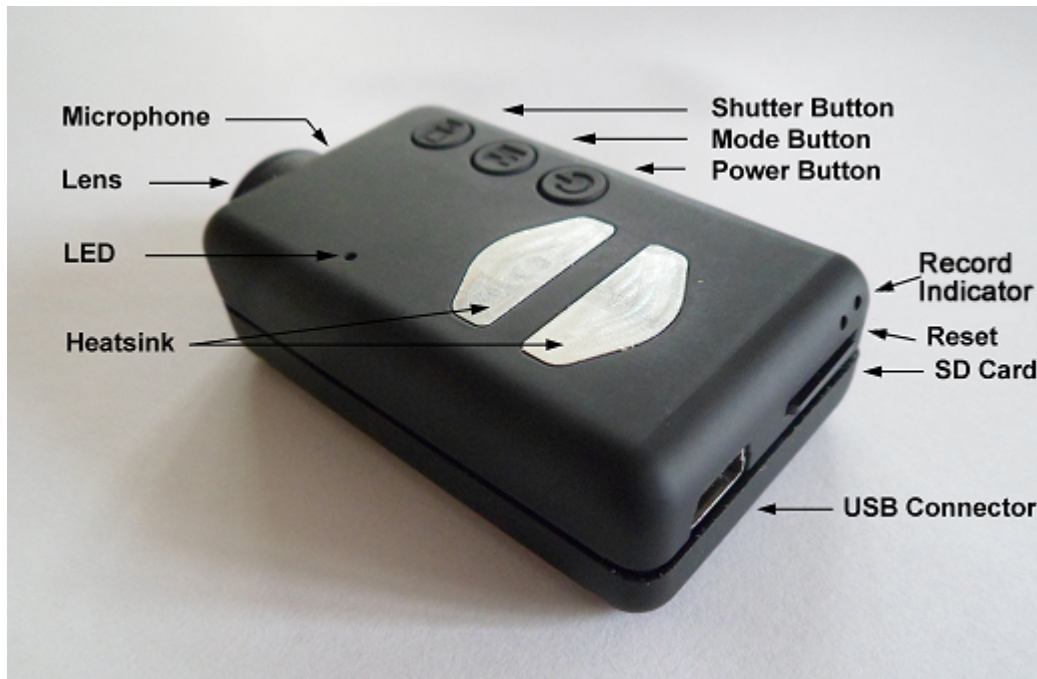


# Instruction Manual for the ActionCam NX by P.E.D. Products



## Description

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

The two heat sinks can become very hot during operation. This is normal, but all the same you should never leave the camera turned on where the surrounding temperature exceeds ~47°C (118°F) - for example in a car parked in the baking sun. If you wish to use the camera in very hot conditions you should ensure the heat sinks are adequately cooled, for example by directing cool air onto the metal plates or using a ventilator to dissipate the heat away from the metal plates. High temperatures will also damage the internal LiPo battery.

At the time of writing you may use any micro SD, micro SDHC or Micro SDXC card with a capacity of up to 64GB with this camera. Larger cards are most likely also supported but not yet available. To avoid card compatibility problems, always use quality cards with a speed rating of Class 4 or greater. The camera supports cards formatted with FAT32 or exFAT. Because of technical reasons, you cannot update the firmware if your card is formatted as exFAT. When using the In-Camera formatting routine (see below) cards with a capacity greater than 32GB will be formatted with exFAT. All other cards will be formatted as FAT32. Older operating systems, for example XP 64-Bit and Windows 2003, do not support exFAT file systems unless you install additional drivers. A list of exFAT drivers can be found at <http://search.microsoft.com/en-us/DownloadResults.aspx?q=KB955704>.

A new, fully charged battery will last about 80 minutes.

## Cables

The camera requires a **standard** USB cable for charging, connecting to external battery packs for continuous recording and for connecting to the PC as an external disk or webcam. A/V-out requires a special cable.

**Under no circumstances use any other "special" USB cable.** Doing so may destroy your camera beyond repair.

## Before you start

Before using the camera for the first time, ensure that it is fully charged. See below, under "Charging". **(NOTE: Camera should be charged every 2-3 months when not in use)**

## The Power button

Press the power button to turn the camera on. The Blue LED will first turn on and then turn off and after about 3 seconds the Yellow LED will turn on. (Default config from P.E.D.) The camera is now ready for use. (If "Power On Delay" is set to **ON**, press the power button for about 4 seconds until the Yellow LED turns on)

- "Power On Delay" is useful to prevent the camera from being inadvertently turned on.
- If the camera has been configured with "Auto Power On Record" set to **On**, the camera will automatically begin recording in Mode 1.
- 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 two seconds. The camera will turn off.

## The Mode button

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

- Video Mode 1 (**Yellow LED**) where the frame rate and resolution can be individually configured.
- Video Mode 2 (**Blue LED**) where the frame rate and resolution can be individually configured.
- Photo Mode (**Red LED**) is the photo mode.
- Playback Mode (**Red LED**) is only possible when the special A/V-out cable is connected.

## The Shutter button

Press the shutter button to start or end a video recording, to take a picture or to play/pause when in Playback mode. (Playback mode is only available when the A/V cable is attached)

## LED status indicators

Since the camera has many functions, it's important to understand the meaning of the LEDs. The following LED states are for a camera **not connected** to the PC.

**Yellow LED remains on:** The camera is in Video Mode 1 and is on standby.

**Yellow LED slowly flashes** (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.

**Blue LED remains on:** The camera is in Video Mode 2 and is on standby.

**Blue LED slowly flashes** (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.

**Red LED remains on:** Camera is in Photo Mode or Playback Mode (if an A/V cable is connected) and is on standby.

**Red LED flashes once** The camera has taken a picture

**Green LED is on:** The battery is charging.

## The Rear LED

When the camera is turned on, the rear LED will blink one to three times to indicate the battery charge. Three blinks indicate a full battery, whereas one blink indicates the battery charge is getting low. The blinks are fast. Slower blinks would unnecessarily extend the time before the camera reaches standby mode. If the camera is configured to show the Recording Indicator, then the rear LED will also blink in sequence with the main LED while recording.

## Connecting the camera to the PC

Make sure 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.

## 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).

NOTE: Charging when connected to a PC USB port can be toggled ON or OFF using the setup program. When connecting to a Smartphone, you should turn this functionality OFF!

When charging, the Green LED will be on, and it will turn off when the battery is fully charged.

Charging takes about 2.5 hours for a fully discharged battery with the camera turned off and connected to an external USB Charger. Charging is limited to around 140mA which offers the best possible long-term battery protection. If charged with under-rated chargers or using a USB hub without an additional power supply, expect longer charging times. For optimum results, the charging voltage should be +5V under load. Batteries are not covered under warranty. **(NOTE: Camera should be charged every 2-3 months when not in use)**

## Formatting

Standard formatting tools provided by the operating system are not always reliable. Also, they do not optimize the SD card's performance. For optimal card performance it is recommended to always use the camera's built-in formatter. Instructions for In-Camera Formatting are outlined below under "In-Camera Formatting". Another excellent formatting utility is "SD Formatter" which can be downloaded from [www.sdcard.org/downloads/formatter\\_3/](http://www.sdcard.org/downloads/formatter_3/). This utility has been specifically designed for formatting SD cards.

## Automatic Power Off from Standby mode

If the camera is in Standby mode (Video Mode 1, Video Mode 2 or Photo 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.

## Turn on Camera

Power-On can be configured as "fast" or "delayed". In fast mode, the camera will turn on immediately when the Power Button is pressed. In delayed mode, press and hold the Power Button for 4-5 seconds until the Yellow LED turns on and remains on. Irrespective of whether the camera is configured as "fast" or "delayed" Power-on, the Blue LED will turn on for a second followed by the Yellow LED. When the Yellow LED remains on, the camera is ready for use.

- If the camera has been configured with "Auto Power-On Record" set to ON, the camera will automatically begin recording in Mode 1 as soon as the power button is pressed or external power is connected. If the recording LED has been disabled, the yellow LED will blink 3 times and then turn off, indicating that recording has started. Otherwise the yellow LED will slowly flash at 2 second intervals indicating that the camera is recording.
- If the camera has been configured with "Auto Record" set to OFF (default setting), the camera will switch to Video Mode 1 (yellow LED) and remain in standby mode until a button is pressed or Auto-Power-Off times out.

## Turn off Camera

Press and hold the Power Button for at least half a second and then release it. The Red LED will blink 3 times and the camera will 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 (only if A/V cable is attached) - Video Mode1 etc.

## Recording Video Mode 1 or 2 (Yellow or Blue LED)

**Start video recording and write-protecting important clips.**

- Briefly press the shutter button. (while in standby for Video Mode 1 or 2)
- • If the recording LED has been disabled, the Yellow or Blue LED will 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.
- The current clip can be **write-protected** by pressing the Mode button while 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.

## **Playback Mode**

- Ensure you have an A/V cable connected between the camera and an external monitor and a card is inserted.
- Turn on the camera if it is not already turned on.
- Press the Mode button until the Red LED turns on (Photo Mode).
- Now press the Mode button once more. The Red LED will remain on, but the camera will be in playback mode and the first frame of the first clip found on the card will show on the external monitor.
- • If no clips are found on the card the display will show "Empty".
- Press the Shutter button to play or pause the clip.
- Press the Mode button to advance to the next clip.
- Press the Power button to exit Playback Mode and turn off the camera.
- • It is not possible to exit Playback Mode except by turning off the camera.

## **Removable Disk Mode**

- Make sure a memory card is inserted and the camera is turned off.
- Connect the camera to the PC using a standard USB cable. The Green LED may turn on indicating that the battery is charging.
- The Blue LED will turn on for about a second but will then be replaced by the Yellow LED. After a short while the Yellow LED may also turn off.
- The camera is now in Disk Mode and a new removable drive should be available on your computer. This may take up to 30 seconds.

## **Webcam Mode**

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

Method 1:

- Connect the camera as a removable drive (see above).
- Press the Shutter button to enter webcam mode.

- If this is the first time you have connected the camera in WebCam mode, Windows will automatically install the required drivers.
- Disconnect the camera or press the Shutter button to exit webcam mode.

#### Method 2:

- Remove the flash memory card.
  - Connect the camera to the PC using a standard USB cable.
  - The Yellow LED will blink at 2 second intervals indicating there is no card inserted. This is normal.
  - If this is the first time you have connected the camera in WebCam mode, Windows will automatically install the required drivers.
  - The camera is now in Webcam mode.
  - Start your favorite WebCam software, such as AMCap. If your screen is black, the software is not configured correctly. Make sure the program shows the "USB PC camera" as the "device" selected for video capture. If this option does not show in the "device" option list, restart the webcam program and check again.
  - Disconnect the camera or press the Shutter button to exit webcam mode.
- Note: Windows XP has an integrated WebCam viewer. The ActionCamNX should be visible in Explorer (My Computer) as a "USB Video Device". This functionality does not exist in Windows 7.

### In-Camera Formatting

The Camera contains a built-in formatter which may be used to format the SD card. In-Camera formatting can be done as follows:

- Connect the Camera as a Removable disk (see above).
  - Press and **hold down the Mode button. DO NOT RELEASE the button until after the next steps are completed.**
  - Disconnect the camera from the computer.
  - The Yellow LED will blink for a few seconds followed by three blinks of the Red LED, after which the camera will turn off. You must wait until you see the Red LED blink three times.
  - Release the Mode button.
- Cards with a capacity greater than 32GB will be formatted with exFAT. All other cards will be formatted as FAT32. See the note about using exFAT in older operating systems in the Description.

### Camera Setup (Configuration)

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

It is, however, also possible to manually change the configuration settings by editing the "SYSCFG.TXT" file which must be placed in the root folder of the card for the camera to find

and load the new settings. You can use any ASCII editor, for example Notepad, to modify the parameters. The "SYSCFG.TXT" must be in plain ASCII, it must not be in Unicode.

A "SYSCFG.TXT" file must first be generated by the Camera. The camera's parameters are self explanatory. It is important not to change the sequence of the square brackets and not configure invalid combinations. For example, never combine a clip longer than 5 minutes with the continuous loop. If you enter invalid combinations or values, the Camera will not perform as expected.

The "SYSCFG.TXT" file can be automatically generated as follows:

1. Disconnect the camera from the PC and turn it off.
2. **Press and Hold Down the Mode button. DO NOT RELEASE the button until step 4.**
3. Press and **Hold Down the Power button** until the **RED LED** blinks 3 times and the camera turns off. This will take about 5 seconds. During the process, the Blue and Yellow LEDs may blink.
4. **Release the Mode and Power buttons.**

The SYSCFG.TXT file showing the camera's current settings should now be in the memory card root folder. Now you can edit the SYSCFG.TXT file as indicated above, and load the new settings back into the camera by using exactly the same method as outlined in steps 1 through 4, above. Once completed, the "SYSCFG.TXT" file will be automatically deleted from the card's root folder. (configuration may also be changed using the NXsetup tool. NXsetup communicates directly with the camera and makes configuring the camera a very simple task.

## Using Software to configure the camera

NXsetup.exe will automatically configure the camera with the parameters you require. Detailed instructions can be found in the program by clicking the "Help" button.

## Firmware Update

Normally, there is no need to update the firmware. You should only update the firmware if you are having problems with the current firmware or the new firmware provides functionality you require that are not available in your current version.

The latest firmware version can be downloaded and installed directly from the setup program or installed manually by downloading the firmware file from [www.ped-products.com](http://www.ped-products.com) under the tools/download menu.

Updating the firmware is an easy and safe process.

### 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:***

- 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 file into the camera's flash card root folder. All firmware files are named FWTLCAM.BIN. The name must **not** be changed.
- 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 Blue LED will turn on for about 13 seconds and then begin to flash. **WAIT**.
- After another 7 seconds the Blue LED will turn off. **WAIT**.
- After a second or two the Yellow LED will turn on. **WAIT**
- The firmware file will be automatically deleted.
- The camera will automatically be connected as a removable device.
- After about 4 seconds the process is complete and the Yellow LED will turn off.
- The camera is now ready for use as a USB drive.

***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 file into the camera's flash card root folder. All firmware files are named FWTLCAM.BIN. The name must **not** be changed.
- 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 Blue LED will turn on for about 13 seconds and then begin to flash. **WAIT**.
- After another 7 seconds the Blue LED will turn off. **WAIT**.
- After a second or two the Yellow LED will turn on indicating the firmware file has been automatically deleted.
- The camera is now in standby mode and ready for use.

**Automatic Firmware Update**

Use NXsetup (Tools) to automatically update the firmware.

**Recording using an external power supply**

With the ActionCamNX, 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/Earth) 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.

When turned on, the camera checks for an electric signal on the two Data wires. If a signal is found, the camera assumes it is connected to a PC and recording will not be possible - see below "Recording when directly connected to a PC".



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.

## **Recording when directly connected to a PC**

With the ActionCamNX, it is possible to charge the battery and record videos or time-lapse photos at the same time while connected to a PC.

In order to do this, the video or time-lapse photo recording must be started **before** the camera is connected to the PC. It is not possible to record if the camera is turned on while connected to a PC. Likewise it is not possible to take single still pictures while the camera is connected to the PC.

## **Special functions**

The following functions need additional explanation:

### **Auto Power-on Record**

If this parameter is set, the ActionCamNX will start recording as soon as external USB power is connected or the camera is turned on. Recording can be stopped and started manually by pressing the Shutter button. The camera will always be turned off when USB power is removed, but, assuming the camera's internal battery has sufficient power, there is a 15 second delay before the recording stops. If power is reconnected during this delay, the camera will resume normal operation.

### **Power-on Delay**

This parameter gives the user the choice of having a 2-3 sec. delayed power-up, or an instantaneous power-up with no delay. Note that the system requires about 2 seconds after power-on until the buttons become active.

### **Audio Volume**

When the volume is turned OFF, the sound track is completely eliminated from the video output stream in **all** camera modes and will free up a nominal 7% video recording space when the volume is turned off.

### **Time Lapse**

If Time Lapse is enabled, Auto Record must be disabled.

## **Trouble shooting**

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

A. The operating system must be XP or greater. The camera must be connected using a standard USB cable. Confirm that 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.

Q. When the camera is connected to the PC and then turned on I can take pictures and movies but the camera is not recognized as a removable disk.

A. The USB cable is defective.

Q. The Yellow LED flashes once per second 4 times and then flashes very quickly before turning off.

A. There is no micro SD card inserted, the card is not properly inserted, the card is full or the card is defective. The card must be inserted with the gold contacts facing upwards, towards the buttons. There should be a distinct spring action when inserting the last 5 mm and there should be no friction whatsoever.

When the card is pushed 1 mm inside the body the card should latch with a distinctive click. Never force the card, and never push the card more than max. 1 mm into the camera body.

Q. When the camera is turned on, the Blue LED turns on for a second and then the Yellow LED turns on as normal. However, the Mode and Shutter buttons don't react and I can't take any video or pictures. The camera is also not recognized by my PC as a removable drive.

A. The lens module ribbon cable is not connected properly or the lens module is damaged.

Q. The camera does not react. The Green LED may be on or off.

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 10 seconds.
- Turn on the camera.
- As a last resort, disconnect the battery and reconnect again after waiting 30 seconds.

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. Window 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.

For more information or questions, visit P.E.D. Products website: [www.ped-products.com](http://www.ped-products.com) , call 315-524-3976 or email [info@ped-products.com](mailto:info@ped-products.com)

## **Specifications:**

- Video: 1080P 30FPS FULL HD, 720P 60FPS, 720P 30FPS HD H.264/AVC1 video codec, .MOV file format.
- Photo: 2304 x 1536, 1920 x 1080, 1280 x 720, supports Time Lapse Photo Shooting

- Super mini size, only around 61mm (L) x 35mm (W) x18mm (H)
- Super light-weighted: only approx 38g (1.4oz.)!
- Rechargeable LIPO Battery (500mah), with Battery Charger Manage IC
- Micro SD card slot, supports up to 32GB, suggest using Class 4 or faster
- USB2.0, plug and play, easy connection with computers, no driver needed.
- Live TV video output while recording videos with optional TV out cable.
- Magnetic Mounting system
- User Configurable settings via text editor, configuration tool or Android App; Time Stamp, Video Resolution, Photo Resolution, Time Lapse Photos, Video Clip Length, Loop Recording, Rotate Video, Video Record Quality, Wide Dynamic Range, Power On Delay, Auto Power Off, Auto Record, LED Functions, Charge From Host, TV Out Mode.
- High quality audio, configurable.

### **Weather Cover & Replaceable Windows**

Weather Cover and replaceable windows are intended to protect against rain, snow, mud etc. It does not protect against submersion of the camera.

**Assembly:** Start by placing (1) of the windows in the recess area in the rubber cover, then insert the camera lens end first, finish by **gently** stretching the cover over the rear of the camera. A pinching action at the corners is preferred over using your finger like a shoe horn, which over stretches the cover. (Over stretching the cover may cause damage)

**Note:** Check that cover is centered over button area, make minor adjustments if necessary.

**Cleaning:** Cover can be cleaned using Isopropyl Rubbing Alcohol or soap and water.



## Mounts:

Camera is removed from Holder by sliding the camera forward, and assembled by aligning the slot on the side of the camera with small tangs on the sides of the Holder, then sliding the camera back until it snaps in place.

With camera removed from Holder, accessory mount screw is exposed in the Mount Adaptor. This is the screw that fastens the different mounts, i.e. Triped Magnet, Bar Mount, Tip Mount to the Mount Adaptor. The Mount Adaptor may also be unsnapped to create a totally flat bottom.

