the bottom left of the screen might be hidden by the start icon. In this case, place the tip where you expect it to be and press the button.

"The ambient light is too bright to run the light pen system properly." message displays.

The surrounding light is too strong. Therefore, try to move the light source or change the location of the screen or turn off the light, also try to make use of the curtain.


The SPDriver icon does not change from red to green when using a USB cable to connect the computer to the projector.

- (1) It maybe due to the poor connection. Please unplug the USB cable and do the connection again.
- (2) It maybe due to the abnormal operation of the SPDriver. Please restart the computer.

LightPen3 software does not move smoothly.

When using some kinds of low performance computers, the interactive function may not work smoothly when using LightPen3 software. In this case, please use the LightPen3_Lite software. (➡ page 18)

The SPDriver icon does not appear.

If the SPDriver6 icon () is present on the taskbar of your computer, the SPDriver icon does not appear. Click the SPDriver6 icon and select "Exit", then use the SPDriver.

Troubleshooting (continued)

Notes for using PT-CW331R series and PT-TW331R series projector together with one computer

WINDOWS

- ① Connect the USB cable to your computer and the projector you would like to use.
- ② Setup screen of SPDriver will display.
 - ※ 1 Auto play screen display appears depending on the setting of the computer. In this case, please select "Execute the setup.exe" to display the setup screen.
 - ※ 2 Depending on the environment of your computer, it may take 1-2 minutes to appear the screen.
- ③ Click "Next" to display a confirmation dialog for installing destination location.
- ④ Click "Next" to display a confirmation dialog for overwriting the driver and then select "Yes".
- ⑤ Click "Finish".
- ⑥ Make sure that the icon on the task bar is green.
 - ※ 3 Depending on the environment of your computer, it may take 1-2 minutes for the icon to become green.
- ⑦ For the above, you can use the interactive features.

■ Step ① ~ ⑥ are required every time you need to change the projector.

MAC OS

- ① Prepare SP Driver of the projector you would like to use.
 - Obtain from CD-ROM
"SP Driver" in the MAC folder.
 - Download from WEB
"SP Driver XXXXX.dmg" (XXXXX indicated the version) will be a "SP Driver" where you mount in the disk image.
- ② When you copy it to the hard disk of the computer, change "SP Driver" to any file name you would like to.
(For example) "SP Driver" --> "SP Driver for CW series"
- ③ Double-click the name-changed SP Driver file for the projector you would like to use.
- ④ Connect the USB cable to your computer and the projector you would like to use.
- ⑤ Make sure that the icon on the menu bar is green.
 - ※ 4 Depending on the environment of your computer, it may take 1-2 minutes for the icon to become green.
- ⑥ For the above, you can use the interactive features.

■ Step ③ ~ ⑤ are required every time you need to change the projector.

LINUX

- ① Start the computer with the administrator privileges.
- ② Connect the USB cable to your computer and the projector you would like to use.
- ③ Copy the "Linux.tar" in the LNX folder of the CD-ROM to the hard disk.
- ④ In this case, change "Linux.tar" to any file name you would like.
(For example) "Linux.tar" --> "Linux for CW series.tar"
- ⑤ Unzip the name-changed "Linux.tar" file to the projector you would like to use.
- ⑥ Double-click "1-setup" in the Linux folder.
- ⑦ Make sure that the icon on the menu bar is green.
 - ※ 5 Depending on the environment of your computer, it may take 1-2 minutes for the icon to become green.
- ⑧ For the above, you can use the interactive features.

■ Step ② ~ ⑦ are required every time you need to change the projector.

Suffix (For Linux)

Install the Linux dedicated SPDriver in the Linux system computer. The Drawing application dedicated for Linux is not included in the CD-ROM contents and the "Pen function" does not work. You can use the Pen or the Pointer as a PC mouse function on the projection screen.

System requirements

The computer must meet the following requirements in order to install the SPDriver.

OS	Linux OS Ubuntu v10.04, Debian v5.0, Suse v11
CPU	Intel Core 2 Duo 2.0 GHz or more (dedicated GPU is recommended)
Memory	2 GB or more
Free space on the hard disk	100 MB or more

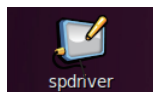
Note

- Please notice that it is not guaranteed of the proper operations for system requirements other than the above mentioned requirements or for the self-made computers.

Even all the requirements are meet, there is not guaranteed operations for all computers.

How to install the Driver

- 1) Before installation, use a USB cable to connect the projector to the PC, and Start the computer with administrator privileges.
- 2) Insert the software recorded CD-ROM into the CD drive.
- 3) Open the "LNX" folder and copy the "Linux.tar" on to the desktop.
- 4) Take the CD-ROM out from the CD drive.
- 5) Double click the "Linux.tar" → "Linux" → "1-setup".
 - spdriver icon and "Installed successfully" messages display on the desktop.



Suffix (For Linux) (continued)

Interactive functions initial settings

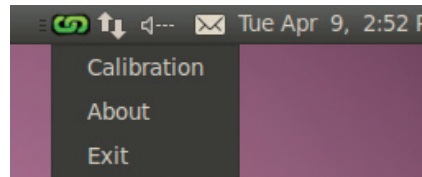
First, carry out the calibration for the projector sensor to accurately recognize the position of the projected screen.

■ Perform the Calibration of the camera

1) Connect the computer to the projector via a USB cable.

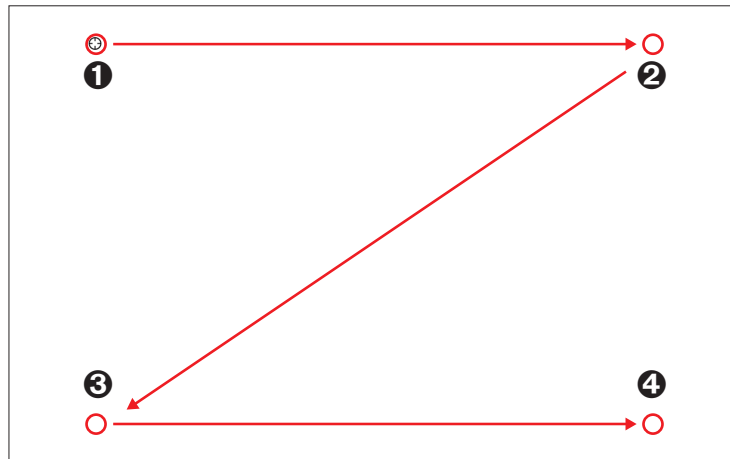
- The SPDriver icon in the taskbar turns from red into green.

2) Click the SPDriver icon in the taskbar.



3) Choose the pop-up "Calibration"

- The manual calibration screen displays.



4) Press the target mark ❶ in the screen with the Pen.

- Each time you press the target mark, the moving order is ❶ → ❷ → ❸ → ❹.

5) Press the target mark ❷ → ❸ → ❹.

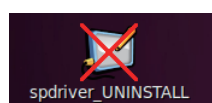
- The "Please wait..." message appears, and after completing the process the message will disappear.

Note

- When the position of the screen and the projector is fixed, there is no need for calibration again next time if you use the same computer at the same resolution.

To uninstall the Driver

1) Double click the "spdriver_UNINSTALL" on the desktop.



- "Uninstalled successfully" message will display when uninstallation finishes.

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