



Scope mounted infra-red night vision



Operating Instructions

For the following models

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Introduction

Congratulations on purchasing a Bestguarder product. Before you start to use the Bestguarder system, please read the user manual carefully to enjoy optimum performance and a long service life. Please keep this manual in a safe place for future reference.

Check whether all the relevant parts are inside the package .

Important information for your safety.

The Bestguarder system operates on 940NM infrared LED technology (and it is invisible to the naked eye).

Never look directly into the infrared LEDs. (or direct the infrared LEDs at any person). Doing so could seriously hurt your eye sight (or others).

Never leave the Bestguarder product un-supervised with persons under the age of 16 years.

The model is powered by a lithium-ion polymer battery pack. Please read carefully the safety information contained in this manual regarding the 18650 Lithium-ion battery used.

Scope Mount Products

There are two option models in the scope mount range for you to choose. The 2.4" LCD and 4.3" LCD. The Bestguarder scope mount device converts your day rifle combo into a night vision system, which is quick and simple to use. .

Every Bestguarder share common features

Suitable for use with any rifle, one minute installation, ultra clear night vision, no need to re-zero, no ambient light required, IR frequency 940nM, video capture to micro SD card, Wi-Fi buddy share feature, 2.4 or 4.3 inch display screen with dimmable back

light, water resistant, can be used both day and night, rechargeable lithium-ion battery, all in one night vision system.

Please read the relevant information regarding your product purchase contained in this instruction manual. Bestguarder scope mount product's viewing ranges expressed are **also** dependant on the scope optic and weather conditions.

Kit Contents

Product items denoted with the model logo, illustrated above, is applicable to that product model only.

Intended use

The products are added **ed** on devices for use with an existing rifle and scope. They are also for use in daylight. During darkness the products will achieve a night vision identification range of **500** metres depending on the model purchased, weather conditions and optic.

Bestguarder does not bear responsibility for the use of this product in countries or territories where the law prohibits its use. It is the sole responsibility of the operator to comply with the laws and regulations of the country or territories where the Bestguarder add on devices are used.

Kit Contents Overview



Kit Components

- 1 x Camera module
- 1 x 32 GB micro SD card
- 1 x Dimmable LCD screen & illuminator module
- 1 x Scope clamp 1 inch (25mm)
- 1 x Scope clamp 30mm
- 1 x Scope sleeve xxm
- 1 x Scope sleeve xxm
- 1 x Carry case
- 1 x Instruction manual
- 1 x Guarantee card

- Varies dependant on the product purchased



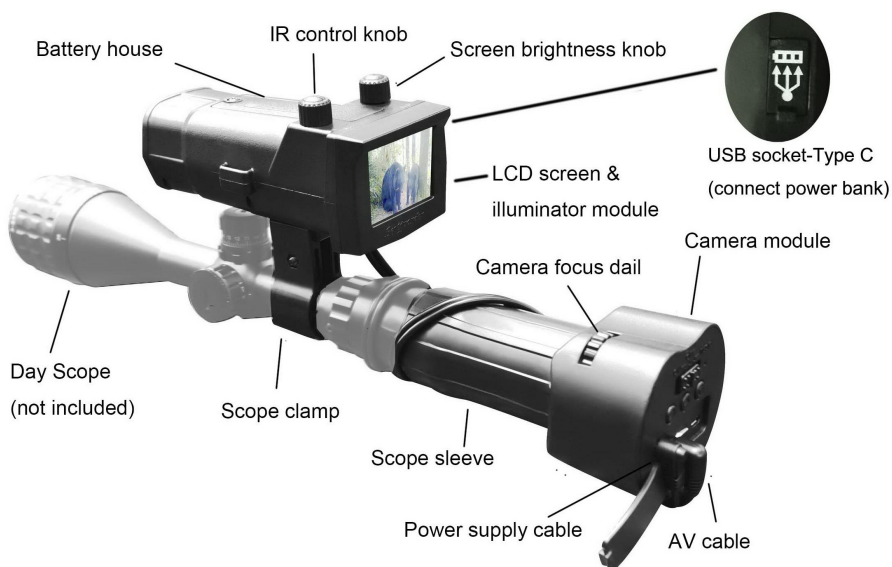
4.3" LCD system



2.4" LCD system



Scope Mount Overview

The LCD has an identification range of up to 150-300 metres depending on your scope with zero ambient light. The LCD allows the user to vary the infra-red light output from zero to maximum smoothly and silently. The range is obtained by the use of the dynamic patented IR lens system. The LCD has a colour module for daytime viewing. In darkness the image appears black and white. The camera has three mode: Photo/Video/Timelapse to recording. The frame resolution is 640 x480. The range has a buddy share feature using WI-Fi. (frequency 2414MHz). This allows for a single user to share the on screen image via a mobile phone or tablet device. The range has an LCD screen dimming feature that can reduces the LCD screen brightness from normal all the way down to off. The LCD support 2-4pcs 18650 batteries (not included), The LCD battery has an operational run time of 10.0 hours, 4.0 Hrs on full IR power..



Technical Specification

	4.3" LCD Screen Product	2.4" LCD Screen Product
LCD	Ratio 16:9	
Lens	Colour IR camera, 1/3 cmos	
IR LED	3pcs 940nM	1pc 940nM
Infrared Cut Filter	Yes	
Dimmable LCD screen	Yes	
LCD	680 x 480	

Distance at full dark night	300 metres dependant on the scope.	150 metres dependant on the scope.
WIFI share	Yes, 2414MHz Ch1	
WIFI password	8-13 bits (digit+letter), Default:12345678	
Picture Size	12MP, 10MP, 8MP, 6MP	
Video Size	1080P , 720P (30FPS),	
Audio Recording	Yes	
Language	English, Germany, France, Spanish, Italian,Russian, Japanese	
Scope Clamps		
Scope Sleeve		
Battery	4pcs * 18650 rechargeable batteries (not included)	2pcs * 18650 rechargeable batteries (not included)
Battery house		
Support power bank	Yes,5V 2.5A, Connect with Type C socket	
Operational run time	up to 15.5Hr approx. (3.5Hrs on max IR)	up to 15.5Hr approx. (3.5Hrs on max IR)
Battery re-charge time	approx: 3.5Hrs.	approx: 3.5Hrs.
Video output	TV:PAL/NTSC	
Micro SD card	Support to 32GB (not included)	
USB	USB:2.0	
Operating Temp.	-10°C - +45°C	
Security	CE,FCC.RoHs	
Weight		638grams (included batteries)

Note

Never connect the LCD screen and illuminator module to any other equipment other than the Bestguarder camera module. Never connect any other equipment to the Bestguarder (AV) socket on the back of the camera module. Failure to do so may result in damage to the Bestguarder equipment and may invalidate the guarantee.

The Bestguarder equipment is not water proof, only water resistant. Always cover the equipment in rainy conditions.

Setting up the Bestguarder Equipment

Step 1

Put in batteries. Fully charge the battery before using the Bestguarder product.

Step 2

Fix the LCD Screen and illuminator module to the scope. Check the size of the rifle scope and select the appropriate clamp from the Bestguarder kit. (1 inch or 30mm)

Remove the fixing bolt from the clamp. Open up the clamp and slid over the scope. Then replace the fixing bolt and knob. Slide the LCD Screen illuminator module into the slot of the clamp. Then tighten the knob until the LCD screen and illuminator module is secure. Check that the LCD screen is facing the eye piece. Do not over tighten the clamp as this may cause strain damage to the clamp.

Step 3

Select a rubber scope sleeve to suit your scope, and place onto the scope eye bell. Push the camera module into the end of the sleeve. For focussing the camera module, please refer to page 11.

Step 4

Connect the power supply cable and AV cable into socket which is in front of the camera module. Camera module **operating instructions are detailed on page 11.**

Step 5

Turn on the Bestguarder system with the button located in front of the camera module.

The LCD screen will power on and the Bestguarder system is in day mode. When in hours of darkness adjust the infra-red LED intensity level by turning the knob on top of the LCD screen & illuminator module clockwise until an image appears on the LCD screen.

Step 6

When in hours of darkness adjust screen brightness level by turning the knob on top of the LCD screen & illuminator module clockwise to darker screen.

CAUTION

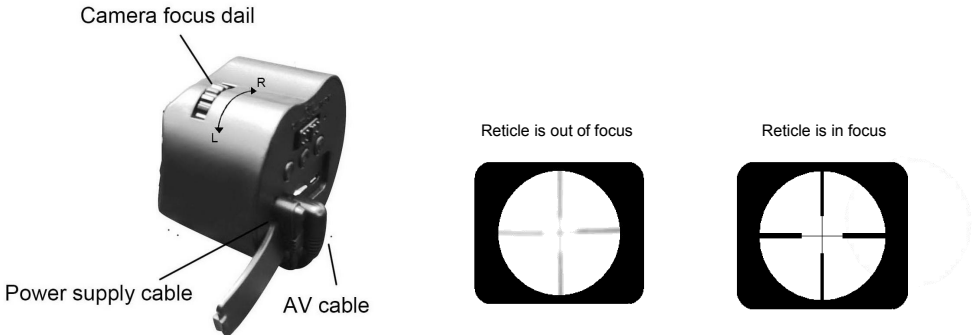
The Bestguarder product must be used adopting a “heads up” shooting position. Please ensure the camera module, when fitted to the scope, is clear of the facial area as the recoil on some rifles may result in the camera module impacting the face.

Camera Module



1. Focussing

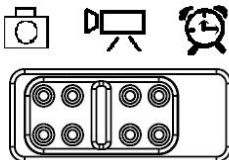
The Bestguarder camera module has a focussing system that allows the user to focus the reticle prior to use while attached to the scope.



The camera module has a unique focussing mechanism. This allows the camera lens to be adjusted via the external focussing dial located on the upper side of the camera module. The user can focus the camera on the rifle scope reticle without removing the camera from the rifle scope sleeve. By turning the focussing dial this turns the lens wheel in the same direction. The Bestguarder camera lens is fully tightened in to the camera so by turning the focussing lens anti-clockwise when using for the first time will focus the camera correctly.

2. Recording

Three mode: Photo/Video/Time lapse(photo only) .



The Bestguarder camera module has the capability to capture all of your favourite moments simply at the push of a button.

1) Before powering the camera module, place the micro SD card into the slot on the face of the camera module. Ensure the micro SD card is fully inserted as failure to do so will prevent recording to the micro SD card.

2) Power the camera module via the button on the face of the camera module. The red light appears steady on the back of the camera unit. The camera is now ready to record.

Photo mode -- Press REC button to take picture

Video mode -- Press REC button once to start and press again to end video

Timelapse mode – Press REC button once, camera is count down 60seconds then start to take photo as setting

On/Off & REC button

The record button is situated above the **Micro SD** card slot on the front of the camera module. Always use the record button to stop recording before turn off the camera module. To view the files that have been captured remove the micro SD card and connect to your PC, laptop or tablet.

On/Off IR mode button

Hold on Down button to turn On/Off IR mode. In IR mode, view on screen is Black and white, recording picture and video in Black and white too. Turn off IR mode, view on screen is color, capture color picture and video.

MENU

Long press Up  button to enter/exit MENU setting

SETUP		SETUP	
Video Size	1080P	Language	EN
Time Lapse		Format	
Date Stamp	OFF	Factory Reset	
Photo Resolution	10M	WIFI Password	
Date & time		System	
OK	Enter	MENU	Back

Video Size	1080P, 720P (30FPS)
Timelapse	Start 00:00 End 00:00 Interval:1/3/5/10/30/60 Mins
Date Stamp	ON/OFF GPS Lng: 000.0000N Lat: 000.0000E
Photo Resolution	12M,10M,8M,6M
Date & Time	YY/MM/DD HH/MM/SS

Language	English, Germany, France, Spanish, Italian,Russian, Japanese
Format	Yes/No
Factory Reset	Yes/No
WIFI Password	Default:12345678
System	VER:00.00.00 (it may update)

Wi-Fi share

The Bestguarder camera module has Wi-Fi capability. This allows one user at a time to tune in and share the image that is seen on the rifle mounted LCD Screen & illuminator module.



The range of the Wi-Fi cabability is aproximately 5-6meters if you are viewing within a vehicle, or up to 15 meters in open areas with a clear line of sight. To use the Wi-Fi feature, firstly download the free Bestguarder application to your device via the App store or Google play store. The name of the application is **Bestguarder player**. Once the application is downloaded then the correct Wi-Fi option has to be selected on the viewing device.(tablet or mobile phone) With holding UP and Down button on camera module to connect WIFI. Select the settings menu on the chosen viewing device, then select the Wi-Fi options. The device will start to search for the Wi-Fi. Wait until the Bestguarder option appears in the menu. The Password is 12345678. Then select the Bestguarder Wi-Fi option. Once selected leave the settings menu and select the Bestguarder Player Application on the device. Add the default password 12345678. It will take a few seconds for the camera module and the device to synchronise.

1) Download "Bestguarder player" Android or IOS APP firstly in the application store of mobile device, and then install it into the mobile device. This app is a free application developed by our company.



2) After the application is successfully installed, a small icon "Bestguarder" will be displayed on the mobile device's screen. (See the right picture)



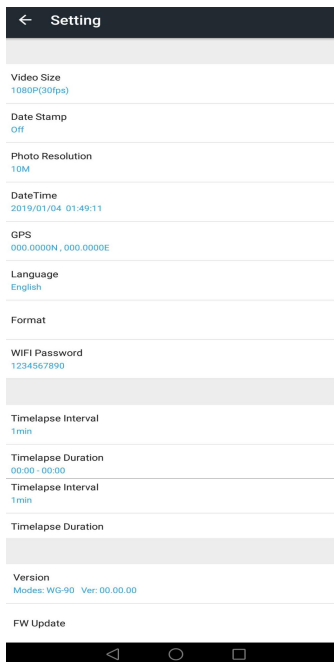
3) Hold "UP"  and "DOWN"  button together on camera module to turn on WIFI

4)Mobile device WIFI connection

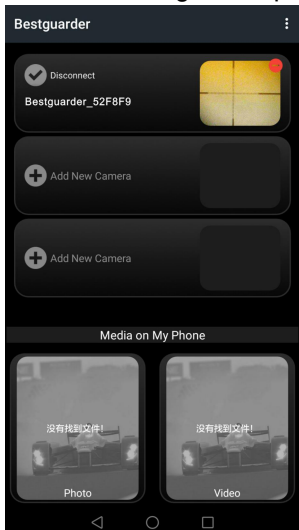
search the device name "Bestguarder_52F8F9" and connect, WIFI password shows on screen(default password: 12345678)



camera module show connecting information on screen



5) Click the Bestguarder Player icon , Click “ADD New Camera” to add a unit and enter Operation interface
Please refer to the following APP operation interface



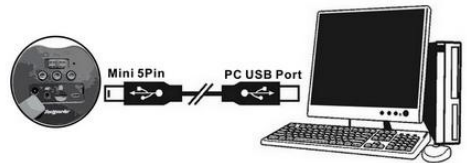
Note

When WIFI is connected successfully, camera module and the APP would be synchronised. Changes on APP will be same on camera module.

USB connect

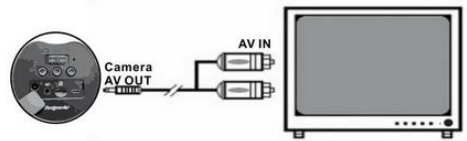
USB connection with the computer
(Refer to the right figure):

The Device must be powered on , use a USB cable to connect the computer. After the success of the connection, you can read, copy, paste, and delete the image in the memory card.



TV connection

Use the TV cable to connect the AV OUT output port, TVOUT can synchronize the video screen to the TV, and you can set or shoot the TV or monitor operation settings.



Selection of battery

The product uses a large-capacity rechargeable lithium-ion battery (18650, 2200mAh/3.7V).

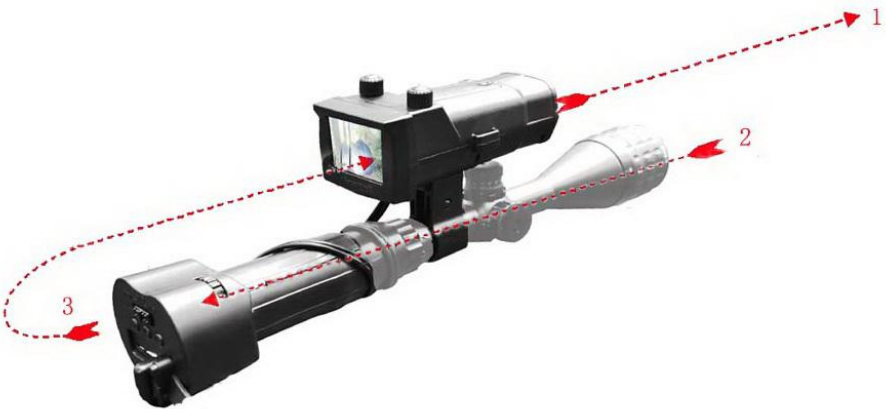
Attention:

- 1, The battery have to be with protruding head for positive electrode
- 2, When charging the battery the first time, it should be charged for 10 hours for the highest battery level.
- 3, Put battery in compartment with correct positive electrode and negative electrode.

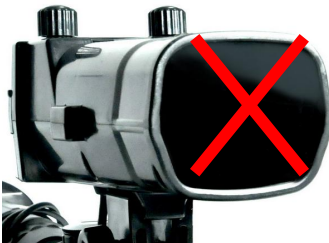


Rifle Scopes and Lens Coatings

The Bestguarder system functions, in night vision mode, with the use of infra-red light. The infra-red light is emitted from the front of the LCD screen & illuminator module. In darkness the Bestguarder system relies on the camera module receiving as much infra-red light through the scope as possible. Some scope manufacturers have a coating that reduces infra-red light passing through the scope optic. This coating improves the image visibility at low ambient light levels. The Bestguarder system is not as effective with scope lenses that have such coatings. To get the best results from the Bestguarder system use a scope that has variable zoom feature with front or side parallax focus capability. Always check the scope manufacturers instruction details prior to fitting the Bestguarder system to ensure you get the best results from the product. For further information please contact customer services.



Harmful emitted infra-red light output, Never look directly



Frequently Asked Questions

The unit is not switching on.	Make sure the battery is fully charged See page 15. Make sure the battery plug is firmly connected to the camera module power socket. See? Make sure the on/off button on the back of the camera module is in the ON position (pushed in)
Does the Bestguarder unit consume power even when the power button Is my Bestguarder water proof?	No. Providing the on/off button on the back of the camera module is in the off position (pushed out) the unit will no longer consume power. No, Bestguarder products are water resistant. Cover the Bestguarder in rainy conditions.
What type of scopes work best with the Bestguarder system?	You get the very best from the Bestguarder system with turn collar zoom and front or side parallax focussing. Also scopes with fewer or no lens coatings that can filter out the infra-red light.
My Bestguarder does not give visibility at night at the ranges specified?	The Bestguarder is dependant on the camera receiving as much reflected infra-red light from the illuminator as possible. Some scopes have special coatings that can filter out the infra-red light thus reducing the range of visibility. Always check your scope manufacturers details.(See page 18 lens coatings).
Will the Bestguarder work in freezing conditions?	Yes. The Bestguarder units have an operating temperature approximately between -10 and 45 degrees centigrade.
Can the Bestguarder withstand the recoil of large calibre rifles?	The Bestguarder product has been successfully tested with 100 rounds consecutively fired from a range of centre fire rifles up to and including a 0.450 calibre rifle without moderators. Springer air rifles are also suitable. Please use the anti recoil clamp shown on page 8.
The rubber scope sleeve does not fit my scope eye piece.	Try warming the scope sleeve in very hot water (boiling is acceptable) This technique will make the sleeve more pliable to fit over most eye pieces.
I cannot mount the scope sleeve on my eyepiece because it's not a perfect circle	Try un-screwing the eye piece to its maximum point. This may create a longer distance for the scope sleeve to grip the scope, then follow the instructions for re-focus the camera module on page 7 & 8.
I cannot get my scope cross hair in focus.	It is likely that the perfect focal point has been missed. Turn the lens fully clockwise until it can be turned no further. Carefully follow the focussing process on page 7 & 8.
The Wi-Fi buddy share is not working.	Turn off and on the camera module and wait for the device to synchronise with the camera module. Also try turning the Wi-Fi off and on again on viewing device.
When I use the zoom feature on my scope the distance I can see is reduced.	This is a normal feature of the Bestguarder system the scope when increasing the magnification is reducing the angle of vision thus reducing the visible light therefore reducing the visible range.
There is no image on my LCD screen when I switch on the unit	Check that the LCD screen dimmer has not been turned down to the off position (fully anticlockwise)

For more Frequently asked questions go to our website at www.Bestguarder.com or visit our Bestguarder Amazon store

Warranty and Cautions

Warranty

Your device is covered by warranty on parts and labor from the date of original purchase, and purchases must be made through the authorized dealer. Warranty period is complying with dealers' legal requirement. The warranty covers defects in workmanship and materials. The warranty does not apply to units, which have been damaged or abused intentionally or unintentionally. A purchase from individuals or unauthorized internet sites such as eBay voids the warranty.

Tampering with or altering the unit will void the warranty. Any unauthorized service will void warranty. A copy of your original sales receipt must be produced for any warranty service.



WARNING:

**Reading User's manual before using it.
Changes or modification to this unit not expressly approved by the party
responsible for compliance could void the user's authority to operate the
equipment.**

Cautions:

- Please install batteries according to shown polarity.
- Please use good quality AA batteries and take out batteries when device will not be used for longer than a few weeks.
- It is recommended to format the Micro SD-card by the camera when used at the first time.
- Keep the device away from any heating and air conditioning vents or other heating devices, direct sunlight, and moisture.
- Always store the unit in its carrying case in a dry well ventilated space in temperature above +15°C(60°F). Do not store near heating devices. Do not store in direct sunlight or high humidity conditions (higher than 70%)

NOTE: This camera is a precision electronic device. Do not attempt to service his camera yourself, as opening or removing covers may expose you to dangerous voltage points or other risks.

FCC 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.

Shielded interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

Specifications and designs are subject to change without any notice or obligation on the part of the manufacturer.



Disposal of Electric and Electronic Equipment

(Applicable in the EU and other European countries with separate collection systems)

This equipment contains electric and/or electronic parts and must therefore not be disposed of as normal household waste. Instead, it should be disposed at the respective collection points for recycling provided by the communities. For you, this is free of charge. If the equipment contains exchangeable (rechargeable) batteries, these too must be removed before and, if necessary, in turn be disposed of according to the relevant regulations (see also the respective comments in this unit's instructions). Further information about the subject is available at your community administration, your local waste collection company, or in the store where you purchased this equipment.



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- 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 assure continued compliance, any changes or modifications not expressly approved by the party.

Responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

This equipment 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.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement.
The device can be used in portable exposure condition without restriction.

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