

AXIS Radar Configuration

OVERVIEW

Purpose and Scope

This document provides EPIC iO field service personnel, partner organizations, or customers the approved standard processes and procedures necessary to configure the AXIS Radar system associated with EPIC iO security trailers and skids for proper operation.

This document addresses the following operations:

- Radar Model Versions
- Determining the Radar Mounting Direction
- Accessing the Radar Locally
- Creating a Reference Map Image
- Setting the Radar Height
- Calibrating the Radar
- Radar Auto-Tracking



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Responsibilities

Assigned field service personnel conducting mobilization or breakdown operations must ensure all appropriate safety precautions are followed, and all assembly/disassembly steps are performed exactly as prescribed. Additionally, the parties conducting set-up or breakdown operations are solely responsible for protection of the sensors, batteries, solar panels, and other equipment related to the trailer/skid.

Tools and Equipment Required

Personal Protective Equipment (PPE)

At a minimum, the following PPE is required during trailer set-up or breakdown:

- Hard Hat - ANSI/ISEA Z89.1, Type I, Class G certified
- Eye Protection (safety glasses or protective goggles) – ANSI Z87.1 certified
- Foot Protection - Steel-toed ASTM F2413-05 M(F) I/75 C/75 standard
- Hand Protection – Suitable for the task(s) to be performed
- Reflective Clothing – High visibility reflective vest, or clothing with retroreflective material
- Flame-Resistant Clothing (location and customer-dependent) – Arc-flash protective with “FR” tech tag clearly visible on the exterior of the garment

Special Tools

- Torx screwdriver TR20 (TR for Tamper Resistant)
- Torx screwdriver T45



T45 Torx® Screwdriver



T30 Torx® Screwdriver



TR 20 Torx® Wrench

STEP 1

CONFIGURATION PROCEDURES

Radar Model Versions

EPIC iO supports the two Radars currently offered by AXIS, the D2050-VE model and the D2110-VE model. Both Radars provide the same function in the AXIS Radar System, providing Radar detection that can be paired with Auto-Tracking of a PTZ camera. The major differences between the two models are the Radar's range and coverage. The D2050-VE model offers a 120° of coverage with a max. range of 50 m (164 ft). The D2110-VE model offers a 180° of coverage with a max. range of 60 m (197 ft). Physically, the two Radars look nearly identical as seen below with the two Radars side by side (**Figure 1**).



Figure 1. AXIS Radar D2050-VE on the left and on the right AXIS Radar D2110-VE.

STEP 2

Radar Mounting Direction

The D2050-VE model, detector covers an angle of $\pm 60^\circ$ from its central axis (**Figure 2**). If the detector is mounted on a wall, there is a "blind spot" to one or both sides of the detector, depending on the mounting direction.

To cover a wall using the D2050-VE model, the radar module inside this version can be moved to an alternate position to maximize coverage. Since the 2110-VE model has an 180° of coverage there is no alternate mounting direction with this unit.

NOTE: In most cases, the D2050-VE model Radar will be mounted in the 0° position (**2, Figure 2**). The mounting direction is used during Calibration of the Reference Map Image. BE SURE to note if the angle of the radar module is other than the 0° position.

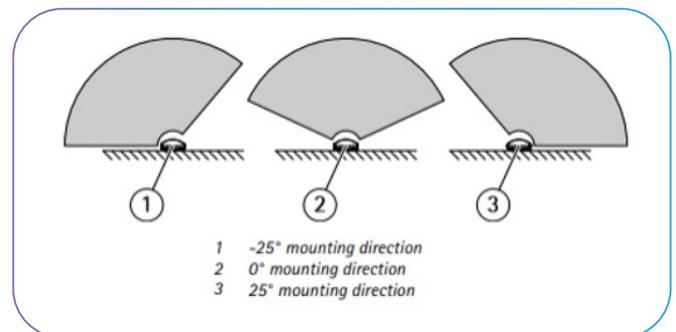


Figure 2. Radar Mounting Direction

STEP 3

Accessing the Radar Locally

- A. Log in to the Radar by entering the Radar's Local IP address **192.168.1.14** in the address bar, then **press the <Enter> key**. If the connection is successful, the **Sign in** dialog displays (**Figure 3**).
- B. Enter the **Username** and **Password** to log in to the system. The **Password** will display as a series of bullets.
- C. Click the **Sign In** button to log in to the system.
 - The Main page displays (**Figure 4**).

NOTE: In some cases, a "Reference map calibration" prompt may display (**Figure 5**). This prompt displays information about using a reference map and calibrating the reference map to the Radar. If the "**Reference map calibration**" prompt displays, **click the Ok button to proceed**.

- D. You have now successfully accessed the Radar.

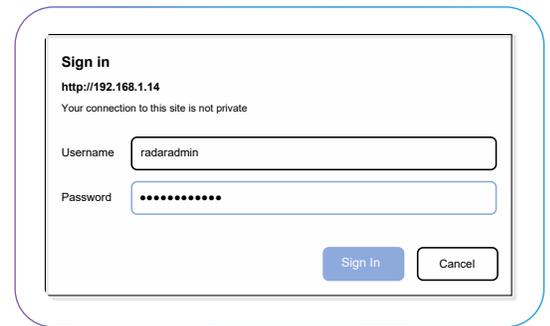


Figure 3. Sign in Dialog

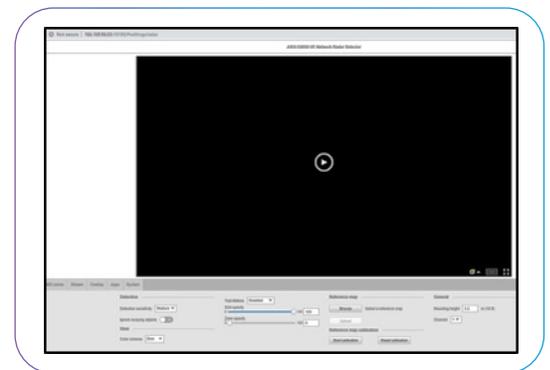


Figure 4. Main Page

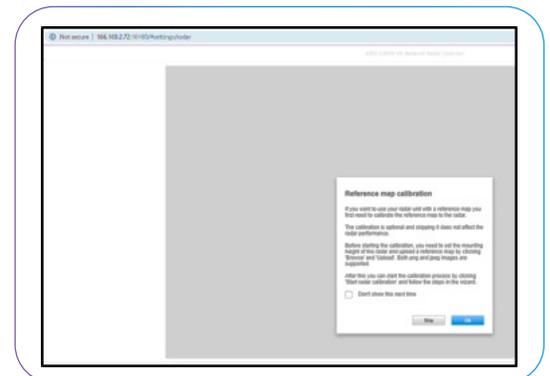


Figure 5. Reference Map Calibration Message

STEP 4

Creating a Reference Map Image

There are several methods that can be used to create a Reference Map Image. The only restriction is that the map image **MUST** be saved as either a PNG or JPEG file.

This guide demonstrates creating a map image on a Windows workstation using the Snipping Tool and capturing the map image from Google Maps.

A. Access the desired location on Google Maps.

- Enter **maps.google.com** into the address bar, then press the **<Enter>** key.
- Search for the desired location by address, or, enter the GPS coordinates for the location.
 - A map of the specified location displays.
 - If necessary, use the icon in the lower left corner of the display to toggle between Map View (**Figure 6**) and Satellite View (**Figure 7**) to display the desired satellite image.

B. Create and save the Reference Map image.

NOTE: The map image (.PNG / .JPEG file) is created using the Windows Snipping Tool.

- Click the Windows icon  in the lower left corner of the screen, and enter **Snipping Tool** in the “search” text box.
 - The Snipping Tool application will display in the search results list (**Figure 8**).
- Click the name of the application to open it.
- Follow the procedures for the Snipping Tool application to capture and save the Reference Map image.
- With the Reference Map image saved, proceed to “Calibrating the Radar.”

NOTE: BE SURE to save the image in .PNG or .JPEG format.



Figure 6. Google Maps – Map View



Figure 7. Google Maps – Satellite View

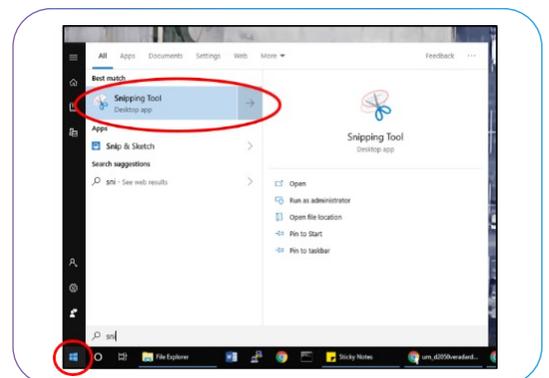


Figure 8. Windows Menu – Snipping Tool

STEP 5

Set the Radar Height.

- On the Main page, click the **Radar** tab (Figure 9).
- Enter the proper **Mounting height** of the Radar, in meters
 - The default value is 3.5 meters.

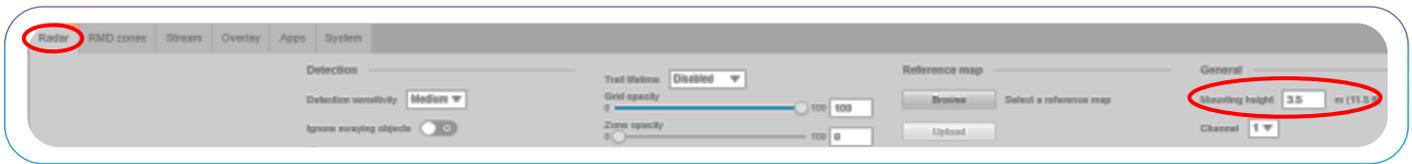


Figure 9. Main Page – Radar Tab

NOTE: For optimal performance, AXIS recommends that the detector be installed 3.5 meters (11 ft) above ground.

The following table shows the detection range of the **D2050-VE Radar** at different mounting heights when detecting a 1.8m (6 ft) tall person walking.

Mounting Height	11 ft (3.5 m)	13 ft (4 m)	15 ft (4.5 m)	16 ft (5 m)
Near detection limit	15 ft (4.5 m)	20 ft (6 m)	23 ft (7 m)	28 ft (8.5 m)
Far detection limit (max. values)	161 ft (49 m)	167 ft (51 m)	167 ft (51 m)	171 ft (52 m)

The following table shows the detection range of the **D2110-VE Radar** at different mounting heights when detecting a 1.8m (6 ft) tall person walking.

Mounting Height	11 ft (3.5 m)	15 ft (4.5 m)	18 ft (5.5 m)	21 ft (6.5 m)
Near detection limit	9.8 ft (3 m)	13 ft (4 m)	25 ft (7.5 m)	25 ft (7.5 m)
Far detection limit (max. values)	197 ft (60 m)			

STEP 6

Calibrating the Radar

This guide shows the option of using Pins to calibrate the radar. The Calibration can always be repeated, so do not worry about making a mistake. Also, during the calibration process you can go back and repeat a previous step.

A. Click the **Start** button (Figure 10).

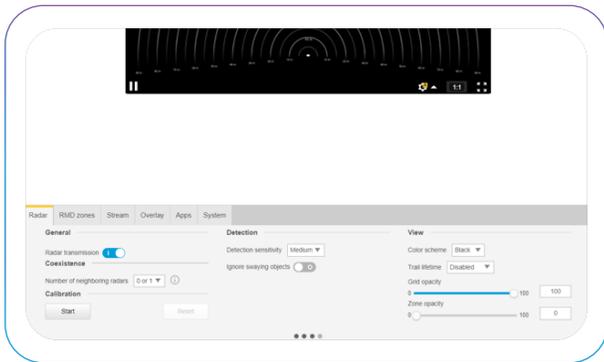


Figure 10. Start button for Calibration

B. Select Calibrate with a reference map (Figure 11) and click on the **OK** button to proceed.

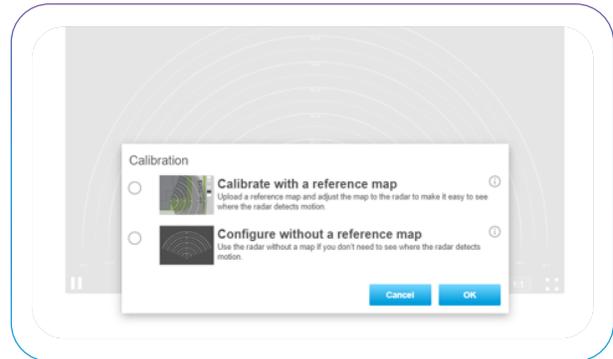


Figure 11. Calibration with a reference map

C. Select Pins (Figure 12) and click on the **Next** button to proceed.

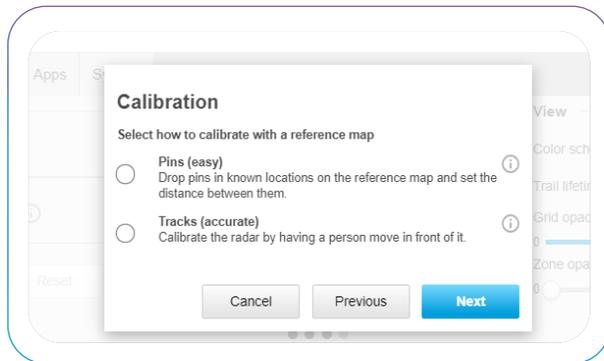


Figure 12. Calibration using Pins

D. Enter the actual mounting height of the Radar (Figure 13) in meters and click on **Next** to proceed.

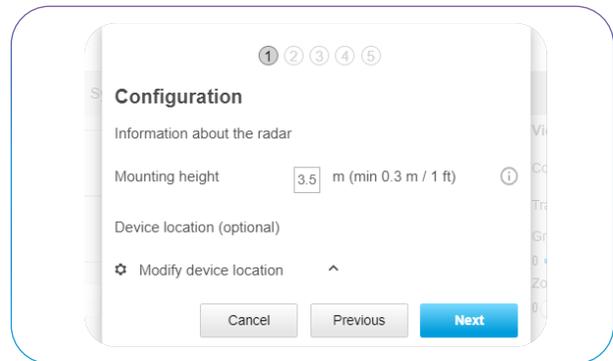


Figure 13. Calibration Step 1 of 5

E. Upload the Reference Map image by clicking on the blue highlighted text (**Figure 14**).

- A standard Windows “Open” dialog displays (**Figure 15**).
- Locate and select the desired file, then click the **Open** button. It may take several seconds to upload the image
- When the upload is complete the “Open” dialog closes automatically, and the uploaded image is displayed (**Figure 16**).
- Click the **Next** button to proceed.

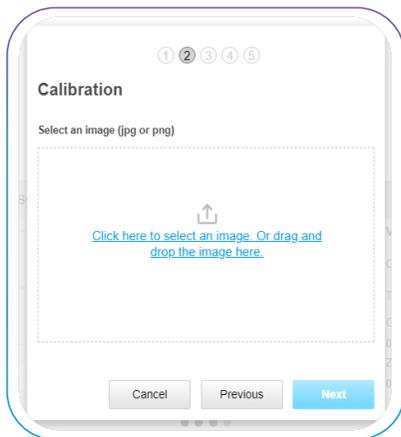


Figure 14. Calibration Step 2 of 5

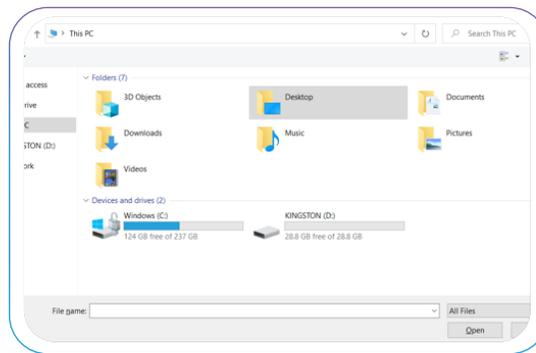


Figure 15. Uploading an image file – “Open” Dialog

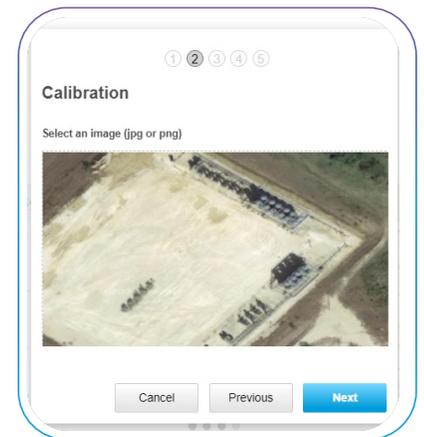


Figure 16. Image file uploaded

F. Mark the location of the Radar on the Reference Map image (**Figure 17**).

- Once you marked the Radar’s location, mark a reference location straight in front of the Radar by clicking on the marker and dragging a line (**Figure 18**) to mark the reference location straight in front of the Radar.
- This line represents the direction that the Radar is facing. This line extends to a reference location where the distance is known between the Radar and reference point.



Figure 17. Calibration Step 3 of 5



Figure 18. Dragging a line in front of the Radar

- After dragging the line straight in front of the Radar, enter the distance (**Figure 19**), in meters, from the Radar to the reference location.

NOTE: There **MUST** be a minimum distance of 5 meters (16 feet) between the reference points. 40 to 60 meters (131 to 197 feet) is recommended.

G. If needed, a rotational adjustment can be made to the image (**Figure 20**). After adjusting the image or if no rotation is needed click on **Next** to proceed.

H. If needed, the image can be cropped (**Figure 21**). After cropping the image or if no cropping is needed click on **Next** to proceed.

I. Click the **Done** button to accept the calibration.

- After clicking **Done**, you can test the calibration with the accuracy of the tracks.
- If desired, you can create, upload and calibrate a Reference Map image that is centered and scaled to the coverage area of the radar to replace the initial image.
 - For comparison, an initial Reference Map is shown in Map Image 1 (**Figure 22**) versus a centered and scaled Reference Map shown in Map Image 2 (**Figure 23**).

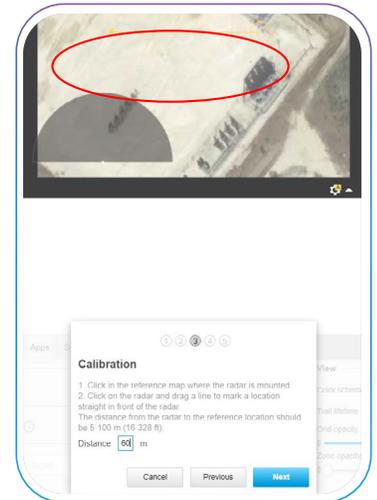


Figure 19. Entering the distance between the reference points

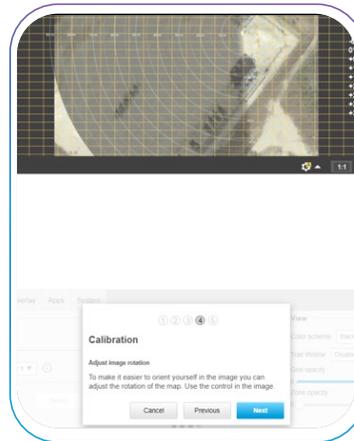


Figure 20. Calibration Step 4 of 5

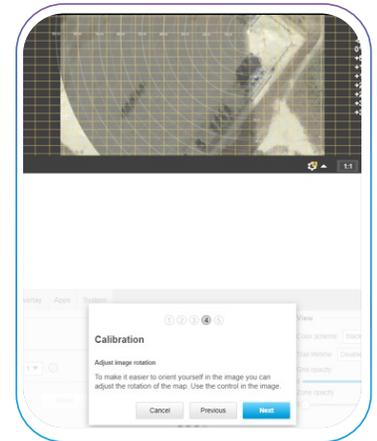


Figure 21. Calibration Step 5 of 5

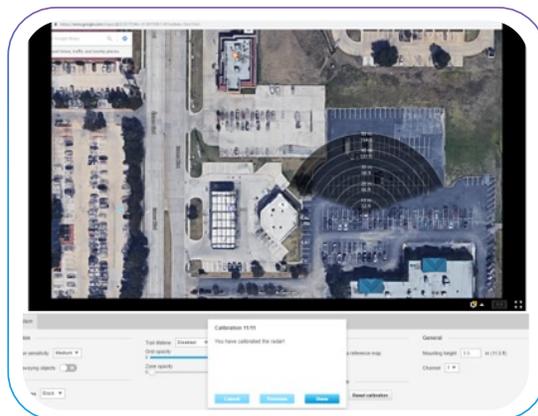


Figure 22. Calibration – Map Image 1

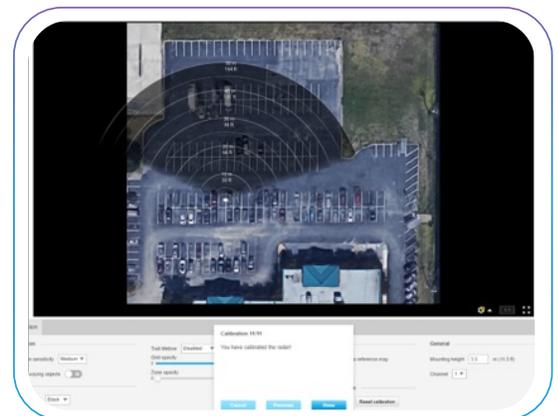


Figure 23. Calibration – Map Image 2

STEP 7

Radar Auto-Tracking

- On the Main Page, click the **System** tab, then click **Radar Auto-Tracking** (Figure 24).

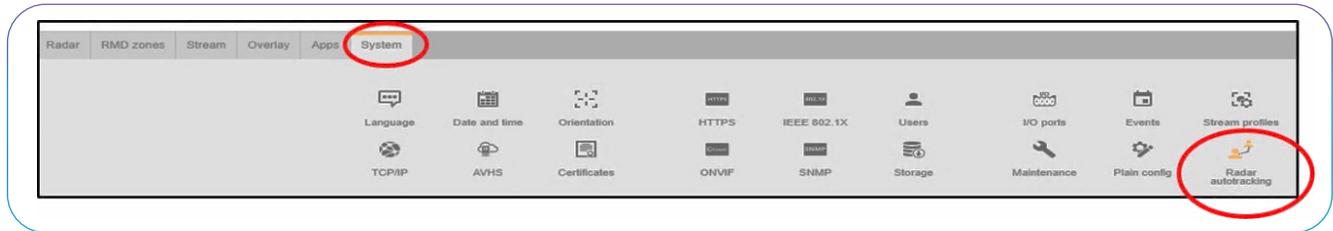


Figure 24. Main Page – System Tab

- The Radar Auto-Tracking setup page displays (Figure 25).

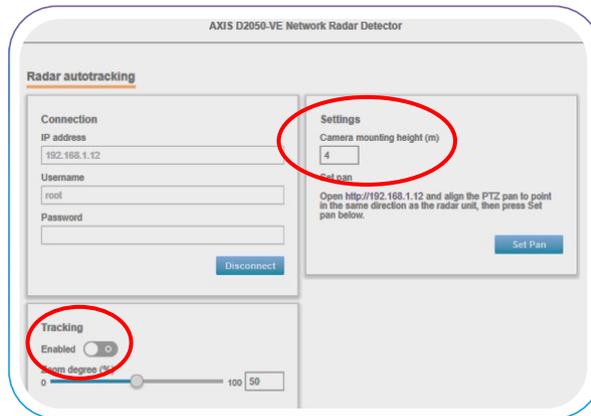


Figure 25. Radar Auto-Tracking

- From Radar Auto-Tracking setup page, you can:
 - Use the **Settings** field to set the height of the PTZ camera (in meters).
 - Use the **Tracking** slider to **Enable** and **Disable** the Radar from controlling the PTZ camera with the Radar tracks.

External References

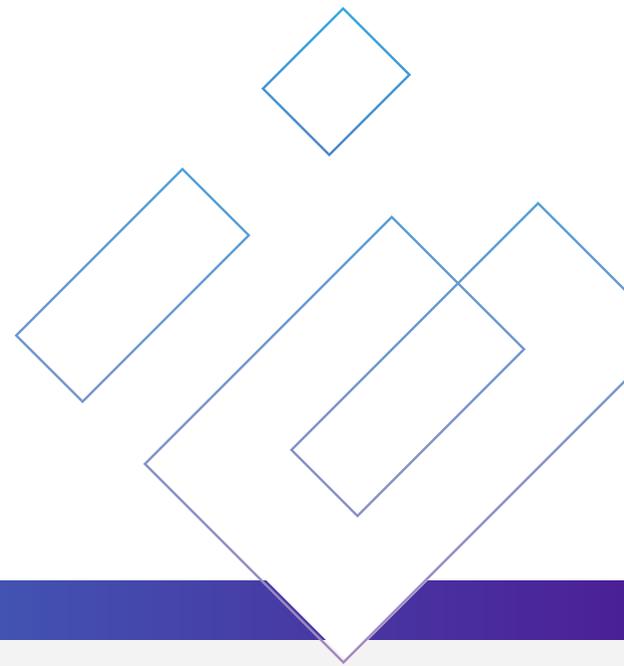
Equipment Links

[AXIS D2050-VE Security Radar User Manual](#)

[AXIS D2050-VE Security Radar Installation Guide](#)

[AXIS D2110-VE Security Radar User Manual](#)

[AXIS D2110-VE Security Radar Installation Guide](#)



7 simple steps to configuring your Atlas Radar.

For additional questions please contact our customer support team at support@epicio.com. We're happy to help!

Learn more today:  [epicio.com](https://www.epicio.com)

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