

# ATOMOS NINJA STAR

## USER MANUAL



**Have you registered your Ninja Star yet?**  
Register now to receive communication on all future updates

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## Safety Instructions

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The Ninja Star is designed to a high standard but there are some things you should be aware of to prolong the life of the unit and for your own safety.

### Batteries and power supplies

The battery supplied with the Ninja Star is a powerful professional device, designed to retain enough energy to supply the Ninja Star for hours. You should avoid short-circuiting the battery connections because this can cause a high current to flow which can damage the cells and even pose a fire hazard. For example, you should not carry batteries in a bag or pocket where they may contact other metal objects such as coins.

The power supply and battery charger included are intended for use with the Ninja Star only. Keep the power supply, plug and cable away from water and unplug from the mains electricity socket when not in use.

Disconnect power supplies before cleaning the Ninja Star or its components.

### Using the Ninja Star safely

Although the Ninja Star is very lightweight compared to all the devices it replaces, it is still a solid object that could cause injury if misused.

- Always make sure that the Ninja Star is mounted securely and is unable to fall onto anyone nearby. This is especially important when there are children present who might be tempted to pull on cables.
- Always ensure that cable runs to the Ninja Star are clearly visible and do not present a trip hazard.

- Do not place on uneven or unstable surfaces.
- Use only Atomos approved 1.0 & 2.0 CFast Cards in the slot on the side of the Ninja Star (see [www.atomos.com/discovery-what-drives](http://www.atomos.com/discovery-what-drives) for complete list).
- The Ninja Star can become warm or hot with prolonged use. Do not place it in contact with any part of your body where such warming could cause discomfort or injury.
- Do not expose to strong electrical or magnetic fields.
- Do not expose to or use near liquids, rain or moisture.
- Do not dispose of the Ninja Star or its batteries in municipal waste and do not incinerate it or its batteries, but follow local regulations for safe disposal

## User Manual Conventions



**Whenever you see a red flag it will indicate a helpful tip, suggestion or something to note.**

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# Warranty & Conditions

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## Notice

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## International Hardware Limited Warranty

### ATOMOS warrants that:

- The main product or any external accessories, will be free from defects in materials and workmanship for a period of 1 years from the date of purchase.
- Batteries, battery charger, CFast card reader and carry case will be free from defects in materials and workmanship for a period of 1 year from the date of purchase.

This warranty is exclusively for the benefit of the original purchaser and is not assignable or transferable.

If during the warranty period the product is shown to be defective ATOMOS may at its option:

- a)** replace the goods or supply equivalent ones, **b)** repair the goods, **c)** pay the cost of replacing the goods or of acquiring equivalent ones and **d)** paying the cost of having the goods repaired;

The customer must notify ATOMOS of any defect in the goods in writing prior to the expiry of the warranty periods set out above. The customer will be solely responsible for returning the goods to ATOMOS or its authorized distributor. Upon acceptance of a warranty claim by ATOMOS, where ATOMOS repairs or replaces the goods, it will be responsible for reasonable shipping costs incurred in sending the goods to the Customer, provided that customer is located in a country in which ATOMOS has an authorized distributor or repair centre or agent.

## Warranty Exclusions

This warranty applies only to defects in workmanship and does not cover defects caused by:

- Neglect;
- Improper or negligent acts or omissions;
- Unauthorised repairs or attempted repairs;
- Tampering with or modification of the goods;
- Connection to incompatible equipment or power sources;
- Exposure to water or weather;
- Exposure to magnetic fields or corrosive liquids or substances;
- Physical damage

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## Introduction

**Thank you for choosing the Atomos Ninja Star: your 10-bit HDMI Recorder/Player. It's the most compact portable recorder available, with extremely long battery life.**

Ninja Star preserves the pristine uncompressed video quality from your camera's sensor by directly encoding it into Apple ProRes as it records to CFast, making it instantly compatible with your NLE time line. The Ninja Star's revolutionary 'Sensor-to-NLE' workflow is the fastest and best quality available today!

Buying a CFast for the Ninja Star is just like buying a tape – except that with a card you will have instant “non-linear” access to your video.

The Ninja Star's interface is intuitive and simple to use. There are no complicated menus or difficult to find functions – everything you need is instantly accessible. Refer to 'Using your Ninja Star' for more information.

Software updates for your Ninja Star will be issued regularly. Registering your Ninja Star now will ensure you are kept abreast of any updates.



AtomOS

MICRO  
HDMI

ProRes



Your Ninja Star comes with a standard 1 year warranty on all parts and accessories.

Register now to receive communication on all future updates at [www.atomos.com/registration](http://www.atomos.com/registration)

This will enable us to let you know about updates to the product and other important information surrounding your purchase.

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Support: [support@atomos.com](mailto:support@atomos.com)

## What's Included

We try to provide you with as complete a package as possible: you don't have to add anything except a media card (you can buy media cards from your Atomos Reseller) and some accessories to suit your set-up, like HDMI cables and tripod screws. All other parts necessary to use the Ninja Star are included.

### Here's the complete list

1. Ninja Star recorder
  2. USB 3.0 CFast card reader
  3. Single battery charger including AC power adaptor
  4. Atomos 7.4 V 2600mAh Battery
  5. Mounting plate with screws
  6. Carry case
  7. Car charger adaptor
- \* Ninja Star Quick Start Guide (not pictured)

We recommend many CFast cards, for the most up-to-date information please visit:

<http://www.atomos.com/discovery-what-drives/>



Your package will not contain any CFast cards. You can buy media cards from your Atomos Reseller.



Contents may differ from those shown here.

## What you also need

### CFast Cards

These are the storage medium for Ninja Star. You can use either CFast 1.0 or CFast 2.0 cards.



### Which CFast cards should you use?

There are many CFast cards available, and newer models appear all the time. We are not able to test all CFast cards but here are some guidelines.

**Speed and reliability are the main factors. Here are a few things to bear in mind:**

- We recommend a write speed of a minimum 80 MB/s.

Atomos regularly test CFast cards – please check this link before purchasing drives: <http://www.atomos.com/discovery-what-drives/>

### Backing up and archiving

Remember that no storage medium, including tape, optical disks, spinning disks and flash memory, is completely immune from failure. You should bear this in mind when deciding how to manage your recorded content. At the very least, you should consider the consequences for you and your business if your storage medium were to suffer from a sudden failure, and you should back up your content accordingly. Hard drives that you can use for archiving are becoming increasingly affordable. You may find that it is completely feasible for you to keep your master Ninja Star cards on a shelf (just like tapes!), and, as a backup, store copies on large hard drives, RAID arrays or Network Attached Storage (NAS).

### HDMI Cables (not included)

Atomos manufactures Pro Video HDMI cables made for the Ninja Star. We have a range of options, including Micro to Micro, Micro to Mini, Full HDMI to Full HDMI and angled Micro Connectors, all with the convenient coiled cable design. For more information on our HDMI cables, go to:

<http://www.atomos.com/hdmi-cables/>



### Standard 1/4" and 3/8" Mount plate adaptor

Mount plate is included and can be attached to the Ninja Star with the provided 4 PH1 screws. This system provides many flexible mounting options to standard 1/4" and 3/8" camera mounts and accessories.

Mount plate adaptor



# Powering up the Ninja Star

## Battery

The Ninja Star is a battery powered device. Like all batteries, you will need to take care of them. Make sure that you don't short circuit the connections because this can result in very high currents that can damage the cells and could pose a fire hazard.

Charge new batteries before using them, using the battery charger supplied. To attach the battery, gently slide it down into the slot until it locks into position. To remove a battery, push the latch to release it.

**⚠** Batteries do not charge in a linear way. At first they charge very quickly, and then the rate slows down to a trickle. While charging, the Charge light will be red. Eventually, when trickle charging is complete and the batteries are at 100% charged, the Charge light will go green. The charge can take a long time to fully complete, but the battery will be almost fully charged after 3 hours. (2600mAh Capacity)

**⚠** Before any type of disposal the battery should be discharged completely. Tape the contacts with electrical tape and package so as to prevent contacts accidentally coming together at any time. Incineration must be performed by an approved and permitted waste treatment facility that handles lithium ion batteries. If you are not sure if your waste facility can handle lithium ion batteries, contact them and verify if they are permitted or not.

**⚠** Ninja Star batteries and modular accessories (Connect Converters, etc) are held in place very tightly because they are on the outside of the device and there has to be no possibility whatsoever that they could work loose, so you will have to be quite firm with the battery latches. We suggest that you familiarise yourself with the force required to remove the batteries and accessories so that you can do this quickly in the field. Make sure that you hold the top and the bottom of the battery or accessory module when sliding it off to avoid dropping it when it is released from the main unit.

**⚠** The Ninja Star may be powered using our D-Tap adaptor which is available separately.

**⚠** **IMPORTANT:** Make sure DC Power range applied to the Ninja Star is between 6.2V to 16.8V.

Push latch to release battery



# Powering up the Ninja Star

## Turning ON power to the Ninja Star

To power up the unit, press the Record button located on the front left hand side. The power LED should light up green immediately. The indicator LEDs will turn on moments later when the device starts up.

## Turning OFF power to the Ninja Star

To turn the unit off **press the red Rec button for 4 seconds**. The unit will then power off.

**Four seconds** can seem like a long time! We've made it this way to make absolutely certain that the Ninja Star can't be turned off accidentally.



Power button

# Ninja Star Connections

**HDMI in:** The video input to the Ninja Star is micro HDMI. This is the connection that is used to record to the Ninja Star's storage media.

**HDMI out:** This is for connection to an external monitor or other device with an HDMI input. It carries a delay-free loop-through of the incoming signal in record and standby mode, and the playout signal when the Ninja Star is in playout mode.

**Audio:** The Ninja Star can record 2 (left and right) channels of digital audio embedded in the HDMI signal. There is a 3.5mm Stereo Line-in socket for recording an additional 2 audio in sync with incoming video. Depending on your set-up, you may find that this gives you better results than the microphone on the camera.

**Some cameras have a delay on their video output so the analogue audio channels will not be in sync. This can be easily fixed in post using your NLE.**

**We now make Atomos Pro Video HDMI Cables. You can find out more by visiting <http://www.atomos.com/hdmi-cables/>**

**IMPORTANT:** The audio input is designed for line level sources. Do not exceed the 2V pk-pk or your audio will be distorted.



CFast Slot



Audio

Stereo Line In  
(Max input 2Vpk-pk)

Video Input

Connect video source here

Video Output

Connect external monitor device here



# CFast Slots

## CFast Slot

On the left hand side of the unit is a slot for CFast cards. To insert a CFast card, slide in card firmly in position.

**Formatting card** - See page 11




## Hot swappable

The CFast cards are hot-swappable, so you can do this at any time – even while the unit is turned on. But don't do it while recording or you will get a corrupted file that may be unplayable.



## Mounting options

The Ninja Star comes with a mounting plate which features standard tripod 1/4" and 3/8" screw mounts. This can be attached to the top or bottom of the Ninja Star with the 4 included screws, allowing you to configure your recording setup various ways.

 *If mounting the Ninja Star on aerial videography platforms or a quad copter, check that the total weight does not exceed the payload limit of the aircraft.*

- Ninja Star = 130g
- Atomos battery = 100g
- Ninja Star mounting plate with screws = 55g



## Ninja Star Modularity

The Ninja Star was designed to be a flexible and modular system. It will work with a variety of battery systems. Canon and Nikon battery adapters, as well as a D-Tap Adaptor are available.

The Ninja Star's battery slot is the key to its modularity. They provide a secure attachment point for modular add-ons such as the Atomos Connect converters (pictured).

### Available Atomos adapters:

- H2S - Add SDI output to your Ninja Star
- S2H - Add SDI input to your Ninja Star
- D-tap adapter - Power the Ninja Star from your rig
- Canon Battery Plate Adapter
- Nikon Battery Plate Adapter



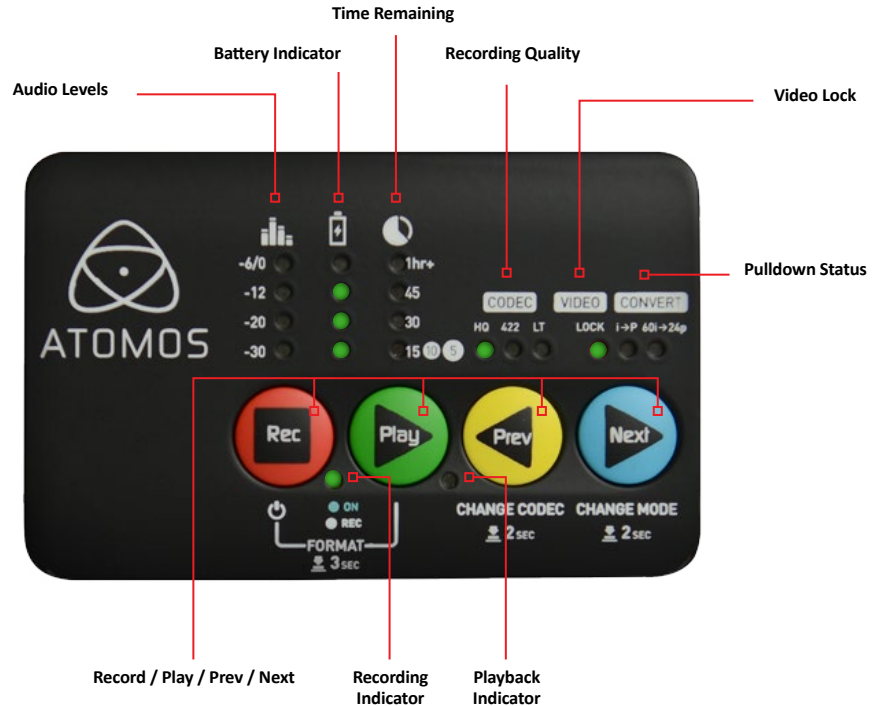
# Using the Ninja Star

The Ninja Star is controlled by a simple user-friendly interface. Pictured right are the main controls seen when the Ninja Star is first powered up and there is a video input connection.

**Note:** HDMI TRIGGER + Timecode will be auto detected on the Ninja Star.

## Record

- CODEC and Pulldown mode can be selected by holding the previous and next buttons for two seconds.
- The Record button can be used to start and stop the recordings.
- The LEDs indicate the status of battery levels, audio levels, time remaining on card, as well as video options.



## Record



Indicator LED light turns red when recording



**Record:** Press to start/stop recording (requires video lock)

OR

**Auto Record Trigger:** Supported on some Sony and Canon cameras



**Play:** Press to enter playback mode.

Hold for 2 seconds to select audio channel levels between HDMI and Analogue.



**Change CODEC:** Hold for 2 seconds to change CODEC



**Change mode:** Hold for 2 seconds to change pull-down removal setting

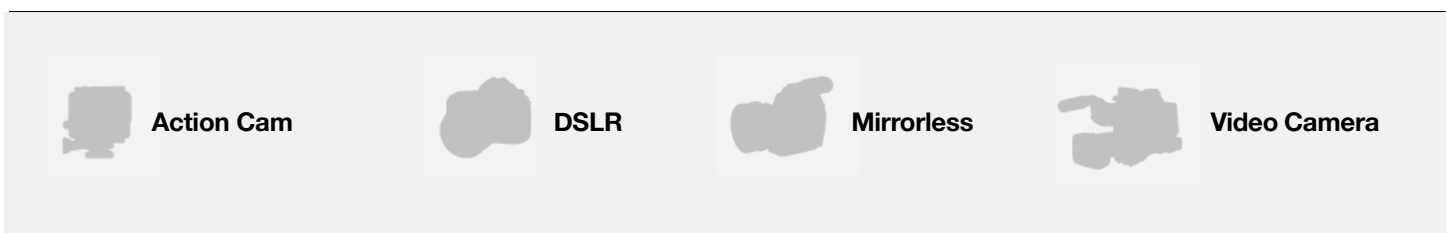


Hold both **Prev + Next** for 2 seconds to Lock/Unlock the Ninja Star panel buttons



Hold both **Rec + Play** for 3 seconds to format CFast Card

## Record from:



# Record

## Requirements

Before recording commences, you need a valid incoming signal locked and a formatted CFast card with space remaining in the CFast slot.

## How to format your CFast card

To format the CFast card, hold down both Rec + Play for 3 seconds.

The 'time remaining' lights will flash, indicating that the CFast card has been formatted.



## CODECs

The Apple ProRes CODEC can be set at one of three quality levels, HQ, 422 or LT. These are set by holding down the 'prev' button for 2 seconds and allow you to trade off quality vs storage space.



Recording Time onto CFast	64GB	128Gb
<b>(I-Frame Only, 422, 10-bit)</b>	<b>Time</b>	<b>Time</b>
ProRes HQ (10-bit, 220Mbps)	39min	1hr 17min
ProRes 422 (10 bit, 150Mbps)	57min	1hr 53min
ProRes LT (10 bit, 100Mbps)	1hr 25min	2hr 50min

## Camera setup

Set up your camera to output a HDMI signal in the desired video mode and connect to the Ninja Star with a suitable HDMI cable. You may need to refer to your camera user manual for information on the relevant settings. Alternatively look on our website at <http://www.atomos.com/discovery-what-cameras/> for setup guides with various cameras. Once you have your camera setup properly and connected to the Ninja Star the Lock light should turn green.

**The light must be lit green for a valid lock.**

## Check for clean HDMI output on a monitor

You can also check that your camera is set-up properly by connecting it to a HDMI monitor or Atomos Recorder/Monitor. This way can verify the signal format you want to use as well as checking that the signal is clean of any on screen display or menus.

If your camera supports Timecode or commands over HDMI you should turn these features on. The Timecode sent from the camera will be embedded in the recorded clip.

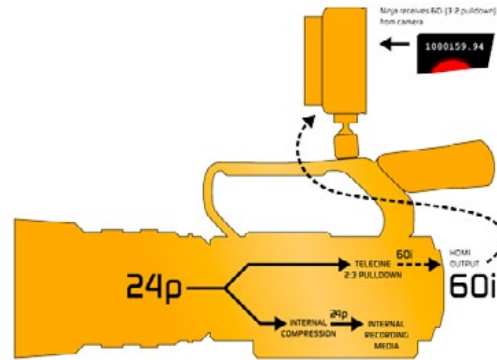
## Audio Setup

Not all HDMI cameras send audio over HDMI, or perhaps you would prefer to use an external mic. In this case analogue audio can be recorded through the stereo 3.5mm input. Please note that some cameras have a delay on their HDMI output so analogue sound may need to be synced in

post. You can change which signal is monitored on the audio level meters by holding down the 'Play' button for 2 seconds. Make sure any analogue input is not too high or the recorded sound will be distorted.

## Pulldown Removal

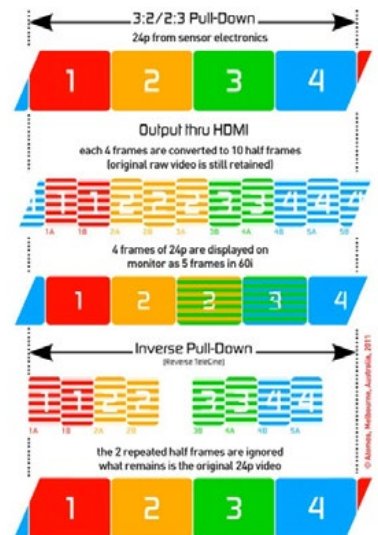
Many cameras do not output progressive signals natively over HDMI. Instead they will embed at progressive signal such as 1080p24 inside of a 1080i60 signal. This is known as 3:2 pulldown.



The Ninja Star is able to recover the 1080p24 signal using pulldown removal and record a progressive ProRes movie clip to the CFast card.

**Pull down removal can be turned on by holding down the 'Next' button for two seconds.**

When recording 1080p30, 1080p25 and 1080p24 from some cameras you may need to use pulldown removal. See the table below.



Camera Setting	Pulldown	Ninja Star Receives
1080p23.98	3:2	1080i59.94
1080p24	3:2	1080i60
1080p25	2:2	1080i50
1080p29.97	2:2	1080i59.94
1080p30	2:2	1080i60

## Triggering

Recordings can be triggered by pressing the 'Rec' button. Whilst the unit is recording you will see the tally light blink red. To stop a recording simply press the 'Rec' button again. Recordings can also be triggered to start/stop by the camera if HDMI stop/start commands are sent by the camera.



# Playback: One touch review



**Record:** Press to return to capture mode



**Play:** Press to play/pause clip

### When paused:



Frame by frame  
RWD / FWD

### When playing:



Hold to Super RWD / Super FFWD  
Click to skip to Previous / Next



### Playback & Review on monitors:

Recorded footage can also be played from the Ninja Star's HDMI Out. This is ideal for large screen client viewing, feedback and editing on location.

## Using the Playback and Playout features

The Ninja Star has a powerful playback function that allows you to playback pristine Apple ProRes recordings in real-time with controls to navigate quickly to any part of a clip, the ability to play recorded content faster than normal playback speed or step through the clip frame-by-frame to check your footage very accurately.

Playback makes the Ninja Star a fully-functional portable HD Deck with quality visually identical to uncompressed!


Whenever playback mode is entered, it will send a HDMI signal through the Ninja Star's HDMI output of the last clip recorded in loop mode. You can view this on an HDMI monitor, or, using an optional Atomos S2H Connect Converter, on a SDI monitor.

The clip playing can be changed by pressing the previous and next buttons.

Note that not all displays and TVs will accept all formats output by the Ninja Star. For example many TVs will not display 1080p25 video clips.

If the monitor or TV is displaying a 'no input' message, check that video mode is supported by the display.

Also, the Ninja Star will only output the audio recorded from the HDMI signal.

 *The Ninja Star is only able to monitor the first two audio channels in a ProRes clip as there is no physical screen to toggle between audio channels.*

# Connecting & Editing

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## Connect

To access and edit your recorded material, connect the included CFast Card reader to a Mac® or Windows® editing workstation via USB 2.0 or USB 3.0.

Remove the CFast card from your Ninja Star and insert it into the CFast Card reader. After a short wait, the recorded video will be accessible to the target computer via a standard disk (exFAT) file system.

## ExFAT compatibility

The Ninja Star formats your disk as exFAT. We have chosen this file system to overcome the 4GB file limitation of FAT32 and keep compatibility on both Windows and MAC OS.

## The Operating Systems that support exFAT are:

- Windows XP - install the following update :  
<http://www.microsoft.com/download/en/details.aspx?id=19364>
- Windows Vista - install SP1 or higher
- Windows 7 (32/64bit)
- Mac OSX 10.6.5 or higher

## Transferring Files

Now your CFast Card reader is connected and your card is recognised by your operating system, you can edit directly from the drive or copy the files to your own storage.

## Windows

Open the card in My Computer > Select all the files or just the ones you wish to transfer, copy and paste them to your desired location.

## Mac OS

Your Ninja Star disk will show in Finder. Select the files you wish to transfer, drag the files to your desired location or use the copy and paste commands.(Apple + C copy, CTRL + V paste).

## NLE supported

We have chosen the Apple ProRes CODECs as they are both not only visually lossless, but also edit-ready formats. All major NLEs support ProRes.

- Final Cut Pro (version 7)
- Final Cut X
- Adobe CS5 (with 5.51 update)
- EDIUS 6
- Sony Vegas 10
- Lightworks
- Avid Media Composer 6
- Autodesk Smoke



# Connecting & Editing

## Importing

Final Cut Pro (version 7), Final Cut X, Adobe CS5 (with 5.51 update), EDIUS 6, Sony Vegas 10, Lightworks and Avid Media Composer 6 support imported files from your Ninja Star disk.

**Note:** Quicktime Player *on* must be installed on Windows machines.

## Importing Ninja Star footage into Final Cut Pro

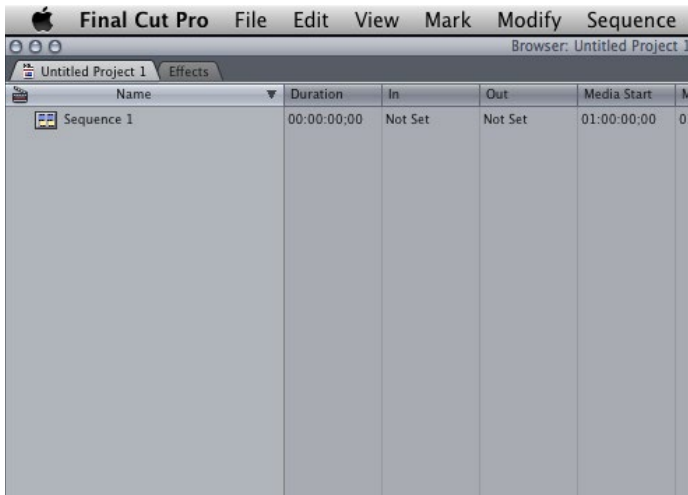
You can import Ninja Star footage into Final Cut Pro (FCP) in just a few simple steps.

First, connect the Atomos CFast Card Reader to your Apple Mac using the USB 2.0 or USB 3.0 port. Insert the CFast card with your footage into the Reader and you will see the drive appear in your Finder window.

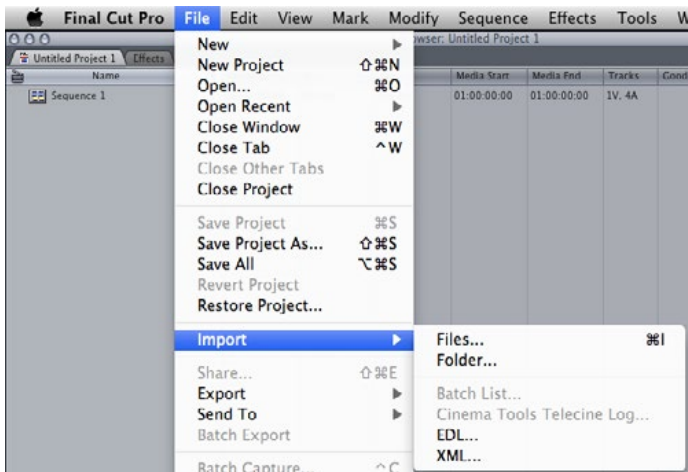
Start FCP and open your project (or start a new one).

**The screen will look like this:**

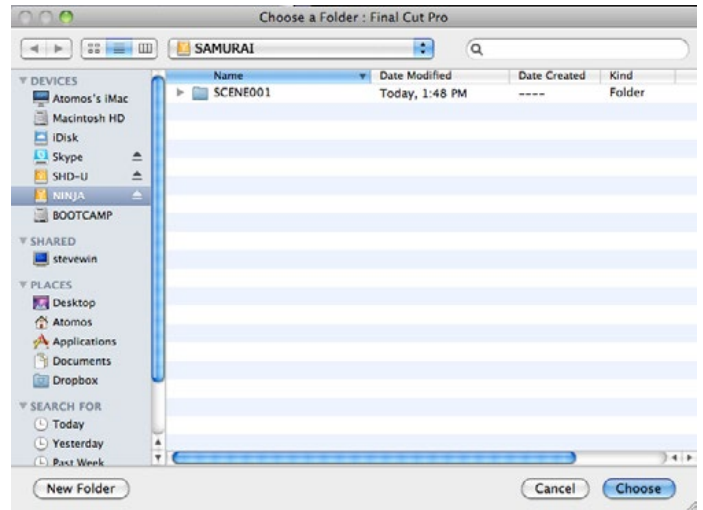
Go to the **File** menu and select **Import > folder**:



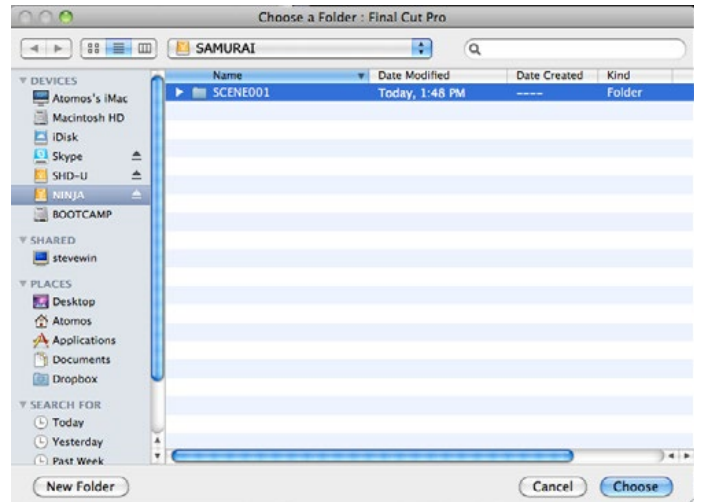
FCP will show you a "browse" window. **Look for the Ninja Star drive, and click on it.**



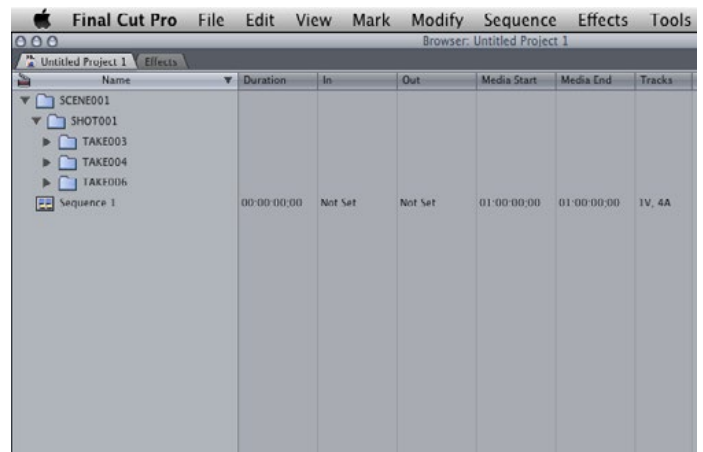
You'll see the folders in the Ninja Star drive. **Select the folder containing the footage you want to import:**



**Click on Choose and go back to your FCP project window:**



Your Scene, Shot and Take folders now appear in the project window, ready for use in your FCP project.





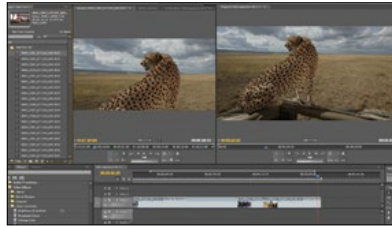
Final Cut Pro X



Final Cut Pro X



Premiere Pro



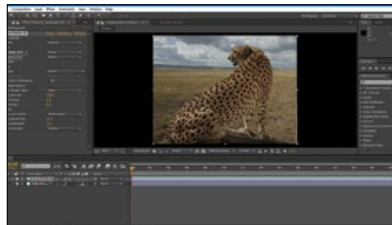
Edius Pro 7



Final Cut Pro 7



After Effects



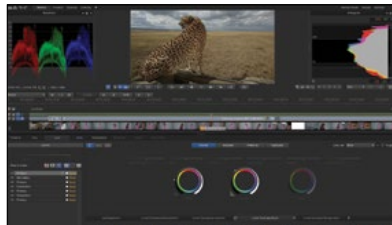
Edius Elite 7



Motion 5



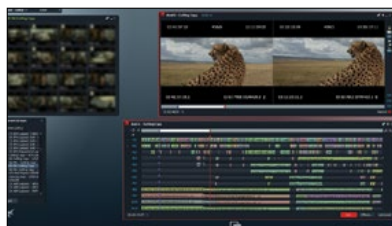
Speed Grade



Smoke



Lightworks



## Using Ninja Star with external power supplies

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### AC Adaptor (sold separately)

This connects on the battery slot on the back of the Ninja Star.

The end of the adaptor will connect to a mains plug.

Alternatively you can use any NP-Compatible Charger or power supply, as long as they use a "Dummy Battery".



### D-Tap Adaptor (sold separately)

This adaptor allows you to take the power supply from any source that has a D-Tap connection such as external battery packs.

The D-Tap also connects to the battery slot of the Ninja Star. You will need a D-Tap to D-Tap cable (sold separately). Voltages 7.2 to 16.8 volts.

Please refer to Atomos D-Tap document on the Atomos Knowledge Base.

## Using Ninja Star with Atomos Connect Converters

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# CONNECT

You can think of Atomos Connect Converters as stand-alone devices or as specially designed modules to give the Ninja Star additional capabilities. With them you can:

- Add an SDI input to the Ninja Star for connection to non-HDMI devices using Connect S2H
- Add an SDI output to the Ninja Star for playout to SDI monitors using Connect H2S

There is nothing to set up when you use a Connect Converter. Just secure the device in the battery slot and place the battery that previously occupied that slot in the battery slot on the converter.





# Software updates

## Updating AtomOS (Firmware)

From time to time we will issue software updates for your Ninja Star. To update the firmware (that's the software that runs inside your Ninja Star), there is a simple procedure you have to follow.

- Go to <http://www.atomos.com/ninja-star-firmware/>
  - Locate and download the firmware upgrade
1. Extract the file **ATOMNJS\_4SXX.FW** from the firmware zip file.
  2. Copy **ATOMNJS\_4SXX.FW** onto a CFast card
    - a. Atomos recommends you use a freshly formatted CFast card.
    - b. Always format your drives in the Ninja Star. The Ninja Star formats the drive for optimal performance for Video.
    - c. Ensure that the firmware update file is on the root of the drive, and not in a folder on the drive.
  3. Put a freshly charged battery on your Ninja Star. It is very important that your Ninja Star does not lose power during a firmware upgrade.
  4. Power down your Ninja Star.
  5. Insert the CFast card with the **NINJABLD.FW** file.
  6. Power up your Ninja Star with a short press of the Power Button.



7. 4x green lights flashing will indicate the Ninja Star is mounting the CFast Card.
8. 3x green + 1x red lights flashing will indicate the Ninja Star is updating the firmware.

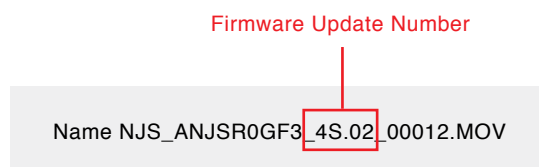


9. The firmware upgrade will take up to a few minutes.
10. When the firmware upgrade is finished, the Ninja Star will:
  - a. Delete **NINJASTR.FW** from the CFast card.
  - b. Power itself down.

## Checking firmware has been updated

To check if the firmware has been successfully updated, you must record a quick clip with the Ninja Star. You can then look at the file name to check if the clip has been recorded with the new update.

If your file name has the firmware update number (see below), you have successfully updated your Ninja Star, Congratulations!



**⚠** Please ensure your batteries have plenty of charge and that you do not interrupt your Ninja Star while its firmware is upgrading. When it is finished, the Ninja Star will restart and you will be able to use the device as normal.

## Problems when installing AtomOS

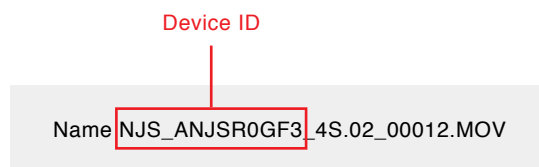
Very occasionally, the firmware update process can go wrong. This might be because of an incomplete or corrupted download.

In the unlikely event of your Ninja Star becoming unresponsive, there is a built-in recovery mechanism.

All you have to do is press and hold the on/off button for 10 seconds. If you do this your Ninja Star will revert to its factory condition, and you will be able to retry the firmware update later (taking due precautions to identify and remove possible reasons for the failure of the previous attempt).

## Finding your Device ID (DID)

Your unique device ID is located within the file name on your recorded media.



NINJA STAR SPECIFICATIONS	
<b>Weight</b>	
Without batteries & HDD	130g/4.6oz
With batteries & HDD	230g/8.1oz
Dimensions (W x H x D mm)	95 x 60 x 25mm
Construction	Advanced rubberised paint
<b>Power</b>	
Operating power	3.5W / 4.5W (Rec,Play)
Compatible batteries	NP series, D-Tap and supporting accessories (Nikon ENL6, Canon EL6)
Input voltage (battery)	6.2V to 16.8V
Battery time (based on 7.4V)	2600mAh - up to 5hrs
	5200mAh - up to 9hrs
	7800mAh - up to 14hrs
Continuous power * Patent pending	via optional Power station
Powerstation continuous power dual supply	Optional
<b>Video input/loop out</b>	
HDMI	1 x HDMI Micro (1.4)
Signal	Uncompressed 10/8bit 4:2:2
<b>Video output (play out)</b>	
HDMI	1 x HDMI Micro (1.4)
Signal	Uncompressed 10/8bit 4:2:2
<b>Supported formats (in/out)</b>	
HD	1080i60, 1080i59.94, 1080i50, 1080p30, 1080p25, 1080p24, 1080p23.98, 1080pSF23.98, 1080pSF24, 1080pSF25, 1080pSF30,
SD	720p60, 720p59.94, 720p50, SD 480i, 576i

NINJA STAR SPECIFICATIONS	
<b>Realtime hardware encoding</b>	
1920x1080 8/10-bit 4:2:2 & SD to	Apple HQ 422 LT
<b>Onboard processing</b>	
	25pSF > 25P (2:2 Pulldown) 30pSF > 30P (2:2 Pulldown) 60i > 24P (3:2 Pulldown) 59.94i > 23.98P (3:2 Pulldown)
<b>Audio input (48kHz PCM audio)</b>	
Analog Line	2ch 48kHz (no gain control)
HDMI	2ch 48kHz
<b>Audio output (48kHz PCM audio)</b>	
Analog line / Headphone	2ch 48kHz
HDMI	2ch 48kHz
<b>Remote start/stop</b>	
HDMI	Auto HDMI Trigger Supported Protocols - Canon, Sony, Atomos Open Standard
<b>Recording</b>	
Supported media (Approved List Only)	Atomos CFast
Dock	USB 2.0/3.0 CFast card reader
Supported applications	Supported Applications FCPX/FCP7+ / Media Composer 5.0+ / Premiere 5.5+ EDIUS 6.0+ / Vegas Pro 10+ / Lightworks / Autodesk Smoke 2015
Accessories included	Main unit, Universal battery charger 110-240V, AC adapter & car charger, CFast card reader, 1 x Atomos 2600mAh battery, Rugged carry case, Cheese plate mounting adapter
Optional extras	D-Tap adapter, Canon & Nikon adapter plates, Connect H2S converter, Connect S2H converter, CFast cards, Atomos specialty HDMI cables



### Construction note:

Your Ninja Star is designed to operate in ambient temperatures up to 40°C/105°F. It features a fanless design which dissipates internal heat through the aluminium chassis.

The top and bottom aluminium surfaces next to the tripod screws are the heat sinks. Under warm or extended operating conditions, these surfaces may get hot to the touch. This is normal part of the design, and shows that your Ninja Star is dissipating heat successfully.

**Have you registered your Ninja Star yet?**  
Register now to receive communication on all future updates

**Web:** [www.atomos.com](http://www.atomos.com) **Sales:** [sales@atomos.com](mailto:sales@atomos.com) **Support:** [support@atomos.com](mailto:support@atomos.com)