FINGER TOUCH PORTABLE INTERACTIVE WHITEBOARD

FP3 BOARD MANUAL

V4.0

Contents

Introduction

Portable Finger Touch Interactive Whiteboard (FP3 Board as bellows) is the first one that supports finger touch and very convenience to take in the world. It can work with any projectors or LCD screen and turn the projection screen or LCD screen into finger touchable. Key features: portable and finger touch; detect any non- transparent objects;no requirement for the board,work on any flat surfaces, no limited on the material; active sizes range from 40”-100’’; can work with common board and save the record of both marker pen and finger writing in the same board.

FP3 includes:Emitter,Sensor,Calibration Software,Application Software

Emitter

Sensor

***** 6 months replacement, 2 years limited warranty for the FP3 Board model.

Features

1,Support finger touch: Use finger instead of pen to write or control;

2,Support Multi-touch: Ten People can write and erase simultaneously;

3,Shortest installation distance is 35cm: For example, the active size is 80inch, then installation distance is around 100cm;

4,Portable and easy to install. Total weight is around 1.6kg. The installation is very easy. Just put the emitter part to the upper of projection screen by double adhesive tape, and put the Sensor (camera)part together with projector or ceiling by mount. No need professional technicians.

5,Turn common board or wall into touchable. Our product can turn any flat surface (like board, wall,LCD) into touchable; just fix the emitter part on the upper of the projection screen.

6,Support to operate by any non-transparent objects. In the active area, any non-transparent objects can work as pen does.

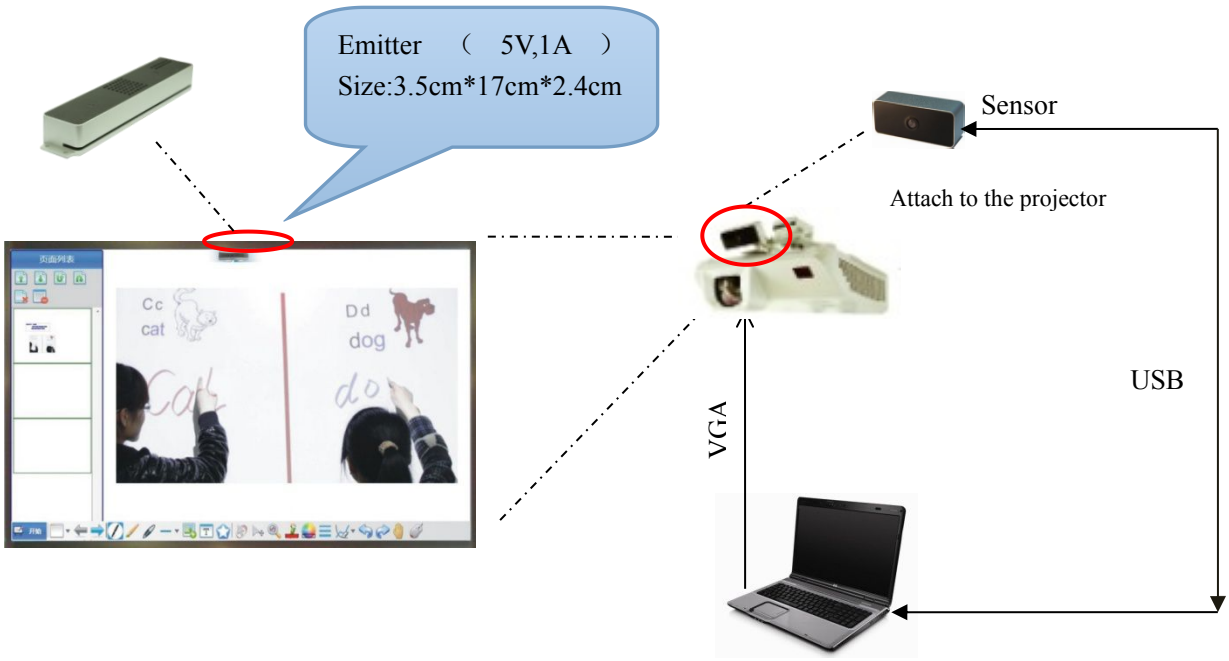
7,Convert Normal Led screen into touchable.Support the active screen 40-100inch.when using,add one piece glass on screen surface.and fix the iwb hardware on glass ,then convert led screen into touchable.compare to the infrared technology solution,low costs,no need customize,the price is not increased by the screen size.

Specification:

Finger Touch Portable Interactive Whiteboard—FP3 Board	
Calibration	Automatic(5s) / Manual (25/36 points)
Gesture Recognition	Gesture Recognition In Education Software:Write with single finger,Erase with palm, Two fingers for move,Two fingers away for zooming out and zooming in,Stay 2s with palm for opening spotlight,Double slap with palm for backing to desktop. In Windows:Max,Min windows,Zoom in or Zoom out or Rotate the picture, One finger as a scroll bar,Display all the windows,Shift windows.
Multi-touch	Ten points touch, write and eraser can do together.
Latency	<30ms
Filter	Software auto-control, enhance stability.
Minimum Active Size	40 inch
Max Active Size	100inch (the room with light-proof curtain,excludes double screen)
Technology	Laser Image Calibration Technology
Positional Accuracy	±1 Pixel (Resolution: 4096*4096)
Aspect Ratio	4:3；16:9；16:10
Projection ratio	Ultra short throw:0.28,FP3ENGLB4, installation distance:0.40~0.55m; Short throw:0.34, FP3ENGLA4, installation distance:0.54~1.10m； Long throw:1.34, FP3ENGLE4, installation distance: 2.15-3.20m. (Depends on 80'' projection screen)
Laser Beam	Short throw/ Long throw: 3units; Ultra short throw: 4units.
Wave of Laser	808nm
Power	5w
Power of Laser Beam	150mw*3
Power Requirements	5V/1.5A
Signal Refresh Rate	120fps
Connect	The sensor and computer are connected by USB Cable; Emitter and Sensor are wireless; Emitter just needs power.
Weight	0.5kg
OS Requirement	Windows XP, Vista, Windows 7, Windows 8
Software	Calibration software(driver) and GLboard(education software)
Certification	CE, FCC
Warranty	2 years
Package	1. Sensor 2.Emitter 3.Mounts 4.USB cable (12m) 5.Pionter 6.Power Adaptor 7. Manual

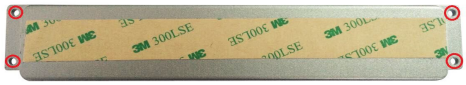
Hardware Installation

Connection Topological graph:



Requirement for installation

1. The whiteboard should be flat, more flat, better touch feeling.
2. It is better to use curtain if the room be full of sunshine.
3. USB cable or adapter cable cannot be cut or extended.
4. Leave 7cm space above the projection screen before you install the projection, such space for install the emitter.
5. Put a adhesive tape on the middle of emitter（the central point of projection screen must on straight line with the central point the emitter)



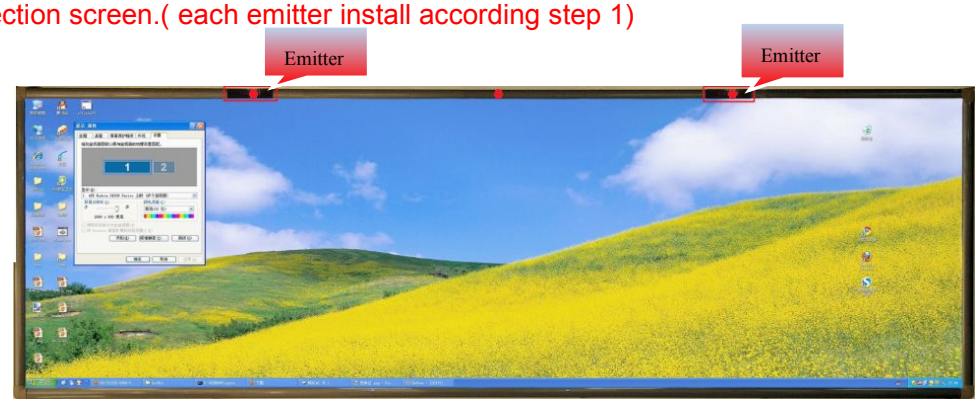
6. Must use the screw to install emitter for long-term use
7. Camera use the mount install beside or on the projector, make sure the camera is fixed after adjusting the projection screen in the camera's view.
8. One emitter support 90inch,two emitter support double screen under 180inch.

Installation

Step 1:

Put a adhesive tape on the back of the emitter body,and attach emitter on the middle upper of the projection screen and distance 3cm to the upper edge of the projection screen.,fixed the emitter by 4 screws(as below Pic1)

Note: if you use double screen FP3 Board, one emitter on the above space of one projection screen.(each emitter install according step 1)



Step 2:

Sensor Installation: attach it to projector or attach it on ceiling. Make sure the Capture viewing is erected.

For 80" active size (Projection screen), the installation distance is about 1m-1.2m for short throw Sensor part, 0.6-0.8m short throw Sensor and about 2.2m-3.2m for long throw Sensor part.

Note: if use double screen, two cameras install on two projectors separately.

Step 3.

Cable connect: Use the USB cable connect camera to computer, and the adapter connect to power

Note:if use double screen, two camera use USB cable connect to the same computer.

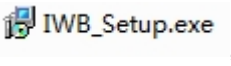
Adjust the hardware

Software installation

Step1.

Calibration software installation:

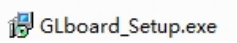
Open the small CD and copy the "Calibration Software" and "Application Software" file folders into your computer.

Open the file of Calibration Software, run "IWB_Setup.exe"; 

, according to the type of the camera install it in correct way,such as :the throw ratio is 0.34,then choose short throw,and click next step,Then there will be icon on desk : 

Education software installation

1. GL Board installation

Open the folder “Application Software’’,double click “GLboard_Setup.exe” 

Click “next step” until it fished. There will be a icon of GLboard 

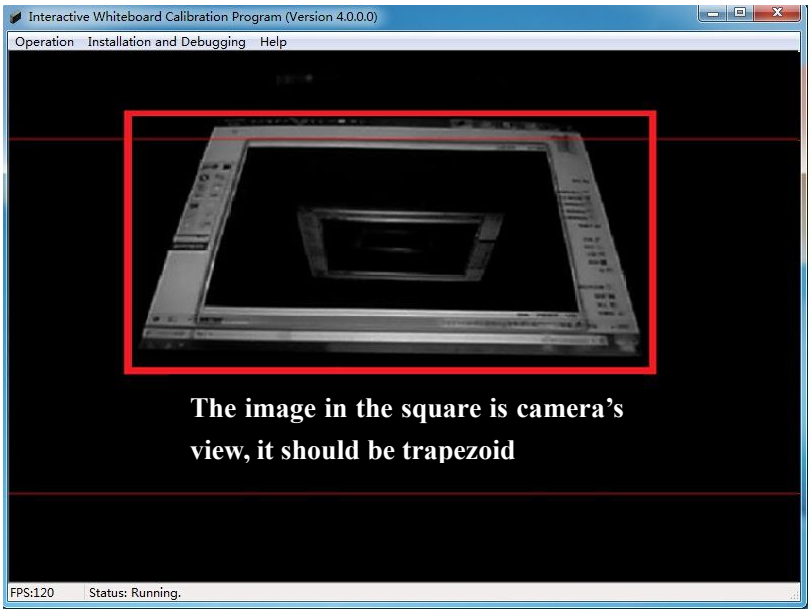
on the desktop.

Step 2.

Adjust the camera

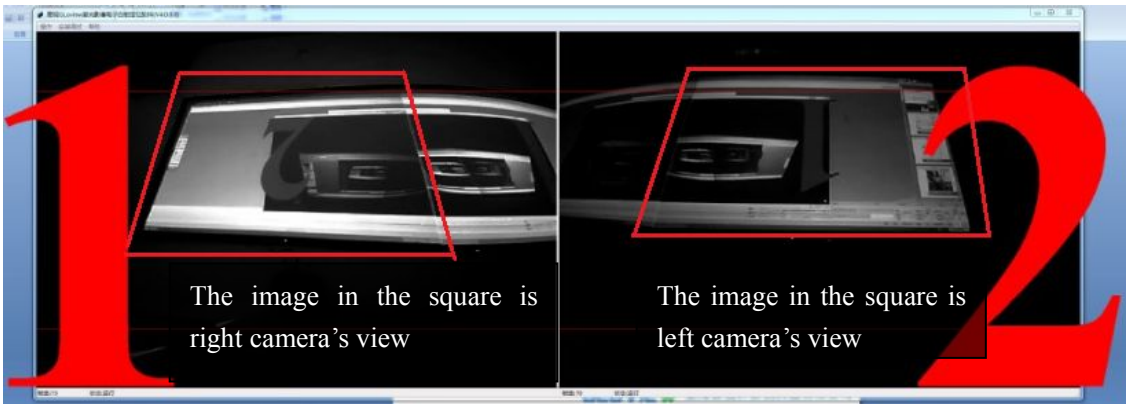
Chose “Installation and debugging”-“Mode 1”, then you can see the whole projection screen clearly (As Pic3).

*****Adjust the camera’s position to make Projection screen image take up 60-80% of the software interface.**



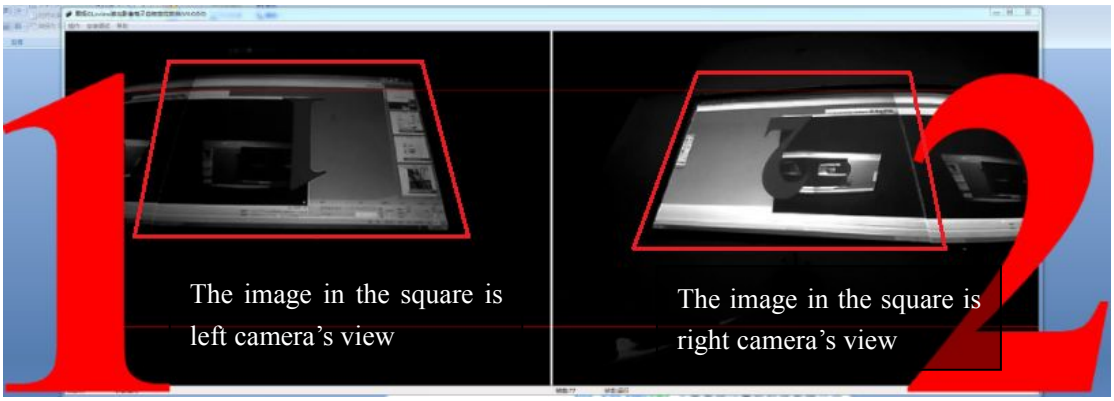
Note: If use double screen FP3 Board, Left camera should take the image of left projection screen, right camera should take the right one.

When it is in camera mode, if the image is in opposite way as Pic 4:



Pic 4

Then please right click in the image, chose "exchange the image", then it will be right as Pic5:



Pic5

Step 3.

Adjust the emitter

1. The standard:Chose "Installation and debugging"-"Mode 2". In this mode, emitter cast invisible the laser light over the whiteboard is about 5mm, the light should be parallel with the whiteboard.

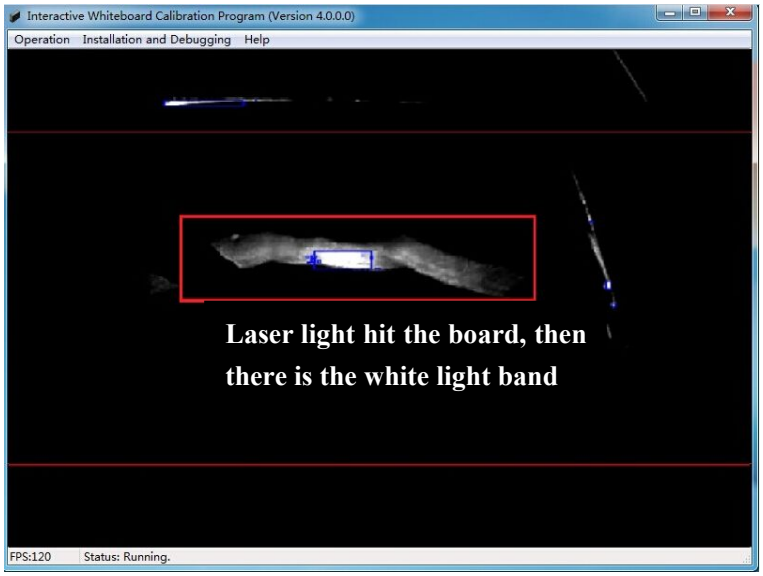
2. Principle of adjust:

Tighten the down-side screw, then laser light Tilt down.when the light is over the board too much, then do this step .

Tighten the upside screw, the the laser light will Tilt up.when the light heat the board, then do this step.

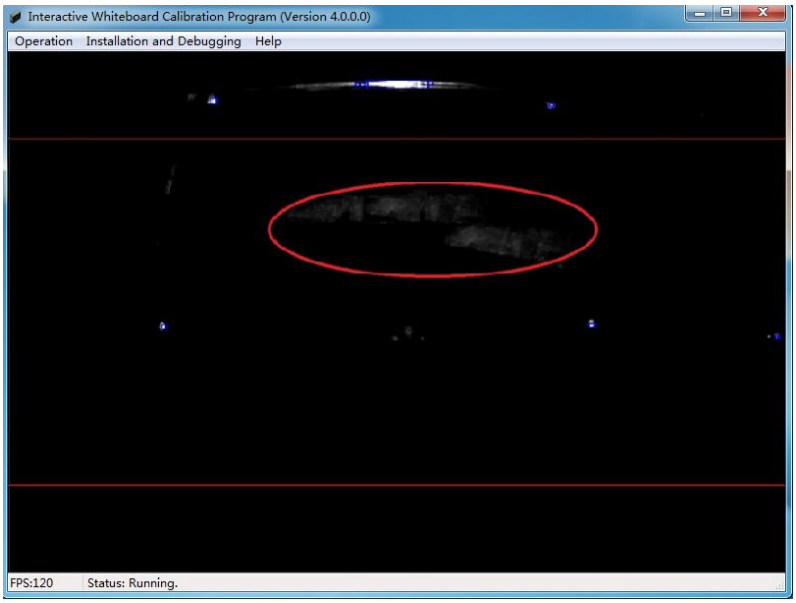
3. Best way of adjust emitter

After install the emitter, tighten the down side screw first, let the laser light heat the board like Pic6



Pic6

Then tighten the up side screw, until the white light bond become weak as Pic 7



Pic 7

Note: If use double screen, adjust the emitter at the same way.

Step 4.

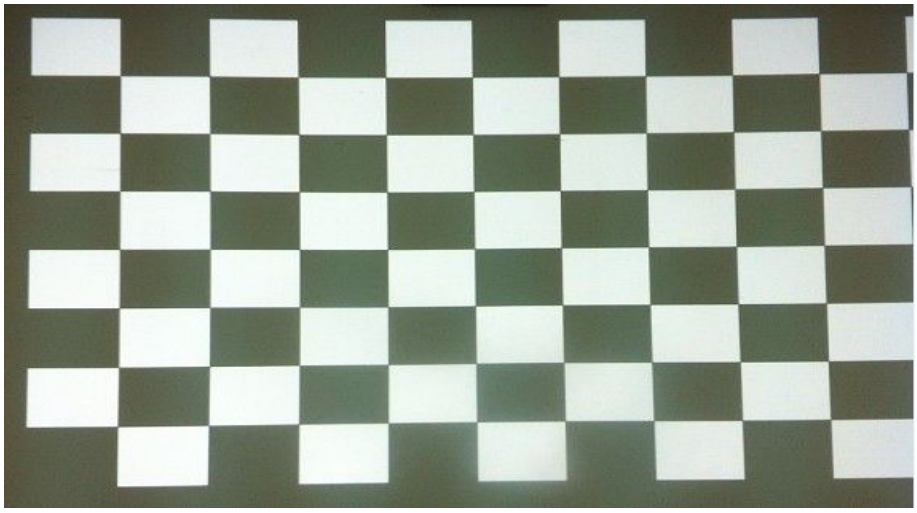
There are two calibrations way: one is auto calibration, one is manual calibration. You can choose the one you like.

Calibration:software will figure out the position of the mouse by accurate calculating,and finger will coordinate with mouse totally,and then finger can do all functions instead of mouse.

Automatic calibration

Choose “Operation”- “Auto Calibration”. After about 4 seconds, calibration success. Then you can use finger do operation in the projection screen.

Just click “Operation”, chose “Automatic calibration”, then you will see as Pic8:



Pic8

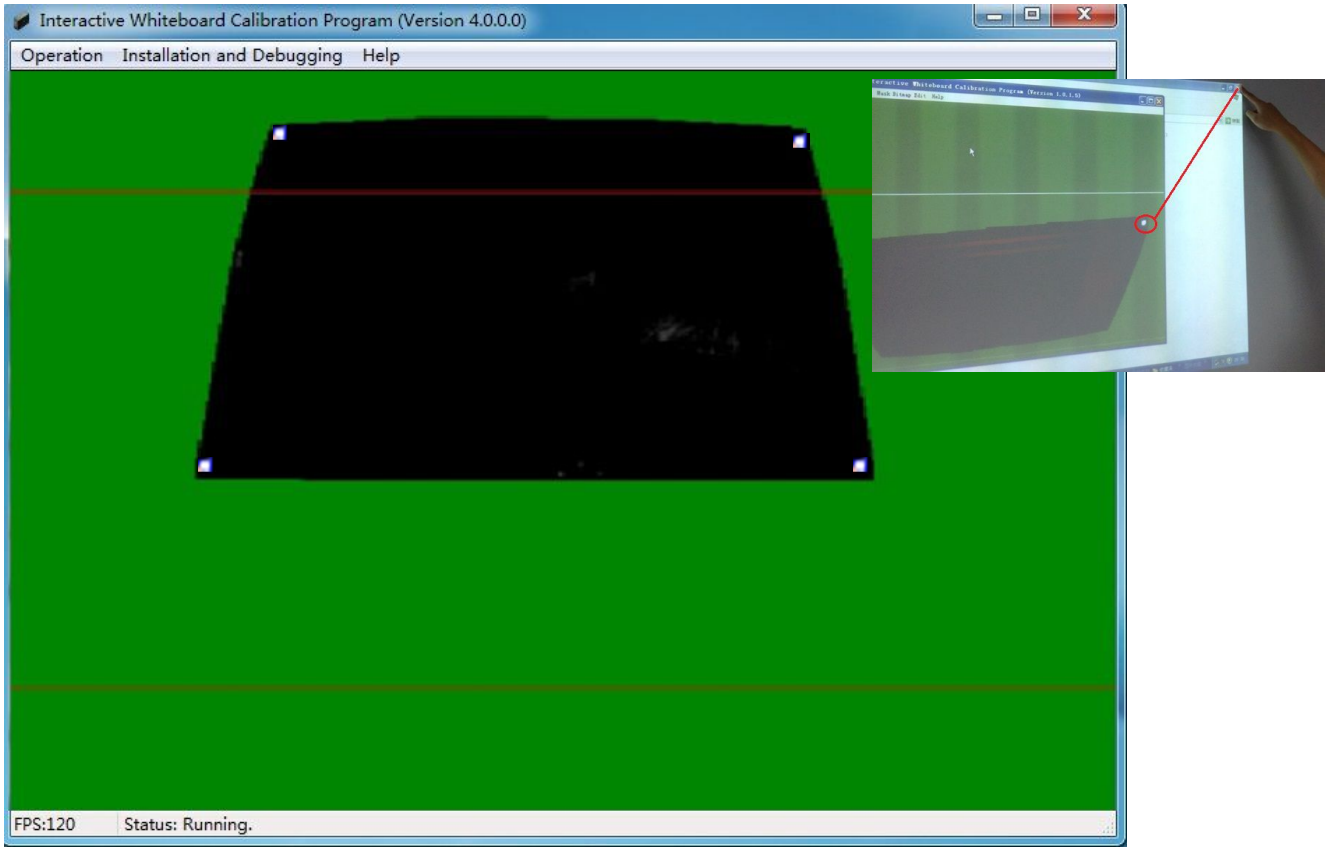
After finished the calibration, then the software will be minimize it on task bar  , then you can use the finger to touch the screen now.

Manual Calibration

If you cannot do auto calibration, then you can do manual calibration.

1, Please choose **"Auto Mask Clutter"** from "**Mask Bitmap Edit"** or you can press **Ctrl+Shift+A.** The software will specify the active area automatically. The other area will be shielded by green mask.

2, Touch each corner and check if it can be seen from the calibration screen like below. If some corner is not included, please eraser the green mask (**Mask Bitmap Edit-→Erase Mask Area**).until you can see the spot as below.



Pic9

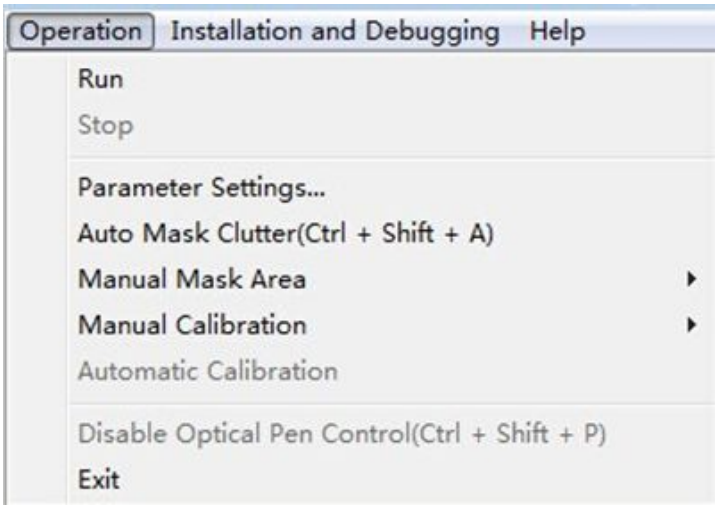
3, Click "**Manual Calibration**" in the "**Operation"**. Then you will see  , touch the cross. Please use finger to touch the dot shown on the screen, another dot then appear, repeat this until the 36thor 25th dot is finished.

4, after the calibration, the calibration software will minimize on task bar  , and then you can use the finger to touch the screen now

Calibration Software

Introduction

Operation menu list

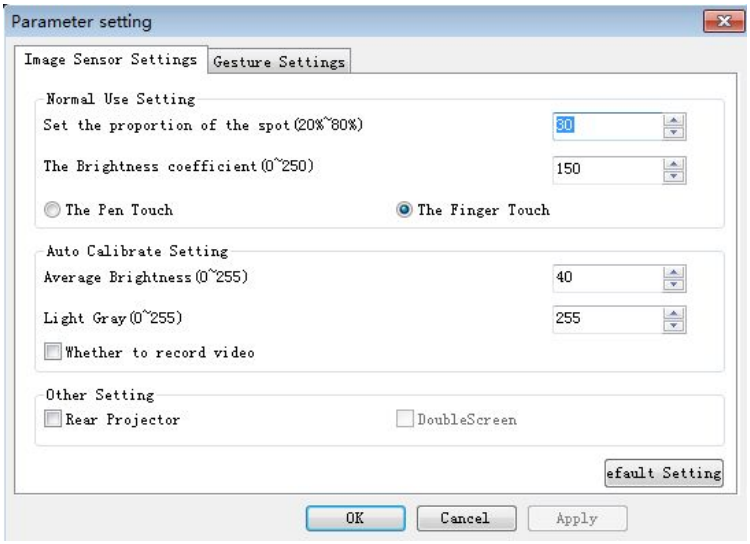


Operation menu list including run,stop,parameter setting,Auto Mask Clutter,Manual Mask Area,Manual Calibration,Automatic Calibration,Lightspot Sampling,Disable Optical Pen Control and Exit.

1. Run:run the calibration software and start the image of sensor.

2. Stop: stop to catch the image of projection, then cannot touch any more.

3. Parameter Setting:Image Sensor Settings



(1) Normal Use setting

Set the Proportion of the spot(20%-80%)：to set how large the spot will cause the sensor to detect.

The Brightness coefficient(0-255)：adjust camera's sensitive to the light in normal usage mode. The higher numbers mean the camera more sensitive to the light.

(2) Auto-calibration Settings

Average Brightness(2-255):adjust camera's sensitive to the light when do auto-calibration,the higher numbers mean the image more brighten, seem to make the camera exposure.

Light Gray(0-255):in auto-calibration process, the contrast of the image "black and white Checkerboard".the higher numbers ,the better the contrast in checkerboard

Video record:to record the auto calibration process

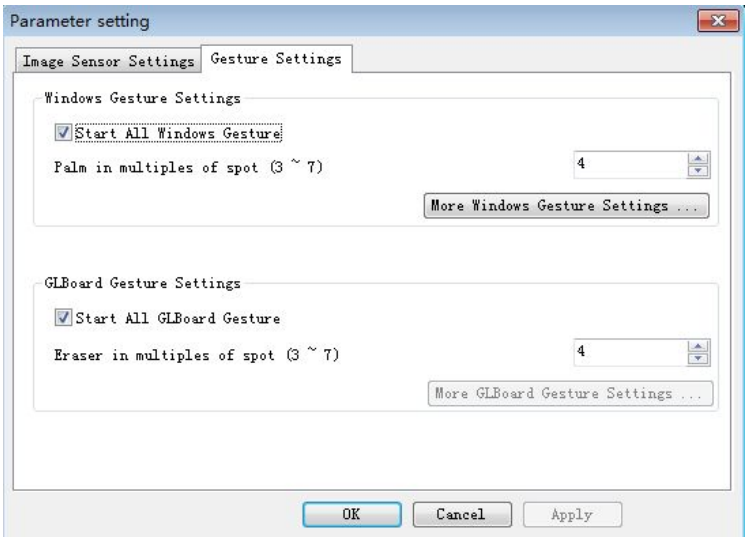
Notes:when the auto-calibration is fail,there will be some pictures in software,if the pictures is brightness,please increase the gray value up to 250,decrease average brightness down to 40;if the pictures is dark ,please increase the gray value up to 150,increase average brightness up to 250;the pictures is brightness in middle part, adjust gray value to 100 , average brightness to 60.

(3) Other Setting

Rear Projector:if your projector is rear projector,please chose it.

Double Screen: when use double screen product, the software will choose the double screen mode automatically.

Parameter setting:Gesture setting

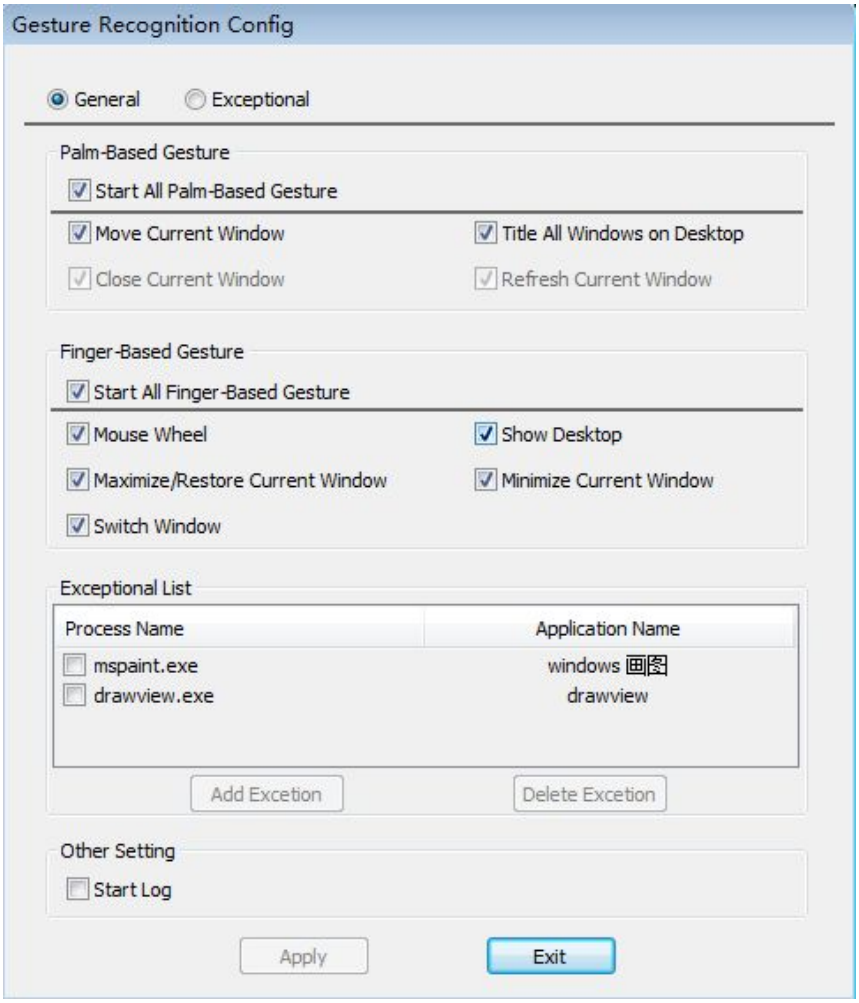


(4) Windows Gesture Settings

Start all the windows gestures:click this function,it will run all the windows gestures,if not,will stop all the windows gestures.

Palm in multiples of spot:it refers to the sensitivity of the palm gesture in windows,the lower number value ,the better of the sensitivity is.

More windows gestures setting



General:users can chose to use or not use any one gestures according to the requirements.

Exceptional:add more exceptional procedure,click“Add Exception” and add the procedures you needed into “exceptional list”,choose added procedures ,and then setting finger gestures recognations for the software you are using,users can run and stop any one gesture recognations according to the requirements.

this function is mainly able to support the third-party software to operate with gesture recognitions.

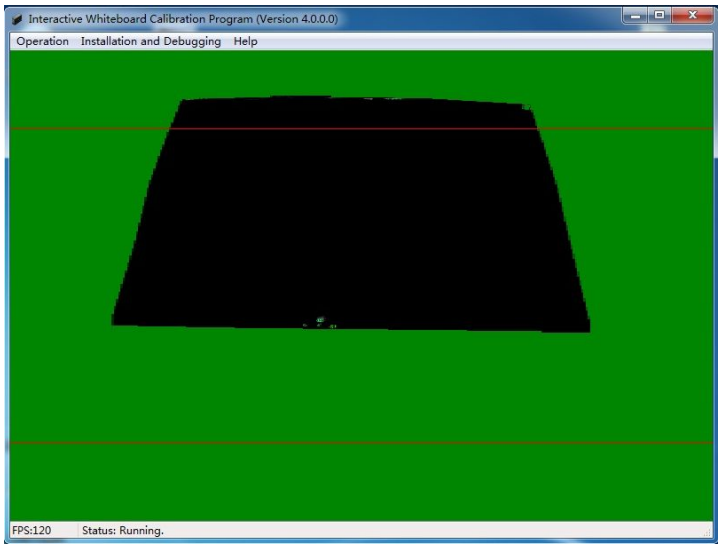
(5) Glboard gesture recognition config

Start all glboard gesture recognitions:click this function,it will run all the gesture recognitions in GLBOARD,if not,will stop all the gesture recognition in GLBOARD

Palm in multiples of spot:it refers to the sensitivity of the palm gesture in GLBOARD,the lower number value ,the better of the sensitivity.

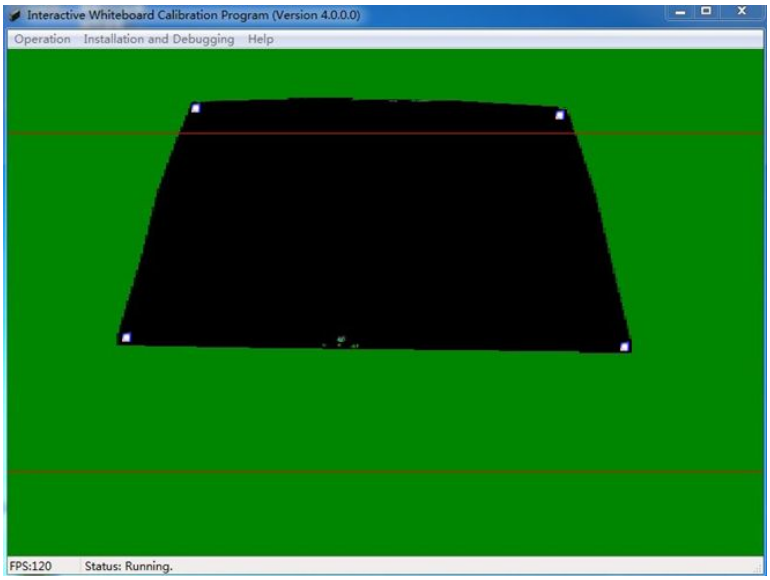
4. Auto Mask Clutter(Ctrl+Shift+A)

Auto mask clutter is the first step before do manual calibration,Please choose “Auto Mask Clutter” from “Mask Bitmap Edit” or you can press Ctrl+Shift+A. The software will specify the active area automatically. The other area will be shielded by green mask.



5. Manual edition mask area

After auto mask clutter,check whether the whole active size is included,draw line along with the four edges of the active size by finger ,see the spot exists or not from the calibration screen like below. If there is no spot in some area, please eraser the green mask (**Mask Bitmap Edit-→Erase Mask Area**).until you can see the spot.Click "**Manual Calibration**" in the "**Operation"**.if there is still blue interference spot in software,please add the black mask(**Mask Bitmap Edit-→Add Mask Area**).until you can't see the blue interference spot ,right click close edition in software.



6. Manual Calibration

Click **"Manual Calibration**" in the "**Operation"**. Then you will see  , touch the cross. Please use finger to touch the dot shown on the screen, another dot then appear, repeat this until the 36thor 25th dot is finished..after the calibration, the calibration software will minimize on task bar  , the installation and debugging is finished now.

Installation and debugging

1. Tuning Webcam Image Mode:choose "tuning webcam image mode",chose this mode before calibration, then you can see the screen more clearly and then adjust the position of camera.

The requirement for webcam:adjust the camera's position to make Projection screen image take up 60-80% of the software interface.

2. Tuning Laser Transmitter Image Mode

Requirements:the infrared laser curtain is parallel with the projection screen surface and 5mm above the screen surface.

3. Normal Usage Image Mode:after the calibration,finger can do operation instead of mouse.

4. Mouse:click mouse function,you only can do single touch in windows.

5. Touch Pad:click touch pad function,you can do multi-touch in windows.

Mouse Operations and Gesture Recognitions

Mouse operations

Single Click:single finger click

Double Click:single finger click two times continually at the same position.

Right Click:single finger stays 2-3s for opening right click function at the same position.

Scroll Bar:open one website,single finger can up and down the page directly.

Gesture recognitions in Windows

Slide up with 5 fingers for maximizing or backing to the windows

Slide down with 5 fingers for minimizing the windows

Two fingers rotate the picture

Two fingers away from or closer for zoom in and zoom out the picture or the website

Slide up the bottom of screen with palm for displaying all the windows

Slide from left or right with 5 fingers for shifting the windows

Stay 1s with palm in one window for moving it

Slide down with 10 fingers for minimizing all the windows

Gesture recognitions in education software GL board

Erase with palm

2 fingers away for moving the page

Double slap with palm for backing to the desktop

Stay 1s with palm for spotlight

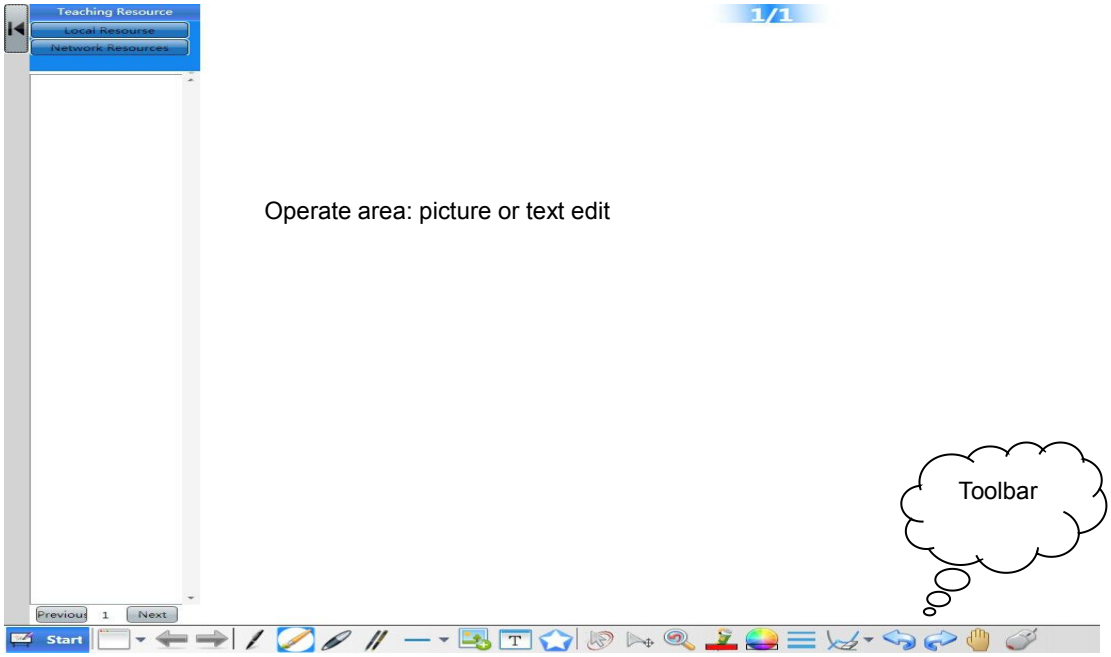
In any non-writing operation, double click with single finger for shifting to write

Usage of GLboard

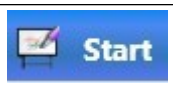
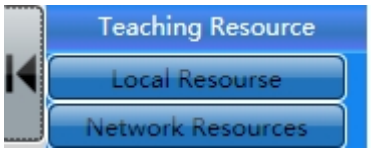
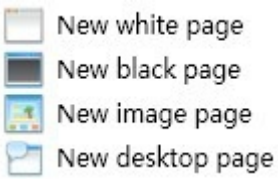
Introduction of the main toolbar

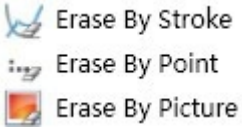
When you use the GLboard at first time, double click GL-board

To pen the software, interface includes three areas as following:



Function of Each button in the tool bar

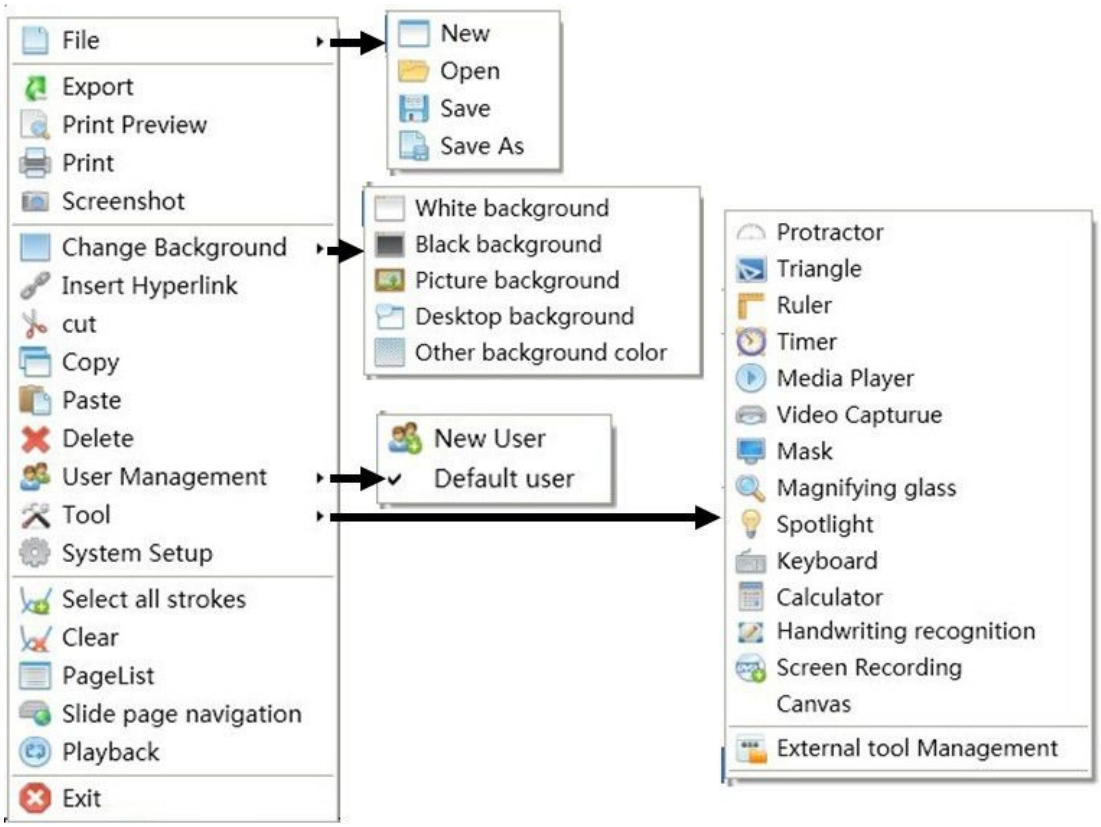
iron	Name	function
	Start menu	Open the menu list
	Resource	Local recourse: You can click it to find many pictures. Network resource: you click it and then you can search any picture as you like.
	New page	There are four options: 
	back	Go back to the previous page
	forward	Forward to next page

	Pen	Write like a ball pen
	brush	Write like Chinese brush pen
	Smart pen	Convert the drawing to typewriting geometric shapes.
	Multi-writing mode	Support ten persons writing simultaneously
	Insert shape	Several shapes can be chose, such as triangle, square ,circle and so on
	Import picture	Insert picture from your computer
	Import text	Insert text frame, then edit the words
	Fill	Fill the geometric shapes with different color
	Select stroke	Select the handwriting on the page, and do “drag and zoom “operation
	Select picture	Move geometric shapes, text and pictures
	zoom in and out	Zoom in or zoom out the picture
	Pen color	Adjust the any pens color
	Fill color	Chose the color to fill
	Pen width	Set stroke width and line type.
	Erase	Three options: 
	undo	Cancel the last operation
	redo	Redo the operation just canceled by undo
	Move	Move the edit screen
	windows	Back to the desktop

When you click  , then you back to the desktop, GLboard will be floating toolbar

Icon	Name	Function
	windows	Back to the desktop
	Pen	Write like a ball pen
	New page	Open a new white page
	New page	Open a new black page
	Back	Go back to the previous page
	Forward	Forward to next page
	Erase	Erase by stroke
	Back	Go back to the main page of GL Board
	Note page	Make the window screen as the background
	Preview Note page	Go back the previous note page
	Close	Close the GLBoard
	Width	Set stroke width

Start menu list



Manu	Submenu	Function Description
File	New File	Create a blank file, if you have not been saved before, there will be display a save message.
	Open File	Open the existing PPT, PDF, PTS file
	Save File	Save the compiling file
	Save File As	Re-save one file
Export		Export into Window System as image file
Print Preview		After printing settings for the document, the user could view the print result of the document in advance
Print		Any words, images, or visible dates in GL-Board, could output on paper through printer.
Screen Shot		Back to the windows interface, select the area which you want to capture, and then click the “ok” button.
Change background	White color background	Background color is white
	Black color background	Background color is black
	Image background	background is a picture

	Screen background	Chose the Desktop as background
	Other background	Chose the background color by yourself.
Insert a hyperlink		Insert the hyperlink, could open the relative page link directly
Shear		Shearing the selected word and image
Copy		Copy file from one place to another place, and save the old one.
Paste		Pasting the copied and sheared content directly
Delete		Delete the selected word or image from the system.
User manage	Add user	Could add new user
	Default user	Default user in the system
Tool	Protractor	Common mathematic teaching tool
	Triangular ruler	Common mathematic teaching tool
	Ruler	Common mathematic teaching tool
	Timer	Time tool
	Media player	Media player
	Document camera	The window for playing video in GL-Board
	Curtain	Similar to the movie screen for the teacher to explain the examples, questions and answers is separate.
	Magnifier	Magnifying the important part for teaching
	Spotlight	Spotlight can shine a circular area, high brightness display, other regions translucent display.
	Soft keyboard	Same with the screen keyboard of windows
	Calculator	Same with the windows calculator
	Gesture recognition	Handwriting input (see “gesture recognition” introduction)
	Screen record	Recording the activities on the GL-Board as a video.
System Setting		Startup setting and page setting, etc.
Select all of the handwriting		Select all of the handwriting in the screen area
Clean up all of the handwriting		Clean up all of the handwriting in the screen area
Page list		Show all page of GL-Board in a list
Slide navigation		Show PPT, first open a PPT, and then use this function to show.
Replay		Replay
Online source	Pep.com.cn	Connect the pep.com.cn
Exit		Exit GL-board

Common Malfunction Analysis

1. Open software,error shows"is not valid Usb Key for hand touch whiteboard"

(1) First check whether the usb cable connect well

(2) Pls confirm whether the usb cable is cutted or lengthened

(3) Pls confirm whether the system exits recovery card,pls add the calibration procedure in recovery card.

(4) Whether the system use solid state disk,if so,pls contact technician.

(5) Change another one usb port or another one computer and have a test again.

2. After the auto-calibration, mouse do not coordinate with finger.

(1) Open"tuning webcam image mode",confirm whether the proportion of projecting screen(photoed by camera) can meet the requirement.

(2) Open "tuning laser transmitter image mode",confirm the height of the laser curtain within 5mm,the image appears touching the board lightly.

(3) If above two steps can meet the requirements,pls contact technician.

3. When do auto-calibration,it hints failure?

(1) Open"tuning webcam image mode",observe whether the projecting screen(photoed by camera) is all included in calibration interface or not,and the proportion of the image whether can meet the requirements or not,and whether the image is clear or not.

(2) Shift "tuning webcam image mode"to "tuning laser transmitter image mode" repeatedly,to observe the brightness of the image change or not,if the image is in black all the time.pls change the sensor.

(3) Observe the calibration failure pictures and analyse the overall brightness of the black and white checkerboard,if it is brightness totally,pls adjust the value of the average brightness to 40,adjust the value of gray light to 250;if it is black totally,pls adjust the value of the average brightness to 140,adjust the value of gray light to 250.

(4) After adjusting the parameter ,but it still can't do auto-calibration,pls do manual calibration or contact technician.

4. Install the device according to the requirement,and the auto-calibration is successful.anyway the operation is not sensitivity in top right corner,and the writing is non-continuous.

(1) Open the calibration software,write in non-continuous area,and obverse whether there is spot in non-continuous area,if not,pls change another one emitter.

(2) If there is spot,the spot is small,firstly adjust the bright coefficient,rise the value to around 170.

(3) Do lightspot sampling

(4) In calibration software,the config file in installation catalogue,revise the value of the Light Spot

(5) Minimum Width and Light Spot Minimum Height to 1

Important information

Note: If you are a user of products, please read the guide's relative warning information and product maintenance method carefully. Before you install the product, please fully understand some safe use information of the guide. It could help you avoid some mistake to cause the product's broken and other safe problem.

Warning:

Please don't look straightly the light of the projector, it will harmful to your eyes.

Warning:

When install the projector bracket, it need two persons operate simultaneously.

Warning:

When fix the camera on the projector, high-altitude operation, please be careful.

Warning:

product can't be installed in the place which the direct sunlight cast on.

Warning:

When install, please fix the USB Cable and the cable of adaptor, avoid to making the product drop.

Warning:

Product don't install in dark wet room, which will affect the product's performance and life-time

Feedback questionnaire

Dear user:

Thank you for your using our product.

In order to offer better service, please fill the following chart. Your suggestion and feedback is very importance for us to make the products better and better.

Thanks again.

User name		Address		Email			
Telephone		Fax		Contact Person		Send time	
Product Name		Quantity		Model		Contract No	
Company Name						Purchase date	
current usage information：							
Service information							
Other information							
Suggestion or ideas:							