



TruGolf®

INTERACTIVE SPORTS CAMERA



MANUAL (4.0)

E6 INTERACTIVE SPORTS CAMERA

MANUAL (4.0)

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HOW THE E6 INTERACTIVE SPORTS CAMERA WORKS

The E6 Interactive Sports Camera tracking system has the following components within the enclosure:

- **2 depth cameras** (*one in the back end of the enclosure, pointed forward toward the screen, one in the front end, pointed back toward the player*)
- **A microphone** (*for voice activation options*)

When a ball is hit/kicked/thrown, the two cameras track the ball, determine the speed and direction, and then translate that information on-screen.

OTHER ITEMS INCLUDED WITH THE E6 ISC:

- Light Track and Universal Projector Mount
- 30' Extension cord
- 32' USB 3.0 Fiber Optic Cable
- Remote Power Switch (*Optional*)
- IR Booster Light(s) w/ Power Adapters and Mounts (*Optional*)
- Three-prong outlet Adapter (*Optional*)



INSTALLING THE E6 INTERACTIVE SPORTS CAMERA

If you have a Vista simulator with an overhead light track, continue on to the next section. Otherwise, go to the **“FOR ALL OTHER SIMULATOR SETUPS”** section on page 3. There, you can determine the best way to install the E6 ISC, based on the height of your ceiling and size of your space. Once you determine this, please view the corresponding video(s), using the link(s) below.

Before starting, here are some terms to get familiar with:

- **Play Area:** The section of floor where you run toward the ball
- **Tee Position:** The spot where you place a ball to be kicked/hit
- **Floor Area:** The section of floor between the Play Area and the screen

INSTALLING THE E6 INTERACTIVE SPORTS CAMERA ENCLOSURE

The E6 Interactive Sports Camera enclosure should be installed to a height of 8–10 ft. above the floor. If you have a Vista simulator with an overhead light track, the enclosure can be mounted to the light track. If not, you will need to attach a light track or a universal projector mount to the ceiling, depending on the height of the ceiling. See below for instructions.

IF YOU HAVE A VISTA SIMULATOR:

The E6 Interactive Sports Camera enclosure attaches to the light track above the play area.

THINGS YOU WILL NEED:

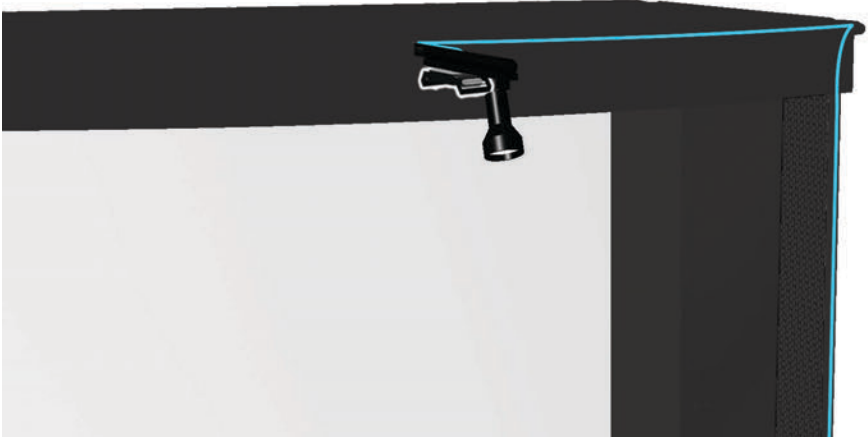
- Phillips screwdriver or drill
- Ladder

MOUNTING INSTRUCTIONS:

- 1 | **WARNING!** *To avoid electric shock, unplug the light track from the power outlet before attempting any of the following.*
- 2 | If you have a light already installed on the light track, this will need to be removed first. Simply twist the light 90 degrees and slide it back.
- 3 | Use a Phillips screwdriver to remove the cap from the end of the light track and slide the light out.

- 4 | Slide the E6 ISC enclosure into the light track using the two track guides on top of the enclosure. The track guides fit only one way, so you may need to adjust them. Slide the enclosure all the way to end of the track. (see illustration for final position).

IMPORTANT! Make sure the end where the cables come out is facing the screen.



- 5 | If you removed a light in the previous steps, replace it now by sliding it back onto the track and twisting 90 degrees to lock it in place.
- 6 | Replace the light track cap.
- 7 | Plug the power back in and adjust the overhead light to shine over the back two rows of the TruTrack 2 Club Sensors.
- 8 | Plug in the USB extension cable's female end to the camera USB, then plug the USB extension cable's male end into an open USB 3.0 port on the computer.
- 9 | Plug in the power cable and run both the power cable and USB Cable along the framing and to the computer (see illustration).

NOTE: Handle the USB 3.0 Fiberoptic Cable with care as a bend or kink in the cable will cause a signal degradation or complete loss of signal.

- 10 | Position the light fixture to shine on the 3 rows of sensors.

IMPORTANT! The overhead light must be positioned to light the 3 rows of sensors for tracking to work properly when playing golf.

FOR ALL OTHER SIMULATOR SETUPS:

You will need to mount either a light track or a universal projector mount to your ceiling, which the E6 Interactive Sports Camera will then attach to. The type of mount you need depends on your setup:

USE A LIGHT TRACK IF:

- Your ceiling is 8 ft. high (*Diagram 1*)
- Your ceiling is over 8 ft. high (*up to 10'*) and you have plenty of Play Area (*space to run and kick the ball*) (*Diagram 2*)

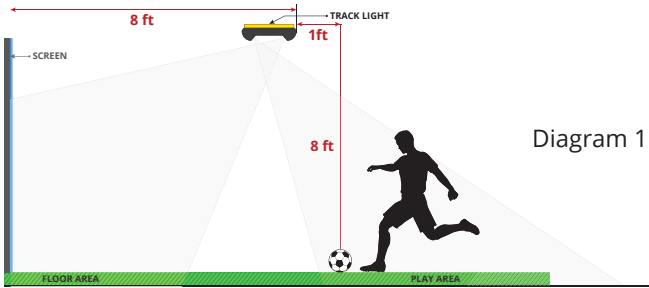


Diagram 1

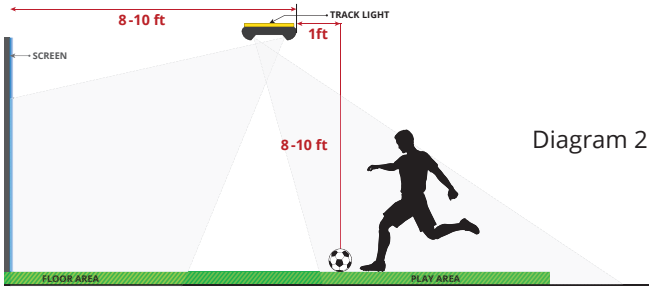


Diagram 2

USE A UNIVERSAL PROJECTOR MOUNT IF:

- Your ceiling is over 10 ft. high (*Diagram 3*)
- The ceiling is over 8 ft. high and you have limited Play Area (*Diagram 4*)

NOTE: "Limited Play Area" is less than 6 ft. of space between where you will kick hit the ball and back wall of the room.

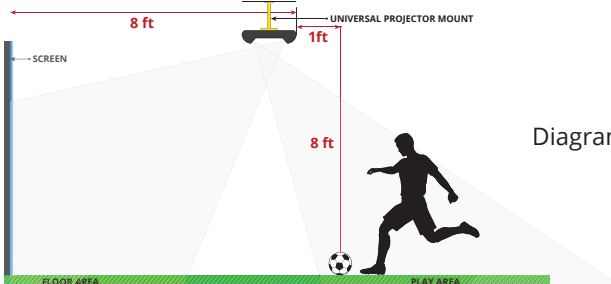
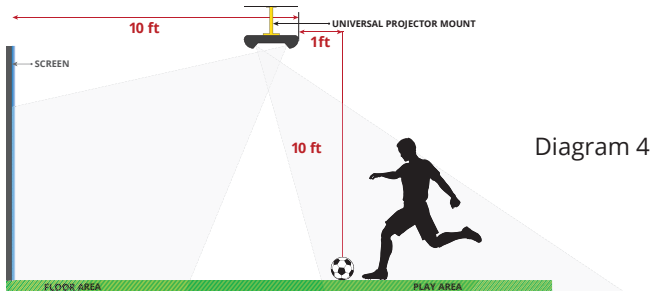


Diagram 3



THINGS YOU WILL NEED:

- 2 ft. Light Track -OR- Universal Projector Mount
- Tape Measure
- Pencil
- Phillips Screwdriver or Drill
- Plumb Bob (optional)
- 2 1½" Wood Screws -OR- 2 self-drilling Drywall Anchors
- 4 4M Screws (for use with a universal projector mount)
- 4 Washers (for use with a universal projector mount)

IMPORTANT! When mounting a light track or universal projector mount, please reference the instructions and materials that come with them.

MOUNTING WITH A LIGHT TRACK:

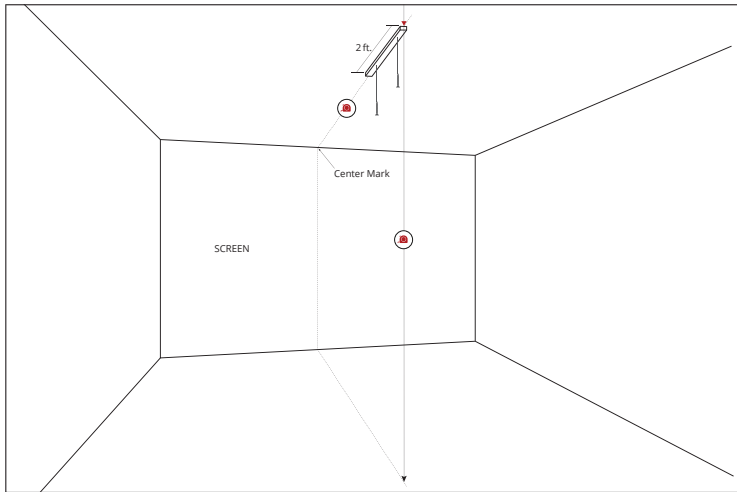
- 1 | Measure to determine the center of the projection screen.
IMPORTANT! The light track must be aligned exactly perpendicular to the center of your projection screen.
- 2 | Use a measuring tape to measure the height of the ceiling above the play area (see diagram on page 2 for location of play area).
- 3 | Measure from the center point of the projection screen back the same distance as the ceiling height (the measurement from Step 2) and make a mark on the ceiling.

NOTE: If you have limited Play Area and this mark is less than 6 ft. from the back wall (behind the Play Area), you can make the mark closer to the screen, up to 10% closer.

EXAMPLE: If the distance from the floor to ceiling was 8 ft., make a mark 8 ft. from the screen.

TIP: To ensure that this mark is properly aligned with the center of the screen, either measure from a side wall or lay the extended tape measure on the floor from the screen to the necessary distance and use a plumb bob.

- 4 | Next, make a second mark on the ceiling, 2 ft. closer to the screen (in this example, 6 ft. from the screen), again, exactly aligned with the center of the screen.



5 | Attach the light track to the ceiling between the two marks, following the instructions included with the light track.

- If mounting directly into a wooden stud, use the wood screws.
- If mounting into drywall, use the self-drilling drywall anchors.

6 | Use a Phillips screwdriver to remove one cap off of the end of the light track.

7 | Slide the E6 Interactive Sport Camera enclosure into the light track using the two track guides on top of the enclosure.

IMPORTANT! Make sure the end where the cables come out is facing the screen.

8 | Replace the light track cap.

9 | Plug in the USB extension cable's female end to the camera USB, then plug the USB extension cable's male end into a USB 3.0 port on the computer.

NOTE: Handle the USB 3.0 Fiberoptic Cable with care as a bend or kink in the cable will cause a signal degradation or complete loss of signal.

10 | Plug in the power cable and run both the power cable and USB cable along the framing and to the computer.

MOUNTING WITH A UNIVERSAL PROJECTOR MOUNT:

1 | Measuring from the exact center of the screen, make a mark on the ceiling at the distance you measured in Step 1, **less 1 ft.**

EXAMPLE: If the ceiling height is 10 ft., make a mark at 9'. Centering the universal projector mount on this mark will put the back end of the E6 Interactive Sports Camera in the correct position (the same distance from the screen as from the floor).

- 2] Attach the universal projector mount to the ceiling, following the instructions included with the universal projector mount.
 - If mounting directly into a wooden stud, use the wood screws.
 - If mounting into drywall, use the self-drilling drywall anchors.
- 3] Attach the E6 Interactive Sports Camera enclosure to the universal projector mount, using the washers and 4M screws.

***IMPORTANT!** If you have an overhead projector and will be attaching the E6 ISC to the projector mount, be aware that the E6 ISC may block the top portion of the projected image on-screen. In this case, you must either switch to a Light Track mount for the E6 ISC or lower the height of your projector.*

- 4] Plug in the USB extension cable's female end to the camera USB, then plug the USB extension cable's male end into a USB 3.0 port on the computer.

***NOTE:** Handle the USB 3.0 Fiberoptic Cable with care as a bend or kink in the cable will cause a signal degradation or complete loss of signal.*

- 5] Plug in the power cable and run both the power cable and USB cable along the framing and to the computer.

USING AN IR BOOSTER TO IMPROVE SHOT REGISTRATION AND ACCURACY

The E6 ISC is designed to work well in relatively low light, so your space should be lit just well enough for the ISC to see balls in the Floor Area (*between the Tee Position and screen*), but not so bright that the ambient light washes out the projected image on the screen. With a high ceiling or not enough light, the ISC may have trouble tracking objects, in which case, you may need an **IR BOOSTER** Add-On.

***IMPORTANT:** When mounting the IR Booster, it must be installed high enough so that the unit itself does not fall into the field of view of the ISC screen-facing camera. In addition to mounting it as exemplified in the diagram below, you can also check to see if it is appearing in the ISC camera's field of vision once you reach the configuration stage (later in this manual) and make adjustments.*



INSTALLING AN IR BOOSTER LIGHT

- 1 | The light must be in front (*on the screen side*) of the E6 ISC.
- 2 | Clamp/attach the light to the ceiling or the E6 ISC enclosure.
IMPORTANT! The IR Booster Light should be high enough that it won't obstruct the view of the rear (screen-facing) ISC camera. If necessary, attach the light slightly closer to the screen.
- 3 | Aim the light so its cone of infrared light covers the floor from 1 ft. away from the base of the screen to 2-3 ft. in front of the Play Area.

IMPORTANT! The IR Booster must not project infrared light onto the screen.

- 4 | Plug in the light, using the provided 3-Prong Power Adapter.

IMPORTANT! The IR Booster Light requires its own individual power supply.

TIP: To preserve the life of the IR Booster, we strongly suggest unplugging it when not in use. If your installation is done by a TruGolf technician, a remote switch can be provided.

INSTALLING TWO IR BOOSTER LIGHTS

In some rare cases (*usually with custom installations with very high ceilings or very large Play Areas*) a second IR Booster Light may be required.



See the previous page for instructions on installing a single IR Booster Light. When installing a second light, it should be clamped/attached immediately in front of and in line with the first light.


When both lights are installed, adjust them so the front light covers the floor up to 1 ft. away from the base of the screen and the back light slightly overlaps the area covered by the front light.

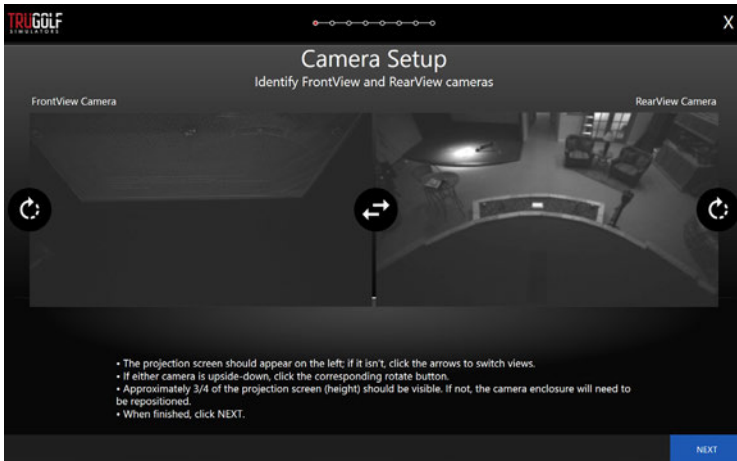
CONFIGURING THE E6 INTERACTIVE SPORTS CAMERA

The E6 Interactive Sports Camera comes with a program that guides users through the required process of configuring the tracking system. This program is accessed in the ADMIN TOOLS section of the E6 Product Launcher. Follow the steps below to configure E6 Interactive Sports Camera.

TO CONFIGURE THE E6 INTERACTIVE SPORTS CAMERA TRACKING SYSTEM:

IMPORTANT! Before starting the configuration, remove all objects from the floor area.

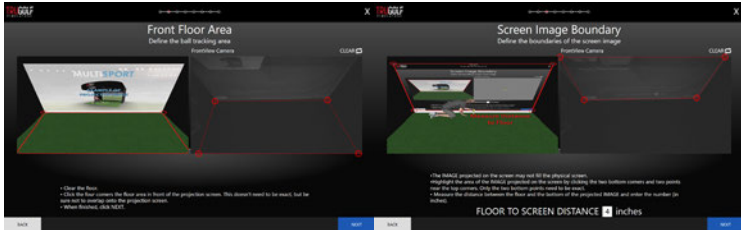
- 1 | To configure the E6 Interactive Sports Camera, the E6 Product Launcher must be installed. Refer to the **E6 Product Launcher manual**.
<https://trugolf.com/pages/support>
- 2 | Double-click the **E6 Product Launcher icon** from the PC desktop or taskbar.
- 3 | In the E6 Product Launcher, click on the **MENU ICON**  in the upper-right corner and then select **ADMIN TOOLS**.
- 4 | Select **E6 Interactive Sports Camera CONFIG**.
- 5 | On the **CAMERA SETUP** screen, identify the FrontView and RearView cameras.



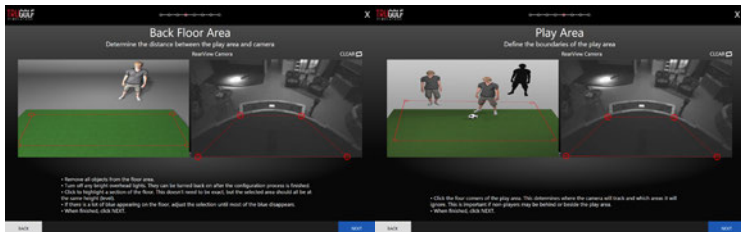
- The projection screen should appear on the left; if it isn't, click the middle arrows to switch views.
- If either camera is upside-down, click the corresponding rotate button on the left or right.
- Approximately 3/4 of the projection screen (*height*) should be visible. If not, adjust the rear (*front-facing*) camera.

IMPORTANT! If significantly less than 3/4 of the projection screen is visible, the E6 Interactive Sports Camera will not track balls accurately, so the mounted enclosure will need to be repositioned!

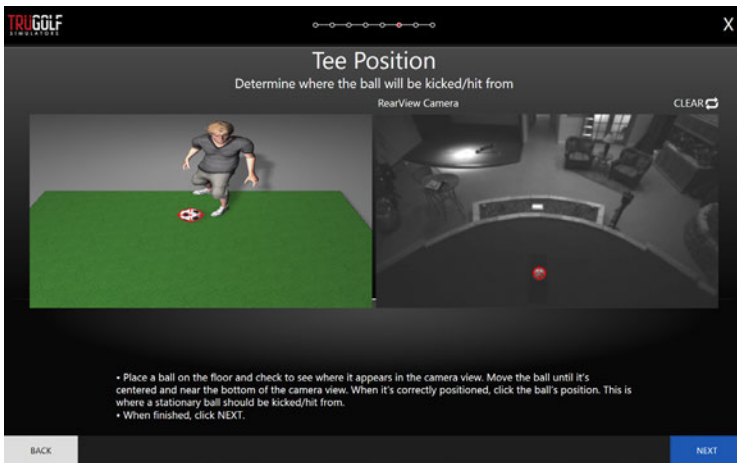
- When finished, click **NEXT**.
- 6 | On the **FRONT FLOOR AREA** screen, define the ball tracking area.
- Click the four corners of the floor area in front of the projection screen. This doesn't need to be exact, but be sure not to overlap onto the projection screen.
 - When finished, click **NEXT**.



- 7 | On the **SCREEN IMAGE BOUNDARY** screen, define the boundaries of the screen image.
- In some cases, the image projected on the screen may not reach the bottom or sides of the physical screen. In this step, you need to select only the projected **IMAGE**, not the entire screen.
 - Highlight the area of the **IMAGE** projected on the screen by clicking the two bottom corners and two points near the top corners. Only the two bottom points need to be exact.
 - Next, use a tape measure to measure the distance between the floor and the bottom of the projected **IMAGE** and then enter the number (*in inches*).
 - When finished, click **NEXT**.
- 8 | On the **BACK FLOOR AREA** screen, click four points to highlight a square or rectangle where you will be kicking or hitting balls.
- This doesn't need to be exact, but the selected area should all be at the same height (*in other words, everything within the square should be level*).
 - When finished, click **NEXT**.

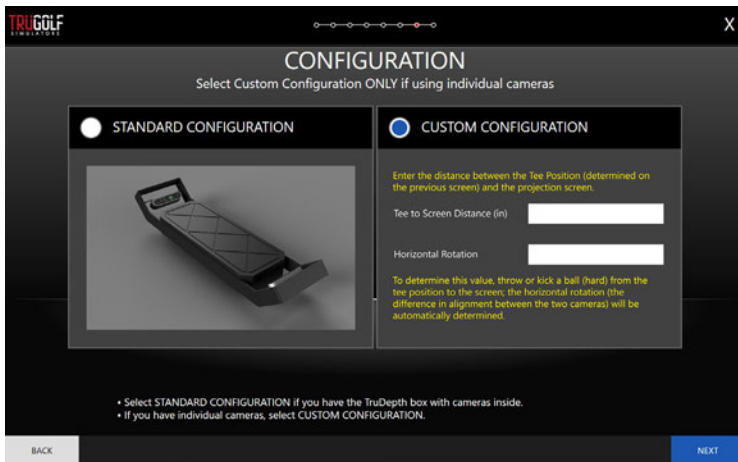


- 9| On the **PLAY AREA** screen, define the boundaries of the play area.
- Click the four corners around the area where you will be kicking and hitting the ball. The camera will ignore any movement outside this area. This is important if non-players might be behind or beside the play area.
 - When finished, click **NEXT**.
- 10| On the **TEE POSITION** screen, determine where the ball will be hit/ kicked/thrown from.
- To start, place a ball on the floor and check to see where it appears in the camera view.
 - Next, move the ball until it's centered. Ideally, the ball should be near the bottom of the camera view, if that will provide sufficient space to kick/hit.
 - When the ball is in the correct position, click on the ball. This marks the Tee Position and is where balls should be kicked/hit from.
 - When finished, click **NEXT**.



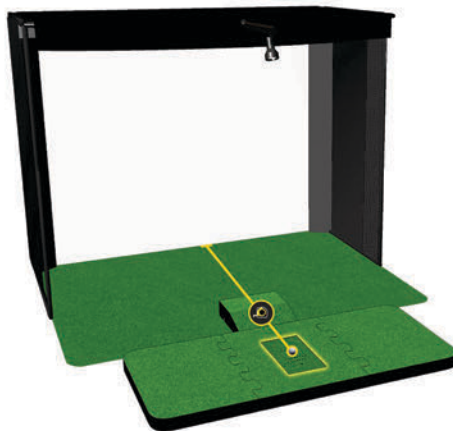
11 | On the **CONFIGURATION** screen, select **CUSTOM CONFIGURATION**.

Note: Even if you are using the standard ISC apparatus (similar to what is pictured here), always choose **CUSTOM CONFIGURATION** at this stage.



Complete the following:

Tee to Screen: Measure the distance between the Tee Position (*determined on the previous screen*) and the projection screen.



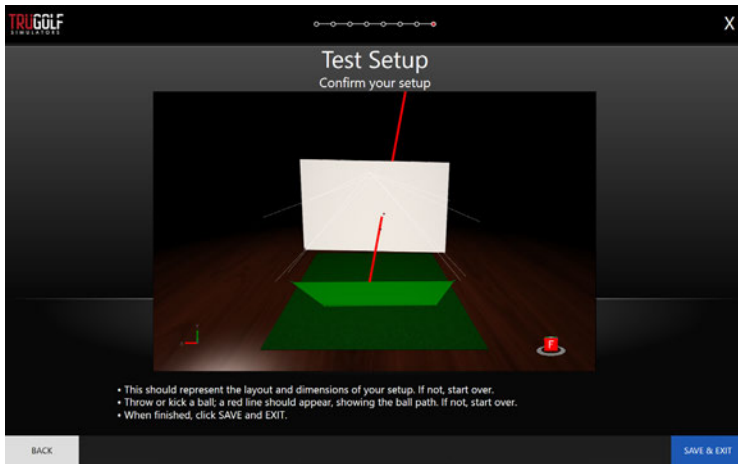
Minus 15 inches from this measurement. For example: if you measure 130 inches tee to screen, input “115” into the “Tee to Screen Distance” dialog.

Horizontal Rotation: Leave this field empty.

- When finished, click **NEXT**.

12| On the **TEST SETUP** screen, confirm your setup.

- This should represent the layout and dimensions of your setup. If not, start over.
- Throw or kick a ball; a red line should appear, showing the ball path. If not, start over.
- When finished, click **SAVE & EXIT**.



13| **ADVANCED SETTINGS**

- Clicking the TRUGOLF SIMULATORS logo opens Advanced Settings. These should be used only if you have technical issues and are in contact with TruGolf tech support.
- To exit Advanced Settings, click the **BASIC** button at the bottom of the screen.

TROUBLESHOOTING

Tracking on my system is not working or is inconsistent:

Solution 1: Check to see if the Interactive Sports Camera hasn't moved since the last time you ran the calibration utility. If it has, please ensure the camera array is secure and run the calibration tool again.

Solution 2: Check to see if your lighting has changed. If your lighting is different to the lighting you had when you first calibrated the camera (for example: you turned on or off extra lights which change the amount of lighting in the player area), either a) Return your lighting to the same as it was during calibration, or b) run the calibration tool again under the new lighting conditions.

Solution 3: Sometimes there are unforeseen circumstances that can alter how the tracking system picks up objects that may not be covered in the above solutions. In this case, please run the calibration tool again. This may help clear out any issues that may have caused problems since the last time the tool was run.

Solution 4: With some installations, particularly those with ceiling heights of 9 feet or more, extra light may be required to track some balls (particularly lower moving balls, or balls rolled along the ground at lower velocities). The ISC can utilize IR Boosters to help in these cases. If you are not already using an IR booster, TruGolf can provide one to improve tracking in certain cases. Refer to the "IR Booster" section of this manual for more information on how to install one on your simulator.

My microphone is not picking up my voice commands, or is inconsistent:

Solution 1: If you are in a particularly loud or echoic environment, the microphone may have trouble picking up your voice. Ensure that you are speaking loudly and clearly at the tee position when making voice commands.

Solution 2: The microphone sensitivity may be set too low or too high.

I'm getting a message on screen that says my ISC tracking system has an "error" or is "restarting", or something similar.

Solution 1: If the on-screen message provides a status like "Restarting", or "Rebooting", or "Initializing", it means the system has undergone a

recent change or automatic update. If this is the case, please wait for the message to go away on its own and avoid using the computer or simulator during this time. If the message remains on-screen for more than 5 minutes, you may need to force a restart of the MultiSport software. Simply open the game menu, quit the game, and relaunch it. This will force the tracking system to complete the update process.

Solution 2: If the on-screen message something like “ISC: Error”, there may be an issue with the USB connection to the computer. In this case: close the MultiSport software, go to the PC and disconnect the USB cable for the tracking system. Wait 30 seconds, then reconnect the cable. Then wait 30 more seconds before launching the MultiSport software again.

If the problem persists, please contact TruGolf support.

Some of my sports games have become unresponsive or appear to “hang” without any way to move the game forward.

Solution 1: Some issues may cause the game to “wait” before allowing the next user to perform an action. A failsafe has been programmed into most of the games which will help “reactivate” games that appear to have stopped responding. To trigger the failsafe simply hit a shot into the screen, even if the simulator is giving you a “please wait” status. In many cases, this will trigger a response from the software, and it will allow players to continue as normal.

Solution 2: In cases where the failsafe doesn’t work, you may need to exit to the game’s main menu and start a new game over.

Solution 3: If the game is completely unresponsive, you may need to force it to shut down and reboot the game. To do this, press the combination of Alt + F4 on your keyboard. This will close the software and return you to the product launcher or windows desktop. Simply relaunch the game again.

My simulator appears to be sending “phantom shots” without any user input.

Solution 1: Having too many balls in the play area can confuse the tracking system. Please ensure that when playing a MultiSport title that you clear the play area of balls before each new shot. This will prevent the system from accidentally recognizing static balls as part of your shots.

Solution 2: When retrieving balls, kicking or dragging them back to the tee area can cause the tracking system to recognize this as a shot. When retrieving balls, it is always best to pick up the ball/object with your hands and hold it close to your body as you return it to the tee area. This will ensure the tracking system won’t confuse you (and the ball you are carrying) as a moving ball.

Solution 3: If you're playing a game that requires a bat, or a stick, sometimes these objects can have a high reflectivity (especially metal baseball bats). When retrieving your balls from the play area, please hold these bats close to your body, or leave them at the tee area when picking up the balls. This will prevent light from reflecting off the bat/stick and falsely registering as a moving object by the simulator.

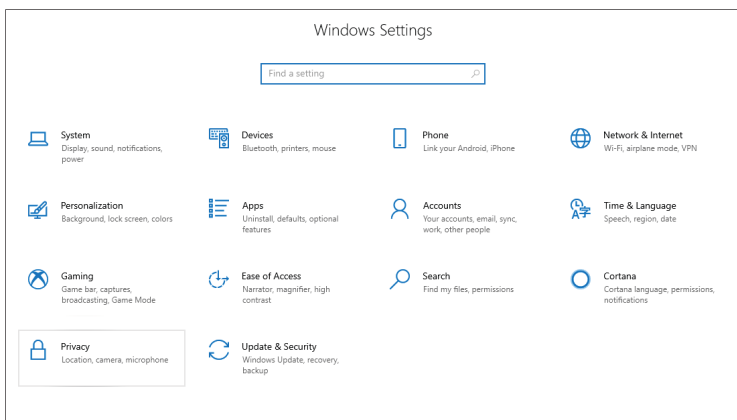
Solution 4: If you're playing Baseball, please avoid swinging the bat in the play area with practice swings. Doing so may cause the tracking system to confuse the swinging bat as a moving object and register it as a shot.

General best practice for baseball: For baseball, move the tee back a further 2 feet from the tee area. Even though your system was calibrated to register shots from the tee position, Baseball performs better if you move the tee position back 2 feet from the calibrated tee position. This will not only help track the balls better, but prevent practice swings or bat swings from registering on the tracking system.

My Microphone is not picking up any sound in-game, despite working OK in my Windows 10 sound settings

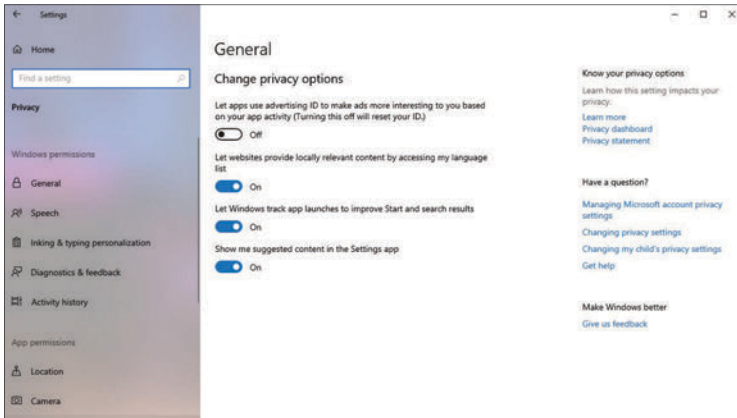
This may happen if your privacy settings are configured differently from the default in Windows 10. This applies to both the USB microphone that comes with your Interactive Sports Camera, or the 3.5mm jack microphone that comes with your Vista or TruFlight 2 system.

- 1 | Navigate to the "Settings" menu of Windows 10 (Start Menu > Settings).

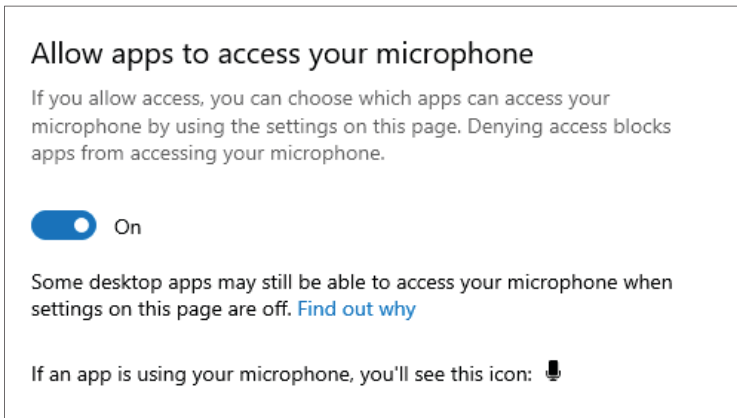


2| Inside the Settings screen click "Privacy".

3| On the Privacy screen, from the list on the left click "Microphone".



4| Inside here you will see a section titled "Allow apps to access your microphone". Please ensure this is switched to ON.



Now you can return to the game and check to see if you have microphone levels showing up.



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