

Monocular outdoor thermal image telescope Instruction Manual



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HT-C17 HT-C18 HT-C19

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Preface

Respected users:

How are you! Thank you for purchasing our instrument. In order to use it in a better manner, we remind you to read the instruction for use carefully before use and keep it properly so as to look up in the future use.

Limited Warranty and Limited Responsibility

Share Link Technology Co.,Ltd guarantees that the product enjoys warranty service of one year from the purchase date.

But the warranty is not applicable to fuse and disposable battery or the damage caused by improper operation, accidents, negligence, misuse, remodeling, pollution and abnormal condition of the operation environment.

The distributor has no right to provide any warranty in the name of Share Link Technology Co.,Ltd.

Share Link Technology Co.,Ltd authorizes the retail dealers to provide new products or unused products to final customers but does not authorize them to provide guarantee with wider scope or different contents.Only the products that are purchased through distributors authorized by Share Link Technology Co.,Ltd or products that the purchaser paid according to proper international price can enjoy the warranty support of our company.

When the product bought in a country is sent to another country for repair, support of our company reserves the right to charge the import fees for the parts and components to be repaired or replaced from the purchasers. When warranty service is repaired, please contact the service center authorized by Share Link Technology Co., Ltd to obtain the authorization information for return. Then post the product together with problem description to the service center with postage and insurance expenses prepaid. Our company will not undertake any responsibility for any damage occurred during the process of transportation. The product will be posted to the purchaser after repair with the transportation expenses paid by the purchasers.

If the product failure is verified by negligence, misuse, pollution, change, accidents or improper operation or handling after inspection, including the over voltage failure caused by use without following the rated value stipulated by the product or daily service wear the of the parts, our company will estimate the repair expenses and carry out repair after obtaining the consent of the purchasers. The product will be posted back to the purchaser after repair with the transportation expenses paid by the purchasers.

The guarantee is the only compensation that users can be obtained and does not include other express or implied guarantees. Share Link Technology Co., Ltd will not undertake any responsibility for any special, indirect, accidental or subsequent

damage or loss, including any data loss caused by any reasons or inference.

Because some countries or states do not allow implied warranties and incidental or consequential damages. Restrictions, so the above limitation of liability and regulations may not apply to every buyer. The users shall make promise that they familiarize with the application field and occasion. The purchase indicates that the users are deemed to know the suitability for the products.

Safety Instruction

Please ensure that you have read and understood the safety precautions described in the following text before using the product so that you can operate it correctly.

The safety precautions described in the following text guides you to operate the product and its accessories correctly and safely to avoid damage and loss to you, other people and the device.



Considerations

Please observe the following guide in order not to damage the product:

Don't assemble or dismantle the product without permission.

The product is a type of super precise equipment. Don't try to dismantle, assemble or remodel any part of the product. Repair of the product should be made by technical personnel designated by Share Link Company.

Avoid damage to probe of the product

Note: don't put the product close to strong heat source directly (such as electric iron). Otherwise, it may damage the probe of the product.

Product hum

When the product works, there is light sound of clicking every several seconds. This is normal phenomenon that the lens captures images.



The warning describes the acts that may cause harm to users. Please observe the following operation in order to avoid electric shock or personal injury.

- **If the product case is damaged, don't use it continuously.**
Please contact the local distributors or agents of Share Link under such condition.
- **During the process of use, if the product is found with smoke, spark and the burnt smell, please stop using at once.**
In case of such condition, the product power supply should be powered off first. After the smoke and peculiar smell disappears completely, please contact the local distributors or agents of Share Link.

- **Don't remodel the adapter and the data line.**
Otherwise, such remodeling may cause short circuit or fire.
- **Don't weld the battery without permission.**
Such operation may damage the battery and result in leakage and explosion of the battery.
- **Avoid that the battery is impacted (such as collusion and falling, etc).**
Such condition may damage the battery case or result in that the battery leaks or explode.
- **Please pull off the adapter on the power socket when charging is not made.**
The adapter may get overheated if it is connected with power supply for a long time. This may cause overheating, deformation and fire.
- **Please ensure that the plug of the adapter is inserted into the specified power socket.**
The adapter plug may be different due to the regions. Please make confirmation whether the specification of the adapter is consist with the specification of electric appliances in your region. Otherwise, this may cause overheating of the equipment, electric shock, fire, chemical leakage inside the battery, explosion and other serious consequences.

- **When the plug of the adapter or wire is damaged, stop using immediately.**

Don't change the battery unless the plug of the charger is inserted into the socket completely.

- **Do not touch the electric wire with wet hands.**

It is possible to cause electric shock when touching the electric wire with wet hands. When pulling out the electric wire, hold the electric wire head rightly to pull out the wire. Don't pull off the electric wire directly. Otherwise, the electric wire may be broken, causing electric shock and fire.

- **Forbid dip the product into water caught in rain.**

If the case contact with any liquid, please wipe it dry immediately. If water or other liquid enters the inside of the instrument, please power off the power supply at once. Continuous use may result in product damage.

- **Clean the dust on the adapter plug and the data line.**

When it is exposed to dusty and dump environment for a long time, the dirt surrounding the electric equipment will accumulate moisture. This may cause short circuit and fire.

- **Please use the original adapter of the company to charge the product.**

The use of non-original power supply accessories may cause equipment overheating, electric shot, fire, and leakage of

chemicals inside the battery, explosion and other serious consequences.

- **Don't use abrasant, isopropanol or solvent to clean the enclosure of the device.**

Such operation may cause the product case to be damaged.

- **The product temperature may increase after a long time of charging.**

You may feel scorching heat when the hands touch the sensors.

- **Problem caused by water condensation**

Don't bring the instrument into low temperature environment from high temperature environment in a short time or from low temperature environment to high temperature environment. This may result in that the inside of the instrument and appearance produce water condensation. In such condition, the instrument should be placed into portable box or plastic bag. Before use, make it restore to the environmental temperature and take it out to use. If the product has water condensation inside, please power it off immediately. Otherwise, the instrument may be damaged. Operation is not allowed unless the water condensation disappears.

- **Avoid that the product is impacted (such as collision and falling, etc).**

Such operation may cause the product to be damaged. Please

avoid such operation.

- **Long-time storage and regular charging.**

The product should be placed at a cool and dry environment if it not used for a long time. If the product installed with battery is stored for a long time, charging should be made regularly.

Otherwise, the battery will run out and the service life will be shortened.

Preliminary Acquaintance with Infrared Thermal Imager

For a long time, infrared thermal imaging detection technology has become an important means to ensure Industrial safety in developed countries. The application field includes electric power, metallurgy, petro-chemistry, machinery, coal, traffic, fire control and national defense, etc. It can not only carries out real-time detection at high voltage, high current and high speed operation to perform real-time detection for production and instrument but also need not power off the power supply, stop the machine or stop the production to find the potential problems and prevent occurrence of malfunction. The “non contact” modern detection technology is safe, reliable and quick. It is a type of technical revolution compared with traditional contact detection method.

The infrared thermal imaging technology is widely used in the following fields:

- Power equipment, transmission, transformer line inspection;
- Hidden fire source search in fire protection;
- Personnel search and rescue in the fire, and fire command;
- Analyze the location and heat loss of leak points in heat pipes and heating equipment;
- Determining the location of the heating fault of the operating train;
- Security department night monitoring.

Overview

This product is an infrared camera that integrates surface temperature measurement and real-time thermal image. The traditional inferred thermometer needs to measure every component one by one while it is not necessary for infrared imaging camera, thus saving time. The potential problems may be displayed on color display screen clearly. Moreover, the central point measurement cursor is used to locate quickly and accurately to measure the temperature of the target object.

In order to increase the differentiation, the product is provided with a visible light camera. The thermal images and visible images are stored in the device and can be read through USB or stored in a computer to generate a report or for print.

With small volume, the product is easy to operate and has strong function. It is the ideal selection for electric power, electronic manufacturing, Industrial inspection and other fields.

Cleaning of the Products

Please use damp cloth or weak soap to clean the enclosure of the device. Don't use abrasant, isopropanol or solvent to clean. The lens and screen should be cleaned with use of cleaning agents for professional optical glasses.

Lens Maintenance

Prevent damage of the infrared lens:


- Clean the infrared lens carefully. The lens is provided with refined anti-reflection coating.
- Don't clean with force to prevent damage of the anti-reflection coating. The selectable color palette.
- Use a cleaning solution for lens maintenance, such as alcohol-based commercial lens cleaners, alcohol, and a lint-free cloth or paper towel. Compressed air tanks can be used to remove loose particles.

Clean the lens:

- The compressed air tank or dry nitrogen ion gun (if applicable) may be used to blow the loose particles on the lens surface.
- Dip the lint free cloth in alcohol.
- Squeeze the excessive alcohol in the cloth or apply the lint free cloth on dry cloth lightly.
- Wipe the lens surface by making circular motion. Then discard the cloth.
- If it is necessary to repeat above step, please use new cloth to dip with the cleaning solution to wipe.

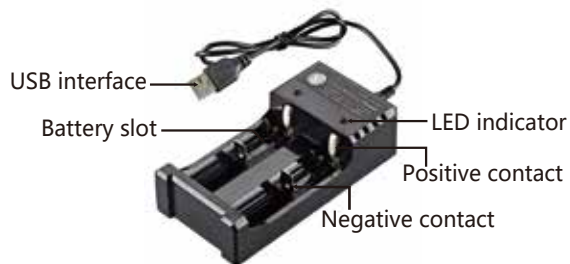
Charging of the Battery and Description

Use USB data line to charge:

- This product has a built-in rechargeable battery.
- When the battery level is low, the top right of the screen will display "  ". Please charge in time through TEPY-C USB interface.
- Pull off the USB line after fully charging.

Use recharge stand to charge:

1. Unscrew the battery cover and take out the batteries.
2. Used the charger from the original manufacturer to charge the batteries. Install the batteries properly according to the polarity as shown on the charger.
3. After it is fully charged, disconnect power supply for the charger, and remove the batteries.

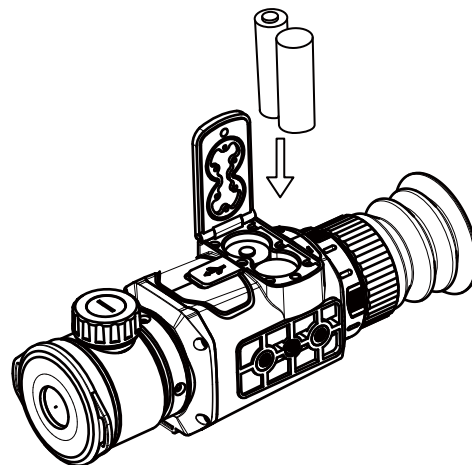


Prompt: When this product lies idle for long, it shall be charged at least every three months to prevent irreversible loss of capacity due to too low battery power arising from its own discharge as it is kept too long.

Installing the Battery

- (1) Turn the battery compartment knob counterclockwise to open the battery compartment cover;
- (2) Install the battery in strict accordance with the positive and negative pole directions of the battery on the battery compartment cover;
- (3) Close the battery compartment cover, and turn the battery compartment knob clockwise until it is locked up.

Note: 1. Please do not use the battery whose insulating layer is damaged; 2. If the battery's positive and negative poles are wrongly connected, the device will be unable to work, and that will damage the battery.



Performance Index

Product model	HT-C17			
Infrared				
Detector type	Amorphous silicon uncooled infrared focal plane			
Resolution ratio	384x288			
Pixel size	17μm			
Focus length	25mm	35mm	54mm	75mm
Field angle	14.9°×11.2°	10.7°×8.0°	6.9°×5.2°	5.0°×3.7°
Work band	8~14μm			
NETD	≤ 40mk@25°C,@F/1.0			
Frame rate	≤50Hz			
Focusing mode	Manual			
Detection range				
Character 1.7mx0.5mx0.3m	417m	583m	900m	1250m
Vehicle 4.5mx2.0mx1.5m	1103m	1544m	2382m	3309m
Perception distance				
Character 1.7mx0.5mx0.3m	1667m	2333m	3600m	5000m
Vehicle 4.5mx2.0mx1.5m	4412m	6176m	9529m	13235m
Display				
Display screen type	OLED			
Resolution ratio	1440×1080			
Display size	0.39inches			
Electronic zoom	1×/2×/4×/8×			

Diopter regulation	±5SD
Palette	White hot, Black hot, Fire hot, Rainbow, Iron red, Cold color
Hot point track	Supported
Picture in picture	Supported
Language	Chinese, traditional Chinese, English, Russian, German
Storage	
Capacity	Built-in 16G EMMC(The system takes up some space and it is 13.8G actually)
Photographing	Supported
recording	Supported
Image/video format	JPG/MP4
Interface	
USB interface	Charging/export image and video
Power	
Detachable rechargeable lithium battery	1400mAh×2(battery model 18350)
General technical index	
Overall power consumption	≤1.8W
Time of endurance	≥5 hours
Work temperature	-20℃ ~ +60℃
Storage temperature	-30℃ ~ +70℃
Impact	≤1000G
Protection grade	IP66
Size/weight	
Product size	198x57.5x64.3mm
Product weight	580g

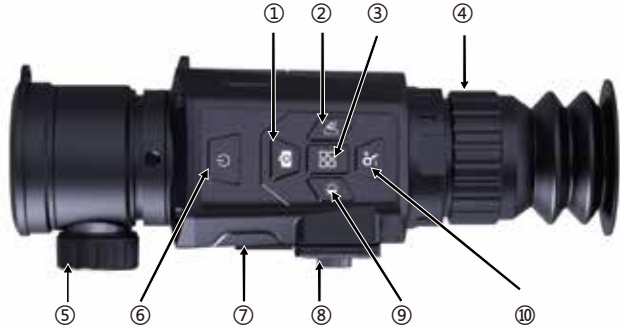
Product model	HT-C18			
Infrared				
Detector type	Vanadium oxide uncooled infrared focal plane			
Resolution ratio	384x288			
Pixel size	12μm			
Focus length	25mm	35mm	54mm	75mm
Field angle	10.5°×7.9°	7.5°×5.7°	4.9°×3.7°	3.5°×2.6°
Work band	8~14μm			
NETD	≤40mk@25°C,@F/1.0			
Frame rate	≤50Hz			
Focusing mode	Manual			
Detection range				
Character 1.7mx0.5mx0.3m	590m	826m	1275m	1771m
Vehicle 4.5mx2.0mx1.5m	1563m	2188m	3375m	4688m
Perception distance				
Character 1.7mx0.5mx0.3m	2361m	3306m	5100m	7083m
Vehicle 4.5mx2.0mx1.5m	6250m	8750m	13500m	18750m
Display				
Display screen type	OLED			
Resolution ratio	1440×1080			
Display size	0.39inches			
Electronic zoom	1×/2×/4×/8×			
Diopter regulation	±5SD			

Palette	White hot, Black hot, Fire hot, Rainbow, Iron red, Cold color
Hot point track	Supported
Picture in picture	Supported
Language	Chinese, traditional Chinese, English, Russian, German
Storage	
Capacity	Built-in 16G EMMC(The system takes up some space and it is 13.8G actually)
Photographing	Supported
recording	Supported
Image/video format	JPG/MP4
Interface	
USB interface	Charging/export image and video
Power	
Detachable rechargeable lithium battery	1400mAh×2(battery model 18350)
General technical index	
Overall power consumption	≤1.8W
Time of endurance	≥5 hours
Work temperature	-20℃ ~ +60℃
Storage temperature	-30℃ ~ +70℃
Impact	≤1000G
Protection grade	IP66
Size/weight	
Product size	198x57.5x64.3mm
Product weight	580g

Product model	HT-C19			
Infrared				
Detector type	Vanadium oxide uncooled infrared focal plane			
Resolution ratio	640×512			
Pixel size	12μm			
Focus length	25mm	35mm	54mm	75mm
Field angle	17.5°×14.0°	12.5°×10.0°	8.1°×6.5°	5.9°×4.7°
Work band	8~14μm			
NETD	≤40mk@25°C,@F/1.0			
Frame rate	≤50Hz			
Focusing mode	Manual			
Detection range				
Character 1.7mx0.5mx0.3m	590m	826m	1275m	1771m
Vehicle 4.5mx2.0mx1.5m	1563m	2188m	3375m	4688m
Perception distance				
Character 1.7mx0.5mx0.3m	2361m	3306m	5100m	7083m
Vehicle 4.5mx2.0mx1.5m	6250m	8750m	13500m	18750m
Display				
Display screen type	OLED			
Resolution ratio	1440×1080			
Display size	0.39inches			
Electronic zoom	1×/2×/4×/8×			
Diopter regulation	±5SD			

Palette	White hot, Black hot, Fire hot, Rainbow, Iron red, Cold color
Hot point track	Supported
Picture in picture	Supported
Language	Chinese, traditional Chinese, English, Russian, German
Storage	
Capacity	Built-in 16G EMMC(The system takes up some space and it is 13.8G actually)
Photographing	Supported
recording	Supported
Image/video format	JPG/MP4
Interface	
USB interface	Charging/export image and video
Power	
Detachable rechargeable lithium battery	1400mAh×2(battery model 18350)
General technical index	
Overall power consumption	≤1.8W
Time of endurance	≥5 hours
Work temperature	-20℃ ~ +60℃
Storage temperature	-30℃ ~ +70℃
Impact	≤1000G
Protection grade	IP66
Size/weight	
Product size	198x57.5x64.3mm
Product weight	580g

Introduction to Product Structure



①	Photographing/ recording/up	②	Pseudocolor/picture in picture/right key
③	Menu/Close UI/enter	④	Diopter adjustment
⑤	Focal length adjustment	⑥	Power/return
⑦	Type-C interface	⑧	Battery compartment
⑨	Brightness/Hot point/ Track/Left key	⑩	Zoom In/Refresh/ Shutter/Down key

Focal length adjustment: Adjust the focus to make the image clearer.

Type-C interface: used for battery charging and connecting the computer to view device photos and video files.

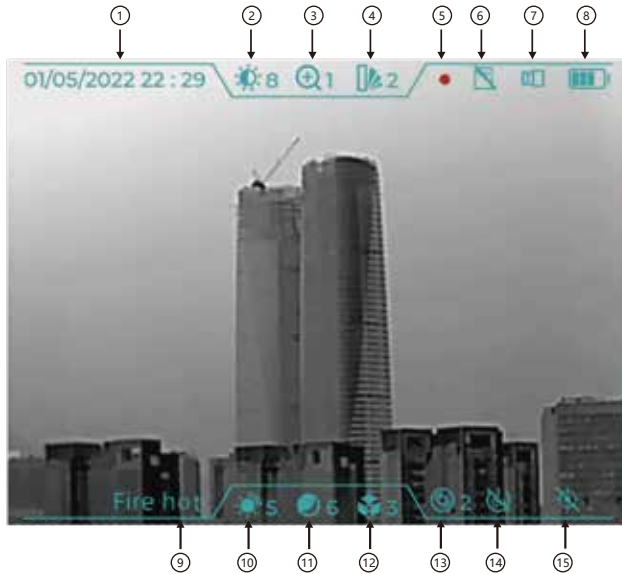
Battery compartment: two detachable 18350 lithium batteries.

Diopter adjustment: Adjust the diopter to make the display screen more clearly.

Key Description

Key/state		Press	Hold down
Power key	Main interface	It can be configure as screen off or freeze frame of picture through the menu.	Pop out the shutdown prompt box to carry out shutdown.
	Menu interface	Return	—
Photo key	Main interface	Photographing	Start recording/ stop recording
	Menu interface	Upward direction	—
Brightness key	Main interface	Brightness adjustment	Hot point tracking
	Menu interface	Leftward direction	—
Zoom in key	Main interface	Zoom in(1x/2x/4x/8x)	Refresh shutter
	Menu interface	Downward direction	—
Pseudocolor key	Main interface	Pseudocolor switching	Open picture in picture/close picture in picture
	Menu interface	Rightward direction	—
Menu key	Main interface	Enter the menu	Open UI display/ close UI display
	Menu interface	Enter	Return

Introduction to Icon of Main Interface



①	Date/Time	②	Screen brightness
③	Zoom in	④	Pseudocolor
⑤	Record	⑥	SD card full
⑦	USB connection	⑧	Battery level
⑨	Pseudocolor name	⑩	Image brightness
⑪	Image contrast	⑫	Scene mode
⑬	Correction method	⑭	Automatic shutdown
⑮	Hot point tracking		

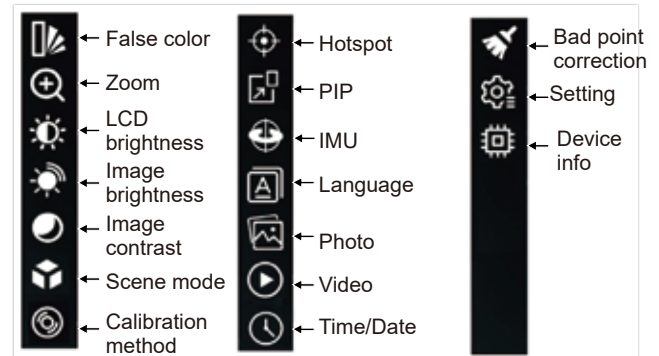
The icons will be displayed in the interface at the following conditions:

recording icon: hold down the recording key to video.

USB connection icon: when the data cable is connected to the computer;

SD card full icon: when the storage space is less than 100M.

Menu Description



False color: White hot, black hot, fire hot, rainbow, iron red, cold color.

Zoom : Electronic amplification 1X, 2X, 4X, 8X.

LCD brightness: The display brightness can be adjusted to 1~10 levels.

Image brightness: The brightness of the infrared image can be adjusted to 1~10 levels.

Image contrast: The contrast of infrared image can be adjusted to 1~10 levels.

Scene mode: The application scene can be set as standard, city or jungle.

Calibration method: The infrared image correction method can be set as manual calibration, automatic calibration and scene calibration.

Hotspot: The hot point tracking of infrared images can be set as on or off.

PIP: The picture in picture function is set as on or off in infrared image mode.

IMU: Pitch angle and roll angle display, set on or off.

Language: Set the language of the device, including simplified Chinese, traditional Chinese, English, Russian and German.

Photo: Photo list, view photos.

Video: Video list, view video.

Time/Date: Set the date (year, month, day) and time (hour, minute), time format (12 hours, 24 hours), and date format (year/month/day, day/month/year, month/day/year).

Bad point correction: HT-C17 refers to automatic correction (operate according to prompts), HT-C18 and HT-C19 refer to manual correction (left, right, up and down navigation keys adjusts the cursor position. The menu key determines to remove bad points and press the power key to return).

Settings: Press the POWER key briefly to configure the video UI, automatic shutdown time, video duration, and picture in picture position.

- Function of pressing the POWER key: can set the POWER (power). Press it for display off or freeze-frame of picture.
- UI configuration of recording: whether the display information of UI interface is provided when to set recording.
- Automatic shutdown time: may set no shutdown, 5 minutes, 10 minutes, 20 minutes, 30 minutes.
- Recording. duration: set the duration of each video file, including 5 minutes, 10 minutes, 20 minutes and 30 minutes;
- Position of picture in picture: Set the position of picture in picture in the center, which can be set as upper right, lower right, lower left and upper left.

Device info: View the model of the device, detector pixel, detector type, screen size, screen pixel, battery capacity, hardware version, firmware version, application version, storage space, etc, and also carry out application update, parameter resetting and formation, etc of the device.

Photos and videos

View photos: In the photos of the menu, open the photo list and press the menu key to view photos. When viewing a photo, press the brightness key to view the previous photo, and press the pseudocolor key to view the next photo.

Photo deletion: In the photo list, press the brightness key to pop up a prompt for deleting photos, and press the menu key to confirm deletion.

View video: In the menu video, open the video list and press the menu key to view the video.

Delete video: In the video list, press the brightness key to pop up a video deletion prompt, and press the menu key to confirm the deletion.

Introduction to Palette

The color palette can be used to change the pseudocolor display of infrared images on the display screen. Some palettes are more suitable for specific applications and can be set as needed.

The palette is divided into six colors: white hot, black hot, fire hot, rainbow, iron red and cold color.

These palettes work best under condition with high thermal contrast, allowing for additional color contrast between high and low temperatures.

Choose the right color palette to display the details of the target

object. For palette colors of rainbow, iron red and cold colors, the coloration outweighs the display colors, which are very suitable for high thermal contrast, and are used to improve the color contrast between high temperature and low temperature. However, white heat and black heat provide uniform linear color. The following pictures are taken from the same object, but with different palettes selected:

