

Industrial Camera FAQ

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Camera Setup, Passwords, USB Connections

Camera Setup and Firmware

Question

How do I confirm if my camera has the latest firmware and how do I update if needed?

How often should I check for firmware updates? Where do I go to get the latest firmware?

Answer

HIKMICRO regularly updates firmware to improve performance and to add new features. We recommend checking for firmware updates when you first receive your camera and then periodically over the life of the product. Firmware versions and downloads are published on www.hikmicrotech.com at the bottom of the product page in Firmware, as well as in the Support/Download Center/Firmware section.

To confirm your camera's firmware version:

- E and B Series, press the menu button and scroll down using the down arrow to ABOUT to view the installed firmware version
- Pocket, M, G, SP Series, firmware version is in *Settings/Device Settings/Device Information*

To Update: If a firmware update is available, download the firmware and save it to your computer. YouTube video here: https://www.youtube.com/watch?v=IDqzExj4CtM

- Unzip the file(s) and locate the digicap.dav file in the Firmware folder.
    - Note: Sometimes there will be two folders, Firmware and FPGA, each with their respective digicap.dav files. Perform each update independently starting with the FPGA update.
    - Please read the accompanying Release Notes for important details.
- Plug in your camera to your computer using the USB C to USB A cable. Your computer should view this as a storage device similar to when you plug in any USB memory stick.
- Copy the digicap.dav file to your camera and then power off/on to reboot the camera. The update will perform automatically.

Question

How do I upgrade my **Mini** camera?

Answer

The Mini Series works with the **HIKMICRO Viewer Android App**. New versions of the mobile app are equivalent to upgrading the Mini.

Passwords

Question

What is the password for my camera when using the hotspot function? (Mobile device connecting to the camera's hotspot)

Answer

The default hotspot password is 12345678. You can see or change the password in hotspot settings in the camera.

Question

In HIKMICRO Viewer, what is the activation password?

Answer

The default activation password in HIKMICRO Viewer is abcd1234. You can view and change the password at the first connection.

Question

I forgot the activation password. How can I reset the password?

Answer

To reset the password to the factory default, perform a **RESTORE** function to reset the camera back to factory default settings. This action will NOT remove images saved in the storage media. Then, you can connect the camera to HIKMICRO Viewer with the default password.

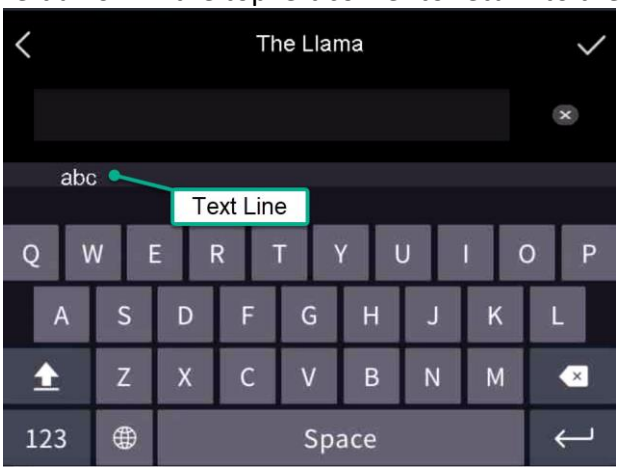
Question

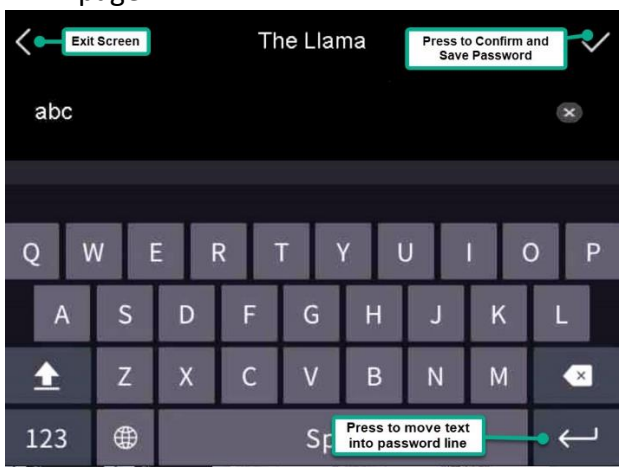
When entering a **WLAN password on POCKET** Series, how do I get the letters into the password field? How can I enter the password with letters and digits?

Answer

For firmware Version 5.5.29 or earlier: When entering letters, please make sure to hit the **Return** button on the lower right corner to move the letters from the text bar to the password field.

Numbers and special characters will be placed into the password field directly. When compete, press the checkmark in the top right corner of the screen to save the password. Finally, press the left arrow in the top left corner to return to the WLAN page.





Connecting with USB

Question 1

My computer is not recognizing the camera when connected with a USB cable to transfer images or update firmware.

Answer

Please confirm the two items below when connecting with USB:

- Confirm “Cast Screen” is turned off in the camera settings. In many cameras, Cast Screen is found in the Connect menu.
- The camera requires a USB A to USB C cable to be recognized as a USB external device. USB C to USB C cables are not supported for data transfer or charging the unit.

Question 2

What should I do if Windows Explorer says **USB device not recognized**?



Answer

Some Windows computers will scan a USB drive when it is connected, and show the error. Click scan and then repair if prompted and Windows will confirm the drive is fine and connect to it.
If you are connecting with the USB cable and still having trouble connecting, try these steps:

1) Make sure you are using the USB A to USB C cable that came with the camera or similar cable.
2) Turn off Autoplay in Windows Settings
3) For cameras with a removable SD card try taking the SD card out of the camera and plugging it in to an SD card reader for your computer.

Software and Apps

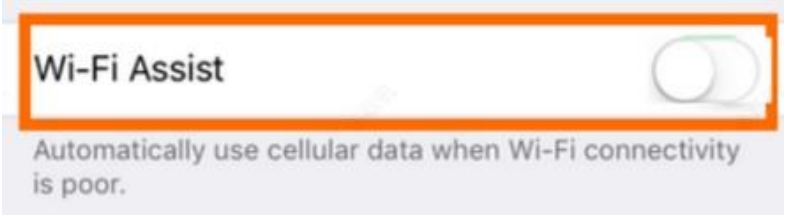
HIKMICRO Viewer & Analyzer

Question

Activation failed via the App in iPhone, when the handheld camera is used as a hotspot. How do I connect and activate?

Answer

1. On your mobile device, scroll down to the very bottom of the Cellular menu and disable Wi-Fi Assist, in Setting – Cellular.



2. Find HIKMICRO Viewer (in the bottom of the main setting page), and disable the Cellular Data.



3. Choose Keep Using Wi-Fi if an option window is popped up after connecting to camera's hotspot.



Question

Does HIKMICRO Analyzer support Mac OS?

Answer

HIKMICRO Analyzer is only supported for Windows based PC's.

Question

I am not seeing an image on my **mobile device** when my Mini camera is connected. How do I enable this?

Answer

1. Ensure you have enabled **OTG connection** in the System settings of your phone.
2. Please confirm your mobile device is listed on the compatibility list.
   https://www.hikmicrotech.com/en/support/download-center/compatibility/

If you could not find the model of your phone, please let us know your phone model. We will test and try to make the App compatible with it in the next version.

Camera Operations

Question

Can I connect my camera to a TV or computer to receive a live feed from the camera?

Answer

The SP series cameras support HDMI output allowing you direct connections to a TV or HDMI monitor.

To view the live feed from an E, B, Pocket, M, G, SP to a computer, you can use you can use **Cast Screen** function with a PC client. Please refer to the guide *How to Cast Screen of Handheld Thermal Camera* in the official website.
https://webassets.hikmicrotech.com/global/asset/023a07cc5024417897e3d1811622a2df.pdf

Question

Can I connect my handheld camera to transmit pictures or video via Bluetooth?

Answer

No. The Bluetooth function in the handheld camera only supports audio connections. You can use a Bluetooth headset to play the audio recorded together with videos and images.

Question

Why does the system time reset to **1970** or **2000**?

Answer

The camera time & date memory (Real Time Clock/RTC) has a small backup battery to maintain settings when the main battery is removed or discharged. If the camera is stored for an extended period of time without a battery or with the battery discharged, then the backup battery could run low causing the time and date to reset. If this happens, charge the device for 10h while it is switched on to fully charge the RTC battery and then reset the system time.

Question

The device makes clicking sounds and the screen briefly freezes. Is it abnormal?

Answer

Your camera will periodically calibrate itself to optimize image quality and measurement accuracy. In thermography this is called a NUC (Non-Uniformity Correction). In this process, the image will pause briefly and you will hear a "click" as the shutter moves in front of the detector to calibrate and thermally stabilize itself. The self-calibration will be more frequent during start as the detector warms up, or in extreme cold or hot environments. This is a normal operation to ensure optimum performance.

Question

The screen is frozen and none of the buttons work in B1L camera.

Answer

Press and hold the power button for 30 seconds to reboot the device. If the issue persists, please restart the camera and try the firmware in the link below to fix.
Firmware link: https://www.hikmicrotech.com/en/industrial-products/b-series-handheld-thermal-imager/

Question

How do I register or activate the warranty for HIKMICRO product?

Answer

You do not need to register or activate the camera for the warranty. Please retain your receipt as proof of purchase and contact your dealer for if you have a warranty question or concern.

Question

Where are the visual images in my **B10/B20** camera stored? I don't see them when my camera is plugged into my computer.

Answer

The thermal image and the optical (visual) image are stored together in a single radiometric jpeg file. If you would like to store the optical image as a separate file you can enable the feature by upgrading to firmware V5.5.37_220901 or higher. Once updated, turn on **Save Optical Picture** in *Settings -> Image Settings* to enable this feature. Your camera will then store both a radiometric jpeg and an optical jpeg.

Question

Where are the visual images in my **Pocket** camera stored? I don't see them when my camera is plugged into my computer.

Answer

The thermal image and the optical (visual) image are stored together in a single radiometric jpeg file. If you would like to store the optical image as a separate file you can enable the feature by upgrading to firmware V5.5.29_221029 or higher. Once updated, turn on Save Optical Picture:

Settings/Device Settings/Device Information-->Version

Confirm Save Optical Picture is active:

Confirm *Settings -> Capture Settings --> Save Optical Picture is turned on* to enable this feature.

Question

Are Thermal Imaged, Temperature Data, and Optical (visual) images in separate files?

Answer

The standard radiometric jpeg file contains the thermal image, temperature data and the visual image. The temperature data in the jpeg can be used for post analysis editing purposes and reports with HIKMICRO Analyzer (name without _VIS). For users that prefer a separate file for the visual image, an additional visual only jpeg file (name with _VIS) is included when Save Optical Picture is enabled in the camera menu. The separate visual file will be stored with the same image name plus "_VIS.jpeg" as in the example below.



Question

Why are my captured images resolution higher than the thermal detectors specified in datasheets?

Answer

HIKMICRO cameras use high performance LCD displays that are higher resolution than the thermal detector. Your camera will scale images for the best picture quality on screen and for offline use. Image editing software will show the resolution of the jpeg at the resolution of the LCD. The Pocket and M Series cameras have a 640x480 **screen resolution**. The E1L and B Series cameras have 240x320 screen resolution. In all cases the thermal resolution and measurements are as stated in the datasheets and manuals.

Question

Does the camera capture radiometric video for secondary analysis?

Answer

M30, G40, G60, and SP60 support radiometric video recordings. If you do not see this option in the camera settings, please update to the latest available firmware in the official website. Also download the latest version of Analyzer PC Software for playback and analysis.

You can create **.rv** video (radiometric video) that contains temperature data. The steps are:

1) In **Video Type**, select **Radiometric Video** instead of MP4.
2) Hold the capture button or trigger to record video.

Question

When I measure distance with the laser distance meter, why does it sometimes say Laser Ranging Failed?

Answer

Laser distance measuring relies on the reflection of the laser hitting the target to calculate distance. The prompt may appear If the measured item is too far away or the reflection is very weak. Working indoors, you should expect maximum distances in most cases provided you avoid glass and matte black or uneven surfaces. When outdoors, direct sunlight on the measurement surface and/or poor reflectivity on matte painted items, rusty metal surfaces, vegetation, or concrete will reduce the working range. Hold the camera as steady as possible during the laser distance measurement cycle.

Question

Will measurement accuracy decrease or change after long-term use?

Answer

All measurement systems, including thermal imaging cameras, can drift over time. Your camera can be recalibrated if it ever drifts outside of the accuracy specification or if your organization's procedures require specific intervals for calibration. Our Service Center offers calibration and maintenance for all of our products. For specific calibration services, please refer the details here https://www.hikmicrotech.com/en/support/calibration-service/

Question

Is there a way to quickly check my camera's temperature accuracy without sending it in?

Answer

A blackbody reference source is ideal for checking accuracy if you have access to one. If you don't have a blackbody, you can use this procedure to quickly check your camera's temperature readings:

- Fill a cup with crushed ice and water and let it set for a few minutes. Set the camera emissivity value to 0.95. Measuring the temperature of the crushed ice and water solution should return a value at or just over the freezing point (0°C, 32°F). Note: for best results, measure the surface of the water & solution versus the side of the container. A camera with +/-2% or 2°C accuracy should read between -2°C and +2°C
- A similar test can be performed with boiling water to check a high temperature point in your working range. Please use caution around the hot water and heat source and be mindful of the effect of altitude on the boiling point. Bring the water to a full boil and keep the steam from condensing on the lens of the camera. At sea level water boils at 100°C (212°F) and a camera with +/-2% or 2°C accuracy should read between 98°C (208.4 °F) and 102°C (215.6°F).

To ensure the most accurate measurements from your camera please also review Emissivity, Reflected Temperature, and Distance Settings for your camera. Be sure your camera has been on for a number of minutes before performing any tests to allow internal components to reach normal operating temperature.

Question

In Fusion mode, the image detail outline (wire frame) does not align with the thermal. How do I correct this?

Answer

The fusion image is a combination of the optical and thermal sensors in your camera. These two sensors are located close together to minimize parallax. Your camera has a distance setting to fine tune the adjustments for parallax and deliver the best results. Parallax may be most noticeable on close targets.

- Make sure the distance between the target and the camera is not less than the Min. focus distance of the camera.
- When Fusion is selected, adjust the alignment distance value in feet or meters to align the visual and thermal images based on how far away from the item you are.

Note: Your camera also has a Thermography Settings> Distance. This is a separate value that is used for temperature calculations to account for atmospheric attenuation due to distance.

HIKMICRO Analyzer allows you to adjust fusion alignment for captured radiometric images when analyzing images on your computer.

Question

How do I enable **Screen Auto Rotation** in the **Pocket** camera series?

Answer

Confirm you are running firmware V5.5.29 or higher. *Settings/Device Settings/Device Information ->Version*

Confirm Auto Rotate is turned on: Settings/*Device Settings -> Auto-Rotate*.

Thermography Questions

Question

How far can I see with a thermal camera?

Answer

The maximum distance you can see an object with a thermal camera is dependent on the size of the object, the camera's resolution, and the lens field of view (FOV). The larger the object, the further away it can be viewed. Higher resolution imagers will also allow for viewing objects further away by providing more pixels to resolve it. Lenses with a narrower FOV also place more pixels on the object and allow for seeing further away. Each camera model will be different based on the lens FOV and resolution. There is a specification that combines the resolution and lens FOV called iFOV which is the field of view of a single pixel. We can calculate the size of that pixel at any distance and determine when it is unable to resolve the target. A 640 x 480 thermal imaging camera with narrow FOV can see the moon without any trouble.

The second consideration is what is your objective to "Seeing" the object? If you went to the beach and looked out at the ocean, you may see a dot on the horizon. You know something is there but you can't tell if it's a ship, small boat, airplane, bird, or something entirely different. Essentially, your camera has 1-2 pixels on target at this **Detection** stage. As the object moves closer, you will **Recognize** that the item is a ship but you are unable to determine if it's a cruise ship, cargo ship, or military ship. In thermography, your camera would have around 5 x 5 pixels to make out the shape as a ship and just start to measure temperature with any accuracy. Eventually, the object moves closer and you can **Identify** that it's a cruise ship and your camera would have 10x10 pixels or more on the item and measurement would be good quality.

For accurate temperature measurements you want to have at least 3x3 pixel density but most thermography professionals aim for 5 x 5 or 10 x 10 minimum pixels on the target by changing lenses or moving closer. When picking a thermal imaging camera for your application, it is important to understand what your typical working distances are and choose the system with the best blend of FOV and resolution. Your local HIKMICRO reseller, HIKMICRO technical support, or HIKMICRO sales representative can help you determine which is the best camera and lens combination for your needs.

Question

What is Emissivity and the relationship between emissivity and temperature?

Answer

The materials viewed with a thermal camera will emit, reflect, or transmit thermal energy to varying degrees. The temperature your camera measures will be a combination of the energy emitted, reflected, or transmitted through the material so It's important to set the camera values for the type of material you are measuring in order to make accurate measurements. Emissivity values range between 0 and 1. An Emissivity of 0 would be a perfect mirror and emissivity of 1 would be a perfect blackbody. An Emissivity of .8 would indicate that 80% of the energy the camera sees is coming from

the object and 20% is reflected from other sources (assuming the object is not transparent). Reflections can cause the apparent temperature to be significantly colder or hotter than the actual temperature depending on the temperature of the source of the reflection. The source of the reflection could be the cold night sky, hot Sun, or even the operator of the camera. Your camera has a setting for both Emissivity and Reflected Temperature to improve the accuracy of your measurements.

Take the time to set both the emissivity and the reflected temperature to get the most accurate results. Fortunately, there are numerous emissivity tables online for common materials to help https://ennologic.com/wp-content/uploads/2018/07/Ultimate-Emissivity-Table.pdf For determining Reflected temperature, you can use a crinkled sheet of aluminum foil and place it in front of the target. Measure the average temperature on the aluminum foil and use that value for your Reflected Temperature.

When measuring highly reflective surfaces (emissivity < .5) it is recommended to either modify the surface or to determine if another location on the object will be a more suitable target for measurement. A small piece of electrical tape is sometimes used as a target for measurements. Electrical tape has an emissivity of .96 and compared to an aluminum bus bar in an electrical cabinet with an emissivity of .05 is a much better target for measurement. Paint, stick on labels, or even Dr. Scholl's™ foot powder have also been used by thermographers for years.

Question

What are the other settings in the camera including distance and humidity that can be set?

Answer

The Distance, Humidity, and Air Temperature Settings allows the camera to account for atmospheric attenuation (how much of the IR signal will be absorbed by the air between you and the object). The amount of absorption varies with temperature, humidity, and distance and the HIKMICRO radiometric equation can accommodate for the difference to maintain accuracy.

Note: HIKMICRO Analyzer allows post processing corrections to radiometric images (emissivity, distance, reflected temperature, humidity) at your desk after the images have been collected in the field or if the camera was not properly configured at time of image capture.

Appendix: Hyperlinks and Their Keywords

Keywords	Hyperlinks
USB Cast Screen	https://webassets.hikmicrotech.com/global/asset/023a07cc5024417897e3d1811622a2df.pdf
Frozen image in B1L	https://www.hikmicrotech.com/en/industrial-products/b-series-handheld-thermal-imager/
Calibration Service	https://www.hikmicrotech.com/en/support/calibration-service/
Compatibility List	https://www.hikmicrotech.com/en/support/download-center/compatibility/

Legal Information

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About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the HIKMICRO website (***http://www.hikmicrotech.com***) Company website.
Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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