

Thermal Radar™ Settings Guide



**THERMAL™
RADAR**

Visionary Thermal Detection


Thermal Radar™ Web Configuration Page

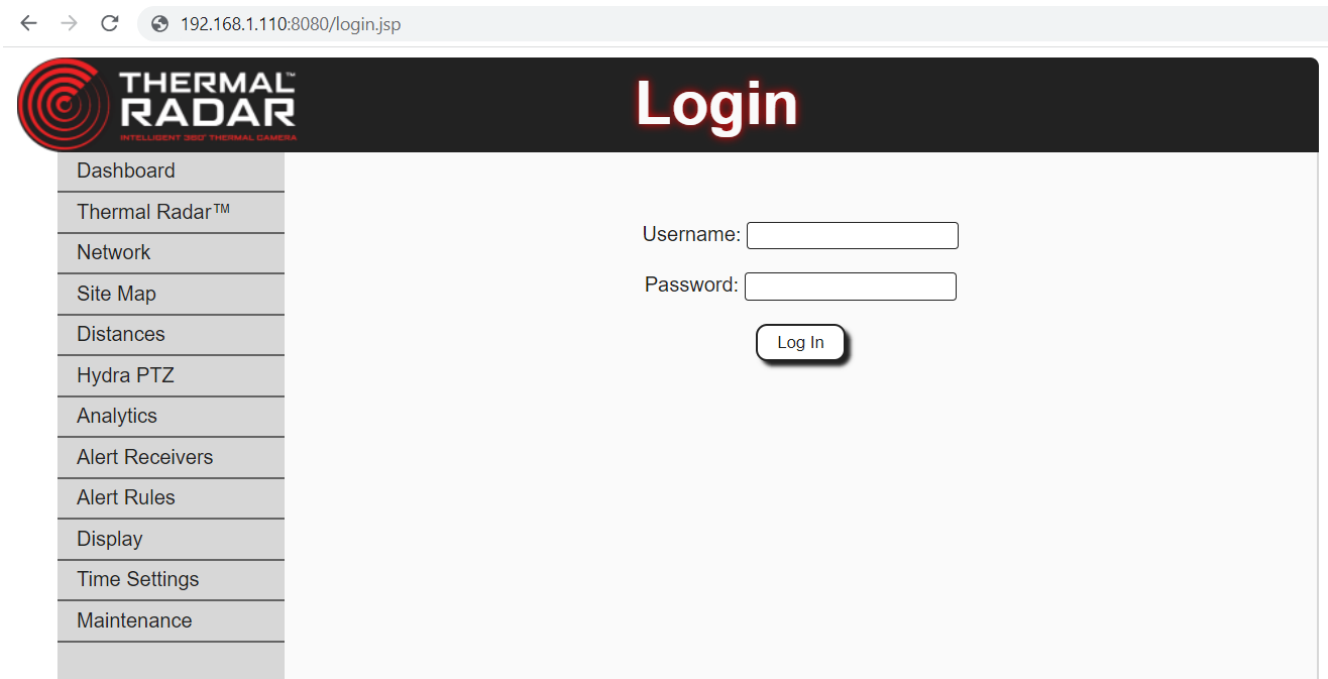
The Thermal Radar can be configured through its web interface. In order to access the Thermal Radar's web interface, open a web browser and type the below URL into the URL text box.

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

http://192.168.1.110:8080

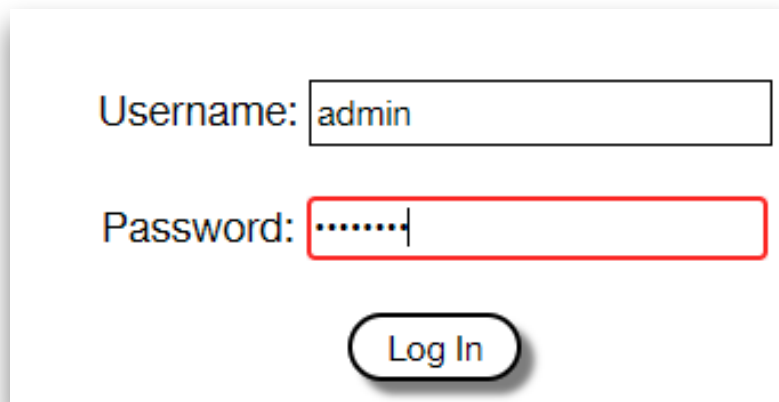
(http://<ipaddress>:8080)

 **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

Dashboard

Thermal Radar™

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Status: OK

Thermal Radar Device: 18.0 mm 15 stops 25.13 rpm

Serial #: 152363 Model #: 20640A024

System Temperature: 35.0°C Hydra PTZ: Hanwha @ 192.168.1.112

Suspend PTZ Control LIVE

Using the left side menu select the **Dashboard** tab.

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 of the Thermal Radar, the number of stops the sensor makes in its 360 degree revolution, and the RPM.

The **Serial #** indicates the serial number of the Thermal Radar.

The **Model Number** indicates the model number of the thermal sensor.

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

LIVE

Select Pause Time:

- 1 minute
- 2 minutes
- 3 minutes
- 4 minutes
- 5 minutes
- 10 minutes
- 30 minutes
- 1 hour
- 2 hours
- 4 hours
- 8 hours

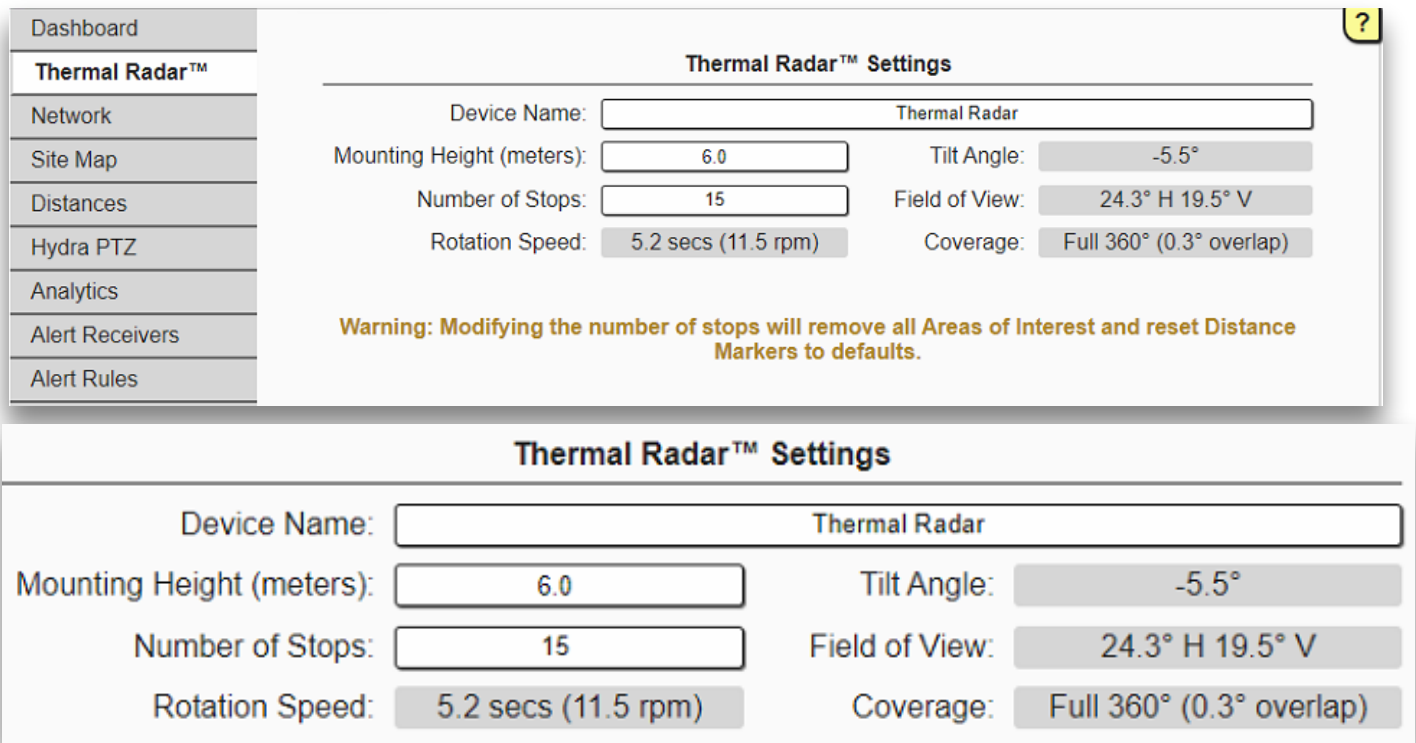
The **Suspend PTZ Control** button suspends the commands the Thermal Radar sends to the pan-tilt-zoom camera (PTZ). This option is used when configuring the Hydra PTZ or when the system operator needs to take manual control of the PTZ and wants avoid interference from the thermal radar's positioning 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** and the commands being sent to the PTZ will be paused for the selected duration.

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

Thermal Radar Setup

The Thermal Radar setup page is used to assign a name to the unit, select the number of rotation stops, display the resulting coverage based on the number of stations and the field-of-view (FOV) of the sensor within the unit, and to select the mounting height.



The image shows a screenshot of a web interface for Thermal Radar settings. On the left is a sidebar menu with the following items: Dashboard, Thermal Radar™ (highlighted), Network, Site Map, Distances, Hydra PTZ, Analytics, Alert Receivers, and Alert Rules. The main content area is titled "Thermal Radar™ Settings" and contains the following fields:

Device Name:	<input type="text" value="Thermal Radar"/>		
Mounting Height (meters):	<input type="text" value="6.0"/>	Tilt Angle:	<input type="text" value="-5.5°"/>
Number of Stops:	<input type="text" value="15"/>	Field of View:	<input type="text" value="24.3° H 19.5° V"/>
Rotation Speed:	<input type="text" value="5.2 secs (11.5 rpm)"/>	Coverage:	<input type="text" value="Full 360° (0.3° overlap)"/>

Below the form, a warning message is displayed: "Warning: Modifying the number of stops will remove all Areas of Interest and reset Distance Markers to defaults."

A second, larger screenshot of the "Thermal Radar™ Settings" form is shown below the first one, displaying the same fields and values as the first screenshot.

Use the **Device Name** text box to assign a unique name to the Thermal Radar. This will make it easier to identify each Thermal Radar when multiple radars are installed on the same network and is shown in the video feed.

Use **Mounting Height** to assign the measured height from the top of the Thermal Radar to 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 Stops** determines how many times the sensor stops during a revolution and determines the number of stations created in the panorama.

The **Rotation Speed** is the amount of time it takes the thermal sensor to make a full 360 degree revolution.

The **Tilt Angle** is the amount 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 (HFV & VFV) 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.

Network Configuration

The **Network Configuration** page allows the user to configure network settings for the Thermal Radar. 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™ IP address will force the Thermal Radar to restart.

Click [Apply Changes](#) to apply the IP settings and restart the affected devices.

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Network Settings

Mode:	<input type="text" value="Static"/>
System IP Address:	<input type="text" value="192.168.1.110"/>
Host Name:	<input type="text" value="tr21-121021"/>
Subnet Mask:	<input type="text" value="255.255.255.0"/>
Default Gateway:	<input type="text" value="192.168.1.1"/>
Preferred DNS:	<input type="text" value="192.168.1.1"/>

Device Info

MAC Address:	<input type="text" value="00:01:c0:2e:29:fb"/>
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Site Map Configuration

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.

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Drag/arrows to position Wheel/+/- to zoom

Latitude: North Offset:

Longitude:

Update/Upload Site Map

To upload a map to the Thermal Radar, the user can type in a GPS coordinate or navigate the uploaded satellite map with a mouse to locate the position of the Thermal Radar™. Then select to save changes.

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 is entered.

To load a previously saved image, select and browse to the image file to be uploaded.

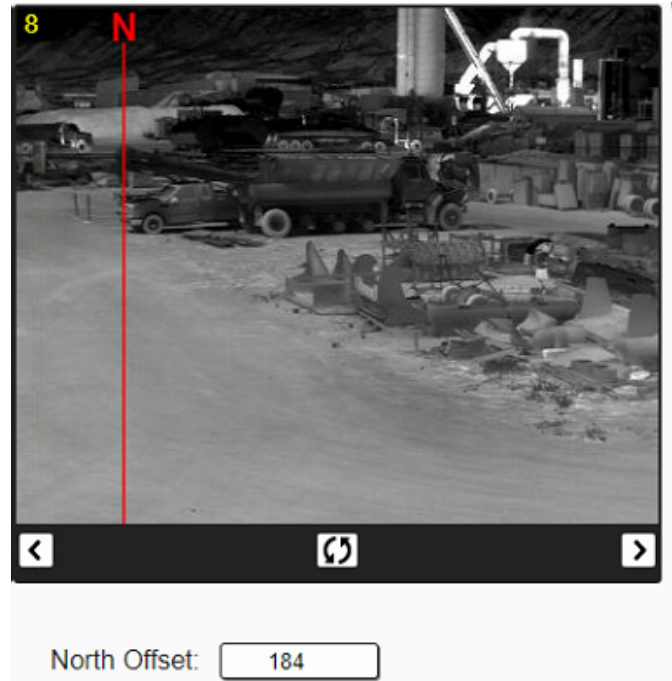
To remove an existing map, select .

North Offset

North Offset indicates the number of degrees, clockwise, North is from the left edge 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 arrows (◀NN▶) indicate as to which direction the **N-line** can be found.

Increasing **North Offset** value will rotate the dots on the map clockwise, and *decreasing* the **North Offset** value will rotate the dots counter-clockwise on the map.



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 off of 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.

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11

250m

85m

60m

22m

Stop 11

Distance to Base: 22

Add Marker Remove Marker

Copy Settings Paste Settings

Reset to Defaults

Selected Marker: 250m

Marker Distance: 250

Control Points: 1 - +

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 are calculated based on the mounting height of the Thermal Radar and the down tilt of the sensor inside of 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 the Thermal Radar is installed, it is recommended that the distance lines are 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 displaying image.

⚠ Note: It is recommended to add at least 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  button to add an additional configurable marker line to the station.

Use the  button to remove the selected marker line from the station.

Use the  button to copy all of the distance settings from the displayed station.

Use the  button to paste the settings from the previously copied station to the displayed station.

Use the  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 off of the average height of a human globally (5.4 ft tall).

Hydra PTZ Configuration

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.

PTZ Camera Settings

PTZ Brand: IP Address:

User Name: Password:

PTZ Alignment

Pan Adjustment: Degrees Clockwise

Tilt Adjustment: Reach Max Zoom at

Maximum Zoom Level:

PTZ Movement Rules

Alert After Consecutive Detections in an AOI

After Alert, Disarm AOI for Rotations Without Detections
(1 rotation = 2.5 seconds)

PTZ Camera Settings

The **PTZ Camera Settings** panel is used to pair/connect the Hydra PTZ to the Thermal Radar/Thermal Radar system.

Use the **PTZ Brand** drop-down to select the brand of the PTZ to be controlled.

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

Enter the **IP Address** of the Hydra PTZ,

Enter the **User Name** and **Password** of the PTZ,

PTZ Camera Settings

PTZ Brand: User Name:

IP Address: Password:

Hydra PTZ Alignment

The **Hydra PTZ Alignment** panel is 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 target/detections accurately.

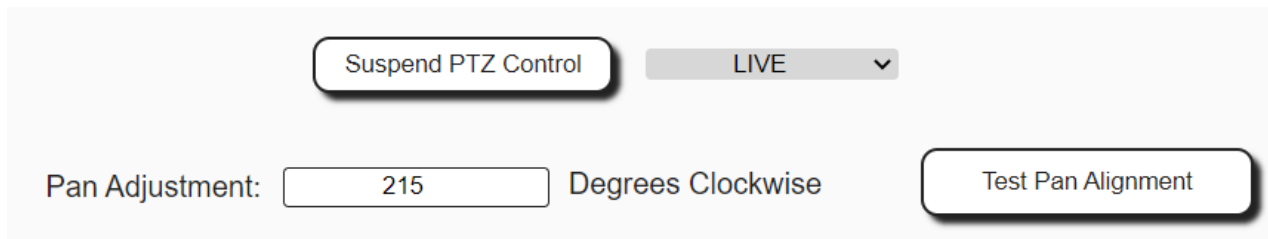
In order to align the PTZ with the Thermal Radar™, the PTZ 0 degree position needs to line up with the Thermal Radar home or 0 degree position (left edge of station 0). If the PTZ is installed to line these positions at startup then this step may not be necessary. In many cases, it is difficult to determine the 0 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 to test the Pan Offset Alignment.

Adjust the **Pan Adjustment** value to adjust the PTZ Pan position. Increase the numbers of degrees to adjust clockwise and decrease number of degrees to adjust counter clockwise.

Click to see the updated location. Adjust the Pan Offset Alignment until the PTZ view is centered on the left edge of Station 0 on the Thermal Radar. You can check the Dashboard page to see an image from Station 0 on the Thermal Radar™.



Screenshot of the Hydra PTZ Alignment control panel. The panel includes a "Suspend PTZ Control" button, a "LIVE" status indicator with a dropdown arrow, a "Pan Adjustment" input field set to "215", the text "Degrees Clockwise", and a "Test Pan Alignment" button.

PTZ View Centered on left edge of station 0



Thermal Radar Station zero (0)



Tilt and Zoom Adjustment

The **PTZ Alignment** panel is used to fine tune and improve the PTZ's accuracy of pointing on target when the Thermal Radar™ senses a detection.

Tilt Adjustment adjusts the PTZ's tilt (up and down) when it is pointed on target. Positive numbers will adjust the PTZ upward and negative numbers will adjust the PTZ downward. Usable values are between -10 and 10.

Reach Max Zoom at adjusts the distance in meters in which the PTZ will reach its maximum zoom level.

Maximum Zoom Level adjusts the PTZ's maximum zoom level.

Example: with the Reach Max Zoom setting set to 200 meters, and the Maximum Zoom Level bar is set halfway, the PTZ's max zoom will be 50%. 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%.

Tilt Adjustment: Reach Max Zoom at
Maximum Zoom Level:

PTZ Movement Rules

The **PTZ Movement Rules** dialog is used to determine how sensitive the PTZ is to moving to detections. Leaving the values set to default, the PTZ will be the most sensitive to moving to detections. Increasing the values will make the PTZ less sensitive to detections.

PTZ Movement Rules
Move After Consecutive Detections in an AOI
 After Move, Disarm AOI for Rotations Without Detections
(1 rotation = 1.7 seconds)

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 1.

Move After Consecutive Detections in an AOI



After Move, Disarm AOI for **Rotations:** shunts the commands sent to the PTZ to move on target, for each individual AOI, for the programmed number of rotations. This option is turned off by default and the value is set to 0.


Note: the amount of time it takes to complete a full rotation varies between Thermal Radar™ models.

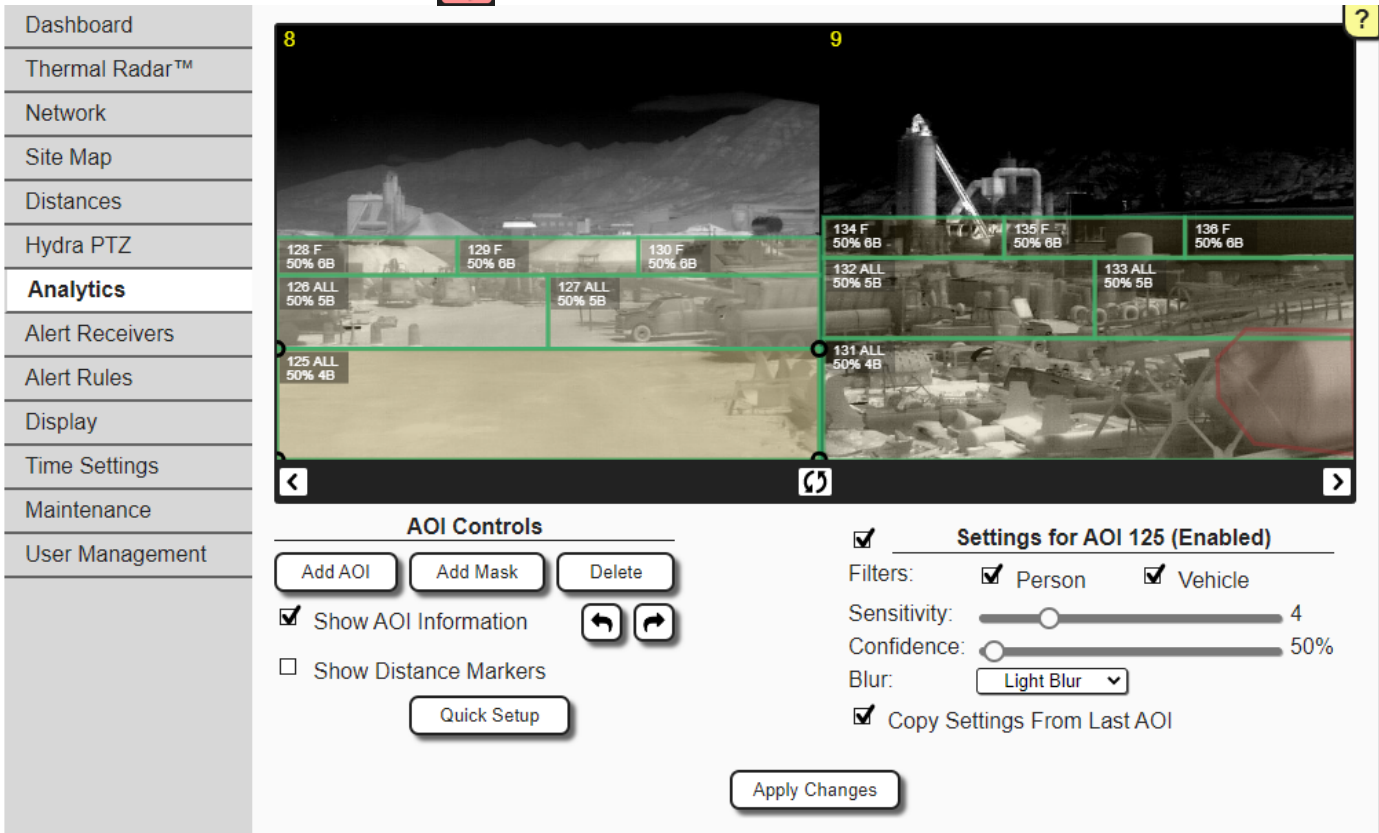
Analytics Configuration

Thermal Radar 2.1 supports configuring **Areas of Interest (AOI)** for the Thermal Radar™. AOI's 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 AOI's. It is recommended that AOI's be large enough to detect an intruder multiple times before the intruder crosses the entire AOI. This will provide for the most control on setting alarm rules.

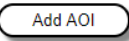

Each AOI is given an *ID* which can be used in the Alert Rules to determine which alerts to send to designated Alert Receivers.

Use the  and  buttons to scroll between stations. Two stations are displayed at a time.


Note: The thermal image is a snapshot, so 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 AOI's

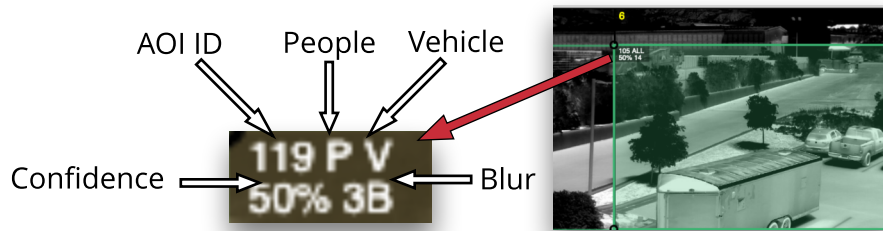
To add an individual **AOI**, navigate to the station(s) where you wish to place an AOI and click  to ready the Thermal Radar to receive a new AOI. Click on the area where the AOI will start and drag to the stop point. Each new AOI has round handles  on the corners that can be used to adjust and move the AOI once created.

Left of the "Settings for AOI..." title, is a that can be used to bypass the AOI. By unchecking this box, the AOI will be left with it's settings saved but will be inactive until it's checked again.

To **Delete** a *Mask* or *AOI*, select the object and click 

Adjusting AOI's

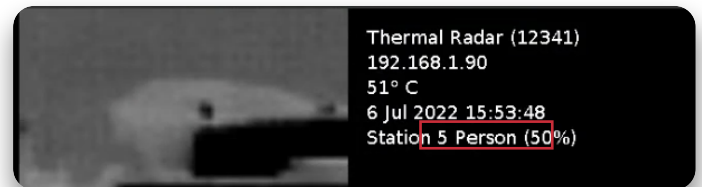
The **Area of interest** (AOI) will show its ID on the settings panel and in the upper left corner of the AOI. It will also show the *Confidence*, *Sensitivity*, *Blur* and which filters (*People* and/or *Vehicles*) are applied to the AOI. You can adjust these settings in the **Settings Panel**.



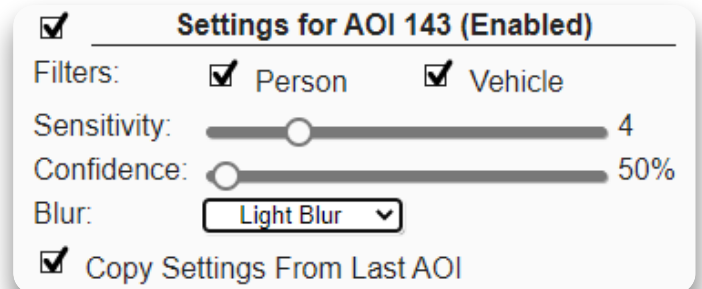
Select **Filters** for *Person*, *Vehicle* or select both. Selecting neither will disable the object classification filter and allow all detected movement to trigger alarms.

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, 8-12 without generating a lot of false detections.

Confidence is used if *Person*, *Vehicle* or both 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.



If desired, check the **Copy Settings From Last AOI** box to copy the settings from the last AOI, to the next AOI created.

Mask/Exclusions

Masks work similar to Exclusions in previous versions where the user can click on then mouse click and drag around the area where the mask will start and drag the cursor around the outline of the area to mask. Click on the  handles to reshape the mask after the area has been traced. The default Mask setting is set to **No Detections** which excludes any portion of the Mask inside an AOI from detecting. Masks also have **Blackout**, **No Blur**, and several **Blur** values. Choose one of these settings to change the Mask to a Blur or Blackout mask, to blur or blackout a portion of an AOI.



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. Each selection covers each selected station from bottom to the horizon with AOIs.

Single Layer populates a single AOI per station

Multi Layer populates multiple layers of AOI's per station

Click **All** to select all stations, or remove all stations if they are all selected.

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

AOI Quick Setup

Single Layer Multi Layer

Sensitivity: 6

Confidence: 50%

Blur: ▾

AOI Stations:

00 01 02 03 04 05 06 07
08 09 10 11 12 13 14 ALL

OK Cancel

Single Layer



Alert Receivers

The Thermal Radar has the ability to send formatted alerts to several different VMS's and devices. The Alert Receivers page is used to configure the communication of the Alerts to the VMS's or devices.

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Format	Active
Bosch 7000i Illuminator	✓

Add Remove Inactivate

Alert After Consecutive Detections in an AOI

After Alert, Disarm AOI for Rotations Without Detections
(1 rotation = 2.2 seconds)

Apply Changes

Bosch 7000i Illuminator Settings

Alert Format:

Name:

Server Address:

Server Port:

User Name:

Password:

Signal Delay:

Adding Alert Receivers

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

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

Click to **Activate** or select 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 to save receivers. Each receiver can be configured for receiving alarms on the Alert Rules page.

Note: This does not require a restart.

It is possible to create the same receiver type multiple times. Give each 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 before sending the alert.

After Alert, Disarm AOI for ___ Rotations . . . if checked, it disarms/shunts the AOI for a selected number of rotations 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.

Both of these rules are applied to each AOI on the Analytics page.

Alert After Consecutive Detections in an AOI
 After Alert, Disarm AOI for Rotations Without Detections
(1 rotation = Infinity seconds)

Alert Rules

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

Type	Stop	Conf	AOI	Data
Any	Any	Any	Any	N/A

System Event	Active	Alert ID
System Error	<input type="checkbox"/>	0

Adding Alert Rules

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

Click **Add** to add a new rule,

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

Rules will execute in order and execution will stop when the first rule conditions are met.

Click **Test** to trigger a rule to test if the Receiver's configuration is working.

The settings for the selected rule will show up in the **Rule Settings** panel. Each detection rule has an *Any* option to trigger regardless of detection information.

Detection Type allows the user to filter rules by *Person*, *Vehicle* or *Both*.

Station allows rules to be filtered by Station.

Confidence allows rules to be sorted by confidence

AOI ID allows rules to be sorted by AOI.

The parameter passed to the Receiver is determined by the receiver type. It will need to match up to a rule or trigger configured in the receiver. For example, the Adam unit has 0-16 digital switches. The Switch ID indicates which switch to trip. The Signal Delay indicates the amount of time, in milliseconds, to trigger the switch before sending an off message.

Select a rule from the list and click **Remove** to remove an existing rule.

Rule Settings	
Detection Type:	Any
Station:	Any
Confidence:	Any
AOI ID:	Any
Label Text	value
Longer Label Text	value

System Event Triggers

A **System Error** 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

Click to save settings.

System Event	Active	Alert ID
System Error	<input type="checkbox"/>	0

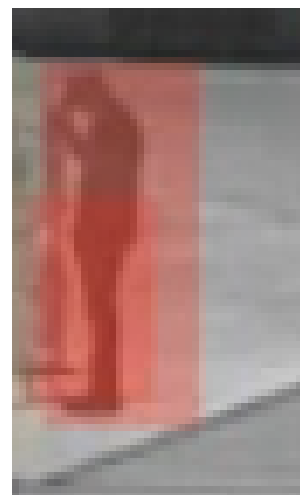
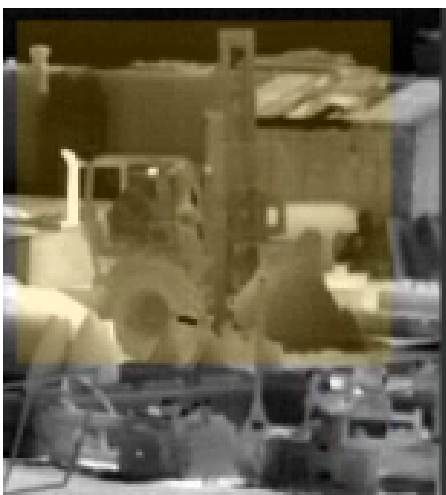
Display

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).

Dashboard	Display Settings Highlight Alert Duration: <input type="text" value="10"/> Seconds  Highlight Detection Duration: <input type="text" value="3"/> Seconds  Upper Panorama Starts at Station: <input type="text" value="0"/> Text Size: <input type="text" value="Small"/> Radar Blip Fade Time: <input type="text" value="2"/> Seconds  Detection Fade Time: <input type="text" value="5"/> Frames  <input checked="" type="checkbox"/> Show Detections <input checked="" type="checkbox"/> Show Time <input checked="" type="checkbox"/> Show Thermal Radar Logo <input checked="" type="checkbox"/> Show Station IDs <input type="checkbox"/> Inverse Image (Black Hot) <input type="checkbox"/> Show Areas of Interest <input type="button" value="Apply Changes"/>	
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Video Display

When the Thermal Radar™ identifies a detection, the detection will be highlighted red 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 setup to send alerts, the border around the station will illuminate red.



Display Settings

Highlight Alert Duration affects how long a station will be highlighted (in **RED**) when a station sends an alert.

Highlight Detection Duration affects how long a station will be highlighted (in **YELLOW**) when a station detects motion.

Upper Panorama Starts at Station can be used to change 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 text displayed in the video stream.

Radar Blip Fade Time affects how many seconds detections (dots ●) show up on the site map before they completely fade.

Detection Fade Time affects the amount of time a detection highlight takes to fade after the Detection Duration time runs out.

Show Detections Toggles the yellow detection highlights on or off in the video stream.

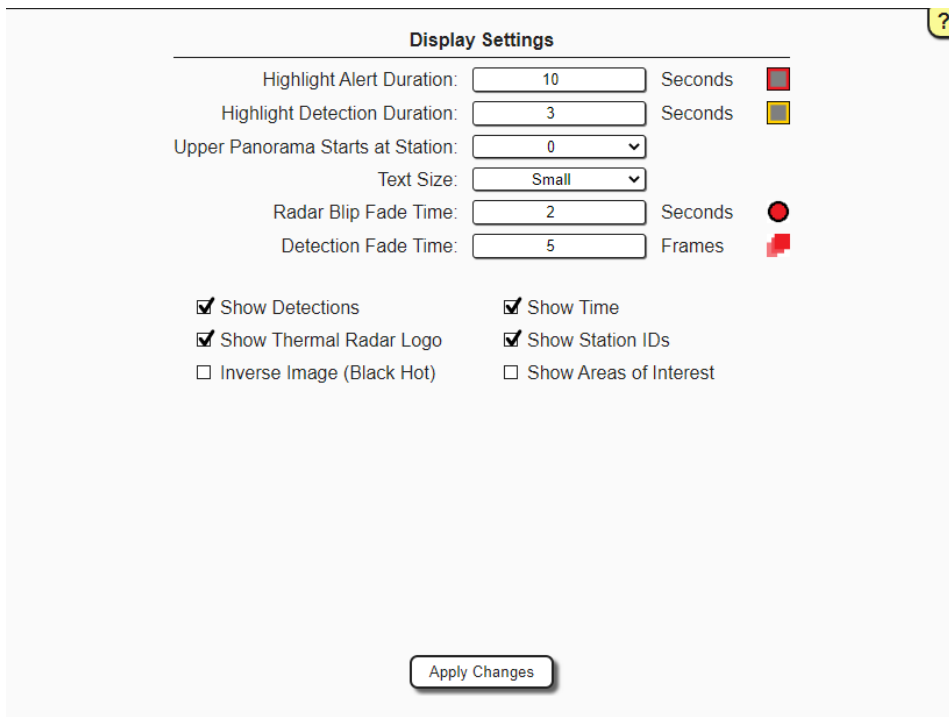
Show Time Stamp shows the Thermal Radar's time in the upper left hand corner of the detection window.

Show Thermal Imaging Radar Logo shows the TIR logo as part of the video stream.

Show Stations IDs labels each station in the video stream starting with 0 as the home station.

Inverse Image inverts black and white pixel values so black is hot and white is cold.

Show Areas of Interest allows areas of interest and masks to be broadcast as part of the video stream.



The screenshot shows a settings window titled "Display Settings" with a yellow question mark icon in the top right corner. The settings are as follows:

Setting	Value	Unit	Color/Icon
Highlight Alert Duration	10	Seconds	Red square
Highlight Detection Duration	3	Seconds	Yellow square
Upper Panorama Starts at Station	0		Dropdown arrow
Text Size	Small		Dropdown arrow
Radar Blip Fade Time	2	Seconds	Red circle
Detection Fade Time	5	Frames	Red square

Below the input fields are several checkboxes:

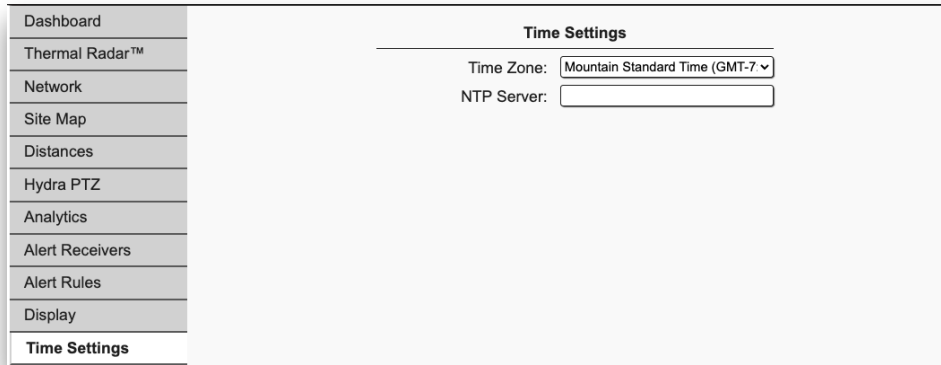
- Show Detections
- Show Time
- Show Thermal Radar Logo
- Show Station IDs
- Inverse Image (Black Hot)
- Show Areas of Interest

An "Apply Changes" button is located at the bottom center of the settings window.

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

Time Settings

Time Settings allows a *Time Zone* and an *NTP Server* to be assigned to the Thermal Radar™.



The screenshot shows a web interface with a sidebar on the left containing menu items: Dashboard, Thermal Radar™, Network, Site Map, Distances, Hydra PTZ, Analytics, Alert Receivers, Alert Rules, Display, and Time Settings (which is highlighted). The main content area is titled "Time Settings" and contains two fields: "Time Zone:" with a dropdown menu showing "Mountain Standard Time (GMT-7)" and "NTP Server:" with an empty text input box.

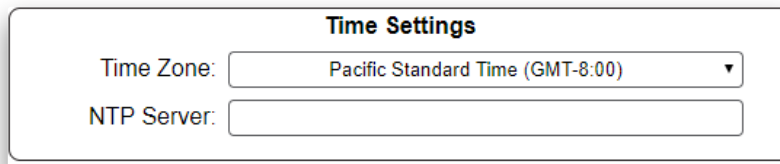
Setting the Thermal Radar™'s Time

Select the **Time Zone** from the drop down menu that matches the location the Thermal Radar™ is installed.

If desired, enter an IP address of a valid **NTP Server**

Click [Apply Changes](#) to save settings.

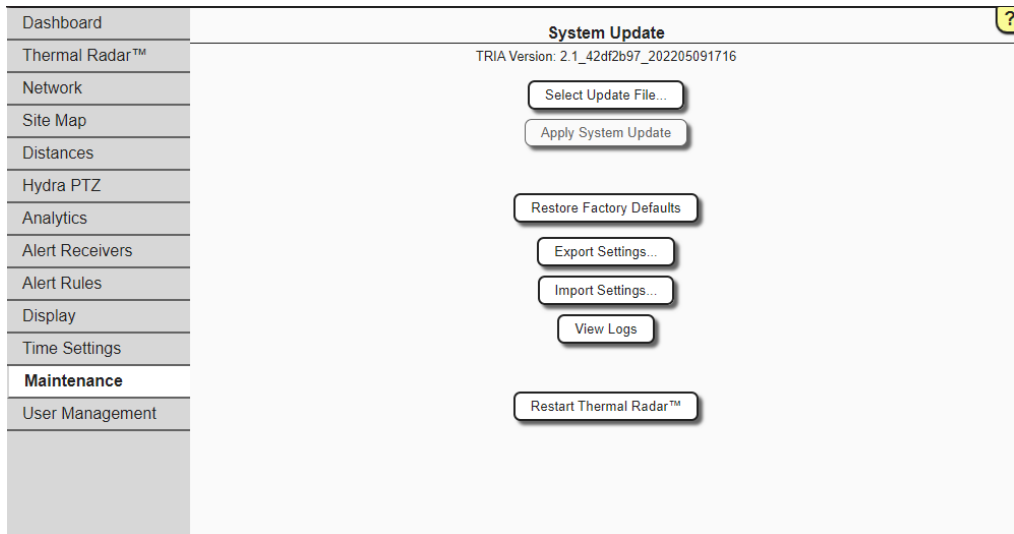
Note: changing the NTP Server may require the Thermal Radar to be restarted.



This is a close-up of the "Time Settings" form. It features a title "Time Settings" at the top. Below the title, there are two input fields: "Time Zone:" with a dropdown menu currently displaying "Pacific Standard Time (GMT-8:00)" and a downward arrow, and "NTP Server:" with an empty text input box.

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 and the Thermal Radar™ is displayed where the upgrade files are selected and uploaded.



Updating Firmware

Thermal Radar Update

Click the **Select TR Update File...** button and browse to the update loaded.

Click the **Apply TR System Update** button to apply the update and restart Thermal Radar™.

Click the **Restart Thermal Radar™** button to restart the unit.

Click the **Restore Factory Defaults** button to restore the unit to the factory settings. Bear in mind that the unit will lose all configured settings.

Importing/Exporting Settings

The 2.1 firmware version now supports importing and exporting Thermal Radar™ settings configurations.

To export settings, click on the **Export Settings...** button and select the path for the download of your settings file. You will then have a .trs file downloaded containing all of the settings of the Thermal Radar™ configuration.

Note: Thermal Radar settings exclude network settings and user database.

To Import settings, click on the **Import Settings...** button, and select the .trs file that contains the settings to be applied.

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

