



MILO Range v5
PRO System Setup Guide

24/7 Technical Support
1-800-344-1707

www.milorange.com

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Training Room Preparation

1. Turn off all non-fluorescent lights in the room.
2. Cover all windows to prevent sunlight from entering the room.

Screen Setup

1. Assemble the projection screen and place it against a wall. Detailed instructions for screen setup are included with the screen.



Projector Setup

NOTE: MILO Range Pro systems are generally mounted from the ceiling but also can be in a floor mounted configuration. Both configurations are covered in the following steps

NOTE: If your system setup requires the addition of an Extron DTP DVI 330 TX and 330 Rx switch and control please reference the Extron Set Up Guide located in the Training & Support folder either on your desktop or C:/MILO/Training & Support/User Guides.

Floor mounted system

1. Place the projector on the floor approximately 18' (6m) from the projection screen with the projector lens pointed at the screen. Do not place the projector on a table or any other raised platform.
2. Connect power to the projector [\(Figure 1, Item 1\)](#). Make sure the cable does not interfere with the area where the trainees will walk or stand during training.
3. Connect the HDMI cable to the HDMI #1 input [\(Figure 1, Item 2\)](#) on the projector. Extend the cable to the computer location. Make sure the cable does not lie where trainees will stand during training.
4. Connect the HDMI cable to the MILO computer [\(Figure 2, Item 1\)](#).



HDMI at Figure 1 - PROJECTOR

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DVI at COMPUTER Figure 2 – Back of Computer

Ceiling Mounted System

1. Using the instructions provided, affix mounting hardware to projector, and construct pole ensuring pole height with projector attached will not drop below the 9 foot recommended height of projector.
2. Install the replacement 2x2 ft. ceiling tile approximately 18 feet from the screen or surface to be projected on.
3. Install mounting pole onto ceiling tile.
 - a. Ensure the safety screw on top side of ceiling tile is tightened, making firm contact with the threads of the mounting pole
 - b. Attach provided safety wire from the ceiling tile to existing structure.
4. Run cables from above the ceiling, down through the mounting pole and out of the cable window (Figure 1-4)
 - a. The order in which the cables should be run down the pole are as follows:
 - i. Power cable for projector
 - ii. HDMI cable
 - iii. 2 network cables (6 foot cables)
5. Above the ceiling, place the 8-port Gigabit switch [\(Figure 3, Item 1\)](#) in close proximity to the installed MILO ceiling tile.
6. Above the ceiling, connect 2 Network cables (6 foot) to the 8-port Gigabit switch POE ports (yellow ports) [\(Figure 3, Item 2\)](#).
7. Above the ceiling, connect 1 end of a 50 foot network cable to the 8-port Gigabit switch POE port (yellow port) [\(Figure 3, Item 3\)](#). The other end of this cable should be run above the ceiling to the TAC camera location.
 - a. This will differ if the system is in a ground mounted configuration. Refer to the TAC camera setup portion of this manual for that connection.
8. Above the ceiling, connect 1 end of a 50 foot network cable to the 8-port Gigabit switch NON POE port (blue port) [\(Figure 3, Item 4\)](#). The other end of this cable should be run above the ceiling to the instructor station location to be connected to the MILO computer.



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8- [Figure 3 – 8-port Gigabit Switch](#)

9. Above the ceiling, place a surge protector in close proximity to the installed MILO ceiling tile.
 - a. Plug the surge protector into an available power source. It may be necessary to use an extension cord to facilitate this.
10. Above the ceiling, plug the power cable for the 8-port Gigabit switch into the surge protector.
11. Above the ceiling, plug the power cable for the projector into the surge protector.
12. Install the projector with mounting hardware previously installed onto the mounting pole.
 - a. Plug the projector power cable into the projector
 - b. Plug the HDMI cable into the projector
- ~~13. Install the camera tree with cameras attached to the mounting pole, ensuring the tree is aligned with the screen and the bracket is securely fastened. (Figure 1-5)~~
- ~~14. Connect both Network cables to the cameras (Figure 1-6)~~
- ~~15.~~13. Above the ceiling, switch the surge protector to the ON position. Ensure the green LED light comes on and the Gigabit switch ports that are plugged in also light up.

Trainer Station Setup

Computer Setup

1. Set computer on desired surface
2. Connect the power cable. (Figure [4-74](#), Item 1)
3. Connect the Network cable. (Figure [4-74](#), Item 2)

4. Connect the 2 USB Dongles that control the keyboard and mouse. (Figure 4-74, Item 3s-3-and-4)
5. Connect the monitor DVI cable. (Figure 4-74, Item 54)
6. Connect the HDMI cable. (Figure 4-74, Item 65)
7. Connect the speaker cables. (Figure 4-74, Item 76)
8. Plug computer power cable into surge protector



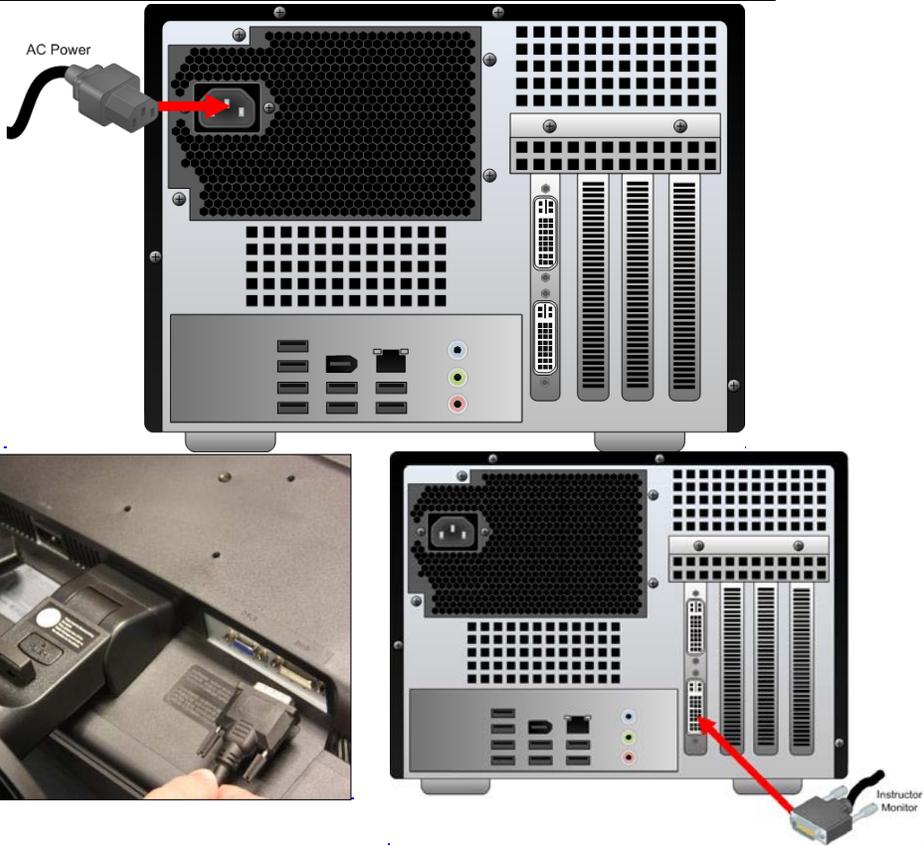
8- [Figure 4 – Back of computer](#)

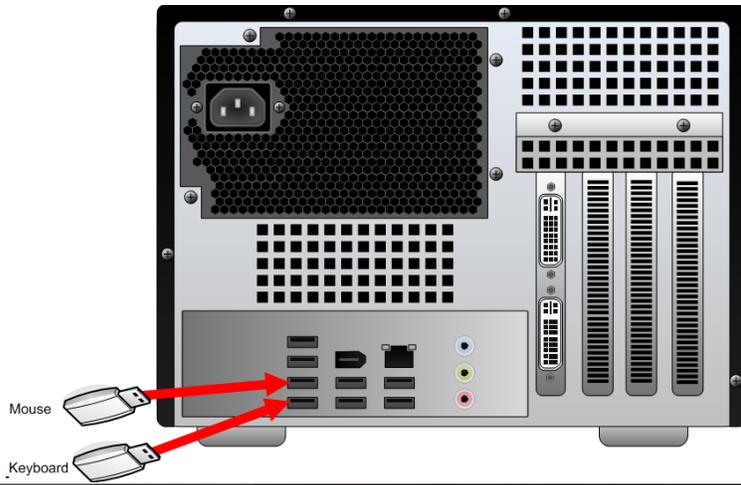
Monitor Setup

1. Place monitor near MILO computer
2. On back of monitor, connect the power cable. ~~(Figure 1-8, Item 1).~~
3. On back of monitor, connect DVI cable. ~~(Figure 1-8, Item 2).~~

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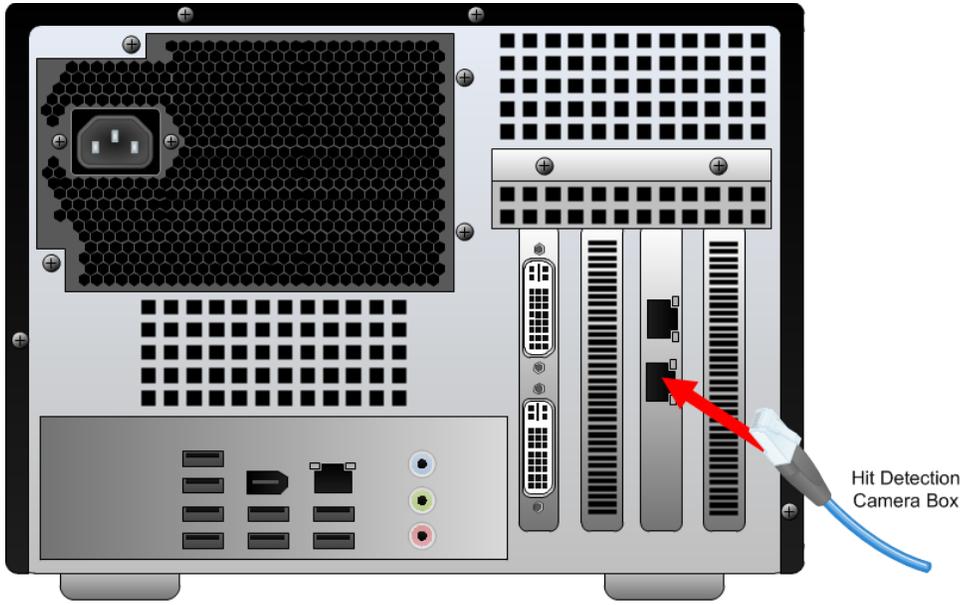
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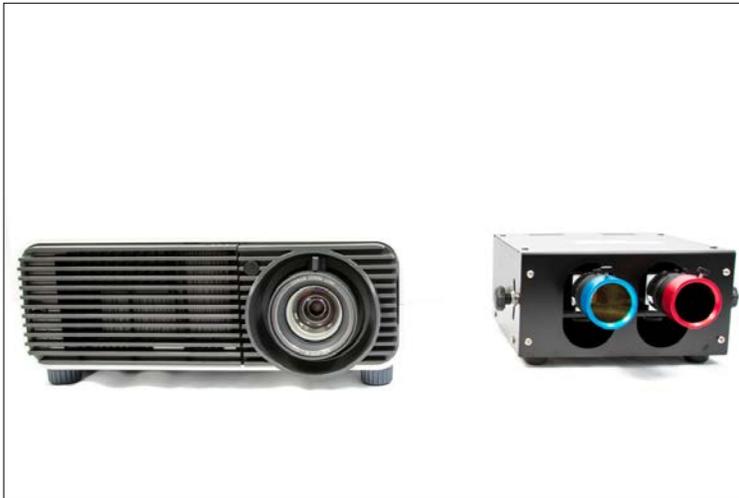
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Camera Setup

NOTE: MILO Range Pro systems are generally mounted from the ceiling but also can be in a floor mounted configuration. ~~Steps 1-222222 Cover the floor mounted configuration. For ceiling mounted systems, skip to step 222222~~The following steps will cover both configurations.

Floor Mount

1. Place camera box on top of, or next to the projector with cameras pointing toward projection screen.
([Figure 5](#))



[Figure 5 – Projector and Camera Box](#)

2. [Attach the Filter Rings to the camera lenses.](#) ([Figure 6](#), [Figure 7](#))

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Figure 6 – Hit Detect Filter and Lens



Figure 7 – Flashlight Filter and Lens

3. Attach the lenses and colored IR filter rings to the cameras. [\(Figure 8, Item 1\)](#)

Note that the hit detect camera is on the right (when looking at the box from the front) and the flashlight camera is on the left. The Red ring set goes on the hit detect camera lens on the right. The Blue ring set goes on the flashlight camera lens. The camera box is labeled for your convenience

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Figure 8 – Camera Box without lenses



2- Figure 9 – Camera Box with lenses



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3-4. Connect the network cable to the camera box "System" port. (Figure 10, Item 1) Now, run the cable to the location where the computer will sit. Make sure the cable does not interfere with the area where the trainees will walk or stand during training.

4. Connect the network cable to the network port on the computer (Figure 1-??, Item ?)



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5. Connect power to the camera box. Make sure the cable does not interfere with the area where the trainees will walk or stand during training. (Figure 10-??, Item ??)



Figure 10 – Camera Box Rear

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Ceiling Mount System

1. Attach the Filter Rings (Figure 11, Item 1) to the Camera Lenses (Figure 11, Item 2).
2. Attach the Cameras (Figure 11, Item 3) to the Knuckles (Figure 11, Item 4).
3. Mount the Camera Tree (Figure 11, Item 5) to the installed pole using the bracket and bolts (Figure 11, Item 6)

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Figure 11 – Camera Tree with Cameras attached

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4. [Connect the network cables \(6 ft. cables\) to the camera network ports \(Figure 12, Item 1\)](#)

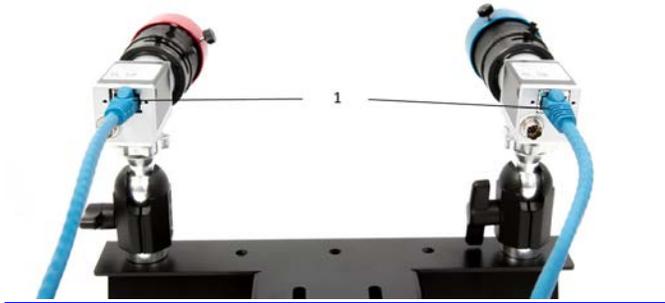


Figure 12 – Rear of Camera Tree

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Speaker System Setup

1. Using the provided instructions, affix the speaker mounts to the walls of the room the system is in.
2. Using the provided hardware, attach the speakers to the speaker mounts.

NOTE: When preparing the speaker wire for installation, marking or labeling each wire on both ends will greatly assist you during installation.

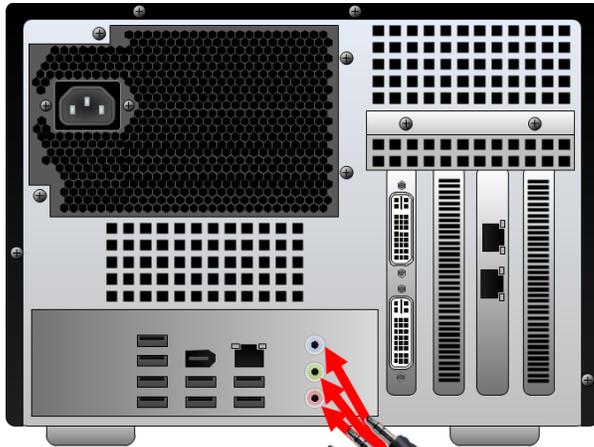
3. Using the speaker wire provided, connect each of the 5 speakers and run the speaker wire above the ceiling and back to the instructor station.
4. Connect the speaker wire to the subwoofer. ~~(Figure 1-??, Item ?)~~
5. Connect the speaker control console to the subwoofer.
6. Connect the speaker jacks to the subwoofer. ~~(Figure 1-??, Item ?)~~



Speaker Control Console Connection

Satellite Speaker Wire Connections

7. Please reference the MILO Range 5.1 Speaker Set Up and Realtek HD Audio Manager Settings Guide that is in the Training & Support folder located either on your MILO Range desktop or C:/MILO/Training & Support/User Guides.



5.1 Audio
Black→Black/Blue
Orange→Orange/Pink
Green→Green



8. Set the console settings according to the settings shown below.



Trainee Action Capture (TAC) Setup

NOTE: The TAC camera has an integrated microphone. Positioning TAC camera in close proximity to a speaker will cause interference with the audio playback from the TAC recording

NOTE: MILO Range Pro systems are generally mounted from the ceiling but also can be in a floor mounted configuration. TAC camera setup differs for each type of configuration. Both will be covered in the following steps

Floor Mounted System

1. Mount the TAC camera to the included clamp system [\(Figure 16\)](#), and secure the clamp to the frame of the projection screen. TAC camera can also be mounted to the wall using the provided mounting hardware



2. Loosen the ball joint on the clamp, aim the TAC camera at the area where the trainee will be during training then tighten the ball joint to secure the camera's position.
3. ~~Connect the power supply to the TAC camera and to an AC power outlet.~~
- 4.3. ~~Connect the supplied network cable to the network port on the TAC camera.~~ (Figure 13, Item 1)

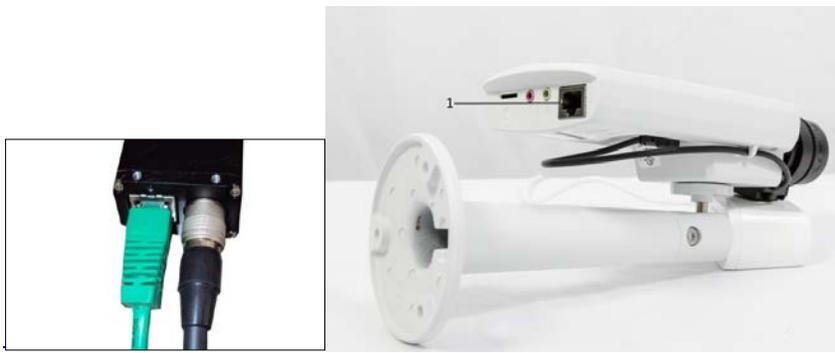


Figure 13 – TAC Camera with supplied mounting hardware

4. Run the network cable from the TAC camera to the Hit Detect & Flashlight camera box, avoiding the area where the trainee will be during training. Connect the network cable from the TAC Camera to the AUX port on the Hit Detect & Flashlight camera box. (Figure 14, Item #1)

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5- [Figure 14 – Rear of Camera Box](#)

Ceiling Mounted System

1. Mount the TAC camera to the included clamp system (Figure 16), and secure the clamp to the frame of the projection screen. TAC camera can also be mounted to the wall using the provided mounting hardware
2. Loosen the ball joint on the clamp, aim the TAC camera at the area where the trainee will be during training then tighten the ball joint to secure the camera's position.
3. Connect the network cable to the TAC camera [network port \(Figure 15, Item 1\)](#). The other end of the network should already have been connected to the 8-port Gigabit switch above the ceiling near the installed ceiling tile.



3- [Figure 15 – TAC Camera](#)

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Power Up

1. Turn on the power to the projector using the remote control or the buttons on the projector. Wait 30 seconds while the projector warms up.
2. Press the power button on the front of the MILO computer [\(Figure 16, Item 1\)](#). After about 1 minute, Windows will finish loading. You should see a MILO Range logo on the instructor screen and projected screens.



Figure 16 – MILO Computer

3. Adjust the projector so that the image fills the projection screen's white display area. For ground mounted systems, you may need to adjust the feet on the projector to change the pitch (angle) of the projector. For ceiling mounted systems, the mounting hardware has adjustment screws that can be loosened to allow pitch and yaw to be adjusted. In addition, you can use the projector lens zoom and focus to adjust the size and sharpness of the projected image.

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Open MILO Range PRO Software

1. Double-Click on the MILO Range icon from the Windows desktop.



System Camera Setup & Calibration

Refer to the following video tutorial for Hit Detect and Flashlight to setup to perform the MILO Hit Detection & Calibration process. It is strongly recommended to perform system calibration every time you power on the system for use. This will ensure accurate hit detection and shot recognition.

Hit Detect Setup	 MRTS Focus-Zoom.mp4 (Command Line)
Flashlight Setup	 MRTS Flashlight Setup.mp4 (Command Line)
Calibration	 MRTS Calibration.mp4 (Command Line)