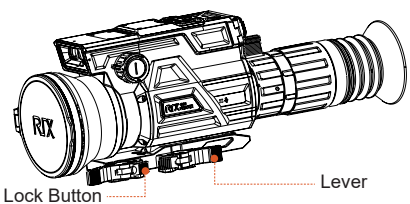
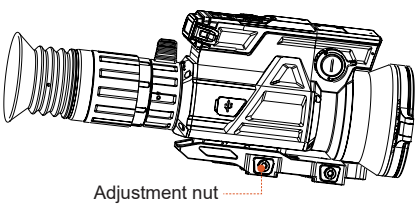
06 PRODUCT INSTALLATION

» Install the assembly onto the rail and move the lever to the locked position.

» Check the tension to close. The correct amount of tension is the maximum amount you apply with one hand to move the lever to a closed position.

» To adjust the tension, move the lever to the open position and use a coin or other tools to rotate the nut to make the necessary adjustment. This process may take a few tries to get it where you want it.

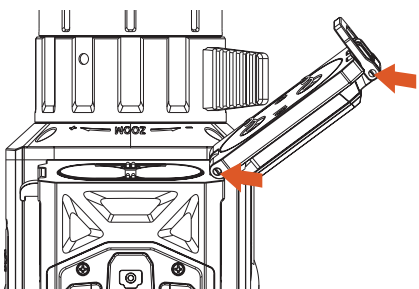




07 BATTERY COMPARTMENT COVER

The DBH D12 comes with 65mm 18650 batteries by default. To use 70mm batteries, please follow these steps to replace the battery compartment cover.

- Open the battery compartment cover to reveal the two screws (as shown in the illustration).
- Use the included screwdriver to remove the two screws.
- Take the spare battery cover from the box, install it, and securely fasten the screws.



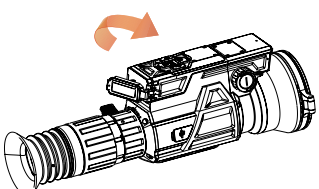
08 POWER SUPPLAY

The DBH D12 is powered by two 18650 replaceable batteries.

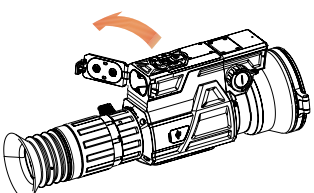
» Open the Battery Compartment: Press the lock to release and open the battery compartment cover.

» Insert Batteries: Place the batteries into the compartment, ensuring the positive (+) ends face inward and the negative (-) ends face outward.

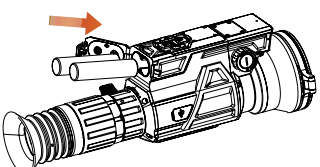
» Secure the Compartment: Align the hook on the clasp and firmly press the battery compartment cover until it clicks into place, ensuring it is securely locked.



Step 1



Step 2



Step 3

08 POWER SUPPLAY

NOTE

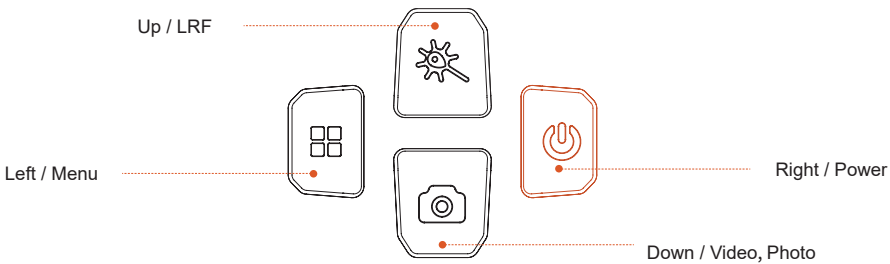
» Battery Orientation: The batteries can be inserted into the compartment in any direction, though it is recommended to place the positive (+) poles inward for optimal performance.

» Battery Maintenance: Remove the batteries if the device will not be used for an extended period. Always ensure the device is completely powered off before removing or replacing the batteries. Avoid using modified or damaged batteries, as they may cause malfunctions or damage to the device.

» Temperature Considerations: A decrease in battery capacity under sub-zero temperatures is normal and not a factory defect. Using the battery at temperatures above 122°F can reduce its lifespan.

» Real-Time Clock (RTC): If the device is not used for an extended period, the RTC will reset. When the device is powered back on, the RTC battery will automatically recharge.

09 BUTTONS OPERATION



09 BUTTONS OPERATION

Current State	Button	Short Press	Press and hold
Powered off	Right	-	Power on the device
Standby	Right	Wake up the device	Wake up the device
Power on	Right	Standby	Shut down
Home interface	Up	Start / Stop distance ranging	Power on / off the LRF
	Left	Open the shortcut menu	Open the main menu
	Down	Start / Stop video recording	Take a photo
	Up+Left	Power on / off laser pointer	-
	Up+Down	Shutter	-
	Up+Right	Ballistic calculation on / off	
Shortcut menu interface	Up	Switch options	-
	Left	Adjust parameters	-

09 BUTTONS OPERATION

Current State	Button	Short Press	Press and hold
Shortcut menu interface	Right	Return to the home interface with saved changes	Shut down
	Down	Switch options	-
Main menu interface	Up	Switch options	-
	Left	Enter / Confirm	-
	Right	Return to the home interface with saved changes	Shut down
	Down	Switch options	-
Playback interface	Up	Rewind the video	Rewind the video continuously
	Left	Start / pause playback	Exit playback interface
	Right	Return to the home interface with saved changes	Shut down

09 BUTTONS OPERATION

Current State	Button	Short Press	Press and hold
Playback interface	Down	Fast-forward the video	Fast-forward the video continuously
Reticle moving interface	Up	Move reticle up / left slowly	Move reticle up / left quickly
	Left	Confirm	
	Right	Return to the home interface with saved changes	Shut down
	Down	Move reticle down / right slowly	Move reticle down/right quickly
Bad pixel correction interface	Up	Move reticle up / left slowly	Move reticle up / left quickly
	Left	Fix / Auto / Save bad pixel	
	Right	Return to the home interface	Shut down
	Down	Move reticle down/right slowly	Move reticle down/right quickly

10 POWER ON / OFF

Powering On

1.Open the objective lens cap.
2.Press and hold the Power button for 3 seconds until the RIX logo appears on the screen.

Powering Off

1.Press and hold the Power button to open the power-off interface.
2.Wait for the 3-second countdown to finish; the device will then shut down completely.

11 STATUS BAR

The status bar is located at the bottom of the screen and displays the status of the scope, from left to right:

1	Zeroing distance:Indicates the active zeroing distance.	7	SD Card Status: Displays when the SD card is full (less than 500MB of capacity remaining).
2	Current Magnification: Displays the magnification level (e.g., 3.0x).	8	Wi-Fi: Indicates Wi-Fi connection status.
3	Palette: Indicates the active color mode (e.g., White Hot).	9	USB: Shows when the USB is connected.
4	Shutter: Status of the device's shutter operation.	10	Battery Level: Green: ≥50%; Yellow: ≥10%; Red: <10%
5	Recoil-Activated Video: Shows whether this feature is active.	11	RTC (Real-Time Clock): Displays the device's clock settings.
6	Microphone: Indicates microphone status.		

12 SHORTCUT FUNCTION

Digital Zoom (Ring)

Rotate the ring to zoom in and out of the image. The status bar provides a real-time display of the corresponding magnification level as you adjust it.

LRF (Press Up button)

1.On the home interface, press and hold Up button to turn on the LRF.
2.Simply press the Up button to start ranging.

Warning
Avoid looking directly into the laser emission window to ensure safety.

12 SHORTCUT FUNCTION

Photo / Video (Press Down button)

Photo Taking

On the home interface, press and hold the Down button to take a photo. A camera icon will appear in the upper left corner of the screen to indicate the action.

Video Recording

On the home interface, press the Down button once to start recording a video. A prompt box showing the recording time in the format HH:MM:SS (hours:minutes:seconds) will appear in the upper left corner. Press the Down button again to stop and save the recording.

12 SHORTCUT FUNCTION

Note:

» Photos and videos are saved to the built-in memory card in the following formats:
Photos: YYYYMMDD_HHMMSS.bmp
Videos: YYYYMMDD_HHMMSS.mp4

» It is recommended to synchronize the device's date and time via the app before using photo or video mode.

» The maximum duration for a single video is 5 minutes. If a video exceeds this limit, the device will automatically start a new file for the remaining footage.

» To download photos or videos, turn on the device and connect it to a computer using the data cable. Open "My Computer" on your desktop, locate the device named "Media," and access the files. To free up storage, delete or transfer media files to an external storage device.

» Always turn off the device properly to prevent damage or corruption of video files.

12 SHORTCUT FUNCTION

Image Correction (Press Up+Down button)

If the image effect becomes worse, you can correct the image effect by pressing the Up and Down button.

Laser pointer (Press Up+Left button)

Press the Up and Left buttons simultaneously to enable or disable the laser pointer. When activated, a green box will appear on the screen to indicate the target point.

Warning
Avoid looking directly into the laser emission window to ensure safety.

Ballistic Calculation (Press Up+Right button)

Enable / disable the ballistic calculation. When enabled, a new marker will appear on the screen to indicate the target.

13 SHORTCUT MENU

On the home interface, press the Left button to open the shortcut menu. Press Up or Down to switch the options, and press Left button to change the setting.

13 SHORTCUT MENU

Scene Settings

Press the Left button to switch between scene modes, which range from 1 to 4. Mode 1 is set as the default.

Palette Settings

Press the Left button to switch palette, and choose from white hot, black hot, red hot, red monochrome, green monochrome. White hot is as the default.

Brightness Settings

Press the Left button to switch image brightness, with a range of 1-10 and 5 as the default.

Contrast Settings

Press the Left button to switch image contrast, with a range of 1-10 and and 5 as the default.

Enhance Settings

Press the Left button to switch image enhancement, with a range of 1-5 and 3 as the default.

14 MAIN MENU

On the home interface, press and hold the Left button to open the main menu. The menu consists of two pages, which can be navigated using the Up or Down button.

Page 1 of the Main Menu

PIP (Picture-in-Picture)

Press the Left button to enable or disable the PIP function. When enabled, the main digital zoom resets to 1x, while the PIP zoom adjusts via the ring.

When the PIP function is enabled, a small window appears on the upper part of the display, magnifying the selected area. This allows users to easily observe target details.

Users can change the type and color of the PIP reticle through menu options.

14 MAIN MENU

Wi-Fi

Press the Left button to toggle the Wi-Fi function. The device can connect to a mobile phone via Wi-Fi. Search for the Wi-Fi network named “DBH D12-xxx” (where "xxx" is the device's serial number) on your phone. Select the network and enter the default password, 12345678, to connect.

Note
The DBH D12 allows customization of the Wi-Fi name and password through the app. To do this, access the Device Parameter interface, and enter a new Wi-Fi name (SSID) and password in the provided text box, submit the changes, and reconnect using the updated credentials.

14 MAIN MENU

File

The file interface allows users to manage images and videos stored on the device efficiently.

● Image: Users can view images in full-screen mode and delete them if necessary.

● Video: Users can play, pause, fast forward, rewind, or delete videos directly from the interface.

LRF (Laser Range Finder)

Easily switch between measurement modes with the Left button:

● Single Mode: Press the Up button once to perform a single distance measurement.

● Continuous Mode: Press the Up button to start continuous distance measurement and press it again to stop.

● Users can change the type and color of the LRF reticle through menu options.

Reticle

Reticle Type

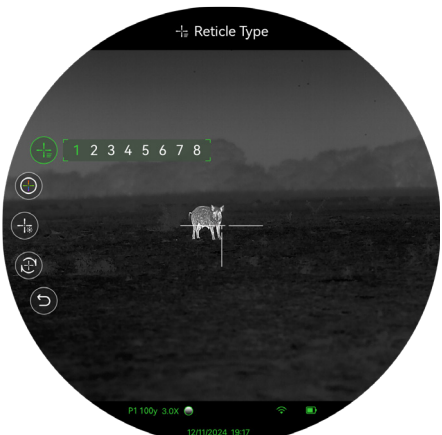
Press the Left button to switch reticle type, with a total of 8 reticle type options available.

Reticle Color

Press the Left button to switch reticle color, with a total of 8 reticle color options available.

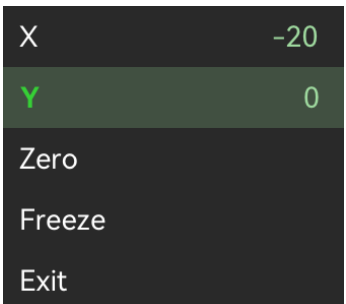
Reticle Brightness

Press the Left button to switch reticle brightness, with a range of 1-3 and 3 as the default.



Reticle Zeroing

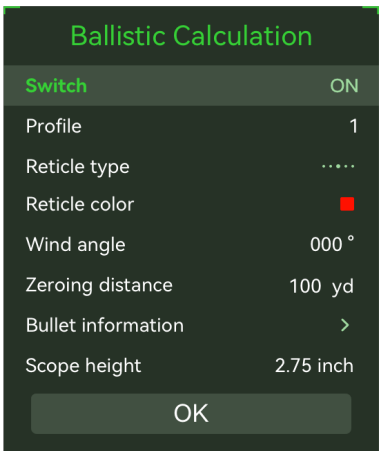
Users can move the reticle positions and quickly center it through this menu. At the same time, the screen can be frozen to make the movement of the reticle more accurate. When finish moving and exit the zeroing menu, the zeroing data is saved.



Ballistic Calculation

The scope offers three types of ballistic markers. When the ballistic calculation function is enabled, users can input ballistic parameters and perform calculations. Once calculated, the screen will display the marker and result. We have provided five sets of profiles for users to use in different scenarios.These parameters can also be accessed via the mobile app.

When the LRF is activated, in single mode, a new result will be calculated based on the measured distance each time, and the reticle will move to the new position. In continuous mode, the distance measurement needs to be stopped first, and then the scope will calculate based on the last measurement result.



Page 2 of the Main Menu

Microphone

Press the Left button to enable or disable the microphone. When enabled, the device captures ambient sound during video recording.

Recoil Activated Video (RAV)

Switch

Press the Left button to enable or disable the RAV function. When enabled, the device automatically records video before and after a recoil event, allowing users to easily capture critical moments.

Time before recoil

Press the Left button to set the pre-recoil recording duration. Options include 5 seconds (default), 10 seconds, and 15 seconds.

Time after recoil

Press the Left button to set the post-recoil recording duration. Options include 5 seconds (default), 10 seconds, and 15 seconds.

> Note
> To prevent video file corruption, always ensure the device is powered off properly.

Anemometer

Press the Left button to enable or disable the anemometer. The anemometer connects via Bluetooth. When enabled, the scope will automatically search for nearby anemometers, indicated by a flashing icon. At this point, turn on the anemometer's Bluetooth switch, and the system will connect automatically. Once the connection is established, the icon will stop flashing, and the wind speed value will appear.

> Note
> The scope can only be paired with a kestrel anemometer.

14 MAIN MENU

Settings

External Video

When enabled, users can view the device's image output on a connected computer.

Auto Shutter

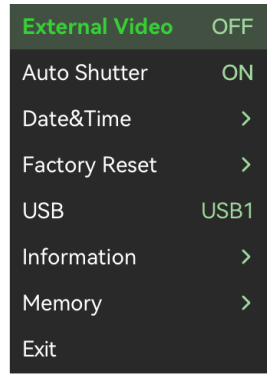
When enable, The scope will automatically perform shutter correction based on the image state.

Date&Time

Users can modify the system's date and time settings. The updated system time will be reflected in the timestamps of photos and videos.

Factory Reset

The device will reset all parameters and settings, and auto reboot.

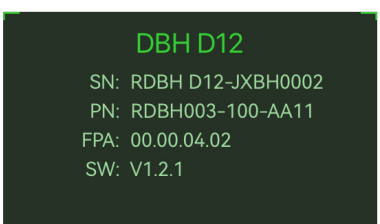


USB

Developer debugging interface.

Information

Show the device information, such like PN, SN, Software.



Memory

The memory interface displays the remaining storage capacity. Users can format the memory and enable the auto-reboot function as needed.

Warning
During a factory reset or memory formatting, ensure the device is not connected to a computer and has at least 50% battery power. Avoid pressing any buttons or shutting down the device until it reboots automatically.

Bad Pixel Correction

When using the device, you may notice pixel defects, such as stable bright or dark spots. The bad pixel correction function allows you to remove these defects.

On the bad pixel correction interface:

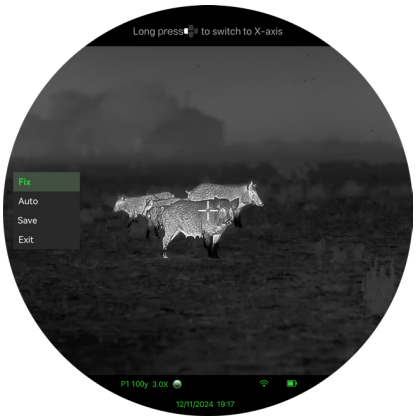
- Press the Up or Down button to move the reticle.
- Press and hold the Left button to switch the reticle direction.
- Press the Left button to perform the desired operation.

1.Fix: Press Left button to fix the pointed pixel.

2.Auto: The device automatically searches for bad pixels and automatically fixes them.

3.Save: Press Left button to save the result and exit the interface.

4.Exit: Press Left button to not save the result and exit the interface.



Laser Pointer

In addition to using the shortcut key to turn on the laser pointer, it can also be turned on or off through the menu options. At the same time, the type and color of the laser pointer reticle can also be adjusted.

15 FIRMWARE UPDATE

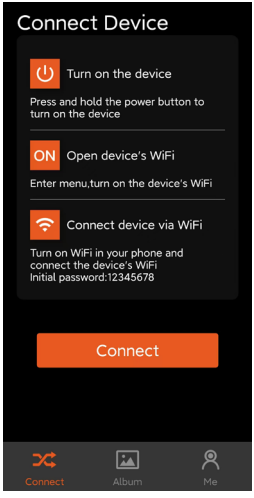
Copy the firmware file to device and reboot, it then detects the firmware file and updates.

16 APP DESCRIPTION

The DBH series comes with a dedicated app. By connecting the device to the app on a mobile phone, you can enjoy real-time image transmission. Download instructions for using the app from the official website (www.rixoptics.com).

Users have the option to update the firmware of the DBH product by utilizing the app or downloading the latest version from www.rixoptics.com.

You can download and install the app from the official website (www.rixoptics.com) or by searching RIX+ in an app store.



RIX+

GET IT ON Google Play

Download on the App Store

17 PRODUCT MAINTENANCE

Prior to using the device, it is important to conduct a thorough technical inspection to ensure the following items are in proper working condition.
To remove dust and dirt from the metal and plastic parts, use a cotton cloth and gently wipe the surface clean.
Make sure that the 18650 battery being used is free from any bulges or deformities and that the plastic cover is undamaged.

18 PRODUCT TROUBLESHOOTING

Refer to the table below, which outlines potential issues that may arise during operation. For any product issues that cannot be remedied or are not listed below, please contact the RIX Optics customer support by visiting our website at www.rixoptics.com or call+1(800) 580-5281.

Fault	Possible Causes	Solutions
The device cannot be started.	The battery is out of charge	Charging
The image quality is poor or the detection range shortens.	These problems are likely to occur when you use the device in harsh weather such as snow, rain and fog.	

18 PRODUCT TROUBLESHOOTING

Fault	Possible Causes	Solutions
The device cannot connect to a mobile phone.	The Wi-Fi password is incorrect.	Enter the correct password
	There are too many Wi-Fi networks in the range of the device, which may cause interference.	For a stable network connection, it is recommended to relocate the device to an area with a lower number of Wi-Fi networks
Wi-Fi signals are lost or interrupted.	The device is beyond Wi-Fi coverage. There is blocking (such as concrete walls) between the device and the receiver	Move the device to a place where you can receive Wi-Fi signals.
When the device is used at a low temperature, the imaging quality is poorer than that at a normal temperature.	At temperatures above 0°C with the temperature rise varies with the observed objects (environment and background)due to different heat conductivity coefficients. As a result, high-temperature contrast occurs and the image quality it better. At low temperatures, the observed targets (background) usually cool down to a similar temperature because of reduced temperature contrast. Therefore, the image quality (details in particular) is poor which is a characteristic of thermal imaging devices.	

19 LEGAL AND REGULATORY INFORMATION

Wireless Transmitter Module Frequency Range

Frequency Range	802.11b/g/n-20MHz: 2.412GHz-2.462GHz
Channel Number	802.11b/g/n-20MHz: 11
Transfer Rate	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 72.2Mbps
Modulation Type	DSSS (802.11b),OFDM(802.11g/n)
Wireless transmitter module power	<20dBm

BT

Frequency Range	2402MHz~2480MHz
Channel Number	79
Bit Rate of Transmitter	1/2/3Mbps
Modulation Type	GFSK, π/4-DQPSK, 8DPSK
Antenna Type	FPC antenna
Antenna Gain	0.83dBi

19 LEGAL AND REGULATORY INFORMATION

BLE

Frequency Range	2402MHz~2480MHz
Channel Number	40
Bit Rate of Transmitter	1Mbps
Modulation Type	GFSK
Antenna Type	FPC antenna
Antenna Gain	0.83dBi

FCC Statement

FCC ID:2A7ZZ-DBH-04

Labeling Requirements

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

19 LEGAL AND REGULATORY INFORMATION

Information To The User

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

EMC Class B

Note: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.

To comply with RF exposure requirements, a minimum separation distance of 0.00 cm must be maintained between the user's body and the handset, including the antenna.

Laser Label

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Tel: +1(800)580-5281
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