

IR Pen Interactive

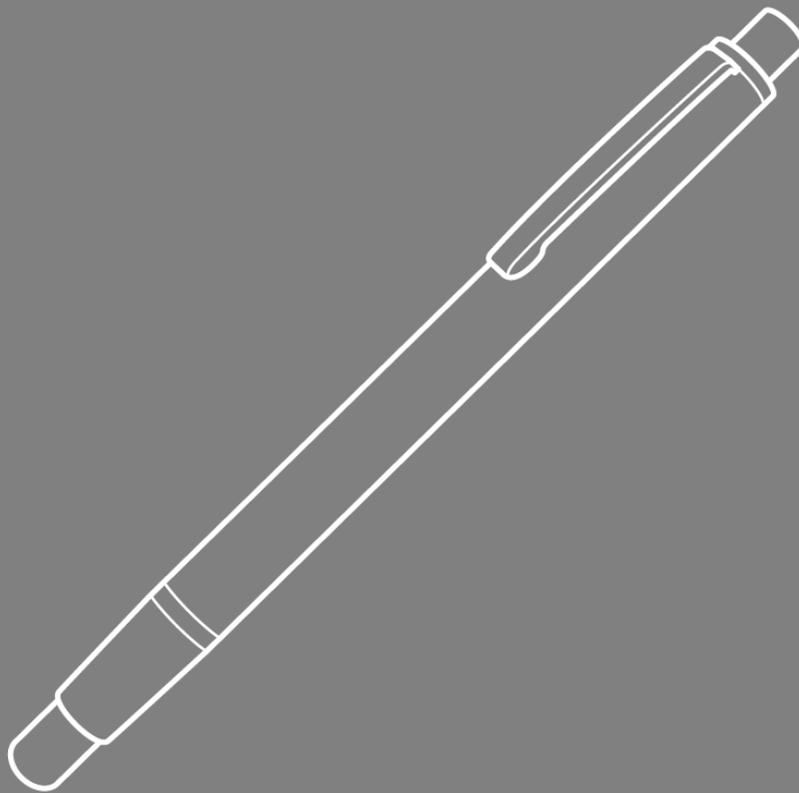


Table of contents

Usage Notice	3
Precautions.....	3
How it works	3
Package Overview	4
Before Installation - Environment Check.....	5
Installation guide	6
Installation workflow.....	6
Installing the mount.....	7
Step 1: Attach the wall plate to the wall	7
Step 2: Attach the projector to the mount plate.....	8
Step 3: Attach the projector to the mount	9
Step 4: Adjusting the projected image size	10
Step 5: Adjusting the tilt (vertical keystone)	11
Step 6: Adjusting the tilt (yaw)	11
Step 7: Adjusting the tilt (horizontal keystone)	13
Installing the whiteboard	14
IR Pen setup	15
Step 1: Install Utility Software	15
Step 2: Interactive Mode	16
Step 3: Touch Area Setting.....	17
Step 4: Calibration	19
Step 5: Trouble-shooting Viewer	20
Appendix.....	21
Troubleshooting.....	21
Distance calculator	26

Usage Notice

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

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

Precautions

The IR camera on the projector receives infrared signals from the IR Pen.

To operate normally:

- The IR camera should face the projection area of the whiteboard.
- Remove any obstacle in between the IR camera and the whiteboard.
- Do not place other infrared communication devices, lighting equipment, or residential heating equipment etc., nearby.

Maintenance: Gently clean the pen tip with dust blower.

How it works

- The IR camera picks up the invisible IR light emitted from the tip of the IR Pen.
- The camera module tracks multiple touch points and reports positions to a PC or laptop via USB.
- To optimize the touch function the whiteboard needs to be flat and in good condition, without dents or warping.

Package Overview

Note: *Supplied with USTir version only.



Before Installation - Environment Check

Before setting up and installing the projector ensure that the power supply and wiring work for the installation location of the mount in advance.

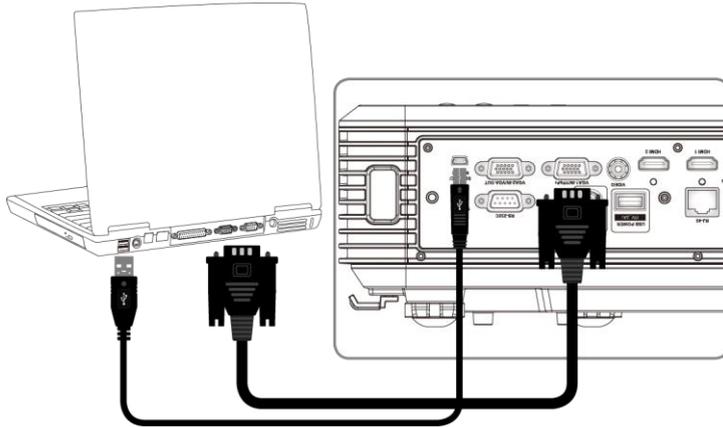
Note:

- Install the projector away from other electrical devices such as florescent lights or air conditioners. Some kinds of florescent lights could interfere with the remote control of the projector
- We recommend to keep source cable length less than 20 meters to reduce external noise
- We recommend using a steel backed whiteboard
- 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 horizontal in relation to the screen
- When using the interactive function install the projector so that the projected image is within reach
- Do not install the projector or screen in a location subject to direct sunlight. If the projector and screen are subject to direct sunlight, the interactive function may not operate correctly.

Installation guide

Installation workflow

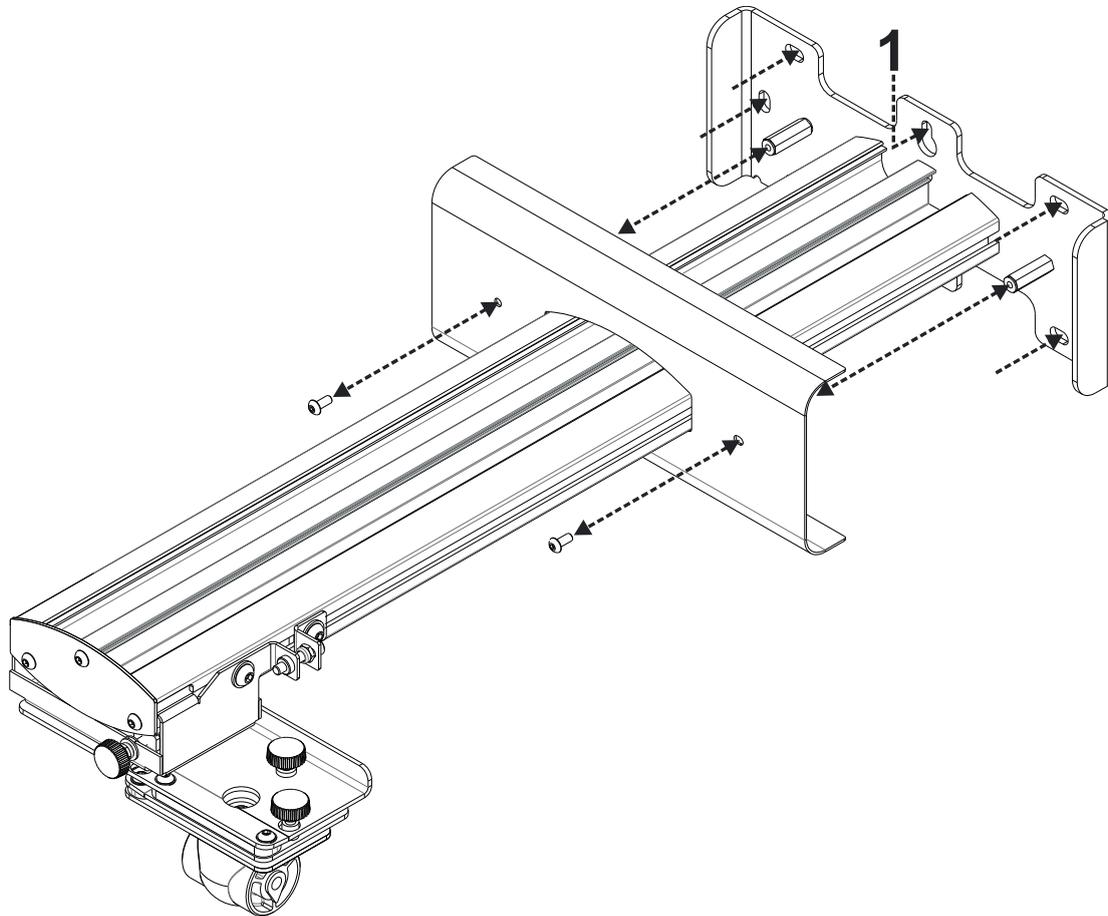
- Install the projector mount (See mount installation guide)
- Attach the projector to mount (See mount installation guide)
- Connect sources and USB to the projector



- Adjust projected images (See mount installation guide)
- Install the whiteboard (See whiteboard installation guide)
- IR Pen setup and calibration

Installing the mount

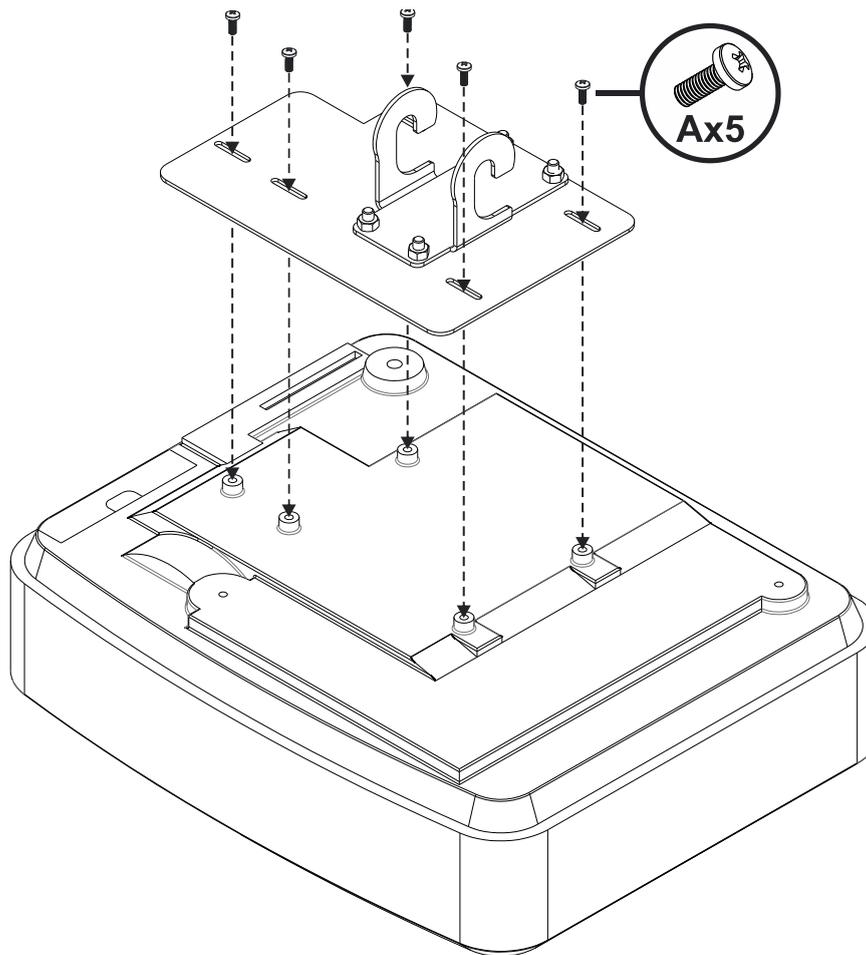
Step 1: Attach the wall plate to the wall



- For ease of installation mount the bracket on the wall using position **1** and mark other positions using a spirit level.
- Remove bracket and drill other positions
- Use fixings suitable for your type of wall construction
- Use all available fixing points
- If in any doubt of the suitability of the wall, its construction or what type of fixings to use, consult a qualified builder or installer

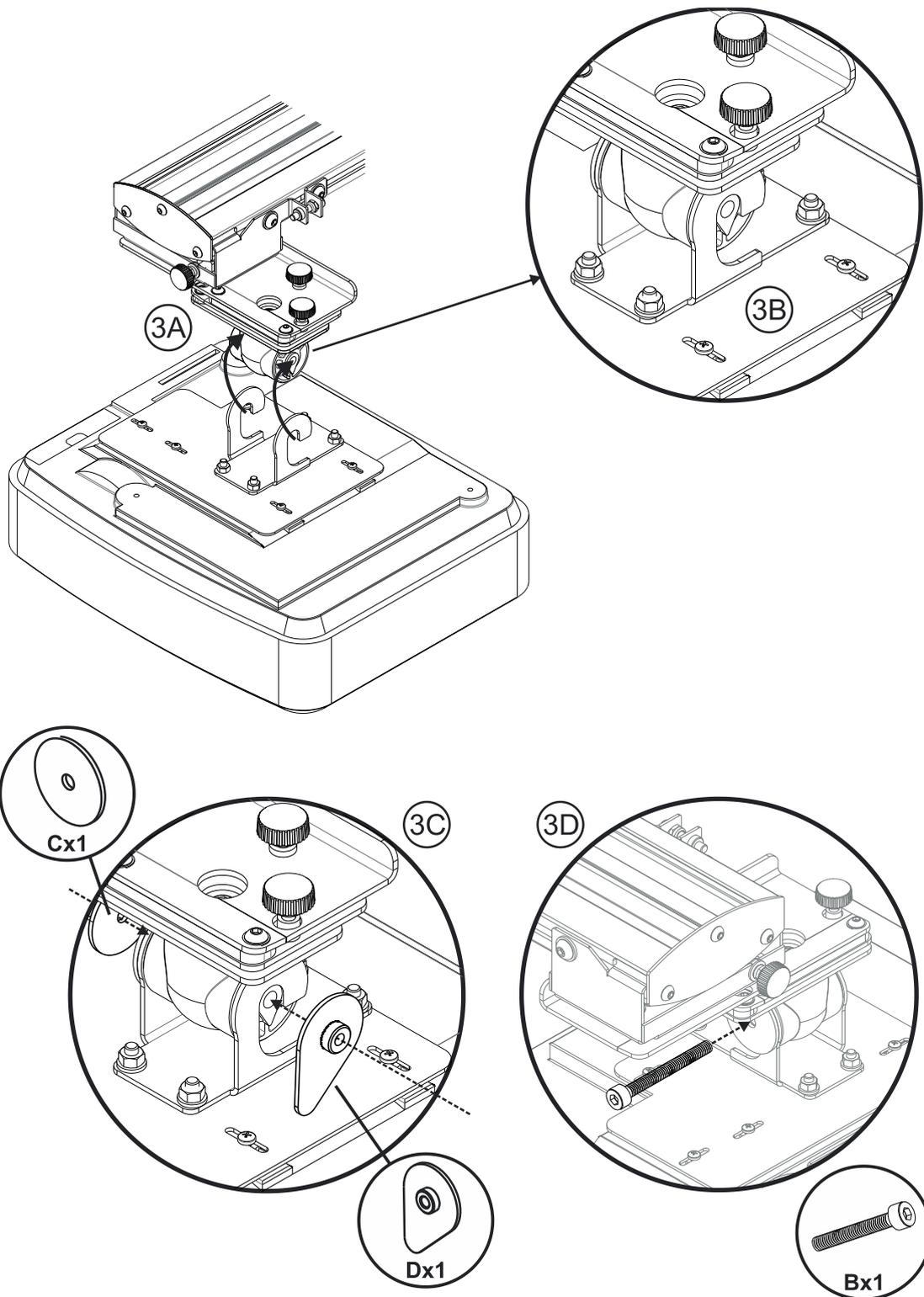
Note: Remove wall plate cover before attaching to wall. Retain fixings for re-attaching cover later.

Step 2: Attach the projector to the mount plate



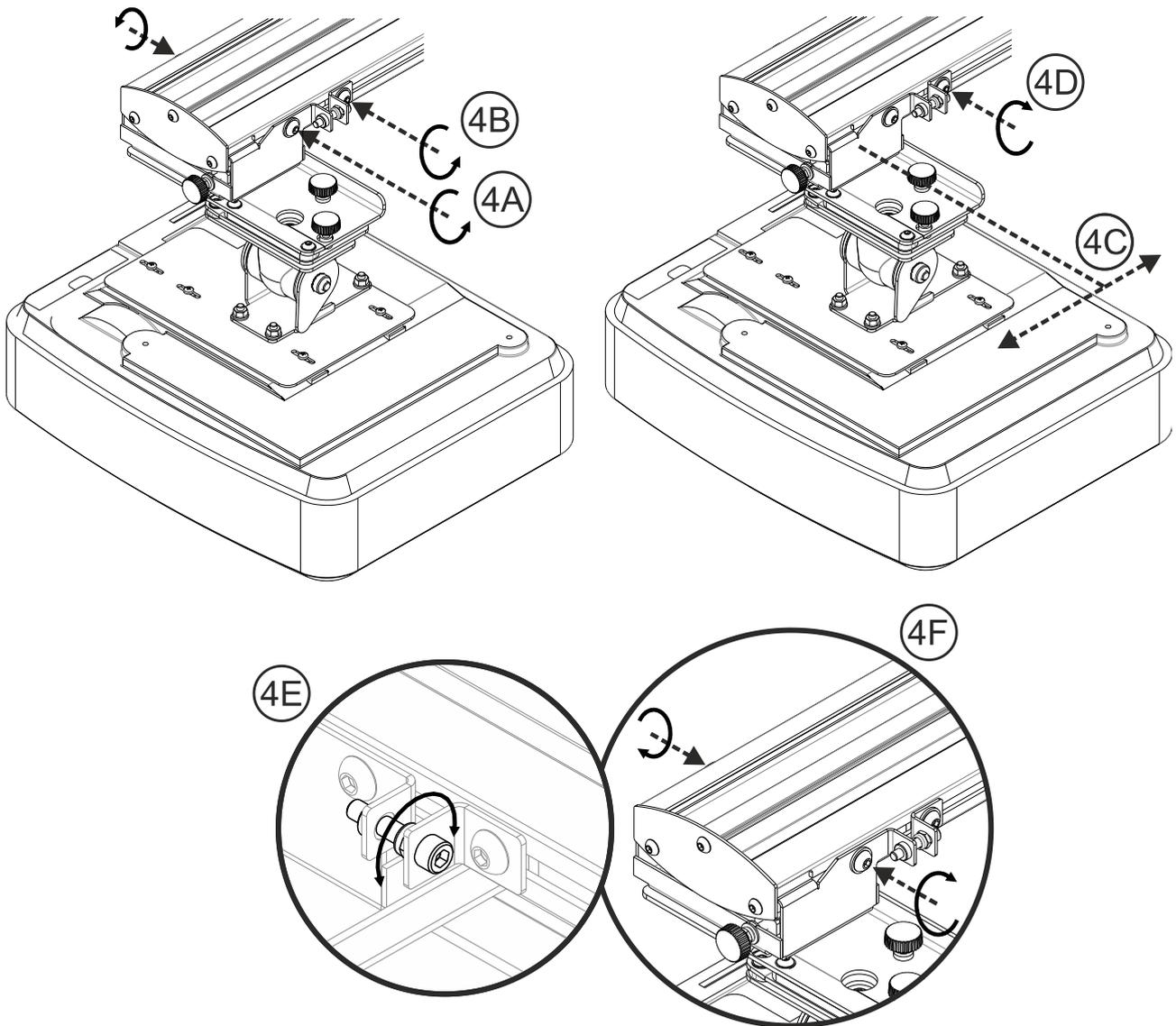
- Place the projector on a soft clean surface
- Position the pre-assembled mounting plate on top of the projector
- Insert **5xA** (M4 x 10mm) screws from the fixing kit, tighten with a posidrive screwdriver

Step 3: Attach the projector to the mount



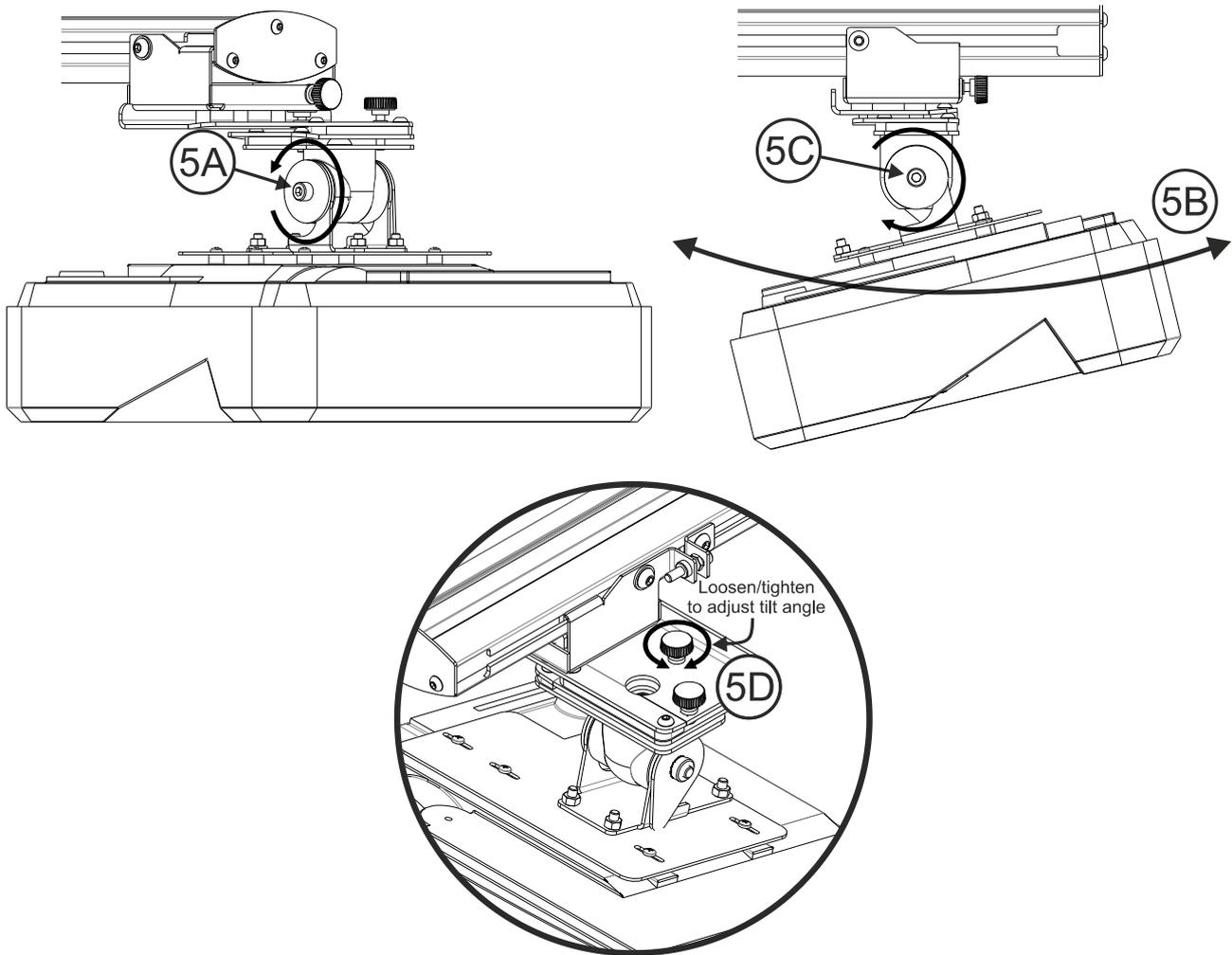
- Lift the projector and mounting plate in to position – **Fig 3A**
- Lift the projector so the two hooks slip over the protrusions on the black molding – **Fig 3B**
- Position the washer **C** and teardrop shaped locking washer **D** against the hooks – **Fig 3C**
- Insert bolt **B** (M8 x 75mm) and tighten it using the one of the allen keys provided – **Fig 3D**

Step 4: Adjusting the projected image size



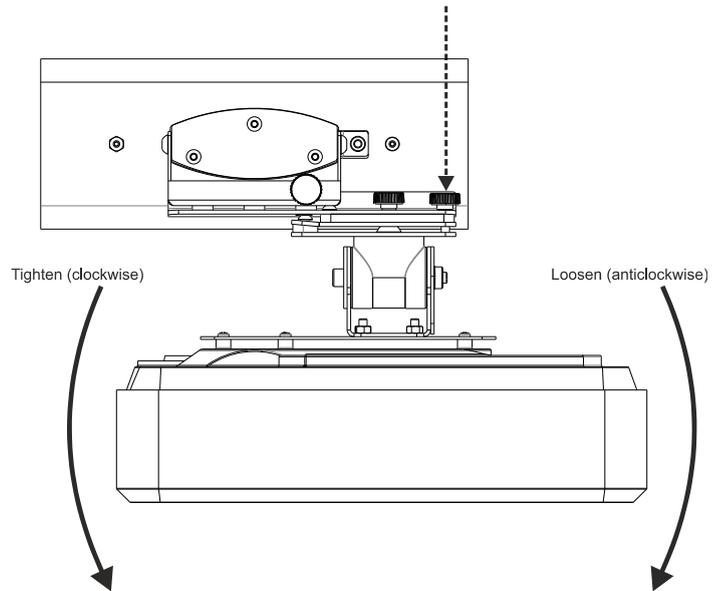
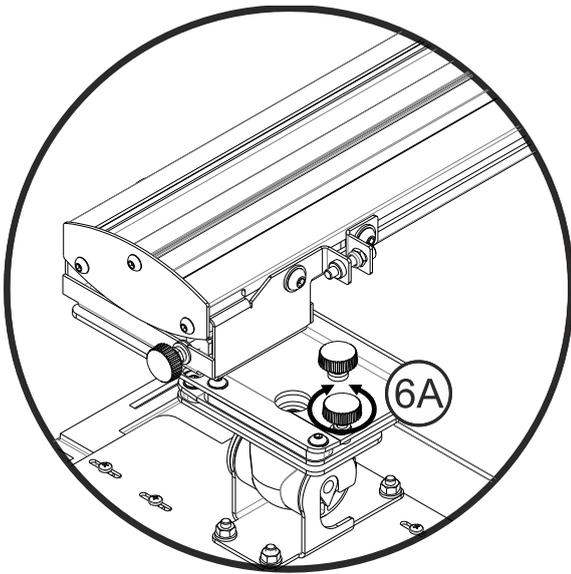
- Loosen the two bolts on the projector caddy – **Fig 4A**
- Loosen the bolt on the fine length adjuster – **Fig 4B**
- Slide the caddy and fine adjuster together until the screen size is nearly correct – **Fig 4C**
- Tighten the fixing bolt on the fine adjuster – **Fig 4D**
- Adjust highlighted bolt to fine adjust the throw distance – **Fig 4E**
- To reduce the projected image size, tighten the bolt clockwise using one of the allen keys provided to move the projector closer to the screen
- To increase the projected image size, loosen the bolt anticlockwise using one of the allen keys provided to move the projector away from the screen
- Once fine adjustment is done. Tighten the two caddy mounting bolts – **Fig 4F**

Step 5: Adjusting the tilt (vertical keystone)



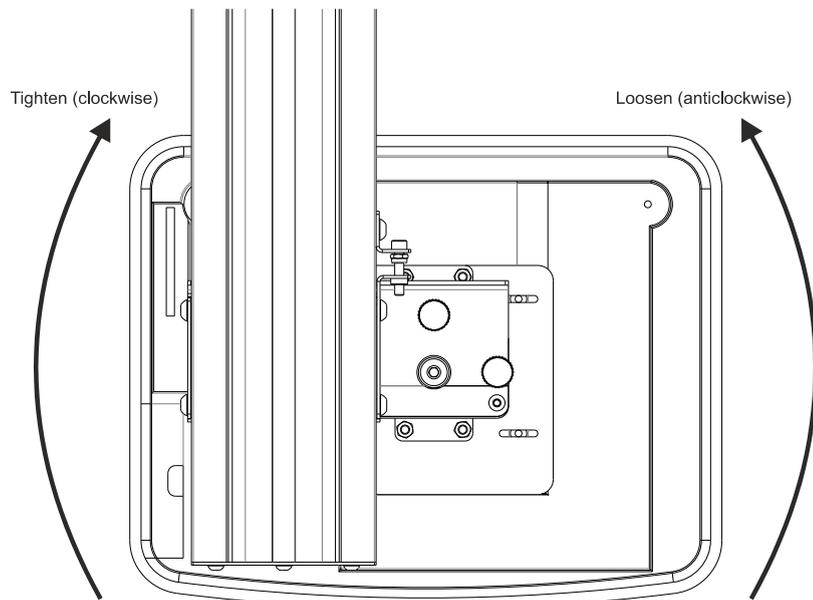
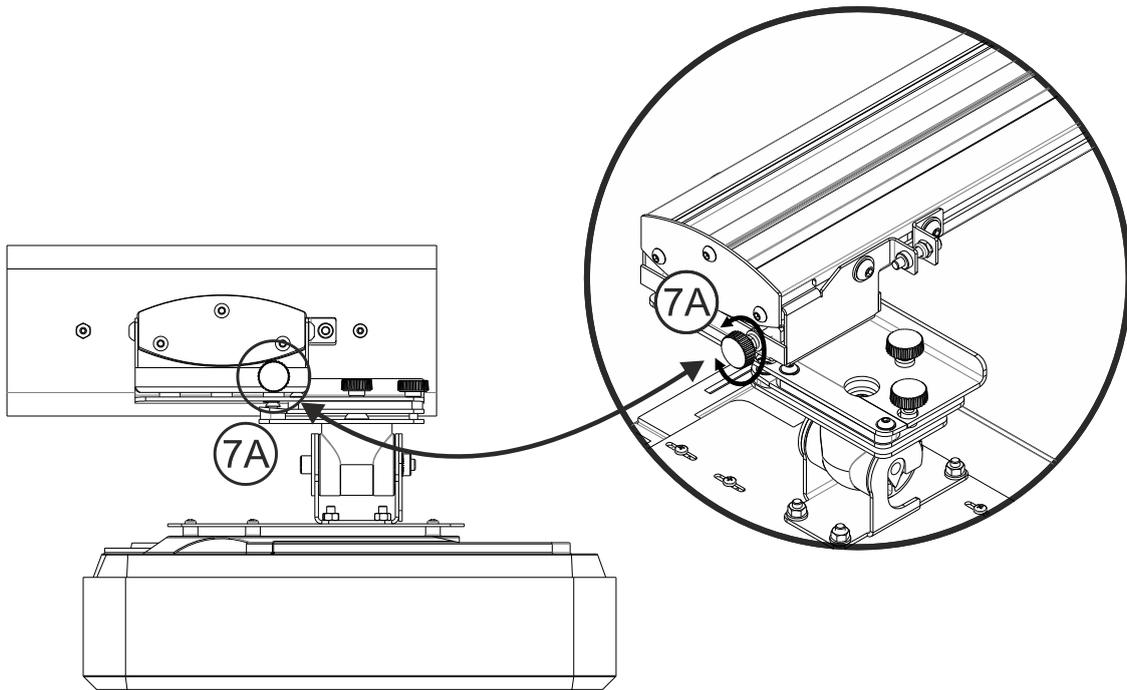
- Loosen the single M8 x 75mm bolt – **Fig 5A**
- Adjust the projector to the required angle – **Fig 5B**
- Tighten the bolt to lock the angle of the projector – **Fig 5C**
- Adjust the highlighted thumbwheel to fine adjust the tilt angle – **Fig 5D**
- To decrease the angle of projection, tighten the thumbwheel clockwise
- To increase the angle of projection, loosen the thumbwheel anticlockwise

Step 6: Adjusting the tilt (yaw)



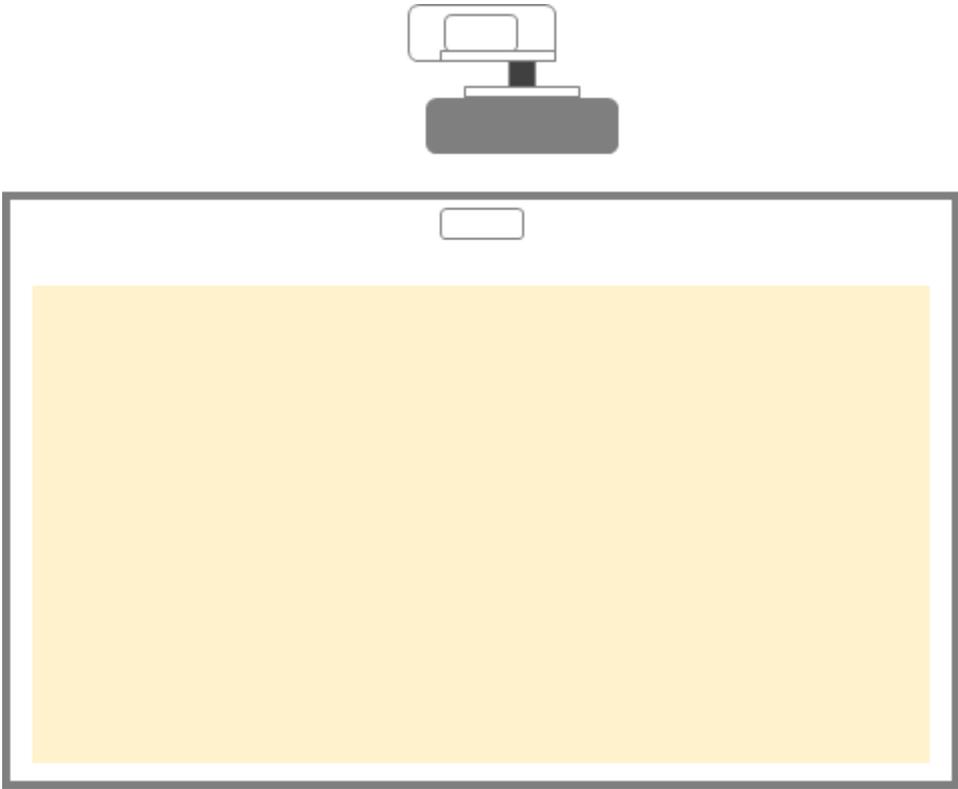
- Adjust the highlighted thumbwheel to fine adjust the yaw angle – **Fig 6E**
- To lower the left hand side of the projector, tighten the thumbwheel clockwise
- To lower the right hand side of the projector, loosen the thumbwheel anticlockwise

Step 7: Adjusting the tilt (horizontal keystone)



- The projector mount is pre-tensioned and can be rotated by hand
- Adjust the highlighted thumbwheel to fine adjust the rotation of the projector – **Fig 7A**
- To bring the left hand side of the projector closer to the screen, tighten the thumbwheel clockwise
- To bring the right hand side of the projector close to the screen, loosen the thumbwheel anticlockwise

Installing the whiteboard



IR Pen setup

Step 1: Install Utility Software

1. System requirements

To ensure normal operation of the touch function, your computer must meet the system requirements shown in the table below.

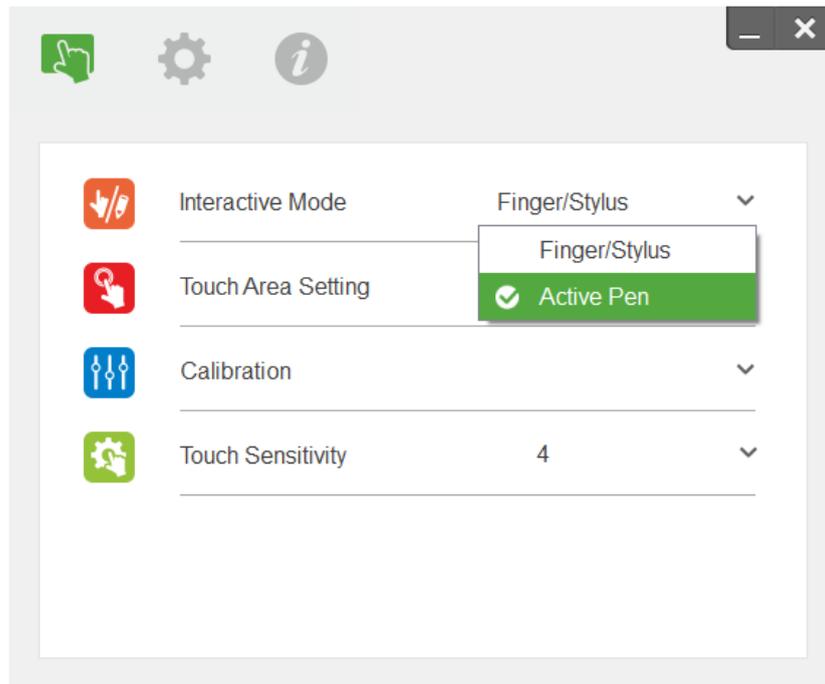
System requirement	
Operating system	Microsoft Windows XP (SP3)/Windows 7 (32bit/64bit)/Windows 8 (Must be installed. NET Framework 4.0)
CPU	Intel® Core™ i3 or above
Memory	2GB or higher
Min. hard disk space	110 MB

2. Install the software utility from the CDROM. The status of the software is shown in the task bar, the icons shown below describe the mode the software is set to:

	Finger/Stylus mode
	Active Pen mode
	Disconnected

Step 2: Interactive Mode

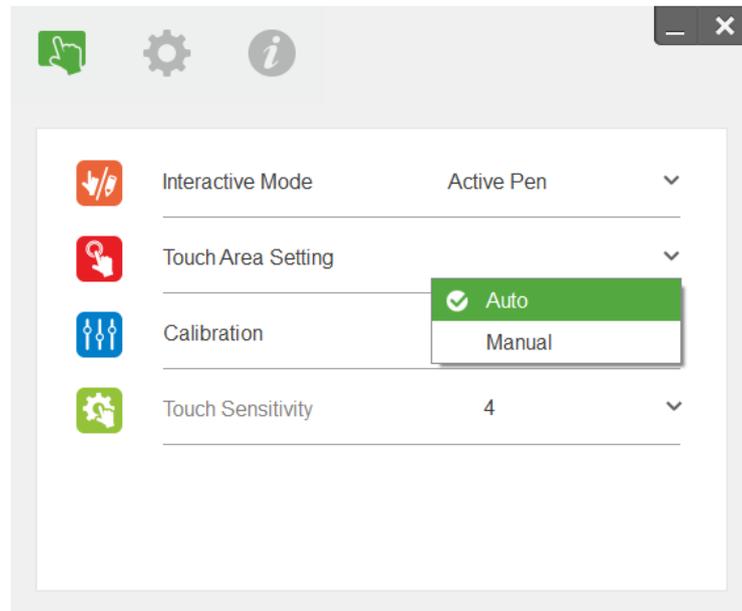
Windows 7 and Windows 8 operating systems support multi-point touch control. Users can select default Finger/Stylus Mode (👉) for multi-point touch, Or switch to Active Pen Mode (🖋️) when using the light pen (IR pen).



Note: Windows XP and MAC operating systems only support **single-point touch**

Step 3: Touch Area Setting

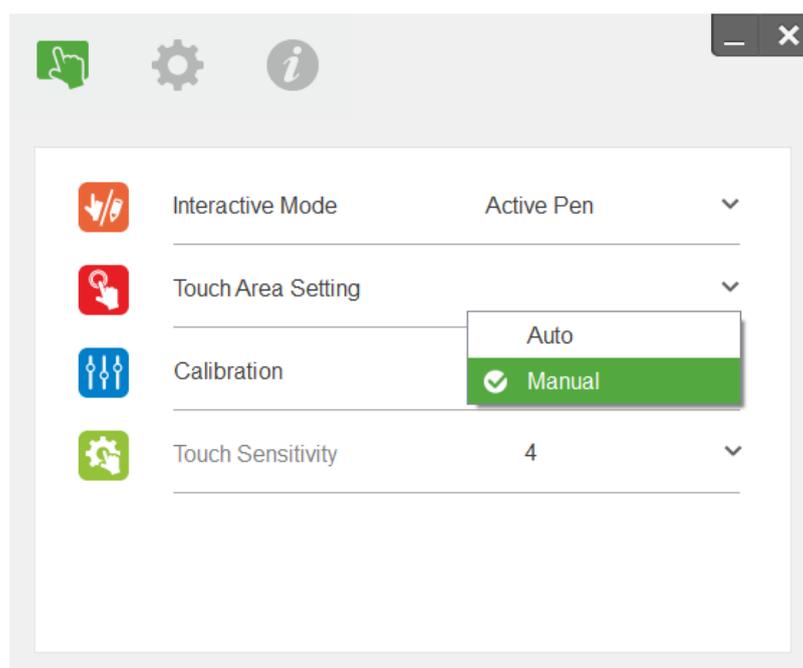
A. Select Auto Touch Area Setting:



Note:

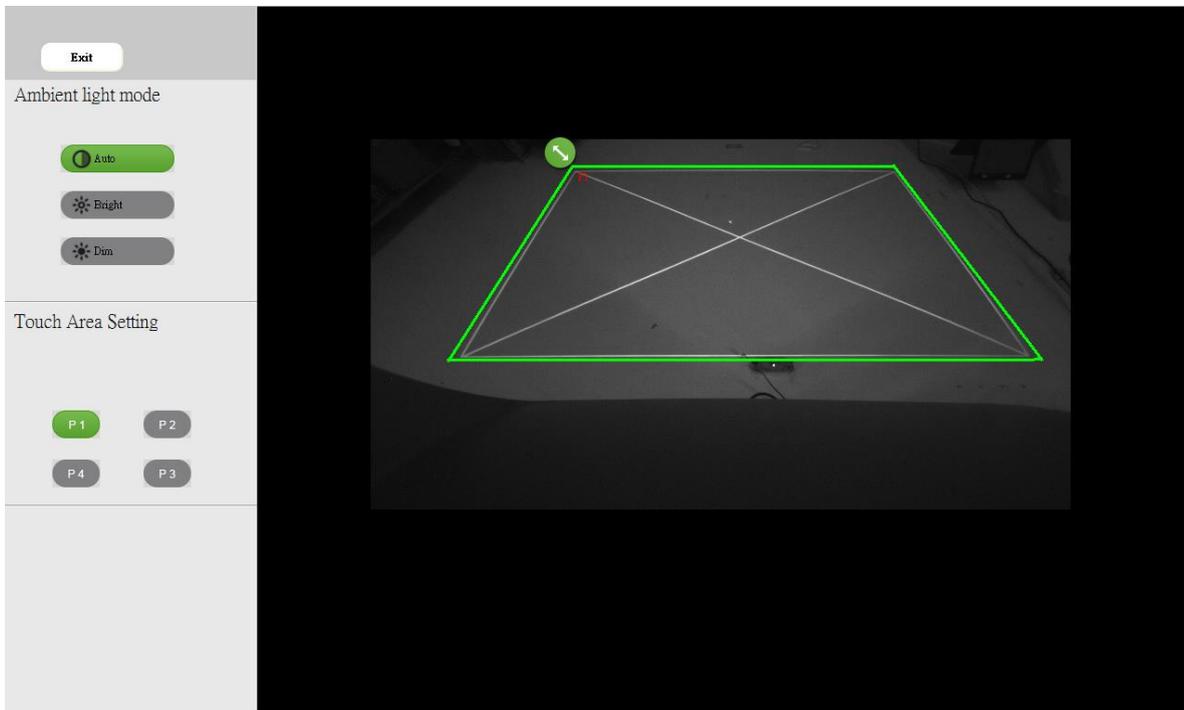
- *Quit all software applications*
- *Reduce ambient light*
- *Do not obstruct or shake lens during Touch Area Setting*
- *Check if projection image is clear. If not, adjust focus to sharpen the image*
If fail message pops up, switch to Manual Touch Area Setting.

B. Select Manual Touch Area Setting:



B-1. After the camera captures the projection image, a Touch Area window will pop up. If the captured image is not clear enough, please re-select “Ambient light mode selection” from “Auto” to “Bright” or “Dim” according to actual ambient light condition.

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



B-2. Touch Area Boundary Fine-tuning

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

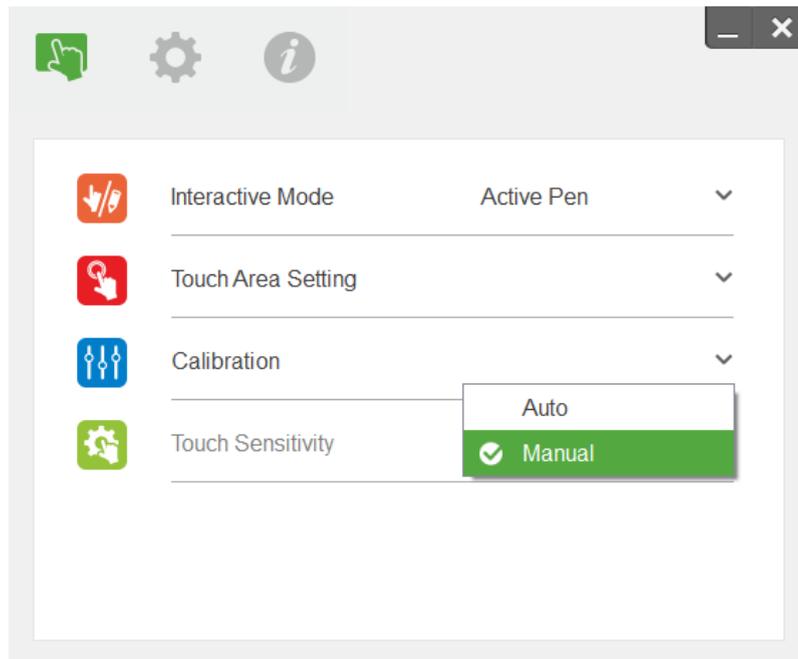
Step 2: Adjust P2 to P4 accordingly; adjustable green zone should completely overlaps the projected white frame.

Step 3: Finally, check again if the green frame completely overlaps the projected white frame. If not, fine-adjust again.

B-3. When the Touch Area is correctly located click “**Exit**” to exit.

Step 4: Calibration

A. Select Manual Calibration



Note:

If the fail message pops up, follow the steps shown below to troubleshoot the issues.

- *Close all software applications*
- *Reduce ambient light*
- *Do not obstruct or shake lens during calibration*
- *Check if projection image is clear. If not, adjust focus to sharpen the image*

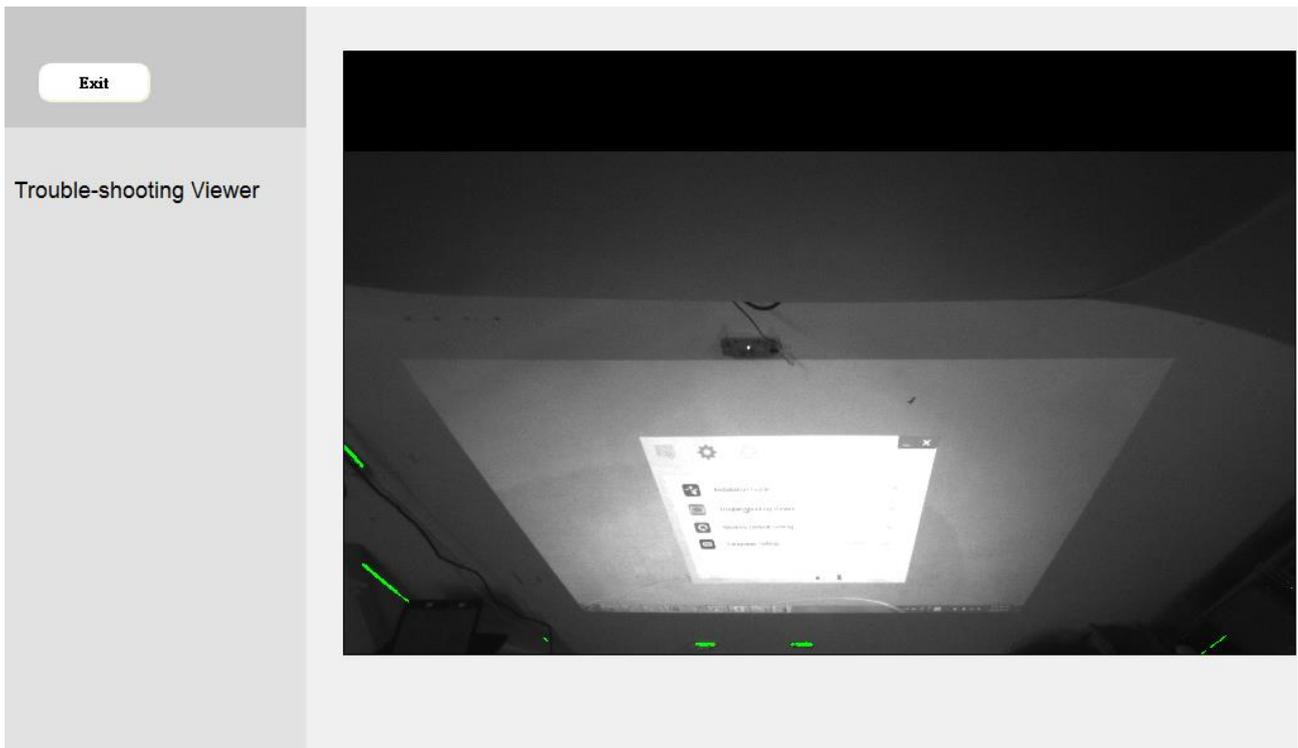
Manual Calibration is suggested for better accuracy.

Step 5: Trouble-shooting 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 infrared light interference is now shown in the window.

Note: Interactive function is disabled under trouble-shooting viewer, click to exit.



Appendix

Troubleshooting

Q1 Why won't the PC boot when the USB cable is connected to the projector?

A:

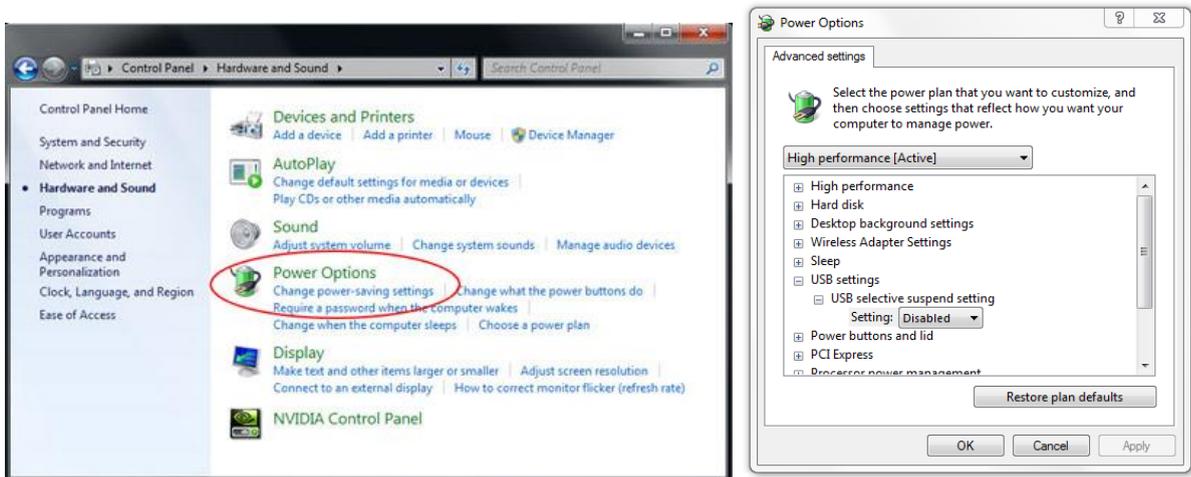
1. Unplug USB cable from PC; or
2. Go to BIOS setup page of PC and modify the "Boot priority order." Choose Hard disk as top priority, save the change and reboot PC.

```
Boot priority order:
1: IDE 0: TOSHIBA MK6465GSK-(S1)
2: USB CD/DVD:
3: USB HDD:
4: Network Boot: Atheros Boot Agent
5: USB FDD:
6: USB KEY:
```

Q2 What to do when Windows system cannot identify the USB device?

A:

1. Unplug/re-plug 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 Power Options in Control Panel, check USB selective suspend settings status in USB settings under Advance Settings. Switch to "Disabled".

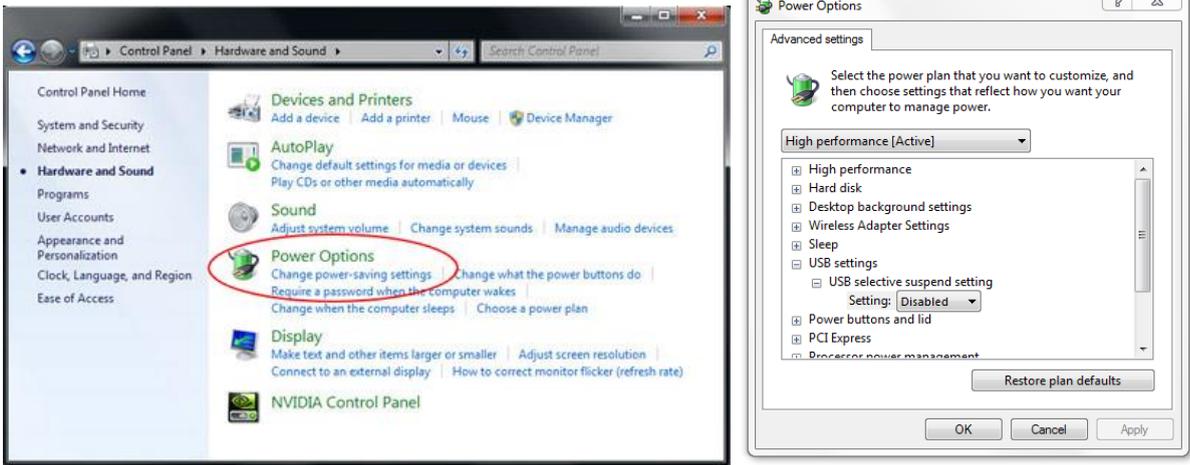


5. Go to the official website of the laptop/PC manufacturer, and update the USB driver to the latest version.
6. Use the USB cable included with your projector and check again. If a USB extension is needed please contact your distributor.
7. The USB port of your computer may not be working. Please contact your IT staff.

Q3 Why is the utility icon (🔴) red and not green (🟢/🟢)?

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

1. Unplug/re-plug 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 Power Options in Control Panel; check USB selective suspend settings status in USB settings under Advance Settings. Switch to “Disabled”.

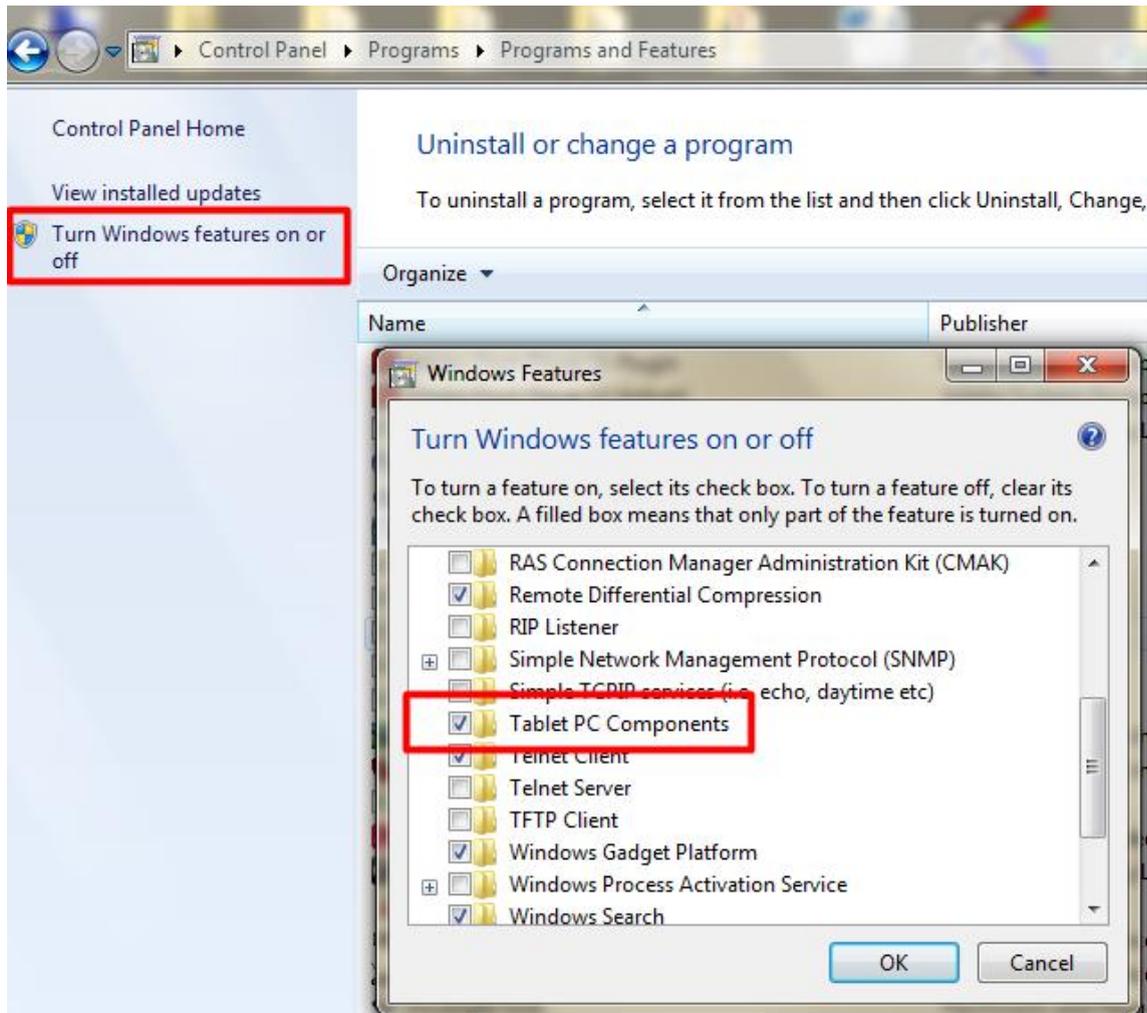


5. Go to official website of the laptop/PC manufacturer, and update the USB driver to the latest version.
6. Go to official website of the laptop/PC manufacturer, and update the BIOS driver to the latest version.
7. Use the USB cable included with your projector and check again. If an USB extension is needed, please contact your distributor.
8. The USB port of your computer may not be working. Please contact your IT staff.

Q4 What to do when there is only single touch point?

A:

1. Re-plug USB cable from PC.
2. Go to “Control Panel” and make sure “Tablet PC Components” is selected.



Q5 When should Calibration and Touch Area Setting be completed?

- A: Please perform Calibration and Touch Area setting during first installation. If the projector or whiteboard is moved, Touch Area Setting and Calibration should be performed again.
- When Laptop/PC resolution is changed, calibrate again.
 - For better accuracy, please complete manual calibration.
 - If an overlarge offset is observed, please perform Manual Calibration and see Step 8 Calibration for troubleshooting.

Q6 What to do when Auto Calibration and Auto Touch Area Setting both fail?

- A:
1. When the projectors OSD message is shown, this may result in Auto Calibration failure and Auto Touch Area Setting failure. Please wait until the OSD message is hidden before performing Auto Calibration and Auto Touch Area Setting.



2. Please follow the troubleshooting steps shown below to perform Auto Calibration and Auto Touch Area Setting again.
 - a. Quit all software applications
 - b. Reduce ambient light
 - c. Do not obstruct or shake lens during Calibration
 - d. Check if 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, please switch to Manual Mode to complete Touch Area Setting and Calibration.
3. Please check Projector Brightness Mode selection. Lower lamp brightness (ECO mode) may affect both Auto Touch Area Setting and Auto Calibration. Please switch to Bright mode to complete Touch Area Setting and Calibration.



4. Please check Projector Display Mode selection. To ensure accuracy of both Auto Touch Area Setting and Auto Calibration, it is suggested to switch display mode to Bright Mode.



Q8 What to do when the mouse cursor () flashes or jumps on screen, or when the Touch function does not work well for a certain projection area?

A:

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

Q9 What to do when the projection area corner is insensitive or intermittent lines are observed?

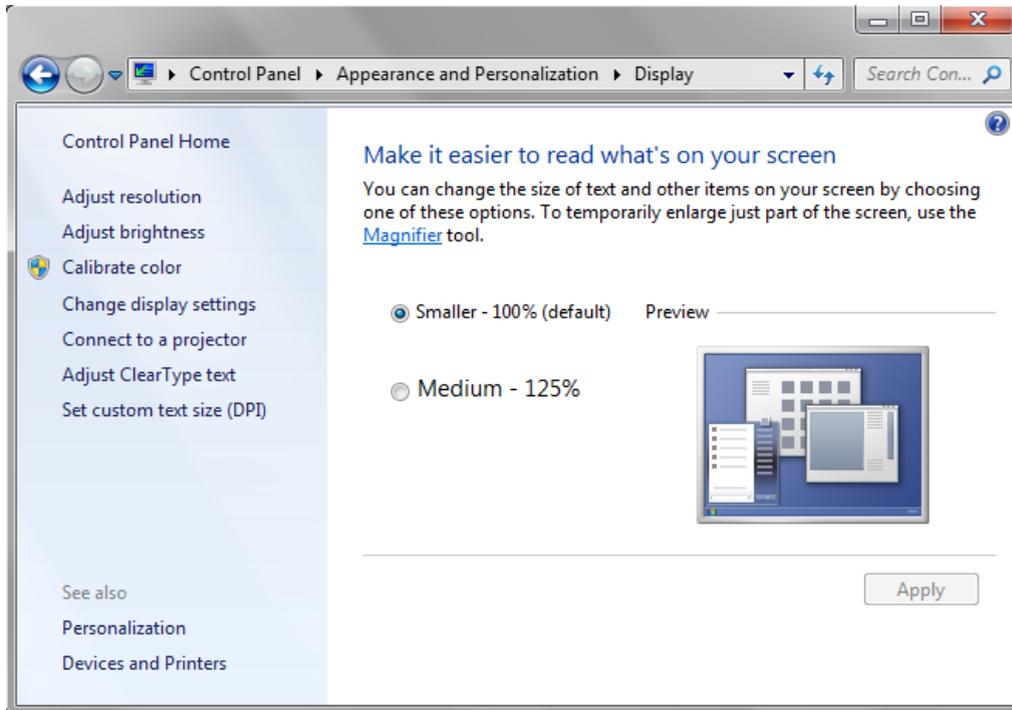
A:

1. Adjust the level of Touch Sensitivity to enhance sensitivity, see Step 9 Touch Sensitivity for troubleshooting.
2. If Touch function remains insensitive, please check the optical port condition. If dust or particles are observed, gently clean the optical port with dust blower.

Q10 What to do when the touch function is not accurate?

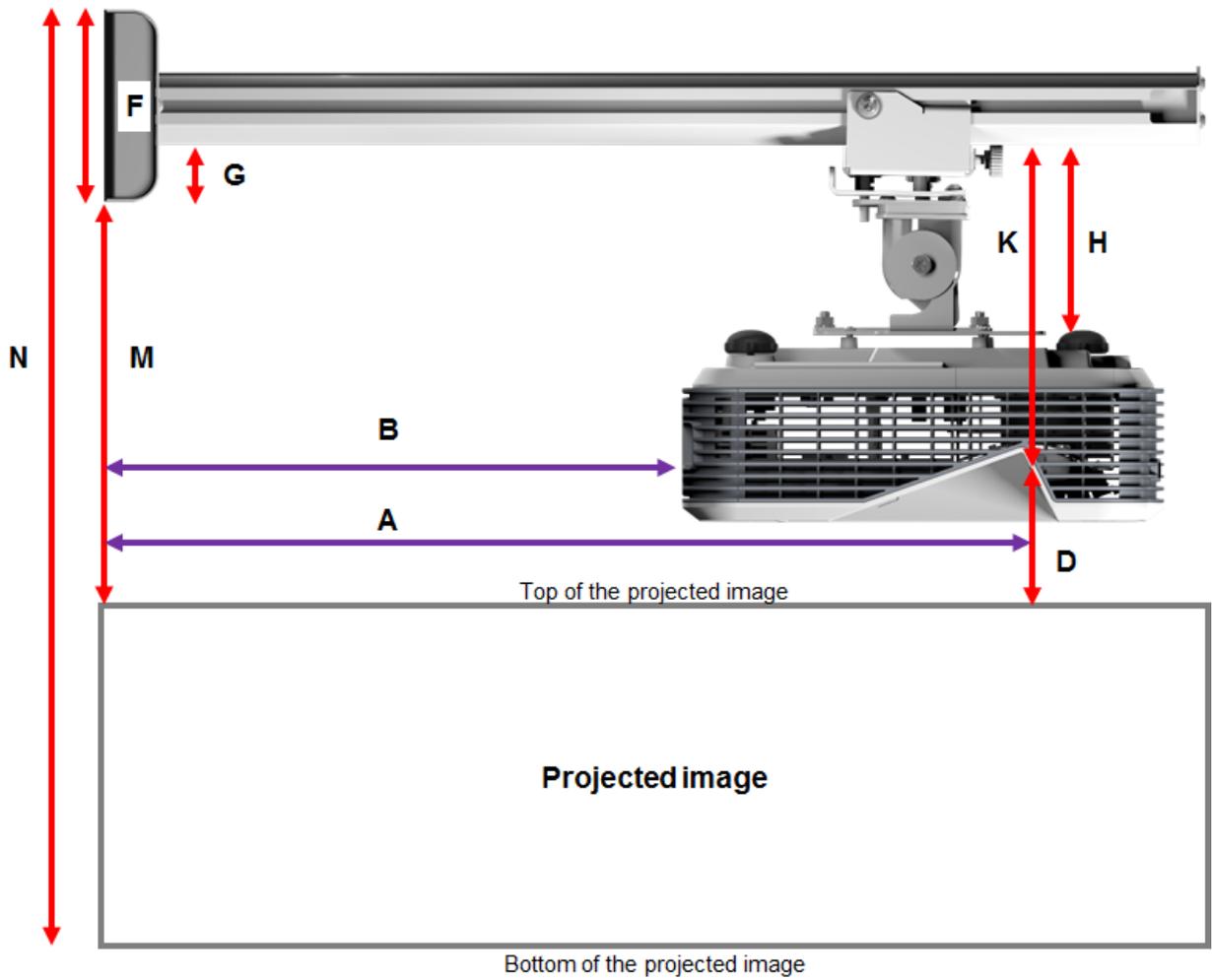
A: Touch accuracy may be impacted when the Windows default display has been changed.

1. Go to the setting page <Start menu/Control Panel/Appearance and Personalization>



2. Select "Smaller - 100%(Default) " and click "Apply".

Distance calculator



XGA

B	A	W	H	Image size	D	M	N
0.219m	0.472m	1.422m	1.066m	1.777m / 70"	0.181m	0.37m	1.57m
0.252m	0.505m	1.521m	1.141m	1.879m / 75"	0.194m	0.38m	1.64m
0.287m	0.540m	1.627m	1.220m	2.033m / 80"	0.207m	0.40m	1.75m
0.354m	0.607m	1.828m	1.371m	2.285m / 90"	0.233m	0.43m	1.92m
0.422m	0.675m	2.033m	1.525m	2.541m / 100"	0.259m	0.45m	2.10m

WXGA

B	A	W	H	Image size	D	M	N
0.232m	0.485m	1.830m	1.144m	2.158m / 85"	0.172m	0.36m	1.63m
0.245m	0.498m	1.879m	1.175m	2.216m / 87"	0.176m	0.37m	1.67m
0.261m	0.514m	1.940m	1.212m	2.287m / 90"	0.182m	0.37m	1.71m
0.318m	0.571m	2.155m	1.347m	2.541m / 100"	0.202m	0.40m	1.87m
0.375m	0.628m	2.370m	1.481m	2.795m / 110"	0.222m	0.42m	2.02m
0.403m	0.656m	2.475m	1.547m	2.919m / 115"	0.232m	0.43m	2.10m

1080p

B	A	W	H		D	M	N
0.193m	0.446m	1.770m	0.996m	2.031m / 80"	0.179m	0.37m	1.49m
0.244m	0.497m	1.972m	1.109m	2.263m / 89"	0.200m	0.39m	1.63m
0.249m	0.502m	1.992m	1.121m	2.286m / 90"	0.202m	0.39m	1.64m
0.305m	0.558m	2.214m	1.246m	2.541m / 100"	0.224m	0.42m	1.79m

Ultra wide*

B	A	W	H		D	M	N
0.467m	0.72m	2.857m	1.071m	3.05m / 120"	0.193m	0.39m	1.58m
0.497m	0.75m	2.976m	1.116m	3.18m / 125"	0.201m	0.39m	1.63m
0.527m	0.78m	3.095m	1.161m	3.30m / 130"	0.209m	0.40m	1.69m

*longer arm mount required

F	G	H	K
0.125m	0.037m	0.125m	0.18