

SeaLife®



Instruction Manual for:

MICRO 2.0 UW CAMERA

Item SL512

micro 2.0 、SL511 、HDV-9B



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I. Package Contents



MICRO 2.0 UW CAMERA
(64GB SL51201)



TV cable (SL51205)



Wrist strap (SL51202)



Wall charger with US plug
(SL51206)



USB adapter (SL51203)



Int'l plug adapters for
UK, EU, AU (SL51207)



USB cable (SL51204)



Camera pouch (SL51208)

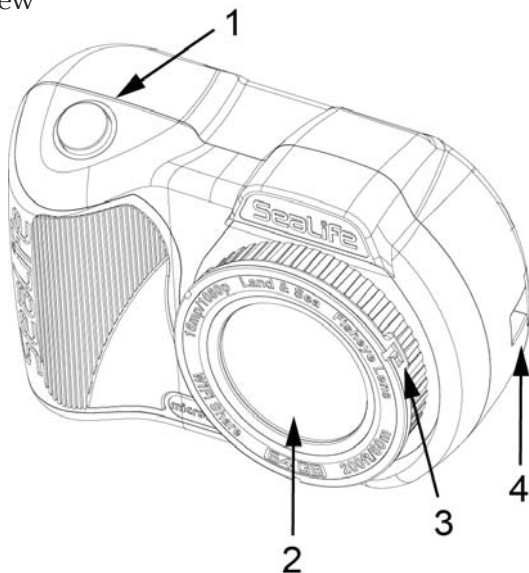
Not shown:

Instruction manual – English (SL51209)

SeaLife Warranty statement

II. Getting to Know Your Camera

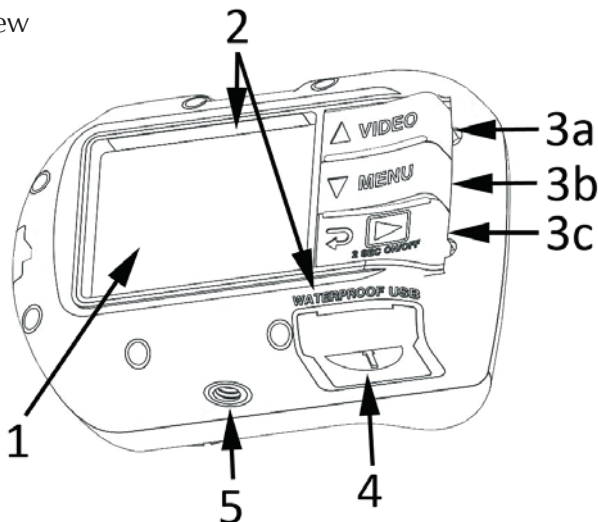
Front view



1. **Shutter button**
2. **Optical glass lens port**
3. **Lens adapter ring** (For attaching close-up lens accessory – sold separately)
4. **Wrist strap connection**

II. Getting to Know Your Camera

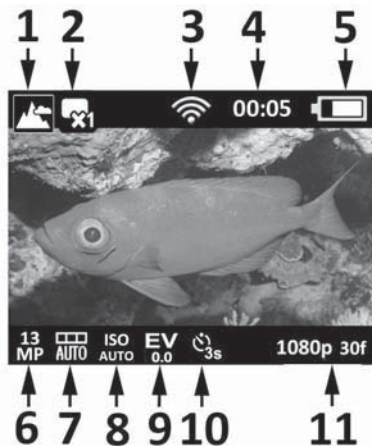
Rear view



1. 2.4" TFT color display
2. Serial # (or located under USB cover)
3. "Piano Key" controls:
 - a. Video (up)
 - b. Menu (down)
 - c. Playback / Power (back 1 step)
4. Waterproof USB contacts (shown w/ USB cover)
5. 1/4-20 tripod accessory mount

II. Getting to Know Your Camera

LCD Display:
Capture Mode



1. Scene modes

- a. Land
- b. Dive
- c. Snorkel
- d. Ext Light
- e. 2 Ext Lights

2. Capture mode

- a. Single
- b. Continuous
- c. Time Lapse
- d. AEB

- 3. Wi-Fi On

4. Timers

- a. 0:00:01 Video record time (H:MM:SS)
- b. 00:05 Time Lapse countdown time (MM:SS)








5. Battery condition

- a. Full power
- b. High power
- c. Medium power
- d. Low power
- e. Near empty

II. Getting to Know Your Camera

LCD Display: Capture Mode






6. Image size resolution

- a.  16MP / 4128 x 3096 / 4:3 / 140°
- b.  14MP / 4128 x 2322 / 3:2 / 130°
- c.  12MP / 3464 x 2598 / 3:2 / 90°
- d.  8MP / 3072 x 2304 / 4:3 / 140°
- e.  7MP / 3072 x 2304 / 4:3 / 140°
- f.  4MP / 2440 x 1832 / 4:3 / 140°
- g.  3MP / 1504 x 1128 / 16:9 / 140°

7. White Balance



- a.  Auto
- b.  Underwater Deep
- c.  Underwater Shallow
- d.  Daylight
- e.  Cloudy

8. ISO value






- a.  Auto
- b.  100
- c.  200
- d.  400
- e.  800

9. Exposure Value (From -2.0 to +2.0 in 0.3 increments)

10. Self-timer or Time Lapse time interval

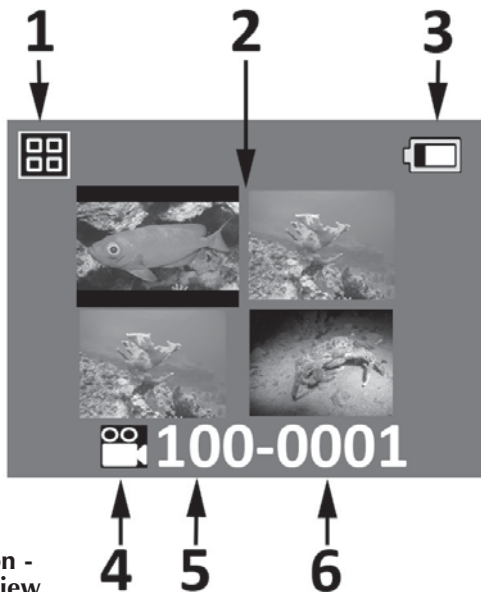
- a.  Self-timer (3s or 10s)
- b.  Time Lapse interval (2s, 5s, 10s, 30s, 1m, 5m or 30m)

11. Video resolution size (with frames per second)

- a.  1296p at 30 fps
- b.  1080p at 60/30 fps
- c.  720p at 120/60/30 fps
- d.  480p at 60/30 fps
- e.  480p at 240/120 fps

II. Getting to Know Your Camera



LCD Display:
Playback Mode
(Thumbnail view)



1.  Playback icon - Thumbnail view

2. Thumbnail images (Maximum 4 per page)

3. Battery condition

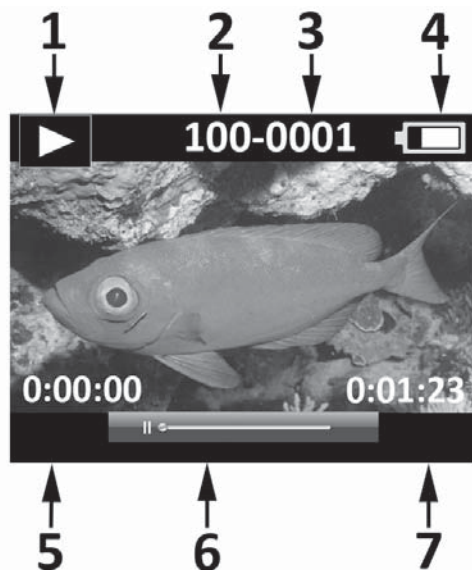
4. File type: a.  Still image b.  Video clip


5. Folder # (100 to 999)

6. File # (0001 to 0999)

II. Getting to Know Your Camera

LCD Display:
Playback Mode
(Single view)

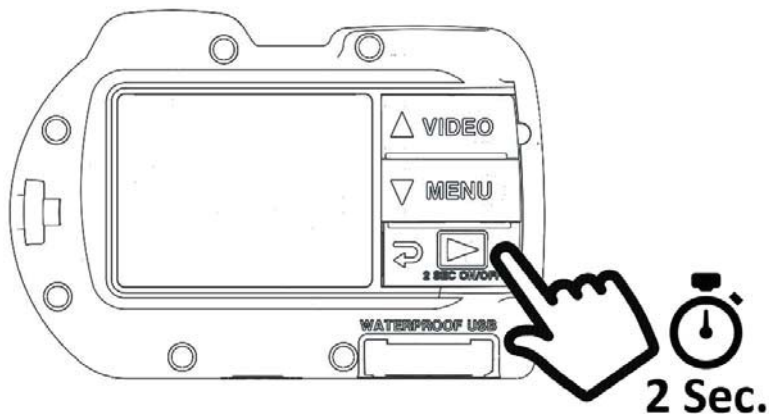


1.  Playback icon - Single image view
2. Folder # (100 to 999)
3. File # (0001 to 0999)
4. Battery condition
5. Elapse time H:MM:SS (video files only)
6. Video status bar (video files only)
7. Total recorded time H:MM:SS (video files only)

III. Basic Camera Operation

Power On:

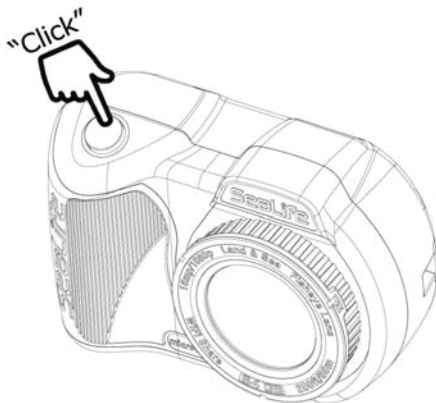
Push and hold bottom button for 2 seconds to power camera ON or OFF.



III. Basic Camera Operation

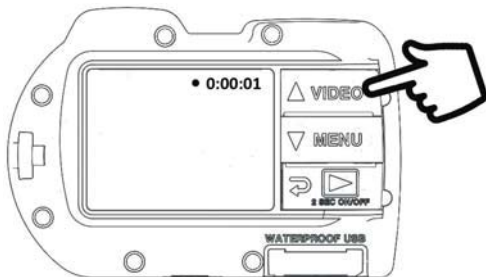
Take a Picture:

Aim, hold camera steady and push shutter button.



Take a Video:

Aim, hold camera steady and push video button to start or stop video recording.



Note:

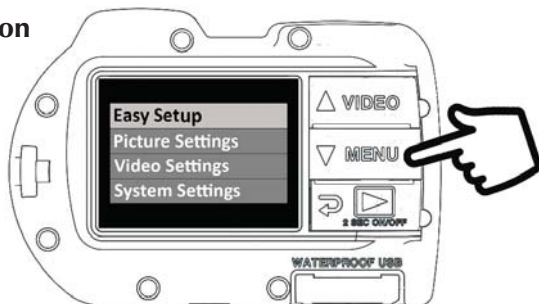
- When video recording is in progress, you will see a red dot with elapse record timer on the top right of the LCD display.
- You can take a 2MP picture while recording video by pushing the shutter button. This feature is not available when recording at 120fps or 240fps video.

III. Basic Camera Operation

Easy Setup:

This on-screen guide will help you set the camera correctly.

1. Push MENU button



2. Push shutter button to select “Easy Setup.”



3. Follow the on-screen guide using the Up (▲ VIDEO) or Down (▼ MENU) buttons to select desired option and Shutter button to confirm setting.

III. Basic Camera Operation

Playback Pictures and Videos:

1. Push Playback button to display thumbnail images.



2. Use the Up (Δ VIDEO) or Down (∇ MENU) buttons to scroll through thumbnails.

3. Push Shutter button to select and display single images/videos.



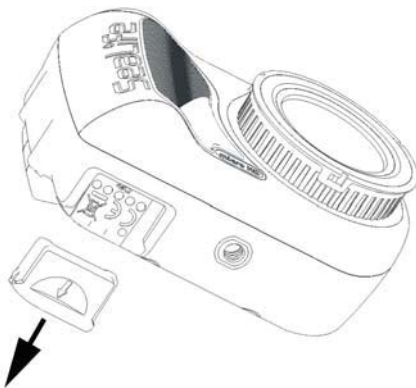
Note:

- Push Shutter button to start or pause playback of video files.
- Use Up (Δ VIDEO) button to increase playback speed or Down (∇ MENU) button to decrease playback speed.
- You can delete an image file by pushing and holding shutter button while in thumbnail view.

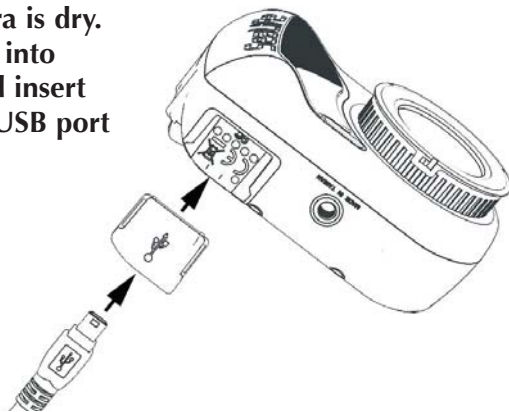
III. Basic Camera Operation

Charge Battery:

1. Remove USB cover.



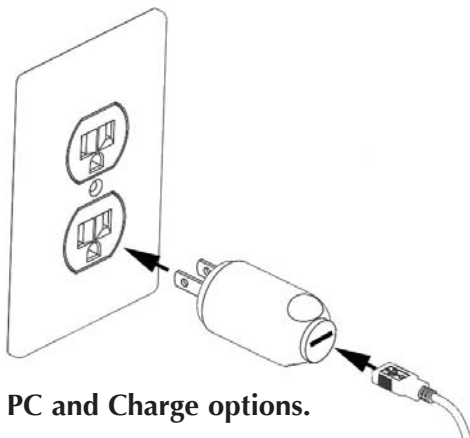
2. Make sure camera is dry.
Insert USB cable into
USB adapter, and insert
into waterproof USB port



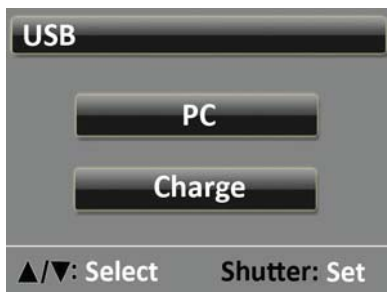
Warning: Dry camera before inserting USB adapter.
USB adapter is not waterproof.

III. Basic Camera Operation

3. Connect other end of the USB cable into the wall charger, and insert wall charger into outlet.



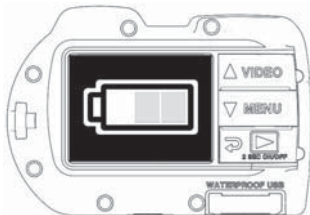
4. The camera will display PC and Charge options.



5. Use the Up (▲ VIDEO) or Down (▼ MENU) buttons to select Charge and push Shutter button to confirm selection.

III. Basic Camera Operation

6. When the camera is charging, the large battery icon in center of display will blink from one to three bars repeatedly. The icon will show three solid bars when the battery is fully charged.



7. After 1 minute of charging, the display will go to sleep in order to save power and charge faster. Push any button to turn on display and see battery charging status.

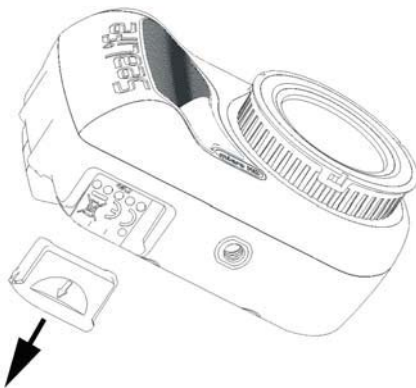
Note:

- After 1 minute, the camera will go into power save mode and display will turn off while camera continues charging.
- Push any button to show battery charging status. Flashing icon means battery is still charging. Solid icon means battery is finished charging.
- The camera may also be charged when connected to a computer USB port; however, charging takes twice as long as charging with wall charger.
- The wall charger may be fitted with one of the 3 international plug types.
- Don't push any buttons while connecting to PC or the camera will not connect.
- See troubleshooting tips on page 47 if camera doesn't connect to charger.

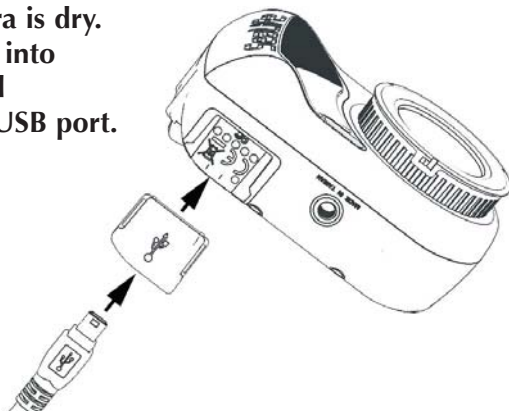
III. Basic Camera Operation

Upload pictures to PC:

1. Remove USB cover.



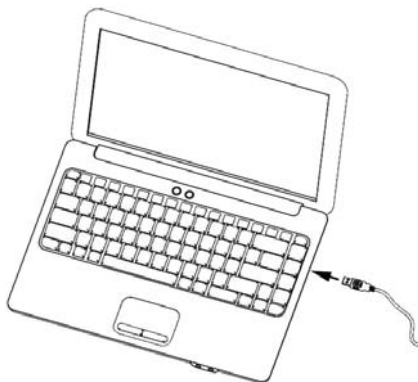
2. Make sure camera is dry.
Insert USB cable into
USB adapter, and
into waterproof USB port.



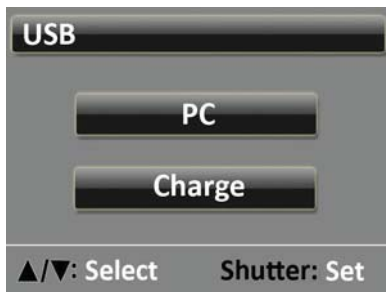
Warning: Dry camera before inserting USB adapter.
USB adapter is not waterproof.

III. Basic Camera Operation

3. Connect other end of the USB cable into computer.



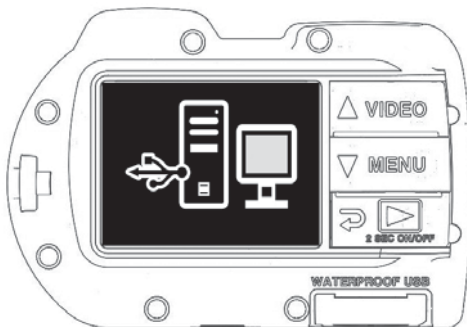
4. The camera will display PC and Charge options.



5. Use the Up (▲ VIDEO) or Down (▼ MENU) buttons to select Charge. Push Shutter button to confirm selection.

III. Basic Camera Operation

6. Display will show PC connection icon for about 1 minute.



For Windows

Click on Windows Start icon and select "My Computer."

Double click on "Removable Disk" icon.

The DCIM folder contains all pictures and videos.

Eject USB device to disconnect camera from computer.

For MAC

Double click on "untitled" or "unlabeled" disk drive icon or your desktop.

The DCIM folder contains all pictures and videos.

Eject USB device to disconnect camera from computer.

Note:

- After 1 minute, the camera will go into power save mode and display will turn off while camera is still connected to PC.
- Push any button to show PC connection icon.
- The battery will keep its charge (not charge or discharge) when connected to a computer USB port.

III. Basic Camera Operation

Note:

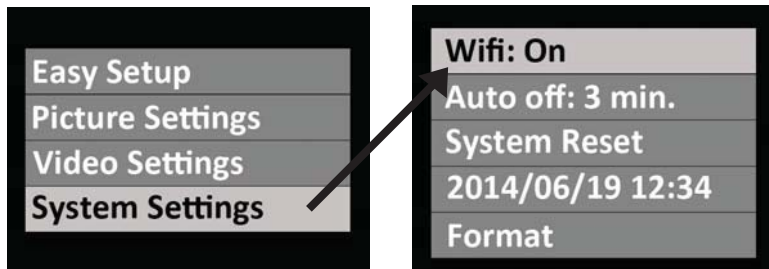
- You may also make USB wired connection directly to a smart phone or tablet provided you have a USB adapter specific to the make / model of your smart device. When connecting the camera directly to an iPad, a USB Power Y-Cable is required to provide additional power to support a USB connection, which is available at most electronic stores
- See troubleshooting tips on page 25 if camera does not connect to PC

IV. WiFi Connection to Smartphone/Tablet

1. Download and install the free “ACTION CAM HD PRO ” app* to your Android or iOS device.



2. In the camera’s “System Settings” menu, turn WiFi setting to “WiFi: On.”

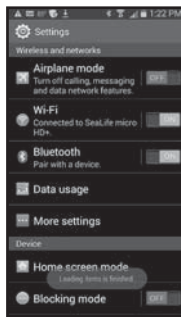


Note:

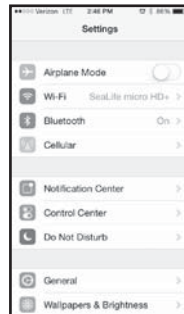
- After turning WiFi ON, please allow 15 to 20 seconds for the WiFi to start up.

IV. WiFi Connection to Smartphone/Tablet

3. On your smartphone (or tablet), select “Settings” icon then select “WiFi.”
4. On the list of available WiFi hotspots, click “MICRO 2.0 UW CAMERA” and enter password 1234567890



Android



Apple

5. Open “ACTION CAM HD PRO” app. Camera will automatically connect to your smartphone.
6. When the camera is connected, the smartphone will show a live preview of what the camera sees.
7. To disconnect WiFi, turn off camera power or select “WiFi: Off” from camera’s Systems Menu.

Note:

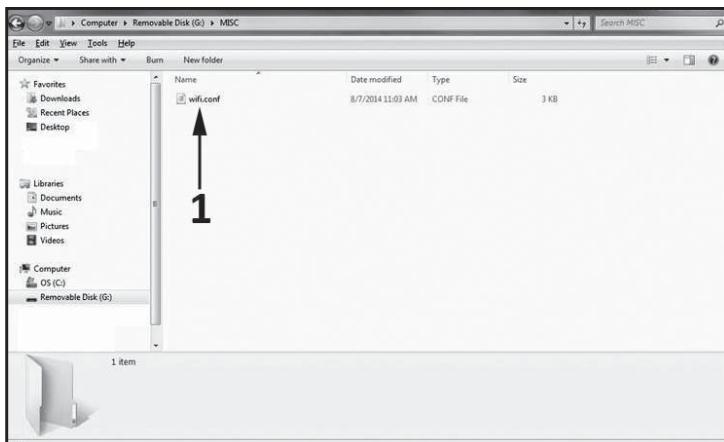
- To change the username and password please refer to page 22.

IV. WiFi Connection to Smartphone/Tablet

Changing ACTION CAM HD PRO username and password (OPTIONAL):

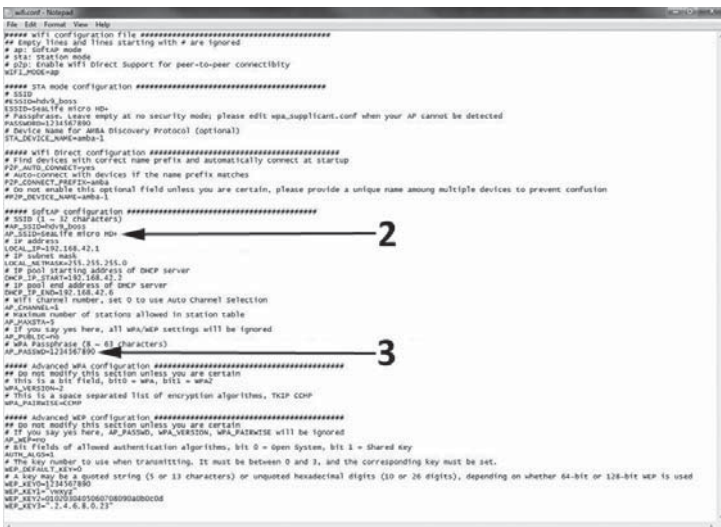
Follow these instructions to change the default username (sealife MICRO 2.0 UW CAMERA) and password (1234567890):

1. **Connect camera to PC using USB cable. See page 16 for instructions on connecting camera to PC.**
2. **Select the “Removable Disk (G:)” drive, double-click the “MISC” folder, and open the “wifi.conf” file (1) with Microsoft Notepad or Mac TextEdit.**



IV. WiFi Connection to Smartphone/Tablet

- Under the section “SoftAP configuration,” change the default username “MICRO 2.0 UW CAMERA” (2) and password “1234567890” (3) to a new username and password of your choice. Username and password must be a minimum of 8 characters and a maximum of 32 characters in length, and may be made up of letters and numbers. Save file after making changes.



```
File Edit Format View Help
===== wpa_supplicant configuration file =====
# Empty lines and lines starting with # are ignored
# ap: SoftAP mode
# sta: station mode
# ctrl: Enable WiFi direct support for peer-to-peer connectivity
WIFI_MODE=ap

===== STA mode configuration =====
# SSID
#ESSID=microwebcam
#ESSID=microwebcam
# Passphrase, leave empty if no security mode; please edit wpa_supplicant.conf when your AP cannot be detected
#PSK=1234567890
# Device name for WPA Discovery Protocol (optional)
STA_DEVICE_NAME=mbn1

===== WiFi Direct configuration =====
# Find devices with correct name prefix and automatically connect at startup
P2P_AUTO_CONNECT=yes
# Auto-connect with devices if the name prefix matches
P2P_CONNECT_PREFIX=mbn1
# Do not enable this optional field unless you are certain, please provide a unique name among multiple devices to prevent confusion
P2P_DEVICE_NAME=mbn1

===== SoftAP configuration =====
# SSID (1 - 32 characters)
AP_SSID=microwebcam
# SSID=microwebcam
# IP pool starting address of DHCP server
LOCAL_IP_START=192.168.42.1
# IP pool ending address of DHCP server
LOCAL_IP_END=192.168.42.1
# IP pool starting address of DHCP server
DHCP_IP_START=192.168.42.2
# IP pool ending address of DHCP server
DHCP_IP_END=192.168.42.2
# WiFi channel number, set 0 to use Auto Channel Selection
AP_CHANNEL=1
# Maximum number of stations allowed in station table
AP_MAX_STA=5
# If you say yes here, all wpa/wpa2 settings will be ignored
AP_FORCE_NO_WPA=no
# WPA Passphrase (8 - 63 characters)
AP_PASSWORD=1234567890

===== Advanced WPA configuration =====
# Do not modify this section unless you are certain
# This is a bit field, bit0 = WPA, bit1 = WPA2
WPA_WPA2=yes
# This is a space separated list of encryption algorithms, TKIP COM
WPA_PAIRWISE=TKIP

===== Advanced WPA configuration =====
# Do not modify this section unless you are certain
# If you say yes here, all WPA/WPA2 settings will be ignored
AP_FORCE_NO_WPA=no
# Bit fields of allowed authentication algorithms, bit 0 = Open System, bit 1 = Shared Key
WPA_AUTH_ALG=0
# The key number to use when transmitting. It must be between 0 and 3, and the corresponding key must be set.
WPA_KEY=1
# A key may be a quoted string (5 or 13 characters) or unquoted hexadecimal digits (10 or 26 digits), depending on whether 64-bit or 128-bit WEP is used
WPA_KEY1="1234567890"
WPA_KEY2="1234567890"
WPA_KEY3="1234567890"
WPA_KEY4="1234567890"
```


V. Care and Maintenance

- Immediately after using camera underwater, soak camera in a fresh water tub for about 10 minutes.
- While holding camera underwater, push each button a few times to rinse out trapped saltwater.
- Dry housing with clean soft towel after removing from fresh water tub. Never let water dry on the lens or LCD window, which can cause water drop stains.
- Do not let camera sit in direct sunlight for prolonged periods of time. Keep camera in a shaded area or under a dry towel.
- Make sure camera is perfectly dry before storage. Store camera in a clean dry area.
- Do not disassemble this product; there are no user-serviceable parts inside and will void warranty.
- Keep camera away from extreme temperatures or prolonged exposure to direct sunlight. Storage temperature range is -20°F to 140°F (-29°C to 60°C).
- For long-term storage, charge battery to about 50%. Storing camera with 0% charge may shorten battery lifespan or permanently damage battery.
- Opening and tampering with the camera will void your warranty.
- Battery may only be replaced by Authorized SeaLife Service Center. Risk of explosion if battery is replaced by incorrect type. Dispose of used batteries according to your local laws.

VI. Troubleshooting

Camera locks up

- In the event the camera locks-up, push the power button and shutter button at the same time to force-off and reset the camera.
- Check SeaLife website for firmware updates:
www.sealife-cameras.com/firmware

Camera not connecting to computer or wall charger

- Gently clean the gold pin contacts on the camera and USB adapter with cotton swab moistened with isopropyl alcohol. You may also use contact cleaner, available at most electronic parts stores. Be careful not to bend the spring contacts on the USB adapter. Do not use pencil eraser or other abrasives to clean the contacts as that will remove the gold plating.
- Check and remove debris that may be obstructing the USB adapter from being fully inserted into the camera's waterproof USB port.
- Reboot computer and try again.
- Try using another USB cable. It's a micro-B type USB cable, which is commonly used with smart phones and other USB devices.
- The USB adapter is not waterproof and needs to be replaced if it got wet.
- Try connecting the camera to a PC or wall charger and pulling back slightly on the adapter. This may be a temporary solution to get a USB connection until the adapter can be replaced.

VI. Troubleshooting

Pictures/videos not sharp or out of focus

- The camera uses a fixed focus lens that is sharp from 12" (30cm) to infinity. Make sure to maintain at least 12" (30cm) distance between the camera and the subject. For close-up shooting distances of 6" to 24" consider purchasing the SeaLife 10X Close-Up lens.
- There are other factors that may contribute to pictures or videos not being sharp. Most common is shooting in low light conditions, which can cause a grainy image or motion blur. Consider purchasing a Sea Dragon external photo-video light ideal for capturing sharp, colorful pictures and videos underwater or in low light conditions.

Downloading Action Cam HD PRO app for iPad

- Search App Store for "Action Cam HD PRO" and select "iPhone Only" from the dropdown menu on the top left of your iPad. The Action Cam HD PRO app is originally designed for iPhones but also works equally well with iPad.

More information

- Check SeaLife website for the latest tips and technical updates: **www.sealife-cameras.com/micro-hd-tips-and-technical-updates**
- For technical support, please contact the USA SeaLife Service Center at **service@sealife-cameras.com** or the SeaLife distributor in your country. A list of distributors is on the SeaLife website: **www.sealife-cameras.com/authorized-dealer-locator**

VII. Spare Parts and Service

We stand behind our product with a pledge to provide superior service to our customers. If your camera needs service or if you need a replacement part, we promise fast, friendly and professional service so you can have your equipment in good working order before your next dive trip.

Parts

To order spare parts, please contact your local SeaLife dealer. Visit the Dealer Locator at www.sealife-cameras.com to find a dealer near you. US residents can also order spare parts online at www.SealifePartsDirect.com

Service

If your SeaLife product is damaged and requires repair service, please follow these important instructions:

1. Visit the Product Updates page located in the Technical Support menu of the sealife-cameras.com website.
2. Check that you have the most recent firmware loaded on your camera. Firmware updates are also available in the Technical Support menu of the sealife-cameras.com website.
3. Contact the dealer from whom you purchased the product. The Dealer Locator page contains a complete list of local dealers that may be able to assist you with trouble shooting your problem.

If none of these options help, please follow the return instructions available on the seaLife-cameras.com website.

VIII. FCC Statement

Applies to SeaLife MICRO 2.0 UW CAMERA (SL512) :

15.105(b)

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.

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 of the device.

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

VIII. IC Statement

Canada, Industry Canada (IC) Notices

This Class B digital apparatus complies with Canadian ICES-003 and RSS-247.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Radio Frequency (RF) Exposure Information

The radiated output power of the Dell Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Dell Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

This device has been evaluated for and shown compliant with the IC Specific Absorption Rate (“SAR”) limits when installed in specific host products operated in portable exposure conditions (antennas are less than 20 centimeters of a person’s body).

This device has been certified for use in Canada. Status of the listing in the Industry Canada’s REL (Radio Equipment List) can be found at the following web address: <http://www.ic.gc.ca/app/sitt/reltel/srch/nwRdSrch.do?lang=eng>

Additional Canadian information on RF exposure also can be found at the following web address: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html>

VIII. FCC Statement

Canada, avis d'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-247.

Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par l'appareil de sans fil Dell est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez l'appareil de sans fil Dell de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce périphérique a été évalué et démontré conforme aux limites SAR (Specific Absorption Rate – Taux d'absorption spécifique) d'IC lorsqu'il est installé dans des produits hôtes particuliers qui fonctionnent dans des conditions d'exposition à des appareils portables (les antennes se situent à moins de 20 centimètres du corps d'une personne).

Ce périphérique est homologué pour l'utilisation au Canada. Pour consulter l'entrée correspondant à l'appareil dans la liste d'équipement radio (REL - Radio Equipment List) d'Industry Canada rendez-vous sur:

<http://www.ic.gc.ca/app/sitt/reltel/srch/nwRdSrch.do?lang=eng>

Pour des informations supplémentaires concernant l'exposition aux RF au Canada rendez-vous sur: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html>