

BRITE STAR opto-electronics

90° NEST BOX INSPECTION CAMERA
WITH
VIDEO & IMAGE RECORDING

OPERATING MANUAL

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Section 1

SYSTEM DESCRIPTION

90° Nest Box Inspection Camera is a pole mountable video or still image recording camera system. It provides a simple *ground based* method of peeking into nest boxes eliminating the need to carry a ladder into the field. The orange camera tube can be rotated through 360° in its mount providing four viewing perspectives:-

Look up - Look down – Look left – Look right

High power **Cree** light emitting diode on the camera head illuminates inside of the nest box. Live colour video is viewed in real time on the LCD monitor which records either video or still images to a micro SD card. Camera is suitable for use on nest boxes with entry holes larger than 27mm diameter.



1. 90° Nest Box Inspection Camera

- Compact size – lightweight – high visibility
- Attaches to standard extension poles
- 360° Rotating Camera
- Records to μ SD card

The kit is supplied in a protective field case and includes the following:

- Nest Box Inspection Camera with 5 metre cabling
- Hand Control Unit
- LCD Monitor/ Video Recorder with charger
- Micro SD Card
- Protective Carry Case

The Nest Box Camera is not waterproof - do not immerse or use in heavy rain

Section 2

THE LCD VIDEO MONITOR



2. LCD Wireless Video Monitor

ON/OFF Power button is located on the top of the monitor. Press the button briefly to turn the monitor **ON**. **Do not switch ON while connected to charger**. To turn off, hold down the power button 3 seconds until the monitor turns **OFF**.

Monitor is powered from an internal, rechargeable LiOn battery which provides up to 2 hours of run time.

Video monitor should be charged prior to use & recharged as soon as practical after use; charge time approx. 3 hours.

Charging the Video Monitor

Monitor must be turned OFF before charging



- Insert charger lead plug into socket marked “DC 5V”
- Connect Plug Pack charger into power point & switch on
- Charge until the “RED” charge light on Monitor goes out
- Charge led located front left hand top corner on monitor
- Charge time approx, 3 hours

3. Charging the Monitor

Installing the Micro SD Card



Insert the micro SD Card into the slot on the side of the monitor. Correct alignment is indicated by the diagram.

4. Micro SD Card slot

Monitor – Real Time Screen



Icons on the real time screen indicate systems status.

Battery Icon - state of charge

Camera Icon - still image mode (*Camcorder Icon* – video mode)

Date time information

SD Card Icon – SD Card is installed

SD Card “F” – SD Card is full

5. Monitor Real Time Screen

Section 3

USING THE HAND CONTROL

Installing the Batteries

Power for the camera, illuminator and hand control is provided by four AA located in the base of the control handle. A black rotary switch turns the camera and the led illuminator **ON/ OFF**, a red led on top of the hand control indicates when the camera is switched **ON**.

Always replace the four batteries as a complete set. Extreme High Power Lithium AA 1.5 volt batteries are recommended:- **DO NOT USE RECHARGEABLE BATTERIES.**



- Slide off the cap in the direction of the arrow
- Remove the black plastic battery carrier
- Battery polarity is marked on the carrier tray

6. Remove the battery cover



- Load 4 AA lithium batteries into carrier
- Reinstall battery carrier into handle
- Refit battery compartment cover

7. Hand Control, AA battery carrier & compartment cover

Connect Monitor to Hand Control



The video monitor locks onto the back of the hand control.

Position the raised mount connector (on the rear of the hand control) squarely into the widest point of the slot on the back of the video monitor.

Gently slide the monitor downward until it locks into place taking care not to damage the plastic locating lugs.

8. Monitor mounted on Hand Control

Connecting the Nest Box Camera to the hand control

The cable from the Nest Camera must be connected to the Hand Control. Inspect the connector socket & plug to ensure they are clear of dirt or debris.



9. *Align the plug & socket*

- On the hand control, slide the knurled retainer rearward to expose the connector socket
- Align the keyed tongue on the camera cable plug with the slot in the connector socket



10. *Tighten the knurled retainer ring*

- Press the plug into the socket, do not force it
- Slide the knurled retainer forward
- Tighten the knurled retainer finger tight only

Switching the Camera ON or OFF



The black rotary trigger switch, on the Hand Control, turns the camera **ON/ OFF**. The led illuminator comes ON with the camera.

Rotate the switch rearward till it clicks **ON**, the led on top of the hand control glows red, the white led on the camera will be lit.

Rotate the switch forward till it clicks **OFF**, red led will go out.

11. *Camera ON/ OFF & illuminator dimmer Switch*

Section 4

PROGRAMMING THE MONITOR

The **Power** button is located on the top right hand corner of the monitor. Press the **Power** button, the monitor will switch ON & the Real Time screen is displayed.

Programming the Monitor

Programming can be carried out with the Monitor disconnected from the hand control.



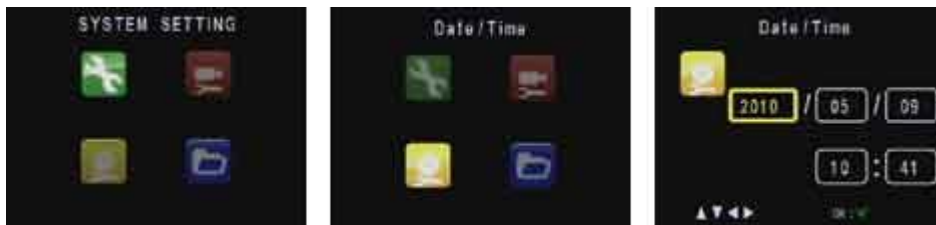
Four buttons are located on the side of the Monitor.

OK – UP – MENU & DOWN.

12. Monitor side control buttons

Hold down the **Menu** button for two seconds and release, the **SYSTEM SETTING** screen will open.

Setting the Date & Time



13. Setting Date & Time

On the **SYSTEM SETTING** screen use the **Down** button to highlight the yellow **Date/Time** option

With the **Date/Time** option highlighted, press **OK** button, the **Date/Time** screen will open.

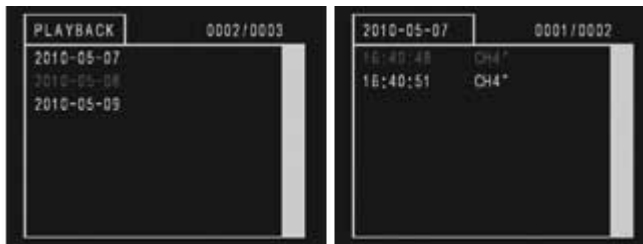
- Year will be highlighted; use **Up Down** buttons to alter the value
- Press **OK** to highlight the month option; use **Up Down** buttons to alter the value
- Repeat above procedure to edit Month – Day – Hour – Minutes options
- Press **Menu** button to return to the **SYSTEM SETTING** screen
- Press **Menu** button again to return to the Real Time screen

Playback images/ video on the Monitor

Previously captured video or still images can be viewed on the monitor; the monitor does not need to be connected to the hand control. Images & videos are stored in folders, folders are identified by the date on which the images were recorded and displayed in *year month date* format. Each folder will contain multiple files; individual files are identified by the time at which they were recorded.

On the real-time screen press the **MENU** button; the PLAYBACK screen will open. A list of folders identified by date is displayed.

Use the **Up Down** buttons to highlight a folder, press **OK** to open the folder.



14. Image & Video Playback

Images are identified by time stamp. Use the **Up Down** buttons to highlight an image press **OK** to display the image. Press **OK** to return to the image list & **Up Down** buttons to select other image.

To exit playback mode, press **Menu** to return to the **PLAYBACK** screen, press **Menu** again to return to the REAL TIME display.

Transfer or view images on a Laptop or PC

The Micro SD card can be read directly by computers with a built in card reader or by using a separate USB SD card reader & the micro to SD card adapter provided. Windows will auto detect & read the card when it is inserted; images can be viewed directly, video can be viewed using Windows Media Player. Images or video files can be copied, drag & dropped directly from the micro SD card to folders on your PC.

Turning the Monitor OFF

Depress & hold down the **Power** button for four seconds, the monitor will switch **OFF**.

Cleaning the Camera Lens

The round lens, below the illuminator Led, can be cleaned using a soft optical lens cleaning cloth lightly moistened with lens cleaning fluid. Use light pressure & **DO NOT SPRAY OR APPLY FLUID DIRECTLY TO THE GLASS LENS.**

Section 5

USING THE INSPECTION CAMERA SYSTEM



Hold the Camera firmly, position pole into threaded port, rotate pole till the Nest Box Camera is well secured to the extension pole.

- On Hand Control - rotate switch to **ON**
- Press Video Monitor power switch, monitor will come **ON**

The red indicator located on the top of the hand control will be lit. The green indicator on the video monitor will be lit with the real time image from the camera visible on the video monitor.

15. Attach the extension pole

- Do not use in areas where electrical shock may occur
- Do not immerse the camera head in fluid or mud
- Avoid using in rain monitor & hand control are not waterproof
- Avoid sharp impacts to the camera head

Select Video or Still Image Record

The default record mode is still image. On the real time display an icon in the top left hand corner of the screen, below the battery icon, displays the current record mode. A square camera icon is shown when **still image** recording is selected and a rectangular camcorder icon when **video recording** is selected. To toggle the record mode, press the **UP** button.

Capturing Photos

On real time display with the camera icon displayed, press the **OK** button to take a single snapshot.

When the SD Card icon displays "**F**" the card is full and should be changed.

Recording Video

On real time display with the camcorder icon displayed, press the **OK** button to start recording. The red hours, minutes, seconds display, lower right of screen, shows the duration of the current recording. A red record icon, centre top of screen shows that recording is in progress.

Press the **OK** button again to stop recording.

Section 6

DISCONTINUING USE

On the Hand Control

- Rotate the camera power switch to **OFF** - the red led will go out
- Disconnect the Camera cable from the hand control unit
- Remove AA batteries during extended periods of storage

On the VIDEO MONITOR

- Depress & hold down the Monitor power button until it turns OFF

Pack the hand control, LCD monitor & camera, as shown, into the recesses provided in the carry case; coil up & pack the camera lead. Do not rest plug on the LCD Monitor.

Carefully close case ensuring that no cabling is jammed & secure the two catches.



16. Packing Procedure

Do not pack the components into the case if the case or the components are wet or damp.

Moisture will be trapped inside the carry case which will lead to corrosion of the electronics when the case is closed and stored.

Avoid using the system if it is raining.

In the event that moisture does enter the case:

- Remove all components from the case
- Leave the case open in a warm dry environment allowing several days for it to fully dry

MOST PROBLEMS ARE BATTERY RELATED

Ensure that the LCD video monitor has been fully charged prior to use. Extreme High Power Lithium AA 1.5 volt batteries are recommended for use in the hand control unit.

If the unit does not operate normally when you follow the instructions indicated in this manual, please refer to the table below or contact Brite Star. Email howard@starweb.com.au

**We take care to make our products simple to operate and relatively “fool proof”.
*This does not mean that they are “idiot proof”.***

PROBLEM	CHECKLIST
White Led illuminator on Camera head is dull	<ul style="list-style-type: none"> • Flat AA batteries hand control • Batteries installed incorrectly
No image visible on the monitor from the camera	<ul style="list-style-type: none"> • Is camera switched ON • Is monitor switched ON • Flat Monitor battery pack - recharge
Poor Image quality	<ul style="list-style-type: none"> • Batteries flat or discharged
	<ul style="list-style-type: none"> • Localised electrical interference
	<ul style="list-style-type: none"> • Camera lens is dirty – clean page 8
<p>Poor image quality may also be due to insufficient light. Nest boxes & tree hollows with dark interiors will absorb light dramatically reducing the effectiveness of the Led illuminator. Never paint the interior of nest boxes with black or dark paint.</p>	
<p>Supplementary light can be added by attaching a small white led torch to the camera head with rubber bands. It should be positioned on the opposite side to the existing leds with its beam facing forward; it does not need to face in the same direction as the lens.</p>	
	<ul style="list-style-type: none"> •