® 1 YEAR WARRANTY

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User's Guide

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Wireless Borescope

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RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:
1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:
1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. The OMEGA® WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; or misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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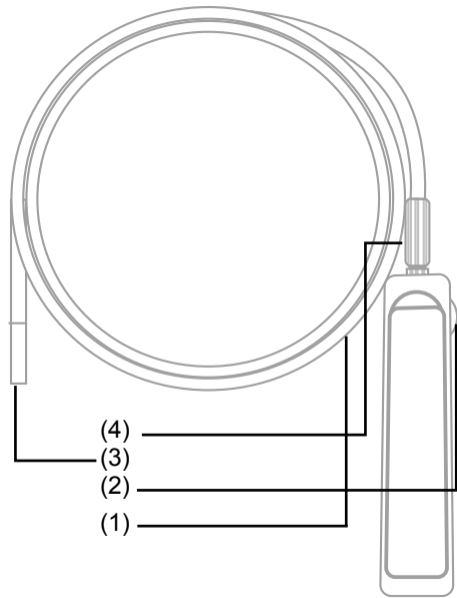
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CONTENTS
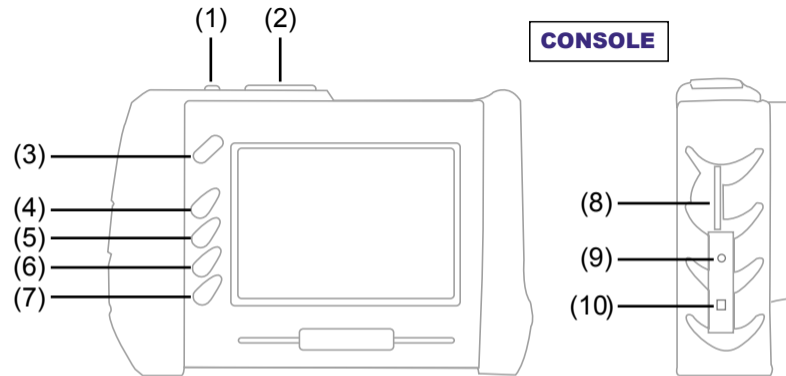
Product Features

Handle/Controller

CONSOLE

1 – Handle

(1) Insert Tube

(2) On/Off Switch & Light
    Source Adjustment

(3) Camera Lens
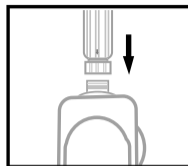
(4) Insert Tube Connector

2 – Console

(1) 📹 RECORD

(2) 📷 SNAP

(3) ⏻ POWER

(4) ▲ PREVIOUS

(5) ▼ NEXT

(6) **OK/MENU**

(7) **ESC**

(8) SD Port

(9) Video Output

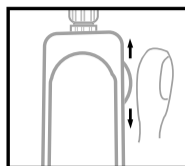(10) AC Jack

(Please read the entire instruction manual before usage)

Before Use

STEP 1 - Insert the insertion tube into the connector according to the direction of the arrow and tighten the screw nut.
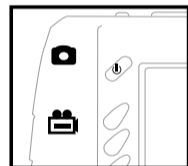
STEP 2 - To activate the insertion tube controller, turn the LED adjustment dial clockwise until you hear a "click" followed by illumination of the adjacent green light.
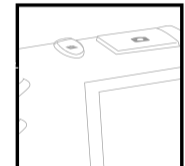
STEP 3 - Press and hold down the ⏻ power button on the console for 3 seconds until the image is displayed on the monitor.

STEP 4 - Aim the camera lens at the selected object. Press ⬛ SNAP to capture a .jpg image, or 🎥 RECORD to begin recording a .asf video.

(Figure.1)

(Figure.2)

(Figure.3)

(Figure.4)

Direct or Wireless transmitting modes

Your **HHB1800** provides two transmitting modes, "Direct Mode" and "Wireless Mode".

»Direct Mode – Simply insert the insertion tube controller into the USB socket located on the back of the console. This will automatically activate the Direct Mode transmitting mode. During Direct Mode, all images are transmitted through the wired socket, not wirelessly. This can be helpful when working in an area where other high frequency wireless equipment is being used because there will be no interference with the video signal.

»Wireless Mode – **HHB1800** also has a built-in wireless transmission function. It will adjust to Wireless Mode automatically once the console and insertion tube controller are separated.

System Modes

The **HHB1800** provides three simple working modes: Preview, Browse and Manual Mode.

Preview Mode	The Preview Mode is activated as soon as the unit is turned on. The image received by the camera is displayed in real time on the video monitor. The user can capture photos and video recordings while in the Preview Mode.
Browse Mode	In Browse Mode, users may view photos and video, and conduct basic file maintainance .
Manual Mode	In Manual Mode, users may customize their set up preferences.

Note: The system returns to Preview Mode automatically after 10 seconds without any response in Manual Model.

Multi-function keys

Each console button performs a unique function depending upon the Mode in which the system is being operated.

Push-Buttons	Preview mode	Browse Mode	Manual Mode
▲	Switch to Browse Mode to view photos and videos.	Move to previous photo or video.	Move upward through the main menu.
▼	Switch to Browse Mode to view photos and videos.	Move to next photo or video.	Move the light bar downward.
OK/MENU	Enter Manual Mode.	Delete photo or video.	Execute selected command.
ESC	Return to Preview Mode.	Return to Preview Mode.	Return to Preview Mode.
📷	Capture a .jpg photos	View the next photo or pause/play video clips.	Display various data for repair
🎥	Start and stop video recording	Return to Preview Mode	Return to Preview Mode

Manual On Screen

The user may press the **OK/MENU** button in Manual Mode to execute desired commands as indicated below.

DELETE ALL
VIDEO OUTPUT
DATE/TIME SETUP
LANGUAGE
VIDEO FORMAT
AUTO POWER OFF

MENU
DELETE ALL
VIDEO OUTPUT
DATE/TIME SETUP
LANGUAGE
VIDEO FORMAT
AUTO POWER OFF

(Figure.5)

DELETE ALL

After initiating this command, select "yes" or "no" by pressing up or down arrow buttons. To delete all, select "yes". Exit by pressing the **OK/MENU** button.

(Figure.6)

ERASE ALL
yes   no
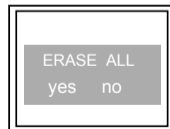
VIDEO OUTPUT

This command will send the video signal out through the AV port.
The monitor will turn black until you execute this command again.

DATE/TIME SETUP

Use the arrow buttons to select Year/Month/Day or Hour/Min/Sec.Press 🖨 RECORDING to increase the number, or press 📷 SNAP to decrease. Select "Display ON" to print the date on the photo.

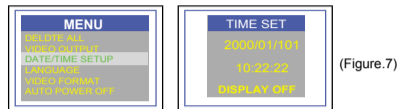| MENU |
| --- |
| DELDTE ALL |
| VIDEO OUTPUT |
| DATE/TIME SETUP |
| LANGUAGE |
| VIDEO FORMAT |
| AUTO POWER OFF |

TIME SET
2000/01/101
10:22:22
DISPLAY OFF

(Figure.7)

LANGUAGE

Use this command to select the desired language.

MENU
DELDTE ALL
VIDEO OUTPUT
DATE/TIME SETUP
LANGUAGE
VIDEO FORMAT
AUTO POWER OFF

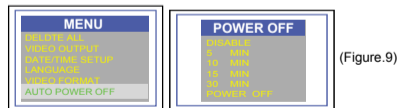| LANGUAGE |
| --- |
| ENGLISH |
| 日本語 |
| ESPANOL |
| ITALIAN |

(Figure.8)

VIDEO FORMAT

Set up your video format.

AUTO POWER OFF

Set the auto power off feature to your desired length of time.

MENU
DELDTE ALL
VIDEO OUTPUT
DATE/TIME SETUP
LANGUAGE
VIDEO FORMAT
AUTO POWER OFF

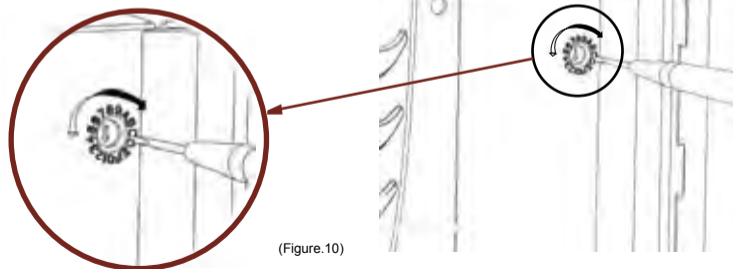| POWER OFF |
| --- |
| DISABLE |
| 5   MIN |
| 10 MIN |
| 15 MIN |
| 30 MIN |
| POWER OFF |

(Figure.9)

Channel Adjusting

The **HHB1800**'s handle and console must be on the same channel during wireless transmission. Adjust the channel by using a small slotted screw driver following the direction of the arrow sign as shown below. Users may refer to the following table to choose a suitable channel.

| Channel	Arrow Indication	Frequency
1	9,1	2414MHz
2	A,2	2432MHz
3	C,4	2450MHz
4	8,0	2468MHz

(Figure.10)
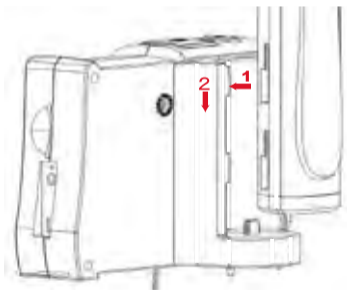
Operating Instructions

Power On/Off

STEP1: To turn the console on, press the ⏻ power button for 3~5 seconds until you see the sign below appear on your monitor.

(▭▭▭▭▭ SD card memory capacity ▭◼ Battery capacity)

STEP2: Press the power button for 3~5 seconds to turn the console off.

(Figure.11)

CAMERA ▭◼◼▭
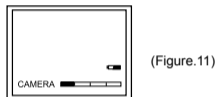
Change from Wireless to Direct Mode

STEP1: Slide the handle into the USB socket as demonstrated in the diagram below.

STEP2: The image may appear fuzzy momentarily while switching from wireless to direct mode.

(Figure.12)

Control Handle Indicator Lights

Light	Indication	Status Description
Green	In use	Working under full battery
Dark Red	Low battery	Please recharge the battery when the dark red light appears during usage
Orange	Charging while in use	Charging while in use
Red	Charging while power off	Charging while power off
None	Full battery (during power-off)	The light dims when the battery is fully charged

Taking Photos

Press 📷 button during Preview mode to take the photo.

Or, continue pressing the 📷 button to show the photo that had just been taken.

Image Status: Returns to preview Mode automatically after photo is taken.

(Figure.13)

Video Recording

1. Press 📹 button to start video recording.

   Image Status: 📹 sign will appear at the left bottom of the screen.

2. Press 📹 button again to stop recording.

   Image Status: 📹 sign disappears.

(Figure.14)

Note: User may return to Preview mode anytime by pressing ▣ button regardless of working under Browse mode or Manual mode.

Viewing photos/videos

1. Press ▲ or ▼ during preview mode.

   Image Status: Display the latest photo/video.

▲ / ▼

(Figure.15)

2. Press ▲ or ▼ again to view the oldest or second to last photo/video.

   Image Status: All files will be stored according to the time sequence of photo capture/video recording.

Note: When viewing videos, the video will be displayed automatically until it ends and then the next photo or video will be displayed.

Setting Time/Date

1.Press **OK/MENU**

2.Press ▲ or ▼ to move to Date/Time command.

3.Press **OK/MENU** to initiate the command.

4.Press ▣ to increase the number or ▣ to decrease.

5.Press ▼ for next adjustment.

6.Repeat step 4 and 5 until the correct time/date are set.

7.Press **OK/MENU** to complete the set up.

(Figure.16)

Setting Time Display

1.Press **OK/MENU**

2.Press ▲ or ▼ to move to "Date/Time" command.

3.Press **OK/MENU**

4.Press ▲ or ▼ for "Display" option.

5.Press ▣ to switch the "Display" function between ON/OFF.

   Image Status: Press ▣ once for ON, press again for OFF.
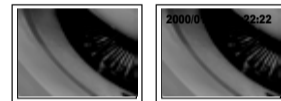
NOT DISPLAY   DISPLAY

(Figure.17)

6. Press **OK/MENU** to complete set up.

7. Press **ESC** to return to Preview mode.

Viewing on a TV monitor

1. Plug the included AV cord into the AV socket located on the right side of the console.

Notice: Please plug the other end of the AV cord into the "AV in" socket on the external monitor.

2.Press **OK/MENU**

3.Press ▲ or ▼ to move to "Video output" option.

4.Press **OK/MENU**

Image Status: image will be transmitted to the external monitor.
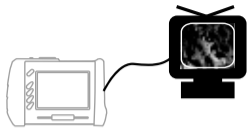
(Figure.18)

Setting video format

1.Press **OK/MENU**

2.Press ▲ or ▼ to move to "Video Format" option.

3.Press **OK/MENU**

4.Press ▲ or ▼ to select NTSC/PAL.

5.Press **OK/MENU**

Deleting a specific photo (Browse mode only)

1. Enter Browse mode, then press ▲ or ▼ to locate the photo or video

   you wish to delete.

2. Press **OK/MENU**

Image Status: "Delete yes or no" options
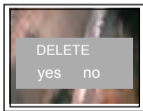
DELETE
yes   no

(Figure.19)

3. To select your option, press ▲ or ▼

   Image Status: The selected option flashes.

4. Press **OK/MENU** to execute your selected option or press **ESC** to cancel.

Deleting all photos

1. Press **OK/MENU** during Preview mode.

   Image Status: Showing the Main Menu

2. Press ▲ or ▼ for "Delete All" command.

3. Press **OK/MENU**

   Image Status: "yes" or "no" option appears

4. Use ▲ or ▼ to select "yes".

5. Press **OK/MENU** to execute.

MENU
DELDTE ALL
VIDEO OUTPUT
DATE/TIME SETUP
LANGUAGE
VIDEO FORMAT
AUTO POWER OFF

ERASE ALL
yes   no

(Figure.20)

Setting auto power off

1.Press **OK/MENU** (during Preview mode.)

2.Press ▲ or ▼ for "Auto power off" command.

3.Press **OK/MENU**

MENU
VIDEO OUTPUT
DATE/TIME SETUP
VIDEO FORMAT
AUTO POWER OFF

POWER OFF
DISABLE
5   MIN
10   MIN
15   MIN
30   MIN
POWER OFF
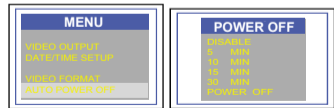
(Figure.21)

4.Press ▲ or ▼ to select desired time length or choose "Disable".

5.Press **OK/MENU**

The console will automatically turn off if it has not been used for this preset length of time.

Re-charging the battery

•*Re-charging the Console battery only*

Plug the adapter into the outlet and plug the power jack into the socket on the console.

•*Combined Console and Handle re-charging*

Insert the handle into the rear slot of the console to re-charge both simultaneously.

•*Re-charging the Handle Controller only*

Connect the handle controller to a PC or Laptop using a standard Mini USB cable for re-charge.

Caution: 1. Turn off the console and handle during re-charging.

2. Ensure the power of PC/Laptop is turned on during re-charging by USB cable.

3. Ignore the "found new hard drive" message during re-charg by USB cable.

Creation of Memory Card Folder

The following information applies to the included SD card only. All photos and videos are stored in the [100MEDIA] folder under the [DCIM] folder. All files will be named according to the time/date setup.

The original setup date 1 Month 1 Date 6:14:23   Name of the file

1 1 0 6 1 4 2 3 .JPG   Month Date Hour: Minute: Second Extension

DCIM   100MEDIA

11061423.JPG

11061435.ASF
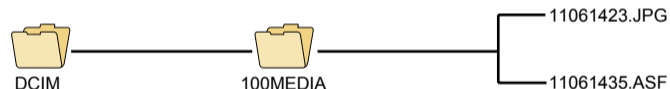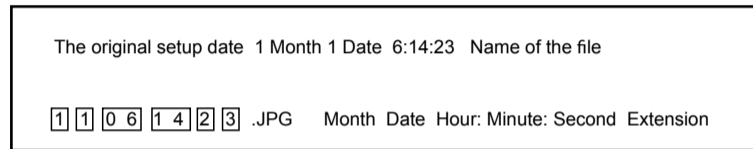
• Users should complete the time/date setup before usage in order to achieve accurate file management.

• The time/date is pre-set to 2007/1/1. Users may identify this when the file name begins with the digits 11.

• File names are not labeled by serial number. They are labeled according to the current time/date.

• Both photos and videos are named in the same way but with different file extensions, .jpg and .asf.

Specifications

Camera System and Insertion Tube	
Insertion tubes diameter	5.5 mm
Rescolution	325(H)*250(V)
Housing	Steel
Light Source	White LED
Length	OBEDIENT 3.3', 6.6', 9.8' (1M, 2M, 3M) SOFT METAL 3.3', 6.6', 9.8', 16.4', 32.8', 98.4' (1M, 2M, 3M, 5M, 10M, 30M)
Field of View	Horizontal field angle 46 º
	Vertical field angle 34º
	Diagonal field angle 56º
Depth of Field (DOF)	0.4" ~ 2.4"
Water Resistant	Only the Insertion tube is water resistant
Working Temperature	32°F to 131°F
Console	
Dimension	139.3 * 34.9 * 31.8 mm
Weight	220g
Wireless Transceiver Frequency	2.4GHz 4channels (2414MHz 2432 MHz 2450MHz 468MHz)
Battery	Rechargeable Li-Polymer battery 3.7V
Brightness Control	Variable
Audio	Integrated microphone

System	
System Dimension	146.9 * 105.4 * 71 mm
System Weight	335g
Power	Battery rechargeable Li-Polymer battery 3.7V power supply AC 100-240V 50-60Hz power consumption DC5.5 1.8A
Display	3.5 TFT LCD QVGA
Recording Medium	1G SD CARD (up to 2G)
Video Out Format	NTSC & PAL
Interface	AV out
Wireless Receiver Frequency	2.4GHz 4channels (2414MHz 2432 MHz 2450MHz 2468MHz)
Compression Format	Compliant with MPEG4
Still Image Storage Format	jpeg (640*480)
Frame Rate	~30 fps
Exposure	Automatic
White Balance	Fixed
S/N Ratio	42dB or more
Language	English // Japanese // German // Spain // French // Italian // Traditional Chinese // Simple Chinese
Recharge Temperature	32°F to 104°F
Working Temperature	-4°F to 140°F
Storage Temperature	-4°F to 140°F

Troubleshooting

1. Unable to turn on the console

   Users will not be able to turn on the console when the battery is very low or empty. Please recharge before use.

2. Can turn on the unit but the image does not appear on the monitor

   Please check the insertion tube connector or simply re-connect the insertion tube to correct the problem.

3. Unable to capture photos/video

   Please check the status of the SD card. Users will not be able to capture photos or video if the SD card is not installed properly or if it is full, write protected or damaged.

Insertion Tube Maintenance

1. To avoid danger, please do not put the insertion tube into any flammable liquid or gas.

2. The insertion tube contains a series of small wires that control the optics and electronics of the camera tip. To ensure long-term reliability, do not bend the insertion tube more than 180 degrees, and always bend the insertion tube in as large an arc as possible during usage and storage.

3. Camera Lens cleaning

   User may clean the camera lens with a cotton swab and small amount of cleaning naphtha

Cautions for Use

- Do not remove the SD card during capturing photos or video. This can cause a loss of the image or video and may damage the SD card.
- Video recording requires an SD card with fast writing speed. We recommend 80X (or above) writing speed SD cards for better video quality.

- The HHB1800 is designed for industrial purposes only. Do not use the system for human or any other biological inspection.
- Do not insert the insertion tube into any flammable gas or liquid (such as a fuel tank) to avoid dangers.
- Do not use the **HHB1800** in a fuel tank or other dangerous environment such as a gasoline or alcohol storage tank.
- Do not use any corrosive liquid for cleaning, such as alcohol.

- Do not try to disassemble the product. This presents a shock hazard and could damage
  the unit.
- Do not bend the insertion tube over 180 degrees rigidly during usage or storage.
- Please use only recommended components or accessories.Unapproved accessories
  and components may cause damage.
- Please do not use the **HHB1800** in a medical facility or on an airplane, as the wireless signal
  may interfere with other critical equipment nearby.
- Avoid direct exposure to sunlight for long periods of time.
- Store the system in a cool, dry and well-ventilated place.