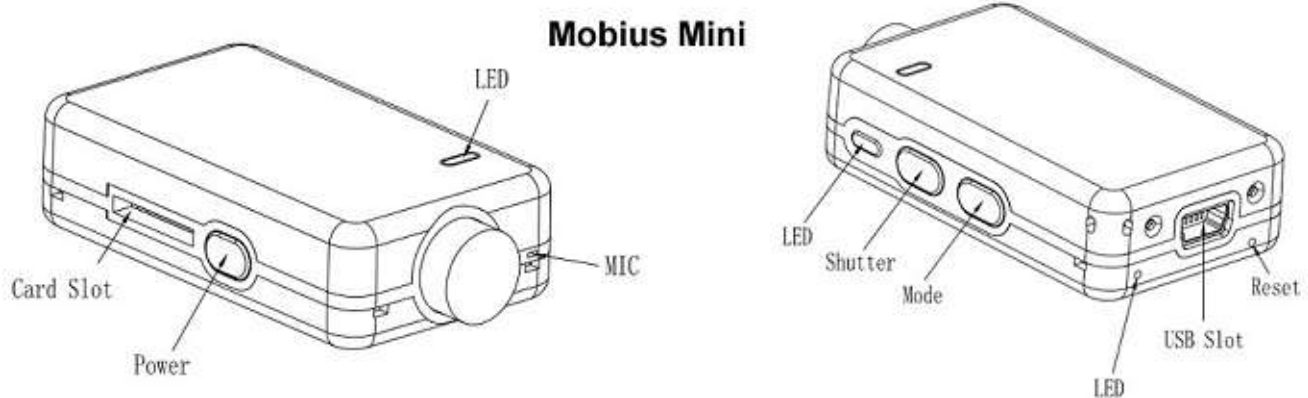


User Guide for the Mobius Mini ActionCam



Description

The above picture shows the arrangement of the user operating features.

- ▶ This manual does not cover replacing the internal battery or lens.
- ▶ This manual assumes the camera is loaded with the latest firmware available at the time of writing. Functionality may vary with earlier or later firmware versions.

Cards

You should always use micro SDHC or Micro SDXC cards with a class rating of 10 or above. The cards may either be formatted as FAT32 or exFAT. Cards with a capacity of 200GB have been tested.

Important: If the firmware detects that the card is too slow (class rating too low), it will decrease the recording speed and/or resolution.

Formatting

Standard formatting tools provided by the operating system are not always reliable and should not be used. In addition, they do not optimize the SD card's performance.

For optimal card performance it is recommended to either use the Windows setup program (mSetup, see below) or use the camera's built-in formatter. Instructions for In-Camera Formatting are outlined below.

In-Camera formatting is also available via the OSD menu.

Another excellent formatting utility is "SD Formatter" which can be downloaded from https://www.sdcard.org/downloads/formatter_4/index.html. This utility has been specifically designed to format SD cards.

In-Camera Formatting

The Camera contains a built-in formatter which should be used to format the SD card.

1. Disconnect the camera and ensure it is turned off.
2. Turn on the camera and wait until it is in one of the Standby modes (steady yellow, blue or red LED).
3. ▶ If the camera was set to auto-record, press the Shutter button to stop the recording.
4. Press and **hold down the Shutter button. DO NOT RELEASE the button.**
5. Very quickly press the Mode button 4 times.
6. ▶ If the LEDs don't start to blink, release the buttons and start over again at 4.
7. The LEDs will blink very quickly while the card is being formatted.
8. Release the Mode and Shutter buttons once the LEDs start to blink (see above).

9. The camera will return to Standby mode when the formatting is finished.

USB connector

The M2 uses a 10 pin Mini USB connector. The connector is compatible with all standard mini USB cables for USB data transfer and charging.

Cables

The camera requires a standard (5-pin) USB cable for charging or connecting to external battery packs for continuous recording. A standard USB cable is also used to connect the camera to the PC in order to set the parameters or to access the camera as an external disk.

A special 10-pin USB cable is required for A/V out (TV-Out, Video-Out)

You must under no circumstances use any other "special" cable, especially the "special" cable supplied with the old #11 808 camera. Doing so will destroy your camera beyond repair. **So, do not use a #11 "special" cable under any circumstances.**

► Always use **HIGH QUALITY** USB cables. Cheap cables may lead to all sorts of problems. If possible, keep the cable as short as possible.

Before you start

Before using the camera for the first time, ensure the internal battery is fully charged. See below under "Charging".

The Reset button

The reset button is in the small hole located below and to the right of the USB Socket (looking at the camera from the rear). It can be pressed by carefully inserting a bent paper clip or similar instrument. The Reset button should only be pressed in case the camera no longer reacts to button presses. Pressing the Reset button will force the processor to restart. No parameter settings will be lost and the RTC (Real Time Clock) will not be interrupted. Do not confuse the reset button with the rear LED below and to the left of the USB socket (looking at the camera from the rear).

The Power button

Press the power button until the LEDs start to blink. After a short while a steady yellow LED is shown. The camera is now ready for use (standby).

- To turn off the camera, first stop any recordings that may be running by pressing the shutter button and then press the power button for about 2 seconds until the camera turns off.

The Mode button

The Mode button enables the camera to be sequentially switched between 3 (4) different modes. Each button press advances to the next mode indicated by the LED color.

- Video Mode 1 (yellow LED). The frame rate and resolution can be individually configured.
- Video Mode 2 (blue LED). The frame rate and resolution can be individually configured.
- Photo Mode (red LED) which also includes Time-Lapse photos.
- Playback Mode (blue LED) only when external monitor (Video-Out/TV-Out) connected.

The Shutter button

Press the shutter button to start or end a video recording or to take a picture.

A word of warning

Never press the Power button together with the Shutter button. Doing so will set the camera in a special 'USB firmware Recovery Mode' and the buttons will no longer react. The only way to exit this mode is to press the Reset button using a small bent paperclip or similar instrument.

LED status indicators

The following LED states are for a camera **not connected** to the PC.

- Steady Yellow - The camera is in Video Mode 1 and is on standby.
- Slowly flashing Yellow (1 sec. On, 1 sec. Off) - The camera is in Video Mode 1 and is recording video. The Video Recording indicator (see configuration) must be ON for this to work.
- Steady Blue - The camera is in Video Mode 2 or Playback Mode (if an A/V cable is connected) and is on standby..
- Slowly flashing Blue (1 sec. On, 1 sec. Off) - The camera is in Video Mode 2 and is recording video. The Video Recording indicator (see configuration) must be ON for this to work.
- Steady Red - The Camera is in Photo Mode.
- One Red/Yellow flash - The camera has taken a picture.
- Steady Green - The battery is charging.

The rear LED

If the camera is configured to show the Recording Indicator, then the rear LED will normally blink in sequence with the main LED while recording or in standby mode.

Connecting the camera to the PC

Make sure a card is inserted and the camera is turned OFF if you want to access the camera as an external device (disk drive, setup). Always connect the camera directly to the PC. Do not use a USB hub.

► You cannot record video or photos if the camera is connected to the PC as an external drive.

Charging

- Connect one end of the supplied standard USB cable to the camera.
- Connect the other end to a USB, 5V DC power source (wall charger, PC or external battery).
- When the yellow LED turns on, **press the Power button** for about two seconds to turn the camera OFF.

When charging, the green LED will be on. It will turn off when the battery is fully charged. Charging takes about 2 hours for a fully discharged battery with the camera turned off and connected to an external USB Charger. Batteries are not covered under warranty. If charged with under-rated chargers or by using a USB hub without an additional power supply, expect longer charging times. For optimum results, the charging voltage should be +5V under load. Only use quality chargers capable of supplying 1000mA (1A) and a stable voltage of at least 5V. Low quality chargers may not be able to supply enough current and can lead to premature battery failure or, in the worst case, even destroy the camera.

A new and fully charged battery will record about 30 minutes of 1080p 60fps videos.

Automatic Power Off from Standby mode

If the camera is in standby mode you must take a picture(s) or start a video recording within *30 seconds. The camera will automatically turn off after *30 seconds of no activity.

*This value can be set using the setup program. Automatic Power Off can also be disabled.

When the special A/V cable is connected, automatic power-off will be disabled. This prevents signal loss during fpv use when the standby time times out.

Turn on Camera

Press the Power button until the LEDs begin to blink. The camera is ready for use once the Yellow LED turns on. .

Turn off Camera

Press and hold the Power Button for about 3 seconds until the LEDs start to flash. The camera will then turn off.

Switching between modes

The camera can be switched between the different modes by pressing the Mode button. Each button click advances the camera to the next mode. Video Mode1 - Video Mode2 - Photo Mode - (*Playback Mode) - Video Mode1 etc.

▶ *If the camera is connected to an external Monitor/TV the camera will enter Playback mode (blue LED) after pressing the Mode button when in Photo mode. See OSD (On Screen Display) Menu below.

Recording Video Mode 1 or 2 (yellow or blue LED)

Start video recording.

- Briefly press the shutter button.
- ▶ If the recording LED has been disabled, the yellow or blue LED will slowly blink 3 times and then turn off, indicating that recording has started.
- ▶ If the recording LED has been enabled, the yellow or blue LED will slowly flash at 2 second intervals indicating that the camera is recording.

Stop video recording.

- Briefly press the shutter button. The camera will return to the standby mode from which the video was started.

Taking a Photo (red LED)

- Briefly press the shutter button. The red LED will flash indicating that a picture was taken.

Removable Disk Mode

- Make sure the camera is turned off and a memory card is inserted.
- Connect the camera to the PC using a standard USB cable. The green LED may turn on at the same time indicating that the battery is charging.
- ▶ If this is the first time you are connecting the camera to the PC the operating system will attempt to install the iCatch drivers. This may take a few minutes.
- The LEDs will blink and after a short while the red LED will turn on.
- The camera is now in Disk Mode and a new removable drive should be available on your computer. The above procedure may take up to 30 seconds.
- ▶ You cannot record video or photos if the camera is connected to the PC in Removable Disk Mode.

Webcam Mode

There are two ways in which you can enter webcam mode.

Method 1:

- Remove the SD card and connect the camera to the PC.
- The camera will connect in webcam mode.
- ▶ If this is the first time you are connecting the camera to the PC the operating system will attempt to install the iCatch drivers. This may take a few minutes.
- If the drivers were installed correctly the camera should now be in USB camera mode.

Method 2:

- Connect the camera to the PC until it is in Removable Disk Mode. See above.
- Very briefly press the Shutter button. The camera will exit Removable Disk Mode.
- ▶ If this is the first time you are connecting the camera to the PC the operating system will attempt to install the iCatch drivers. This may take a few minutes.
- If the drivers were installed correctly the camera should now be in webcam mode.

▶ Note: Windows XP has an integrated WebCam viewer. Your Mobius should be visible in Explorer (My Computer) as a "USB Video Device". This functionality does not exist in Windows 7.

Camera Setup (Configuration)

GUI (Graphical User Interface) configuration - recommended method

On Windows it is recommended to always use the program mSetup.exe to modify the camera's configuration or format the SD card. mSetup communicates directly with the camera and makes configuring the camera a very simple task.

The camera must be in Webcam mode in order to set the parameters. See Webcam Mode, above.

Manual configuration

It is also possible to manually change the configuration settings by using the On Screen Display (OSD) by connecting the camera to an external Monitor/TV. This requires a special cable.

1. Disconnect the camera from the PC and turn it off.
2. Connect the camera to an external monitor/TV using the special cable.
3. Optional. You may also connect the USB plug to a power source. The camera will automatically turn on.
4. Turn on the camera by pressing the Power button until the LEDs begin to blink.
5. Long-press the Shutter button to enter OSD Menu Mode.
6. Briefly press the Shutter button to switch between Recording settings and Basic settings. Ensure that no parameters are highlighted.
7. Briefly press the Mode button to move down the list or the Power button to move up the list.
8. Briefly press the Shutter button to change a parameter value.
9. Use the Mode button or the Power button to move down or up the list (see above).
10. Briefly press the Shutter button to select the value.
11. Long-press the Shutter button to exit OSD Menu Mode and return to Standby Mode.
 - ▶ The meaning of the different buttons are shown on the OSD. Up, Down, Enter
 - ▶ In order to switch between Recording settings and Basic settings make sure no parameters are selected. Use the appropriate buttons to move the selection up or down to the top or the bottom of the list.
 - ▶ Also see OSD (On Screen Display) Menu, below.

Using Software to configure the camera

The Windows program mSetup.exe will automatically configure the camera with the parameters you require (see above). It will also accurately set the camera's date and time or allow you to format the SD card. Detailed instructions can be found in the program by clicking the "Help" button.

The camera must be in Webcam mode in order to set the parameters

OSD (On Screen Display) Menu

Connect the camera to a monitor or TV and then turn it on.

- ▶ Long Press the Shutter button to enter Setup Mode. See above (Camera Setup - Manual configuration).
- ▶ To enter Playback Mode, press the Mode button to cycle from Video Mode1 -> Video Mode2 -> Photo Mode -> Playback Mode.
- ▶ When in Video Mode1, Video Mode2 or Photo Mode double-click the Shutter button to turn the OSD overlay (text/icons) off or on.
- ▶ When in Video Mode1 or Video Mode2 double-click the Mode button to turn the microphone on or off.
- ▶ Playback Mode. Double-click the Mode button to cycle between the Video, Photo and Locked folders
 - Double-click the Mode button to cycle between the Video, Photo and Locked folders
 - Use the Mode (Down) or Power (Up) buttons to select the file to play.
 - In Video Mode, briefly press the Shutter button to play the video. See below (Playback Mode)

- > Video playback)
 - In Photo Mode, double-click the Shutter button to exit Playback mode and return to Video Mode1.
 - Double-click the Shutter button to exit Playback mode and return to Video Mode1.
- ▶ Playback Mode -> Video playback
 - Press the Shutter button to pause/play the video.
 - Press the Power button to fast forward the video.
 - Press the Mode button to reverse the video.
 - Long-press the Shutter button to exit Video playback Mode.
- ▶ In-Camera formatting is also available via the OSD menu.
- ▶ Also see Manual configuration under Camera Setup (Configuration), above

Firmware Update

New firmware versions usually correct issues found in previous versions but often provide new functionality which was not previously available.

Use mSetup (Tools) to automatically update the firmware. This is by far the easiest method.

Manual Firmware Update

DO NOT PRESS ANY BUTTONS during the firmware update process.

There are two methods with which you can update the firmware.

Method 1 without pressing any buttons (recommended method):

- Turn off the camera.
- Connect the camera to the computer and wait until the card is recognized as a Removable Drive.
- Copy the new firmware files into the camera's flash card root folder.
- Disconnect the camera from the computer and wait until it turns off.
- Wait until all the LEDs are turned off.
- Connect the camera to the PC. The green LED, indicating the battery is charging, may turn on. **WAIT**.
- The LEDs will blink rapidly indicating the firmware is being updated. **WAIT**
- The firmware will be updated when the LEDs stop flashing and the camera is recognized as a Removable Drive.
- The firmware file will have been automatically deleted.

Method 2 by pressing the power button :

- Turn off the camera.
- Connect the camera to the computer and wait until the card is recognized as a Removable Drive.
- Copy the new firmware files into the camera's flash card root folder.
- Disconnect the camera from the computer and wait until it turns off.
- Wait until all the LEDs are turned off.
- Turn on the camera and **WAIT**.
- The LEDs will blink rapidly indicating the firmware is being updated. **WAIT**
- The firmware will be updated when the LEDs stop flashing.
- The firmware file will have been automatically deleted.
- The camera is now ready for use.

▶ After updating the firmware the date and time and all parameters will be reset to their default values.

Recording using an external power supply

With the Mobius Mini, it is possible to charge the battery and record at the same time using a standard external USB 5V DC power supply. The power supply may be mains driven (normal household wall plug), or run off batteries, including the car charger USB plug (optional accessory) and cable supplied with the camera.

External USB power supplies usually only use the +5V and the - (Ground) wires. The 2 data wires are normally not used. However, some USB power supplies designed for a specific USB device

may use different wiring schemes and thus may not work with this camera. To avoid possible problems, always use a generic power supply.

For recording video or taking pictures using a standard external power supply connection, the USB power supply can be connected at any time, i.e. before the camera is turned on, before the recording is started, or after the recording has been started.

► Only use a quality chargers capable of supplying 1000mA (1A) and a stable voltage of at least 5V. Low quality chargers may not be able to supply enough current and can lead to premature battery failure or, in the worst case, even destroy the camera.

Additional information

The following functions/parameters need additional explanation:

Turn Audio on off

With the camera turned on and in one of the two video Standby modes (steady yellow or blue LED), or while recording, rapidly press the Mode button 2 times. This will toggle the sound on or off.

If the sound has been toggled to off, the red LED will be shown together with the yellow or blue LED to indicate the sound will **not** be recorded.

► Beware - The toggle will remain active even after the camera is turned off.

Loop Recording

Loop recording can be enabled or disabled by software or by using the camera's OSD menu.

By default, Loop Recording is disabled meaning the camera will record clips until the card is full.

The camera will then stop recording and enter standby mode.

If Loop Recording is enabled, the oldest clips will be overwritten when the card is full. As such, the camera will never stop recording and only the most recent clips will be available on the card.

File Protection (write protect) while recording

The current clip can be Write Protected by briefly pressing (max. 1 second) the Mode button while the camera is recording. The camera must have loop recording enabled for this function to work.

This will set the file's read-only attribute which will prevent the current recording from being deleted. The video clip will be moved to the SDs 'LOCKED' folder.

Note that formatting the card will delete all the files, including the protected files with the read-attribute set.

AE Lock (Auto Exposure Lock) AWB Lock (Auto White Balance Lock)

AE Lock (AEL) and AWB Lock (AWBL) are advanced functions first implemented in firmware version v0.53 and above. Their **functionality is disabled by default**.

AEL and/or AWBL functionality **must be explicitly enabled in the settings parameters**. AWBL functionality requires the White Balance parameter to be set to 'Auto'.

AE/AWB can be locked while the camera is either in standby mode or recording mode.

To enable AEL/AWBL point the camera at the object you want to correctly exposure and then set the lock as follows:

- If the camera is in Standby mode or recording, briefly press the Power button until an additional LED (yellow or blue, depending on which mode the camera is in) turns on. This indicates that AEL and/or AWBL is enabled.
- If the camera is in Standby mode or recording, briefly press the Power button until the additional LED (yellow or blue, depending on which mode the camera is in) turns off. This indicates that AEL and/or AWBL has been disabled.
- AEL/AWBL will remain enabled until they are manually disabled or the camera is turned off, even when stopping a recording and changing modes.
- An additional icon will be displayed on the external monitor if connected and OSD is enabled.

Trouble shooting

Q. When I press the Power button, nothing happens.

A. The battery is flat or defective. Replace or charge the battery. Use a paper clip or similar object to press the Reset button.

Q. When I turn on the camera the yellow and blue LEDs blink rapidly about 16 times. The camera then turns off.

A. There is no SD card inserted or the SD card is not making proper contact. Insert the card and/or clean the contacts.

Q. When I try to record a video or photo the yellow and blue LEDs blink slowly about 4 times. The blinking rate then increases and the camera turns off after a few seconds.

A. There is a problem with the SD card.

- The card is full. Format the card using SDFormatter, if possible.
- The card is not formatted correctly. Format the card using SDFormatter, if possible.

Q. The camera functions normally but only records very short clips and may turn off.

A. This can be caused by the following:

- The battery may not be charged. Charge the battery for about 2 hours until the green LED turns off.
- The battery is too cold to provide the power needed to record video. Keep the battery warm before using the camera in cold temperatures (around freezing and below).
- Check the integrity of your card by using the program h2testw to make sure your card is genuine and not a fake card that has been up-rated.
- The card used is not compatible with the camera. Use class 10 cards for best results.

Q. The camera does not react.

A. The firmware may have entered a continuous loop, or the battery may be discharged.

- Make sure the battery is fully charged.
- Use a paper clip or similar object to press the Reset button. This should force the camera to be turned off.
- Wait a couple of seconds.
- Turn on the camera if it does not turn on automatically.
- As a last resort, disconnect the battery and reconnect again after waiting 30 seconds.

Q. The camera is not recognized as a removable disk.

A. The operating system must be XP or greater. The camera must be connected using a standard USB cable. Confirm the cable is not defective by attaching another USB device using the same cable. Do not use a USB hub. Try using another USB port.

Defective cables are the most common problems when the camera is not correctly recognized by the PC.

The iCatch drivers may not be installed correctly. Disconnect the camera from the PC, power down the PC and start over. An Internet connection is required in order to download the drivers.

Q. The camera is not recognized by mSetup or Webcam programs.

A. The camera must be in Webcam mode, **not** Removable Disk mode. The camera must be connected using a standard USB cable. Confirm the cable is not defective by attaching another USB device using the same cable. Do not use a USB hub. Try using another USB port. Defective cables are the most common problems when the camera is not correctly recognized by the PC. The iCatch drivers may not be installed correctly. Disconnect the camera from the PC, power down the PC and start over. An Internet connection is required in order to download the drivers. You may need to rollback or update the driver software in Device Manager.

Q. An SD card is installed, but the camera is not recognized as a removable disk.

A. If you are sure your USB cable is not defective, then it's possible that the PC USB drivers are not working properly. DriveCleanup.exe (freeware) may be able to fix USB corruption problems.

Q. When the camera is connected as an external disk all the files on the SD card appear as corrupt.

A. There is a problem with your cable or the PC USB drivers are corrupt. DriveCleanup.exe (freeware) may be able to fix USB corruption problems.

Q. The camera does not charge or does not automatically start recording when external power is connected and the 'Auto Record External Power' parameter is set appropriately.

A. External USB power exceeds ~5.25V or is under-powered.

Q. Playback is erratic or stutters or the playback colors are psychedelic or the video flashes, has corrupted blocks etc.

A. Always first copy the video file from the memory card to your hard drive.

- Your PC or graphics card may not be powerful enough to playback the video stream.
- You may not have enough memory installed in your PC.
- Use VLC Media Player or MPC-HC (Media Player Classic - Home Cinema). Windows Media Player often chokes on underpowered machines.
- Psychedelic colors may also indicate problems with the CMOS lens module. Make sure the CMOS lens cable is correctly seated and not cracked. The lens cable is very fragile.

Q. The camera records video with a different frame rate and/or resolution than defined by the parameter settings.

A. The card's Class rating is too low. If the firmware detects that the card is too slow (class rating too low), it will decrease the recording speed and/or resolution.

Q. The camera functions normally but the video is completely black.

A. Make sure the lens cap is removed.

Q. The camera functions normally but no sound is recorded.

A. Make sure the audio has not been toggled off (see above). The red LED will be shown together with the yellow or blue LED if the sound has been muted.

Q. There is a distinctive buzzing or clicking noise when videos are played back.

A. Only use quality micro SD cards with a class rating of 10. Low quality cards can draw excessive current which may result in electrical noise in the recording.

This manual was last updated on 19 September 2016