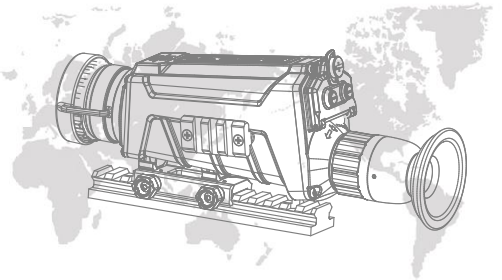

Thermal Scope

User Manual

UD11400B

0504001080820

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About This Manual

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This Manual is applicable to **Handheld Thermal scope.**

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 in the company website (http://overseas.hikvision.com/en/).

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FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

After the laboratory measurement, the device satisfies the RF exposure requirement

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation

EU Conformity Statement

This product and, if applicable, the supplied accessories are marked with “CE” and comply therefore with the applicable harmonized European standards listed under the Radio Equipment Directive 2014/53/EU, the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

WARNINGS AND CAUTIONS

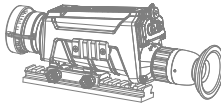
- All the electronic operation should be strictly compliance with the electrical safety regulations, fire prevention regulations and other related regulations in your local region.
- Please use the power adapter, which is provided by normal company. The power consumption cannot be less than the required value.
- Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.
- Do not drop the device or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the device installation on vibrations surface or places subject to shock (ignorance can cause equipment damage).
- Do not place the device in extremely hot (refer to the specification of the device for the detailed operating temperature), cold, dusty or damp locations, and do not expose it to high electromagnetic radiation.
- The device cover for indoor use should be kept from rain and moisture.
- Exposing the device to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).
- Do not aim the device at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.

For long-term storage of the battery, make sure you fully charge it every half year, to ensure the battery quality. Otherwise, you may damage the battery.

SAVE THIS MANUAL FOR FUTURE REFERENCE

1 Introduction

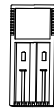
1.1 Box Content



Handheld Thermal Scope (×1)

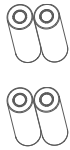
Power Adapter (×1)

USB Cable (×1)



Battery Charger (×1)

Manual (×1)



Battery (×4)

Lens Cleaning Cloth (×1)

1.2 Overview

The handheld thermal scope is equipped with high-sensitivity IR detector, and adopts advanced thermal imaging technology, to get clear view in poor visibility or dark environment.

It helps aiming at the target and measuring the distance.

The scope is not only small in size and light in weight, but also strong and durable. It can aim at the moving target and meets the outdoor using condition. The thermal scope can be widely used in patrolling, crime hunting, and shooting, etc.

1.3 Features

- High performance chip, and DDE (Digital Detail Enhancement) technique
- 1024 × 768 Resolution OLED display
- Built-in rechargeable Li-ion battery
- Up to 8 hours continuous running
- USB Cable

- Small in size and light in weight
- IPX7 water-proof

1.4 Functions

Distance Measurement

The device realizes distance measurement function after marking the top and bottom of target, and input the target height.

Range Table Correction

The crosshair helps you to aim at the target fast and accurately.

Picture in Picture

The device zooms in the central part of the live view, and displays it inside the live view, so that you can see the details.

Wi-Fi Hot Spot

Device can capture snapshots, record videos, and set parameters via APP after being connected to your phone.

DPC

The camera can correct the defective pixels on the screen which are not performing as expected.

GPS Function

The device can be located with GPS system.

Storage

Built-in memory module (up to 16 GB) supports video recording/snapshot capturing.

Digital Zoom

Device supports 1×, 2×, and 4× digital zoom.

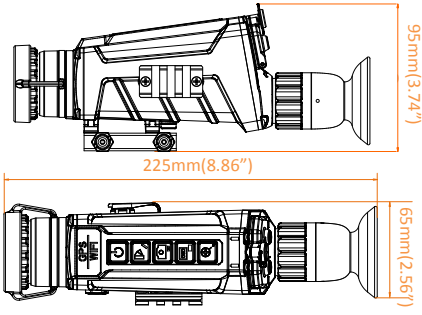
CVBS Output

The device can be connected to a CVBS cable.

2 Appearance

2.1 Dimensions

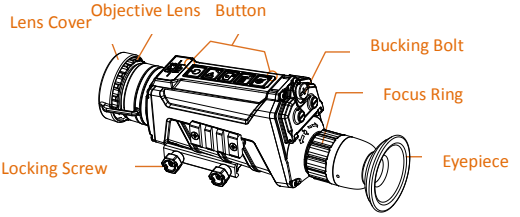
Take the figure below for the dimensions of the thermal scope.

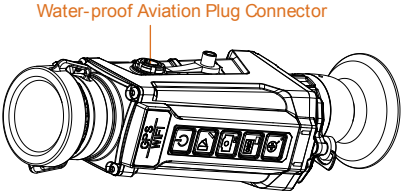


Note: the dimension varies according to different camera models.

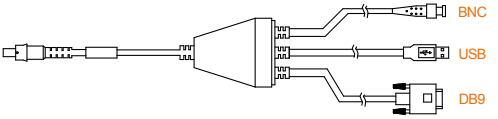
2.2 Scope Interfaces

Take the figure below for the interfaces description of thermal scope.





1	**Lens Cover**	Cover the lens.
2	**Objective Lens**	Adjust the distance between the lens and the sensor to view the target much clearer.
3	**Focus Ring**	Adjust the sight view.
4	**Buckling Bolt**	Loosen the buckling bolt to install the batteries.
5	**Locking Screw**	Secure the scope to the gun/base.
6	**Aviation Plug Connector**	Connect with the output cables.

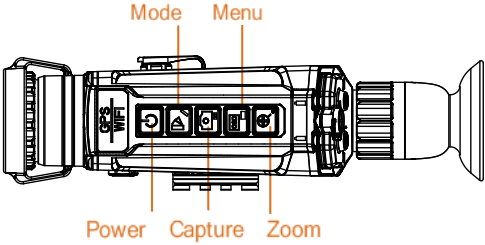


1	**BNC**	Connect it to the display screen.
2	**USB**	Connect it to your PC to backup videos/images.

3	**DB9**	Reserved.

2.3 Buttons

Take the figure below for the buttons description of thermal scope.



Power		Press: Power On Hold: Power Off
Mode		Press: Switch Pallet Hold: Distance Measure
Capture		Press: Capture Snapshot Hold: Start/Stop Record Video
Menu	OSD	Press: OSD On/Off Hold: Menu Operation
Zoom ±		Press: Digital Zoom Hold: Enable/Disable Crosshair

Note: For detailed operations of the menu, refer to ***Menu Operation*** Section.

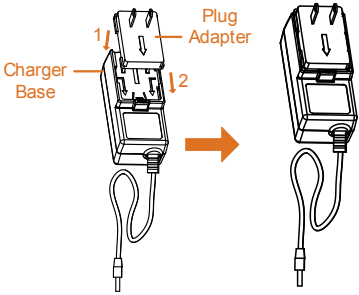
3 Basic Operations

3.1 Charging the Battery

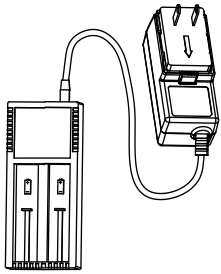
Please charge the scope with the delivered power adapter. The charging temperature should be 0 ℃ to 45 ℃ (32 ℉ to 113 ℉).

Steps:

1. Take the proper plug adapter.
2. Push and hold it, at the mean time slide it toward the inside to assemble the power adapter.



3. Connect the power adapter to the battery charger.



4. Insert the batteries in the charger with positive/negative terminals corresponded.

Note:

The charger will detect the battery's status, and show it on the display. The status description are shown below:

1	**Model & battery bars**	Standby mode
2	**Unlighted**	Power-saving mode Press any button.
3	**Err**	Battery is damaged.
4	**Blinking**	Battery is being charged.
5	**Chg.Finish**	Battery is fully charged.

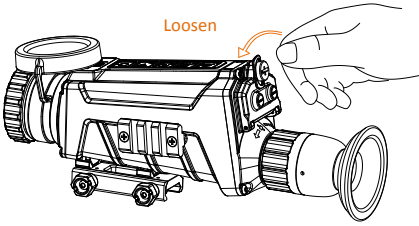
5. Complete battery charging and disassemble the battery.

3.2 Install the Battery

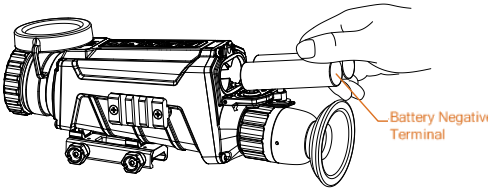
Turn on the scope, and the OSD (on-screen display) shows the battery information. When it says: **Low Battery**, charge the battery in time.

Steps:

1. Anticlockwise rotate the buckling knob to loosen it.



2. Make sure the battery's positive terminal is heading the inside, and insert the batteries.



3. Clockwise rotate the buckling knob to tighten it.

Note: For long-time not using the device, take the battery away.

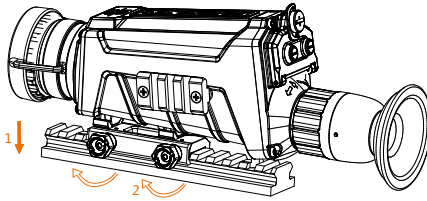
3.3 Secure the Scope

Notes:

- Turn off the scope first.
- Use the Non-dust cloth to clear the scope base and your gun's base.

Step:

Install the scope to the gun base as arrow 1, and then tighten the knobs to secure the scope as arrow 2.



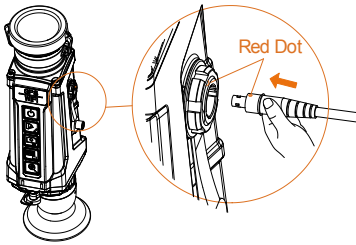
3.4 Connect Cable

Note:

Do NOT drag the cables when you connect it to the scope.

Step:

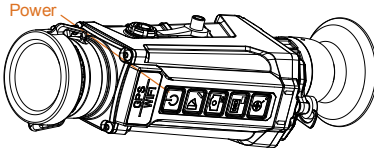
Make sure the red dot of the cable aligns with the red dot of the aviation plug connector, and connect the cable.



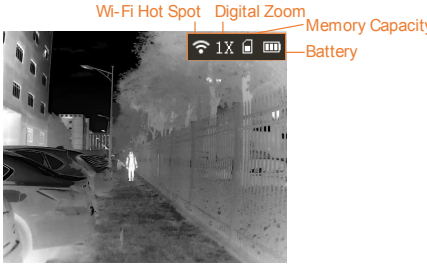
3.5 Power On/Off

Power On

Press the POWER button ⏻ to power on the device. After the device is powered on, you can view the live view.



Refer to the figure below for the main view of the thermal scope.



Power Off

When the scope is turned on, hold the POWER button for four seconds to power off the device.

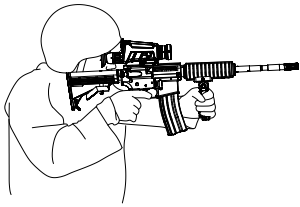
3.6 Thermal View Observation

Steps:

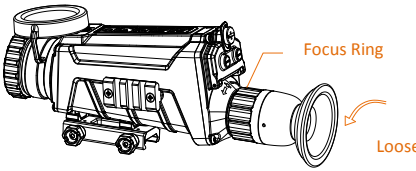
1. Power on the scope.
2. Pull out the lens cover and place it on the top of the lens.

   Note:

   Do NOT drag the lens cover to avoid damaging it.
3. Hold the scope and make sure the eyepiece covers your eye.



4. Slide the focus ring to adjust the diopter until the OSD text or image is clear.



Note: You must perform the diopter adjustment before any further use of the scope.

5. Point the scope towards the target.

3.7 Files Operation

Connect the thermal scope to your PC with USB cable, you can export the recorded videos and captured snapshots.

Before you start:

Turn off the Wi-Fi hot spot first.

1. Hold the button to enter the menu.
2. Select the icon .
3. Press and the icon turns to and the Wi-Fi hot spot function is disabled.

Step:

Connect the thermal scope to your PC with USB cable, you can see a detected removable disk.

Notes:

- When you connect the device to PC for the first time, it installs the drive program automatically.
- When you connect the device to PC, the device displays images, but functions such as recording, capturing and Wi-Fi hot spot are disabled.

File Export

Steps:

1. Connect the thermal scope to your PC with USB cable and open the detected disk.
2. Enter DCIM>100EZVIZ to view the videos and snapshots.

- Select and copy the videos to PC and play the file with the player.
- Select and copy the snapshots to PC and view the files.

3. Disconnect the device from your PC.

Upgrade

Steps:

1. Connect the thermal scope to your PC with USB cable and open the detected disk.
2. Copy the upgrade file and paste it to the root directory of the device.
3. Disconnect the device from your PC.
4. Reboot the thermal scope and the device upgrades automatically. The upgrading process will be displayed in the main interface.

4 Device Settings

4.1 Menu Operation

When the scope is turned on, hold the button for three seconds to display the OSD menu.

Press to move the cursor up.

Press to move the cursor down.

Press to confirm.

4.2 Distance Measurement

Before you start:

Make sure you hold the scope steadily to ensure the accuracy.

Purpose:

Mark the top and bottom of the target in the

distance to calculate the distance.

Steps:

1. In the view node, hold to enter the distance measurement mode.
2. Define the target height.
   a) Press to enter the height setting interface.
   b) Press and to select the target from Deer, Wolf, Bear, and Custom.
   c) Press to confirm.
   d) Press and to set the target height.
   e) Press to confirm.
3. Set the top of the target.
   a) Move the thermal scope slightly to place the top mark above the target top.
   b) Press to confirm.

4. Set the bottom of the target after the cursor flash.
   a) Move the thermal scope slightly to place the bottom mark below the target bottom.
   b) Press to confirm.

The distance between you and the target and the height of target will display on the upper left corner of the live view interface.

Note:

Enter the distance measurement interface, press to view the measured distance.

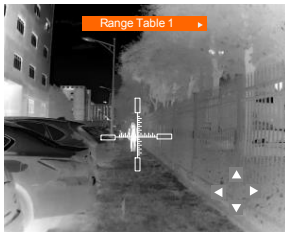
4.3 Range Table Correction

Purpose:

Enable the range table to aim at the target.

Steps:

1. In the view node, hold to show the menu.
2. Select and press to confirm, enter the range table correction interface. A crosshair shows in the center of the view.



3. Press to select the range table type.
4. Set the crosshair position.
   a) Press or to move the cursor to the direction icon: ▲, ▼, ◄, and ►.
   b) Press to move the crosshair.
5. Hold to exit the settings interface.

4.4 Digital Zoom

Press the button in the view mode, the live view will switch between 1× digital zoom, 2× digital zoom, and 4× digital zoom.

4.5 Picture in Picture

Notes:

- If digital zoom is enabled, the PIP view also zooms. If the digital zoom ratio exceeds 2, the PIP does not zoom.
- When you select Upper Right PIP type, the OSD will be blocked.

Purpose:

The device zooms in the central part of the live view, and displays it inside the live view, so that you can see the details.

Steps:

1. In the view node, hold to show the menu.
2. Select and enter PIP mode. The details shows in the upper left corner.
   - When range table is enabled, the PIP view is the detail of crosshair.
   - When range table is not enabled, the PIP view is the detail of central part.
3. Press to switch the PIP type, upper left, upper middle, upper right, and off are selectable.

4. Hold to exit the settings interface.

4.6 Palettes Settings

Press to select different palettes to see the scene in different effects.

White Hot **Black Hot** **Red Hot**

4.7 Image Settings

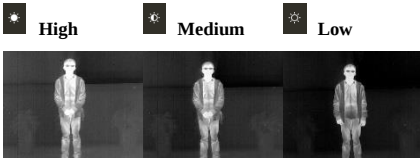
Steps:

1. In the view node, hold to show the menu.
2. Select and press to adjust the image contrast.
3. Select and press to adjust the

image brightness.

Note:

The brightness is for the screen display, here is the example of white hot palette mode.



In black hot mode, the brightness of the image turns in the opposite way.

4.8 Record/Capture

Video Recording

In the view mode, hold for 3 s to record. In the upper left corner, the recording time displays.

After recording the video, hold for 3 s again to stop recording.

Snapshot Capturing

In the view mode, press , the live view freezes for 1 s, and the snapshot is captured.

4.9 Network Configuration

Connect your phone to the Wi-Fi or hot spot of the thermal scope, you can configure the parameters and realize functions of the device.

Wi-Fi

Steps:

1. Hold the button to show the menu of thermal scope.
2. Press the key to enable Wi-Fi function.
3. Setting the Wi-Fi name and password of your phone or the router as follow:
   - Wi-Fi Name: WLAN-IPTP.
   - Wi-Fi Password: abcd1234.
4. Search the “IVMS-4500” on App Store (iOS System) or Google Play ™ (Android

System) to download and install the app.

5. Open the APP and connect your phone with the device. You can view the interface of thermal scope on your phone.

Hot Spot

Steps:

1. Hold the button to show the menu of thermal scope.
2. Press the key to enable hot spot function.
3. Turn on the WLAN and connect to the hot spot.
   - Hot Spot Name: HIK-IPTS Serial No.
   - Hot Spot Password: S + serial No.
4. Search the "IVMS-4500" on App Store (iOS System) or Google Play ™ (Android System) to download and install the app.
5. Open the APP and connect your phone with the device. You can view the interface of thermal scope on your phone.

4.10 DPC

The camera can correct the defective pixels on the screen which are not performing as expected.

Dead Pixel Repair

Purpose:

This function can correct the dead pixel.

Steps:

1. Cover the lens cover.
2. Hold the button to show the menu of thermal scope.
3. Press the key.
4. Press and to select **Dead Pixel Repair**.
5. Press to confirm.

Dead Pixel Restore

Purpose:

This function can restore dead pixel to original statue when the dead pixel repair or camera operation is abnormal.

Steps:

1. Cover the lens cover.
2. Hold the button to show the menu of thermal scope.
3. Press the key.
4. Press and to select **Dead Pixel**

Restore.

5. Press to confirm.

External Correction

Purpose:

This function can correct the image when the displaying is not perform good after long time using.

Steps:

1. Cover the lens cover.
2. Hold the button to show the menu of thermal scope.
3. Press the key.
4. Press and to select **External Correction**.
5. Press to confirm.

4.11 Others

CVBS Output

After connecting the scope to the screen with CVBS cable, call the menu and select **CVBS** and confirm to enable/disable CVBS output.

Reset Device

Select from the menu and confirm to reboot the scope, and restore all parameters to default settings.

Version Information

Select from the menu and confirm to view all the version information.

5 FAQ

Q: The image/crosshair is vague.

A: Perform the diopter adjustment referring to section 3.3.

Q: Wi-Fi is not found.

A: Examine whether the Wi-Fi function is turned on. If not, go to OSD menu and turn on Wi-Fi.

Q: Capturing or recording fails.

A: Examine the items below:

1. Whether the device is connected to your PC and disabled the capturing and recording.
2. Whether the storage space is full.
3. Whether the device is low-battery.

Q: There is no GPS signal.

A: Examine the using environment. If the device receives no signal in indoor environment, please go to outdoor

spaces. It takes about 10 min to power on and search for the signal.

Q: There is no CVBS signal output.

A: Examine the items below:

1. Whether the CVBS connection is loosen.
2. Whether the cable works.
3. Whether the **CVBS** is enabled in the OSD menu.

Q: The PC cannot identify the scope.

A: Examine the items below:

1. Whether the device is connected to your PC with standard USB cable.
2. If you use other USB cables, make sure the cable length is no longer than 1m.
3. Whether the Wi-Fi function is turned on. If so, go to OSD menu and turn off Wi-Fi.

Q: There is no live view.

A: Examine whether the lens cover is removed.

Q: The OLED display is dark.

A: Examine the items below:

1. Whether you turned on the device by holding ⏻ for 3 s.
2. Whether the battery ran out.
3. Whether the batteries are installed oppositely.