



# ATOMOS NINJA INFERNO

## USER MANUAL

EDITION 1: MAY 2017



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**3 The Ninja Inferno 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.**

#### 6 Using the Ninja Inferno safely

Although the Ninja Inferno 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 Inferno 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 Inferno are clearly visible and do not present a trip hazard.
- Do not place on uneven or unstable surfaces.
- Do not insert anything but Ninja Inferno Master Disk caddies in the Master Disk slot on the front of the Ninja Inferno.
- Do not touch the Ninja Inferno's screen with sharp, metallic or abrasive objects.
- 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 Inferno in municipal waste and do not incinerate it, always follow local regulations for safe disposal.

#### 15 Care of disk drives

Spinning disks and SSDs are very sensitive to damage from static electricity. Please observe all the usual ESD precautions when handling them.

Please see the section Mechanical shock and vibration later in this manual for information about how to handle and care for your disk drives.

#### 21 HDMI cables

Please remember that HDMI cables do not use locking connectors and will simply pull out if they are jerked or tripped over. Please ensure your cables make a secure connection and avoid flexing them excessively to maintain reliability.

## User Manual Conventions

**To keep things simple but clear, we've only adopted two conventions in this manual:**

 *A helpful tip, suggestion or something to note because it's not obvious at first.*

 *An important note or warning*

# Warranty & Conditions

## Notice

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## International Hardware Limited Warranty

### ATOMOS warrants that:

- Main product, not including TFT/LCD, or any external accessories, will be free from defects in materials and workmanship for a period of 1 years from the date of purchase, the user may upgrade to a 3 year warranty upon registering their product at [www.atomos.com](http://www.atomos.com)
- The TFT/LCD, HDD/SSD Docking Station, Master Caddy II and Cable 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;
- 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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**Atomos does not warrant that the goods will operate in a manner that is error free, or uninterrupted. The goods are not intended to be the primary or only data storage device for data – customers are solely responsible for back up and protection of data.**

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## Registration + Warranty Upgrade

Standard warranty is 1 year. Register to upgrade your warranty to 3 years. Visit: [www.atomos.com/registration](http://www.atomos.com/registration)

## Introduction

Thank you for choosing the Atomos Ninja Inferno: your 10-bit 4K HDMI Recorder/Monitor/Player. Featuring a super high-resolution screen in a lightweight body, with waveform monitoring, vectorscope and world's leading support for HDR monitoring.

This user manual will get you up to speed with all the amazing features packed into the Ninja Inferno with tools designed to help your workflow both on set and in post.

Stay up to date with the latest information and software, by registering your product or visiting the Support section of the website:

[www.atomos.com/support](http://www.atomos.com/support)



HDMI

ProRes

DNxHR®



Your Ninja Inferno comes with a standard 1 year warranty on all parts and accessories. You can upgrade to a 3 year warranty on the main Ninja Inferno unit alone (excluding IPS screen) by registering your Ninja Inferno online 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.



## What's Included

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We include necessary accessories such as a mains power supply and a media Master Caddy to get you started. Additionally you will need a 2.5" SSD, a HDMI cable and a means for connecting to your tripod. Optional Atomos accessories and approved 3rd party accessories including great value combo kits are also available. Visit the Atomos website for the latest accessory options.

Atomos does not sell storage and your package will not contain any spinning disks or SSDs. You can buy these locally to keep running costs as low as possible.

We recommend drives, please refer to **Part 15** (Technical Specifications) of this manual. For the most up-to-date information please visit:

**[www.atomos.com/drives](http://www.atomos.com/drives)**

### Here's the complete list

1. Ninja Inferno recorder/monitor
2. 1 x empty Master Disk Caddy II's + 4 screws for fixing disks
3. 1x power supply
4. Travel case
5. Ninja Inferno Quick Start Guide (not pictured)

*\* Contents may differ slightly from those shown here.*



## What you also need

Widely available 2.5" drives are the basic storage medium for 4K Monitor recorder. We work closely with all the leading drive manufacturers to qualify as many options as possible. Hard drives / HDD or Spinning disk can only be used for HD recording. Solid State Drives / SSD are required for 4K recording or for more demanding production environments that may not be suited to HDDs.

See the section below about when you should consider using SSDs.



 HDD |  SSD

### Which drives should you use?

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

Spinning Disk Drives (HDD) are recommended for recording up to 1080p30/1080i60 HD video only

Solid State Drives (SSDs) are recommended for recording up to 4KUHDp30.

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

- Disk drive data rates tend to be given in megabytes per second, and codec data rates are normally given in megabits per second. It's very easy to get confused. But there's no need to be, because all you have to do to convert megabits to megabytes is divide by 8. So if you're recording at 220 megabits per second, that's going to result in  $220/8$  megabytes per second, which is 27.5 megabytes per second.
- We recommend at least 7200 RPM drives. Just remember that the higher the bit-rate of the codec you're using, the faster the drive needs to be, with 4K recording your data rate is four times from that of HD recording, please ensure your drive is capable of keeping up with 4K write speed requirements.

Atomos regularly test hard drives – please check this link before purchasing drives: <http://www.atomos.com/drives>

### Mechanical Shock and Vibration for Spinning Disk HDD's

Hard disks are precision mechanical devices that need to be handled carefully. The use of mechanical drives or Solid State drives will vary depending on the intended filming application.

We can't give rigid guidelines because there are so many different kinds of drives, each which has different mechanical properties. You may find variations between drives of the same type.

What we have found is that mechanical drives are suitable for most purposes that don't involve harsh vibration or mechanical shocks. We would not advise using mechanical disks if there is a likelihood that they might be dropped onto a hard surface.

### Here are some things that you should bear in mind when using spinning disks:

- Even though spinning drives can withstand substantial shocks when they are not in use, they are more vulnerable when running. Harsh treatment that may not actually damage the drive may interrupt recordings at a much lower level of severity. We recommend that you experiment with your drives by testing them in the conditions that you normally work in.
- Do not bang or jolt the Ninja Inferno while recording.
- Do not use spinning drives (HDD) for recording 4K video
- You will find noticeable differences in the ability of drives to withstand shock and to continue recording during vibration and movement.

# What you also need

## File Recovery

- Your Ninja Inferno is able to detect when the drive is under stress and it will recover from any break in a recording by waiting until the drive is ready to continue, and then resuming from that point. If frames have been dropped because of shock or vibration, a “**Skippy**” Kangaroo symbol will appear on the home screen on the Ninja Inferno, in the top left hand corner of the display. This means that you will not normally have to restart the Ninja Inferno, even if a recording has been interrupted by mechanical disruption to the disk drive. (see *Monitoring and Recording : Anti-shock technology* for more information)

Taking into account most usage scenarios, we think that mechanical disks will be suitable in the majority of cases when recording up to 1080p30 HD. Spinning disks are most sensitive when they are rotating. It is obviously best to avoid dropping them but many disks now have a “drop detector” that will lock the most fragile mechanical parts in place and protect them from surprisingly hard knocks. We recommend that if you want to experiment with this, you do so with a drive that doesn't contain the day's shoot!

## 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 Inferno disks on a shelf (just like tapes!), and, as a backup, store copies on large hard drives, RAID arrays, Network Attached Storage (NAS) or LTO.

## HDMI cables

HDMI cables are robust physically and electrically: you should rarely have problems with signal transmission unless your cables are either damaged or too long.

Atomos make a range of Professional HDMI cables which are ideal for connecting between your camera and Atomos device.

Not all HDMI cables are created equal and there are a variety of different qualities available. Please make sure you test your cables prior to shooting.

Also check your connectivity at both the camera connector and the recorder/monitor connector to make sure you have a firm connection to avoid any signal drop out.



*If the HDMI cable is removed while recording the “Skippy” image will also be displayed. To remove touch Skippy and he will disappear ready for his next notification.*



Refer to **page 35**: Atomos Anti-shock technolog for more information about “Skippy”.

## Standard 1/4” Camcorder Mount

This must fit a standard 1/4” screw mount. Select the type that best suits your application and conditions.



### 3. Mounting disks in the Master Caddy II

#### Mounting drives in the Master Caddy II

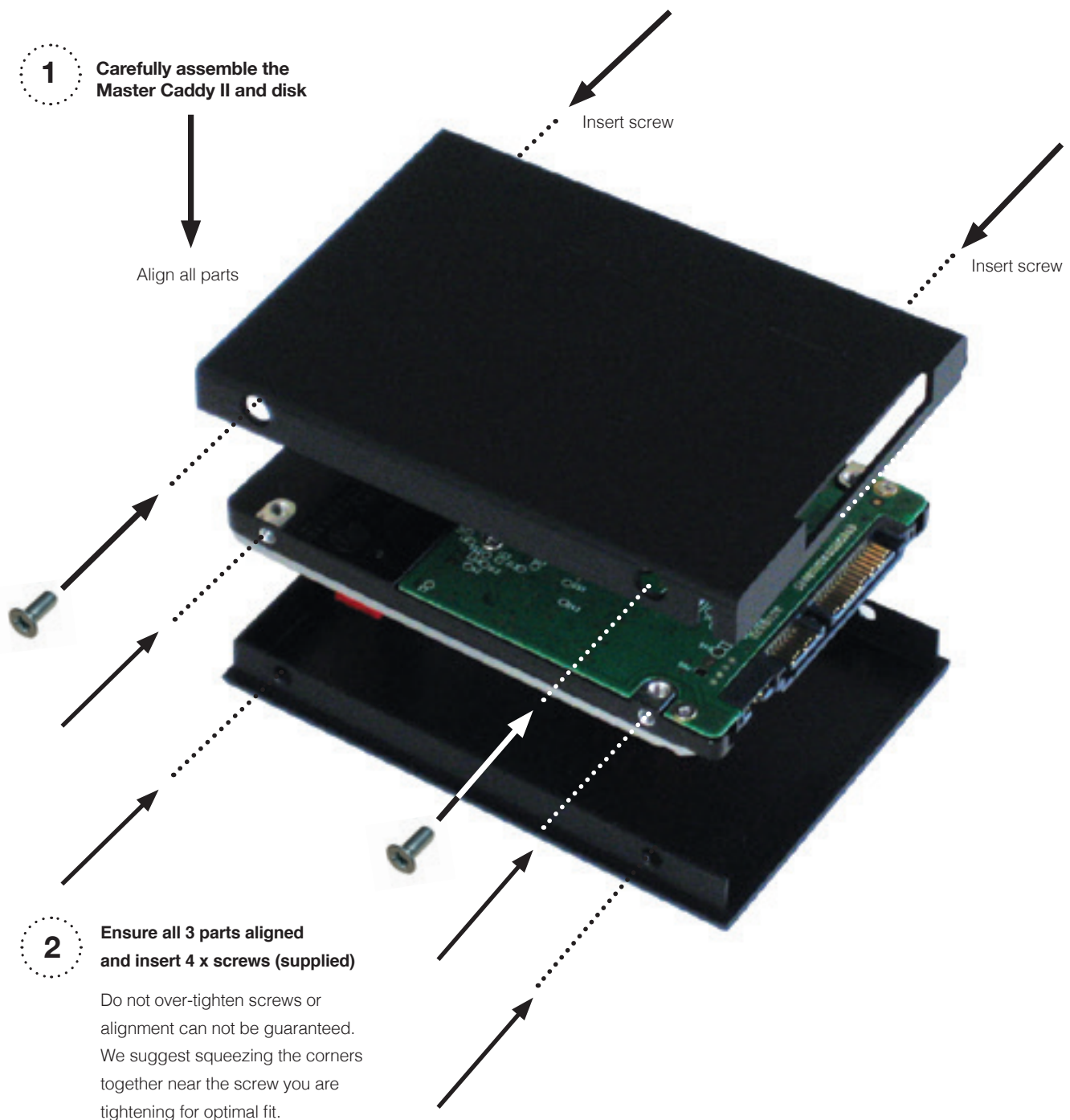
Insert the disk into the caddy, and secure with four screws. The caddy is light and the disk just needs to be held securely. Don't over-tighten the screws. There are no connections to make because sliding the caddy into the Ninja Inferno or the Docking station makes all the connections for you.

The Master Caddy can't be inserted the wrong way round. Always make sure that the disk connector faces the slot in the Ninja Inferno. You have to be quite firm to push the Master Caddy II into place, but don't push too hard, just in case something isn't set up or aligned properly.

There is very little that can cause problems and the most likely thing is that the Master Caddy isn't properly flush with the drive inside. A quick visual check will confirm this.

⚠ Spinning disks and SSDs are very sensitive to damage from static electricity. Please observe all the usual precautions when handling them, especially **DO NOT EVER** touch the exposed SATA connector as static electricity may be harmful to your disk.

⚠ Master Caddy II drives are backwards compatible with previous Atomos recorders, however Master Caddy 1 is not forward compatible with the Ninja Inferno due to the compact latch design.





## 4. Connecting the Ninja Inferno and powering up



### Battery

The Ninja Inferno 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, one or more red lights will blink. When 90% charge is reached, all the lights will flash. It is perfectly OK to use the batteries at this point and we recommend stopping at this stage for the longest battery life. If you leave the batteries on charge after all four lights are flashing, the charger goes into trickle charging mode for the final 10%. Eventually, when trickle charging is complete, and the batteries are at 100% charge, all the lights will go out.*

 *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.*

### Battery Charger

The optional battery charger has been designed to rapidly charge the included batteries yet be a light weight charger that is easy to travel with.

To start charging connect the AC power supply to the mains, and connect the DC jack to the input on the charger.

 *It's worth noting that the two included power supplies are identical so you can use either with the charger or Inferno unit.*

Simply align the battery with the retaining rungs and slide in to place. The battery is held in to place via friction and can be removed by sliding it out, there is not battery locking mechanism to release.

The LED indicators on at the top of the charger provide status indication for the battery:

**SOLID RED LED** – Unit is Powered and ready to go.

**FLASHING RED FIRST LED** – This is reading the current Charge Status of the battery.

**FLASHING GREEN & Flashing RED** – This indicates the level of charge with each bar representing roughly 25% of the batteries capacity.



 **SOLID GREEN** – Indicates the battery is 100% charged.  
*In the unlikely event of a charge error the first and fast red LEDs flashing quickly.*

 *Fast charging of the battery is possible up to 80% capacity and the remaining 20% will then charge at a slower rate to maintain good battery life.*

### DC Power

Once the Ninja Inferno is switched on, it will operate from your external DC power source if available, if no DC power source is present, then the battery will become the primary power source. The battery will work as redundant power if DC power is disconnected.

To attach the battery, gently slide it down into the slot and lock into position. To remove a battery, push the release button below the battery. To attach a DC Power source such as Power Station, connect the DC cable to the rear of the Ninja Inferno.

 *Ninja Inferno batteries and modular accessories are held in place tightly because they are on the outside of the device, this is to ensure there is no possibility whatsoever that they could work loose, so you may have to be quite firm with the battery latches. We suggest that you familiarize yourself with the force required to remove the batteries and accessories so that you can do this quickly in the field.*

The Ninja Inferno features an Atomos technology called Continuous Power which uses battery looping technology for uninterrupted switching between power sources during use.

 *The Ninja Inferno may be powered from NiMH & Li Ion 14.4V battery systems. Battery adapter required such as the Atomos battery plate or D-Tap adapter.*

### Coiled Dtap to DC cable

An optional Ninja Inferno accessory is a D-Tap/P-Tap connector to 2.1mm DC barrel cable. This is designed to allow you to power your device from an external battery system. To use this simply connect the Dtap connector to your power source. Ensure that the output of the power source does not exceed 16.8V DC and ideally should be using either 12 or 14v. When the Dtap cable is in use it will replace the DC input an override any attached batteries.

 *It is worth keeping a battery on the Inferno unit - the connected Dtap source runs out it will automatically switch over to the battery that is connected to the the Inferno.*

## 4. Connecting the Ninja Inferno and powering up cont.



### Turning OFF power via touchscreen



### Turning ON power to the Ninja Inferno

The start button is located on the top right hand side of the unit (as you look at the screen). Momentarily press the circular button on the top right side of the Ninja Inferno as you look at the screen to power up the unit. After a couple of seconds you will see the Atomos logo, and then the Ninja Inferno Home Screen.

### Turning OFF power to the Ninja Inferno

To turn the unit off, touch **menu** on the home screen, and then **press the red Power off icon for 3 seconds** the icon will go white when touched to indicate activation of the button. The unit will then power off. You can also do a forced power down by **depressing the on/off button for three seconds**.

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

## 5. Ninja Inferno Connections

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### 1. Power Button

The power button is used to power on/off the device.

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### 2. Calibration Port

The calibration 2.5mm jack on the left hand side (looking from the front), allows for the connection of supported calibration devices with support now available for the retail version of the X-Rite i1Display Pro as well as legacy Atomos Spyder Calibrator. Both units utilize the optional USB to serial adaptor cable. The latest version of the Atomos Calibration software is available at [www.atomos.com/support](http://www.atomos.com/support)

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### 3. Headphone Ports

A 3.5mm headphone jack is located under the power button. Channel selection and volume for headphone monitoring is via the audio controls section in the lower left hand side of the touchscreen.

## 5. Ninja Inferno Connections cont.

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### 1. HDMI

**HDMI IN:** The video input is a full size HDMI 2.0a connection used to receive the video and when supported by your device embedded audio and Timecode. This is both displayed and recorded to the Atomos recorder/monitor storage media.

**HDMI OUT:** This is for connection to an external monitor or other device with an HDMI input. It carries a loop-through of the incoming HDMI signal in record and standby mode, and the playback signal when the Ninja Inferno is in playback mode. This output is 2.0a and can carry either a 4K or HD signal (with the option to down convert the 4K input to HD).

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### 2. Analogue Audio

On the side of the Ninja Inferno unit is a multi-pin connector in to which the XLR break out cable can be connected. A 2 in 2 out XLR cable is available as an optional additional accessory. The inputs can be configured at Line, Mic and Pro level in the Audio menu. The inputs can also provide 48V Phantom power to compatible microphones.

The XLR outputs are available via the optional 2 x 2 XLR cable accessory for monitoring and the audio channel routed to them can be selected via the headphones selection in the Audio menu.

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### Video Scale Convert

Video out also has the option for a down scale to be applied allowing your 4K input to be converted to a 1080 HD output for use with existing HD equipment.

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### 3D LUT Output

When not using AtomHDR mode 3D LUTs can be applied to the outputs of the Inferno and LUTs can also be selected to be applied to the outputs and routed out to other equipment via the HDMI connections.

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### Embedded Audio

The Ninja Inferno can record 8 channels of digital audio embedded in the HDMI signal.



## 6. Master Caddy II, Screw Mounts and Sun Hood

### Master Caddy II Slot

On the rear of the unit is a 2.5mm HDD slot for Ninja Inferno Master Disk Caddy II's. To insert a caddy, gently push until it clicks into position.

**Formatting disks - see page 19**



### Master Caddy II - New 2 keyway system

The Master Caddy II is 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.

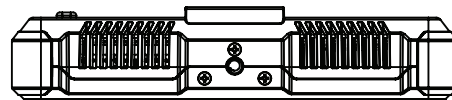
 *The Ninja Inferno does NOT have a release latch - it is friction-fit. Simply pull the Master Caddy out using the top and bottom tabs on the caddy itself.*

*Master Caddy II is backwards compatible with previous Atomos recorders Master Caddy 1 is not compatible with Ninja Inferno as the keyways are on one side only.*

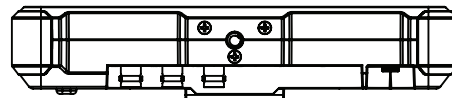
### Screw Mounts

The Ninja Inferno features standard tripod 1/4" screw mounts on the top and bottom of the unit, allowing you to configure your recording setup various ways (1/4" camcorder mount not included in Ninja Inferno kit).

 *Ensure you do not over tighten the screw mounts as this may cause damage*

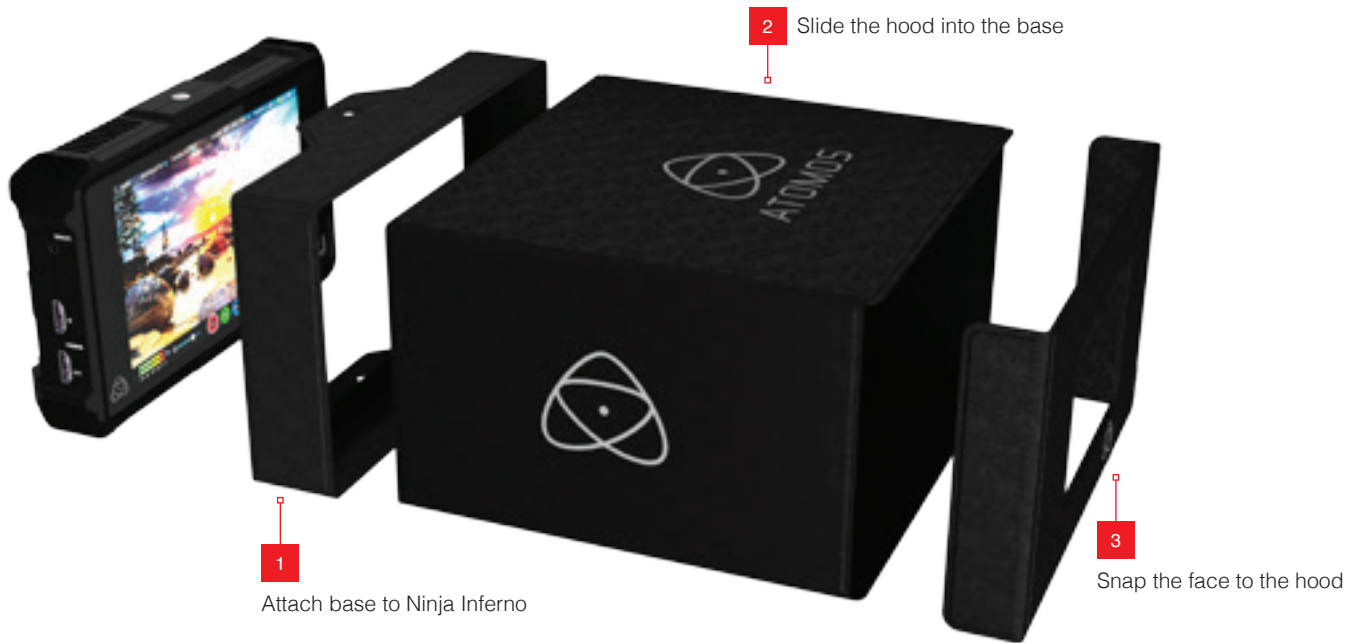


1/4" Screw mount top



1/4" Screw mount base

## 6. Master Caddy II, Screw Mounts and Sun Hood cont.



### Attaching the Sun Hood

For HDR, the viewing experience can easily be influenced by the environmental conditions and the best experience for viewing HDR requires that you minimise the ambient light between your eyes and the screen to easily resolve the dynamic range of the scene. This allows you easy to more easily adjust and as such quickly resolve the dynamic range.

For this reason, an optional accessory for Ninja Inferno is a sun hood which comes flat packed in 4 sections for transportation along with 2 x 1/4" 20 mounts.

To assemble the sun hood please follow the following steps:

First thing to note is that the Sun hood consists of 3 parts as shown in the image above - the base which connects to the Inferno unit, the long shade part of the hood and the front face. Attach the base to the Inferno in the orientation shown above ensuring that the soft side is sitting against the glass face of the Inferno unit.

 This is a snug fit in order to minimize external light bleed.

Push the unit in, align the top and bottom screw mounting holes and attach the retaining screws.

 As the retaining screws provide anchor point for mounting make sure they are firmly connected to provide a solid base.

With the Sun hood base in place, take the main section and pop this out to form a rectangular tunnel. With the Atomos logo on the top facing correctly toward you, slide this into the base.

You can now attach the front face, with the side flaps wrapping around the Sun hood and retained by magnets.

 When first using the front face it may be required to bend the edge flaps a few times to free up movement.

On the underside of the Sun hood construction is an elasticized access point to the touch screen of the Inferno unit. If required the front section of the Sun hood can be removed from the base for direct access to the touchscreen.

 Due to the quick release nature of the front section NO NOT HOLD or pass the unit by the Sun hood alone as this could lead to accidentally dropping and damaging the Inferno.

## 7. Using the Ninja Inferno

The Ninja Inferno is controlled via an intuitive touchscreen interface. Icons and buttons have been designed and laid out in a specific way to ensure operation is simple and fast.

The high definition 1920x1200 Home Screen displays all necessary technical and functional information.

The menu on the bottom of the screen is 120px allowing a full uncluttered 1920x1080 image to be visible on screen. Everything important for operation and adjustment is no more than one touch away. Here is how it works:



 *Touching the center of the screen at any time removes the top interface overlay, tapping again clears the bottom controls and a third tap brings all the options back up. Active Shot Setup or Monitor assist functions that are enabled will remain active when the menu system is cleared. This is to allow you to use the Shot Setup and Monitor assist functions at all times while shooting.*

### Category 1 – Operating Settings

This list of real-time operating settings can be adjusted or toggled when a BLUE ARROW  is present. If the Blue arrow is disabled, the setting cannot be adjusted.

### Category 2 – Shot Setup & Monitor Assist Tools

This list represents the icons and functions available for Shot Setup and Monitor Assist Tools:



Waveform Monitoring Functions  
**See page 24**



Monitor Assist Functions  
**See page 26**



Smart Log Cut and Tagging  
**See page 29**



Monitor Mode (AtomHDR & 3D LUTs)  
**See page 31**

Touch these icons to reveal more functional options in a sub-category. Touch the sub category icons to toggle the functions on or off. When a Shot Setup or Monitor Assist function is active, detailed settings for each Shot Setup tool are also available from this panel.

Touch the  icon to go back to the Home Screen at any time.

### Category 3 – Main Controls REC, PLAY & MENU

The Main Controls of the unit are indicated by large round icons.



To enable recording  
**See page 16**



For instant playback and review  
**See page 16**



To make settings changes  
**See page 16**

## 7. Using the Ninja Inferno cont.

### Home screen and menu functions

#### Rec (Record)

This is the icon you touch to begin a recording. Touch it again to stop a recording. While recording the Rec icon changes to a Stop icon and a red frame is present around the screen.

#### Standby



#### Recording



#### No input / No media



 The Rec icon is dimmed and disabled if there is no valid video input OR, the disk is not formatted, or the disk is full. The button is dimmed because you cannot record.

#### Play

Touch this icon to play previously recorded clips. When you press the green Play button the Ninja Inferno will switch to playback mode and automatically play the last recorded clip.

#### Standby



#### Navigation



Ninja Inferno uses a unit name, scene, shot and take convention to name the clips. Select the clip you want to play by touching the file name and this will start to playback.

#### No disk



 The Play button will be dimmed and disabled if there is no disk or the disk is not formatted.

**See page 20 - Formatting disks**

#### Menu

Pressing this takes you into a number of options which will explained next.



#### Time Lapse



 When the icon is shown with small interval lines around the red circle this means that Time lapse recording is activated.

For more information on Time lapse on **page 39**

#### Pre Roll



 When a white circular arrow is show this means Pre Roll record is active.

For more information on Pre Roll **see page 39**

## 7. Using the Ninja Inferno cont.



### File Naming

Allows you to select the scene and shot number that will be recorded as well as change the unit / media name. To change the unit name tap the arrow under UNIT/MEDIA NAME, Use the left and right arrows to select a letter, and the up and down arrows to change its value.

To modify the scene and shot number under CONFIGURE FILE NAME, select plus or minus next to scene or shot (up to 999). The number you choose will then be shown in the file name at the top of the screen during recording, the take number is automatically increased with each take.



### Date & Time

Allows you to adjust the date and time shown by the clock in the Ninja Inferno. This will also change the time of day Timecode. Touching the Date & Time takes you into the Date and Time Screen.

Date formats (i.e. dd-mm-yyyy or mm-dd-yyyy) are selectable by tapping the blue arrow on "Select Date Format" Menu. Simply keep tapping until the desired format is shown. The Time, Month, Day and Year are selectable and can be modified by clicking the blue plus and minus icons next to the desired fields.



For both Time of Day Timecode and Scheduling start times for Time Lapse record mode it's important to ensure that the correct time is set.



## 7. Using the Ninja Inferno cont.

---



### Lock the Display Screen

You can lock the display of the Ninja Inferno so that no changes can be made by mistakenly touching the screen, to lock the Ninja Inferno simply short tap the power button. The screen lock function will simultaneously lock or unlock both Channels of the Ninja Inferno.

Short tap the power button again to unlock the unit.



UNLOCKED



LOCKED



*The lock screen can be combined with the display off function so that when lock is engaged the display is turned off. The Tally light on the front of the unit will still display Rec (Red) or idle (green) status. Locking of the display can be found in the Monitor Mode.*



### Timecode

Takes you to the dedicated Timecode configuration page.



*Refer to **Page 36** of this manual for more information.*



### Ninja Inferno Info

Shows the software (firmware) version and unique device ID (DID) of your Ninja Inferno device. This will be required to activate the Avid DNxHD / Avid DNxHR codec. You can also check on the Atomos website to ensure you are running the latest firmware:

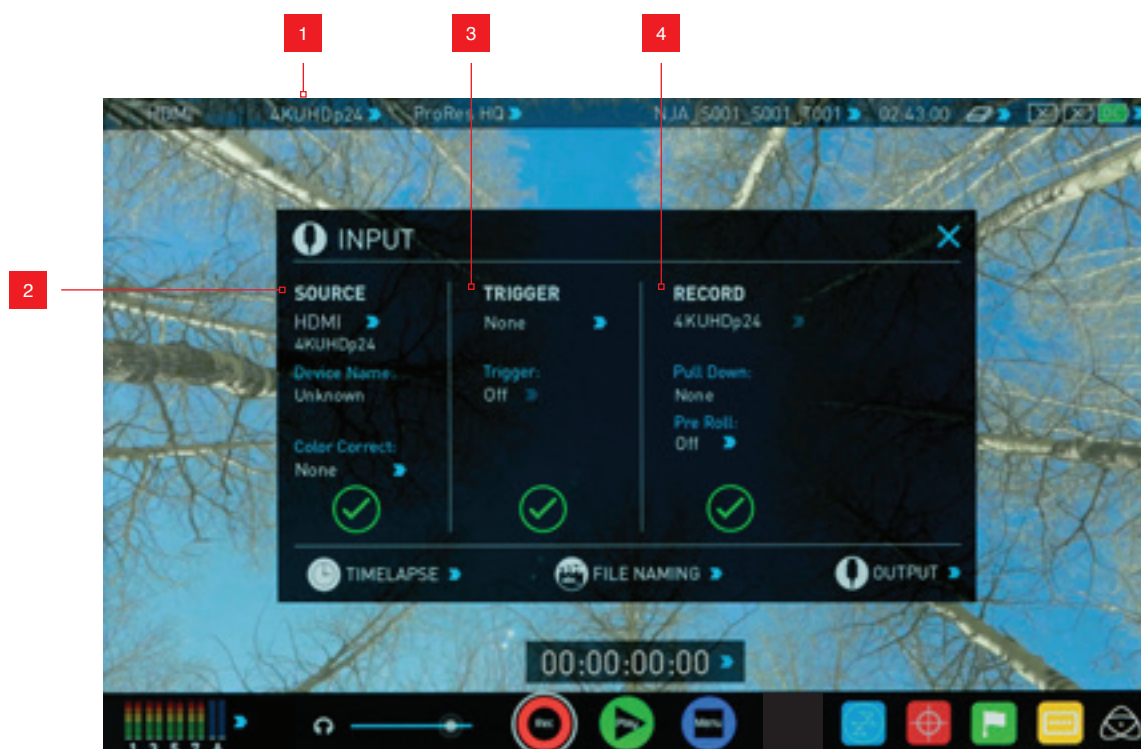
<http://www.atomos.com/support>



*Remember that pressing on the Back button will always take you back to the previous menu.*



## 7. Using the Ninja Inferno cont.



### 1. The Input Menu

Simply tap the source input menu to the top left of the screen to bring up the input control panel. This panel is a command centre for all devices connected to the Ninja Inferno and will assist you with connectivity by indicating if the signal is active or if attention is required.

### 2. Source

The current input resolution of the selected input source is displayed.

HDMI Devices will display an EDID Device name if the information is available from the HDMI device connected.

A green tick on Source indicates the Ninja Inferno has locked signal on this input, a red cross indicates a signal or lock issue with the attached device, double check your cable and camera output settings. There is also an option to Correct Color input for use with Canon 5DMKIII that can be applied to the input.

### 3. Trigger

The Ninja Inferno can be remotely triggered to record from your camera. Select the correct triggering option for your camera and set Enable Trigger to ON. Please refer to **page 23** for more information.

### 4. Record

The record menu allows you to apply pulldown removal if recording from a source that applies pulldown to the output signal. Note for 3:2 Pulldown removal, movement in the frame may required to accurately lock signal, simply wave your hand in front of the camera to achieve lock. See **page 38** for more details on pulldown removal.

The 3D LUT option allows you the option to burn in your selected LUT to the recorded file. Please be aware that this will permanently baked in and is non reversible. When this option is selected a red LUT icon will flash in the top right hand corner of the display. See page 29 for more details on 3D LUTs.

Pre-roll allows for you to cache the last few seconds of footage so if you are late to hit record you won't miss the action. When this option is selected it will show a round arrow on the record button and flash a red Pre Roll icon in the top right hand corner of the display.

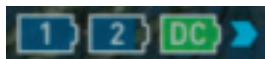
 As Pre Roll is always cache recording once activated a number of features that are related to record settings will be locked. These include audio record channel select, 3D LUT record, Codec selection and Drive naming.

### 5. Video Out

This menu displays the active video format being output from HDMI. A 4K to HD down conversion can be applied to the output. This enables you to send a 4K input signal to a HD device. When working in Rec.709 SDR mode, 3D LUTs can also be applied to the output independently of the Ninja Inferno screen. This can be useful if you wish to monitor log footage on the Studio and show a graded image on an external display.

## 7. Using the Ninja Inferno cont.

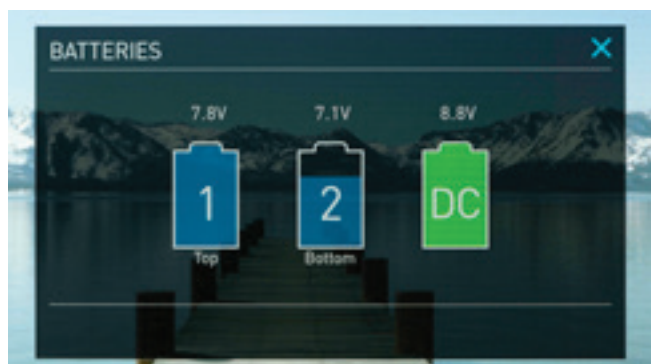
### 8. Battery Indicator



Indicates if one or two batteries connected or DC connections from external power sources. Touching the battery Indicator takes you to the Batteries screen where you can closely monitor the status of the batteries. When a new battery is added the system will switch to that battery and DC will over ride battery power.

 When a battery is running low its icon will flash.

### Batteries Screen

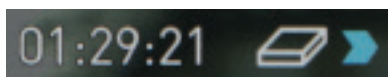


The Batteries screen indicator is made up of three icons, two will display the batteries and the other for the DC input. The active battery is shown in green and the level of the battery is shaded in 1/4 increments with a voltage level shown on top.

### Auto Switching/Manual Switching

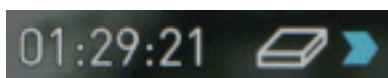
The Ninja Inferno will automatically switch between connected power sources when the source in use is depleted. ie: DC > Battery auto switches.

### Storage Capacity Indicator



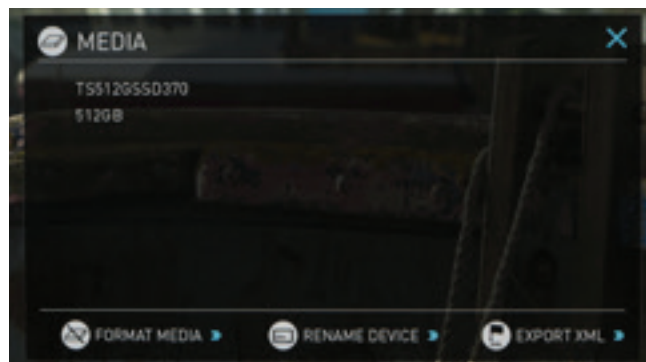
Located in the top right of the screen. When a disk is inserted, the Storage Capacity Indicator will show the recording capacity of the drive. This is calculated based on codec settings and input signal type. If no input is connected it will show as --:--:--.

### Formatting HDD/SSD



Touching the Storage Capacity Indicator on the home screen will take you to the Media Menu. This menu provides information on the drive currently inserted. To format the drive touch the Format Media button. A confirmation screen will give you the choice to continue or cancel the process.

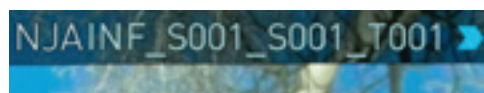
If you do not see your hard drive information, there may be a problem with the connection or drive. Try ejecting the drive and re-inserting the drive.



Please check the drive compatibility list prior to purchasing drives:  
<http://www.atomos.com/drives>

 The Ninja Inferno file system is exFAT. We recommend that you format each disk with the Ninja Inferno and not your computer to ensure the correct parameters are set with the file system.

### Unit Name



To access the unit name click the file name indicator from the home screen, then Unit Name.

The unit name serves two main purposes:

- **Drive Naming:** Naming the unit names the drive if the drive is formatted after the unit name has been set
- **File Naming:** File name is the current unit name as the start of the recorded clip name; NJAINF\_S001\_S002\_T003

To access the unit name screen simply touch the blue arrow to the right of the unit name. Creating your own unit name by pressing the arrow to change and enter the letters in. Pressing OK will allocate the new unit name and return you to the menu screen.

 When changing the drive please ensure that you take note of the last scene and take number so you can append this as formatting a drive will reset the scene and take counter to 01,01,01.

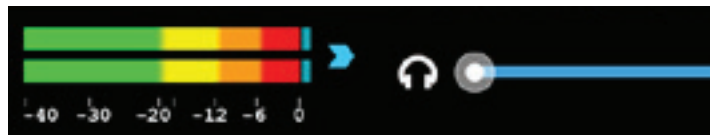
## 7. Using the Ninja Inferno cont.

### Monitoring & Recording Audio Channels

Located on the bottom left corner of the home screen you will see the Audio panel and quick headphone volume adjustment bar.

Tap the audio bars to bring up the audio panel.

From this panel you can manage up to 8 digital channels (via HDMI input) as well as 2 analogue audio channels (via the Line in).



 Recorded digital audio inputs work in correspondence to the video input source selected from the Input Menu, Analogue Line In is available to both selectable inputs. An active video input is required to record audio.



Each channel has a level meter assigned to Left & Right Channels; when there is active audio feed you will see the level indicator moving.

You can choose to record from any or all of the digital (HDMI) channels from the active source input as well as analogue inputs. Underneath each pair of audio channels you can see the  record button, when this is shown in red it is set to record, simply select the channels you want to record.

The Analogue audio input level is located to the far right, tap  to record this channel. Use the optional XLR break out cable.

 Please note that if analogue audio is recorded it will be placed as the first pair of audio tracks in the recorded file.

### Audio Options

To adjust the gain on the analogue input you need to bring up the audio options page by pressing in the lower right corner of the audio menu. To select the input line Level to match your device. Options available are;



### Line Level (-10 dBV)

Sets the analogue input channel to Line Level via the XLR breakout cable.

### Mic Level (-40 dBu)

Sets the analogue input channel to Mic Level via the XLR to XLR connector. With Mic Level selected you also have the option to provide 48V phantom power should your microphone require it. Please only use this when your microphone supports it and if unsure please consult the manual for the mic you are using.

### Pro Level (+24 dBu)

Sets the analogue input channel to Pro Level Audio to via the XLR breakout cable.

Analogue gain can then be tuned by incremental increase or decrease of up to +/- 20dB individually for both Left and Right channels.

 It is not possible to vary the gain if the signal input is from the HDMI connection because this is digital and is embedded in the signal. You can usually adjust this from the camera, please see your camera manual for operational details.

For the XLR outputs you will need the optional 2 x 2 XLR accessory cable, the audio line out level can be adjusted by cycling through the Audio out options.

To enable phantom power for mic's connected via the XLR connection, turn on the Mic 48V option.

 Audio In must be selected as Mic Level.

For monitoring the audio, the Home Page Audio options Toggles the orientation of the audio bars displayed on the Ninja Inferno home page in the lower left corner. Options available are;

### Horizontal

Displays the 2 channels you are actively monitoring.

### Vertical

Displays 12 channels + 2 Analogue Channels.

### Monitoring Audio

To monitor the audio, tap the headphone icon  next to the channel you wish to monitor from the headphone output.

 Selecting the Monitor icon does not mean that track is selected to be recorded. You need to select each channel using the  record button. Tracks that are selected to be recorded have colored Audio Meters.

### Audio Delay

This option allows you to delay the Audio to be in sync with the video by adding in frame delays.

### Audio During Playback Mode

When you enter into Playback mode on the Ninja Inferno it will only output channels 1/2 on the headphones, please bear this in mind when you select the audio channels for recording.



## 8. Monitoring and Recording

### Setting up for recording

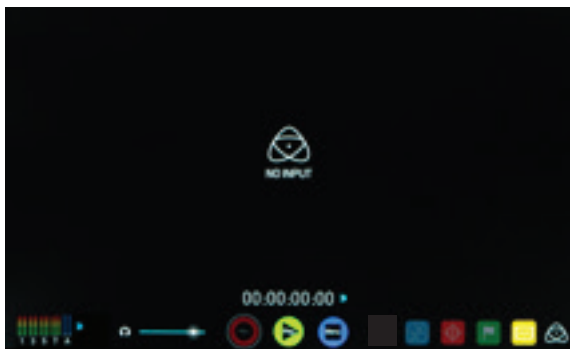
As soon as you connect a supported signal to the Ninja Inferno input and have inserted a formatted drive the following will happen;

- The Rec icons will go solid
- The input source & format will be shown in the top left corner
- Audio inputs will show levels in bottom left corner

### Ready to Record



### No Input / Disk Present



### No Input / No Disk / No Disk Formatted



### Input Present / No Disk



### Recording Checklist

- Check there is a valid signal by checking the input menu ensuring all fields display a green tick.
- Check the input signal is set to what you would like from the input menu:
  - Progressive
  - Progressive with 2:2 or 3:2 pulldown (1080i inputs only)
  - Interlaced (HD Only)
- If you see No Input for any reason please check your camera settings match a supported format for Ninja Inferno. The formats supported are listed in the technical specifications page at the end of this manual.
- Connect any additional Analogue audio inputs and adjust gain accordingly.
- Check you have the correct audio channels in record, set to you required from the audio panel.
- Connect headphones and monitor the audio channels to make sure the sound is as expected
- Ensure the video is coming in as expected. Make sure the signal is clean and does not have any GUI overlays from the camera.
- Check you have the correct Scene & Shot number selected, this can be adjust by tapping the file name to the top of the screen.
- Check your drive is inserted and has been formatted by the Ninja Inferno
- Check your Timecode and trigger settings are as required
- Choose how you will start/stop your recording

### Choosing your recording format (Codec)

Select the codec name on to the top left of the screen to display the codec menu.



From the codec section you can toggle between ProRes® or Avid DNxHD®\*. The Quality menu allows you to toggle codec compression Apple ProRes offers 3 levels of compression (HQ, 422 & LT) DNx offers 4 (220x, 220, 145, 36 ) and DNxHR is available in HQX, HQ, SQ and LB. The expected record time available from each codec selection is automatically calculated from the available space on the media inserted.

 If Avid DNxHD / DNxHR is required, you must activate it first. This can be done at [www.atomos.com/support](http://www.atomos.com/support) – DNxHD 220x/DNxHR HQX are 10bit, all others are 8 bit, DNxHD36 is a proxy codec.

 More information regarding Apple ProRes data rates can be obtained online from Apple ProRes whitepaper PDF document.



## 8. Monitoring and Recording cont.

### SmartControl

SmartControl is a versatile set of functions used to control the starting and stopping of recording by automatic or external means. This section outlines the different methods to start and stop recording.

**Ninja Inferno Start and Stop record control can be triggered by the following methods:**

1. Home Page Touch Screen
2. HDMI Rolling Timecode trigger
3. HDMI Camera trigger
4. Via LANC for Sony and Canon Cameras
5. Via LANC serial port

#### 1. Home page Touch Screen

By pressing Rec (Record) and STOP to end recording



#### 2. HDMI Rolling Timecode Trigger record



If the camera is Record Run mode, recording can be stopped or started by a moving Timecode via HDMI.

When enabled the camera and the Ninja Inferno will start and stop recording simultaneously.

 *Rolling Timecode trigger is for use in older cameras with TC only & no trigger. If your camera is set to FREE RUN this trigger will start recording immediately. Please be that aware not all cameras have Start/Stop flags for triggering record, especially older cameras. In such cases rolling trigger in REC RUN will need to be used to trigger recording automatically at the same time as the camera starts recording.*

### 3. HDMI Camera trigger record

The HDMI Camera trigger is available for supported cameras, There is a flag within the digital signal that lets the Ninja Inferno know the start/stop record has been pressed on the camera; in turn this will trigger the Ninja Inferno to start/ stop recording at the same time as the camera.

## 8. Monitoring and Recording cont.

### Waveform Monitoring

AtomOS6 has a newly improved Waveform Monitoring control panel which can be enabled with only a few button presses.



- |                             |                                                  |
|-----------------------------|--------------------------------------------------|
| 1. Waveform Monitoring Menu | 6. Waveform Size (1/4, 1/3 and Full Screen view) |
| 2. Luma Waveform            | 7. Transparency                                  |
| 3. RGB Waveform             | 8. Waveform Brightness                           |
| 4. Vectorscope              |                                                  |
| 5. Vectorscope Zoom         |                                                  |

### What is Waveform Monitoring?

Waveform Monitoring is used for measuring the brightness, luminance or chroma values from a video input signal. This feature has several benefits to the production workflow including:

- Ensuring camera to camera matching accuracy when shooting multicam.
- Returning to locations for additional pick-up shots.
- Assisting with colour correction.
- Camera white and black balance

### How to use

To enable the Waveform Monitor, press the Waveform Monitoring icon on the home screen.



**Waveform Monitoring icon**

 The Waveform Monitoring icon will only be visible if there is an input signal detected.

## 8. Monitoring and Recording cont.

### Waveform Monitor Types

Inside the Waveform Monitoring menu, two types of Waveform Monitors are available for use:



**Luma Waveform**



**Vectorscope**



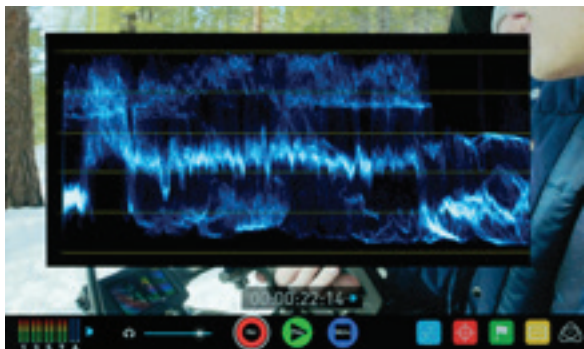
**RGB Waveform**



**Vectorscope zoom**

Luma Waveform, RGB Waveform, Vectorscope and Vectorscope Zoom are enabled simply by touching the corresponding icon and will be by default displayed at the bottom right hand corner.

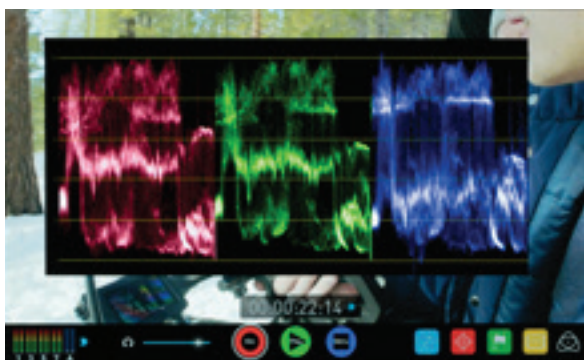
### Luma Waveform



The Luma or Luminance Waveform is a great way to visualize the dynamic range of your image, allowing you to protect exposure of both your high lights and shadow detail. It's particularly useful when shooting with a low contrast LOG curve and works in perfect partnership with the AtomHDR engine to illustrate the highlight clipping point to allow you to correctly expose your image.

### RGB Waveform

RGB Waveform will monitor the level of Red, Green and Blue from an



input source. The RGB channels are displayed side by side. This can be used to check to white balance. Just point the camera at something white and the Red, Green and Blue levels should match if white balance is setup correctly on the camera

 *The Waveform Monitor will remain on screen when hiding the overlays ensuring the focus remains on calibrating your image.*

### Vectorscope



The Vectorscope display shows colour information of hue (shown as a phase vector), and saturation (measured by outward distance from the centre). This is useful for checking if an image is under or over saturated and for calibrating multiple cameras to ensure greater consistency between shots.

### Vectorscope Zoom



The Vectorscope Zoom shows a scaled up view (x8) of the centre of the vectorscope.

### Waveform Monitor Settings

From within the Waveform Monitoring menu you can access the display settings for the waveform monitor.

To change the size of the waveform, press on the 1/4, 1/3 or Full Screen icons and the display will update immediately.



Waveform Size settings

 *To toggle between Waveform Monitor sizes of 1/4, 1/3 and Full Screen from the Home Screen, tap in the bottom left corner of the screen .*



Brightness



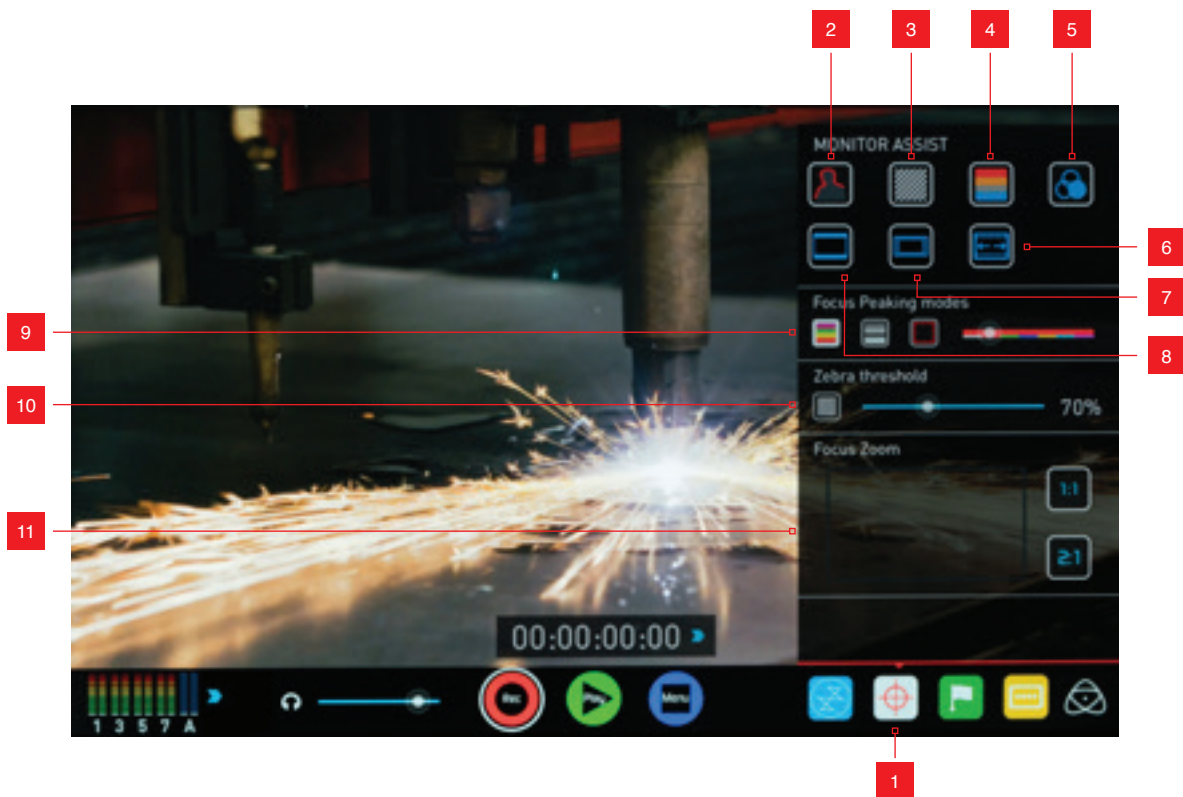
Transparency

The Brightness slider directly controls the intensity of the waveform while the Transparency slider adjusts the transparency values of the waveform display on screen.

## 8. Monitoring and Recording cont.

### Monitor Assist

AtomOS features Smart Monitor tools that help with making your shot picture perfect. Easily access Focus Peaking, Zebra, False Colour and Blue Only Exposure to check image is in focus, noise free and correctly exposed. Options for safe area/ title area markers along with aspect ratio markers and anamorphic desqueeze functions are also available.



- |                          |                                                             |
|--------------------------|-------------------------------------------------------------|
| 1. Monitor Assist Menu   | 7. Safe Area / Title Lines                                  |
| 2. Focus Peaking         | 8. Cinema / TV Guides                                       |
| 3. Zebra Pattern         | 9. Focus Peaking Display (Colour / Monochrome / Edges Only) |
| 4. False Color           | 10. Zebra Threshold                                         |
| 5. Blue Only Exposure    | 11. Focus Zoom with Pan & Scan                              |
| 6. Anamorphic De-squeeze |                                                             |

### How to use

To enable the Monitor Assist functions, press the Monitor Assist icon on the home screen.



**Monitor Assist icon**

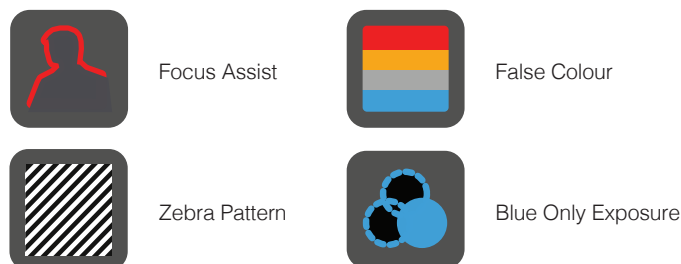
 The Monitor Assist icon will only be visible if there is an input signal detected.



## 8. Monitoring and Recording cont.

### Focus Assist Tools

Inside the Monitor Assist menu, four types of focusing tools are available for use:



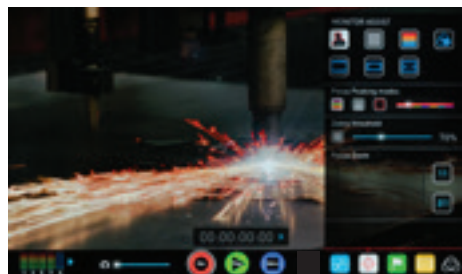
Focus Assist, False Colour, Zebra Pattern and Blue Only Exposure are enabled simply by touching the corresponding icon in the menu.

*You can apply multiple filters to your monitor at the same time, however can be set up individually for your needs.*

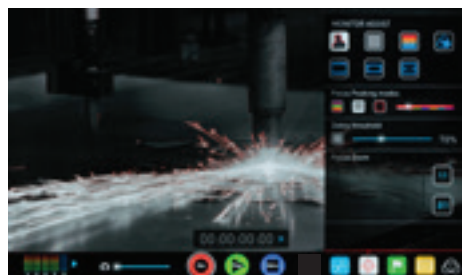
### Focus Peaking

Focus peaking allows the user to ensure their recordings are always in focus. The parts of the image in focus are highlighted by the selected colour (can be adjusted by dragging the slider). There are a number of options for how peaking is displayed, it can be overlaid over the colour video image, over a greyscale image or just show the peaking by selecting the corresponding icon.

### Focus Assist Colour



### Focus Assist Mono

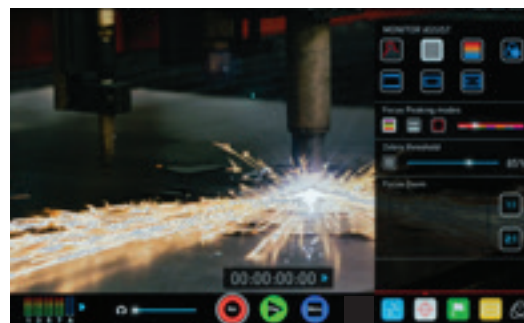


### Focus Assist Outline



*You can change the focus peaking colors and modes from the Focus Assist Panel.*

### Zebra



Zebra pattern show the parts of the image that are exposed  $\pm 5\%$  of the target level set.

The Zebra threshold value can be adjusted by moving the slider left or right.

### False Colour



False Colour assigns different colors to areas of different brightness in the image. This gives a visualization of what is going on with exposure across the image. There is a scale on the left hand side, overexposed elements will display as red, and underexposed elements will display as blue.

### False Colour Scale



To help you determine the exposure range with more accuracy, please use the scale on the left hand side of the display.



## 8. Monitoring and Recording cont.

### Blue Only Exposure



Blue only displays a greyscale image based on the blue channel of the input signal. This is useful to observe the noise content of a video image as sensor noise is most visible in this channel.

### Cinema Guides / Safe Areas / Anamorphic De-Squeeze

AtomOS 6.5 introduced improved frame guides and safe areas. You can cycle through your required cine or TV frame guides by repeatedly pressing the guides icon. Action safe area and title safe areas can then be turned on and are proportional to the frame guides based on SMPTE standards.

#### How to use

To enable the Frame guides press the frame guide button to cycle through your chosen aspect ratio. The aspect ratio markers are very useful with the 2 x Anamorphic De-Squeeze to preview and crops that could be made in post.

To turn on the safe area markers tap the Safe area button once for the Action area and again for the title safe area.



Cinema Guides



Safe Areas



Anamorphic De-Squeeze

### Cinema Guides Shown With Menu Overlays



### Cinema Guides Shown Without Menu Overlays



 The Safe Area/Grid Lines will still be visible when tapping the center of the screen to hide the overlays.

### Focus Assist Settings

From within the Waveform Monitoring menu, press the Settings icon to access the display settings for Focus Peaking, Zebra, False Colour and Blue Only Exposure.



Focus Assist Settings icon

To change the Focus Assist modes, press on the Colour, Mono or Outline icons and the display will update immediately.



Color



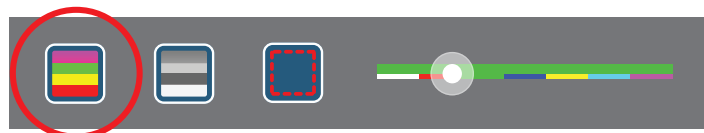
Mono



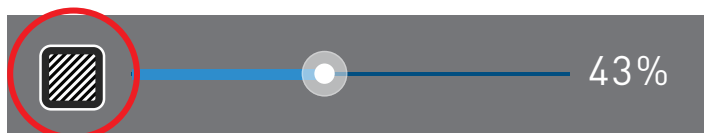
Edges Only

(Depth of field focus tool)

The color of the Focus Assist can be changed by dragging the slider, the color selected will be reflected in the top line.



The Zebra threshold value can be adjusted by moving the slider left or right. The threshold percentage will be shown on the right of the slider.



 All of these settings will update without the need to close the settings.

### Zoom

Zoom mode enables you to punch in and check critical focus



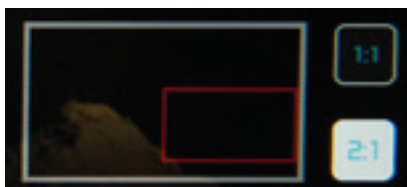
Toggle 1:1 to display 1:1 pixel mapping, the indicator box shows the location of the screen you are viewing.

**4K 1:1 shows 1/4 of the 4K UHD image.**



Toggle 2:1 to magnify the screen, the indicator box shows the location of the screen you are viewing, you can move the zoomed location by dragging across the screen or selecting a portion of the indicator box.

**4K 2:1 shows 1/16 of the 4K UHD image.**



## 8. Monitoring and Recording cont.

### SmartLog

SmartLog gives you the ability to tag your clips during recording (or playback, more on this later).

By the pressing the Favorite and Reject icons you can assign a “good clip” or “bad clip”. This information can then be imported into a non-linear editing system to speed up the edit process. You can easily see which parts of your recording you have marked to keep or reject. Favorite clips can easily be built into a Playlist in playback mode and these tagged sub clips can then be played out back to back.

AtomOS 6.4 introduced extended tags to allow you to be also make more specific tags that can help facilitate the edit.

 *SmartLog is compatible with FCPX XML (.fcpxml).*

### How to use in Record and Monitor mode

To access tagging press the Cut and Tag on the home screen.



Cut and Tag icon

You can now see your video in the background and the Favorite and Reject icons along with other tags for marking clips whilst recording.

To use simply tap the desired tag to mark the in point and tap again to mark the outpoint.

### Recording Mode: Cut And Tagging For Easy Clip Selection



### Recording Mode: Clip Marked As A Good Take



### How to use in Playback mode

To review and use the Cut and Tag feature in playback mode, press on the Play icon on the bottom of the screen.



Playback icon

From the Playback screen, hit the file name at the top centre of the screen to bring up the Playback file list. Select a clip from the list by directly pressing it and it will become available for marking.



To access tagging press the Cut and Tag on the home screen.

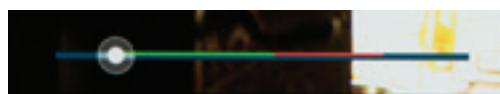


Cut and Tag icon

The Favorite & Reject tags along with the other icons will appear on screen.



Press Play and when you see the section of the footage you would like to mark as good or bad, press Favorite or Reject and then press again to stop marking that section. Multiple other tags can be applied to your clips to provide Timecode accurate meta tags that can be exported to FCX XML.



 *A green or red line will appear in the timeline scrubbing bar so you can identify the region that has been selected.*

### Removing tagged clips

To clear all marking point clips, press on the Reset icon.



Clear Tags

## 8. Monitoring and Recording cont.

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### Your final stage is to Export the tags to a FCPX XML file:

- Enter either the Playback List or the Media Information page
- On the bottom right hand side there is an icon Export XML
- Press this once
- You will be shown a please wait screen (the length of time will vary depending on your recording time and amount of flags applied)
- Then it will return you to the previous screen



EXPORT XML ICON



*You can carry on recording but please remember if you add any additional tags you will need to export your XML file again.*

### Favorite Playlist

When in Playback mode you have the option to create a Playlist of your Favorites. You can set this up by clicking on the Playlist option in the Playback file lister. Cycle through the options until favorites is selected. You can then play these out in either order recorded or reverse. See the playback section for more details on Playlists on **Page 41**.

## 8. Monitoring and Recording cont.

### Monitor Mode

AtomOS features Monitor tools that help with making your shot picture perfect for on set and in post. The new AtomHDR mode provides a way to monitor HDR content on your Atomos recorder.



1. Monitor Mode Menu
2. Native Source Video
3. AtomHDR
4. Log to Video
5. Custom Look
6. Custom Look options

7. Display options

### How to use

To enable the Monitor Mode functions, press the Monitor Mode icon on the home screen.



**Monitor Mode icon**

 The Monitor Mode icon will be visible even if there is no input signal detected.

## 8. Monitoring and Recording cont.

### Native Video Source



NATIVE SOURCE VIDEO ICON

The first option is "Native Source Video". This option will display the video source without any processing. When connected to a camera this means the image you are viewing is the untouched camera output e.g. a standard Rec.709 image, a Rec.709 image with a selected picture profile applied, Log image etc. If this may be a standard REC.709 image, a REC.709 image with a selected picture profile applied or an image that has a LOG curve applied to it.

With this mode selected you have the option to change the screen brightness by adjusting the slider. As you slide to the right the brightness will increase and when at 100% the image will be using the full 1500 NITs of the display. As with any electronic screen device increasing the brightness will increase the power draw and battery life will be effected accordingly.

In this mode adjustments can also be made to the Lift, Gamma and Gain of the display. You can tap the icon on the left of the menu to scroll through the options and adjustments are again made by moving the slider left and right.

 *The adjustments for Lift, Gamma and Gain are for the display only and will not effect the image being recorded.*



The screen adjustments can easily be reset to the default 0 position by tapping the reset icon.

In addition to the screen adjustments you have the option to:



The Display off function allows for the screen to be turned off without effecting the operation of the unit. This is combined with the screen lock function and will become active by tapping the power on/off button on the side of the unit.

The Tally lights on the front and rear of the unit will still display red for record and the idle (green) status will be displayed on the front screen LED.



The Flip screen option allows you to invert the screen to meet your needs of operation.

 *whilst the screen is inverted take note to respect the air flow and not to obstruct the cooling vents of the unit.*



Tally provides control of the rear tally light, allow it to be turned on or off.



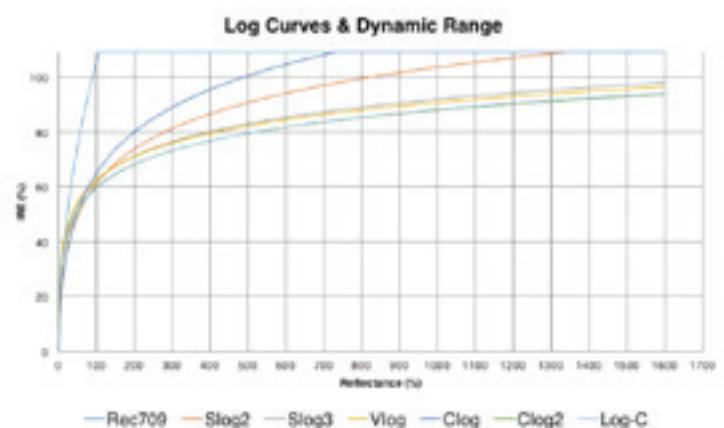
ATOMHDR ICON

### AtomHDR

The second mode option allows you to engage the AtomHDR monitoring mode that allows the processing engine of the Inferno to display the High Dynamic Range capabilities of a Log gamma input. AtomHDR is a result of the research and development by Atomos that allows control of all aspects of the monitor through image processing to deliver the unclipped beauty of spectral highlights through natural, vibrant colors with a result that allows you to simply shoot what you see. When the scene in front of you and the picture displayed on the Inferno look the same your exposure will be correct and when used in conjunction with the waveform monitor you will be able to see the levels and easily train your eye to make accurate exposure settings.

Before entering in to the operation of AtomHDR it's important to understand the background of HDR and we advise that you read the Atomos HDR tech guide to familiarise yourself with the key terms and differences between the existing Rec.709 standard dynamic range (SDR) and the future the way we view images in High Dynamic Range (HDR).

One of the key elements to understand is that if your camera can shoot in Log then it can already capture the more dynamic range than you can display in SDR. It in fact preserves the highlight information by applying a Logarithmic curve to compress the additional stops of dynamic range to fit in to the Rec.709 standard. This is why the image appears washed out and de-saturated as each pixel contains more brightness information than SDR can display, if it were to do this it would be brighter than 100 NITs and so be clipped. This is illustrated below:





## 8. Monitoring and Recording cont.

### AtomHDR cont.

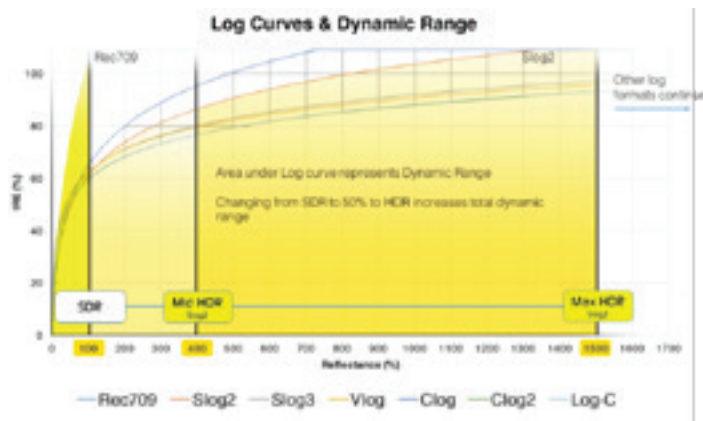
The first step in HDR is to recognize you have a HDR scene. Look for a good range of contrast across the brightest and darkest parts of your image and also across the color and tonal range as each color also contains its own brightness or luminance information.

Secondly ensure you are sending a Log signal into the Ninja Inferno so that you are recording the HDR Log information. Now you are ready to capture Log but use AtomHDR image processing to resolve the final HDR result in the field rather than dealing with the washed out look of Log for critical exposure decisions

The main impact of HDR is apparent in the spectral highlights and bright areas. Areas that would have previously been blown out will now contain detail and information to enhance your content.

 *Alongside the physical light in the scene, the faster/brighter your lens the greater the level of brightness you'll have to play with. Choosing a Cine style lens or those with a delimited manual aperture can provide increased flexibility over photo lenses that use an electronic control aperture.*

AtomHDR uses an in depth understanding of each Log curve and combines it with the control of the panel processing and back light in order to apply an increased brightness to the highlight areas of the scene. Start using AtomHDR by selecting the icon and step through the selection process to pick the camera, Log gamma signal and color gamut matching your setup



Camera Manufacturer – tap to scroll through to the manufacturer of the camera providing the input. Sony, Canon, Panasonic, Arri, Red and JVC

Log Gamma Format – For each manufacturer there may be a number of different Log curves available and you can scroll through to the correct selection by tapping the Gamma icon. In the case of Arri there is only LOG-C but you need to set the ASA of the the Log Gamma to match the input of the camera.

Gamut – the third selection allows you to select the Color Gamut of the input. This is not applicable to all cameras but again ensure that this matches the input of the camera to ensure accurate monitoring.

 *All adjustments are completely non destructive and will not effect the recording. The adjustments you make to the exposure and color Gamut on the camera will then be out put to be recorded on the Inferno.*

The HDR slider below these allows you to adjust the brightness of the screen to match you scene. Sliding it to the right will increase the dynamic range of the scene and allow you to monitor % or Stop increases over REC.709. The screen is capable of displaying up to 10.2 stops of dynamic range. As you slide to the right you increase the dynamic range the panel reproduces up to its maximum of 10.2 stops. In terms of operation you want to adjust the slider so that the image on the monitor matches the dynamic range of the scene. Leaving it too far down the SDR end of the range means critical highlight detail will be clipped, whereas sliding too far down the HDR end may result in the overall brightness appearing too dark. The easiest way to get this right is to either trust your eyes - judging what you see in reality matches what is on screen or use the Waveform clipping tool (available with OS7.1) that lets you pin point the precise dynamic range for your scene. With OS7.1 a moving graticule or line on the waveform is introduced that illustrates the luminance clipping point. This is illustrated below:



 *Whilst in AtomHDR mode 3D LUTs can not be used for either display or loop out. We are actively looking in to this and it may change in future Firmware releases. Manual adjustments to the Lift, Gamma and Gain of the screen as the AtomHDR engine is dynamically controlling these.*

## 8. Monitoring and Recording cont.

### LOG to Video



LOG TO VIDEO ICON

The third monitor mode LOG to Video allows you to apply a 3D Look Up Table or LUT to the Log image. This allows you to view the Log and convert it to a Rec.709 Luminance with a specific LUT applied for each Log Gamma curve. As with AtomHDR mode you can choose the correct setting by first clicking on the camera manufacturer icon and scrolling through to the appropriate setting. Where applicable you can then scroll through the available Log Gamma Curves and the same process can be applied to the Color Gamut.

### Custom Look



CUSTOM LOOK ICON

The fourth mode is for users who are either not working in Log or for user looking to use a custom 3D LUT in order to view aspects of colour management of Log footage.

A LUT or Look Up Table is a table that transforms the color response and as such adjusts the 'Look' of the input. 3D LUTs have a combination of three inputs defining the combination of R, G, and B values allowing for adjustment of not only color but also gamma and gamut. LUTs can also be used to monitor the input in a specific color space or more creatively to create a specific 'look' such as film stock emulation or to match cameras.

It's worth noting that not all LUTs are equal and the majority of LUTs are designed to work within the boundaries of REC.709. This means that whilst they may apply the colour adjustments you are looking for they may also effect the luminance of the image and in which case these LUTs should only be used for delivery of content designed to be viewed in REC.709 or SDR. If you are working with 3D LUTs you can use color correction applications, as well as applications like Photoshop to create your own custom Looks that can then be imported to your Atomos device. They can provide a great base or primary grade that allow you to apply an instant look to your footage.

Atomos support 3D LUTs in the industry standard .CUBE format and provides 8 LUT memory slots for you to load your LUTs into. These can be loaded from the Built-in LUTs or from files created using 3rd party software.

1D LUTs are not supported and will need to be converted via 3rd party software to be imported.

To import LUTs into your Ninja Inferno first copy the .CUBE files on to the SSD/HDD in your Master Caddy II using a computer and the supplied USB3 Dock.

To load a LUT select the desired slot and press on the blue file icon and then choose from off DISK. Navigate via touching through the disk file system to the LUT file to be uploaded, press on the name to select the LUT and then again to import. Then wait for the LUT loading progress bar to complete. The name of the currently selected 3D LUT is displayed at the top of the Monitor Mode panel.

This LUT can then be applied to the display by selecting the correct LUT memory slot. The LUT will automatically be applied to the Display.

Under the display brightness slider there are 3 options that relate to the processing of the LUT.



**REC LOOK** – If this option is selected to the recording it will bake the LUT look into the recording and this is a non-reversible process. It cannot be undone in Post so we advise you consider your workflow before the use of this option. When enabled, a CUSTOM LOOK icon will flash in the top corner of the monitor and the REVIEW LOOK cannot be activated during recording to avoid any potential issues with the recorded content.



**OUTPUT LOOK** – With this option the selected LOOK is also applied to the HDMI loop out of the Inferno. This will allow for review on a larger monitor or to be used with a wireless sender. This function can also be combined with the down convert option that can be found in the input menu.



**REVIEW LOOK** – During color management it's likely that you may want to review a number of LOOKs and even compare them to the Native Video Source. Tapping the REVIEW LOOK option will apply a 50/50 vertical screen split that will show both the Natural Source Video and the selected LOOK of the LUT.



*Please note that activating the 50/50 preview will also be applied to the Loop out.*

## 8. Monitoring and Recording cont.

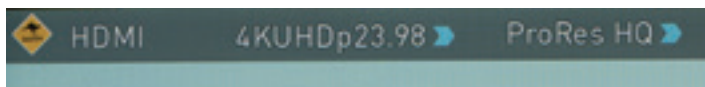
### Atomos Anti-Shock Technology

Spinning disks are very reliable in a controlled environment where movement and vibration are minimal and within the capabilities of the devices. They are ideal for low-cost recording, but will suffer reduced performance if they are jolted or receive a sudden impact.

If a large enough shock occurs a break in the recording may occur. In this case the Ninja Inferno will automatically start a new recording once the drive recovers.

This means that even if you suffer a momentary break in your recording, the video capture will continue without any intervention from you, the user.

It is obviously important for you to know that you have suffered from an interrupted recording and the user interface will display a warning (in the form of a Kangaroo sign) clearly in the top left hand corner of the display.



Skippy Warning

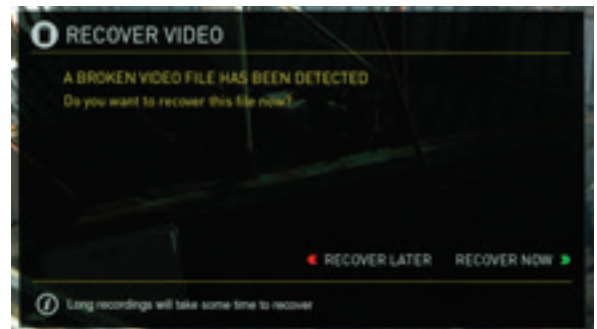
 To remove "Skippy" warning, simply touch the icon and it will disappear.

### File Recovery

The Ninja Inferno continuously writes to disk while in recording mode. If the power fails or the drive is removed accidentally all but the last few seconds of the clip can be recovered

In the event of an interrupted recording, when you restart the Ninja Inferno, or enter playback mode, you will be presented with a menu that gives you the option to recover immediately, or recover it later.

If you select recover later, every time you put the disk in, or start up the Ninja Inferno, the same menu will appear to prompt you to recover the file that did not close properly.

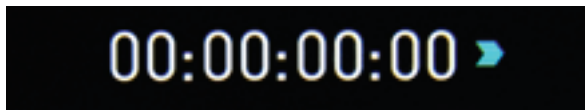


 If the drive is broken, or has become corrupted, then we will not be able to recover the file and we recommend that you try third-party hard disk recovery software

## 9. Timecode

### Using Timecode

Touching the Timecode display on the home screen, just above the three main controls (Rec, Play, Menu), will take you to the Timecode setup screen (this is also accessible by touching Menu and then Timecode)



Occupying the lower-centre part of the screen is the timecode display with controls to set the start-time of the timecode.

The Timecode modes supported are:

- HDMI (Embedded)
- Record Run
- Time of Day
- Auto Restart

Cycle through these modes by touching the Timecode Source Selector.

### HDMI embedded Timecode



With this setting, the HDMI input will use the Timecode embedded in the input signal. The controls to adjust the Timecode value are disabled in this menu as you will need to adjust these on the camera. Note that not all HDMI sources embed Timecode.

### Trigger from HDMI time code



If HDMI timecode is selected and the camera is in REC RUN mode, the user has the choice to start and stop recording remotely from the source camera timecode.

To enable rolling Timecode Start/Stop functions, simply press the TC icon shown here. When enabled, pressing the camera Record Stop/Start button will make the Ninja Inferno start and stop record simultaneously as the timecode starts and stops.

 When using the camera in Free Run timecode, the rolling timecode trigger might not work as expected.

### Time of Day



With this setting, each new clip that is created will contain embedded Timecode starting with the time of day when the recording is started. Please check that Ninja Inferno clock has been set correctly.

This can be set in *Menu > Date & Time*



 If recording is stopped and then restarted while in this mode, there will be a time gap between the last clip and the next one, equal to the length of time the Ninja Inferno has been out of record.

 In Time of Day mode, the controls on the Timecode Setup Screen for adjusting the start-point of the Ninja Inferno Timecode are not available, as the Timecode is set by the Ninja Inferno's internal clock.

## 9. Timecode cont.

### Record Run



With this setting you set the starting Timecode for the first clip. The following clips will start at the frame immediately after the out point of the preceding clip. This will continue for all clips that follow. This is also known as continuous Timecode.

### Auto Restart



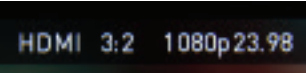
With this setting, the Timecode will be reset to the Timecode you have defined whenever you press record. All your clips will start with this same Timecode.

 To adjust the Timecode use the "+" and "-" above and below the hour:minute:seconds sections

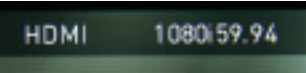


# 10. HD Pulldown

## What is Pulldown?



Many professional and consumer cameras available today do not send true 1080p24, 1080p23.98, 1080p25, 1080p29.97 or 1080p30 signals down their HDMI outputs.



Instead they send 1080i59.94 in NTSC regions (eg USA, Japan), and 1080i50 in PAL regions (eg Europe)

In order to convert the signal from the internal recording format to 1080i5994 or 1080i50, they use a process called 3:2 or 2:2 pulldown.

Pulldown is only applicable to interlaced HD signals, not 4K

| Camera Setting | Pulldown | Ninja Inferno 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                |

You will, of course, want the Ninja Inferno to record the actual frame rate such as 1080p23.98, not the1080i59.94 to disk. In many cases, it is not possible for the Ninja Inferno to detect when pulldown has been applied to the video, so you will have to set the correct mode of removal on the Ninja Inferno to match the setup of your camera.

With some cameras, the Ninja Inferno can detect and remove the pulldown automatically, in which case the mode you expect (eg 1080p23.98) will display on the Ninja Inferno and you will not have to do anything further.

If there is no input detected, then toggle the input by pressing the screen until you see the input you wish to record.

Atomos is adding auto-detection support for more cameras, please check for firmware updates regularly at [www.atomos.com](http://www.atomos.com)

### 1080p23.98 or 1080p24



If you have set 1080p23.98 or 1080p24 in your camera and your Ninja Inferno displays 1080i59.94 or 1080i60, then you can easily remove the pulldown by following these steps:

- Select the Input Menu from the top Left and toggle the blue arrow underneath Record repeatedly until you see 1080p23.98 (or 1080p24) displayed. You may not get a green tick in this column immediately.
- Your Ninja Inferno needs to analyse the video for about 1 second, in order to detect the pulldown sequence and remove it.
- If it is not automatically detected after 1 second, wave your hand from side to side in front of the lens, or wave the camera from side to side for a few seconds. The Ninja Inferno will detect the pulldown cadence in the movement, and you will see a green tick along with the video displayed on the screen.
- 3:2 pulldown detection is difficult, if not impossible to detect on completely still video. This is why you should wave your hand in front of the lens.

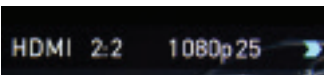
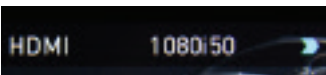
3:2 pulldown detection is difficult, if not impossible to detect on completely still video. This is why you should wave your hand in front of the lens.

If you lose the input detection – for example you unplug the HDMI cable or go to Playback mode, you will need to wave your hand or the camera again, when the signal is restored to the Ninja Inferno.

Some cameras use a variant of pulldown removal, for example Panasonic Advanced pulldown. The Ninja Inferno does NOT support this format, and it will not be detected.

Standard Panasonic pulldown is supported, ensure in the Panasonic camera settings that pulldown is not set to Advanced.

### 1080p25, 1080p29.97 or 1080p30



For these modes, simply press the blue arrow underneath Record on the input menu repeatedly until your 1080p desired format is displayed. There is no need to wave your hand or the camera, as 2:2 pulldown removal does not require moving video.

## 11. Record mode options

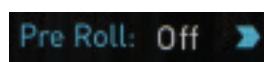
### Record Modes:

In standard record mode there are a number of features that are implemented with safety in mind. Source Drop – If a connection is lost due to the cable being pulled out from either side of the signal path the recording will stop and close that file. As soon as you plug the cable back in it will start recording a new file without having to press record again.

If AC power is lost the recorded files are still safe. Once the unit is powered back up it will detect the broken file and ask you to repair the clip now or later. With a power loss there will be some loss of content. Typically the last 5-10 seconds of footage.

Alongside the standard recording functionality additional Record Modes are available in the form of Pre Roll and Time Lapse.

### Pre Roll Record



This option is enabled from the input menu under Record section. With this option turned on you will see a white circular arrow around the record button and a red Pre Roll icon will flash in the top left hand corner. Whilst enabled the input is constantly been recorded with approximately the last 8 seconds in HD and 2-3 seconds in 4K being cached into memory. The frame rate and codec selected will affect the number of seconds being cached for pre roll. Using a lower bit rate codec setting and shooting at lower frame rate will increase the length of pre-roll.

When the record button is pressed or trigger is sent, the buffered pre-roll data in memory will be written out to the start of the recording. This means if you are few seconds slow hitting the record button when something interesting happens you will still capture the shot.

 *With Pre Roll mode activated the Recorder is constantly caching frames internally to the unit and as such any feature that can not be changed whilst recording is disabled. This includes audio channel select, 3D LUT record, codec, disk options etc. Time Lapse record is also disabled when Pre Roll is enabled.*

### Time Lapse

Video Time lapse provides the ability to create seamless time lapses without capturing individual images that require compiling in post. Utilizing video also takes away the wear on your camera shutter that can be expensive to replace if you are doing lots of time-lapse work.

This function is accessed via the input menu and then selecting the Time Lapse option in the bottom left of this menu.



The Time Lapse Recording menu will then open to provide you with a number of options.



Time Lapse On/off – this allows you to turn on time lapse recording mode and when an input is present the record button will have dashed lines around it like a clock face.



*When time lapse is enabled Pre-Roll cannot be enabled.*

A sequence entry will already be present in the menu and to edit the entry simply touch to highlight it and then tap on the blue arrow at right hand side of the entry. This opens the Edit Sequence menu where you can alter the following settings:



Capture – Specifies the number of sequential frames to be captured

Every – Specifies the frequency of the capture.

For – defines the amount of time to repeat the process for this entry.

Play time – this will display the playback duration for the above settings.

Times can be specified in Frames, Second, minutes and hours



*The number of frames specified for 'Capture' will capture in quick succession at the specified time – so for example if it is set to capture 5 frames every 1 minute, The 5 frames will be captured sequentially at the start of every minute. The frames captured will not be evenly spread across the minute.*

When setting up a sequence you can also choose to add Motion blur to an entry. With this option enabled the behavior is slightly different. The number of frames specified in 'Capture' are added together with the resulting single summed frame being recorded. You will notice that the Playtime decreases when you have motion blur turned on as multiple frames are been summed to a single frame instead of been recorded sequentially. When motion blur is on the maximum setting for 'Capture' is 64 frames.

The sequence setting for the current entry is saved when you tap the OK button.



The Add icon allows you to add additional entries to your time lapse sequence. Up to 10 sequences can be added will automatically flow in to each other.



Pause sequences can also be set up to allow the recording to be paused for a specified amount of time with no frames captured.



After the required number of sequence entries have been set up an option to apply a smooth transition can be selected. This will apply a ramp between the different sequence entries to improve the blend between differing capture settings. The icon will be white when the option is selected.

## 11. Record mode options cont.

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The Schedule start icon allows you to utilize the internal clock of your Ninja Inferno to set a specific time for the start of the time-lapse sequence.

Pressing the icon will activate the Schedule start mode and the icon will turn white with a default time

of 00:00:00 will appear with a blue arrow. Press the blue arrow to adjust the starting time. For the Scheduled start to be accurate please check the Date & Time settings are correct. They can be accessed via the blue Menu button at the bottom centre of the GUI and Selecting the Date & Time icon  to adjust them if required.

With Schedule Start activated when you press the record button a red icon will flash in the top corner, along with the red record border and tally light and a count down to the scheduled start will be displayed.



*To conserve battery power for longer time lapses you can use the Display Off function. This is accessed in the yellow display options menu and once pressed will be active. The monitor recorder then needs to be placed in to screen lock mode by a quick tap on the power button and the display will then be off. Touching the screen will then briefly turn it back on and to cancel the display off simply unlock the screen using the power button before reversing the above process.*

## 12. Playback & Payout

### Playback Mode

One of the key elements of the Ninja Inferno REC PLAY MONITOR EDIT is the ability to utilize the monitor recorder as a play back and play out device for the content that has been recorded whilst maintaining the same visually lossless high quality images.



Pressing the Play button switches the device into playback mode and the last clip recorded on to the drive will instantly begin to playback.

Once within Play mode the complete Monitoring tool set is available allowing you to analyse the content. This is key for establishing if takes are out of focus, lighting has changed or previewing content with LUTs applied.

Clips can be selected for play back by tapping the clip name at the top of the screen, with the ability to skip to the next or previous clip via the on screen controls.

Once the file name had been pressed a menu displaying the clips available on the drive will be displayed showing clip name (with Scene shot Take numbers) as well as resolution, codec and duration. Tapping to highlight a clip will show a preview of the first frame in the back ground and tapping again will play this clip or by pressing the play button.

 *When the playback content list menu is open play back will automatically stop.*

Whilst a Clip is playing you can play or pause the clip by using the main play button in the center of the menu controls at the bottom of the screen. Above the Monitor tools icons are also a Play and Pause button along with additional play back controls.



By tapping this icon you can put the clip in to loop play back. In and out markers for loop you can be placed and cleared using the following buttons :



Press to turn on and mark loop starting point, press again to remove both in and out loop markers. When loop in is pressed the loop out point will automatically be set to the end of the clip.



Press to place the loop out marker and replace the marker at the end of the clip, press again to reset it to the end of the clip.



 *These are accessed via the green flag tagging menu*



Whilst a clip is playing these buttons have the ability to play the clip back at 2 x or 4x speeds both forward and in reverse.



Whilst a clip is Paused these buttons have the ability to step the clip by 1 second either forward or reverse to give you chance to analyse the clip in more detail, this is especially useful when combined with the 2:1 zoom function.

### Playlist

To increase the functionality and flexibility of the playback mode there is also the ability to create a Playlist.

To start to build a Playlist press on the file name in the top menu and open the content list. Then press the Playlist button, which will turn green and reveal the options available.



 *It's important to note that all clips in the Playlist must be in the same codec, resolution and frame rate.*



The Order Arrow allows you to choose order in which clips playback. The clips are stored based on the order they were recorded with the last clip recorded at the top of the list. You can either play down the list (newest to oldest) or up the list (sequential order).



This icon can be pressed to scroll through the Playlist options. All will play all clips on the disk.



Will play only the clips that are tagged as favorites.



Will allow the clips for the Playlist to be selected using the tick boxes.



Will include the favorites and also allow the ability to selected additional clips to be played back.

 *The duration of each clip is combined together and are shown on the scrub bar in play pack controls. A white vertical line indicates the start and end points and clips will seamlessly playback across those selected to be in the play lost.*

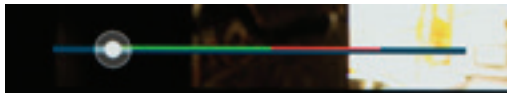
## 12. Playback & Playout

The Genlock input can accept a standard composite video signal such as a Black Burst bi-level reference signal and Tri-level reference signal. Once connected, playback output is synchronized to this common reference source. This can be done across multiple units and ensures proper deck use with Switchers and Vision Mixers in live events & mobile production studios. Having all the inputs synchronized at the video Switcher allows the Switcher to operate glitch free when making transitions, cuts, and graphic overlays between those synchronized.

### Metadata tagging and cut edits

In playback mode the ability to tag clips is extended beyond simply applying a single tag to a clip. With a clip selected and either ready to play or playing you can set in and out points for tags. This allows you to make Timecode accurate clips and even subclips with those tags. The tags can be applied by tapping the appropriate icon to mark in and out points at the desired play head positions.

This can be done whilst the clip is playing or by simply dragging the scrub bar to the position wanted. Favorites will be displayed as a green section on the scrub bar, a red section indicates rejected areas and white is used for the other tags.



Creating smart cut tags via this method is non destructive to the clips and the information can be exported to a separate XML file. These markers are ideal for creating an Edit Decision List (EDL) to go with the clips. This allows for edit preparation to take place on set, whilst traveling or with a client to save time in post production.



Creates and saves the metadata tags in to XML in FCPX format.



Tapping reset will remove the all tags from the current clip.

### Favorite Playlist

The cut tag edit points can be combined with the favorites Playlist allowing the in and out points that have been created with in the clip using the favorites flag to be used as sub clips with in a Playlist. This means that if in and out points have been marked on a clip only those section of the clip will play when used in a favorites or combined Playlist. Close attention should be place to the order icon as this also relates to the sub clips in that with the run down order  will play the last sub clip first in the Playlist.

 Whilst a Playlist is in operation further metadata tags can not longer be applied to these clips.



## 13. Connecting and Editing

### Connect

To access and edit your recorded material, connect the Master Caddy Docking Station to a Mac® or Windows® editing workstation via USB 2.0 or USB 3.0.

Eject the Master Caddy from your Ninja Inferno and insert it into the Docking Station. After a short wait, the recorded video will be accessible to the target computer via a standard disk (exFAT) file system.

### NLE supported

We have chosen the Apple ProRes®, Avid DNxHD® and Avid DNxHR® codecs as they are both not only visually lossless, but also edit-ready formats. All major NLEs support ProRes and DNxHD/DNxHR.

- Final Cut Pro (version 7)
- Final Cut X
- Adobe CS5 (with 5.51 update or later)
- EDIUS 6
- Sony Vegas 10
- Lightworks
- Avid Media Composer 6 (version 8.3 or later for DNxHR)
- Autodesk Smoke

Avid DNxHD® / DNxHR® support requires online activation.

### ExFAT compatibility

The Ninja Inferno 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 & 8 (32/64bit)
- Snow Leopard 10.6.5 or higher
- Lion 10.7
- Mountain Lion 10.8
- Mavericks 10.9 and above



*The Master Caddy Docking Station is a sophisticated device supporting two different data interfaces: USB 2 and USB 3. When using the Master Caddy Docking Station you may need to connect both USB connectors. This is because when it has to power a disk drive and its interface electronics, the Docking Station may consume more power than is available from a single USB port.*

### Transferring Files

Now your docking station is connected and your disk is recognized by your operating system, you can edit directly from the drive or copy the files to your own storage.

### Windows

Open the disk in My Computer > Select all the files or just the ones you wish to transfer, copy and paste them to your desired location. (ctrl+c copy, ctrl+v paste).

### Mac OS

Your Ninja Inferno 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. (COMMAND + C copy, COMMAND + V paste).



*If you have used a FAT32 formatted disk in the Ninja Inferno this will have a folder structure Scene, Shot, Take. This will mean you either transfer all the folders or utilize the Windows Search or MACs automate program to transfer just the .mov files. There are instructions on this in our knowledge base; visit [www.atomos.com/support](http://www.atomos.com/support) for more info.*



## 13. Connecting and Editing cont.

### 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 Inferno disk.

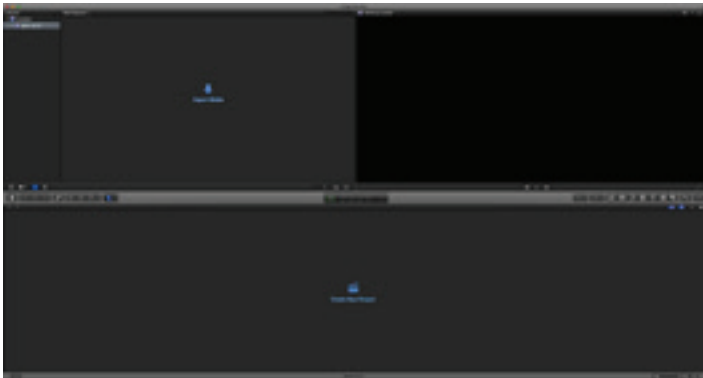
### Importing Ninja Inferno footage into Final Cut Pro

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

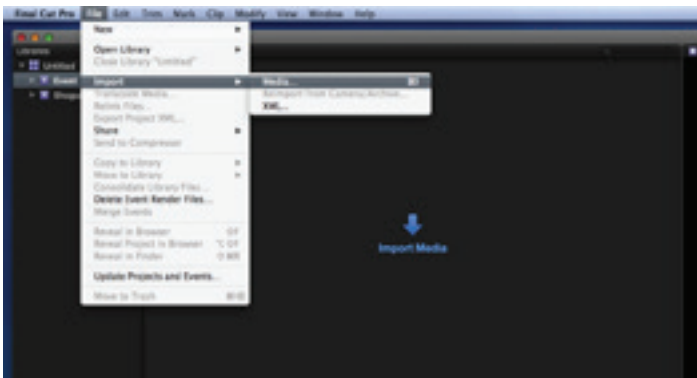
First, connect the Ninja Inferno Docking Station to your Apple Mac using the USB 2.0 or USB 3.0 port. Insert the Ninja Inferno Master Caddy containing the disk with your footage into the Docking Station and you will see the drive appear in your Finder window.

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

The screen will look like this:

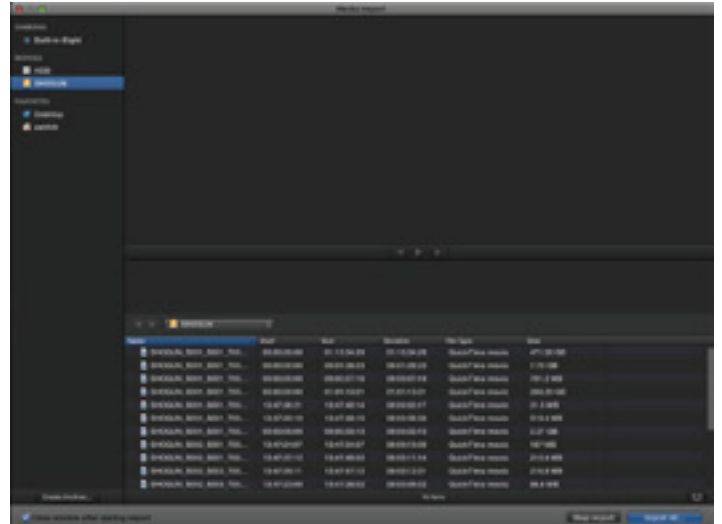


Go to the File menu and select Import > Media



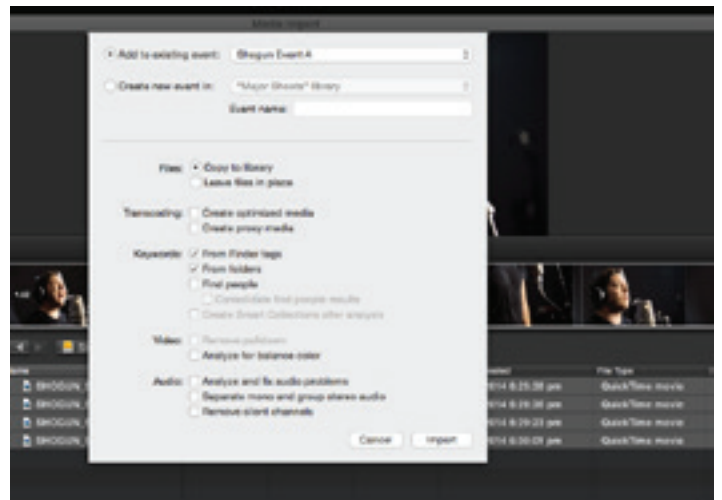
FCP will show you a "browse" window. Look for the Ninja Inferno drive, and click on it.

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



Click on Import All or Import Selected, individual clips can be selected. Choose the Event you wish to import the footage into, or create a new event.

Select Import:



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



## 13. Connecting and Editing cont.

### SmartLog with FCP X

**Prior to importing the XML files into FCP X, ensure that:**

- You have exported XML whilst the drive is in your Ninja Inferno
- You have connected your Master Caddy Docking Station and inserted your Master Caddy into the Dock
- You are using an operating system that supports ExFAT
- Your QuickTime version is up to date
- FCP X is the latest version

**There are 2 ways to import the XML file:**

1. Directly from the docked hard drive
2. Manually into FCP X

#### 1. Automatic Import

- Open Finder
- Select the drive (in this example it is EXCVIDEO)
- Double-click the unitname.FCPXML file
- This will open FCP X and import the .xml file

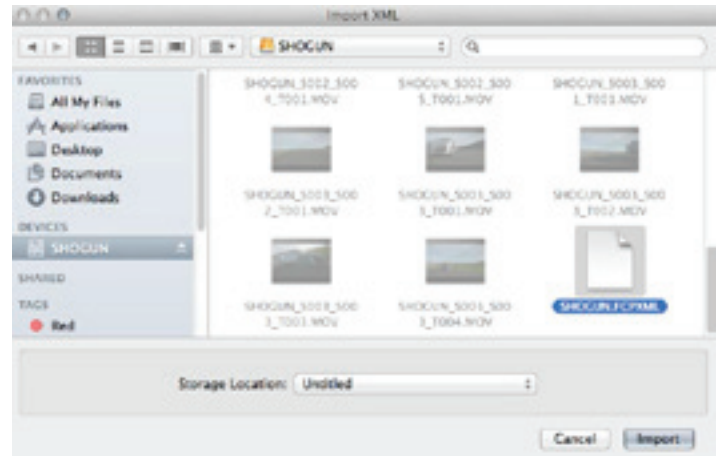
FCP X will make a event of the disk name and reference all the footage in that event.

You will notice that on the clips you have added Smart Tags too, with Green and Red indicating Favorite and Reject.

You can sort these by using the pull-down menu to show favorites. This will show all the individual favorites as separate clips in the Event Viewer.

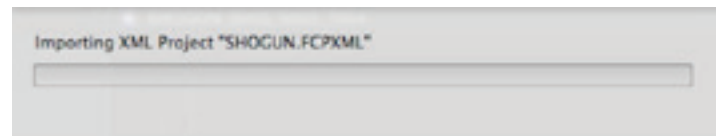
#### 2. Manual

- Open FCP X
- Create a New Project (or you can use an existing project); in this example it is called XML Import
- Select File, Import, XML

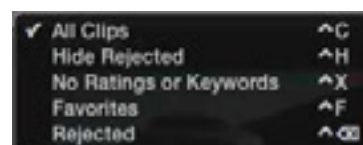
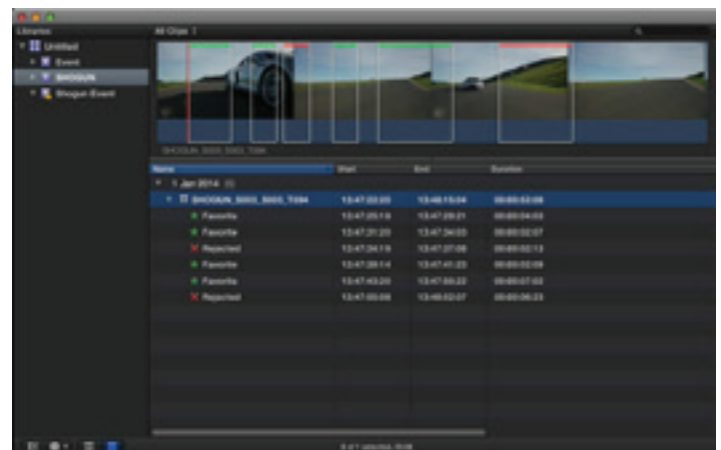


- Select the Ninja Inferno drive under Devices (in this example it is called EXCVIDEO)
- Choose the unitname.FCPXML, select Import

**The XML will import**



Once imported you can expand the clip and you will see the Favorite and Reject tags. You can also filter the view to only see favorite, etc.



## 14. Software Updates

### AC Adapter (included)

This connects to the DC input on the back of the Ninja Inferno. You'll notice there are 2 AC Adapters included with the packaging - they are identical with the other one used for the battery charger.

### D-Tap Adapter (optional)

An optional accessory is the DC to D-Tap coiled cable allowing you to connect the Ninja Inferno to D-Tap / P-Tap sources such as V-Lock (voltages 7.2 to 16.8V).

### Updating AtomOS (Firmware)

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

- Go to [www.atomos.com/support](http://www.atomos.com/support)
  - Locate and download the firmware upgrade
1. Extract the file ATOMNJI.FW from the firmware zip file.
  2. Copy ATOMNJI.FW onto a drive in a Master Caddy.
    - a. Atomos recommends you use a freshly formatted known good disk.
    - b. Always format your drives in the Ninja Inferno. The Ninja Inferno 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 2 freshly charged batteries on your Ninja Inferno or connect to mains power. It is very important that your Ninja Inferno does not lose power during a firmware upgrade.
  4. Power down your Ninja Inferno.
  5. Insert the Master Caddy with the ATOMNJI.FW file.
  6. Power up your Ninja Inferno with a short press of the Power Button.
  7. Watch the screen. The Atomos logo will appear, and then be replaced with a Please Wait logo and after a few seconds the firmware upgrade will start.
  8. While the firmware upgrade is happening, there will be flashing colored lines above and below the Please Wait Logo.
  9. The firmware upgrade will take up to a few minutes.
  10. When the firmware upgrade is finished, the Ninja Inferno will:
    - a. Delete ATOMNJI.FW from the drive.
    - b. Power itself down.
  11. Turn on your Ninja Inferno again with a short press of the Power Button located on the side.
  12. When the Ninja Inferno has booted, Press "MENU" and then "Ninja Inferno Info" and check that the version number is the version expected.



### ⚠ IMPORTANT: Problems when installing AtomOS

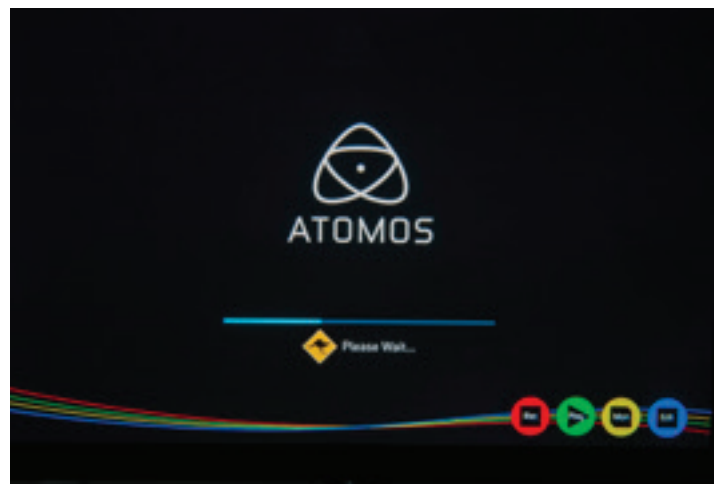
Very occasionally, the firmware update process can go wrong. This might be because of an incomplete or corrupted download.

In the unlikely event of your Ninja Inferno 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 Inferno 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).

🚩 Please ensure your batteries have plenty of charge and that you do not interrupt your Ninja Inferno while its firmware is upgrading. You will see a progress bar to the lower half of the screen, When it is fished, the Ninja Inferno will restart and you will be able to use the device as normal. This process can take up to 7 minutes.

🚩 Please make sure that the firmware file is not renamed when you computer unpacks the ZIP file. If you have other firmware in the same folder, the file may become renamed to ATOMNJI-2.FW when unzipping and the update will not work.



# NINJA INFERNO SPECIFICATIONS

| Weight                                    |                                                                                                                                |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Without batteries & media                 | 630g / 22.2oz                                                                                                                  |
| With batteries & media                    | 1074g / 37.9oz                                                                                                                 |
| Dimensions (W x H x D mm)                 | 214 x 127 x 45mm, 8.4 x 5 x 1.8"                                                                                               |
| Construction                              | High quality lightweight ABS Polycarbonate for durability & portability                                                        |
|                                           | Built-in armor protection                                                                                                      |
| Power                                     |                                                                                                                                |
| Operating power (including SSD)           | 10-33W                                                                                                                         |
| Compatible batteries                      | NP-F series and supporting accessories                                                                                         |
| Input voltage (battery)                   | 6.2V to 16.8V                                                                                                                  |
| Battery time (based on 7.4V)              | -                                                                                                                              |
|                                           | 5200mAh - up to 1.5hrs (monitor & record 4K 30p)                                                                               |
|                                           | 7800mAh - up to 2.2hrs (monitor & record 4K 30p)                                                                               |
| DC In                                     | 1 x DC in (6.2 - 16.8V)                                                                                                        |
| Continuous power<br>* Patent pending      | Primary-secondary battery system<br>Change batteries without losing power<br>Loop batteries continuously                       |
| Touchscreen                               |                                                                                                                                |
| Size                                      | 7.1"                                                                                                                           |
| Resolution                                | 1920 x 1200                                                                                                                    |
| PPI                                       | 325                                                                                                                            |
| Aspect ratio                              | 16:9 native                                                                                                                    |
| Color Gamut                               | REC709 HDTV                                                                                                                    |
| Look up table (LUT) support               | 3D LUT (.cube file format)                                                                                                     |
| Anamorphic de-squeeze                     | 2x, 1.5x, 1.33x, Panasonic 8:3                                                                                                 |
| Technology                                | SuperAtom IPS panel (capacitive touch), calibration to Rec.709 with optional calibration unit                                  |
| HDR                                       |                                                                                                                                |
| AtomHDR                                   | Yes                                                                                                                            |
| Supported Log formats                     | Sony SLog2 / SLog3, Canon CLog / CLog 2, Arri Log C, Panasonic Vlog, JVC JLog, Red LogFilm                                     |
| Supported Gamuts                          | Sony SGamut / SGamut3 / SGamut3.cine<br>Canon Cinema / BT2020 / DCI P3 / DCI P3+<br>Panasonic V Gamut<br>Arri Alexa Wide Gamut |
| Bit depth                                 | 10-bit (8+2 FRC)                                                                                                               |
| Brightness                                | 1500nit (+/- 10%)                                                                                                              |
| HDR input (PQ/HLG)<br>HDR output (PQ/HLG) | Yes / Yes<br>Yes / Yes                                                                                                         |
| Video input/loop out                      |                                                                                                                                |
| HDMI                                      | 1 x HDMI (2.0)                                                                                                                 |
| SDI                                       | -                                                                                                                              |
| Signal                                    | Uncompressed true 10-bit or 8-bit 422 (camera dependent)                                                                       |
| Video output (play out)                   |                                                                                                                                |
| HDMI                                      | 1 x HDMI (2.0)                                                                                                                 |
| SDI                                       | -                                                                                                                              |
| Signal                                    | Uncompressed true 10-bit or 8-bit 422 (playback file dependent)                                                                |

| Supported loop out formats                              |                                                     |                                                                                                                                             |
|---------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| HDMI to HDMI**                                          |                                                     | 720p 50/60, 1080i 50/60,<br>1080p 24/25/30/50/60/100/120<br>2160p 24/25/30/50/60                                                            |
| Supported Codecs & frame rates (record & playback)      |                                                     |                                                                                                                                             |
| Video to ProRes / DNxHR (DNx utilizes a .MOV wrapper)** | Brand / Model / CodecR                              | esolution / Frame rate                                                                                                                      |
|                                                         | Refer camera compatibility list; atomos.com/cameras | 4K DCI; 24/25/30/50/60p<br>4K UHD; 24/25/30/50/60p<br>2K; N/A***                                                                            |
|                                                         | ProRes (HQ, 422, LT)<br>DNxHR (HQX, HQ, SQ, LB)     | 1080p; 24/25/30/50/60/100^/120^<br>1080i; 50/60i<br>720p; 50/60p                                                                            |
|                                                         |                                                     |                                                                                                                                             |
| Onboard processing                                      |                                                     |                                                                                                                                             |
| Pulldown removal                                        |                                                     | 24/25/30pSF > 24/25/30p (2:2 pulldown)<br>60i > 24p (3:2 pulldown)                                                                          |
| 4K UHD downscaling                                      |                                                     | Yes - Loop-out and playback                                                                                                                 |
| Audio in/out (48kHz PCM audio)                          |                                                     |                                                                                                                                             |
| HDMI                                                    |                                                     | 2 or 8ch 24-bit, camera dependent                                                                                                           |
| Audio                                                   |                                                     | 2ch balanced XLR analog in/out<br>Dynamic range >90dB<br>Max signal level +24dBu<br>Max analog gain +52dB<br>48V Phantom Power for Mic      |
| Remote start/stop                                       |                                                     |                                                                                                                                             |
| HDMI                                                    |                                                     | Auto HDMI Trigger<br>Supported Protocols - Canon, Sony, Atomos Open Standard                                                                |
| Other                                                   |                                                     | LANC control - Slave                                                                                                                        |
| Playback                                                |                                                     |                                                                                                                                             |
| Playlist                                                |                                                     | Yes                                                                                                                                         |
| CDNG (Recorded content)                                 |                                                     | N/A                                                                                                                                         |
| ProRes (Recorded content)                               |                                                     | All recorded files can playback. Playback in slow motion >= 100fps                                                                          |
| DNxHR / DNxHD (recorded content)                        |                                                     | All recorded files can playback. Playback in slow motion >= 100fps                                                                          |
| Recording                                               |                                                     |                                                                                                                                             |
| Pre-roll record                                         |                                                     | Yes (HD 8s, 4K 2s)                                                                                                                          |
| Custom timelapse                                        |                                                     | Yes                                                                                                                                         |
| Meta data tagging                                       |                                                     | Yes (10 tags available)                                                                                                                     |
| Supported media (Approved List at Atomos.com/drives)    |                                                     | Select SSD: Video (4K 30p, 1080 60p)<br>Select SSD or HDD: Video (1080 30p, 720 60p)                                                        |
| Master caddy case                                       |                                                     | Master Caddy II (included)<br>75mm x 105mm x 12mm                                                                                           |
| Master caddy dock                                       |                                                     | 2.5" SATA to USB 2.0/3.0                                                                                                                    |
| Supported applications                                  |                                                     | Supported Applications FCPX/FCP7+ / Media Composer 5.0+ / Premiere 5.5+<br>EDIUS 6.0+ / Vegas Pro 10+ / Lightworks /<br>Autodesk Smoke 2015 |
| XML support                                             |                                                     | FCPX XML native, FCPX/Adobe limited supported with 3rd party conversion tools                                                               |
| Accessories included                                    |                                                     | Ninja Inferno unit, 12V-3A AC adapter, 1 x Master Caddy II, Travel case                                                                     |

Specifications correct at time of printing E&OE

\* Available in a future firmware update.

\*\* 24/30/60 frame rates also include 23.98/29.97/59.94 frame rates for all resolutions

\*\*\* No HDMI Spec for 2K DCI ^ From supported HDMI sources such as gaming consoles & graphics cards

## AVAILABLE ACCESSORIES



ACCESSORIES KIT



POWER KIT



HDMI CABLES



G-TECHNOLOGY  
SSD



ANGEL BIRD  
SSD



X-RITE  
CALIBRATION



**Construction note:**

Your Ninja Inferno is designed to operate in ambient temperatures up to 45°C/113°F. It features a heat pipe design with a silent fan to circulate air and remove excess heat from the rear vents .

If you wish to extend the temperature of operation in high temperature conditions, you can choose an SSD drive, and set the TFT brightness to a minimum.

**Atomos (HQ)**

29 Nott Street, Port Melbourne  
Victoria 3207 Australia

**Tel:** 1300 ATOMOS

**www.atomos.com**

**Have you registered your Ninja Inferno 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:** [www.atomos.com/support](http://www.atomos.com/support)