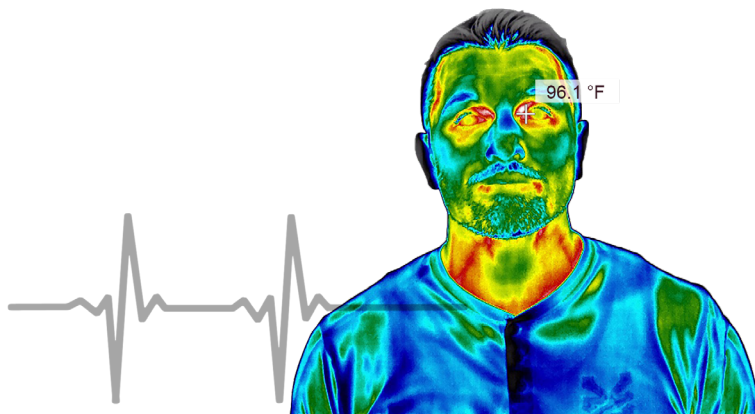


SKIN TEMPERATURE MONITOR SOFTWARE

USER MANUAL VERSION 6.6

PLEASE READ THIS MANUAL BEFORE LAUNCHING THE SOFTWARE.
IMPORTANT SAFETY INFORMATION INSIDE.



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Contents

1.	Changes in Version 6.6	6
2.	General Description	6
3.	Safety Information	7
4.	Features	8
5.	Intended Use	8
6.	Technical Specifications, Accessories, and Documentation	8
7.	Installation	9
8.	Launch STM on Startup	14
9.	FM+ Series Firmware Update	16
10.	Main Display	17
11.	Heads-up Display Settings	18
12.	Settings Menu	21
13.	Setting a Password	23
14.	Gaining Root Access (Login)	24
15.	Changing a Password	25
16.	Enable Kiosk Mode	26
17.	Enable Multi-face Detection	27
18.	Enable Access Control	29
19.	Enable Questionnaire	30
20.	Real Time Bias Offset Settings	31
21.	Level and Span Settings	32
22.	Alarm Settings	34
23.	Data Capture	35
24.	Email Settings	42
25.	Display Settings	43
26.	Modbus Settings	48
27.	Relay Settings	49
28.	Face Detection Settings	50
29.	FM/FM+ Series IR/Visible Camera Alignment	51
30.	FMX 400 Focus Controls	52
31.	Remote Access	55
32.	Maintenance	56
33.	Troubleshooting	56
34.	About ICI	62

1. Changes in Version 6.6

1-1 Additional Features

- Added a way to enable access control without the Wiegand transmitter.
- Added a way to record badge number to the CSV log file.
- Added different formats for label printing.
- Renamed Crowd Screening to Multi-face Detection.

1-2 Bug Fixes

- No bugs reported.

2. General Description

IR Flash Skin Temperature Monitor (STM) is a professional thermographic screening software used in adjunct to other clinical diagnostic procedures for elevated human body temperature screening. Skin surface temperature is visualized from the human face. The software has features for correcting radiometric data and imaging parameters.

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3. Safety Information

- Do not attempt to install the software without following the installation instructions provided in this manual. Improper installation may cause the program to become unresponsive, crash, or not function properly.
- User must not tamper with files or alter the program in any way. Altering the program may cause the software to become unresponsive, crash, or not function properly.
- Any software application provided in this package is provided “as is” without warranty of any kind, expressed or implied. The entire risk lies with the user for the accuracy and performance of the program.
- The camera is controlled by the software application and should never be unplugged from the computer while the software is running. The user should exit the software program before the camera is unplugged. This will safely shut the camera down. Failure to follow this process may result in the need for the manufacturer to re-calibrate the camera system. Failure to adhere to this tenet may void the camera warranty.
- It is the responsibility of the user to obtain proper training in the use of the camera for their particular application including a working knowledge and understanding of any inaccuracy that is typically attributed to radiometric measurements.
- The software package is self-contained and requires no maintenance beyond maintaining the viability of the machine on which it resides, etc. Future updates for the software may or may not be made available to users at ICI's discretion.
- When using the software for medical purposes, the technology presented here should be used to measure only one subject at a time.
- Measurements should not be solely, or primarily, relied upon to diagnose or exclude a diagnosis of any disease.
- Elevated body temperature should be confirmed with secondary evaluation methods (e.g., an NCIT or clinical grade contact thermometer). This software is intended for adjunctive Use with other clinical diagnostic procedures to measure human body temperature via non-contact skin measurements visualized from the human face. Not meant for standalone clinical diagnostic procedures or to treat or diagnose Patients.
- We suggest the user thoroughly read this manual before calling for assistance.
- Infrared Cameras, Inc. reserves the right to determine, at its sole discretion, the extent of user support made available to any user who ignores safety information or violates the Terms and Condition of Sale delivered in writing at time of purchase. The Terms and Condition of Sale are made available online at:

<https://infraredcameras.com/support/terms-and-conditions-of-sale/>

4. Features

- Built-in touch screen functionality
- Intuitive menu design and navigation
- Easy-to-use level and span functions
- Audio/visual alarms for quick detection
- Alarms configuration
- Bias controls for unknown and known temperature values
- Email notifications
- Relay control
- Remote access for customer service
- Easily switch between color palettes
- Choose between Celsius and Fahrenheit scales
- AI face tracking
- Electronic zoom function for electronic zoom cameras

5. Intended Use

IR Flash STM Software is used as an adjunct to other clinical diagnostic procedures for elevated body temperature screening based the skin surface temperature visualized from the human face.

Patient population: All age groups

Environment of use: hospitals, sub-acute healthcare settings, public areas, i.e., airports.

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6. Technical Specifications, Accessories, and Documentation

Documentation can be found online on the IR Flash STM web page under the Downloads section or at this address:

<https://infraredcameras.com/ir-flash-stm-manual/>

6-1 Recommended System Requirements

Processor: i5 or above (Quad Core or better)

RAM: 4 GB or above

OS: Windows 8/8.1/10

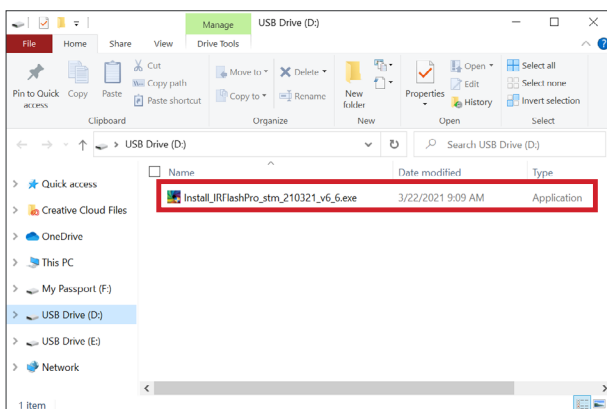
Hard Drive: 256 GB or above

Resolution: 1920 × 1080

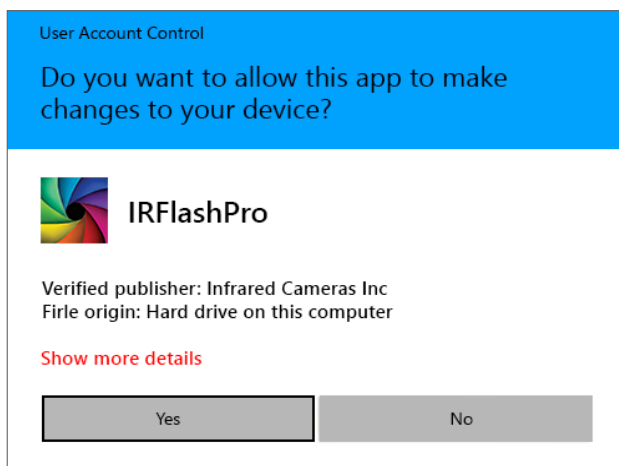
7. Installation

IR Flash STM arrives installed on computers and tablets purchased from ICI as complete systems. A copy of the software is provided on the Software USB Drive. Customer service can be contacted for a downloadable copy. The following instructions are for installation via the provided Software USB Drive.

1. Insert the Software USB Drive into an available USB slot and launch .exe by double-clicking file.

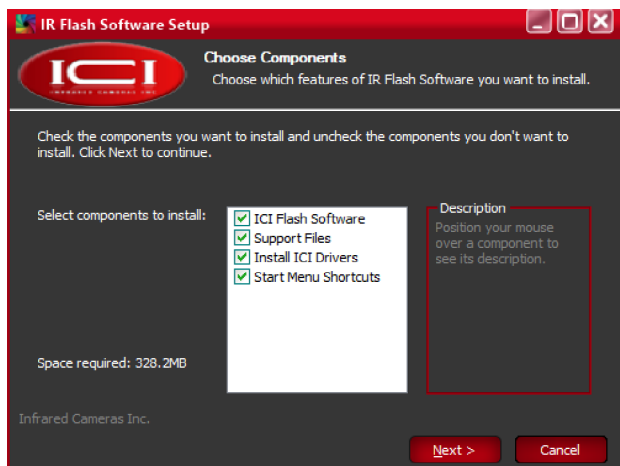


2. Grant system permission. Click Yes if you agree to continue software installation.

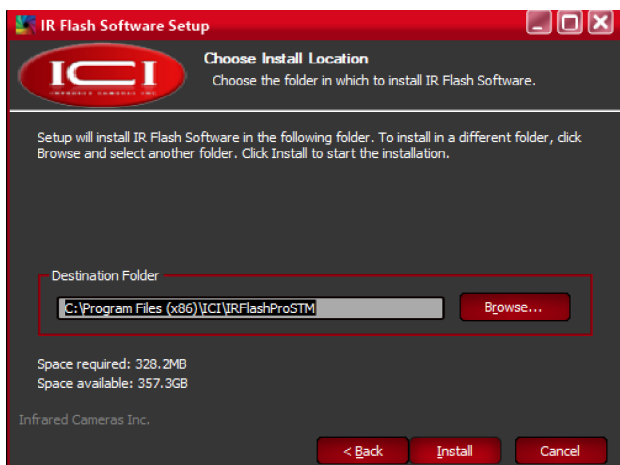


SOFTWARE INSTALLATION IS REQUIRE MED FOR IR FLASH TO WORK CORRECTLY. IT IS BEST TO INSTALL ALL COMPONENTS FOR PROPER SOFTWARE FUNCTIONALITY AND EASE OF USE. FAILING TO INSTALL DRIVERS MAY CAUSE IR FLASH STM TO WORK IMPROPERLY OR NOT AT ALL.

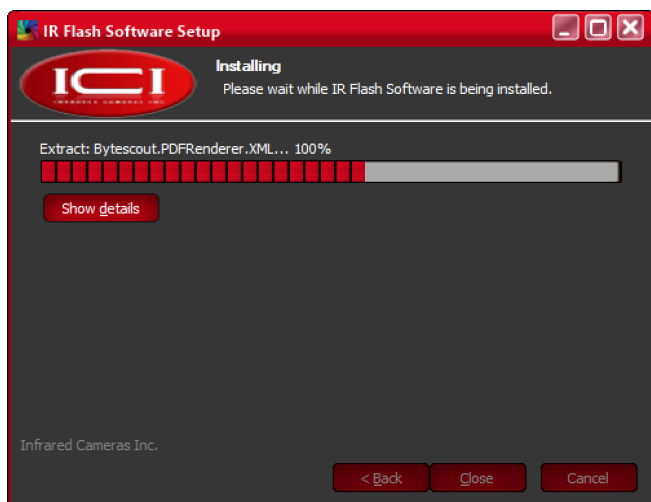
3. Choose Components. Click Next.



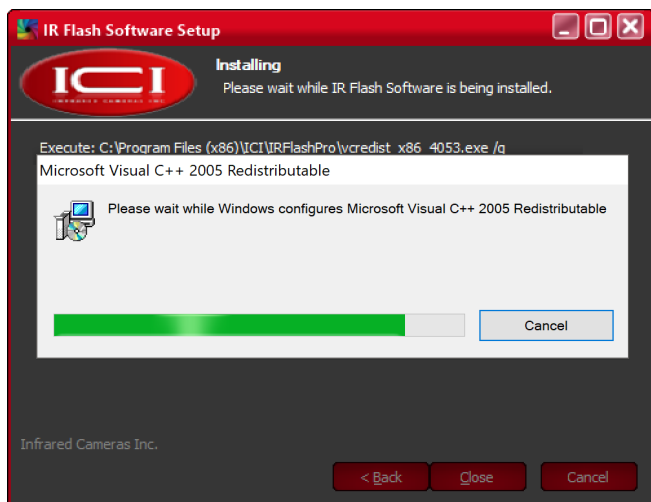
4. Optionally change installation location by clicking Browse. Click Install.



- Please wait while IR Flash software installs. Pop-ups will occur. Do not close or cancel the installation.

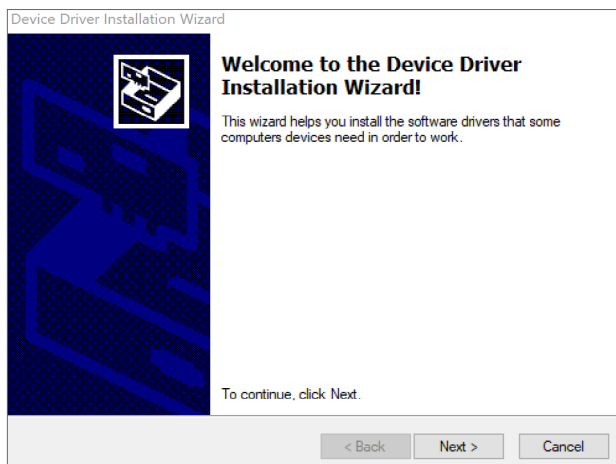


- Please wait while C++ configures. Pop-ups will occur. Do not close or cancel.

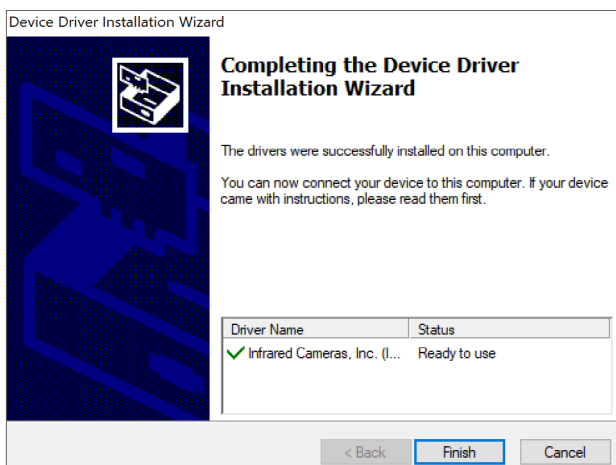


**MORE THAN ONE DRIVER MAY NEED TO BE INSTALLED.
REPEAT STEPS 7 AND 8 AS REQUIRED.**

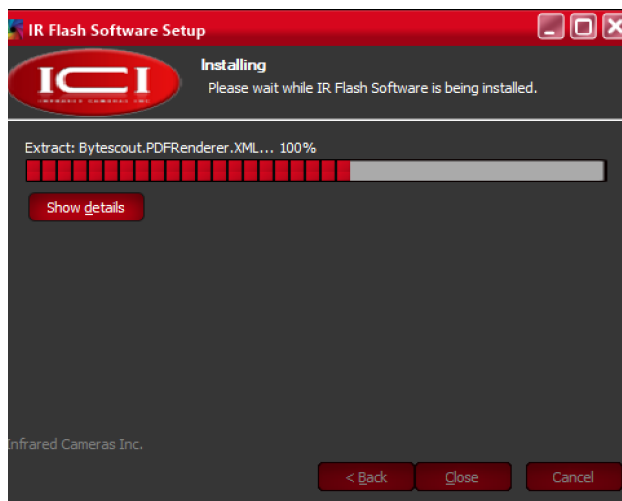
7. Device Driver Installation Wizard will open. To continue with installation, click Next.



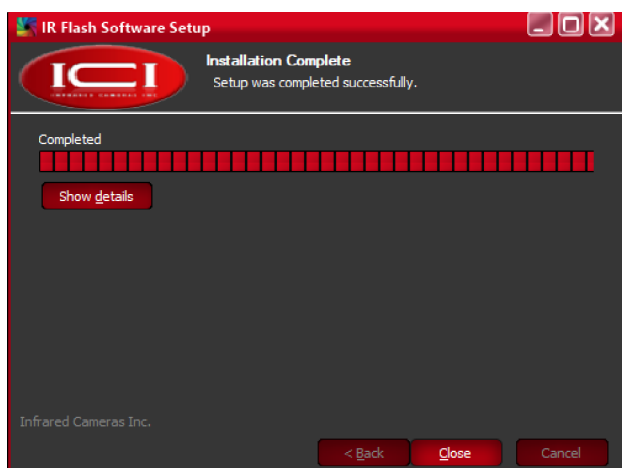
8. Click Finish.



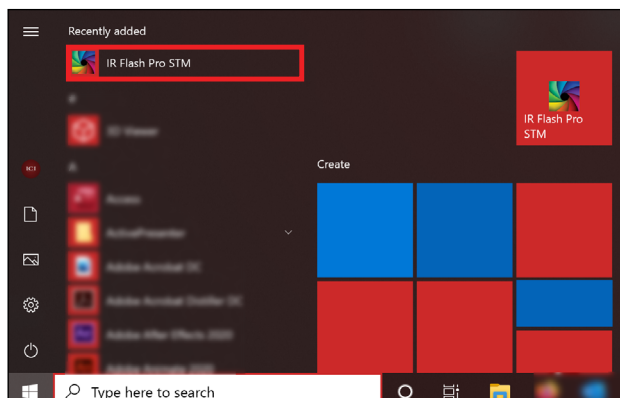
9. Allow IR Flash software to finish installing.



10. Click Close.



11. Launch IR Flash Pro STM from the start menu.



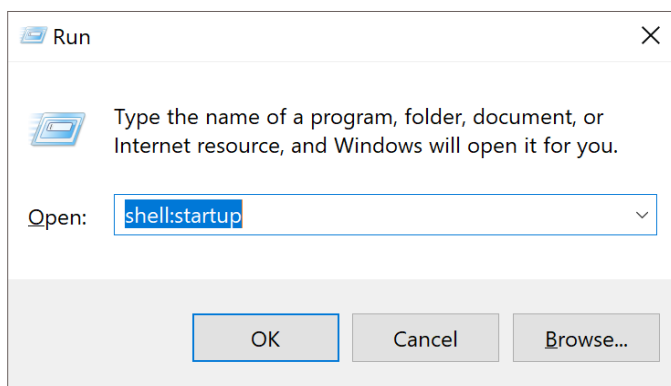
8. Launch STM on Startup

After installing IR Flash STM, the icon to manually launch the software appears on the desktop and in the Start Menu. Users can set IR Flash STM to automatically launch when the computer system is powered on by adding it to the Startup directory.

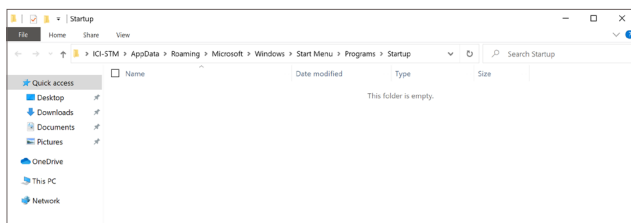
1. Open the Run command by pressing the Win + R keys.



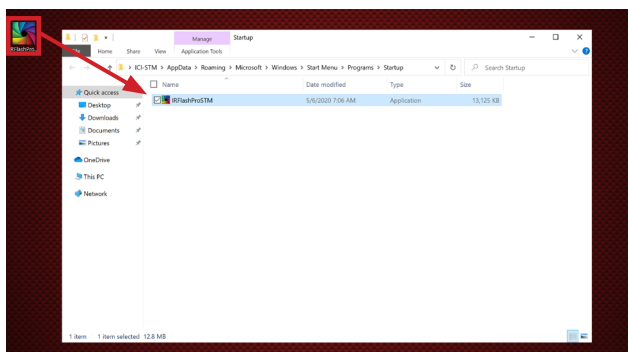
2. The Command Prompt will launch. Type *shell:startup* into input box. Press OK.



3. The Startup directory will open.



4. Click and drag IR Flash STM icon from desktop to Startup directory.



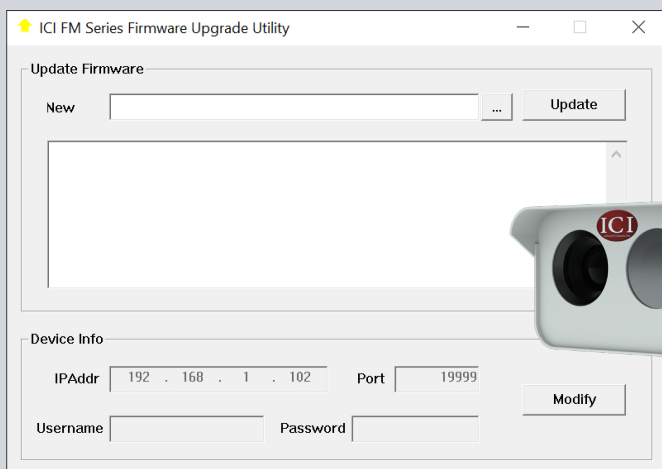
IR FLASH STM WILL NOW START AUTOMATICALLY WHEN COMPUTER IS BOOTED.

GRAY PAGES INDICATE A DEVIATION IN DEVICE FEATURES. APPLICABLE DEVICES ARE NOTED IN THE PAGE TITLE. IF THE USER'S DEVICE IS NOT LISTED IN THE TITLE, THE USER MAY SKIP OVER THESE PAGES. CALL CUSTOMER SERVICE WITH QUESTIONS.

9. FM+ Series Firmware Update

A firmware update is required for FM 320+/FM 640+ devices to use IR Flash STM. If you do not have and FM+ series device you may skip this section.

1. Set up the device according to its quick start guide and manual.
2. Download the firmware update utility:
https://www.dropbox.com/s/v84t1sbyyhr1o9q/Firmware_20200826.zip
3. Launch upgrade_ici.exe by double-clicking file.
4. Click Modify.
5. Enter the camera IP address (Default: 192.168.1.102).
6. Click Ok.
7. Click browse button (...).
8. Select the ICI-20200826_restart.upg file.
9. Click Open.
10. Click Update.
11. "Finished" will show in the message box once the update is finished installing.
12. Click "X" in top-right corner to exit.



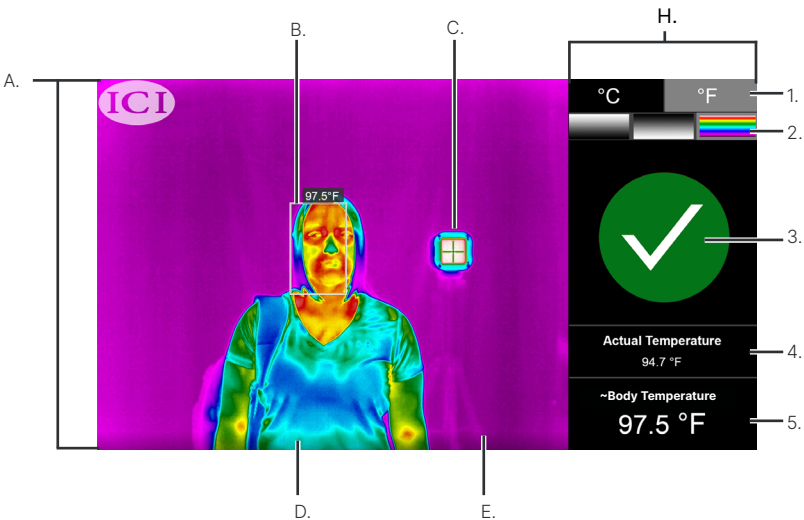
Indented Hood

**FM PLUS SYSTEMS MEASURE 192 MM X 135 MM X 85 MM
(L X W X H ± 0.5 MM) AND HAVE A INDENTED HOOD.**

10. Main Display

10-1 Main Interface

- A. Default screen
- B. AI face targeting (with temperature reading)
- C. Temperature/temperature reference cross-hair
- D. Settings menu (hold and release or right-click)
- E. Subject
- H. Heads-up display



10-2 Heads-up Display

- 1. Temperature scale selection (°C or °F)
- 2. Thermal polarity (white hot, black hot, or rainbow)
- 3. Green light/Red light zone (Pass/Fail Zone)
- 4. Actual temperature reading
- 5. ~Body temperature reading

11. Heads-up Display Settings

11-1 Selecting a Temperature Scale

Left-click or tap the box of the desired measurement scale. Box will turn gray.

Fahrenheit selected



Celsius selected



SCALE SELECTION WILL DETERMINE OUTPUT READINGS AND MENU SETTINGS.

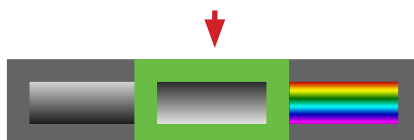
11-2 Selecting Thermal Polarity

Switch between polarities by left clicking or tapping the desired gradient rectangle. Active palettes will have a green outline.

White-hot selected



Black-hot selected



Rainbow selected



11-3 Understanding the Green Light/Red Light System

Temperature data is gathered automatically and translated into a green light (pass) or red light (fail).



A green light indicates a ~body temperature measurement that does not exceed the alarm threshold.



A red light lets informs the user the device has detected an elevated ~body temperature. An audio alarm may also sound on red light fails (see Alarm Settings). Review your company's policy regarding pass or fail readings.

**GREEN/RED COLORBLIND INDIVIDUALS CAN REFERENCE THE
"✓" AND "X" ICONS FOR PASSES/FAILS, RESPECTIVELY.**

11-4 Understanding Actual and ~Body Temperature

The actual temperature reading reflects the hottest value detected in the target zone. ICI's proprietary software uses this number to approximate the body temperature of the subject. The red light/green light system uses the ~body temperature to determine a pass or fail.

Default settings:

~Body temperature readings < 37.5 °C (99.5 °F) will trigger a green light (pass).*

~Body temperature readings ≥ 37.5 °C (99.5 °F) will trigger a red light (fail).*

Actual Temperature

94.7 °F

~Body Temperature

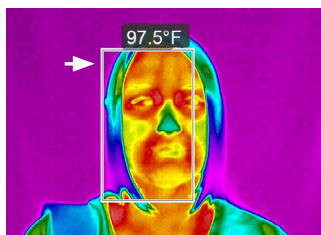
97.5 °F

*** THESE SETTINGS ARE ADJUSTABLE IN THE SETTINGS MENU.**

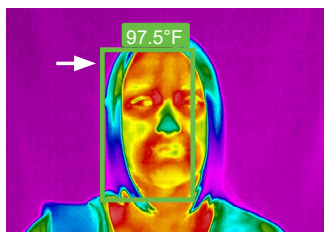
11-5 AI Face Targeting

AI face targeting happens automatically. The measurement area is outlined with a white border. The border will turn green for a pass and red for threshold fails. A subject's ~body temperature reading is shown above the outlined area.

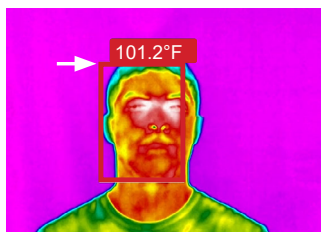
Searching



Pass

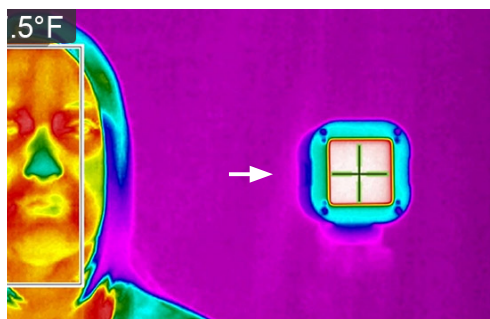


Fail



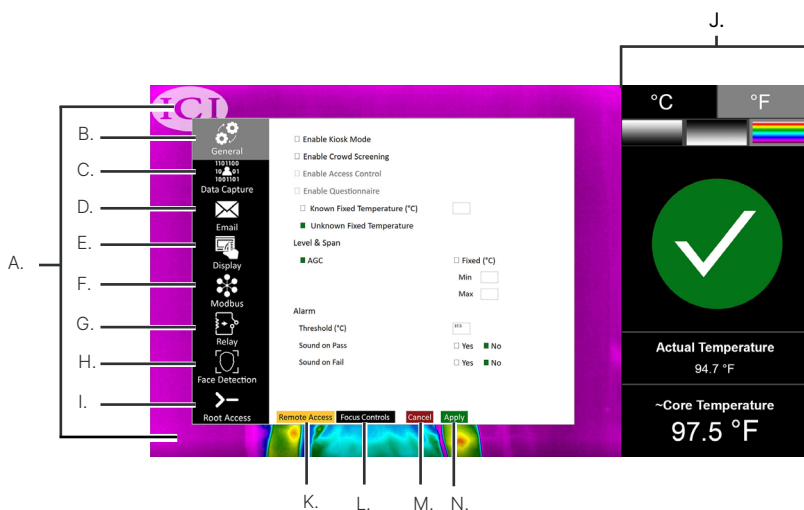
11-6 Temperature Reference Cross-hair

Move the temperature reference cross-hair by left clicking and dragging it to the center of the temperature reference. Touch-hold and drag on touch enabled devices.



12. Settings Menu

The settings menu gives the user an extended range of customizable options. Access the Settings Menu by right clicking on the program window. For touch enabled devices, touch-hold and release to open the menu.



- | | |
|--------------------------|----------------------------------|
| A. Settings menu | H. Face Detection |
| B. General sub-menu | I. Heads-up Display |
| C. Data capture sub-menu | J. Root access sub-menu |
| D. Email sub-menu | K. Remote access |
| E. Display sub-menu | L. Focus controls ^{*,^} |
| F. Modbus sub-menu | M. Close/cancel changes |
| G. Relay sub-menu | N. Apply settings |

* THE FOCUS CONTROLS BUTTON ONLY EXISTS IF YOU HAVE AN FMX 400 CAMERA.
 ^ BECOMES AN IR/VIS ALIGNMENT BUTTON FOR FM/FM+ SERIES CAMERAS.

12-1 Opening/Closing the Settings Menu

1. Access the Settings Menu by right clicking on the program window. For touch enabled devices, touch-hold and release the screen to open the menu.
2. Close menu by clicking or tapping Cancel or Apply.

12-2 Apply Settings

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login to make changes (see Gaining Root Access (Login)).
3. Click Apply to apply the changes and close the menu.



Apply

12-3 Cancel Settings

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. To cancel any changes and close the menu, click or tap Cancel.



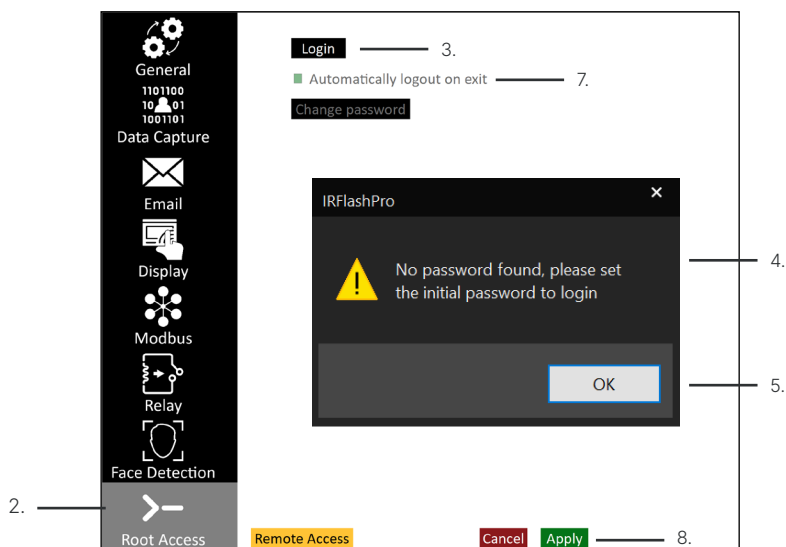
Cancel

THE MAIN MENU IS NOT ACCESSIBLE WHILE SETTINGS MENU IS OPEN.

13. Setting a Password

Changes to the settings can only be made if the user has root access. On first usage, the software allows the user to set a new password. After setup, users will need to input the password to change settings.

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Click on the Root Access sub-menu button.
3. Click Login.
4. A warning box will indicate the absence of a password on file.
5. Click Ok.
6. Set and confirm a password using the input fields.
7. Decide if the user should be logged out upon exiting the menu (checked by default).
8. Click Apply to save settings or select Cancel to discard changes.

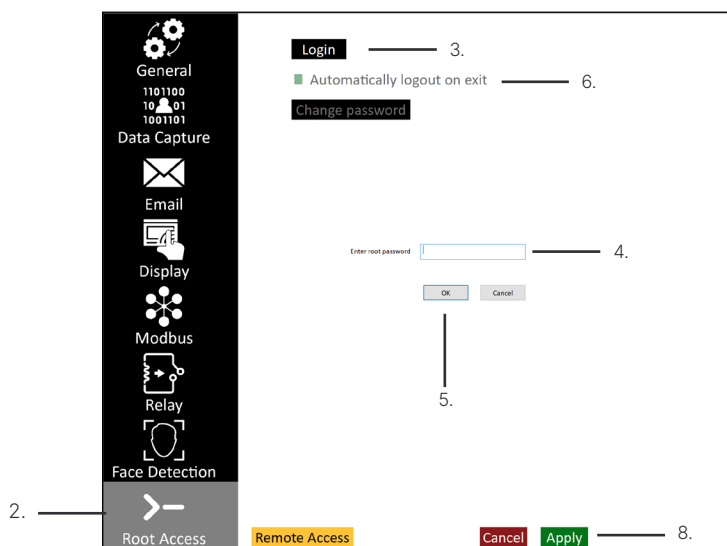


TO ACCESS GRAYED OUT FEATURES EITHER LOGIN OR ENABLE PARENT SETTINGS.

14. Gaining Root Access (Login)

Changes to the settings can only be made if the user has root access:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Click on the Root Access sub-menu button.
3. Click Login.*
4. Use the input field to enter the current password.
5. Click Ok.
6. Decide if the user should be logged out upon exiting the menu (checked by default).
7. Change any other desired settings.
8. Click Apply to save settings or select Cancel to discard changes.

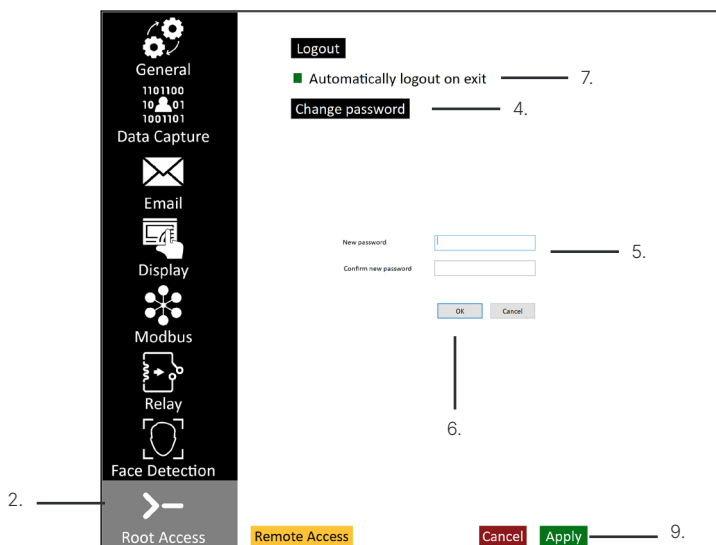


*** ONCE THE CORRECT PASSWORD IS ENTERED THE LOGIN BUTTON WILL BECOME THE LOGOUT BUTTON.**

15. Changing a Password

Follow these steps to change the password:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Click on the Root Access sub-menu button.
3. Login (see Gaining Root Access (Login)).*
4. Click Change Password button which is now unlocked.
5. Set and confirm a new password using the input fields.
6. Click Ok.
7. Decide if the user should be logged out upon exiting the menu (checked by default).
8. Change other settings if desired.
9. Click Apply to save settings or select Cancel to discard changes.



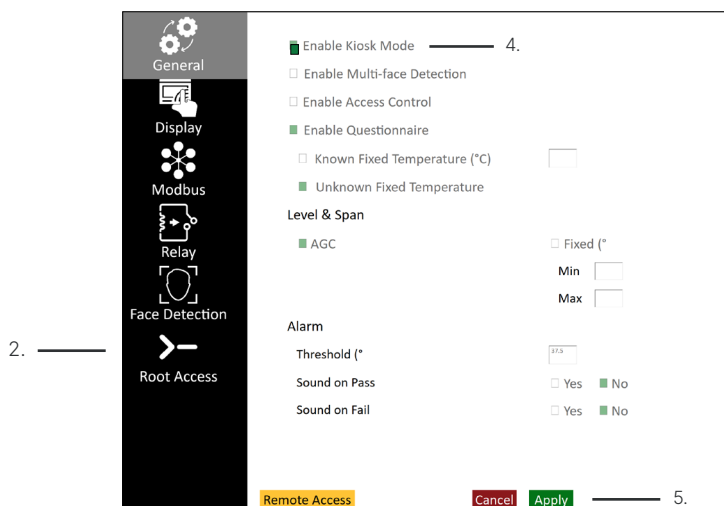
* IF THE PASSWORD BECOMES LOST AND A USER IS UNABLE TO LOGIN, AN AUTHORIZED USER WILL NEED TO CONTACT CUSTOMER SERVICE TO HAVE THE PASSWORD RESET.

16. Enable Kiosk Mode

In Kiosk mode, the software begins a 3 second countdown timer. The individual being screened needs to remain relatively still otherwise the counter resets. At the end of the 3 second countdown, the software displays the temperature screening result, either a pass or a fail based on the temperature threshold set by the user.

Follow these steps to enable Kiosk Mode:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Check box for Enable Kiosk Mode.
5. Change other settings if desired.
6. Click Apply to save settings or select Cancel to discard changes.



IR FLASH STM SUPPORTS VARIOUS PRINTERS. THE SOFTWARE DETECTS THE CONNECTED PRINTER ON BOOT UP, AND PRINTS A LABEL WHENEVER A "PASS" IS DETECTED. THE SOFTWARE NEVER PRINTS A LABEL ON A "FAIL". THERE ARE NO USER INTERFACE SETTINGS TO MAKES ADJUSTMENTS TO PRINTERS. AVAILABLE PRINTERS:

- Zebra KR203
- Zebra KR403
- Zebra ZD420
- Zebra ZD410
- Zebra GK420D
- Primera LX500c

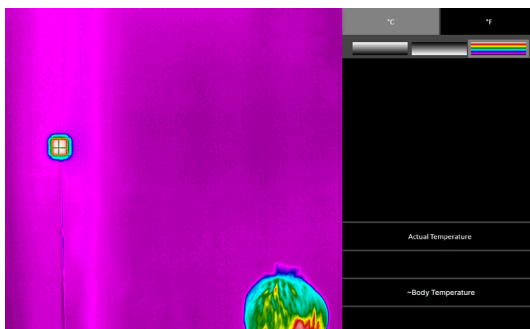
ISO13154 GUIDELINES ADHERE TO SINGLE FACE DETECTION METHODS OF TEMPERATURE SCREENING. MULTI-FACE DETECTION IS NOT SUPPORTED IN THE STANDARD AND IS THEREFORE NOT RECOMMENDED OR INTENDED TO BE USED FOR NON-INVASIVE TEMPERATURE SCREENING.

17. Enable Multi-face Detection

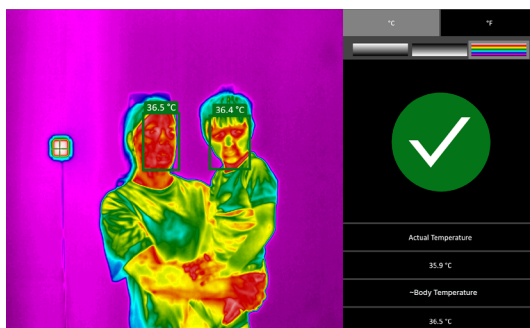
Enabling Multi-face Detection lets the user screen multiple individuals at once. This feature is most helpful when encountering an infant, non-walking toddler, or child who wanders from the screening area. In such an event the assistance of a parent is required in order for a successful screening to occur.

IR Flash STM shows a pass notification (green “✓”) if every screened individual passes; their faces will also be surrounded by a green box and the highest temperature detected will be displayed in the actual and ~body temperature statistics. The software shows a fail notification (red “X”) if even a single individual fails to pass the threshold. Individuals who fail will have a red box around their faces while those that pass will have a green box. Directions for enabling this feature are on the next page.

An example of a child who wanders from screening area:

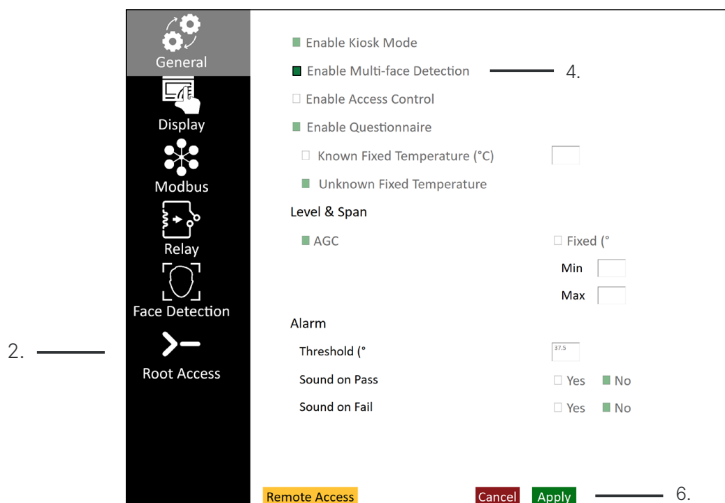


Example of a mother holding her child with Multi-face Detection enabled:



Follow these steps to enable Multi-face Detection:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Check box for Enable Multi-face Detection.
5. Change other settings if desired.
6. Click Apply to save settings or select Cancel to discard changes.



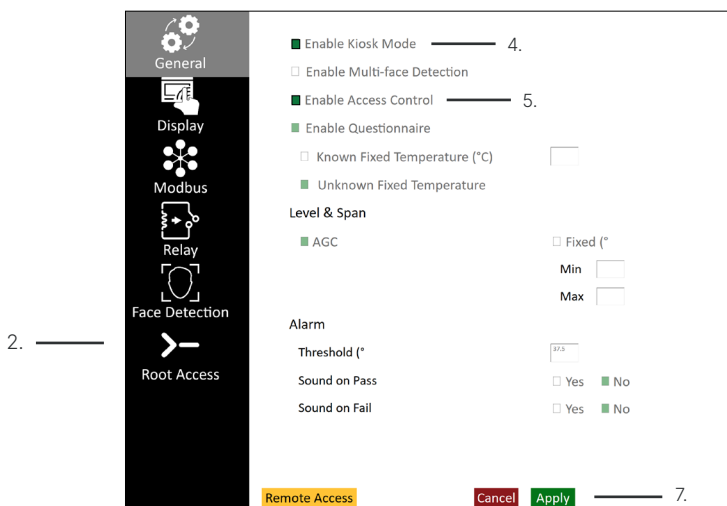
ISO 13154 GUIDELINES ADHERE TO SINGLE FACE DETECTION METHODS OF TEMPERATURE SCREENING. MULTI-FACE DETECTION IS NOT SUPPORTED IN THE STANDARD AND IS THEREFORE NOT RECOMMENDED OR INTENDED TO BE USED FOR NON-INVASIVE TEMPERATURE SCREENING.

18. Enable Access Control

In Kiosk mode, the software begins a 3 second countdown timer. The individual being screened needs to remain relatively still otherwise the counter resets. At the end of the 3 second countdown, the software displays the temperature screening result, either a pass or a fail based on the temperature threshold set by the user.

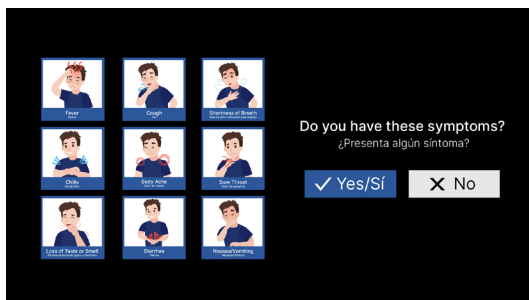
Follow these steps to enable Kiosk Mode:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Check box for Enable Kiosk Mode.
5. Check box for Enable Access Control.
6. Change other settings if desired.
7. Click Apply to save settings or select Cancel to discard changes.



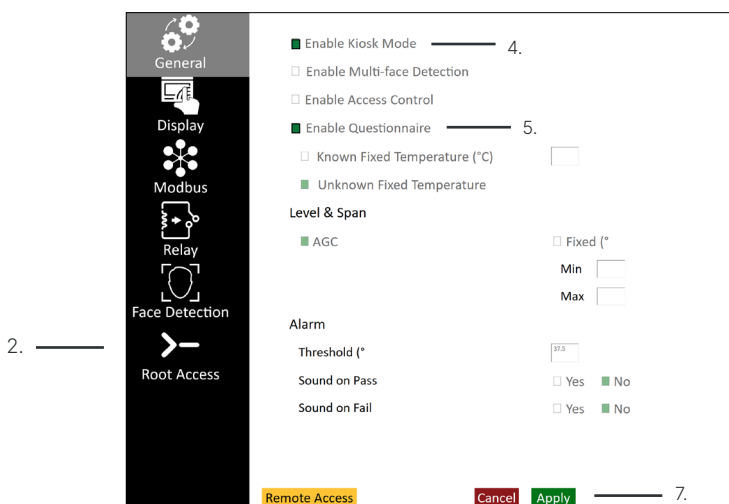
19. Enable Questionnaire

When enabled, the software can display a screening questionnaire after the 3 second countdown timer.



Follow these steps to enable the questionnaire:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Check box for Enable Kiosk Mode.
5. Check box for Enable Questionnaire.
6. Change other settings if desired.
7. Click Apply to save settings or select Cancel to discard changes.

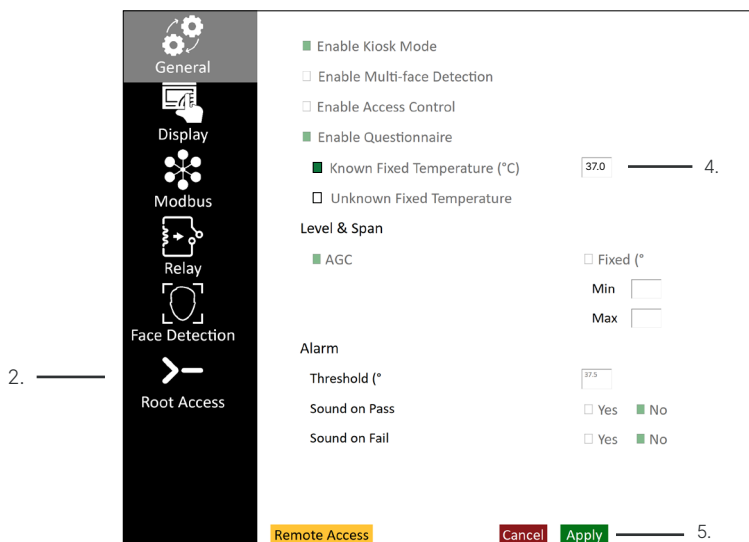


2. ———

20. Real Time Bias Offset Settings

20-1 Setting a Known Fixed Temperature

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Known Fixed Temperature box is checked by default. Select box if unselected.
5. Enter temperature reading defined on back of temperature reference into the Known Fixed Temperature input field.
6. Press Apply to accept settings and exit menu.
7. A green temperature reference cross-hair will be applied to the image. Position the temperature reference cross-hair by left clicking and dragging it to the center of the temperature reference. Touch-hold and drag on touch enabled devices.



Temperature Reference



20-2 Setting a Unknown Fixed Temperature

If the user does not have a temperature reference, check the box for Unknown Fixed Temperature.

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Check box for Unknown Fixed Temperature.
5. Press Apply to accept settings and exit menu.
6. A green temperature cross-hair will be applied to the image. Position the cross-hair where there is no action in the scene, e.g. a top-left or top-right of the image.

☐ Known Fixed Temperature (°C)

☒ Unknown Fixed Temperature

IT IS NOT RECOMMENDED TO MEASURE TEMPERATURE VALUES WITHOUT A TEMPERATURE REFERENCE. PLEASE READ THE CURRENT GOVERNMENT REGULATIONS REGARDING TEMPERATURE MEASUREMENTS.

21. Level and Span Settings

21-1 Setting AGC

AGC stands for Automatic Gain Control. This setting is selected by default and automatically adjusts the contrast of the on screen thermal image.

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Check box for AGC under Level & Span.
5. Press Apply to accept settings and exit menu.

Level & Span

☒ AGC

PLEASE NOTE THAT THIS OPTION IS ONLY APPLICABLE FOR IR CAMERAS ONLY. FOR ICI DUAL CAMERAS, AGC IS THE ONLY OPTION.

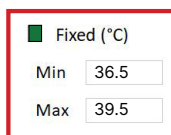
21-2 Setting a Unknown Fixed Level & Span

Use these setting to gain finer control of the image:

- Min - the minimum temperature to be detected in °C or °F
- Max - the maximum temperature to be detected in °C or °F

An expanded Min and Max temperature range will allow for a wider range of temperatures to be detected by the imager. A narrow Min and Max will reduce the range of temperatures detected by the imager.

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Check box for Fixed under Level & Span.
5. Type Min and Max temperatures into input fields.
6. Press Apply to accept settings and exit menu.



A screenshot of a software interface for setting temperature ranges. It features a red-bordered box containing a green square icon followed by the text 'Fixed (°C)'. Below this, there are two rows: 'Min' with a text input field containing '36.5', and 'Max' with a text input field containing '39.5'.

<input checked="" type="checkbox"/> Fixed (°C)	
Min	<input type="text" value="36.5"/>
Max	<input type="text" value="39.5"/>

STM THERMAL IMAGERS ARE CALIBRATED FOR A SPECIFIC TEMPERATURE RANGE. EXCEEDING THIS CALIBRATION IN EITHER DIRECTION WILL NOT IMPROVE IMAGE CONTRAST. IT IS BEST TO LEAVE THE SETTINGS ON AGC MODE UNLESS YOU ARE A CERTIFIED THERMOGRAPHER.

22. Alarm Settings

22-1 Setting an Alarm Threshold

The Threshold setting under Alarm is the ~body temperature that triggers a red light (fail). By default the setting is 37.5 °C or 99.5 °F depending on the temperature scale selected (see 11-1 Selecting a Temperature Scale).

Raise or lower the setting manually by using the input box.

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Type alarm Threshold into input field.
5. Press Apply to accept settings and exit menu.

Alarm

Threshold (°C)	37.5
----------------	------

22-2 Turning On/Off the Audio Alarm

IR Flash STM features audible alarms. Pass and fail alarms are mutually inclusive and can sound at the same time if both are enabled. Both are disabled by default.

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the General sub-menu button.
4. Under Alarm, find the settings for sound. Either check the Yes box to turn on audio alarms or check the No box to turn off the audio alarms. Both can be controlled independently of one another.
5. Press Apply to accept settings and exit menu.

Alarm

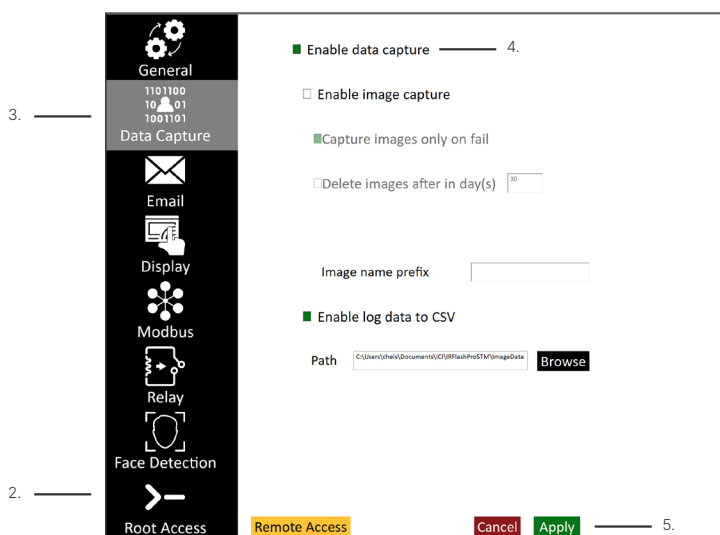
Threshold (°C)	37.5
Sound on Pass	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sound on Fail	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

23. Data Capture Settings

23-1 Enable Data Capture

Data capturing is turned off by default. When enabled, the software captures only pass/fail information and saves the information in a CSV format in a location designated within the program (see 23-6 Choosing a Save Location for Data). To turn on data capturing follow these steps:

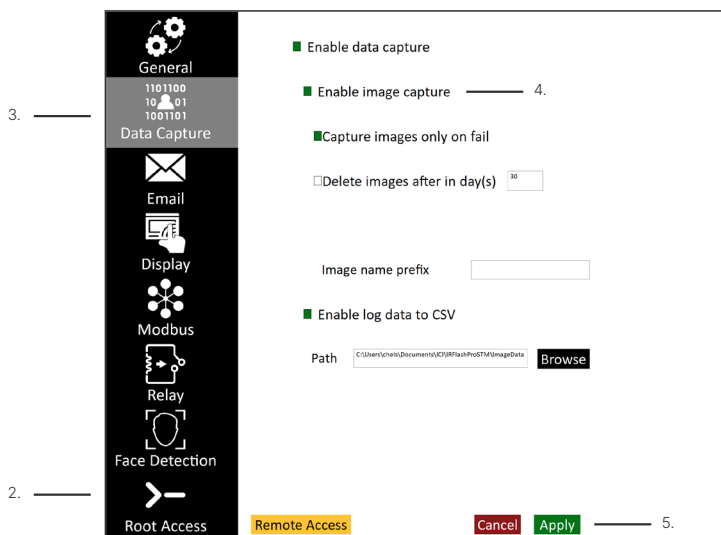
1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Data Capture sub-menu button.
4. Check the box next to Enable data capture. Box will turn green and additional data capture settings will become available.
5. Press Apply to accept settings and exit menu.



23-2 Enable Image Capture

Image capturing is turned off by default. To turn on this feature follow these steps:

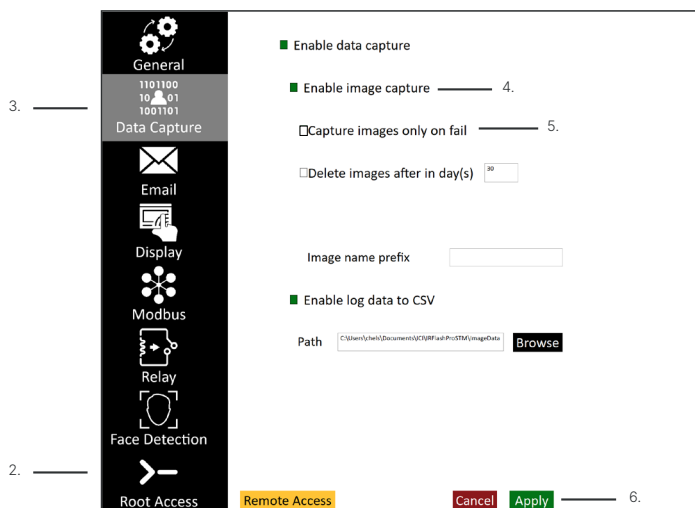
1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Data Capture sub-menu button.
4. With data capture enabled (see Enable Data Capturing), click the box next to Enable image capture. Box will turn green and additional features will become available.
5. Press Apply to accept settings and exit menu.



23-3 Capturing All Data

When Data image capturing is enabled, only red lights (failures) are captured by default. To turn on data capturing for every scan follow these steps:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Data Capture sub-menu button.
4. With data capture enabled (see Enable Data Capturing), click the box next to Enable image capture. Box will turn green and additional features will become available.
5. Deselect the box next to Capture data only on fail.
6. Press Apply to accept settings and exit menu.

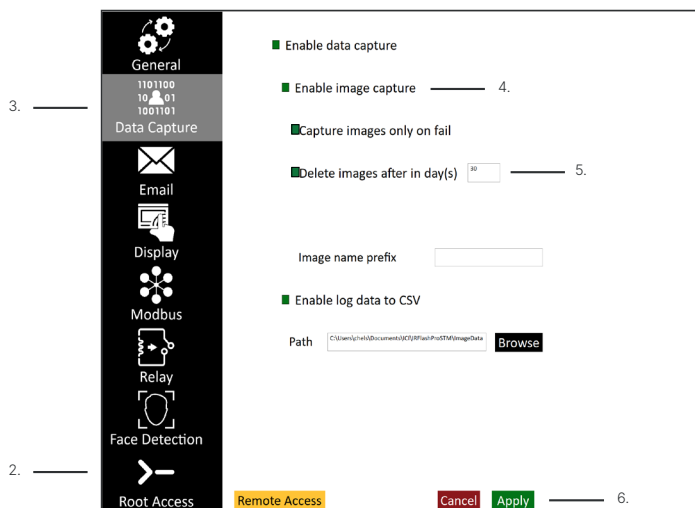


TURNING OFF CAPTURE DATA ONLY ON FAIL MAY CAN CAUSE THE IMAGES TO TAKE UP AN ENORMOUS AMOUNT OF HARD DRIVE SPACE.

23-4 Deleting Data

By default only pass/fail information is saved to the CSV file. This information is stored in a location designated within the program (see 23-6 Choosing a Save Location for Data). Extra precautions maybe needed to protect the privacy of employees, clients, etc. As such users may wish to delete stored data automatically. Individual records cannot be deleted; however, users can set an expiration date for all stored data:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Data Capture sub-menu button.
4. With data capture enabled (see Enable Data Capture), click the box next to Enable image capture. Box will turn green and additional features will become available.
5. Use the input box next to Delete data after in day... to enter a whole number. Data will expire after this many days.*
6. Press Apply to accept settings and exit menu.

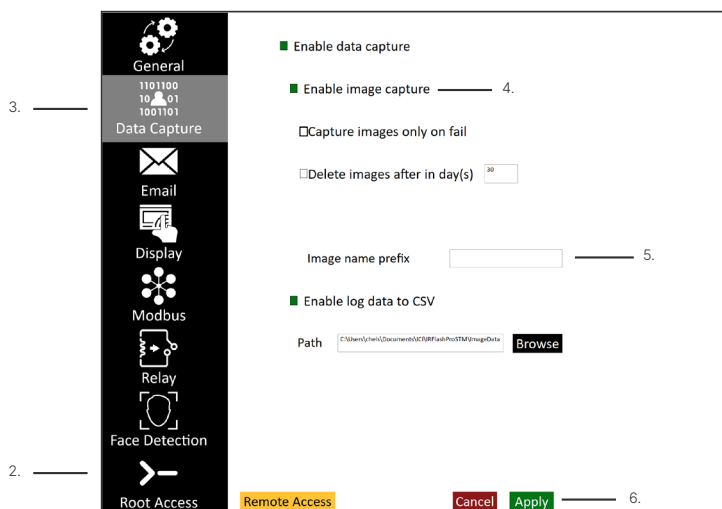


*** FOLLOW THE PRIVACY POLICY OF YOUR COMPANY. DESELECTING THE DELETE DATA BOX WILL CAUSE INFORMATION TO BE HELD INDEFINITELY.**

23-5 Naming Images

Image capture file names are auto-generated, but you can assign a prefix:

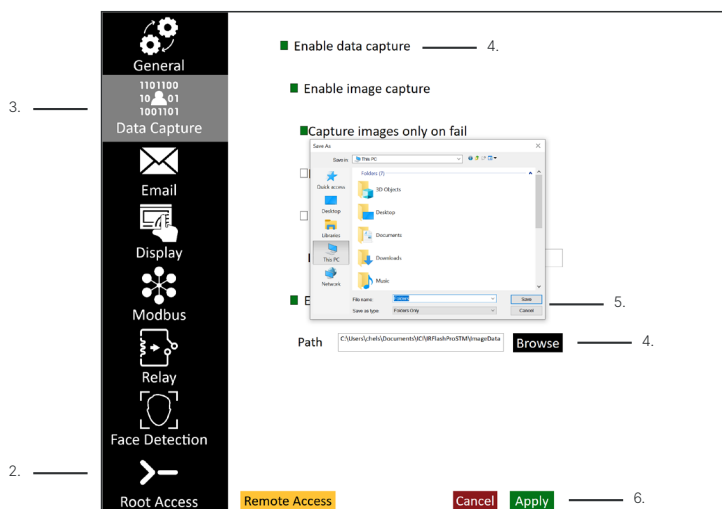
1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Data Capture sub-menu button.
4. With data capture enabled (see Enable Data Capturing), click the box next to Enable image capture. Box will turn green and additional features will become available.
5. Define a prefix using the input field next to Image Name Prefix.
6. Press Apply to accept settings and exit menu.



23-6 Choosing a Save Location for Data

You can choose a save location for data by following these steps:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Data Capture sub-menu button.
4. With data capture enabled (see Enable Data Capturing), click Browse.
5. A dialog box will appear. Choose a save location and click Save.
6. Press Apply to accept settings and exit menu.

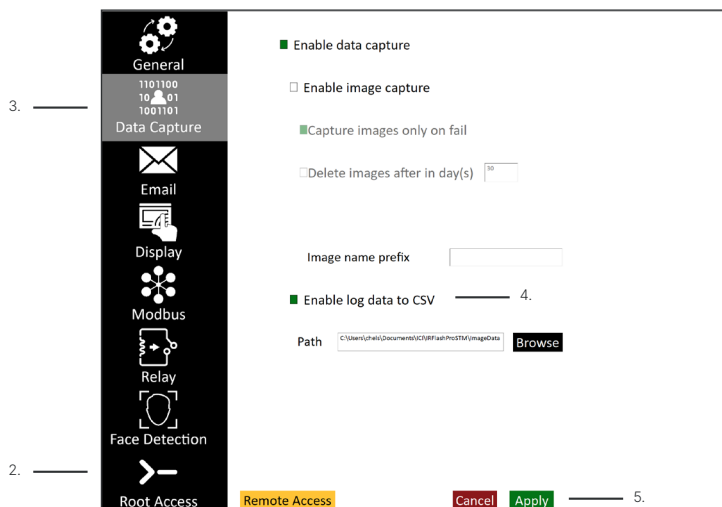


23-7 Enable CSV Log Data

CSV data logs can be auto-generated. By default, these files only contain pass/fail information. This data is stored in a location designated within the program (see 23-6 Choosing a Save Location for Data).

Enable CSV data logging as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Data Capture sub-menu button.
4. With data capture enabled (see Enable Data Capturing), click the box next to Enable Log Data to CSV.
5. Press Apply to accept settings and exit menu.



CSV LOGS ARE EXCLUSIVE AND CAN BE USED TOGETHER OR SEPARATELY.

24. Email Settings

Automatic emails can be generated when a red light (fail) occurs.* Set up email as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Email sub-menu button.
4. Check the box next to Enable Alarm Email Notification. Box will turn green and additional email settings will become available.
5. Decide if you want an image capture attached to the email.
6. Enter server information, username, password, send-to email, subject, and a message to be auto-generated using the available input fields.
7. Press Apply to accept settings and exit menu.

More settings are available in the Modbus section.

3. ———

2. ———

4. ———

5. ———

6. ———

7. ———

General
1101100
10 01
1001101

Data Capture

Email

Display

Modbus

Relay

Face Detection

Root Access

Enable Alarm Email Notification

Send image as an attachment

SMTP Server Address

SMTP Port Number

Use Encryption

Yes No

Username

Password

To Email Address

Subject

Message

Test Connection

Remote Access

Cancel

Apply

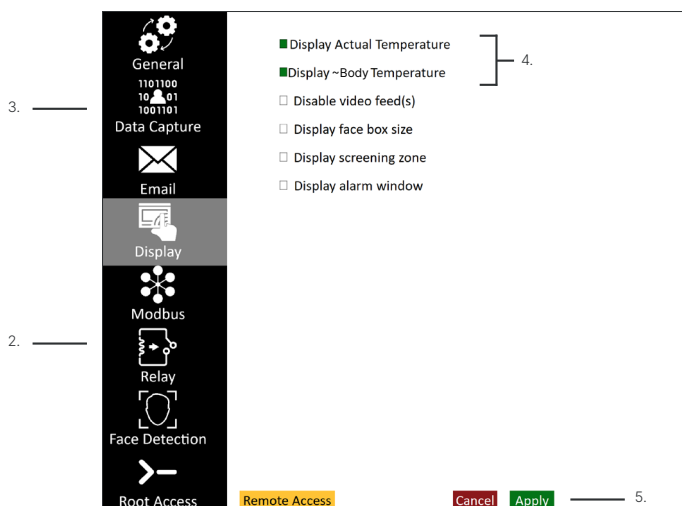
*** EMAILS WILL BE GENERATED FOR ALL CAPTURED DATA REGARDLESS OF PASS OR FAIL IF CAPTURE DATA ONLY ON FAIL IS TURNED OFF IN THE DATA CAPTURE SUB-MENU.**

25. Display Settings

25-1 Disable Actual and/or ~Body Temperature Data

Users can turn on/off specific interface data. This includes turning off front-end quantitative data such as Actual and ~Body Temperature. These settings are enabled by default. To disable the data, access the display settings as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Display sub-menu button.
4. To disable these settings Deselect the boxes next to Actual and/or ~Body Temperature.
5. Press Apply to accept settings and exit menu.

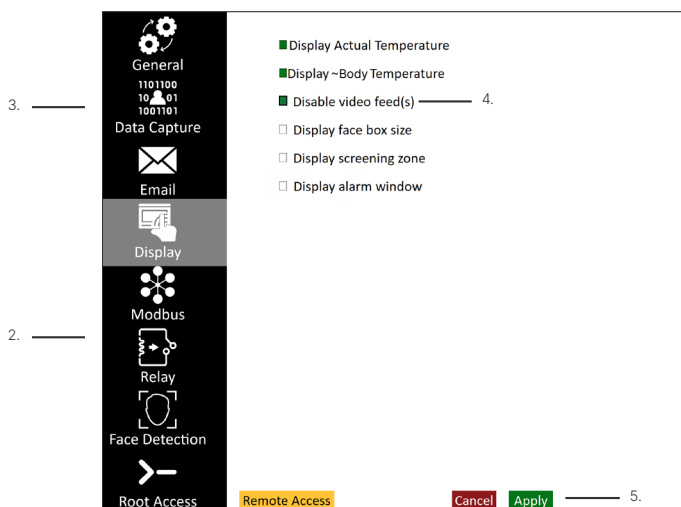


TURNING OFF THE DEFAULT SETTINGS WILL ELIMINATE QUANTITATIVE DATA FROM THE FRONT END, I.E. USERS WILL ONLY RECEIVE VIDEO FEEDS FROM IR AND VISIBLE CAMERAS WITHOUT TEMPERATURE DATA.

25-2 Turning off Video Feed(s)

Video feed(s) are on by default. Turn off the video feed(s) as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Display sub-menu button.
4. Check the box next to Disable video feed(s).
5. Press Apply to accept settings and exit menu.

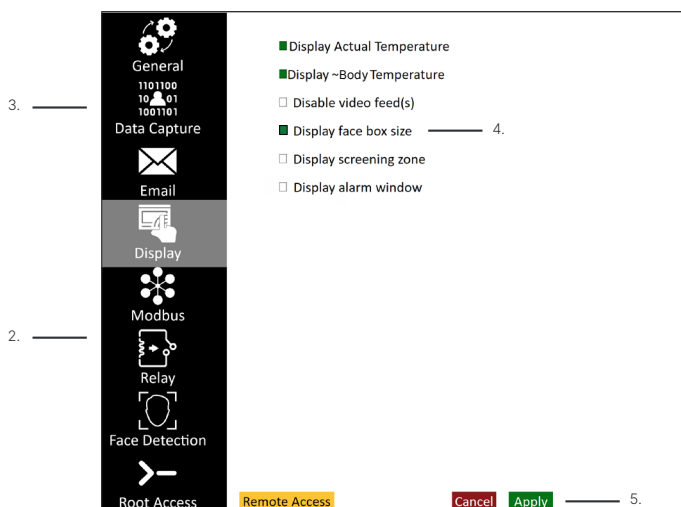


TURN VIDEO FEED(S) OFF BY DESELECTING THE BOX NEXT TO DISABLE VIDEO FEED(S).

25-3 Display Face Box Size

Users can determine the size of the face box in pixels by enabling the face box size. Display face box size is off by default. Turn on the face box size display as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Display sub-menu button.
4. Check the box next to Display face box size.
5. Press Apply to accept settings and exit menu.

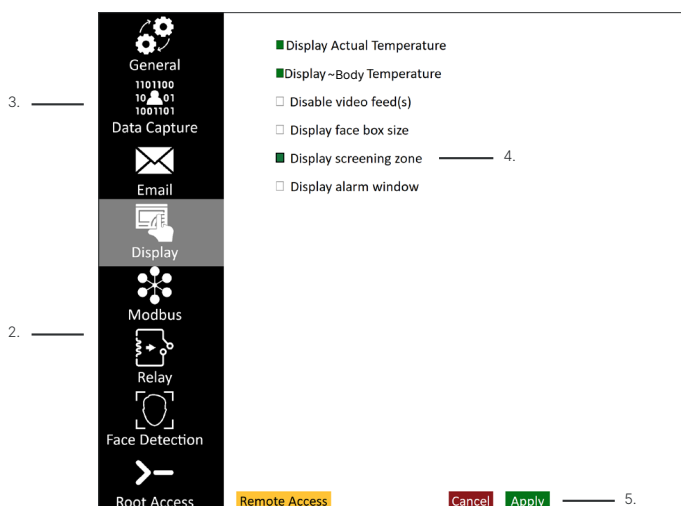


TURN FACE BOX OFF BY DESELECTING THE BOX NEXT TO DISPLAY FACE BOX SIZE.

25-4 Screening Zone

The screening zone is the area of the screen where temperature information is gathered for skin temperature measurements; this area makes up 70% of the available pixels and assists in preventing false positives. The screen zone is enabled by default and cannot be disabled; however, users can highlight the screening zone as follows:

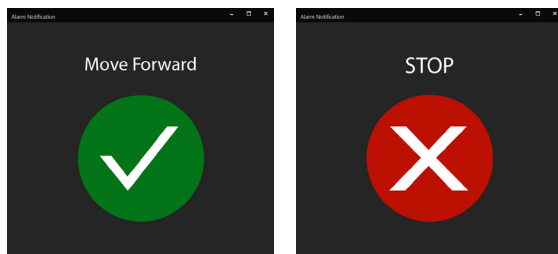
1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Display sub-menu button.
4. Check the box next to Disable video feed(s).
5. Press Apply to accept settings and exit menu.



TURN THE SCREENING AREA OFF BY DESELECTING THE BOX NEXT TO DISPLAY SCREENING ZONE.

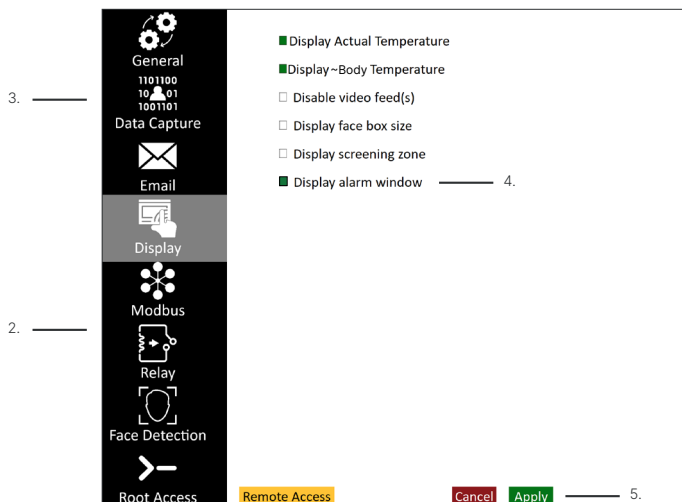
25-5 Displaying an Alarm Window

Users can utilize a pop-up window to display a pass or fail notification on a separate monitor. This feature is disabled by default.



Enable the Alarm Window as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Display sub-menu button.
4. Check the box next to Display alarm window.
5. Press Apply to accept settings and exit menu.

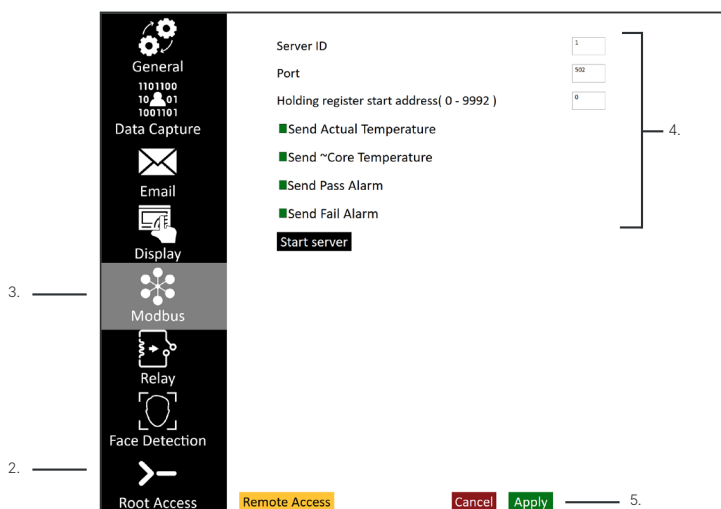


**CLICK AND DRAG THE WINDOW TO A SECONDARY MONITOR
TO DISPLAY THE WINDOW ON A SEPARATE VIEWING SCREEN.**

26. Modbus Settings

The Modbus settings allow automated messages to be sent in direct response to temperatures screened by the infrared camera. Access the Modbus settings as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Modbus sub-menu button.
4. Change settings as desired.
5. Press Apply to accept settings and exit menu.



Emails may contain the following information:

Actual Temperature - the temperature value detected by the camera.

~Body Temperature - the pass/fail value determined by the algorithm.

Pass Alarm - an alarm given when a temperature value is within the accepted threshold.

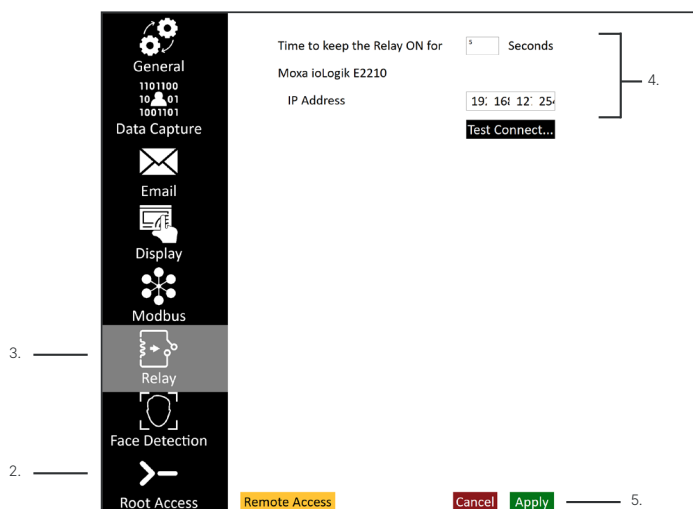
Fail Alarm - an alarm given when a temperature value exceeds the accepted threshold.

USERS CAN DISABLE MODBUS SETTINGS INDIVIDUALLY BY DESELECTING THE BOX NEXT TO THE ITEM TO EXCLUDE FROM THE AUTOMATED EMAIL.

27. Relay Settings

Access the Modbus settings as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Relay sub-menu button.
4. Change settings as desired.
5. Press Apply to accept settings and exit menu.



WE SUPPORT ADVANTECH 4761 BE. THE SOFTWARE ONLY WORKS WITH ADVANTECH 4.0 SDK; THESE ARE THE SIGNALS THAT WILL BE TRIGGERED ON ALARM NOTIFICATIONS.

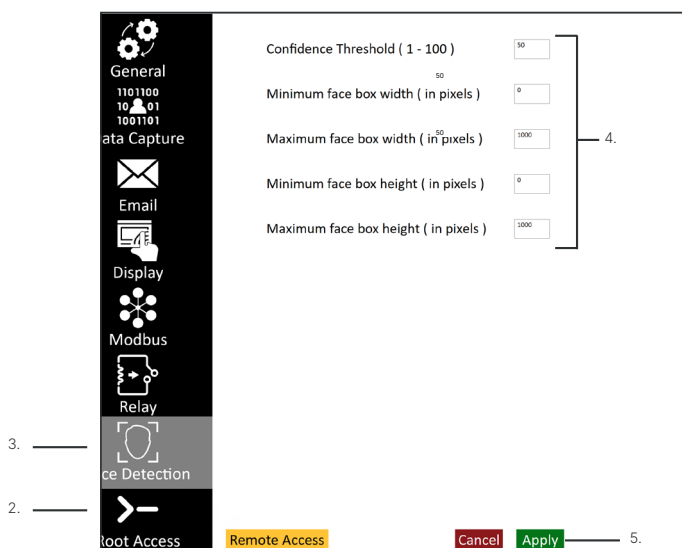
PASS → NO0
FAIL → NO1

28. Face Detection Settings

These settings give users a range of parameters that affect sensitivity and face box size dimensions. The confidence level is a measure of how 'confident' a model is that a face is contained within the image provided to it. The higher the confidence threshold value, the more accurate is the face detector model. In general, the face detector model gives the best results with confidence thresholds between 50 and 70.

Access face detection settings as follows:

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Face Detection button.
4. Change settings as desired.
5. Press Apply to accept settings and exit menu.



The face box detected by the facial detection model has to be greater than the entered minimum face box value and less than the entered maximum face box value, e.g.

Minimum width = 50
Minimum height = 50

Maximum width = 100
Maximum height = 100

Then the face box detected by the face detection model has to be greater 50×50 and less than 100×100 to be displayed on the front end.

GRAY PAGES INDICATE A DEVIATION IN DEVICE FEATURES. APPLICABLE DEVICES ARE NOTED IN THE PAGE TITLE. IF THE USER'S DEVICE IS NOT LISTED IN THE TITLE, THE USER MAY SKIP OVER THESE PAGES. CALL CUSTOMER SERVICE WITH QUESTIONS.

29. FM/FM + Series IR/Visible Camera Alignment

Dual vision cameras require an IR and visible image alignment. If you do not see this button your camera does not require an image alignment and you may skip this section.

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click on the IR/Vis Alignment button.

IR/Vis Alignment

4. A thermal infrared image will display over the visible camera image with 75% opacity.
5. Move and resize the thermal infrared image to align it with the visible image.
6. Once the infrared and visible images are aligned, click the apply icon “✓” in the top-right corner.



30. FMX 400 Focus Controls

The FMX 400 has electronic focus. This camera will include a Focus Controls menu button. If you do not see this button your camera has manual or automatic focusing and you may skip this section.

30-1 Opening the Focus Controls Menu

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click Focus Controls button.

Focus Controls

4. The focus control buttons will appear:

Focus Controls

X



30-2 Closing the Focus Controls Menu

Close Focus Controls menu by clicking or tapping "X" in upper right corner of focus controls menu box.

Focus Controls

X



30-3 Focus Far

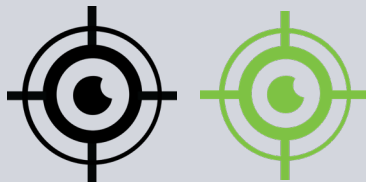
1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click Focus Controls button to open the menu.
4. To focus far, press and hold the Focus Far button. The button will temporarily turn green as it focuses.



5. Release the button when scene is in focus.
6. Close Focus Controls menu by clicking or tapping "X" in upper right corner.
7. Change other settings as desired.
8. Press Apply to accept settings and exit menu.

30-4 Auto Focus

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click Focus Controls button to open the menu.
4. To reset, click or tap Auto Focus button.
5. The button will temporarily turn green until focus is clear.



6. Close Focus Controls menu by clicking or tapping "X" in upper right corner.
7. Change other settings as desired.
8. Press Apply to accept settings and exit menu.

30-5 Focus Near

1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click Focus Controls button to open the menu.
4. To focus near, press and hold the Focus Far button. The button will temporarily turn green as it focuses.



5. Release the button when scene is in focus.
6. Close Focus Controls menu by clicking or tapping "X" in upper right corner.
7. Change other settings as desired.
8. Press Apply to accept settings and exit menu.

THE ELECTRONIC FOCUS MENU WILL ONLY BE AVAILABLE FOR FMX 400 DEVICES.

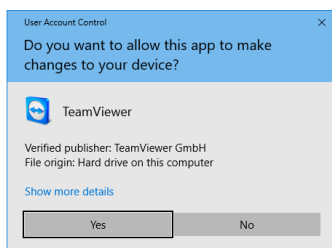
31. Remote Access

Technical support may need access to your computer to assist you in troubleshooting issues. Enable remote access:

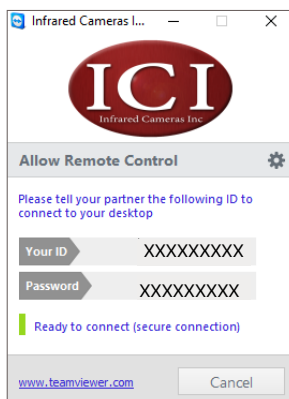
1. Access the Settings Menu (see Opening/Closing the Settings Menu).
2. Login (see Gaining Root Access (Login)).
3. Click the Remote Access button.

Remote Access

4. Allow program to make changes to the computer. Click Yes.



5. Give technical support the information provided in the dialog box.



USERS MUST BE LOGGED IN TO INITIATE REMOTE ACCESS. CONTACT CUSTOMER SERVICE IF THE PASSWORD BECOMES LOST OR UNRECOVERABLE.

32. Maintenance

The software package is self-contained and requires no maintenance beyond maintaining the viability of the machine on which it resides, etc. Future updates for the software may or may not be made available to users at ICI's discretion.

33. Troubleshooting

33-1 Inaccessible Features

Grayed out features are inaccessible and require user permissions.

Solutions:

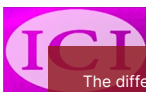
1. Login (see Gaining Root Access (Login)).
2. Enable parent settings after logging in (see Gaining Root Access (Login)).

3.-2 Error: Temperature reference view seems to be obstructed

The thermal reference source is still warming up, is being blocked from the thermal sensor, or the green cursor is not correctly positioned.

Solutions:

1. Wait for the thermal reference source to reach the proper temperature.
2. Position green cursor in middle of the temperature reference (see Setting a Known Fixed Temperature).
3. Do not stand in front of the temperature reference or block the camera's view of the temperature reference.
4. Instruct clients to mount the temperature reference source in a higher or lower position while following ISO 13154, which instructs operators to meet specific environmental conditions.



Error: Temperature reference view seems to be obstructed.
The difference between the calculated and the temperature reference value is greater than 2 °C
Calculated 22.0 °C Actual 37.0 °C

33-3 Abnormal Low/High Temperature Readings

The drivers for the camera are not installed or it is time to re-calibrate the device(s).

Solutions:

1. Install driver(s) for the camera(s). Contact ICI with serial number(s) to request missing driver file(s).
2. Contact ICI to schedule device re-calibration (see About ICI).

ANNUAL RE-CALIBRATION OF THERMAL DEVICES IS REQUIRED FOR ACCURATE TEMPERATURE MEASUREMENTS AND PROPER MAINTENANCE.

33-4 False Pass: Obstruction

The system incorrectly reports a person has a normal body temperature when the person does not have a normal body temperature. The person being scanned either has eye wear or a head covering that blocks the hottest part of the face. There may also be other obstructions in the scene.

Solutions:

1. Instruct the operator to follow ISO 13154, which states the operator must instruct the person being scanned to remove glasses, masks, hats, and any other face coverings during the scan.
2. Check screening area for obstructions.

33-5 False Fail: Internal issue

The system incorrectly reports a person has an elevated body temperature when the person does not have an elevated body temperature due to faulty calibration, incorrect implementation of calibration formula, or inaccurate body temperature estimation. Could also be caused by a faulty piece of hardware.

Solutions:

1. Contact customer service.
2. Verify ~body temperature by traditional temperature measurement methods.

33-6 False Fail: Dual camera systems (infrared and visible)

The dual camera system incorrectly reports a person has an elevated body temperature when the person does not have an elevated body temperature due to the misalignment of the infrared and visible images.

Solutions:

1. Ensure proper alignment of visible and IR camera images.
2. Verify body temperature by traditional temperature measurement methods.
3. Test the IR camera per IEC 80601-2-59-2017.

33-7 Abnormal Readings: Reflective surfaces

The background of the scene contains a reflective surface such as Plexiglas, a mirror, or shiny metals.

Solutions:

1. Remove the reflective surface, or cover it with something non-reflective.
2. Check screening area for other obstructions.

33-8 Incorrect position of infrared camera to person being screened.

The infrared camera is too close or too far from the subject as well as the temperature reference source leading to incorrect temperature values.

Solutions:

1. Instruct clients to mount the infrared camera in a higher or lower position while following ISO 13154, which instructs operators to meet specific environmental conditions.

33-9 Subject's face not in the frame despite standing in target location

Faces are not being seen by the system because subject is taller or shorter than expected or there is incorrect framing of the scene which occurred during setup.

Solutions:

1. Re-frame scene correctly.
2. Instruct clients to mount the camera and temperature reference source in a higher or lower position while following ISO 13154, which instructs operators to meet specific environmental conditions.

33-10 Not able to detect faces

Faces are not being detected by the system because the face box is too small, is absent from the screening area, or the confidence level is too high.

Solutions:

1. Check face box size.
2. Check screening area.
3. Decrease confidence threshold.

NOTE THAT A CONFIDENCE THRESHOLD VALUE < 50 IS NOT RECOMMENDED.

33-11 Blurry Images

Camera is out of focus.

Solutions:

1. Adjust camera focus near, or
2. Adjust camera focus far.

AUTOMATIC CAMERAS FOCUS AUTOMATICALLY. MANUAL CAMERAS CAN BE ADJUSTED USING THE FOCUS RING ON THE CAMERA. SOME CAMERAS HAVE ELECTRONIC FOCUS (SEE FOCUS CONTROLS).

33-12 Image Feed without Data

Settings are turned off or there is another issue.

Solutions:

1. Check display settings (see Display Settings).
2. Ensure camera is plugged into an appropriate wall outlet (if applicable).
3. If the error is accompanied by an ICI logo, ensure the camera is plugged into the computer properly.

33-13 ICI Symbol without Data

Camera is not connected or lacks power.

Solutions:

1. Ensure the camera is plugged into the computer.
2. Ensure the camera is plugged into an appropriate wall outlet (if applicable).



33-14 ICI Symbol with Data

Video feed is turned off.

Solutions:

1. Check display settings (see Display Settings).



33-15 Alarms do not sound

Alarms are not enabled.

Solutions:

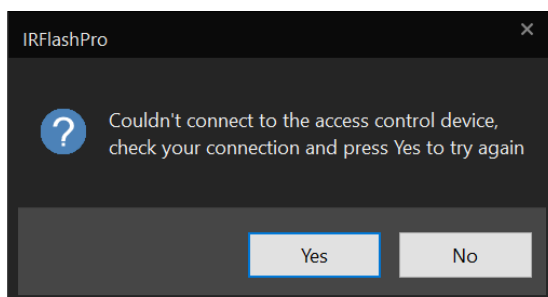
1. Check the sound settings (see Alarm Settings).

33-16 Couldn't connect to the access control device

The access control device is not connected properly or is not being powered.

Solutions:

1. Ensure all devices are plugged into an appropriate wall outlet (if applicable).
2. Ensure the control access device is connected properly.
3. Restart the computer.



33-17 Update failure: Error opening file for writing

There is a version of IR Flash STM running.

Solutions:

1. Abort the setup, close the running software program, and restart the update.

34. About ICI

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Beaumont, TX 77705

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Toll Free: (866) 861-0788
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General Inquiry: support@infraredcameras.com
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You may reach a representative by phone or email Monday – Friday 8:00AM - 5:00PM CST.

ICI manufactures complete systems and software. We can provide complete engineering, software, and OEM solutions. Our Fortune 500 clients rely on us for infrared equipment and thermography training (which we offer through the Infrared Training Institute).

In addition to providing custom germanium, silica, and sapphire optics, we also build windows for enclosures, as well as custom pan and tilt units. We can even provide customizable explosion-proof systems.

Our knowledge and experience stems from years of using infrared imaging and temperature measurement instruments to provide solutions to: managers, engineers, scientists, inspectors and operators in space, power companies, medical, pulp and paper, food industry, research and development, and various process industries. You can see our products and services used in industrial, commercial, and government applications worldwide. Originally named Texas Infrared (still DBA), Infrared Cameras, Inc. has been in business since March, 1995.

Thank you for your dedicated and continued support.