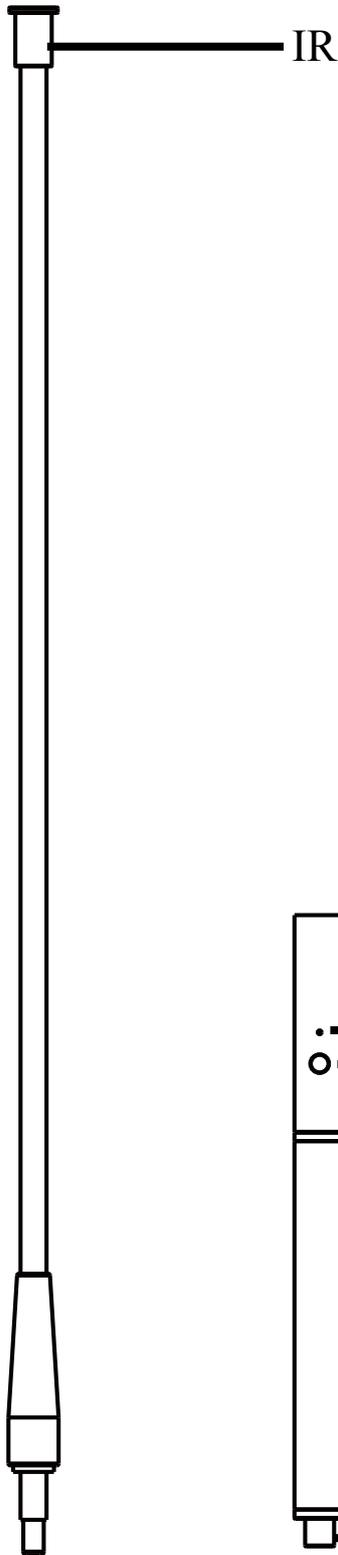


INTERACTIVE FUNCTION MANUAL

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Operation Guide for Windows OS.....	4
Operation Guide for Mac.....	22
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Accessories Introduction

Function Key on the "Pointer Body"



Before using the Pointer.

Screw the Rod part into the pointer body firmly please.

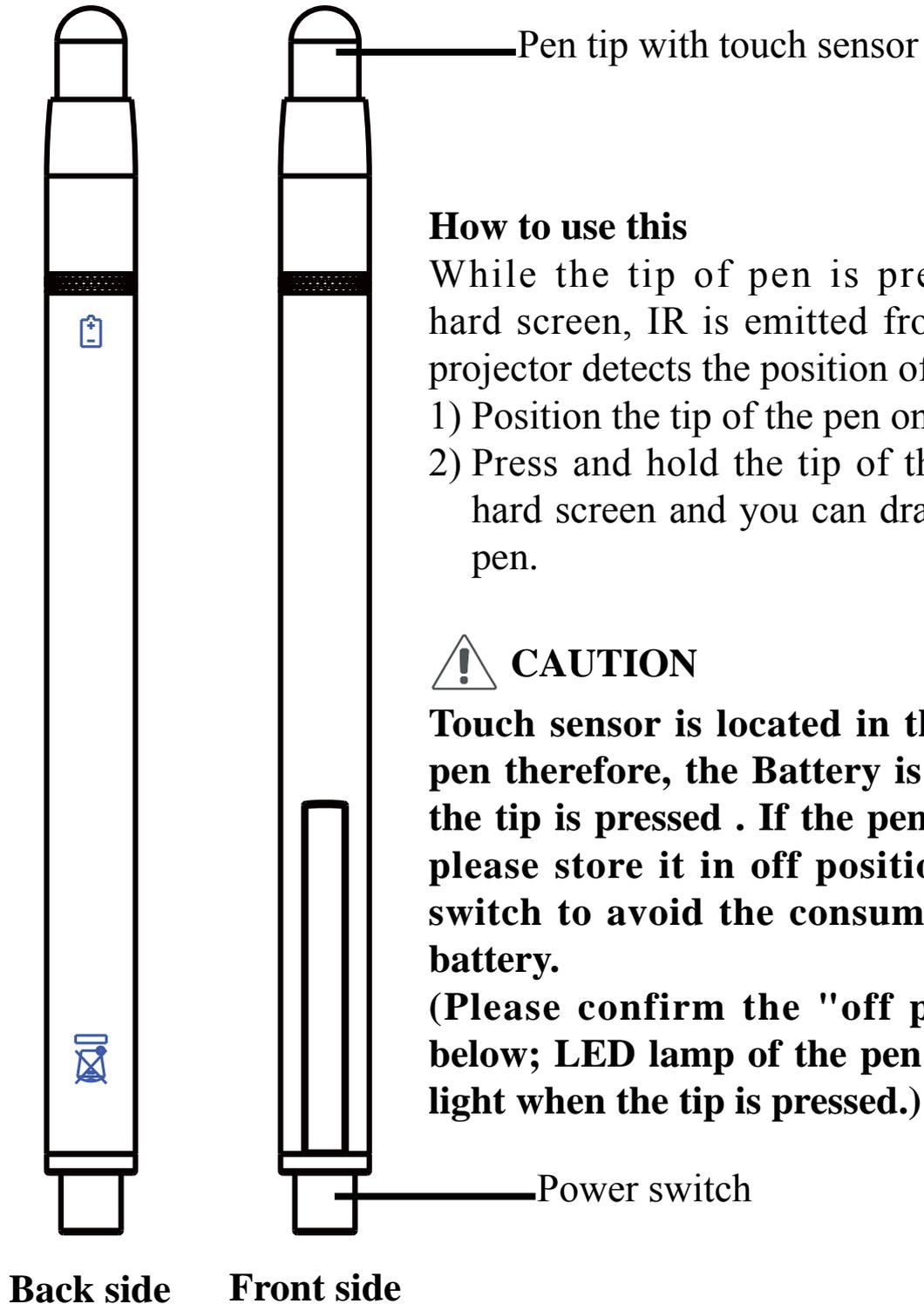
How to use this

While pressing the button IR is emitted from the tip of the rod and the CMOS sensor in the projector detects the position of it. While the signal is emitted, the LED Lamp also lights green.

- 1) Position the tip of pointer on the screen.
- 2) Push the button to click the target as a mouse or push and hold the button to draw a line as a pen.

Accessories Introduction

Function Key on the "Light Pen"



How to use this

While the tip of pen is pressed to the hard screen, IR is emitted from it and the projector detects the position of it.

- 1) Position the tip of the pen on the screen.
- 2) Press and hold the tip of the pen to the hard screen and you can draw a line as a pen.



CAUTION

Touch sensor is located in the tip of the pen therefore, the Battery is consumes if the tip is pressed . If the pen is not used, please store it in off position of Power switch to avoid the consumption of the battery.

(Please confirm the "off position" as below; LED lamp of the pen tip does not light when the tip is pressed.)

Operation Guide for Windows OS

Interactive function is provided by "LightPen-Dual" software.

1. System Requirements

To ensure the interactive function work properly, please check your computer system to see if it meets the following conditions.

LightPen-Dual

System Requirements	
OS Required	Microsoft Windows 7 / 8 / 10
Processor Type	Intel® Core™ i3 or above (dedicated GPU is recommended)
RAM	2GB above
Min. Free disk space	100 MB

Operation Guide for Windows OS

2. Software Installation

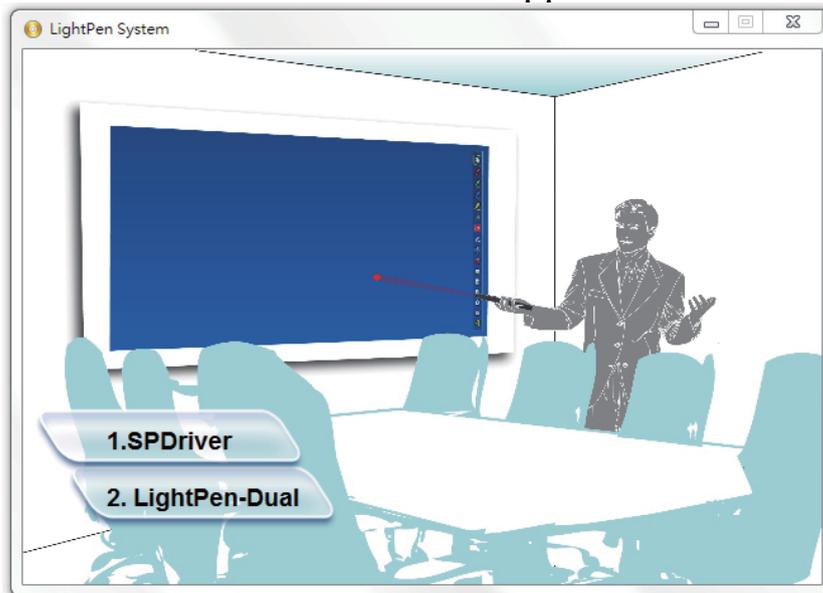
2.1 Driver Installation

Step 1. Insert the "Owner's Manual" CD-ROM into the CD drive.

Step 2. Open the "LightPen Software for Windows" folder in the CD-ROM.

Step 3. Double click " Setup.exe" by mouse.

And then the window will appear as below.

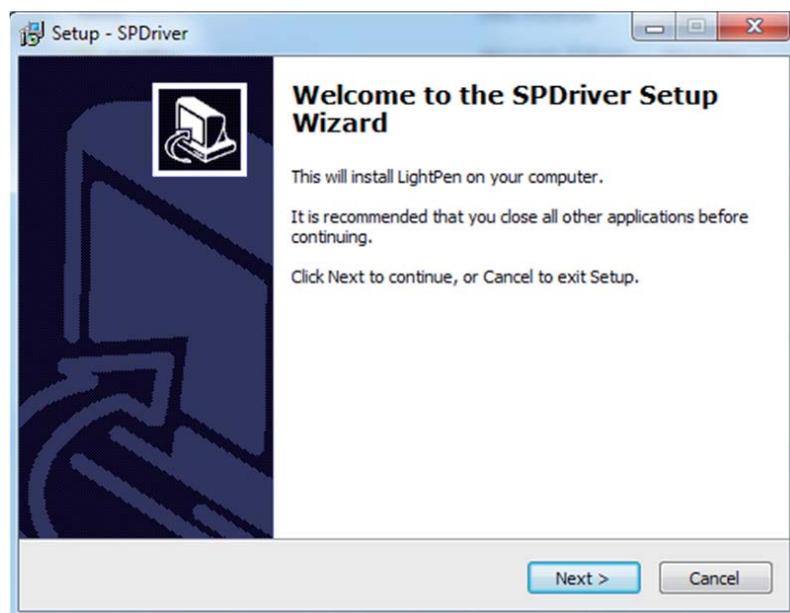


Step 4.

(1) click " SPDriver" by mouse.

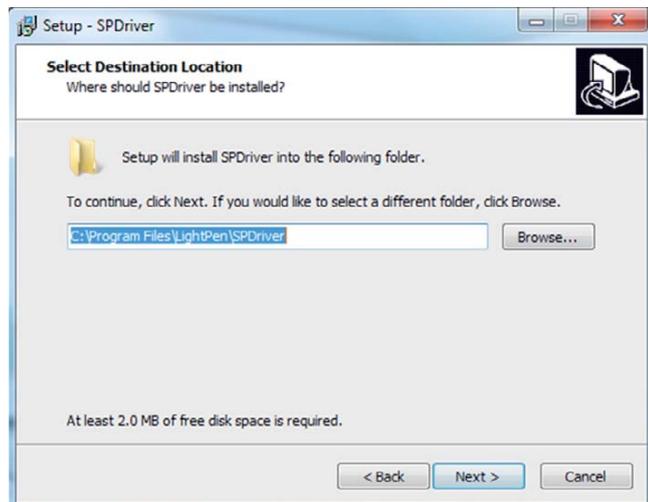
And then "Setup Wizard" window will appear as below.

Click "Next" to install.

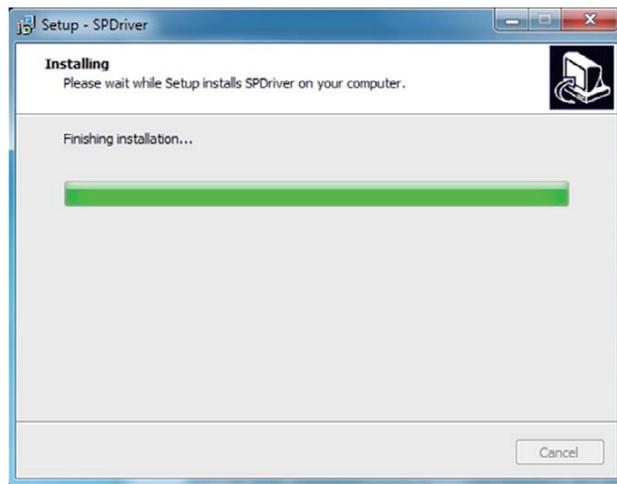


Operation Guide for Windows OS -SPDriver

- (2) You can choose to install folder depend on your requirements, or use the default folder. Then click "Next" to continue.



- (3) Please wait for a while for the installation. Installation is finished.



Operation Guide for Windows OS _LightPen-Dual

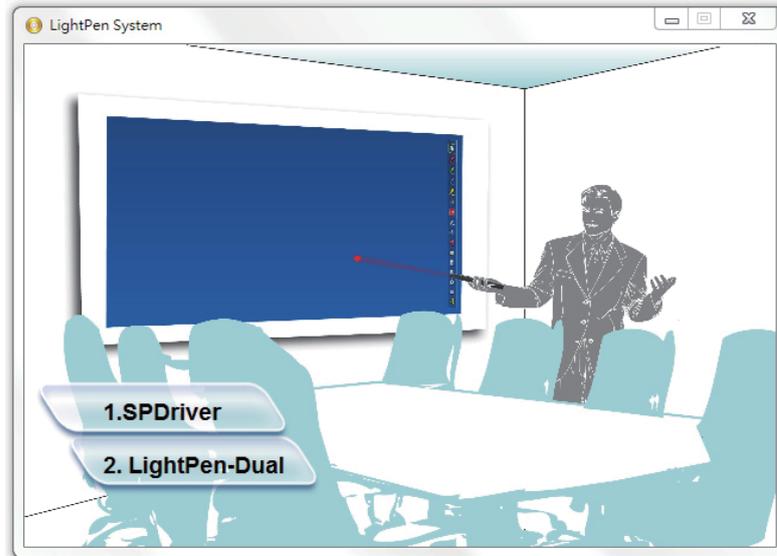
2.3 LightPen Software Installation

Step 1. Insert the "Owner's Manual" CD-ROM into the CD drive.

Step 2. Open the "LightPen Software for Windows" folder in the CD-ROM.

Step 3. Double click " Setup.exe" by mouse.

And then the window will appear as below.



Step 4.

(1) click " LightPen-Dual" by mouse.

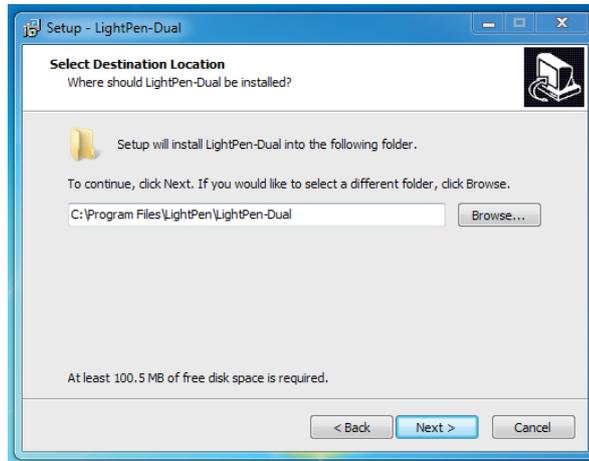
And then "Setup Wizard" window will appear as below.

Click "Next" to install.

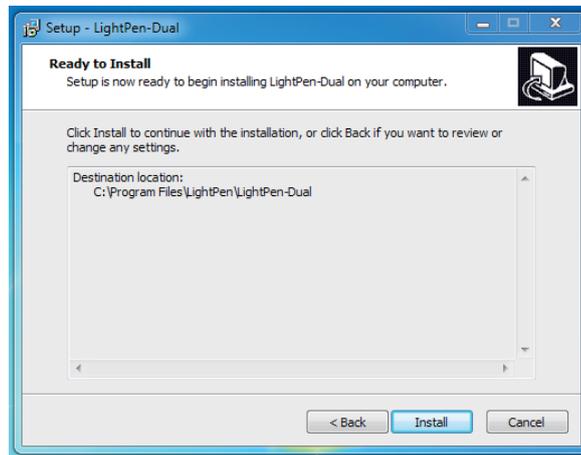


Operation Guide for Windows OS _LightPen-Dual

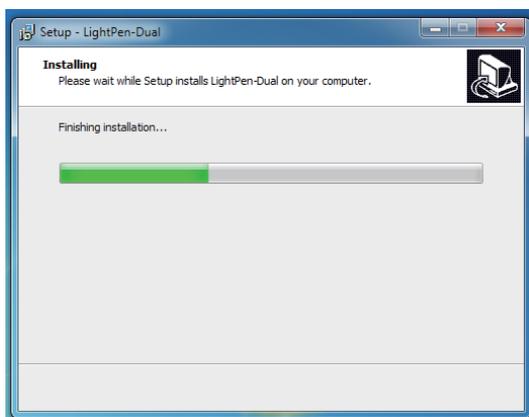
(2) You can choose to install folder depend on your requirements, or use the default folder. Then click "Next" to continue.



(3) Confirm the information listed and select "Install".



(4) Please wait for a while for the installation. Installation is finished.



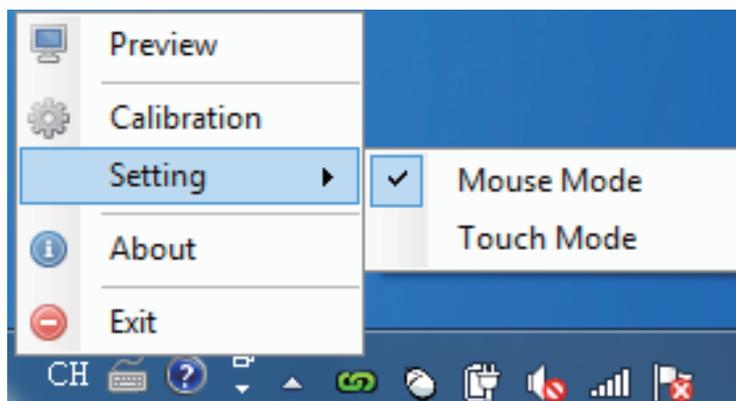
Operation Guide for Windows OS -SPDriver

3. Initial Setup for Interactive Function

3.1 After SPDriver finished, from "Start Menu/LightPen/SPDriver/SPDriver" to execute it. Connect supplied USB cable between projector and your PC which show below icon.



3.2 Click the mouse left key on the  icon in the task bar to show the menu.



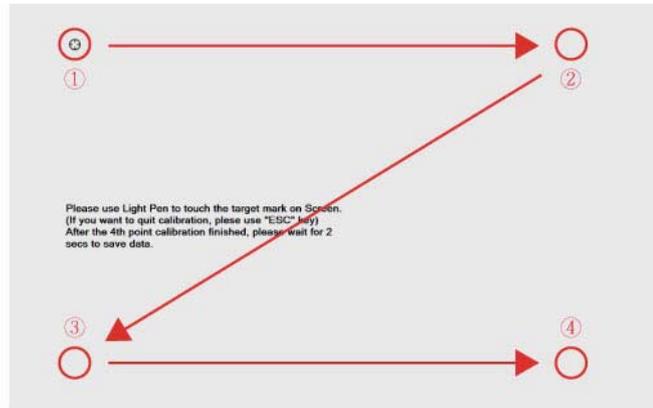
(Windows 7)

* *The Microsoft Windows 7 OS support multi-point touch control. When using your projector with a PC running Microsoft Windows 7 OS, you may select to use the default Mouse mode or the Multi-point Touch Control mode.*

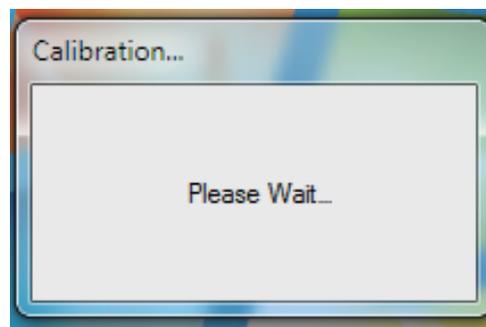
* *Microsoft Windows 8 OS support touch mode only.*

Operation Guide for Windows OS -SPDriver

3.3 Select the "Calibration" to enter the calibration process. Use your pen or pointer to touch the circle shown on the screen. Then another circle appear, repeat this process until the 4th circle is finished.



3.4 After calibration by 4 points on the screen, PC system will save data, as shown as below, please wait.



3.5 After you have finished calibration, you can use either pen or pointer as a mouse on the projection board or wall.

Operation Guide for Windows OS _LightPen-Dual

4.2 Function of each icon in the Tool bar

Icon		Description
	Mouse	Change function to Computer Mouse.
	Red pen	Change function to red pen.
	Green pen	Change function to green pen.
	Blue pen	Change function to blue pen.
	Marker pen	Change function to marker pen.
	Drawing tool	Draw a circle, a square, a triangle or a straight line.
	Fineness and color of pen	Select the fineness and color of pen.
	Eraser	Erase drawing.
	Clean all	Erase drawing on the screen all at once.
	Save file	Save the current page into file in computer.
	Dual Pen	<Full Screen Mode> / <Split Screen Mode> support two pens writing at the same time
	White Board	Change function to white board.
	Page up	Go to last page.
	Page down	Go to next page.
	Edit tool	Edit drawing.
	Keyboard	On screen keyboard.
	Exit	Exit the application.

4.3 Advanced function in Tool bar

(1) Drawing Tool

Select , then Drawing Tool function menu will be shown on the screen as below. Please select the icon you want to use.



(2) Dual Pen

Select , then Dual Pen Mode setting menu will be shown on the screen as below. Please choose the screen mode to use.

Icon	Description
	Use two pens at the same time on full screen by same setting
	Use two pens at the same time on two split screen by different setting



Operation Guide for Windows OS _LightPen-Dual

(2.1) <Full Screen Mode>

Use two pens at the same time on full screen by same setting.



<Split Screen Mode>

Use two pens at the same time on two split screen by different setting.



Operation Guide for Windows OS _LightPen-Dual

(2.2)The description of two pens function

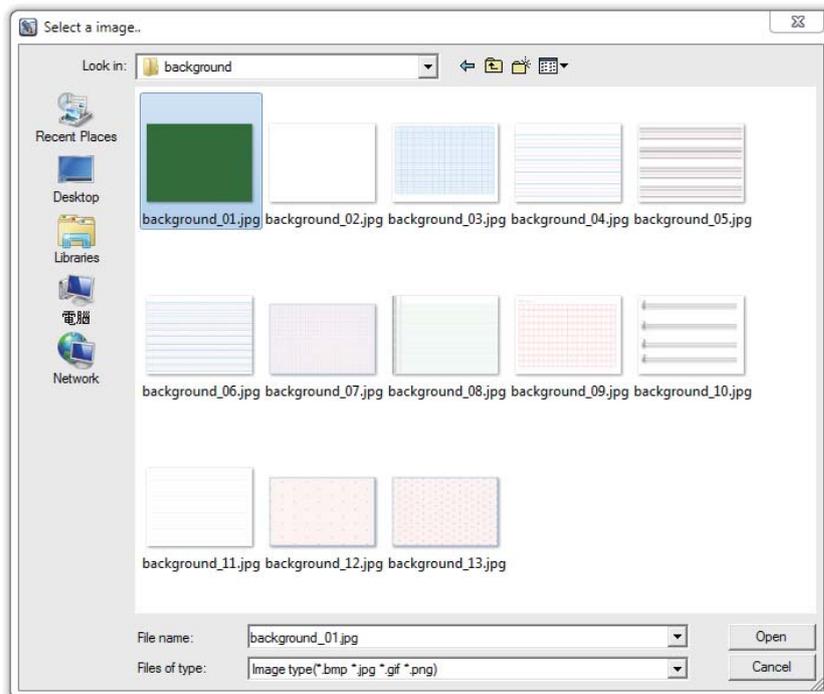
Icon		Description
	Red pen	Change function to red pen.
	Green pen	Change function to green pen.
	Blue pen	Change function to blue pen.
	White pen	Change function to white pen.
	Thin round pen	Draw with a thin round script.
	Thick round pen	Draw with a thick round script.
	Thick angle pen	Draw with an angle script.
	Eraser	Erase drawing.
	Clean all	Erase drawing on the screen all at once.
	Insert Image	Insert an image as the background.
	Save file	Save the current page into file in computer.
	Exit	Exit the application.

Operation Guide for Windows OS _LightPen-Dual

(3) Whiteboard Mode

Select  screen will change to white color background. Original Page up  and Page down  function icon on Toolbar also change to  import background icon and  import whiteboard icon.

i. Select , you can see the below interface. You can select any picture you want to be used on background.



ii. Select , background will turn to White board mode.

If you want to exit White board mode, just click  again.

Operation Guide for Windows OS _LightPen-Dual

(4). Edit Tool

Select , edit tool bar is shown as blow. Please select the function you want to use.

Icon	Description
	Select drawing line as an object. An object can enlarge, decrease, or move.
	Rotate the drawing object you choice.
	Print the current page you are seeing.
	Undo the last operation.
	Redo the last operation.
	Spotlight function.
	Curtain function.
	change the vertical toolbar to a horizontal toolbar.
	switch the toolbar position to the right/left side.



4.4 Mouse Mode

Mouse pointer can be replaced by the Pointer or LightPen.

The left click or double click can be done by pressing the button when using Pointer or the tip of the Light Pen on the screen.

If mouse pointer stays at the same position for 2-3 seconds, then it can be automatically changed to mouse right key function.



Operation Guide for Windows OS _LightPen-Dual

4.5 Switch to Mouse or Pen mode

Mouse mode or Pen mode can be changed by clicking the tip of the Pointer or the Pen on the top or bottom edge slightly outside of the projected image.

In case of the Mouse mode,  icon is shown in the task bar.

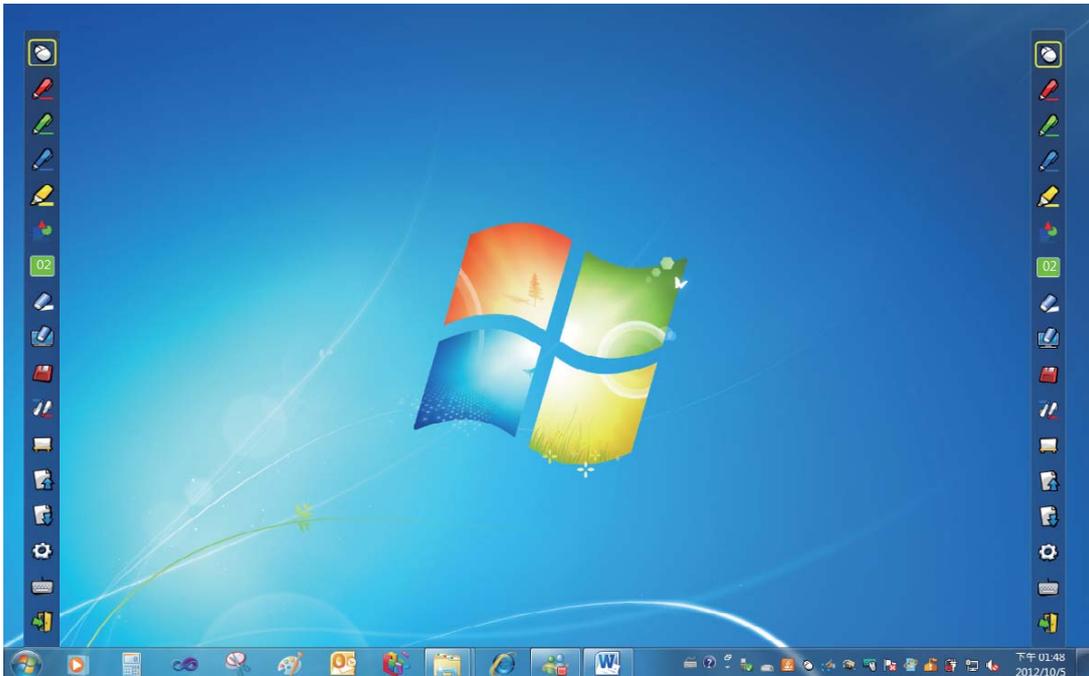
In case of the Red Pen mode,  icon is shown in the task bar.



Menu icon with yellow square mark is shown in the tool bar therefore, it is convenience to confirm the present situation.

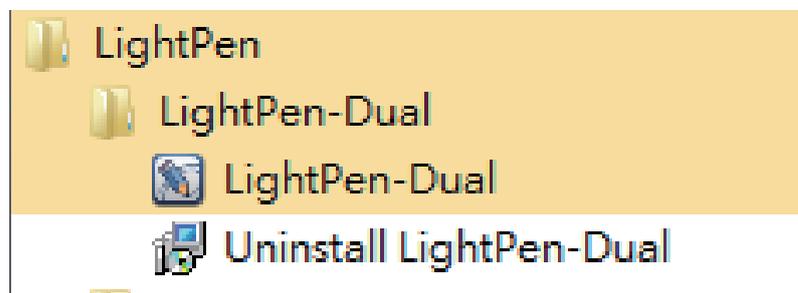
4.6 Change Toolbar Location

There is a quick way to change the position of the tool bar or hide/show it. Place the tip of "Pointer" or "Light Pen" on the left or right edge slightly outside the projected image, then press the button of the pointer or the tip of the pen to the screen.



4.7 How to execute LightPen-Dual software again

Execute the driver from "Start Menu / LightPen / LightPen-Dual / LightPen-Dual".

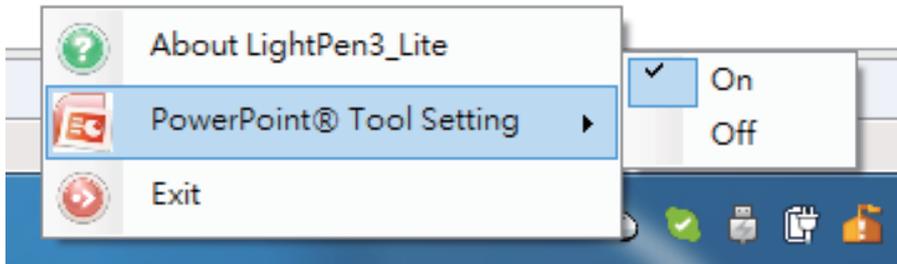


Operation Guide for Windows OS

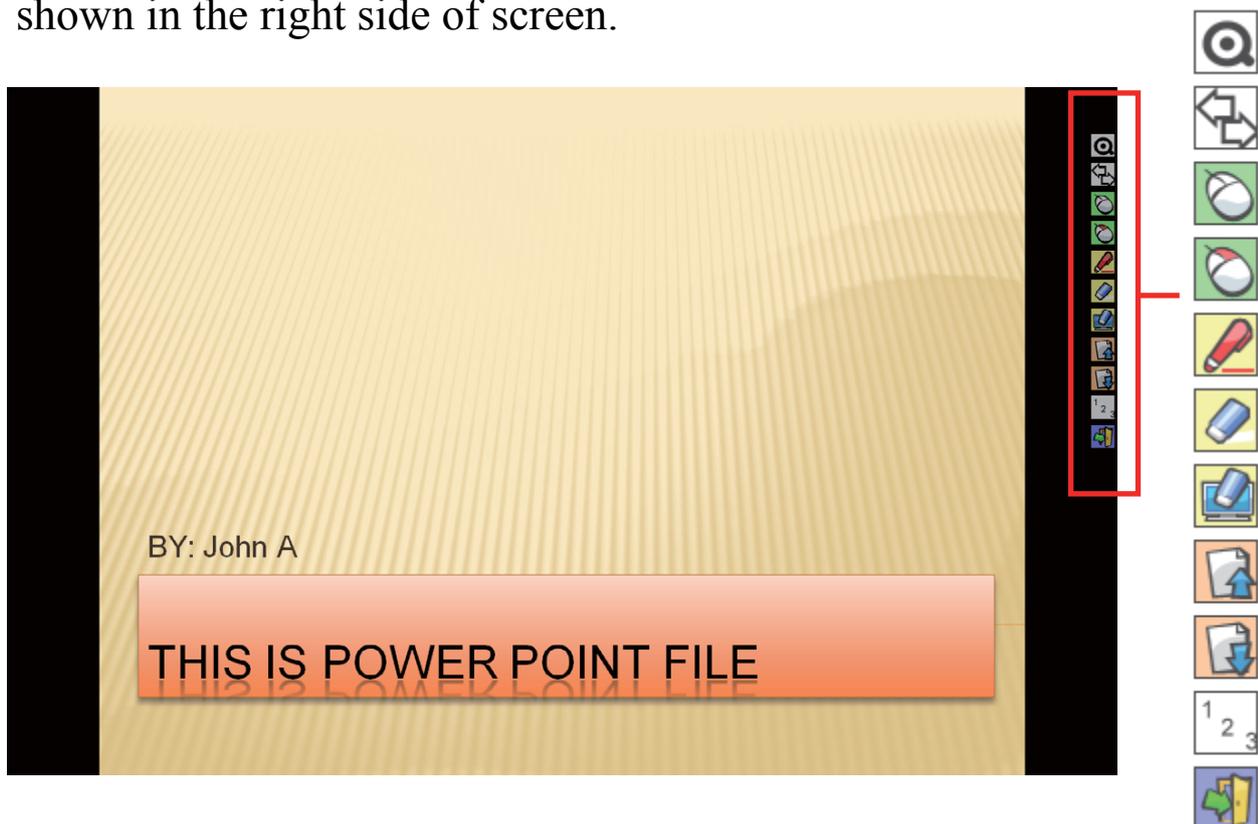
5. PowerPoint® Tool

This function can be executed by LightPen-Dual and LightPen3_Lite.

The PowerPoint® Tool does not support Microsoft Office PowerPoint® 2002.



If you click mouse icon on the task bar and select "PowerPoint® Tool setting" as "ON", when you use PowerPoint® and show your PowerPoint® file as "Presentation mode", PowerPoint® tool will be shown in the right side of screen.



When you exit "Presentation mode", PowerPoint® tool will be closed automatically.

Operation Guide for Windows OS

5.1 Function of each icon in PowerPoint® Tool bar

Icon	Description
	Make toolbar as a small icon.
	Change PowerPoint® Toolbar to another side.
	Change function to Computer Mouse.
	Change function to Computer Mouse Right Key.
	Change function to red pen.
	Erase drawing.
	Erase drawing on the screen all at once.
	Go to last page.
	Go to next page.
	Select page.
	Exit Presentation Mode.

Operation Guide for Mac

Interactive function is provided by "LightPen3" software

1. System Requirements

To ensure the interactive function work properly, please check your computer system to see if it meets the following conditions.

LightPen3

System Requirements	
OS Required	Mac OS X v10.12 ~ 10.15
Processor Type	Intel processeor
RAM	2 GB above
Min. Free disk space	100 MB

2. Software Installation

2.1 Driver Installation

※When you connect supplied USB cable between projector and your PC, the folder of SPDriver will pop-up. Please completed the installation process from step 3.

Step 1. Insert the "Owner's Manual" CD-ROM into the CD drive.

Step 2. Open the "LightPen Software for Mac" folder in the CD-ROM and copy“mac.zip” to the disk.

Step 3.Double click and move SPDriver ICON to computer screen and execute it.

2.2 LightPen Installation

Step 1. Insert the "Owner's Manual" CD-ROM into the CD drive.

Step 2. Open the "LightPen Software for Mac" folder in the CD-ROM and copy“LightPen3.zip” to the disk.

Step 3.Double click and move LightPen3 ICON to computer screen and execute it.

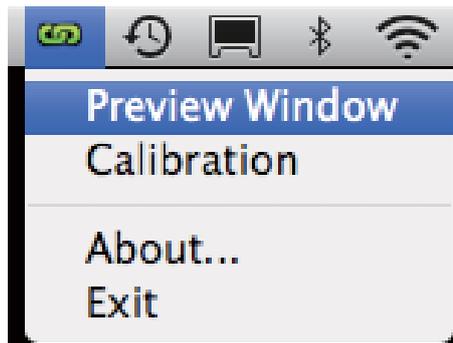
Operation Guide for Mac

3. Initial Setup for Interactive Function

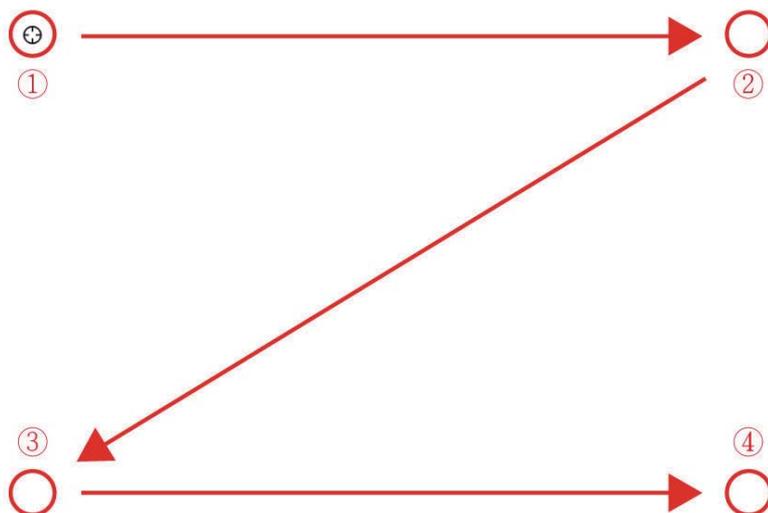
3.1 Connect supplied USB cable between projector and your PC which show below icon.



3.2 Click the mouse left key on the  icon in the task bar to show the menu.



3.3 Select the "Calibration" to enter the calibration process. Use your pen or pointer to touch the circle shown on the screen. Then another circle appear, repeat this process until the 4th circle is finished.



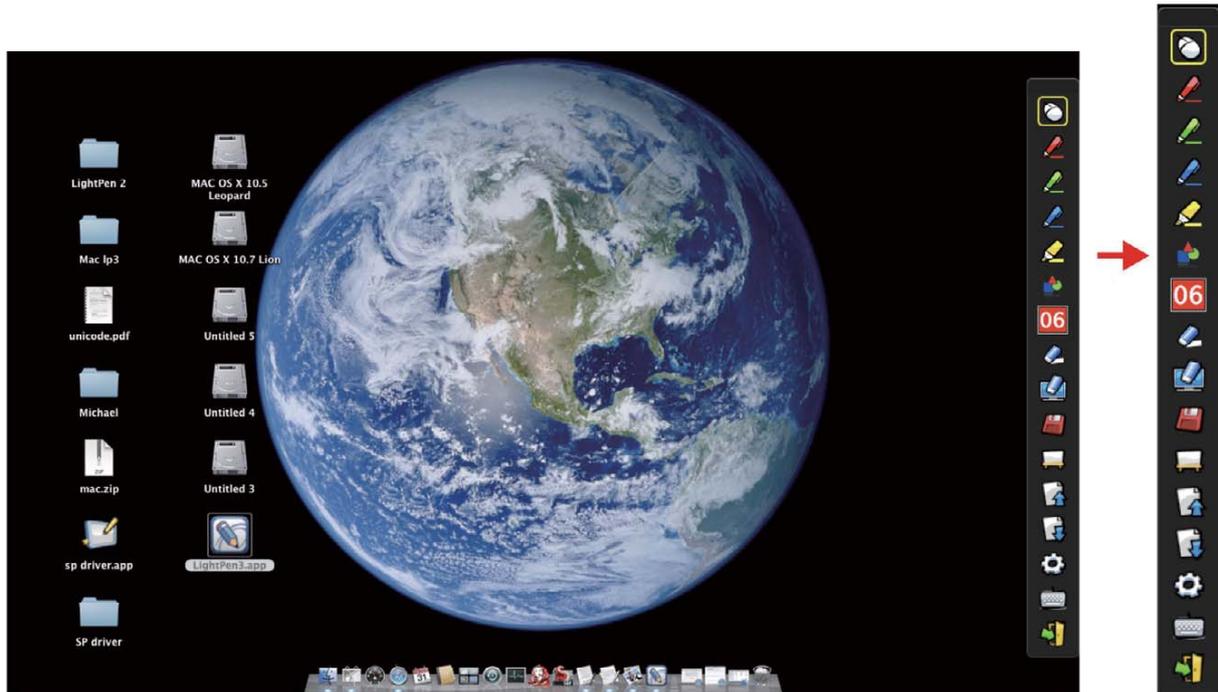
3.4 After you have finished calibration, you can use either pen or pointer as a mouse on the projection board or wall.

Operation Guide for Mac -LightPen3

4. How To Use Interactive Function in LightPen3

4.1 LightPen-Dual Function

When you complete the installation of LightPen3 and start it, you see the tool bar in the right side as shown below.



Operation Guide for Mac -LightPen3

4.2 Function of each icon in the Tool bar

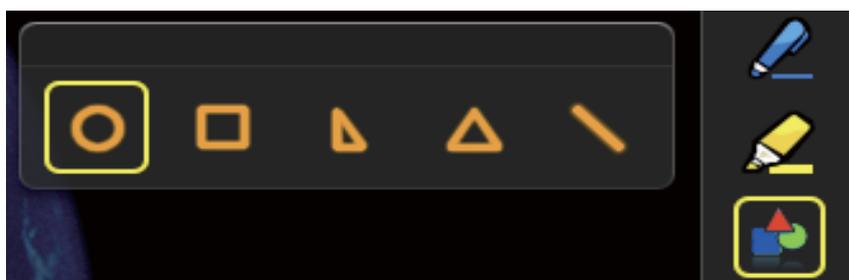
Icon		Description
	Mouse	Change function to Computer Mouse.
	Red pen	Change function to red pen.
	Green pen	Change function to green pen.
	Blue pen	Change function to blue pen.
	Marker pen	Change function to marker pen.
	Drawing tool	Draw a circle, a square, a triangle or a straight line.
	Fineness and color of pen	Select the fineness and color of pen.
	Eraser	Erase drawing.
	Clean all	Erase drawing on the screen all at once.
	Save file	Save the current page into file in computer.
	White Board	Change function to white board.
	Page up	Go to last page.
	Page down	Go to next page.
	Edit tool	Edit drawing.
	Keyboard	On screen keyboard.
	Exit	Exit the application.

Operation Guide for Mac -LightPen3

4.3 Advanced function in Tool bar

(1) Drawing Tool

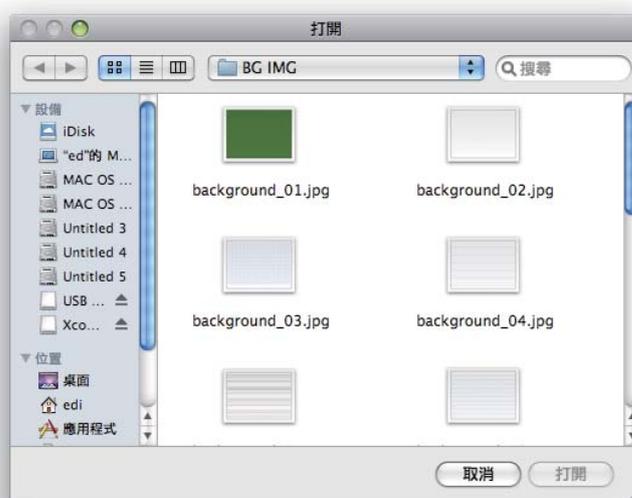
Select , then Drawing Tool function menu will be shown on the screen as below. Please select the icon you want to use.



(2) Whiteboard Mode

Select , screen will change to white color background. Original Page up  and Page down  function icon on Toolbar also change to  import background icon and  import whiteboard icon.

- i. Select , you can see the below interface. You can select any picture you want to be used on background.



Operation Guide for Mac-LightPen3

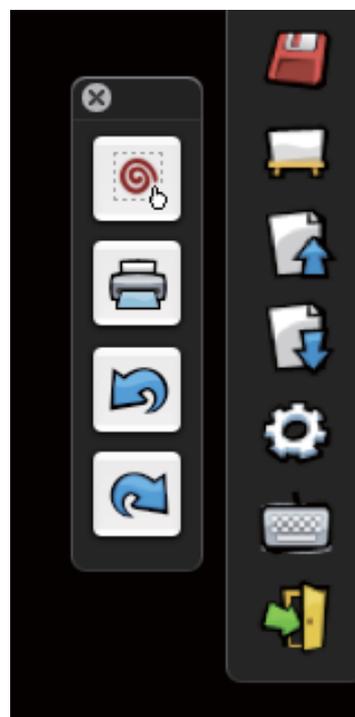
ii. Select , background will turn to White board mode.

If you want to exit White board mode, just click  again.

(3).  Edit Tool

Select , edit tool bar is shown as blow. Please select the function you want to use.

Icon	Description
	Select drawing line as an object. An object can enlarge, decrease, rotate, delete or move .
	Rotate the drawing object you choice.
	Print the current page you are seeing.
	Undo the last operation.
	Redo the last operation.



Operation Guide for Mac -LightPen3

4.5 Switch to Mouse or Pen mode

Mouse mode or Pen mode can be changed by clicking the tip of the Pointer or the Pen on the top or bottom edge slightly outside of the projected image.

In case of the Mouse mode,  icon is shown in the task bar.

In case of the Red Pen mode,  icon is shown in the task bar.



Menu icon with yellow square mark is shown in the tool bar therefore, it is convenience to confirm the present situation.

Operation Guide for Mac-LightPen3

4.6 Change Toolbar Location

There is a quick way to change the position of the tool bar or hide/show it. Place the tip of "Pointer" or "Light Pen" on the left or right edge slightly outside the projected image, then press the button of the pointer or the tip of the pen to the screen.



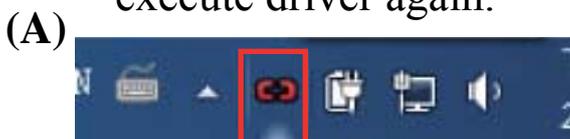
Troubleshooting

1. Q: Why does it show “No LightPen found”?

A: Reasons for this might be:

(1) The USB cable does not be connected PC with Projector properly. Please check if the USB cable has been connected PC with Projector properly.

(1-1) If screen is shown as following images, it means you should connect the USB cable with PC and Projector, then execute driver again.



(1-2) In case of Windows OS, if the following image (A) pop up, it indicates that USB cable is not connected or the USB port is out of order. If icon is shown as (B), it means you can use LightPen program.



(2)The USB cable is not proper. Please use the one included with projector. If you need more length, please contact your dealer.

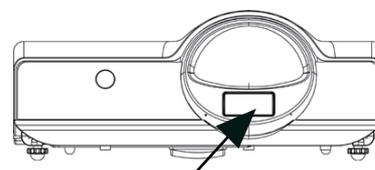
(3)USB port on computer malfunctions. Please check if the USB port is functioning or not. If not, please consult with IT engineer.

2. Q: Why I cannot execute calibration on the circle target mark?

A: (1) Please check if "Pointer" or "Light Pen" works:

(1-1) Please check if "Pointer" or "Pen" battery is low or battery cap is loose.

(1-2) When using "Pointer" or "LightPen", be sure to locate the tip of the "Pointer" or "LightPen" in the site of the CMOS sensor in front of the projector. If the sensor cannot see it, the Interactive system does not work.



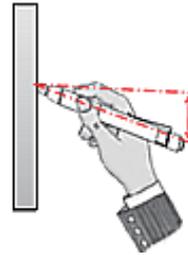
CMOS Sensor

Troubleshooting

The writing should be avoided in the shadows.



Using Light pen to maintain 25° or above with projection screen.



- (2) The ambient light may be too strong. Take the light out of the site of the CMOS sensor.

Strong ambient light is usually caused by the following:

(2-1) Sunlight through the windows near the screen.

(2-2) Light source working close to the sensor or the screen.

Please quit the SPDriver and execute again, if you see the window shown as Question5. Please take the light out until you can't see any light in Window.

3. Q: Why the cursor is not at the position that "Pointer" or "LightPen" pointed to?

A: Possible reasons for this are:

- (1) The system is not calibrated well. Try to point to the "center" of circle target when you run calibration.(See Page 10 or 23)
- (2) The position of the projector, screen or projection size has been changed.
- (3) The image resolution has been changed.

Running the calibration procedure again will solve the problem.

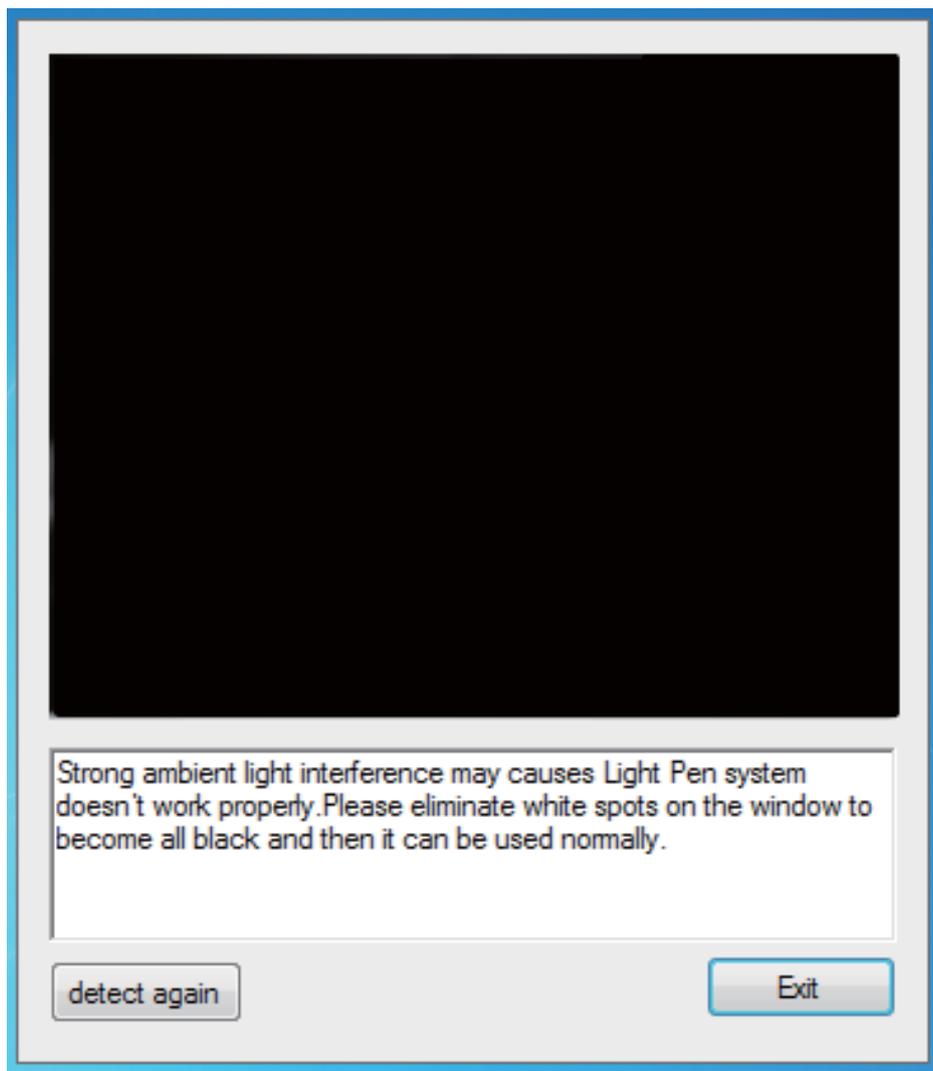
4. Q: Why is the cursor jumping?

A: This may be caused by strong ambient light interference. Try to avoid strong ambient light interference, especially strong sun light directly projected on the screen. (Please refer to the Question 2-2.)

Troubleshooting

5. Q: Why does the window screen appear "Strong lighting in the environment may cause light pen to stop functioning normally." ?

A: If this window is shown automatically after you start LightPen software, it is because the ambient light is too strong. The light is shown white in the window. Please take off the light out of the sensor's site by moving the screen or turning off the light or using curtains etc..



Troubleshooting

6.Q: How come the SPDriver have no response of virtual keyboard function when the setting of SPDriver as <Mouse mode> on Windows 7 operating system ?

A: Ther virtual keyboard function of SPDriver may be restricted by the default setting of the <User Account Control, UAC> on the Windows operating system. User can modify the setting by following steps.

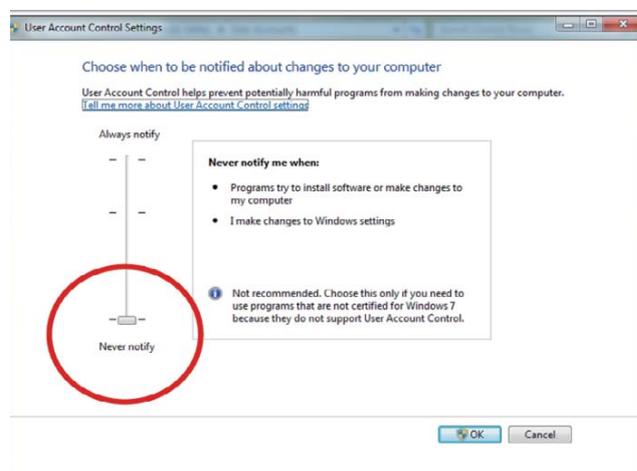
(1) Choose the setting page from <Start menu / Control Panel / User Accounts>.



(2) Select <Change User Account Control settings>.

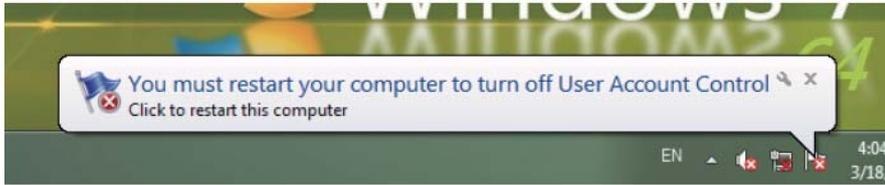


(3) Change the level of User Account Control as "Never notify", then click "OK" to confirm.



Troubleshooting

(4) Restart the computer to complete the process.



Note: Since SP driver is resident in the PC, the driver displayed is an invalid one when connects to the SP module again.