USER MANUAL

020-000838-01

Captiva Touch

CHRISTIE®

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USAGE NOTICE

Follow all warnings, precautions and maintenance as recommended in this user's manual.

- Warning - Do not disassemble the Captiva touch.
- Warning - Do not use, store, or leave the Captiva Touch near fire, or in places with a high temperature, for example, in direct sunlight, or in sun-heated cars.
- Warning - Use standard USB cable (maximum length: 5 m). To extend the USB cable length over 5 m, a certified active extension USB cable is required.
- Warning - Do not allow liquid or foreign material enter the Captiva Touch.

Precautions

The IR camera on the projector receives infrared signal from Captiva Touch which is attached to the whiteboard.

To operate normally:

- The IR camera should face the projection image area on the wall.
- Remove any obstacles between the IR camera and Captiva Touch.
- Do not place other infrared communication devices, lighting equipments, or residential heating equipments and so on, nearby.
- Only use the interactive cable from the accessory kit. The L side connector should plug into Captiva Touch.

Maintenance: Gently clean the optical port with a dust blower.

How it works

- The Captiva Touch covers the entire whiteboard with a thin invisible IR light.
- When finger or stylus breaks into the Captiva Touch, IR light reflects to the IR camera.

- The Camera module tracks multiple touch points and reports positions to a computer or laptop using USB.
- To optimize the touch function, whiteboard non-flatness should be less than 5 mm.

STEP 1: ENVIRONMENT CHECK

Before setting up and installing the projector and Captiva Touch, ensure that the interactive cable works for the installation location of the mount in advance.

Note:

Make sure the projector is installed under the following conditions:

- ❖ *- The projected image is a rectangular shape without any distortion.*
- ❖ *- The projector is tilted at an angle no more than +/-3 degrees vertically and horizontally in relation to the screen.*
- ❖ *- When using the interactive function, install the projected image within reach by hand.*
- ❖ *- Do not install the projector or screen in a location subject to direct sunlight. If the projector or the screen is subject to direct sunlight, the interactive function may not operate correctly.*

A. Captiva Touch installation Information

Before installing the Captiva Touch module, the projection surface must meet the following conditions/criteria:

1. The screen surface is a flat, smooth unwrapped surface with no unevenness of more than 5 mm. The surface can be a flat wall or a whiteboard. For details on how to check surface flatness, see page 8.

2. The surface must allow for the Captiva Touch to be fixed with screws.

If the projection surface meets the criteria above, the projector and Captiva Touch can then be installed in one of the following ways:

1. Mount the projector to the wall and the Captiva Touch to the whiteboard.

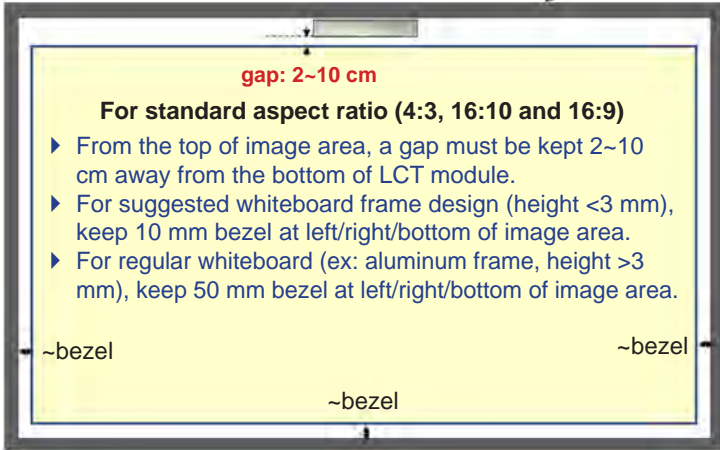2. Mount the projector and Captiva Touch to the wall.
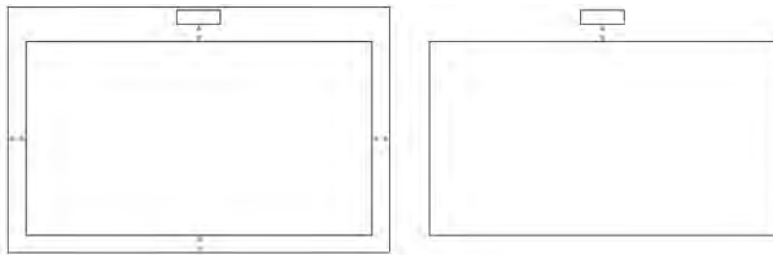
B. Whiteboard guideline

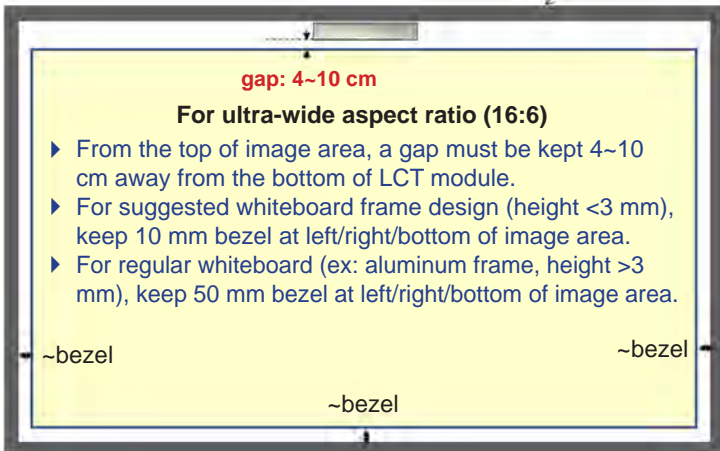When installing the Captiva Touch on a whiteboard, follow the guidelines below:

B-1. For standard aspect ratio (4:3, 16:10 and 16:9)

White board frame

gap: 2~10 cm

For standard aspect ratio (4:3, 16:10 and 16:9)

▸ From the top of image area, a gap must be kept 2~10 cm away from the bottom of LCT module.

▸ For suggested whiteboard frame design (height <3 mm), keep 10 mm bezel at left/right/bottom of image area.

▸ For regular whiteboard (ex: aluminum frame, height >3 mm), keep 50 mm bezel at left/right/bottom of image area.

~bezel   ~bezel

~bezel

B-2. For ultra-wide aspect ratio (16:6)

White board frame

gap: 4~10 cm

For ultra-wide aspect ratio (16:6)

▸ From the top of image area, a gap must be kept 4~10 cm away from the bottom of LCT module.

▸ For suggested whiteboard frame design (height <3 mm), keep 10 mm bezel at left/right/bottom of image area.

▸ For regular whiteboard (ex: aluminum frame, height >3 mm), keep 50 mm bezel at left/right/bottom of image area.

~bezel   ~bezel

~bezel

If the whiteboard frame thickness is greater than 3 mm, the reflected light interference from the whiteboard frame may be detected by IR camera. This can compromise the touch function. To reduce the risk of this happening, it is recommended that a 50 mm boarder is kept around the projected image instead of 10 mm as shown in diagram on the previous page.

If the whiteboard frame thickness is less than 3 mm, ensure the reflected light interference is not observed while doing Step 6 Laser Beam Alignment (Page 11).

C. Measuring projection surface flatness

✓ Criteria: overall whiteboard flatness <5 mm, flatness requirement is <3 mm at Captiva Touch mounting area.

✓ Equipment: leveling instrument (1.2~1.5 m) and thickness gauge.

C-1) Split projection area into 16 segments equally (see below chart). Place the leveling instrument on the whiteboard.

C-2) Insert a 5 mm thickness gauge at point 1~9 positions in the order shown below.

Horizontal:

- Measure point 1, 2 and 3
- Measure point 4, 5 and 6
- Measure point 7, 8 and 9

Vertical:

- Measure point 1, 4 and 7

-

	Point1	Point2	Point3
	Point4	Point5	Point6
	Point7	Point8	Point9

- Measure point 2, 5 and 8

- Measure point 3, 6 and 9

C-3) If 5 mm thickness gauge cannot be inserted, which means the whiteboard flatness is less than 5 mm and can be used for finger touch.

STEP 2: INSTALLING CAPTIVA TOUCH

1. Open the top cover using a screwdriver.
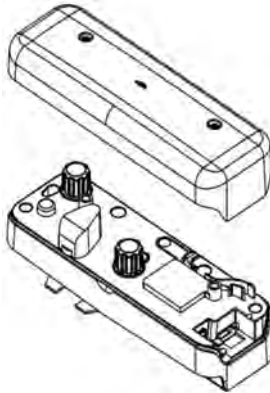
2. Mount the base plate to the whiteboard or wall.

✓ Keep away distance to image area for ultra-wide aspect ratio (16:6):
- 7.5 ~ 13.5 cm from the bottom of the base plate
- 4 ~ 10 cm from the bottom of Captiva Touch

✓ Keep away distance to image area for standard aspect ratio (4:3, 16:10 and 16:9):
- 5.5 ~ 13.5 cm from the bottom of the base plate
- 2 ~ 10 cm from the bottom of Captiva Touch

2-1. For short-term demonstration:
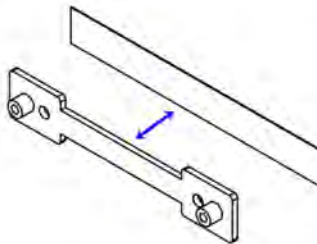
2-1-1. Clean surface with isopropyl rubbing alcohol, wipe gently, let dry.

2-1-2. Adhere double-sided tape (enclosed in accessory box) onto the base plate, then paste onto the whiteboard or wall.

Caution:
Do not use with wallpaper. May not adhere well to vinyl surfaces or textured surfaces.

2-2. For long-term use:
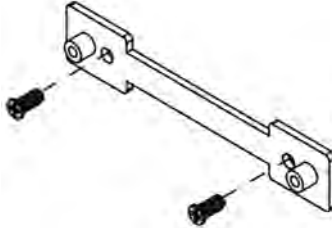
Use screws to fix base plate onto whiteboard:

- Drill tip: ΦO=2.3 mm
- Screw type: M3x6L
- Screw head: ΦO<5.5 mm, thickness <2.5 mm

3. Fix curtain module with wall plate by screws.
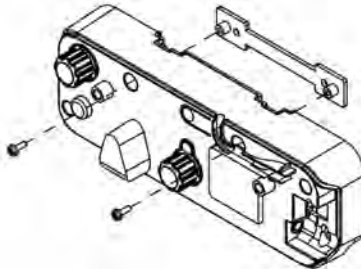
4. Plug power cord to the Captiva Touch.
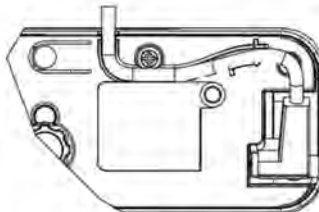
Note:
The L side connector must plug into the Captiva Touch.

STEP 3: INSTALL UTILITY SOFTWARE

A. System requirements

To ensure normal operation of the touch function, follow the requirements below to check the condition of your system.

System requirement	
Operating system	Microsoft Windows XP (SP3)/Windows 7 (32bit/64bit)/Windows 8/ Windows 8.1
	(.NET Framework 4.0 must be installed)
	Mac OS X(10.7~10.10)
CPU	Intel® Core™ i3 or above
Memory	2GB or more

B. Install software utility from CDROM. Utility icon indicator as below:

	Touch mode
	Pen mode
	Disconnected

STEP 4: INITIAL SETUP

For initial setup, follow the Installation Guide to complete installation procedure ( ).

STEP 5: OPERATION MODE

The Windows 7 and Windows 8 operating systems support multi-point touch control. Users can select default Touch Mode ( ) for multi-point touch. Switch to Pen Mode ( ) while using light pen (IR pen).
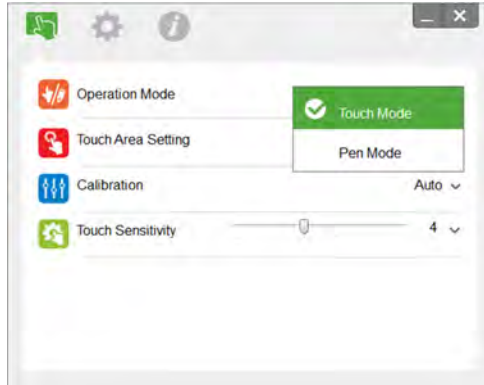
Only **single-point touch** is available for Windows XP and Mac OS X.

STEP 6: LASER BEAM ALIGNMENT

1. Press the button to switch to visible light mode (the red LED will blink continuously).

LED indicator			
Mode	Blue LED	Red LED	Description
IR Laser mode	Solid	--	IR laser ON
Visible light mode	Solid	Blinking	Visible light ON (IR Laser OFF, touch disabled)
Error	--	Solid	Error of LD module occurred

2. Connect a computer and Projector using a USB cable.

3. Rotate the black and grey knobs clockwise until they stop.

4. Rotate the grey knob counter-clockwise, until both beams are symmetrically at the same level.
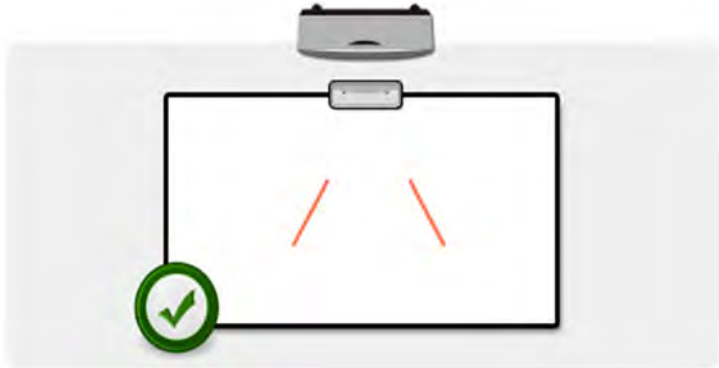
5. Rotate black knob counter-clockwise, and move the beams downward until they reach whiteboard frame.
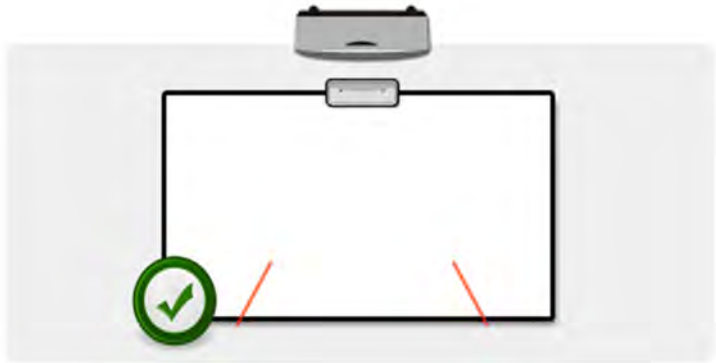
6. Check the beam height with the alignment sticker. The beams should be located within the grey zone.
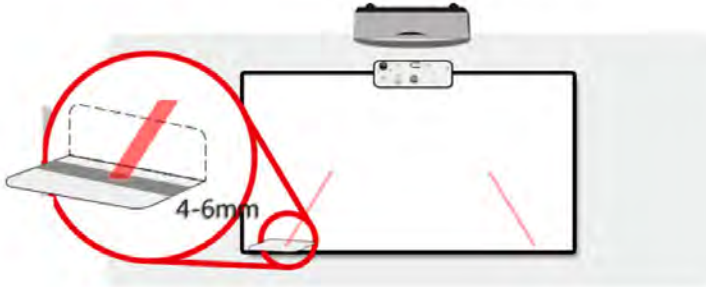
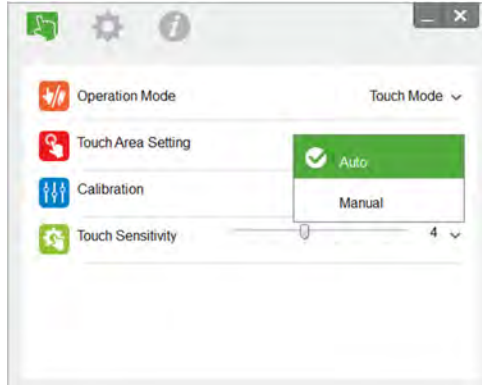7. Press the button again to switch back to IR mode (the blue LED will stay solid).

LED indicator			
Mode	Blue LED	Red LED	Description
IR Laser mode	Solid	--	IR laser ON
Visible light mode	Solid	Blinking	Visible light ON (IR Laser OFF, touch disabled)
Error	--	Always ON	Error of LD module occurred

8. Replace the top cover.
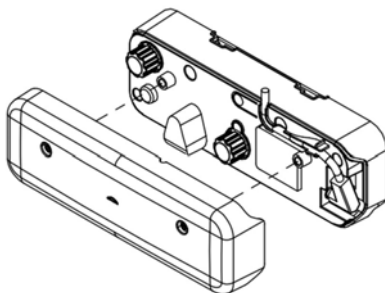
STEP 7: TOUCH AREA SETTING

1. Select Auto Touch Area Setting:

Note:
- ❖ ***Exit all software applications.***
- ❖ ***Reduce the ambient light.***
- ❖ ***Do not obstruct or shake lens while setting up the touch area.***
- ❖ ***Check if the projection image is clear. If not, adjust focus to sharpen the image***

***If a failure message appears, switch to the Manual Touch Area setting.***

2. Select the Manual Touch Area Setting:
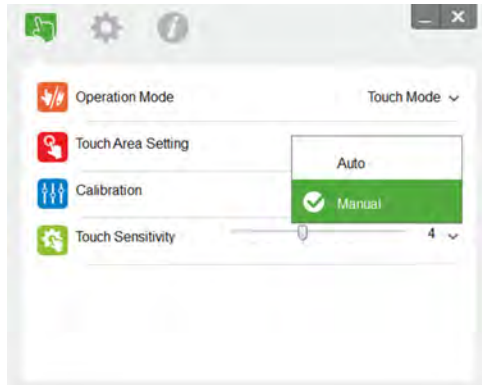
    2-1. After the camera captures the projection image, a Touch Area window appears. If the captured image is not clear, re-select Ambient light mode selection from Auto to Bright or Dim according to the ambient light condition.

Remark:
The captured image shows the camera view, which is reversed from the projection image. For example: P1 is in the lower right corner, P2 is in the lower left corner, and so on.
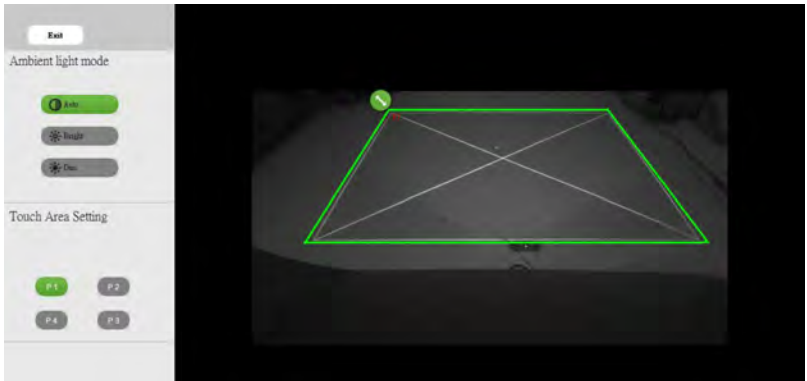

2-2. Touch Area Boundary Fine-tuning

Step 1: Click on P1, and use mouse to drag P1 to upper left corner. Align the adjustable green zone with the projected white frame.

Step 2: Adjust P2 to P4 accordingly; the adjustable green zone should completely overlap with projected white frame.

Step 3: Check again if the green frame overlap completely with projected white frame. If not, fine-adjust again.

2-3. When the Touch Area is correctly located, click to Exit.

STEP 8: CALIBRATION

A. Select Auto Calibration
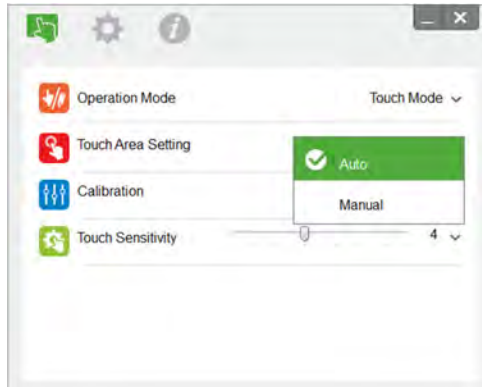
Note:

If the failure message appears, follow the steps below to troubleshoot and do Auto Calibration again.

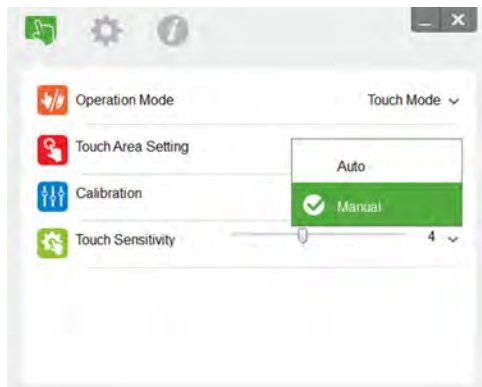❖ *Exit all software applications.*

❖ *Reduce the ambient light.*

❖ *Do not obstruct or shake lens while setting up calibration*

❖ *Check if the projection image is clear. If not, adjust focus to sharpen the image*

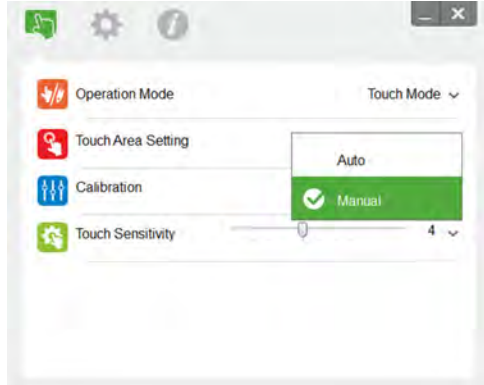*If the Auto Calibration failure message appears again on the screen, switch to Manual Calibration.*

B. Select Manual Calibration:

Note: Manual Calibration is recommended for better accuracy.

STEP 9: TOUCH SENSITIVITY

When the touch function is unresponsive or writing is intermittent, adjust the sensitivity by adjusting the Touch Sensitivity level:

- Default: 4
- Maximum: 10 (most sensitive)
- Minimum: 0 (least sensitive)

***Note:***
Touch Sensitivity is not adjustable in Pen Mode.

TROUBLESHOOTING VIEWER

Sometimes infrared red light (IR light) from ambient light sources may interfere with touch performance. The troubleshooting viewer shows real time images for debugging purposes. Any light interference is marked in green. If green obstacles appear within the image area, remove to secure proper interactivity.

Note:
***The interactive function is disabled under the troubleshooting viewer. Click to exit.***
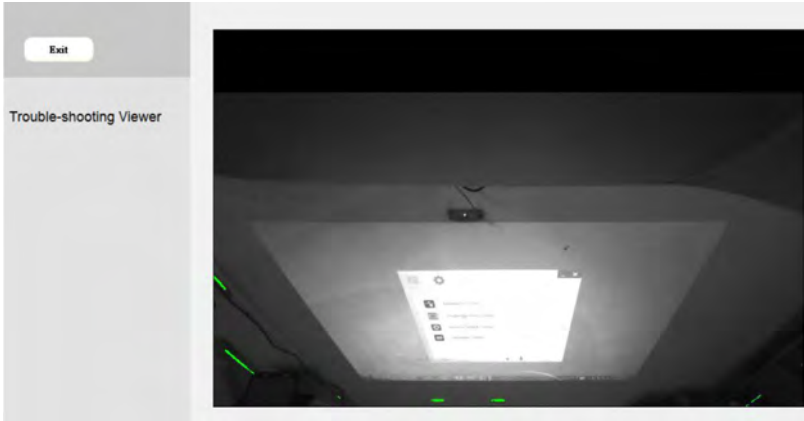
TROUBLESHOOTING

Q1 Why can the computer not boot when the USB cable which connects the computer and projector is already plugged in?

**A:** There are two options to resolve this issue.

1. Unplug the USB cable from computer.
2. Go to BIOS setup page of computer and modify the "Boot priority order." Choose Hard disk as the top priority, save the change, and reboot computer.
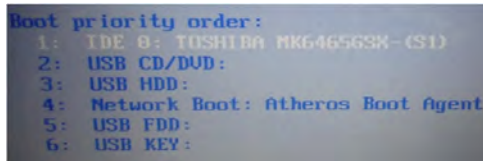
Q2 Windows system cannot identify the USB device

A:

1. Unplug and replug in the USB cable and check again.
2. Switch to another USB port and check again.
3. Restart your computer and check again.
4. Go to the Power Options in Control Panel, check the USB selective suspend settings status in the USB settings under Advance Settings. Switch to "Disabled".
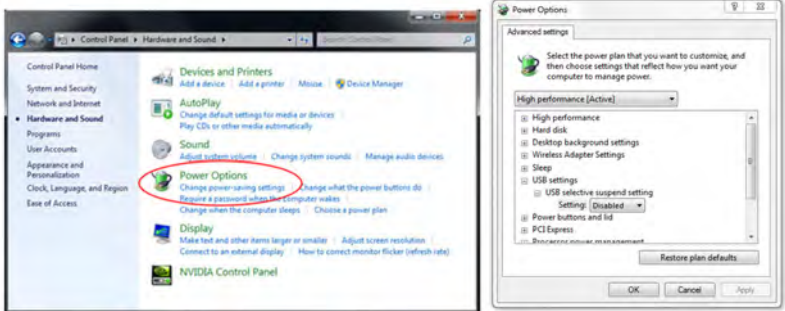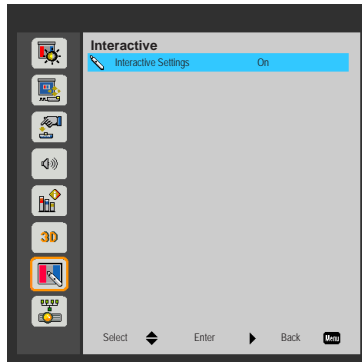

5. Go to the official website of the laptop/computer manufacturer, and update USB driver to the latest version.
6. Use the USB cable included with your projector and check again. If an USB extension is needed, contact your distributor.

7. The USB port of your computer maybe not working. Contact your IT staff.

Q3 Why is the utility icon ( ) red, not green (/)?

A: The Red icon ( ) indicates a failed connection. This may be caused by following:

1. Check if interactive function is enabled using the OSD selection

2. Unplug and replug in the USB cable and check again.

3. Switch to another USB port and check again.

4. Restart your computer and check again.

5. Go to the Power Options in Control Panel; check the USB selective suspend settings status in the USB settings under Advance Settings. Switch to "Disabled".
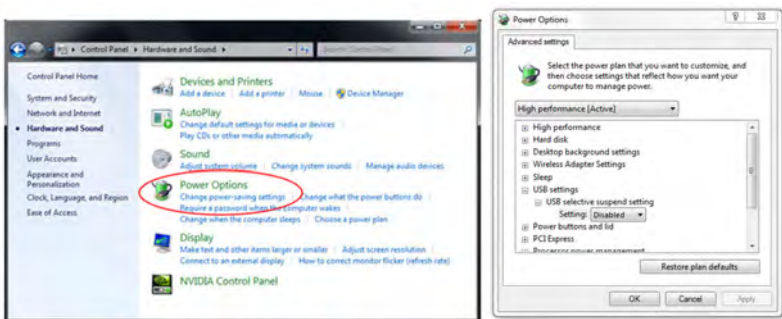
6. Go to the official website of the laptop/computer manufacturer, and update USB driver to the latest version.

7. Go to the official website of the laptop/computer manufacturer, and update BIOS driver to the latest version.

8. Use the USB cable included with your projector and check again. If an USB extension is needed, contact your distributor.

9. The USB port of your computer maybe not working. Contact your IT staff.

Q4 There is only single touch point

A:

1. Re-plug the USB cable from the computer.

2. Go to "Control Panel" and make sure "Tablet PC Components" is selected.
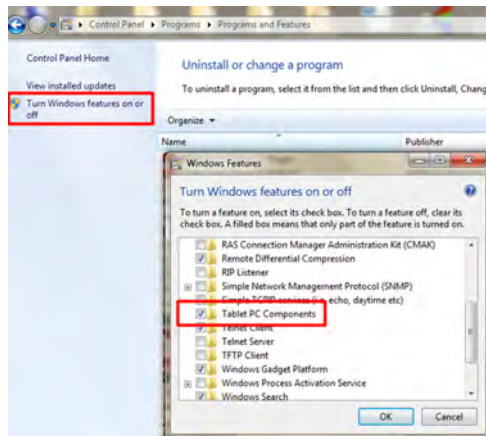
Q5 When should Calibration and Touch Area Setting be done?

A: Perform Calibration and Touch Area setting during initial installation. If the projector or whiteboard is moved, Touch Area Setting and Calibration must be performed again.

- When Laptop/computer resolution is changed, calibrate again.

- For better accuracy, perform Manual Calibration.

- If an overlarge offset is observed, perform Manual Calibration and see Step 8 Calibration for troubleshooting.
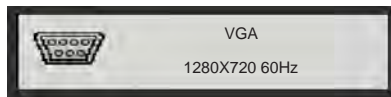
Q6 Auto Calibration and Auto Touch Area Setting both failed?

A:

1. Check the "Ceiling Mount" OSD setting first. The interactive function supports Ceiling Mode only

When projector OSD message is shown, this may result in failure to Auto Calibration and Auto Touch Area Setting. Wait until OSD message is gone before performing Auto Calibration and Auto Touch Area Setting.

Follow the troubleshooting steps below to perform Auto Calibration and Auto Touch Area Setting again.

a. Exit all software applications.

b. Reduce ambient light.

c. Do not obstruct or shake lens while setting up Calibration

d. Check if the projection image is clear. If not, adjust focus to sharpen the image.

e. If the "Auto Touch Area Setting failed" or "Auto Calibration failed" message pops up on screen again, switch to Manual Mode to do Touch Area Setting and Calibration.

2. Check Laser Power Mode selection Lower brightness (ECO mode) may affect both Auto Touch Area Setting and Auto Calibration. Switch to Normal mode to complete Touch Area Setting and Calibration.

Laser Power Mode		Normal	ECO

3. Check the Projector Color Mode selection. To ensure accuracy of both Auto Touch Area Setting and Auto Calibration, it is recommended to switch Color mode to Bright Mode.

Color Mode	Bright	PC	Movie	Game	User

Q8 The mouse cursor ( ) flashes or jumps on screen, or when Touch function does not work well at certain projection area?

A:

1. Check if strong light is shown on the whiteboard. If yes, turn off the light.
2. Check if any foreign object is on the whiteboard. If yes, remove the object.
3. Refer to Step 6 (page 11) Laser Beam Alignment for detailed procedures, to see if laser beam is aligned.
4. Refer to Step 7 (page 14) Touch Area Setting for detailed procedures. Check if the Touch Area boundary is located properly.

Q9 The projection area corner is insensitive or intermittent lines are observed?

A:

1. Adjust the level of Touch Sensitivity to enhance sensitivity, see Step 9 (page 17) Touch Sensitivity for trouble-shooting.
2. If the Touch function remains insensitive, check the optical port condition. If dust or particles are observed, gently clean the optical port with a dust blower.

Q10 The Touch function is not accurate?

A: Touch accuracy may be impacted when the Windows default display setting under Windows has been changed.
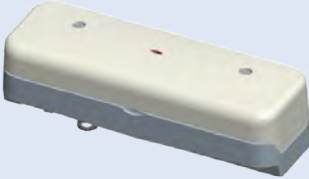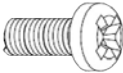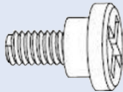
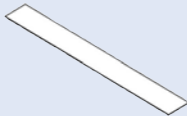1. Go to the setting page <Start menu/Control Panel/Appearance and Personalization>.
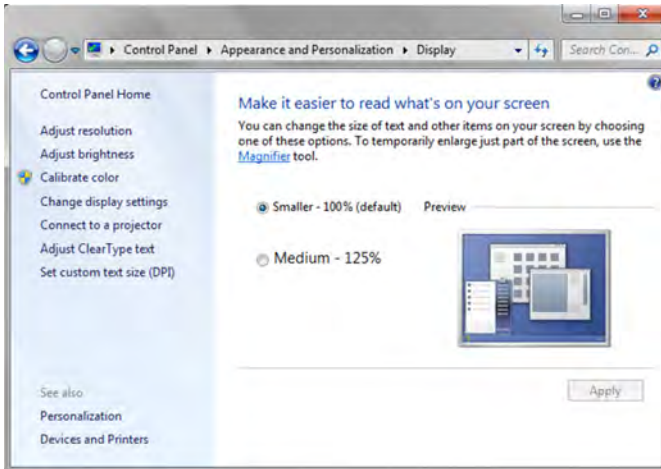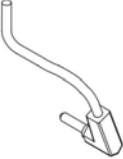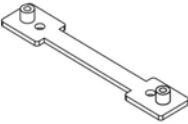
2. Select "Smaller - 100% (Default)" and click "Apply".

APPENDIX A: SPECIFICATION

I. Captiva Touch	
Laser Safety	Class 1
Curtain to Screen Distance	20 mm ~ 100 mm @75"~100" XGA/WXGA/1080p
	40 mm ~ 100 mm @ 120"~140" 16:6 ultra-wide
LED Indicator	Blue/Red
I/O Port	Interactive Jack x1
ID Size(W*L*H)	150.0 (W) x 50.0 (L) x 40.0 (H) mm
Weight	<330g
Power Consumption	12V/0.3A
Operation Temperature	0°C~+40°C (without cooling fan)
Storage Temperature	-20°C~+60°C
II. General Specifications	
Calibration	Auto Calibration
	Manual Calibration
Multi-touch	10-touch points (Win 7 and Win8 compliant)
Multi-touch Min. Distance	≥40 mm
Hover (Z-depth)	Default hover height is 5.5 mm.
Working Projection Image Size	85"~100" @1080P (Captiva DHD400S projector)
	120"~140" @16:6 ultra-wide (Captiva DUW350S projector)
Display mode	Support Ceiling mode only
III. Installation Software	

System Requirements	OS Required:	• Microsoft Windows XP (SP3): Mouse mode supported • Windows 7/Windows 8: Touch mode-10 touch points supported and Mouse mode supported (Windows: .NET Framework 4.0 installation is required) • Max OS X(10.7~10.10)
	Processor Type	Intel Core™ i3 or above
	RAM	2GB or More

APPENDIX B: ACCESSORY

Item	Description	Quantity
1	Captiva Touch	1
2	Screw M2.6x6 (to fix LCT module)	2
3	Screw M3x6 (to fix base plate)	2
4	Interactive cable	1
5	Alignment sticker	2
6	LCT module base plate	1

7	Double-sided tape(for base plate)	1
8	5m USB A to mini USB B cable	1
9	Passive Pen	2
10	CD for User Manual and Utility Software	1

For the most current technical documentation,
please visit www.christiedigital.com

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