THERMAL™ RADAR

Visionary Thermal Detection

SETTINGS GUIDE

Firmware Version 4.0.0

More Information :

801-762-6800

www.thermalradar.com

1450 West 105 North Orem, UT 84057

Thermal Radar™ Web Configuration Page

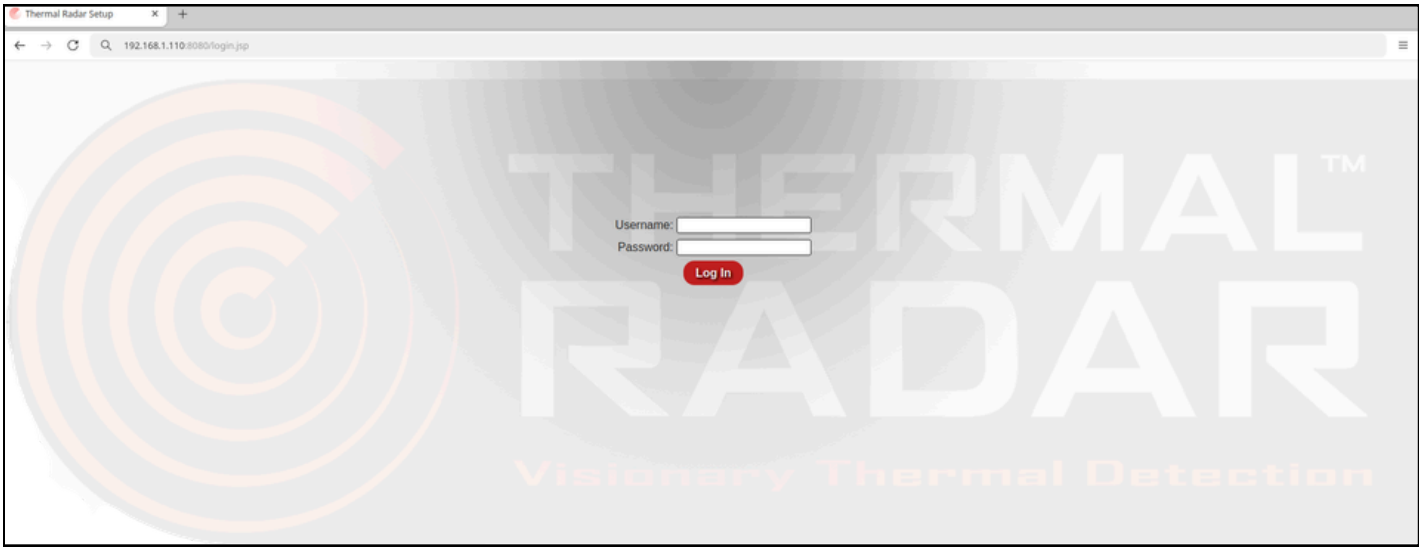
The Thermal Radar™ is configured through its web interface. In order to access the Thermal Radar's web interface, open a web browser, and type the URL below into the URL text box.

The default IP address of the Thermal Radar™ is 192.168.1.110.

http://192.168.1.1(http://:8080

(http://<*ipaddress*>:8080)

⚠ ***Note:*** *Internet Explorer is not supported*

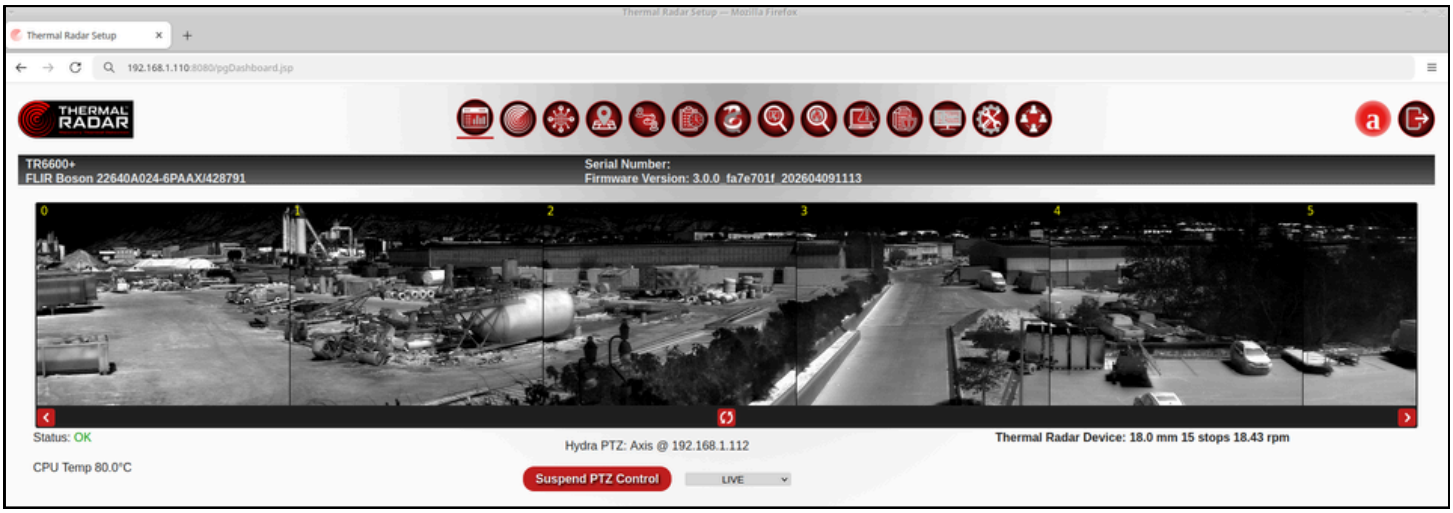


Login Screen

The Login screen will be the first page you see when opening the Thermal Radar™ web interface. The default username is **admin**, and the default password is **Admin1234**. (See User Management)

Dashboard

The Dashboard page is used as a quick reference for status overview.



- The **Status** message indicates the current state of the Thermal Radar™. If the Thermal Radar™ encounters an error, it will be displayed here.
- **Thermal Radar™ Device**: indicates the sensor size installed inside the Thermal Radar™, the number of stops the sensor makes in its 360-degree revolution, and the RPM.
- The **Serial Number** indicates the serial number of the Thermal Radar™.
- The **System Temperature** indicates the temperature of the CPU inside the Thermal Radar™.
- **Hydra™ PTZ** indicates the brand and IP address of the PTZ camera connected to the Thermal Radar™.

Suspend PTZ Control

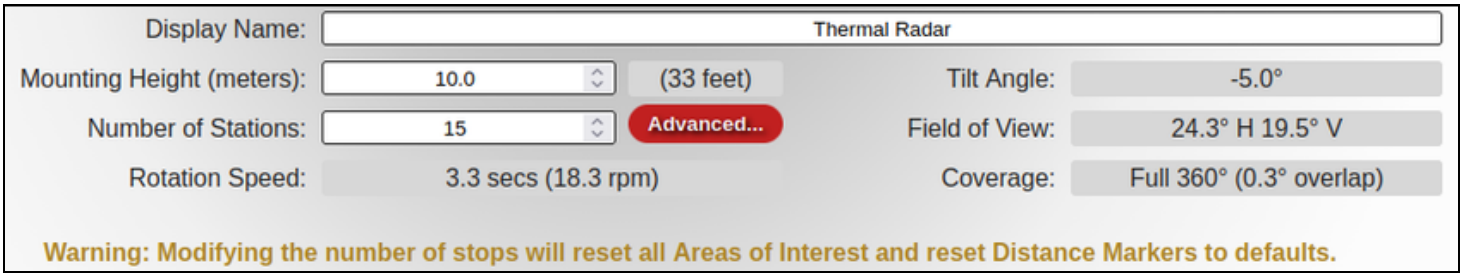
The Suspend PTZ Control button suspends the commands the Thermal Radar™ sends to the pan-tilt-zoom (PTZ) camera. This option is used when configuring the Hydra™ PTZ or when the system operator needs to take manual control of the PTZ and wants to avoid interference from the Thermal Radar's positioning commands.

Use the drop-down LIVE next to the Suspend PTZ Control button to select the duration of time to pause the commands being sent to the PTZ. Once selected, press the Suspend PTZ Control button, and the commands being sent to the PTZ will be paused for the selected duration.

The button will update the thermal panoramic view on the Dashboard. If not pressed, the panoramic images will automatically refresh every ~15 seconds.

System

The **System** page is used to assign a name to the unit, set the unit's height, select the number of rotation stops, and display the resulting coverage based on the number of stations and the field-of-view (FOV) of the thermal sensor.



Use the **Display Name** text box to assign a unique name to the Thermal Radar™. Assigning a name will make it easier to identify each Thermal Radar™ when multiple radars are installed on the same network. The device name is also shown within the Thermal Radar's video feed below the site map.

Use **Mounting Height** to assign the measured height from the top of the Thermal Radar™ to the ground level of the mounting location (measured in meters). The Thermal Radar™ utilizes the Mounting Height to calculate the detection range. The range information is used to determine size and type of object, as well as distance, which is used to filter out false detections.

The **Number of Stations** determines where and how many times the sensor stops during a revolution. Use the Advanced... button to select which stations out of the number entered you'd like the sensor to stop at during its 360-degree revolution (see next page). The number of stops selected will reflect within the panorama displayed in the video feed and the web interface.

The **Rotation Speed** is the amount of time it takes the thermal sensor to make a full 360-degree revolution based on the number of stops selected.

The **Tilt Angle** is the number of degrees the particular thermal sensor is physically tilted within the Thermal Radar's housing.

The **Field of View** indicates the horizontal and vertical field of view (HFOV & VFOV) of the particular sensor installed inside the Thermal Radar's housing.

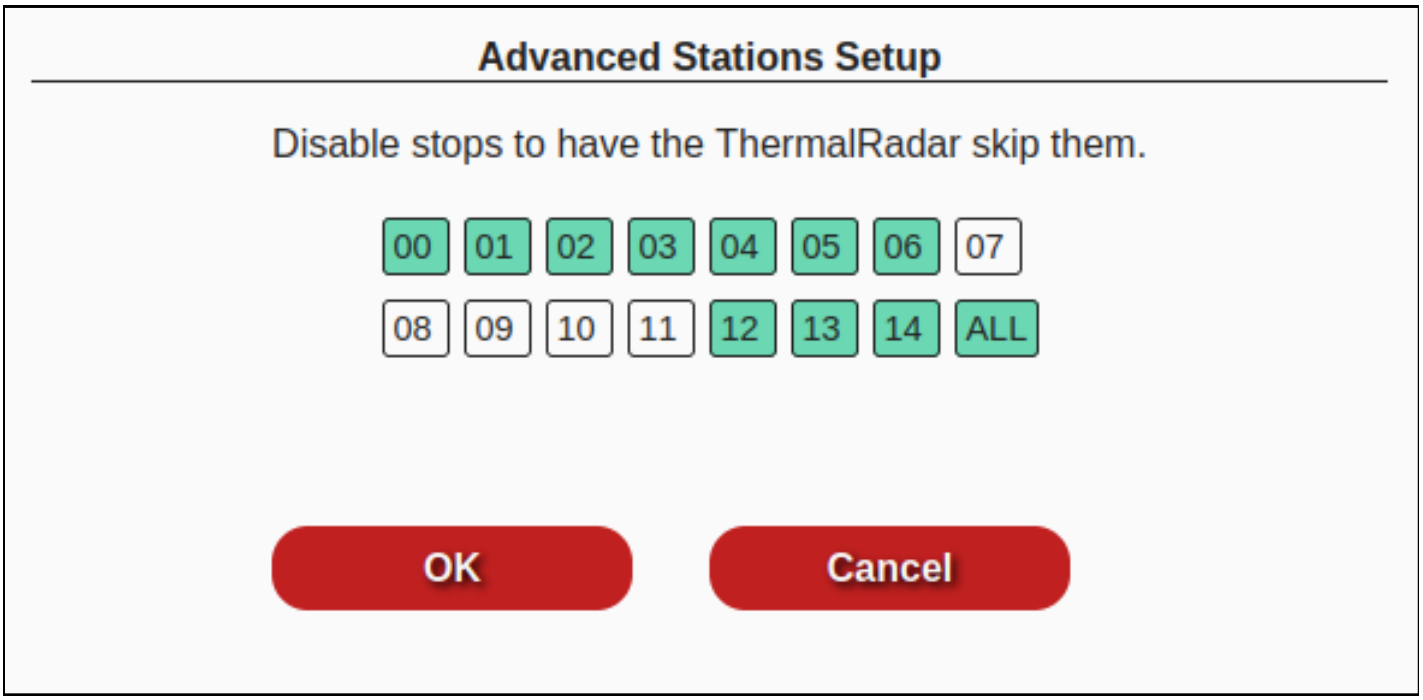
Coverage displays the gap or overlap between stations in degrees as calculated by the HFOV of the sensor and the number of stops. The necessary number of stops to ensure overlap differs between sensor models. Reducing the number of stops will increase possible rotation speed and frame rate in the final panorama, but may result in gaps between stations, in which case there will not be complete coverage. If it shows an overlap, then neighboring stations may show redundant visual information and detections on the edges of the stations.

Advanced Stations Setup

Advanced... allows the user to fine-tune the Thermal Radar's rotation by selectively disabling stations without affecting the angles of the remaining stations. Disabling a station skips it completely, which reduces the time it takes to perform a complete rotation and removes the station from both the video feed, and the previews on the web interface.

Select ALL to select all stations, or remove all stations if they are already selected. Changing the Number of Stations value will reset all stations to enabled.

⚠ ***Note:*** *Enabling or Disabling any stations will reset Distance Markers and AOIs, even if the number of enabled stops does not change.*



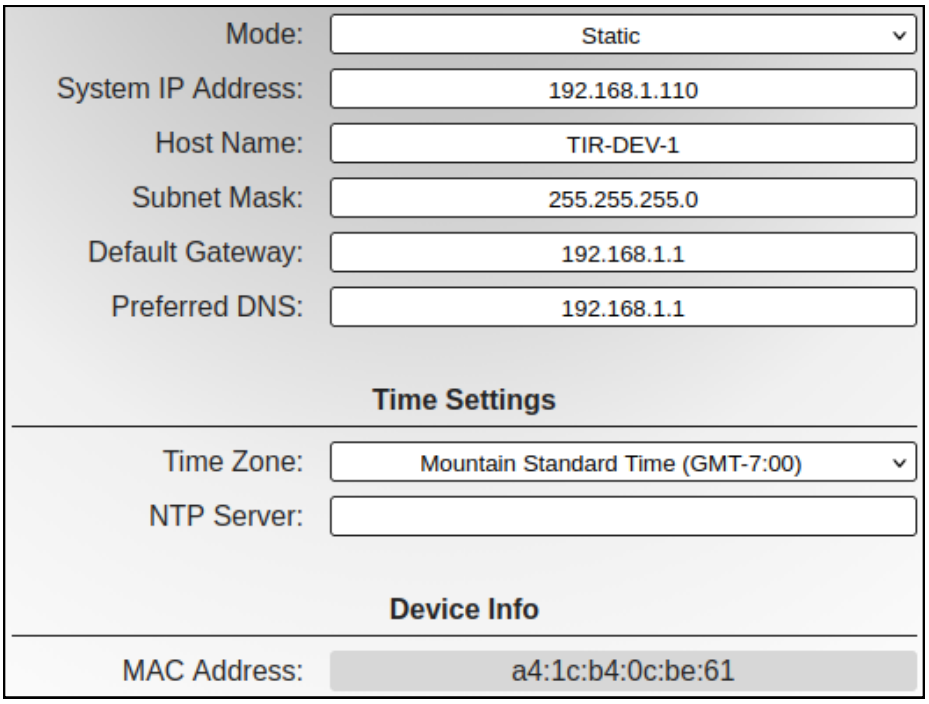
Network Configuration

The **Network** configuration page allows the user to configure network and time settings for the Thermal Radar™.

Network Settings

To change the **Network Settings**, select Static or Dynamic to set the network mode. Enter the IP Address, Host Name, Subnet Mask, Default Gateway, and Preferred DNS.

⚠ ***Note:*** *Changing the Thermal Radar's IP address will force the Thermal Radar™ to restart.*



Time Settings

Time Settings allows a *Time Zone* and an *NTP Server* to be assigned to the Thermal Radar™. To set the Thermal Radar's time, select the **Time Zone** from the drop-down menu that matches the location where the Thermal Radar™ is installed. If desired, enter the IP address of a valid **NTP Server**.

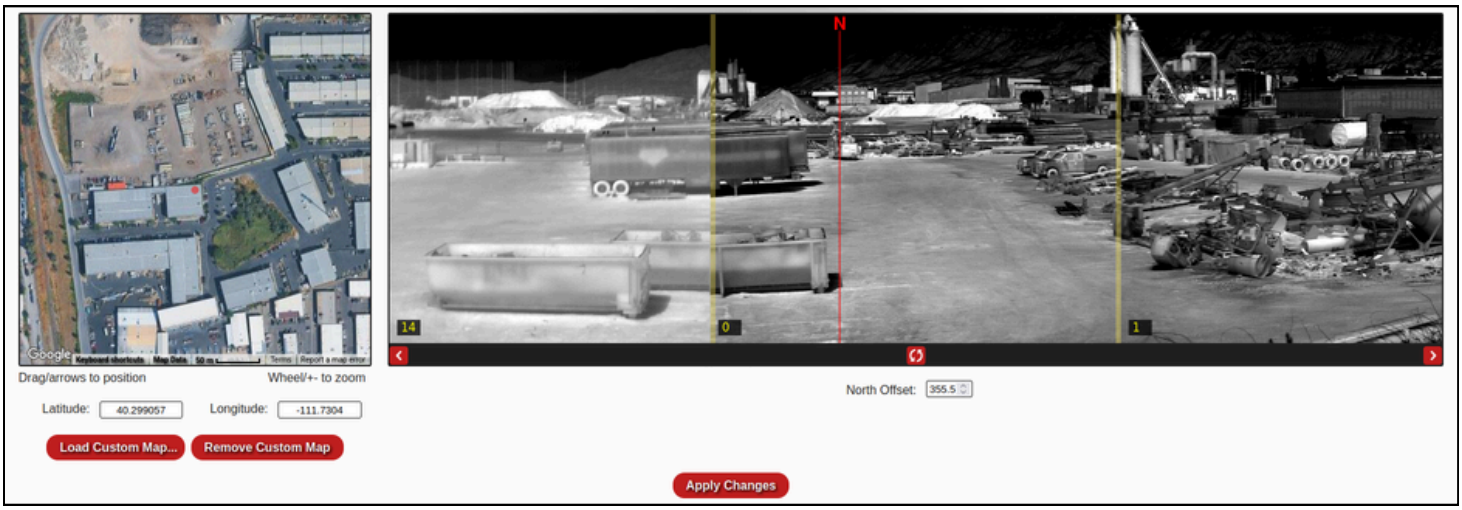
Click 'Apply Changes' to apply the time settings. The Thermal Radar™ will restart to apply the settings.

Device Info

Device Info displays the MAC-address of the Thermal Radar™.

Site Map

The Thermal Radar™ displays the **Site Map** as part of the video stream. Dots are displayed on the site map to indicate the location of alerts. To ensure the site map displays and shows the locations of the alerts correctly, a satellite image of the area needs to be uploaded and the Thermal Radar's North position needs to be configured.



Update/Upload Site Map

To upload a site map to the Thermal Radar™, the user can type in GPS coordinates or upload a site map manually. If the computer connected to the Thermal Radar's web interface has an internet connection, the site map will be pulled automatically from Google Maps when the coordinates are entered. To load a previously saved image, select Load Custom Map... and browse to the image file to be uploaded. To remove an existing map, select Remove Custom Map.

Once the map has been uploaded, navigate the uploaded site map with a mouse and locate the position of the Thermal Radar™ with the red dot in the center of the map. Once the site map has been uploaded and adjusted, select Apply Changes to save changes.

North Offset

North Offset indicates the number of degrees, clockwise, North is from the center of station 0 on the Thermal Radar™.

To set North on the Thermal Radar™, identify an object that is North in the Thermal Radar's view and adjust North Offset until the **N-line** lines up with said object. The station view has arrow buttons ( ) to move from station to station, and an indicator arrow ( ) to indicate as to which direction the **N-line** can be found.

Increasing the North Offset value will rotate the dots on the map counter-clockwise.
Decreasing the North Offset value will rotate the dots clockwise on the map.

The yellow or red vertical lines on either side of the image represent the edges of the selected station's image. If the lines are yellow, it indicates that the selected image and adjacent images are overlapping. If the vertical lines are red, it indicates there is a gap between the images.

If the Thermal Radar™ has been configured to skip stops within its 360-degree rotation, the skipped stops will display a blank image with a "SKIPPED STOP" message.

Distances

The **Distances** page allows the user to configure visually how far away objects are, as well as set the horizon, to allow the Thermal Radar™ to account for variances in terrain.

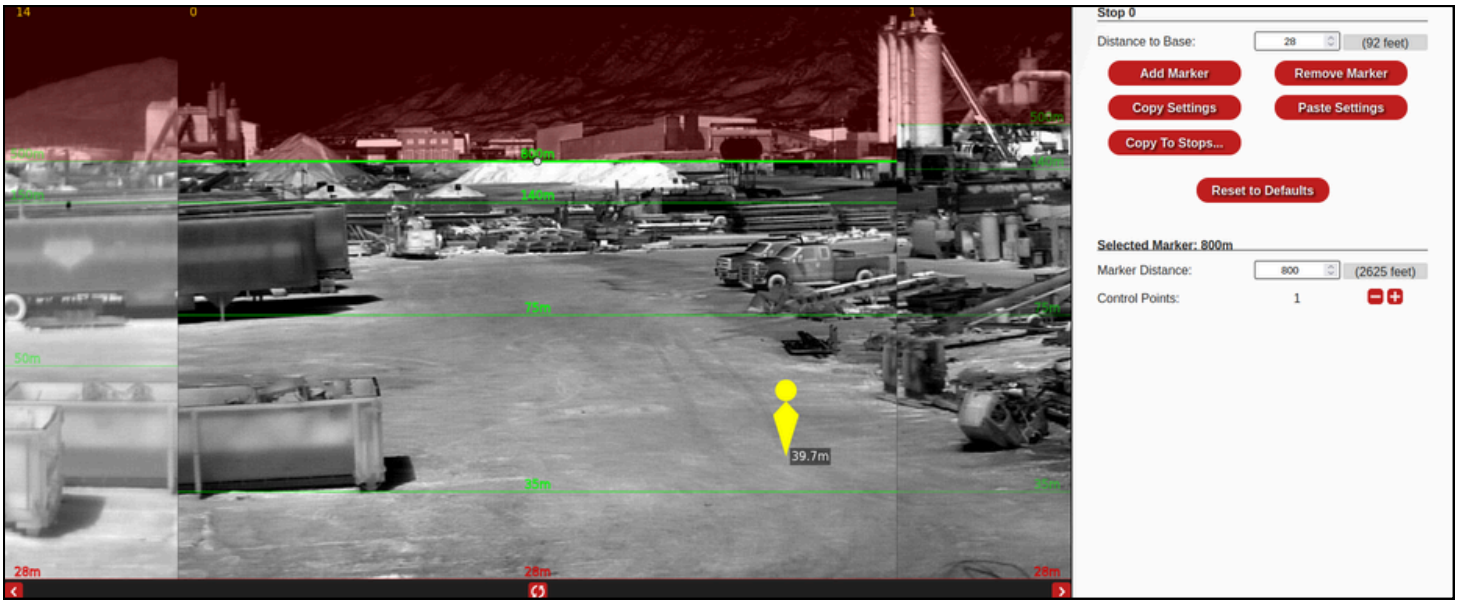
The way the Thermal Radar™ calculates the distance of an object from the device, and thus the geographic location and size of the object being detected, is based on a series of trigonometric functions. This set of calculations is based on the assumption that the plane on which the Thermal Radar™ sits is perfectly parallel to the also perfectly flat ground. This has been found to almost never be the case in real-world scenarios, and thus we've added the **Distances** interface to compensate.

The **Distances** page allows the user to navigate through each of the images in the Thermal Radar's panorama to configure the respective distance lines per stop in the panorama.

The **green** lines displayed in each image/stop are preconfigured distance lines. The distance of each of the lines is calculated based on the mounting height of the Thermal Radar™ and the down tilt of the sensor inside the Thermal Radar™. Often, these lines do not align with the actual distances in the environment due to elevation variances. If these lines are not accurate with the environment in which the Thermal Radar™ is installed, it's recommended that the distance lines be configured according to the environment.

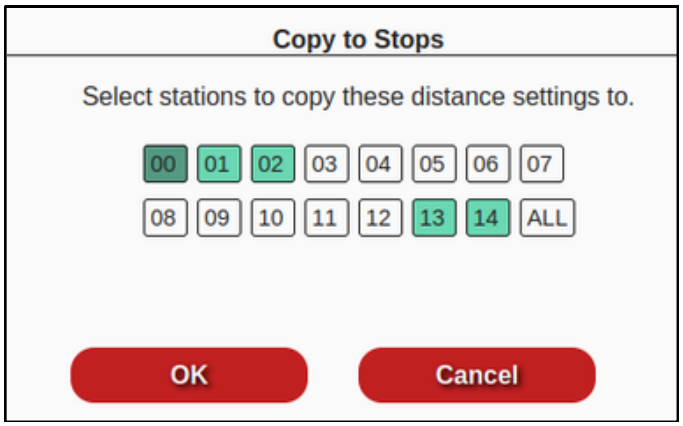
Use the ( ) arrow buttons to navigate left or right through each stop in the panorama.
Use the button to update the displayed image.

Note: *It is recommended to add at least three (3) distance lines for proper operation. Set the top line to the furthest point you wish to detect, set the second line somewhere near the center of the detection area, and set the third line somewhere between the base and the middle distance line.*



Distance to Base indicates the distance from where the Thermal Radar™ is mounted, to the beginning or bottom of the image.

- Use the Add Marker button to add an additional configurable marker line to the station.
- Use the Remove Marker button to remove the selected marker line from the station.
- Use the Copy Settings button to copy all of the distance settings from the displayed station.
- Use the Paste Settings button to paste the settings from the previously copied station to the displayed station.
- Use the Copy To Stops... button to copy all of the distance settings from the displayed station directly to any other chosen stations.
- Use the Reset to Defaults button to reset all of the distance settings on the displayed station to default or factory values.
- **Selected Marker** displays the current configured distance in meters of the selected distance line.
- Use the **Marker Distance** text box to enter the desired distance value in meters.



- Use **Control Points** to add or remove control points on the selected distance marker line. Adding additional control points can allow you to contour the distance line to a hill or other elevation changes within the imagery.

Click anywhere on the thermal image to display the yellow perspective tool to get an idea of how tall an average human would be at the selected distance according to the configured distance lines. If the perspective tool does not appear to be the correct size, adjust the distance lines accordingly. Left-clicking, holding, and dragging the cursor within the image will move the perspective tool wherever the user moves their cursor.

⚠ ***Note:*** *The size of the perspective tool is based on the average height of a human globally (5.6 ft tall).*

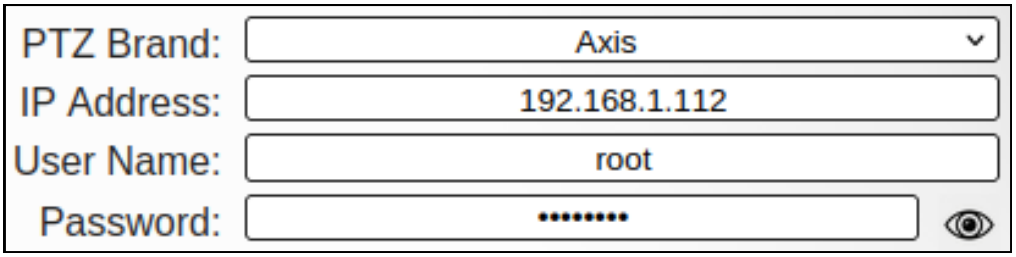
Hydra™ PTZ

The Hydra™ PTZ configuration page allows the user to pair and align a PTZ with the Thermal Radar™, as well as configure the behavior of the PTZ in response to detections.

⚠ ***Note:*** *The PTZ should be mounted on the same vertical axis as the Thermal Radar™.*

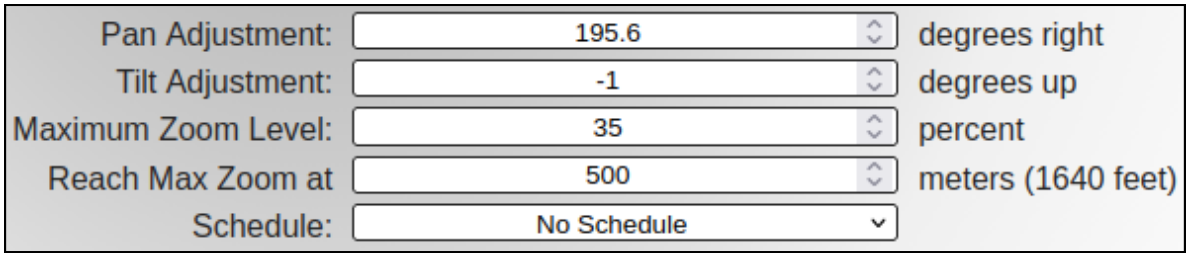
PTZ Camera Settings

- The **PTZ Camera Settings** are used to pair/connect the Hydra™ PTZ to the Thermal Radar™.
- Use the **PTZ Brand** drop-down to select the brand of the PTZ to be controlled.
- Enter the **IP Address** of the Hydra™ PTZ.
- Enter the **User Name** and **Password** of the PTZ.



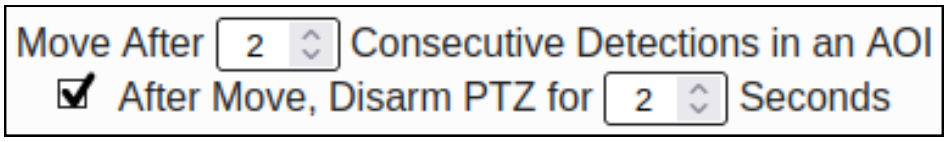
Pan, Tilt , and Zoom Adjustment

- **Pan Adjustment** adjusts the PTZ's pan (clockwise and counterclockwise) when it is pointed at a target. Positive numbers will adjust the PTZ clockwise, and negative numbers will adjust the PTZ counterclockwise.
- **Tilt Adjustment** adjusts the PTZ's tilt (up and down) when it's pointed at a target. Positive numbers will adjust the PTZ upward, and negative numbers will adjust the PTZ downward. Usable values are between -10 and 10.
- **Maximum Zoom Level** adjusts the PTZ's maximum zoom level.
- **Reach Max Zoom at** adjusts the distance in meters at which the PTZ will reach its *Maximum Zoom Level.*
- **Example:** with the Reach Max Zoom setting set to 200 meters, and the Maximum Zoom Level is set to 50%, the PTZ's max zoom will be 50% at 200 meters. In this circumstance, if there is a detection at or beyond 200 meters, the PTZ will only zoom to 50%. If there is a detection at 100 meters, the PTZ will only zoom to 25%.
- **Schedule** applies a preconfigured schedule to the PTZ. (see Scheduling) Select a schedule from the drop-down to apply the schedule to the PTZ. Select No Schedule to remove the schedule from the PTZ.



PTZ Movement Rules

The **PTZ Movement Rules** dialog is used to determine how sensitive the PTZ is to moving to detections. Decreasing the movement rule values will make the PTZ more sensitive to detections. Increasing the values will make the PTZ less sensitive to detections.



Move After _____ Consecutive Detections: determines how many detections need to occur within a single Area of Interest (AOI) before the PTZ moves on target. The default value is 2.

☑ **After Move, Disarm PTZ for ____Seconds**: shunts the positioning commands sent to the PTZ for the configured number of seconds. This option is turned on by default and the value is set to 2.

Hydra™ PTZ Alignment

The Test PTZ Alignment button and the panorama view are used to align the PTZ with the Thermal Radar™.

⚠ ***Note:*** *If the PTZ is not aligned with the Thermal Radar™, the PTZ will not be pointed onto detections accurately.*

In order to Align the PTZ with the Thermal Radar™ , the PTZ zero-degree position needs to align with the Thermal Radar™ zero-degree position (center of station 0). If the PTZ is installed to line these positions at startup, then this step may not be necessary. In many cases, it's difficult to determine the zero-degree position on the PTZ. The Hydra™ PTZ Alignment makes it easy to adjust for any difference.

To make the PTZ alignment easier, open the PTZ's web interface to view the PTZ's video stream along side the Thermal Radar's Hydra™ PTZ configuration page.

- Click on any point on the panorama with the mouse to highlight a target for the PTZ to focus on.
- Click Test PTZ Alignment to focus the PTZ on the highlighted point.
- Adjust the **Pan Adjustment** value to adjust the PTZ Pan position. Increase the number of degrees to adjust clockwise, and decrease the number of degrees to adjust counterclockwise.
- Click Test PTZ Alignment to see the updated location. Adjust the Pan Offset Alignment until the PTZ view is centered on the point on the panorama you highlighted.

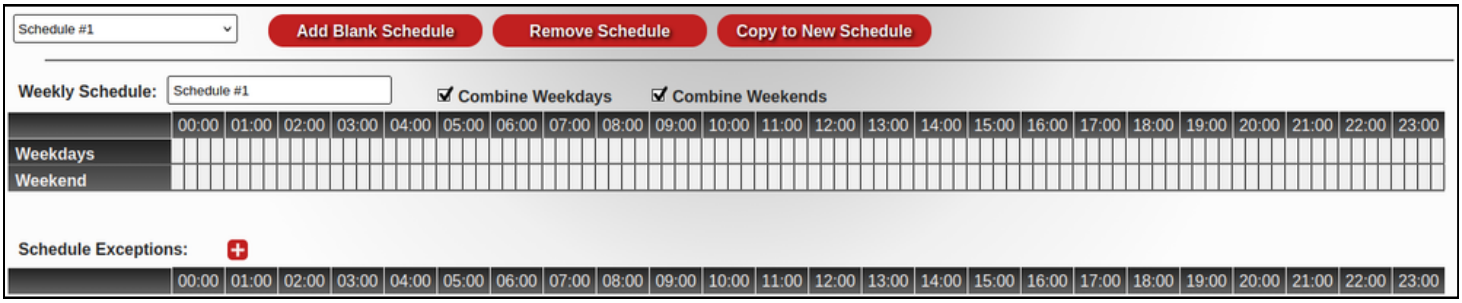
Note: *Scheduling is NOT required if the system is armed 24/7.*

Scheduling

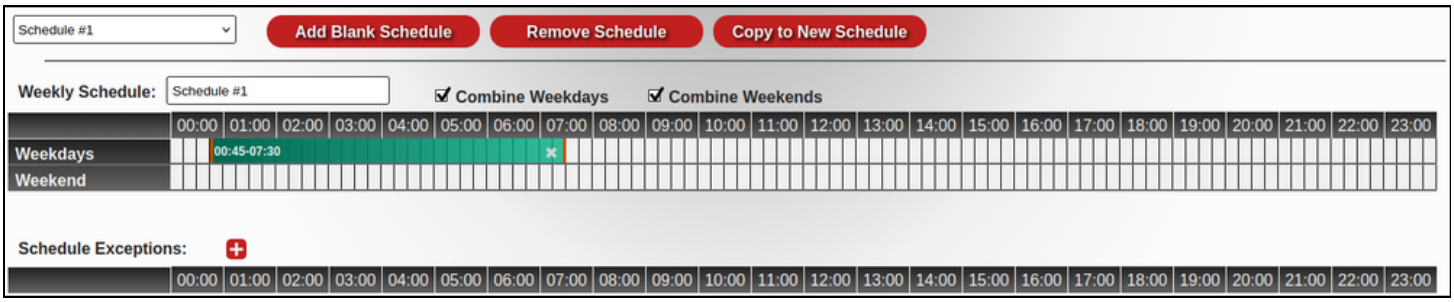
The **Scheduling** page allows the user to create daily system operation schedules. It allows the user to determine when the Thermal Radar™ system should or should not be armed.

As an example, say the Thermal Radar™ system only needs to be armed after hours, so it doesn't alert on workers during business hours. This scenario can be easily handled by using the scheduling feature.

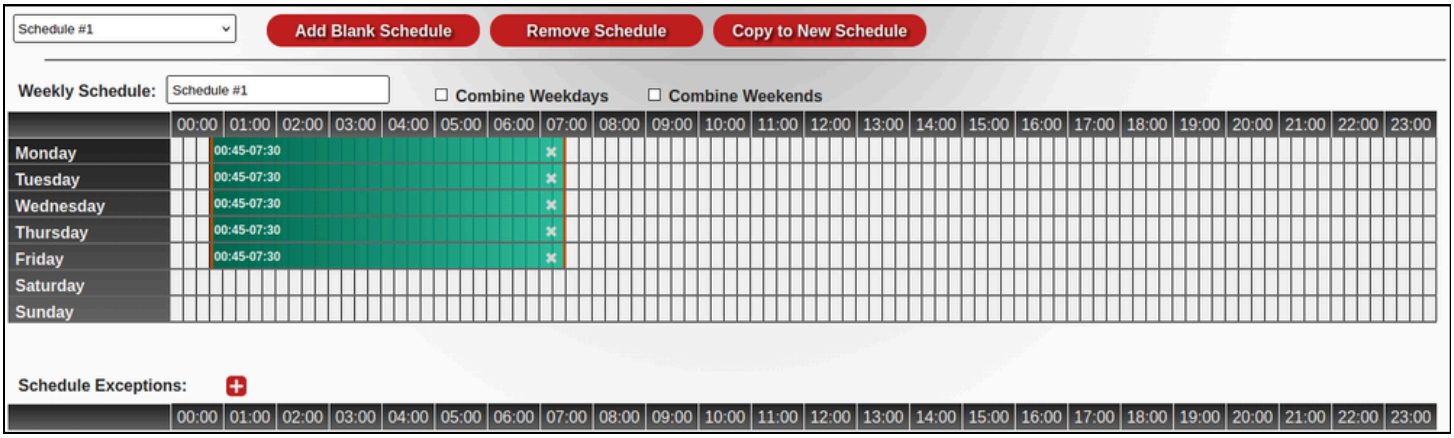
In order to **create a schedule**, the user needs to click on the Add Blank Schedule button. Once a blank schedule has been added, the scheduling table below will pop up:



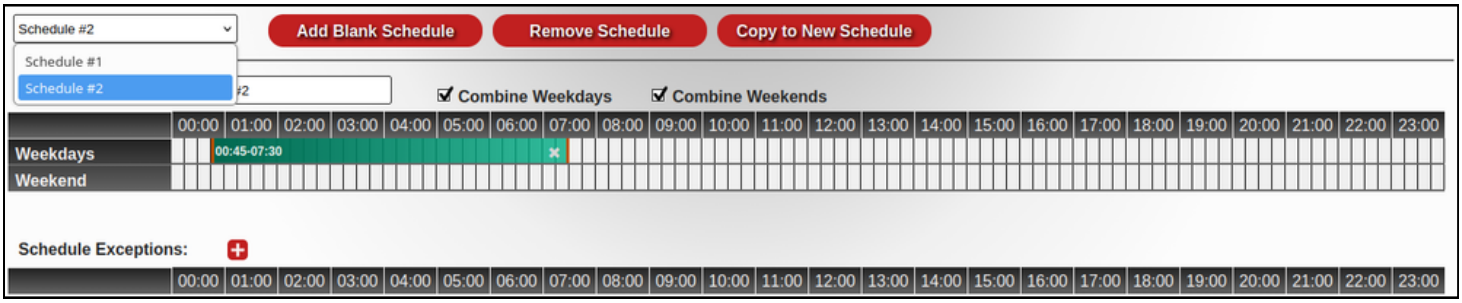
To **add a green time bar** or arming period into the schedule, click anywhere on the timeline. The amount of time the system is armed (green), is chosen by dragging the schedule bars left or right. The schedule bars on both the *Weekly Schedule* and *Schedule Exceptions* can be dragged around to move them, stretched from either end to expand them, and dragged into one another to combine them.



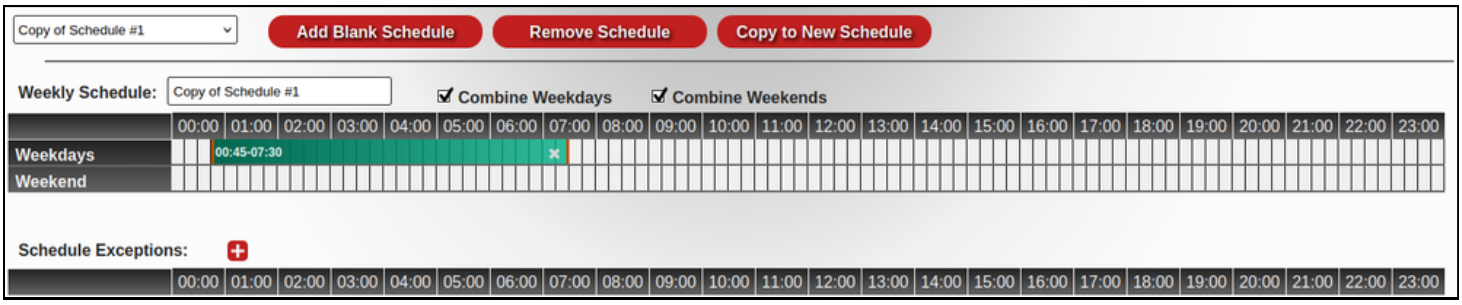
Schedules may be given custom names. They don't necessarily need to be unique, but it's recommended. The **Combine Weekdays** & **Combine Weekends** check boxes can be unchecked if the user wants more control over daily schedules.



The Add Blank Schedule button allows the user to **create a new schedule**. Once selected, it will show up in the *Weekly Schedule* drop down on the left.



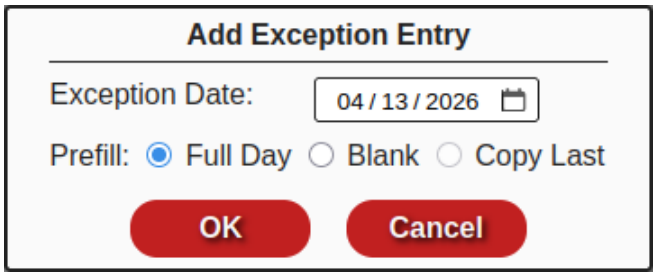
The Copy to New Schedule button allows the user to **create a copy of the selected schedule**.



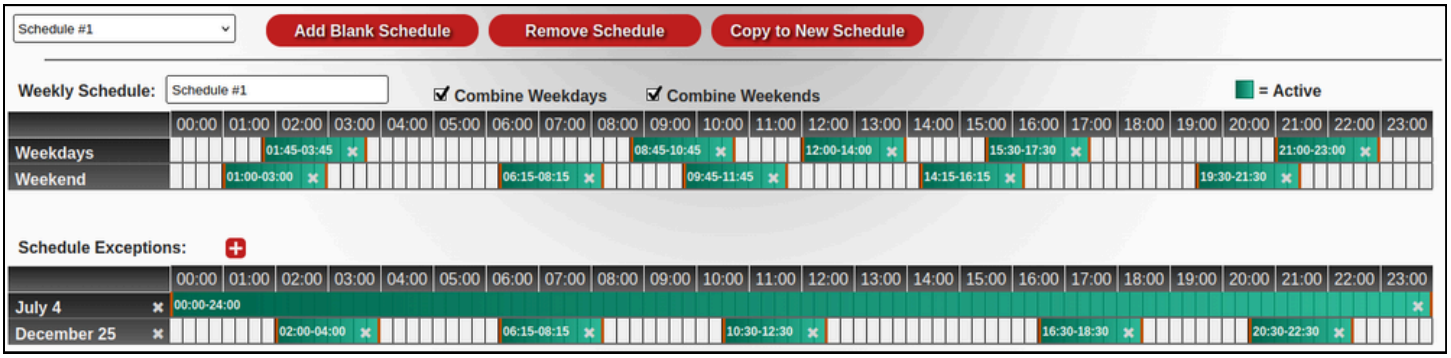
The Remove Schedule button **removes (deletes) the selected schedule**.

Click + button to create a schedule exception. There are three options for pre-filling an exception that will speed up the process of creating several exceptions.

- **Full day**: arms the full day (24 hrs).
- **Blank**: disarms the full day (24 hrs).
- **Copy Last**: copies settings from previous exception.

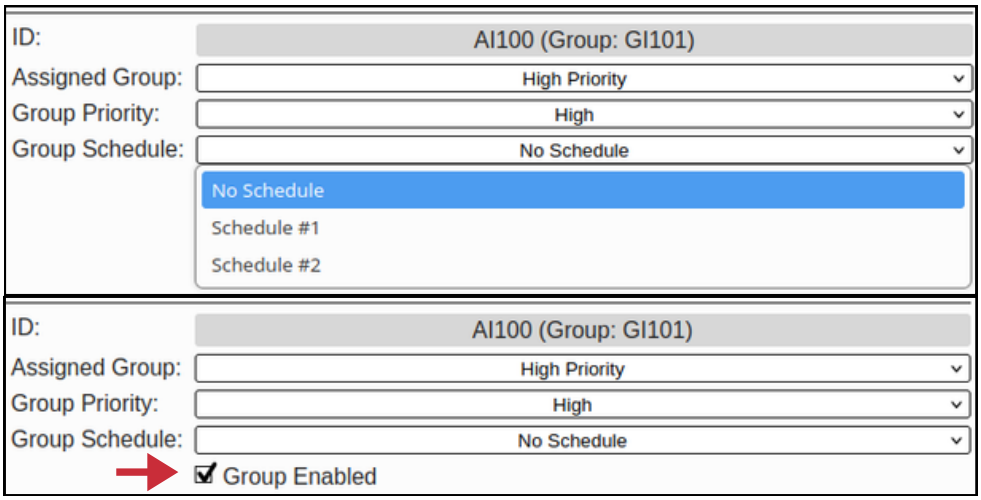


Schedule Exceptions are set up by date and override the *Weekly Schedule* for that day. Exceptions allow special handling for holidays, etc. Exceptions will repeat on the same date every year.



Schedules are generic. They don't by default apply to anything. After a schedule is created, it can be applied to AOI Groups over on the Analytics pages, the PTZ on the Hydra PTZ page, and Alert Receivers on the alert receivers page.

Schedules enable/disable a component similarly to doing so manually. The component will be enabled each time the schedule transitions from off (white) to on (green), and disabled on the opposite transition.



If a schedule is applied to an AOI group, the schedule will take precedence and the manual enabled/disabled checkbox will not enable or disable the group. If the group needs to be enabled or disabled, an exception will need to be added to the schedule, or the schedule will need to be removed from the group.

If a schedule is applied to the Hydra™ PTZ, the PTZ will automatically be enabled or disabled according to the schedule, without otherwise affecting the analytics. While the schedule has set the PTZ to enabled, it can still be manually disabled temporarily with the Pause PTZ function.

If a schedule is applied to an Alert Receiver, the schedule will take precedence, and the Activate/Deactivate button below the table of receivers will not enable or disable it. Similar to AOI groups, if the receiver needs to be enabled or disabled, an exception will need to be created, or the schedule will need to be removed.

Intrusion Analytics/Fire Analytics

The **Intrusion** and **Fire Analytics** configuration pages are used to tell the Thermal Radar™ where and where not to detect, and what to detect. Areas of Interest (AOI) are used to indicate areas where alerts are to be detected and indicate which types of alerts to detect. Users can add any number of AOIs. It is recommended that AOIs be large enough to detect an intruder multiple times before the intruder crosses the entire AOI. This will provide the most control over setting alarm rules.

Each AOI is given an ID which can be used in the Alert Rules to determine which alerts to send to designated Alert Receivers.

Use the › and ‹ buttons to scroll between stations.

⚠ ***Note:*** *The thermal image is a snapshot. Video is not constantly streaming to the setup application. If an updated image is needed, press* ↻ *to update the images or use the refresh button on your browser.*

Adding/Deleting AOIs

To add an individual **AOI**, navigate to the station(s) where you wish to place an AOI and click the 📍 button to ready the Thermal Radar™ to receive a new AOI. Click on the area where the AOI will start, and then click on the location of each corner of the desired shape. To complete the AOI, either double click on the location of the final corner, or click on the location where the AOI started. Each new AOI has round handles on the corners ● that can be used to adjust the AOI once created.

To **Delete a Mask** or AOI, select the object and click ✖.
To **Delete EVERY Mask** or AOI, select the object and click 🗑.

Keyboard Shortcuts (Analytics Page)

Use the **Delete** key to delete the selected AOI or Mask.

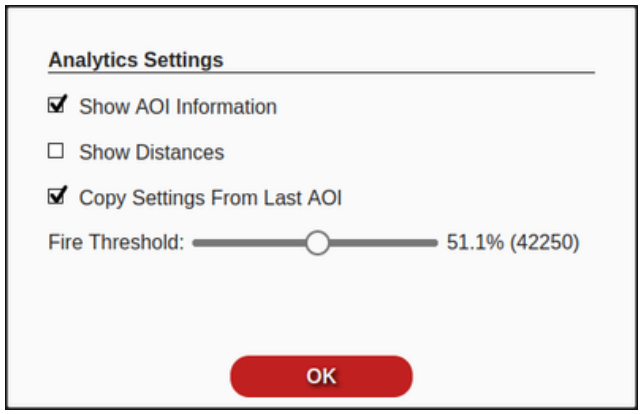
Press **Esc** while drawing an AOI or Mask to delete incomplete object.

Use **Ctrl + Z** to undo the last operation.

Hold **Shift + Left-Click** and drag the mouse to a stop point to create or adjust a rectangular AOI or Mask.

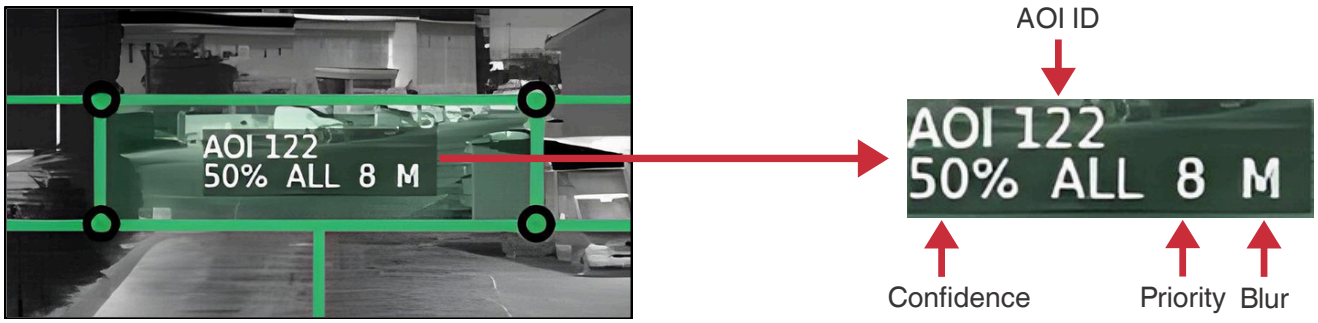
Analytics Settings

Select the ⚙ button to enter the Analytics Settings dialog, which contains a handful of useful tools for setting up AOIs.



- ☑ **Show AOI Information** causes Areas of Interest to show their ID at the center of the AOI. It will also show the Confidence, Sensitivity, Blur, Priority, and which filters(if any) are applied to the AOI. You can adjust these settings in the **Settings Panel**.
- ☑ **Show Distances** displays the configured Distance markers for each station as blue lines behind the drawn AOIs.
- ☑ **Copy Settings From Last AOI** causes newly created AOIs to have the same settings and Group as the last AOI that was selected. If it is disabled, new AOIs will use the default settings and Group instead.
- ☑ The **Fire Threshold Slider** allows the user to adjust the levels at which the Thermal Radar™ detects fires. Lowering the value will make it more sensitive, and raising the value will make it less sensitive.

⚠ ***Note:*** *The Fire Threshold slider will only be present on the Fire Analytics page.*

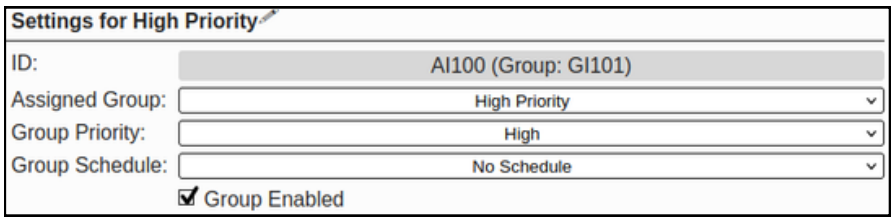


Groups

Each Area of Interest on an Analytics page is created as part of a **Group**. Groups are collections of AOIs that can be used to prioritize one group over another, for the purpose of prioritizing control of the attached PTZ camera. Groups can also be leveraged for alarming purposes (see Alert Rules).

- To **create** a new Group, select *Create New Group* from the Assigned Group drop-down menu, and provide it with a unique name. The currently selected AOI will automatically be assigned to the new group.
- To **remove** a Group from the list, reassign all of its AOIs to other groups, and refresh the page.
- To **assign** a selected AOI to an existing group, select the desired group from the Assigned Group drop-down.

Group Priority helps determine how the PTZ moves when more than one detection is registered at once, with higher priority groups taking precedence over lower priority groups.



Group Schedule applies a preconfigured schedule to the selected group (see Scheduling). Select a schedule from the drop-down to apply the schedule to the group. Select No Schedule to remove the schedule from the group.

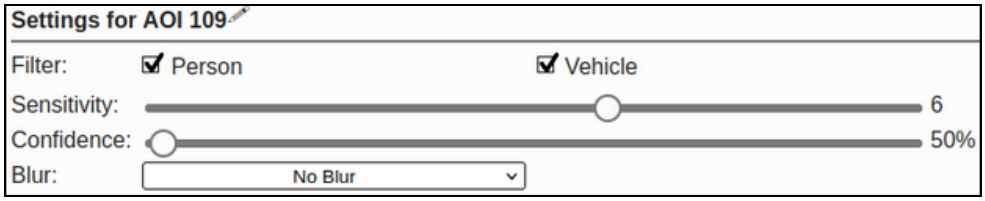
☑ **Group Enabled** can be used to enable or disable every AOI that is part of that group. By unchecking this box, each of those AOIs will be left with their settings saved, but will be inactive until the box is checked again.

⚠ ***Note:*** *Whenever an AOI is assigned to a new Group, that Group's Priority and Enabled status are automatically applied to the AOI.*

Adjusting AOIs

Select **Filters** *for Person, Vehicle,* or select both. Selecting neither will disable the object classification filter and allow all detected movement to trigger alarms.

⚠ ***Note:*** *The Fire Analytics page does not have the ability to turn the Fire filter on or off.*



Sensitivity indicates how sensitive the area should be to changes in pixel value. Objects closer to the Thermal Radar™ can be detected in AOIs of lower sensitivity, typically between 1 and 2. Objects farther away can be detected with AOIs with higher sensitivity, 4 - 6 without generating a lot of false detections.

Confidence is used if one or more filters are selected. It determines how closely an object needs to match the classification characteristics to be a valid detection. This can be used to filter out small animals and some random movement. On the video output feed, this will be displayed for each object triggering an alert.

The **Blur** parameter applies a Gaussian blur to the AOI which softens edges and blends the pixel values together to create a uniform texture. Blur is useful for filtering out small movement which can be generated by wind on grass, bushes, or fabrics. By default, there is no blur, this gives the best performance for detecting movement.

Renaming AOIs and Groups

The ✎ button can be used to rename an AOI or Group after it has been created.

To rename an AOI, select that AOI on the canvas, then click on the ✎ next to its name above the AOI details on the left side of the screen.

To rename a group, select any AOI that is part of that group, then click on the ✎ next to its name above the Group details on the right side of the screen.

AOIs and groups can be renamed any number of times, but their internal IDs cannot be modified. The AOI ID and Group ID for the selected AOI is shown in the ID field as part of the Group information.

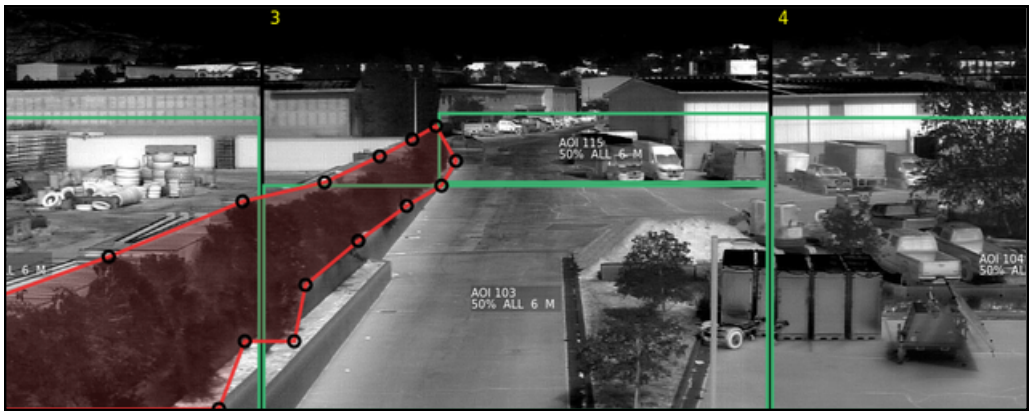
Mask/Exclusions

Masks are created in the same fashion as AOIs. Select the button to prepare a new mask, and then click on each corner of the desired shape on the station view. Click on the handles to reshape the mask after the area has been designated. The default Mask setting is set to **No Detections** which excludes any portion of an AOI from detecting where the mask is overlapping the AOI.

Masks also have **Blackout**, **No Blur**, and several **Blur** values.

A **Blackout Mask** will remove the portion of the image the mask is covering from displaying within the video feed output from the Thermal Radar™. The Blackout mask can be used to mask out an area that doesn't need to be recorded by the Video Management System.

A **Blur Mask** can be used to blur a select portion of an AOI. The Sensitivity setting of the blur mask will override the sensitivity of the AOI that the blur mask is overlapping.



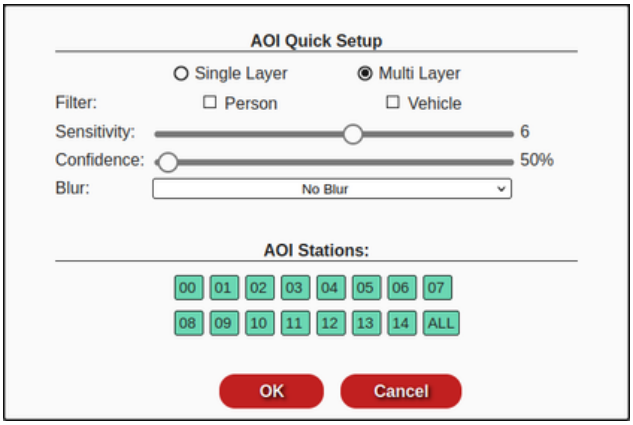
Quick Setup

Quick Setup will allow the user to send out a *Single-layer* or *Multi-layer* pattern of AOIs with the selected values to the selected stations. The selected quick setup will cover the selected stations with AOIs from the bottom of the station to the configured horizon.

Single-layer populates a single AOI per station.

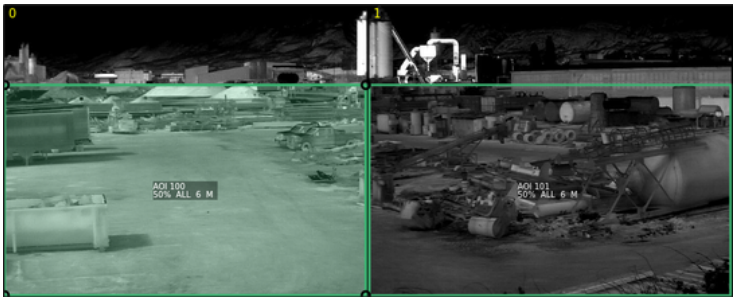
Multi-layer populates multiple layers of AOIs per station.

Click ALL to select or deselect all stations.

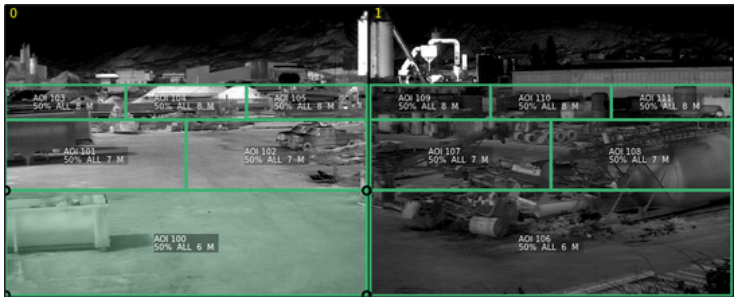


⚠ ***Note:*** *If you send a quick setup with no stations selected, it will erase/delete all of the AOIs from the configuration.*

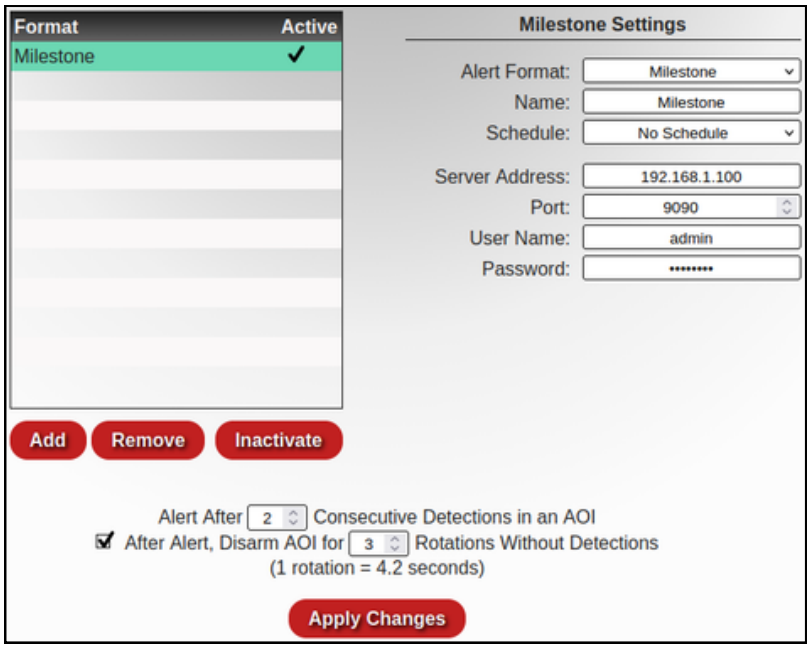
Single-layer



Multi-layer



Alert Receivers



The Thermal Radar™ has the ability to send formatted alerts to several different Video Management Systems (VMS) and devices. The **Alert Receivers** page is used to configure the communication of the alerts to a Video Management Systems or devices.

Adding Alert Receivers

To **Add** a new receiver, click the Add button.

To **Remove** a receiver, select the receiver and click the Remove button.

Click Activate to **Activate** or select Inactivate to **Inactivate** a selected receiver.

The settings for the selected receiver will be displayed in the Settings panel. IP Address, Port, User Name, and Password are the most common settings. Other settings may be required by the receiver, such as URI, Signal Delay (for on/off signals), etc.

Click Apply Changes to save receivers. Each receiver can be configured for receiving alarms on the Alert Rules page.

⚠ ***Note:*** *It's possible to create the same receiver type multiple times. Doing this will allow alerts to be sent to the same alert receiver simultaneously (see Alert Rules). Give each Alert Receiver a unique name to distinguish them later.*

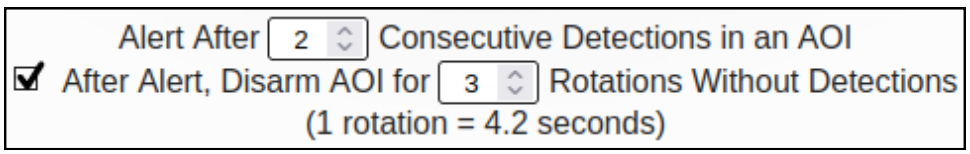
Detection to Alert Rules

Each **Alert Receiver** that is added to the Thermal Radar™ will be sent alerts based on the Alert Rules at the bottom of the Alert Receivers page.

Alert **After ____Consecutive Detections** . . . is how many consecutive detections in a single AOI need to occur before sending the alert.

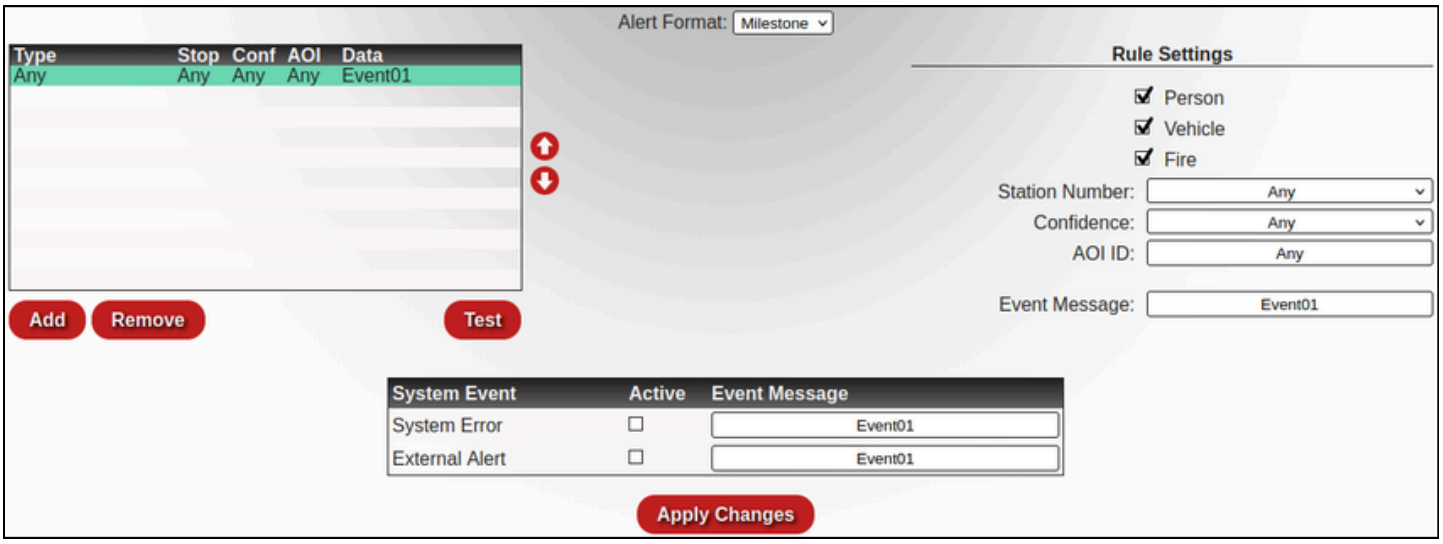
☑ **After Alert, Disarm AOI for ____Rotations** . . . if checked, it disarms/shunts the AOI for a selected number of rotations without detections before arming the AOI again. While the AOI is disarmed/shunted, it will not send alerts. If not checked, the AOI's are armed and active and will follow the *Alert After ____Consecutive Detections rule.*

⚠ ***Note:*** *These rules are applied to each individual AOI on the Analytics page.*



Alert Rules

The **Alert Rules** page is used to configure how alerts will be filtered and sent to each target Alert Receiver.



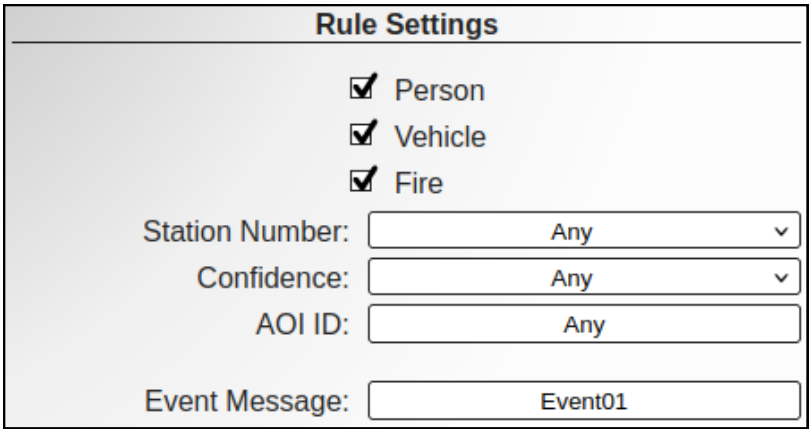
Adding Alert Rules

Use **Alert Format** to select the alert receiver the Alert will be sent to.

Click Add button to add a new rule.

Click up and down arrows to change rule order/priority.

Rules will execute in order, starting from the top of the list, and execution will stop when the first rule conditions are met.



The settings for the selected rule will show up in the **Rule Settings** panel. Each rule has filter options that are preselected, and an *Any* option to trigger regardless of detection information.

- **Detection Type** allows the user to filter rules by *Person*, *Vehicle*, *Fire* or *All*.
- **Station Number** allows rules to be filtered by Station.
- **Confidence** allows rules to be filtered by confidence level.
- **AOI ID** allows rules to be sorted by a single AOI or an entire group of AOIs; i.e. AOI ID: AI100 or Group ID: GF100.

The parameter/text fields allocated for the specific type of receiver will display below the AOI ID text box. The parameters passed to the receiver are determined by the receiver type. The unique parameter will need to match up to a rule or trigger configured in the receiver. For example, the Advantech ADAM IO module has 0-16 digital switches. The Event Message indicates which switch to trip. Click Test to trigger the selected rule, to verify if the receiver's configuration is working. To remove an existing rule, select a rule from the list and click Remove.

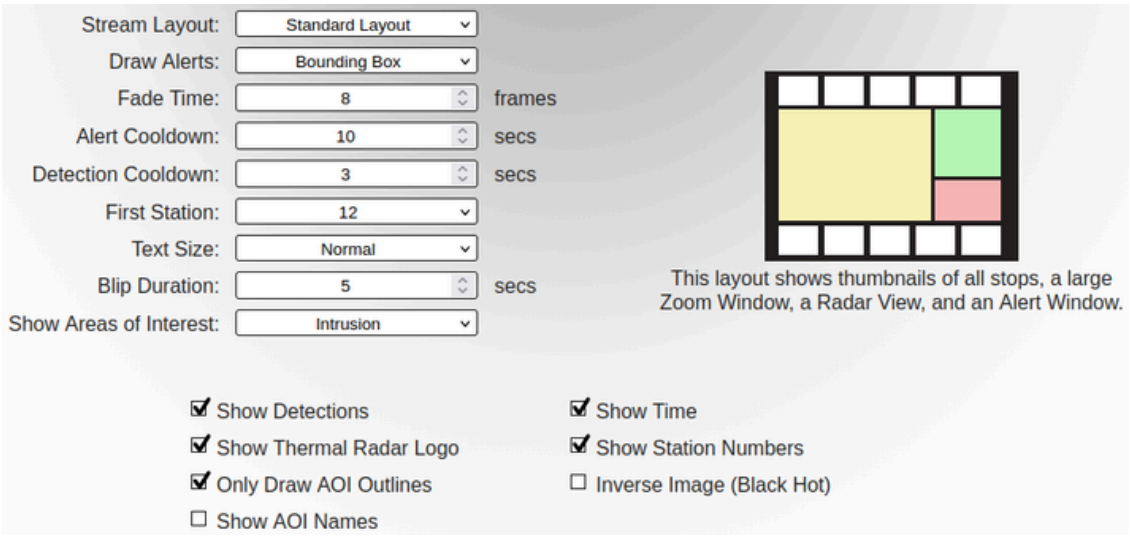
System Event Triggers

- A **System Event** can also be configured to trigger events in the receiver.
- Check ☑ **Active** next to System Error to send an error message to the receiver when an error occurs on the Thermal Radar™.
- Check ☑ **Active** next to External Alert to send an alert message to the receiver when the Thermal Radar™ receives an event from an external source, such as a supported AI analytics module. While this entry is active, the configured receiver will only generate alerts from such sources, and not from the Thermal Radar's analytics.
- Enter a unique identifier into the System Event text box for each checked System Event. The type of parameter required will depend on the alert receiver.
- Click Apply Changes to save settings.

System Event	Active	Event Message
System Error	☐	Event01
External Alert	☐	Event01

Display

The **Display Configuration** page allows format changes to be made to the Thermal Radar's video stream that is sent to the desired Video Management System (VMS).



Video Display

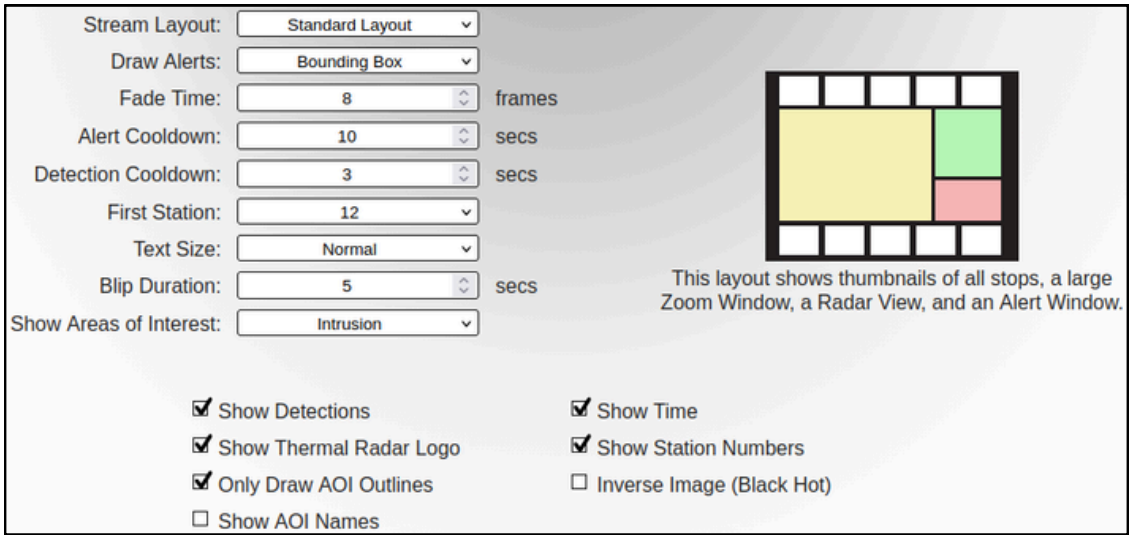
When the Thermal Radar™ identifies a detection, the detection will be highlighted yellow and the station that contains the detection within the Thermal Radar's video display will illuminate with a yellow border. If any of the Areas of Interest (AOI) within the station are set up to send alerts, the detection will be highlighted red and the border around the station will illuminate red.

System Detection

System Alert

Display Settings

- **Stream Layout** can be used to change the output of the video stream to one of six configurations, each showing a differing amount of information.
- **Draw Alerts** affects the way that detections and alerts are highlighted on the video stream.
- **Fade Time** affects the amount of time a detection highlight takes to fade after the *Detection Duration* time runs out.
- **Alert Cooldown** affects how long a station will be highlighted, in RED, when a station sends an alert. Additionally, this feature will specify the amount of time the Zoom Window will be fixated on an alert and not be superseded by a lesser priority alert.
- **Detection Cooldown** affects how long a station will be highlighted, in YELLOW, when a station detects motion. Additionally, this feature will specify the amount of time the Zoom Window will be fixated on a detection and not be superseded by a lesser priority detection.
- **First Station** can be used to change the layout of top and bottom station images to start with the requested station in the upper left corner.
- **Text Size** affects the font size used in the text displayed in the video stream.
- **Blip Duration** affects how many seconds detections (dots) show up on the site map before they completely fade.
- **Show Areas of Interest** allows areas of interest and masks of a specified analytics type to be broadcast as part of the video stream.
- **Show Detections** toggles the yellow detection highlights on or off in the video stream.
- **Show Time** shows the Thermal Radar's time in the upper left-hand corner of the zoom window.
- **Show Thermal Radar Logo** shows the TIR logo as part of the video stream.
- **Show Station Numbers** labels each station in the video stream with an ID, starting with 0 (zero) as the home station.
- **Inverse Image** inverts black and white pixel values from default. When enabled, black pixels are hot and white pixels are cold.
- **Only Draw AOI Outlines** modifies the areas of interest added by *Show Areas of Interest* to only render outlines of those AOIs when enabled. When disabled, it renders a filled shape to represent the AOI.
- **Show AOI Names** renders the name of each area added by *Show Areas of Interest* in the center of its shape.



Click Apply Changes to save and apply changes to the Thermal Radar's video stream.

Maintenance

The **Maintenance** page is used to update the Thermal Radar™ firmware, restore the unit to its factory default settings, or restart the Thermal Radar™. The current firmware version of the Thermal Radar™ is displayed on the screen banner.

Updating Firmware

- Click the **Select Firmware Update File...** button and browse to the update file location.
- Click the **Apply System Update** button to apply the update and restart Thermal Radar™ .

Restoring Factory Defaults

- Click the **Restore Factory Defaults** to restore the factory default settings. Restoring factory settings returns the unit to its default configuration while preserving its network settings.

Export and Import Settings

- To **Export Settings**, click on the **Export Settings...** button and select the path for the download of your settings file. A [.trs file] will download, containing all of the settings of the Thermal Radar™ configuration.
  - ***Note:*** *Thermal Radar™ settings exclude network settings.*
- To **Import Settings**, click on the **Import Settings...** button, and select the [.trs file] that contains the settings to be applied.

Logs

- The **View Logs** button will allow the user to view the logs for the last 30 days of the Thermal Radar's operation. The logs are primarily used for support purposes.

Restarting the Thermal Radar™

- To **Restart** the Thermal Radar™, click the **Restart Thermal Radar™** button.

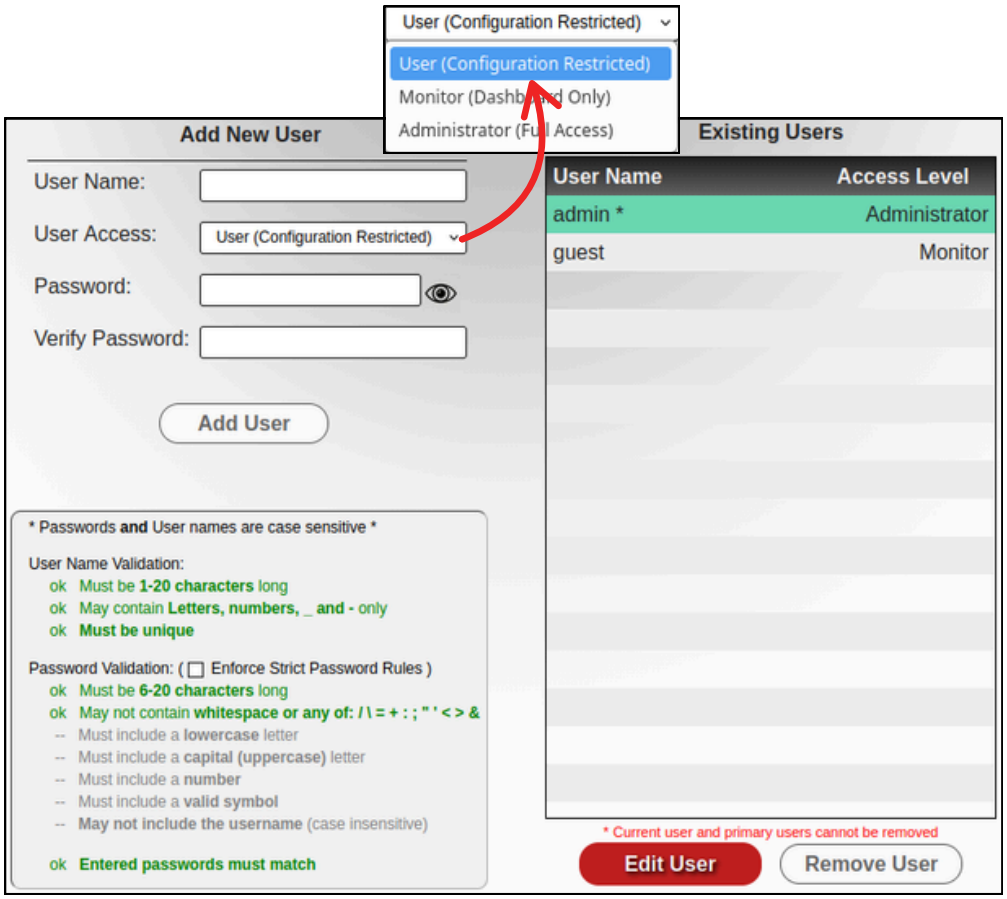
User Management

- **User Management** can be used to add additional users to gain access to the Thermal Radar's web interface. There are three different authority/access levels that can be assigned to a user: **User**, **Monitor**, and **Administrator**.
- The **User authority level** has access to make changes to the system within the web interface other than the Network, Maintenance, and User Management tab.
- The **Monitor authority level** can only use the Dashboard page (pause PTZ commands) and view the current configuration on the other tabs.
- The **Administrator authority level** has full access to everything within the web interface.

How to add a user:

- Select **User Management** from top menu.
- Type in **User Name** and select **User Access level** from the drop-down.
- Type in and verify **Password** selected for the User in the appropriate fields, conforming to the standards in the dialogue box below the *Add New User* field.

Select Add User to add the user's profile to the system.



Log Out

In the upper right-hand corner of the web interface, use the **Log Out** button to log out of the web interface when finished making changes.

Need Help?

Thermal Radar Support

Submit a Support Ticket

THERMAL™ RADAR

Visionary Thermal Detection

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