ATOMOS

SHOGUN STUDIO 2

USER MANUAL

Introduction

Thank you for choosing the Atomos SHOGUN STUDIO 2.

Building on the architecture of the Shogun platform, the SHOGUN STUDIO 2 leverages the features and functions found on cameras to build them into your rack. Harnessing the latest 4K/HD recorder, monitor and playback technologies the SHOGUN STUDIO 2 offers a feature set that will help facilities existing HD workflows and provide the option for creating 4k Masters.

Following the same core Atomos principles of Record, Playback, Monitor and Edit the SHOGUN STUDIO 2 allows you to over come many of the challenges faced with in live events, outside broadcast environments, production galleries, post production facility MCR, ProAV / Signage, on set DIT, sports officiating and many more.

Atomos defined the ability to migrate away from MPEG based GOP codecs with high levels of compression and reduced color accuracy by capturing content direct from the sensors of any camera that outputs a clean feed such as studio cameras and outputs from vision mixers and even RAW out puts from large sensor Cinematic cameras in to visually lossless edit ready Apple ProRes and Avid DNx edit ready codecs.

This user manual will get you up to speed with all the amazing features packed into the SHOGUN STUDIO 2 that will assist you during a shoot and speed up your workflow on set and in post production.

Stay up-to-date with the latest information and software by registering your product today.

www.atomos.com/support

Safety Instructions

The SHOGUN STUDIO 2 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.

Using the SHOGUN STUDIO 2 safely

Although the SHOGUN STUDIO 2 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 SHOGUN STUDIO 2 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 cables that run to the SHOGUN STUDIO 2 are clearly visible and do not present a trip hazard.
- Do not place on uneven or unstable surfaces.
- Do not insert anything but a Master Caddy II or AtomX SSDmini in the drive slot on your SHOGUN STUDIO 2.
- Do not touch the SHOGUN STUDIO 2 screen with sharp, metallic or abrasive objects.
- Do not expose to strong electrical or magnetic fields.
- Do not expose to liquids, rain or moisture.
- Do not dispose of SHOGUN STUDIO 2 in municipal waste and do not incinerate it, always follow local regulations for safe disposal.

Care of disk drives

SSDs are very sensitive to damage from static electricity. Please observe all the usual electrostatic discharge (ESD) precautions when handling them.

HDMI cables

Please remember that almost all 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.

SDI Cables

Please remember that SDI cables use locking connectors and will not simply pull out if they are jerked or tripped over. They are therefore a significant trip hazard to your equipment, which may be damaged if the cables are misused.

Software License Agreement

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Notice

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Trademarks

REGISTRATION + WARRANTY UPGRADE Register within 12 months of purchase date to upgrade your standard 1 year warranty to a 3 year warranty. Visit: my.atomos.com.

Registered users receive updates of all AtomOS updates upon release.

Registering your product

Register your SHOGUN STUDIO 2 at my.atomos.com within twelve months of purchase to upgrade to a 3 year warranty. Registering your product ensures you receive communication on all future updates.

International Hardware Limited Warranty

International Hardware Limited Warranty

ATOMOS warrants that:

- The main product, not including the IPS screen, or any external accessories, will be free from defects in materials and workmanship for a period of 1 year from the date of purchase; or 3 years upon completion of product registration within 1 year from the date of purchase at my.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.
- 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 center 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

Except as stated in this warranty, ATOMOS, it's vendors, agents, resellers and distributors disclaim in their entirety all other warranties, express or implied, including without limitation all warranties of merchantability or fitness for a particular purpose. The remedies outlined in this warranty are the exclusive remedy a customer from defective goods, which are subject to the warranty.

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.

REGISTRATION + WARRANTY UPGRADE Register within 12 months of purchase date to upgrade your standard 1 year warranty to a 3 year warranty. Visit: my.atomos.com.

Registered users receive updates of all AtomOS updates upon release.

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

What’s included

Your SHOGUN STUDIO 2 includes the equipment listed below. Additional Master Caddy II, Spyder Calibrator and HDMI cables are available from your local Atomos Reseller.

What's in the box:

1. 1 x SHOGUN STUDIO 2
2. 2x Rack ears with screws
3. 5x Master Caddy II
4. 4x short rubber feet with screws (for desktop use)
5. 2x large rubber feet (for elevating the front of the unit)
6. 2x IEC power cable (or external PSU for Japan)
7. 1 x USB-C Dock
8. 2 x HDMI Cables
9. 1x Quick Start Guide

Atomos does not include storage and your package will not contain any media drives. You can buy these locally to keep running costs as low as possible.

For recommend drives, refer to atomos.com/compatible-drives/?product=shogun-studio-2

Attaching Rack Ears and Feet

SHOGUN STUDIO 2 can be configured for both rack mount and desktop use. Included in the box are 4 x small feet, 2 x large feet and rack ears along with all the mounting screws for these accessories.

Rack Ears

Remove the metal rack ears and screws from the protective packaging. Line up the holes and screw in the supplied screws with the appropriate Philips head screwdriver. Take care to screw each screw in 3/4 of the way in and then gradually tighten all screws so you can ensure correct alignment.

Rack ears

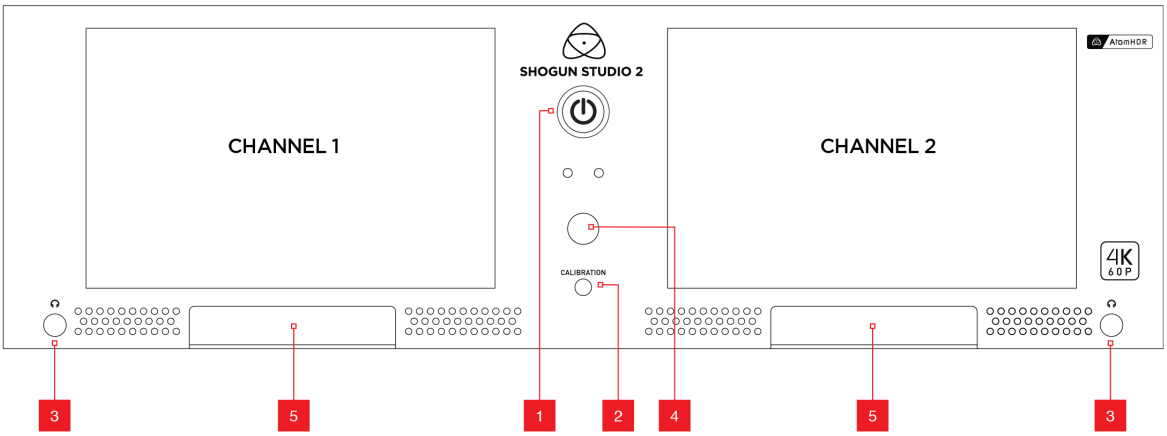
Feet

Depending on the intended use of the SHOGUN STUDIO 2 select the appropriate rubber feet. Whilst the power is disconnected turn the unit over and locate the four screw holes

for the feet. The 4 small feet can be attached and used during rack mount operation. The 2 x larger feet are designed to raise the front of the unit to an angle to allow for easier desktop viewing. It is advised to remove these larger feet during rack mount operation.

Feet

Physical Features



Looking at SHOGUN STUDIO 2 from the front, recorder channel 1 is on your left side and recorder channel 2 is on your right side.

Some screen printing/labelling on the front and rear of unit as illustrated above may differ from actual unit. When connecting any input or other device please ensure you are connecting to the correct connection by referring to the labelling on your actual unit.

1. **Power Button**

The power button as described earlier controls the simultaneous turning on or off both recorder channels. With both power supplies connected press the Power button and both units will power up.

On initial connection of power the controller will go through a boot phase and the fan will spin up. Once this has happened the power button can be used to turn on the device.

Once powered, pressing the power button for 4 seconds will turn both units off. After power down the unit's fan will remain on whilst the internal controller of the SHOGUN STUDIO 2 shuts down.

2. **Calibration Port**

The Calibration 2.5mm jack port beneath the power button allows for connection of the optional x-rite i1 display pro unit.This single port is able to be used to calibrate both devices and each channel will display as a separate option in the Atomos Calibration software. This software will be available via www.atomos.com/support

3. **Headphone Ports**

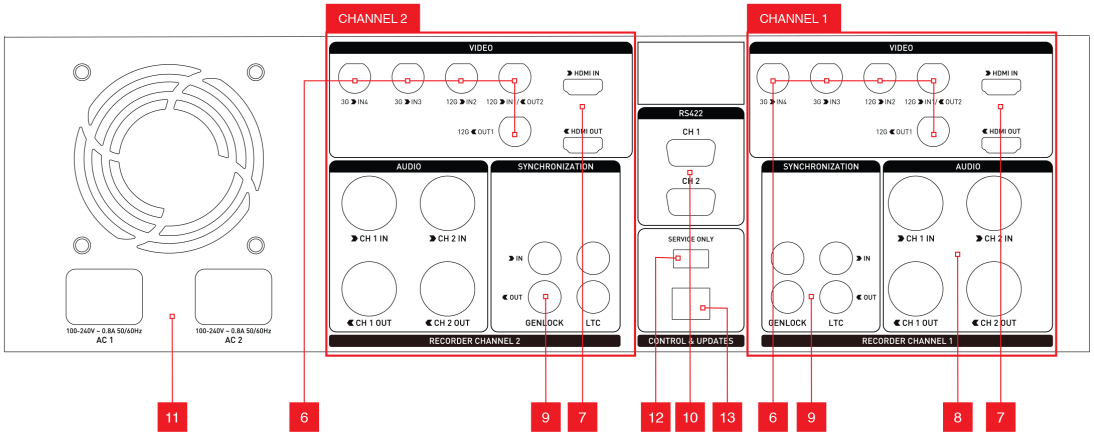
Both channels have an independent 3.5mm headphone jacks for monitoring audio.The volume control is located in the Meters menu – accessed by touching the Audio Meters on the main screen, or via the Setting Menu.

4. **Dual record**

Pressing this button will trigger both units to start recording based on current settings.To stop recording, press and hold until recording has stopped.

5. **Disk slots**

Insert compatible media. AtomX SSDmini may be used with the addition of SSDmini handles. DO NOT use SSDmini media without the attached handle or disks may become logged inside the unit.



The rear panel of SHOGUN STUDIO 2 has been laid out symmetrically to align the connections with the recorder channel monitor when viewed from the front.

6. **SDI In/Out**

BNC connectors for SDI inputs in HD/3G/6G/12G as indicated. Loop supporting up to 12G 4kp60 and should be used to connect channel 1 to channel 2. SDI input 1 can also be used as a secondary output in playback mode.

7. **HDMI In/Out**

HDMI input connection used to record to the SHOGUN STUDIO 2 supports up to 4Kp60. HDMI output connection provides a live loop out or play out when in Playback mode. Loop out between Channel 1 and Channel 2 is limited to 4kp30.

8. **Analogue Audio**

Each recorder channel has 2x XLR inputs and 2x XLR outputs. 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 for monitoring and the audio channel routed to them can be selected via the headphones selection in the Audio menu.

9. **Synchronization**

Each Recorder channel has Genlock input and output via BNC as well as LTC Time-code input and loop output.

Please note that the output of the Genlock and LTC are only for loop out and the SHOGUN STUDIO 2 cannot generate either Genlock or LTC Timecode.

Operation of LTC can be found in the Timecode menu & operation of Genlock found in the Output menu when in Playback mode.

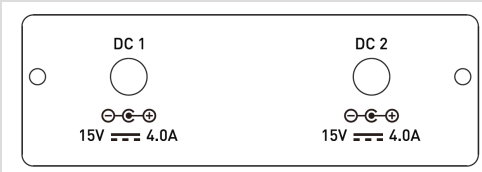
10. **RS422 9pin D-Sub**

Each recorder has its own dedicated 9pin D-Sub for RS422 machine control. Simply connect your RS422 cable from a qualified device or controller to the relevant port on the SHOGUN STUDIO 2. A list of supported devices and RS422 commands are defined in the user manual.

11. **AC Power inputs**

AC1 and AC2 inputs with IEC C14 sockets. Refer to SHOGUN STUDIO 2 User Manual for more information.

Units purchased in Japan will have a different power input configuration, as pictured below.



DC Input for Japanese market version

12. **USB Port**

For SERVICE ONLY and should only be used if instructed to do so as part of firmware updates.

13. **RJ45 connection**

For SERVICE ONLY and should only be used if instructed to do so as part of firmware updates.

Media

Which drives should you use?

There are quite a large number of drives available on the market, and newer models appear all the time. To avoid potential data loss and/or write/read errors, ATOMOS only recommends the use of AtomX SSDmini and approved SSD media only. For the most up-to-date information on compatible drives, please visit: www.atomos.com/drives

Solid State Drives (SSDs)

Widely available 2.5” SSDs are the basic storage media for ATOMOS Monitor Recorders. We work closely with leading drive manufacturers to qualify as many options as possible. Before using these drives, they need to be mounted in the Master Caddy II. For more information refer to

To purchase Master Caddy II units, visit atomos.com/accessories

AtomX SSDmini

ATOMOS has teamed with the world’s leading media manufacturers to design SSD media that is better suited to our ever evolving Monitor Recorders. The AtomX SSDmini is a little over 1/4 inch tall and 3” long. These tiny, slimline SSDs are a true innovation by our close drive partners Nextorage and Angelbird. It is also 20% shorter than traditional SSDs, yet keeps the standard SATA III connector.

It fits directly into the SHOGUN STUDIO 2 with the addition of an extension handle (SSDmini adapter) and is compatible with all ATOMOS recorders and docking stations. AtomX SSDmini is backward compatible with previous ATOMOS devices by adding the SSDmini adapter to the drive.

> *To use an SSDmini with SHOGUN STUDIO 2, you must use the SSDmini adapter handle so that you can insert and remove the drive from the device.*

To purchase an AtomX SSDmini, visit the Nextorage SSDmini or Angelbird SSDmini pages on the ATOMOS website.

To purchase an SSDmini handle adapter, visit atomos.com/accessories/ssdmini-handle

Secure Erase

For drives that carry the ATOMOS Logo such as the G-Technology 4K SSD, Angelbird 4KRAW, AtomX SSDmini by Angelbird and Sony, an option for Secure Erase is presented. This allows for the entire drive including the drive cache to be formatted. This will erase ALL content on the drive meaning nothing can be recovered. It will wipe all data off the drive (which may also be useful as a additional security measure) and reset it back as close as possible to factory conditions. The benefit of this feature is that it helps to maintain maximum drive performance, and therefore should be used when available.

Backing up and archiving

Remember that no storage media, 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 media were to suffer from a sudden failure, and you should back up your content accordingly.

Deleting files

To ensure the integrity of data writes and to avoid situations such as fragmentation, the ATOMOS operating system on the SHOGUN STUDIO 2 does not support the deletion of files. We also do not advise removing or deleting files randomly from the disk on your computer. Often files are left in the trash or garbage partition of the drive occupying drive cache and this can affect drive performance. It's advised that you archive your content and reformat the drive before each shoot. For more details refer to "Best Practice" on page 31

File Recovery

Your SHOGUN STUDIO 2 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 SHOGUN STUDIO 2, in the top left hand corner of the display. This means that you will not normally have to restart the SHOGUN STUDIO 2, even if a recording has been interrupted by mechanical disruption to the disk drive.

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!

Master Caddy Docking Station

The Master Caddy Docking Station allows you to connect your media to your computer for editing directly from the drive or to copy the files to your own storage system. SHOGUN STUDIO 2 2 includes the ATOMOS USB-C 3.1 Powered Docking Station, which allows you to efficiently offload the drive contents direct to your computer.

ATOMOS USB-C 3.1 Powered Docking Station

The integrated USB cable features one USB-C 3.1 connector for use with computers with a USB-C connection.

> *When connecting the AtomX USB-C 3.1 Docking Station II with older computers a USB 3.0 Male to Type C Female adapter is required*

All SHOGUN STUDIO 2 media can be connected to a docking station:

- AtomX SSDmini,
- Master Caddy II with SSD media installed

For the most up-to-date information on compatible drives, please visit: www.atom-os.com/drives

Master Caddy 1 drives can connect to a Master Caddy Docking Station, but are NOT compatible with the SHOGUN STUDIO 2.

HDMI cables

ATOMOS makes a range of professional HDMI cables which are ideal for connecting between your camera and SHOGUN STUDIO 2. For 4Kp50/60p and RAW recording we advise the use of ATOMOS HDMI 2.0 cables. For more information and to purchase ATOMOS HDMI cables, visit the HDMI Cables page on the ATOMOS website.

In terms of third party HDMI cables, they are not all created equal and there are a variety of different qualities available. Please make sure you test your cables prior to shooting. This is particularly important when recording 4Kp50/60 and RAW. Many cables will claim to be high speed but will lack the required shielding on both cable and connector to maintain a high quality signal. If the signal contains errors that affect your recording, your SHOGUN STUDIO 2 may not lock to these inputs.

Take care to use HDMI cables of the appropriate grade and ensure that you protect them from damage. Signal issues can often result from damaged HDMI cables, or from using cables that are too long.

Check your connectivity at both the camera connector and the recorder / monitor connector to make sure you have a firm connection. This will help to avoid signal drop outs.

If the HDMI cable is removed whilst you are recording, the 'Skippy' icon will be displayed. Tap the Skippy icon and it will disappear, ready for the next notification.

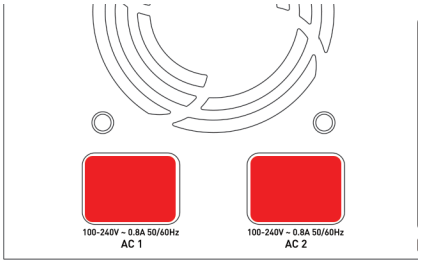
What you also need - SDI Cables

SDI cables are robust physically and electrically; you should rarely have problems with signal transmission unless your cables are either damaged or too long. Please remember that SDI cables use locking connectors and will not simply pull out if they are jerked or tripped over.

Therefore they can be a significant trip hazard, and also a hazard to your equipment, which may be damaged if the cables are mishandled or of a low grade. Please ensure you test and check your SDI cables for 4K. For longer runs, cables of a Belden 1694A specification are recommended

Connecting and powering up

We recommend that you connect SHOGUN STUDIO 2 directly to a stable mains connection or via a power distribution unit / strip to an uninterruptible power supply in your rack. The SHOGUN STUDIO 2 has 2 x AC inputs and we advise using both where possible. These inputs provide you with a a Dual Redundant AC Power Supply.



Connecting Power and about PSUs:

The rear bottom left hand side of the unit are located AC1 and AC2 inputs with IEC C14 sockets. Connect the provided power cables to the sockets and then connect to mains power. The dual power supplies internally balance the power draw across both units and additionally allows for backup power if one of the power supplies fail.

If a PSU fails or a single power supply is connected, a warning screen will be displayed. To continue using the unit, activate single power supply mode by clicking the blue X in the top corner of the message box. The power input icons in the top left corner of each unit will display a green and yellow icon.

With both power supplies connected, press the Power button in for 3 seconds and both units will power up and the LED light on both channels will illuminate red.

On initial connection of power the controller will go through a boot phase and the fan will spin up. Once this has happened the power button can be used to turn on the device.

The SHOGUN STUDIO 2 does not feature a software off function in the menu and can only be powered down from the physical switch on the front of the unit.

Once powered, pressing the power button for 3 seconds will turn both units off. After power down the unit's fan will remain on whilst the internal controller of the SHOGUN STUDIO 2 shuts down.

Mounting disks in the Master Caddy III

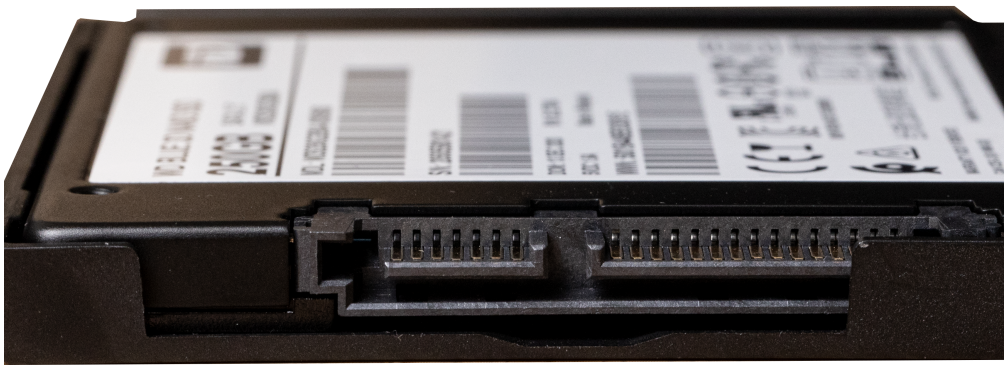
If you choose to use your own disks instead of a pre-built AtomX SSDmini, then follow this procedure to install it in the provided Master Caddy III. A Master Caddy III and screws is included in the box with your SHOGUN STUDIO 2. If you have used Master Caddy II before with other ATOMOS products, you will notice that Master Caddy III has a slimmer, lighter weight design to ensure compatibility with the CONNECT range of hardware products. For information on drives that are compatible with SHOGUN STUDIO 2, refer to the compatible drive page at https://www.atomos.com/compatible-drives

How to mount a disk into Master Caddy III

When inserting the disk into the Master Caddy III, ensure that the SATA connectors of the drive line up with the gap in the plastic shell. If they do not line up with this gap, turn the drive over.

Correct alignment

Incorrect alignment



It is important to properly align the drive correctly with this gap in the Master Caddy III, so that the drive can connect to the SATA connectors on SHOGUN STUDIO 2 when inserted.

SSDs are very sensitive to damage from static electricity. Please observe all the usual precautions when handling them and NEVER touch the exposed SATA connector as static electricity may be harmful to your disk.

With the drive inside the Master Caddy III, use the four supplied screws to secure the drive in place. These screws should be tightened so the screw heads are flush with the casing of the caddy. The caddy is light and the disk just needs to be held securely.

Take care not to over-tighten the screws.

Inserting the Master Caddy III into the media slot

When inserting the Master Caddy III into the media slot on your SHOGUN STUDIO 2, ensure that the SATA connectors on the disk line up with the SATA connectors on your device. Gently push the Master Caddy III into place, but never force the disk just in case something isn’t set up or aligned properly.

If you experience difficulty when inserting the Master Caddy III to your device, the drive may not be sitting correctly in the Master Caddy or the screw heads may not be flush with the casing of the caddy. A quick visual check will confirm this. Remove the drive and re-inserting it in the Master Caddy III. For information on attaching media to a Master Caddy Docking Station see "Connecting media" on page 163.

Master Caddy II drives are compatible with SHOGUN STUDIO 2.

Inserting and Removing Media

Master Caddy II Slot

On the front of the SHOGUN STUDIO 2 a drive slot is located under the centre of each of the 7.1” SuperATOM IPS monitors.

To insert a drive make sure it is mounted correctly in the Master Caddy II and push the drive in to the slot. The side keys will guide the drive in to position and engage the drive with the SATA connector.

Do not attempt to insert a drive without a Master Caddy II as this could damage the rear connector and the drive.

The included AtomX SSDmini Handle can be attached to your AtomX SSDmini. This allows it to be used with existing ATOMOS Master Caddy II devices like SHOGUN STUDIO 2, and also reduces handling and potential damage to the disk casing.

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. If files are incomplete your AtomOS will detect this and allow you to repair the file but in the case of power loss there will be frame loss of roughly 7 seconds.

The SHOGUN STUDIO 2 does NOT have a release latch - it is friction-fit. Simply pull the Master Caddy II out using a finger and thumb on either side of the Master Caddy II and pull the drive out of the slot. Master Caddy II is backwards compatible with previous Atomos recorders Master Caddy 1 is not compatible with SHOGUN STUDIO 2 as the keyways are on one side only.

Best Practice

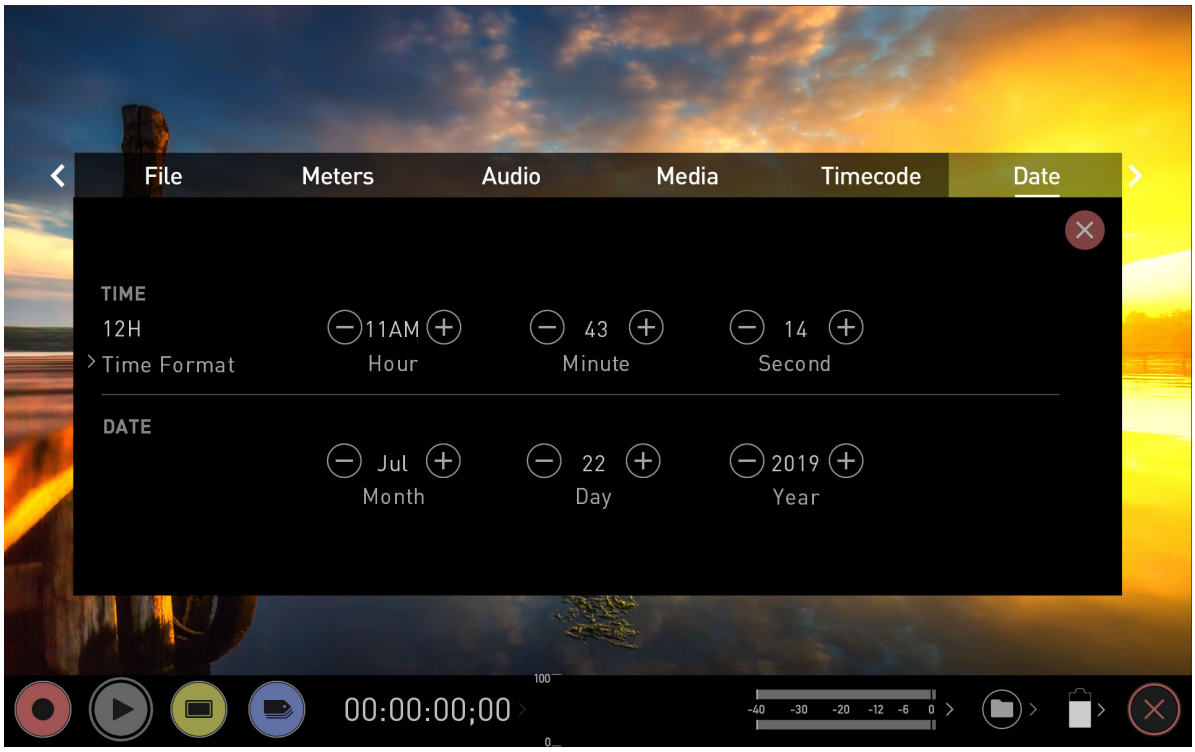
Understanding the basic controls and 'housekeeping' functions will save you time in the future. Before you start enjoying your SHOGUN STUDIO 2 it will help to set the date and time, the 'device name' and file naming conventions.

Date & Time

It is vital you set the correct date and time on your SHOGUN STUDIO 2 to ensure that the metadata for your files is correct. To access the Date Time tab, tap the input indicator from the home screen Information bar.

Then swipe the menu tabs to the left to navigate to the Date Time tab. This is how you can access menu tabs quickly.

Swipe left to reveal more tabs that contain settings. If you cannot find the menu you are looking for, swipe left or right.

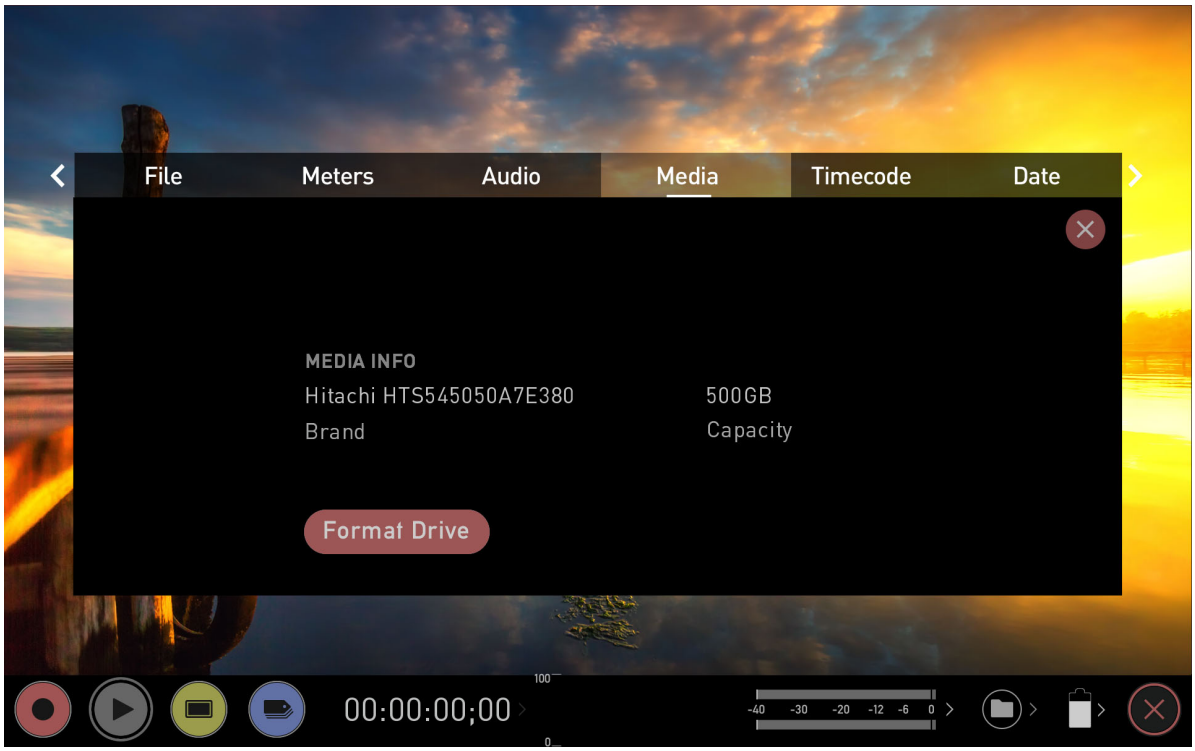


Use the -+ icons for each setting to set the time zone, time and date used on the SHOGUN STUDIO 2. For more information refer to the "Date Menu" on page 90.

Format Media

Make sure your drive is correctly inserted and all data from previous shoots has been securely backed-up. Touching the Storage Capacity Indicator on the home screen will take you to the Media Menu.

The Media menu provides information on the drive currently inserted. To format the drive tap the Format Drive button (below).



When you first insert a drive you may be presented with 'Invalid media'. This means that the drive has not yet been formatted and you simply need to format your drive before using it.

If you do not see your hard drive information, there may be a problem with the connection or drive. Try removing the drive and reattaching the drive. Ensure correct alignment of your media.

The SHOGUN STUDIO 2 uses the exFAT file system for broadest compatibility.

Secure Erase Format

For drives that carry the ATOMOS Logo such as the G-Technology 4K SSD, Angelbird 4KRAW, AtomX SSDmini by Angelbird and Sony, an option for Secure Erase is also presented. For more information refer to Secure Erase Format in the "Media Menu" on page 85.

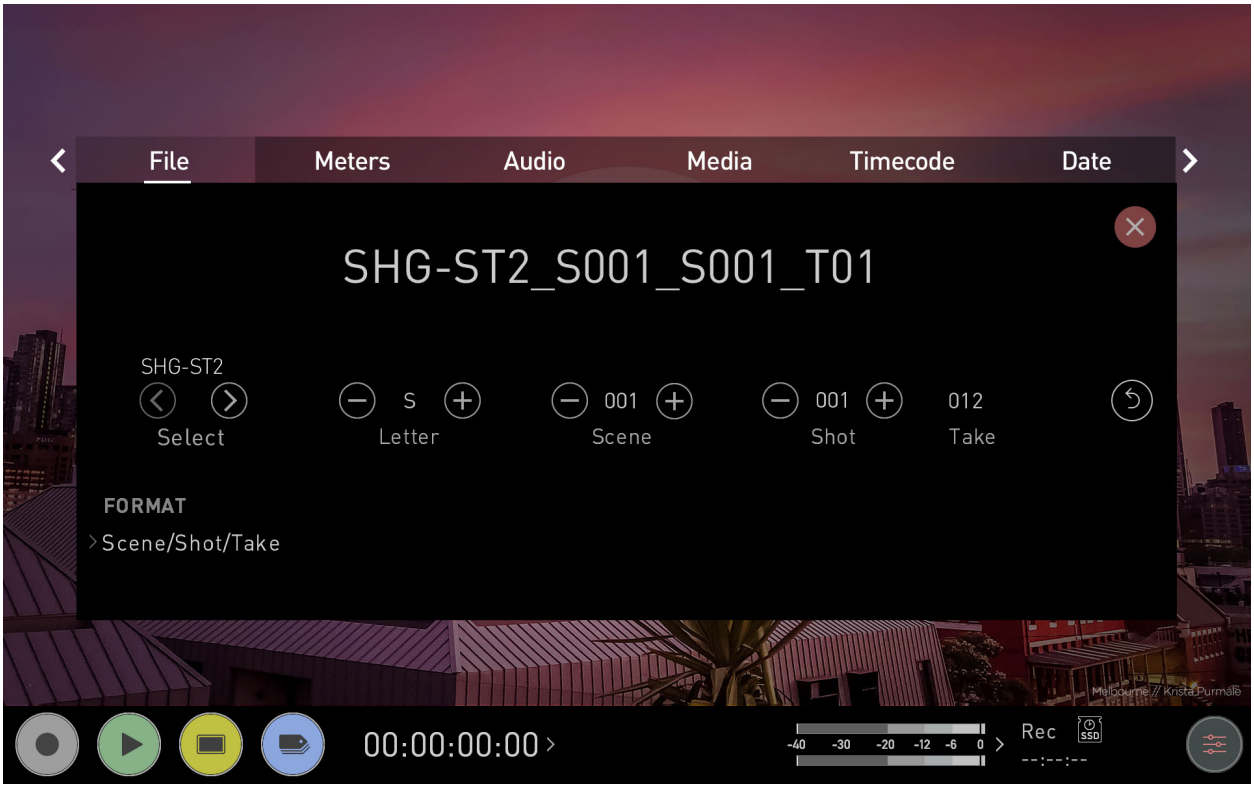
Unit Name

You can also modify the unit name for your SHOGUN STUDIO 2. Creating a unique name for each SHOGUN STUDIO 2 you are using can be very useful when using multiple devices or with multicam shoots. Practicing good file management during production will save you valuable time in post production.

The unit name serves two main purposes:

- Drive Naming: Giving the unit a unique name aids with identification. Once you have given it a name all drives subsequently formatted in the SHOGUN STUDIO 2 will bear this name as a prefix.
- File Naming: The current unit name appears at the start of the recorded clip name: **SHGCNCT_S001_S001_T001.MOV**

To access the unit name, navigate to the **FILE TAB** where you can change the unit name.



How to change the Unit Name:

- Using the < > icons at Unit Name, select the letter to update. The character you are updating will display in the Letter indicator.
- Tap the Letter - + icons to change the character. When the correct letter is displayed, use the select control to move to the next character.
- Tap on the reset arrow to reset the unit name.
- Once you have finished making changes, tap on Apply.

File Naming

The File menu also allows you to adjust the Scene and Shot number that will form part of the recorded clip filename:

SHGCNCT_S001_S001_T001.MOV

How to modify the File Name:

- Use the - + icons at Scene and Shot, to increase or decrease the numerical values.
- Once you have finished making changes, tap on Apply.

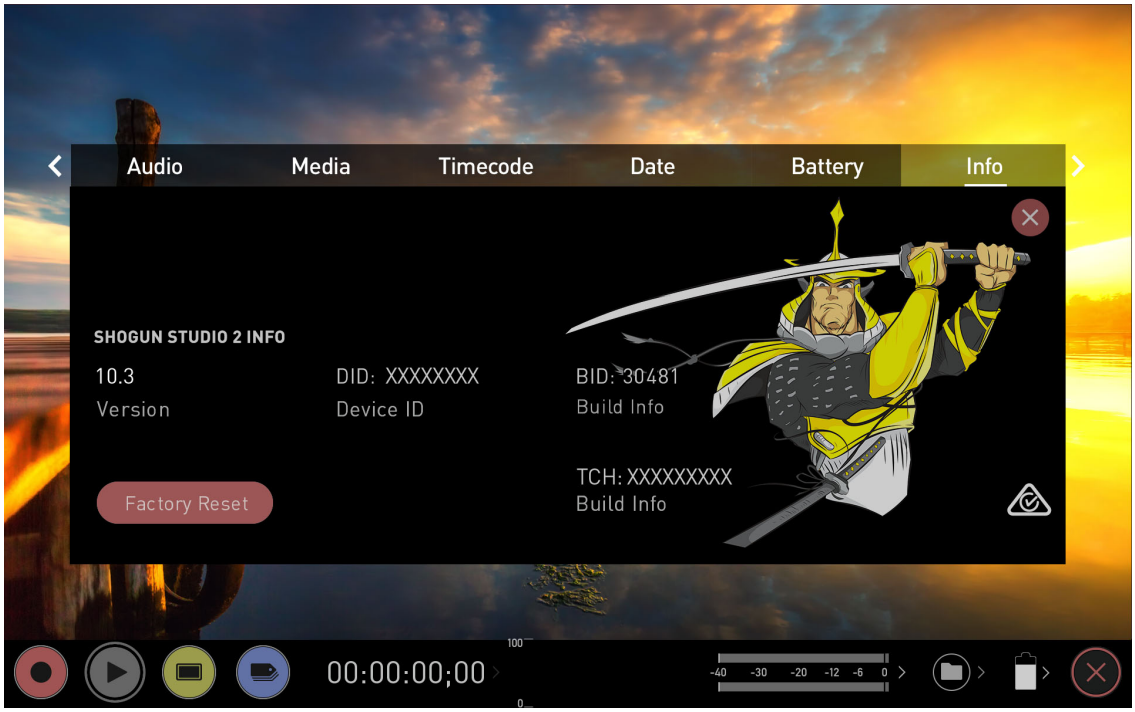
When changing the drive please ensure that you take note of the last scene and take number so you can append this, as formatting a drive will reset the scene and take counter to 001,001,001.

AtomOS Updates (Firmware)

From time to time we will issue AtomOS (firmware) updates for your SHOGUN STUDIO 2. This is the software that runs inside your SHOGUN STUDIO 2 and is available from our support page, along with the release notes for each AtomOS release.

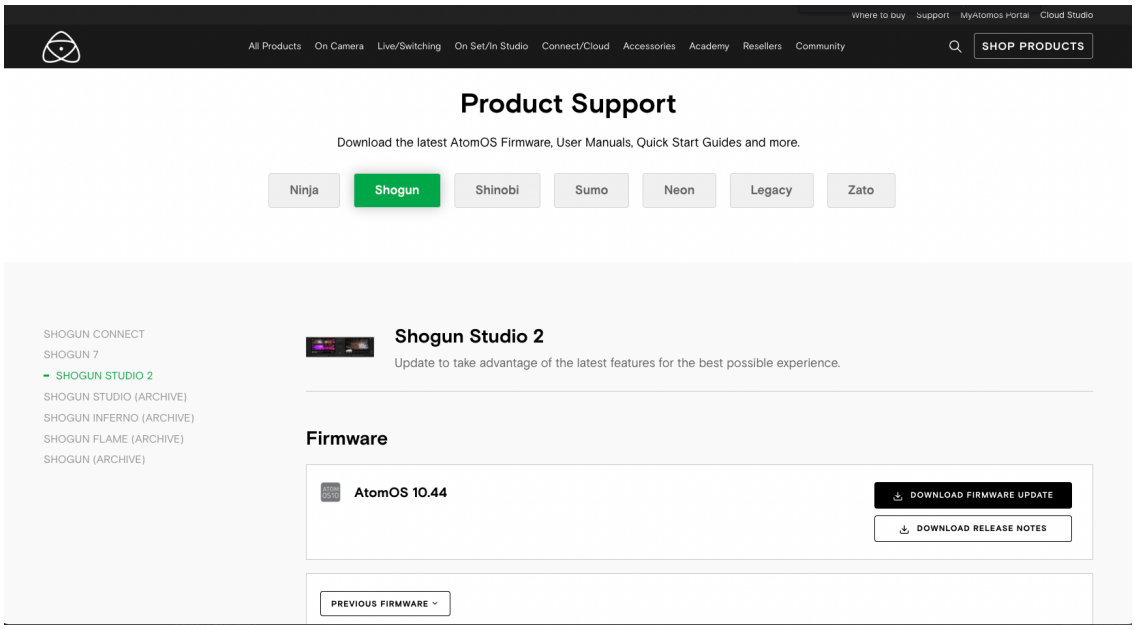
How to update AtomOS (Firmware)

1. Tap the power plug icons at the top right of the home screen on your SHOGUN STUDIO 2 to open the Power menu screen, then select the Info tab. The Info menu page lists the AtomOS version and other important information about your SHOGUN STUDIO 2. Take note of the AtomOS version that is installed.



2. Visit atomos.com/product-support and select SHOGUN as the product family, then SHOGUN STUDIO 2 from the left side of the screen. check the current AtomOS version for SHOGUN STUDIO 2 which will be listed at the top of the page. If the listed AtomOS version number is greater than the AtomOS version number displayed on the SHOGUN STUDIO 2, a firmware update is required. Click Download Firmware Update to download the update.

> *The firmware release notes will list the date of release for each firmware version.*



3. Insert a compatible, formatted drive into your Docking Station and connect it to your computer.

> *Always format your drives in the SHOGUN STUDIO 2 first. It formats the drive for optimal performance for video*

4. Unzip the downloaded zip file and copy the **ATOMST2.FW** file to the root of the drive in the docking station.

> *Ensure that the firmware update file is on the root of the drive, and not in a folder on the drive.*

> *Make sure that the firmware file is not renamed when your computer unpacks the ZIP file. If you have other firmware in the same folder, the file may become renamed to**ATOMST2-1.FW**when unzipping and the update will not work.*

5. Eject the drive (according to operating system guidelines).

6. Insert the drive with the **ATOMST2.FW** file into the SHOGUN STUDIO 2. It is very important that your SHOGUN STUDIO 2 does not lose power during a firmware update.

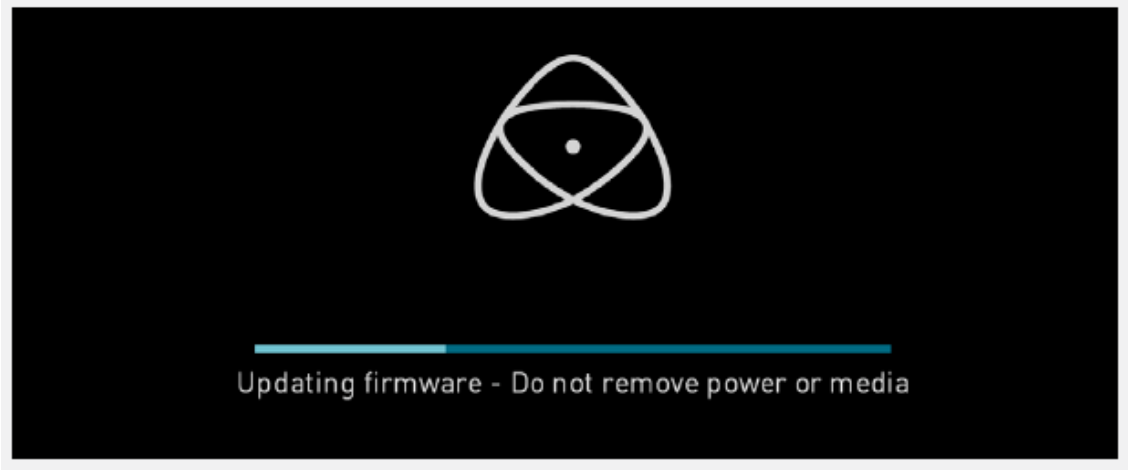
7. Press the Power Button to power the SHOGUN STUDIO 2 on. The AtomOS update process will begin automatically.

> *If you place the .FW file on the drive and insert it into the SHOGUN STUDIO 2 whilst it is turned on, the device will recognize the firmware update and ask if you'd like to apply the update. If you select 'OK' the device will shut down and begin the update process. Once the update has completed, your SHOGUN STUDIO 2 will delete the .FW file and power down.*

8. If your SHOGUN STUDIO 2 is already powered on, you will be prompted to perform the AtomOS update when a drive containing a new AtomOS version is inserted.

9. The ATOMOS logo will appear. After a few seconds the AtomOS update will start.

10. During the AtomOS update, an 'updating firmware' screen will appear. The update will take a few minutes.



11. When the AtomOS update is finished, the SHOGUN STUDIO 2 will:
    a. Delete the **ATOMST2.FW** file from your drive.
    b. Power itself down.

12. Power your SHOGUN STUDIO 2 on and check that the AtomOS version is the version expected (menu>Info Menu tab).

For further information and troubleshooting on updating AtomOS, click here.

IMPORTANT: Problems when installing AtomOS

Very rarely, the firmware update process can go wrong. This might be because of an incomplete or corrupted download. In the unlikely event of your SHOGUN STUDIO 2 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 SHOGUN STUDIO 2 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)

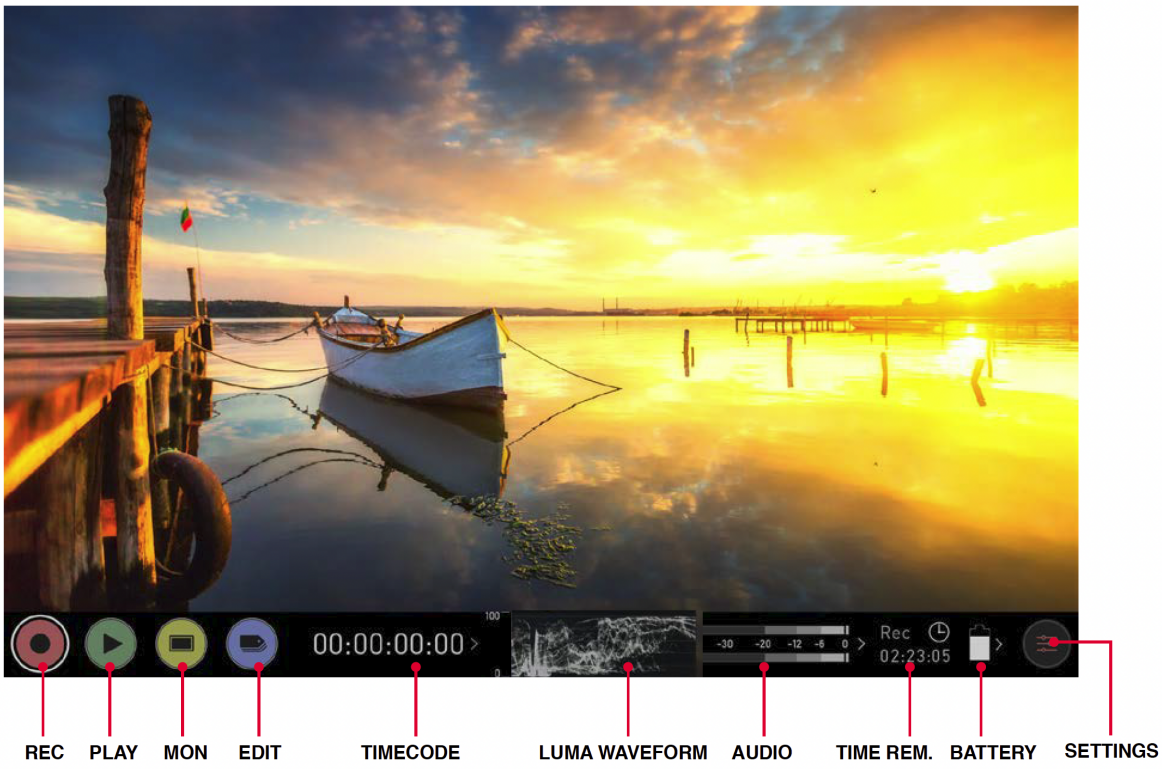
AtomOS 10 Operating System

With the AtomOS 10 Operating System, you get the ultimate touch interface for monitoring and recording and an operating system that has a clean, intuitive and elegant design. It’s simple and straightforward, but at the same time it provides access to the complete range of features. No complicated sequences of buttons. No endless menus crowded with text. It’s optimized for the AtomIC hardware platform. And it’s extremely responsive with fast boot up times.

The Main Screen - Home Screen

The ATOMOS 10 home screen is designed for unobstructed monitoring at all times. The clean and uncluttered design of ATOMOS 10 concentrates the attention on the image, not on the device's operation. From the muted main button controls through to flexible histogram size and positioning, all on-screen controls are non-obtrusive and incredibly intuitive to use. Monitoring tools are only one-touch away, and allow for a better view of your subject while adjusting monitor-assist functions such as focus peaking and false color, Record, Playback, Monitoring and Edit features are easier than ever to use.

Monitor Mode / Home



REC (Record): Press to begin recording. Jump to Record Home Screen.

PLAY: Jump to the most recently recorded clip on the Playback Home Screen.

MON (Monitor): Press once to show Monitoring Features and Information Bar. See the following pages for activating Monitoring features. Press again to return to home.

EDIT: Press to show Editing Features and Information Bar. Press again to return.

TIMECODE: Shows the selected timecode such as embedded, time of day or rec run.

LUMA WAVEFORM: Luma Waveform is a constant on your home screen, to allow for greater control over monitoring without compromising the subject.

AUDIO: Audio Meters. Touching the Audio meter will open the Audio Menu.

TIME REMAINING: Time Remaining on Disk (at current record settings). Changing Recording Format will change Time Remaining.

BATTERY: Touch to access Power Menu. Battery Indicator shows power level and flashes red when power is running low.

SETTINGS (red): Touch to access all Recording settings, including input, output, file, media, gamma, gamut, and more.

Touch **MON** (Monitor) to reveal Monitoring Features and the Information Bar. When activated the Monitor button will have two surrounding rings. For more information refer to "The Main Screen - Monitoring Features" on page 46

At any time you can remove the overlays by touching the center of the screen. Touch again to bring them back.

The Main Screen - Information Bar

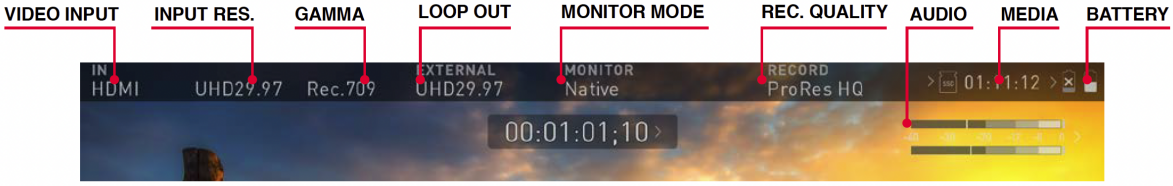
At the top of the SHOGUN STUDIO 2 screen is the area referred to as the **Information Bar**.

It displays the input source as SDI or HDMI, the settings of your input device/camera, current settings of your SHOGUN STUDIO 2, media, audio, disk capacity and more. Touching any of these areas will take you to the relevant menu and allow you to make changes to your setup.

Alternatively you can access these setting by tapping the Record Settings icon. Tapping the Settings button will open the Record Settings menu, from where you will be able to navigate to the required tab. Swipe left to see more tabs.

The content in the Information Bar is dependent on what mode you are in, for example Recording and Monitoring will display the Video Input type, but if you are in Play mode, Video Input will show the resolution and frame rate of the video clip currently cued or playing.

Monitor Mode / Features



VIDEO INPUT: (Rec & Mon mode) Input source - HDMI or SDI

VIDEO INPUT: (Rec & Mon mode) Resolution and frame rate from input device

VIDEO INPUT: (Play & Edit mode) Resolution and frame rate of current playback clip

INPUT GAMMA: Displays the current input gamma. Tap to open Input menu to ensure it matches the output coming from your camera or other input device. RAW inputs will automatically be set to match the camera output. For some cameras further options can be selected. During playback mode this setting will be determined by the metadata of the recorded content.

VIDEO OUTPUT: This menu displays the active video resolution and frame rate being output from the HDMI Out.

MONITORING MODE: Displays the monitoring display mode that has been selected. Native, Rec709, HLG, PQ or the name of the 3D LUT selected. Touch to change settings.

CODEC (RECORDING FORMAT): Shows the recording format. Touch to change settings.

METERS: (Audio Meters): Touching the audio meters will open the Audio Menu.

MEDIA : This shows the remaining recording time based on the chosen codec and remaining capacity of the drive.

POWER: Touch to access Power Menu. A Battery icon will be displayed when a battery is attached, with the current power level of the battery displayed visually. The icon flashes red when power is running low, and will have an X over the battery icon when no battery is attached. A Plug icon will be displayed when DC power is connected.

SETTINGS (yellow): Touch to access Monitoring Feature settings.

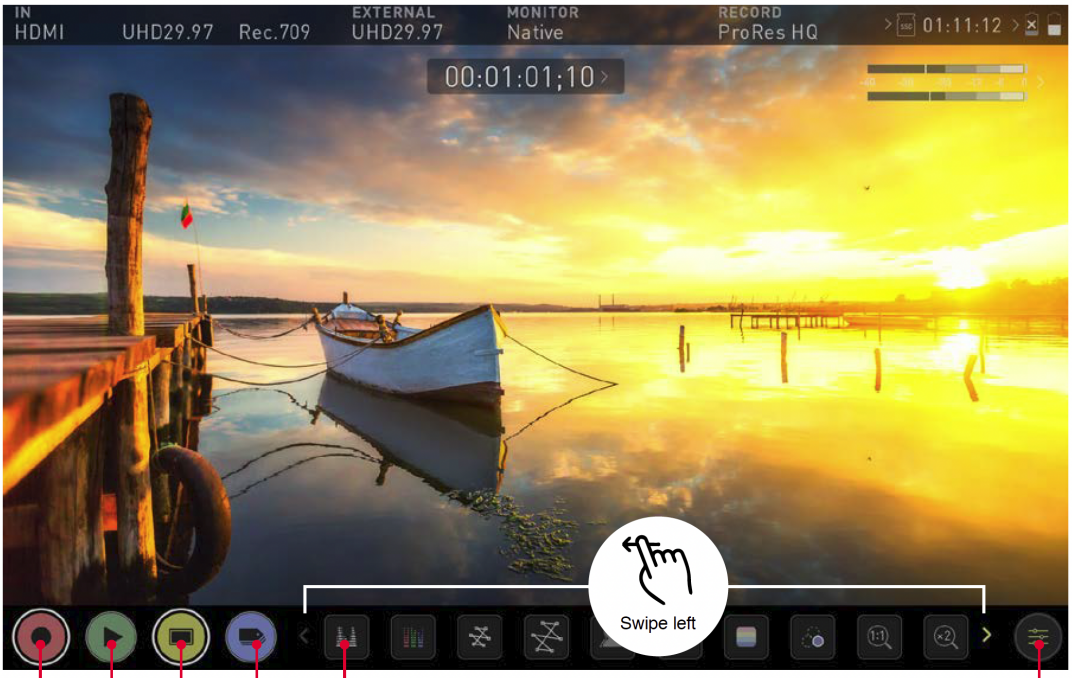
Touch MON again to return to previous screen.

The EDIT button works in a similar fashion to the Mon button, as it is not possible to have Monitor and Edit active simultaneously.

The Main Screen - Monitoring Features

At the bottom of the Monitoring screen are the Monitoring Features, accessible by toggling the MON icon. Monitoring Features do not affect your recorded file and can be turned on and off, or adjusted whilst recording (unless you choose to burn a LUT into your footage). Not all Monitoring features are available at first glance – to reveal all Monitoring features, swipe monitoring icons to the left. The icons will behave in a carousel like manner and you can swipe left and right to access any of the features. At the bottom right is the Settings button. Press the yellow Settings icon to adjust the settings and behaviors of the Monitoring Tools.

Monitor Mode / Features



Main Controls

REC (Record): Tap to begin recording / Return to Record Home Screen.

PLAY: Jump to the most recently recorded clip / Enter Playback Home Screen.

MON (Monitor): Whilst on the monitoring features screen press once to revert to home screen view. For Monitor settings press the Settings button.

Any Monitoring functions you have enabled will remain active until deactivated.

EDIT: Press to show Editing Features and Information Bar.

Press again to return to home. Any Monitoring functions you have activated will remain active until they are turned off.

SETTINGS (yellow): Touch to access Monitoring Feature Settings. Set scope sizes, adjust transparency, LUTs, Focus Peaking and more.

Monitoring Feature Activation Icons

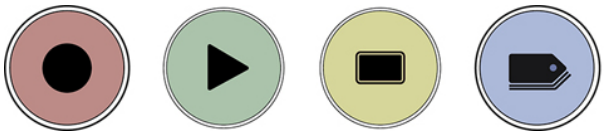
For more information on the monitoring tools, refer to the "Monitoring Features" on page 99 section.

Home screen and menu functions

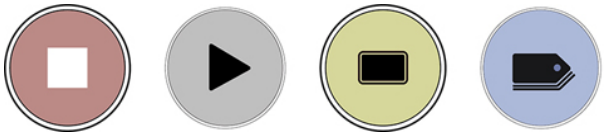
REC (Record)

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



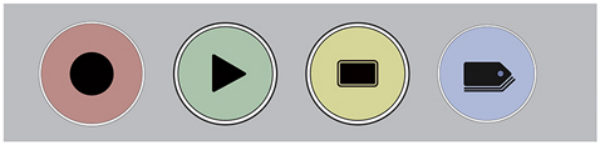
No input / No media

The Rec icon is dimmed and disabled if there is no valid video input. It also appears in where there is no media, 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 and touch it again to pause playback. When you press the green Play button the SHOGUN STUDIO 2 will switch to playback mode and automatically play the last recorded clip.

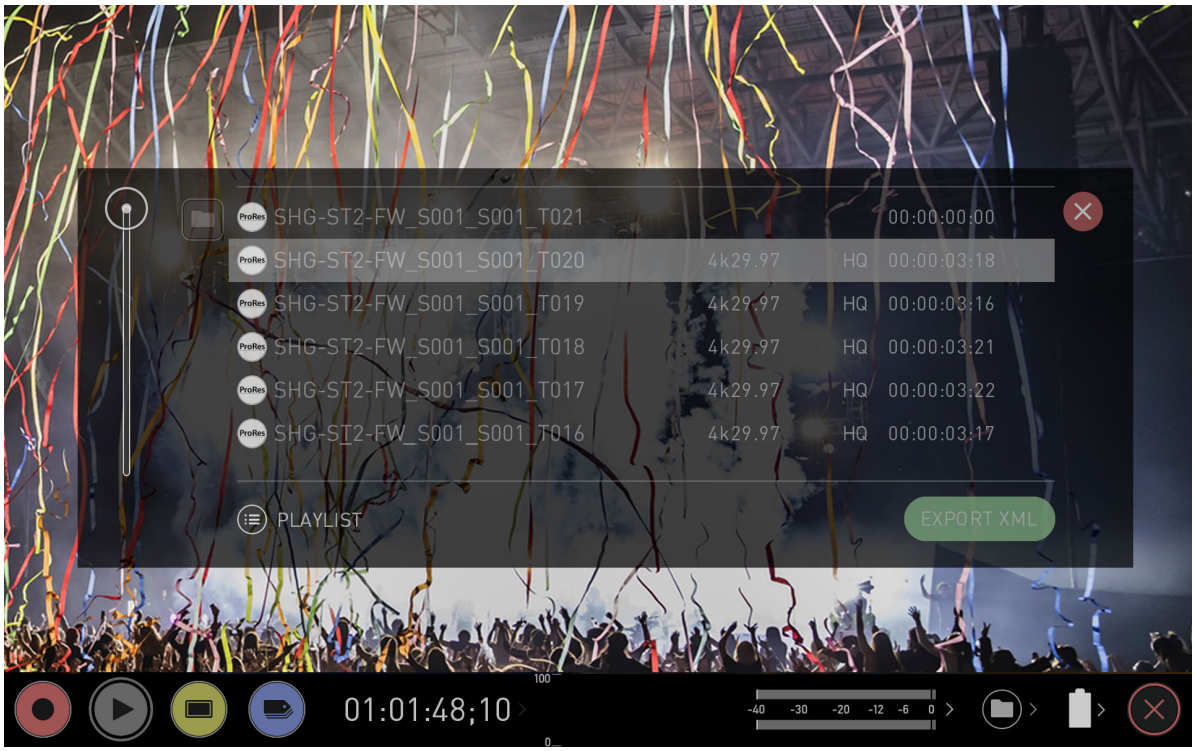
Playback Mode



Playback Home screen

Touching the folder icon will reveal the available playlist.

SHOGUN STUDIO 2 2 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 play-back. To exit the playlist simply touch close, or any other button. Touching close will take you to the previous window.


ProRes SHG-ST2-FW_S001_S001_T021 00:00:00:00
ProRes SHG-ST2-FW_S001_S001_T020 4k29.97 HQ 00:00:03:18
ProRes SHG-ST2-FW_S001_S001_T019 4k29.97 HQ 00:00:03:16
ProRes SHG-ST2-FW_S001_S001_T018 4k29.97 HQ 00:00:03:21
ProRes SHG-ST2-FW_S001_S001_T017 4k29.97 HQ 00:00:03:22
ProRes SHG-ST2-FW_S001_S001_T016 4k29.97 HQ 00:00:03:17
PLAYLIST
EXPORT XML
100
0
01:01:48;10
-40 -30 -20 -12 -6 0

Close Screen

Tap to close the screen.

Folder level up

Tap to navigate one level up in the folder structure.

Playlist Options

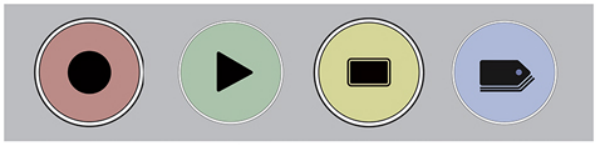
Tap to enable Playlist options. For more information on using playlists, refer to "Playlists" on page 137

No disk / disk not secure

The Play button will be dimmed and disabled if there is no disk, where there is a poor connection or the disk is not correctly formatted and during recording. See the "Best Practice" on page 31 section for more information.

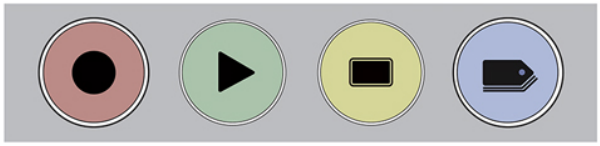
MON (Monitor)

Pressing MON reveals Monitor Assist icons as shown in "The Main Screen - Monitoring Features" on page 46 section. These features are explained in detail in the Monitoring Features section.



EDIT

You can use the edit tools during recording and playback. Pressing EDIT takes you into a number of options. For more information refer to the "Edit Mode" on page 151 section.



The Menu system

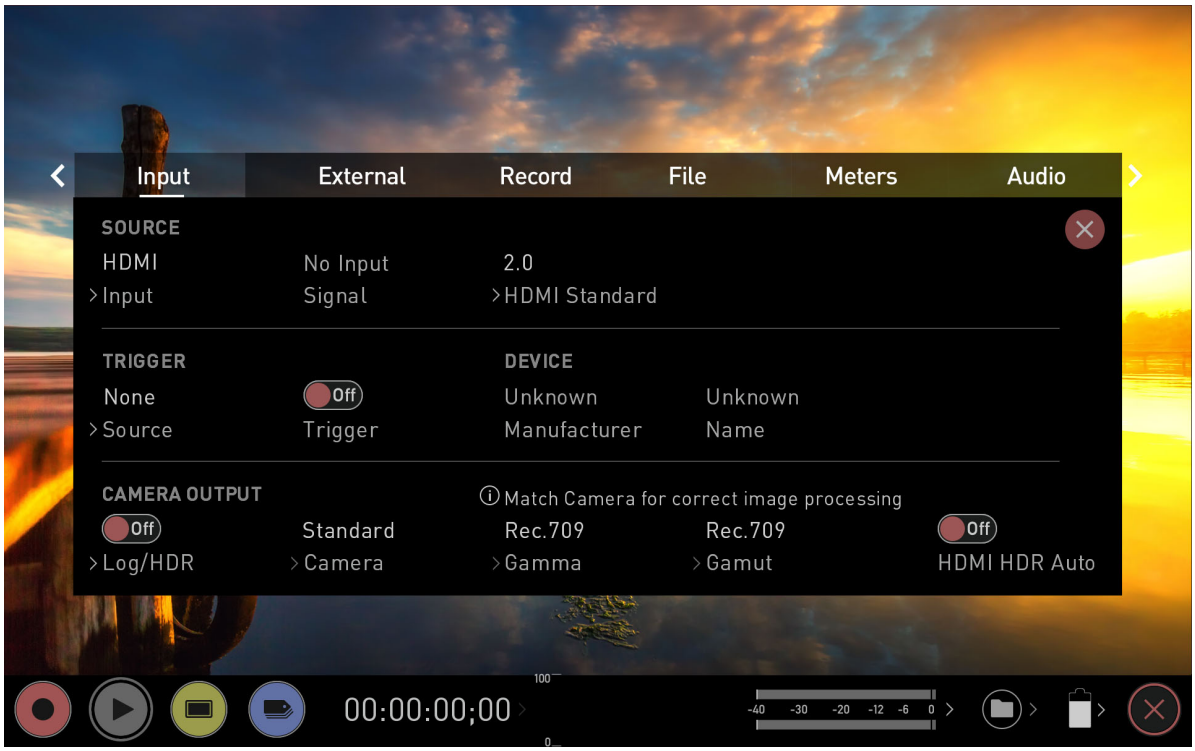
Tap on the Input, Output, Codec, Media or Battery indications in the Information bar at the top of the home screen to open the menu related to that item.

Menu pages contain information as well as settings that can be adjusted. Across the top of the menu page that opens are menu tabs that link to the other menu pages. Swipe the menu tabs to the left or right to see all of the menu tabs and tap on the one you wish to enter.

Swipe left to reveal more tabs that contain settings. If you cannot find the menu you are looking for, swipe left or right.

Input Menu

The source section allows you to select the input signal connection type, and related settings.



SOURCE

Input

To switch between different sources, tap on Input to open the source selection screen. By default, SDI sources will use a single input signal, however you can configure the device for dual or quad link as well as four separate inputs for switching. The input source options will be listed on the left side of the screen, and will allow you to switch the input signal between the following:

- HDMI
- 12G-SDI 1
- 12G-SDI 2
- Dual link 6G-SDI

- Quad link 3G-SDI
- Switching 4x3G-SDI

When an option is selected on the left, the image on screen will display the cable configuration. This helps to ensure that you are selecting the correct input type and have the correct number of cables connected to the SDI inputs.

For example the Dual link 6G-SDI option requires two cables to deliver the signal and Quad link 3G-SDI requires four cables to deliver the signal. In both of these cases the cables in the image will be blue to indicate the fact that they are delivering one signal. In comparison, the Switching 4x3G-SDI option displays four different colored cables connected to the SDI inputs, to indicate four separate input sources.

Tap to select an input source on the left, then tap on Confirm.

In the switching 4x3G-SDI mode, the image shows four cables connected, but you can also perform switching with two or more connected sources.

When using Dual link or Quad link modes, each input must be the same framerate/resolution and synced to a reference signal.

Signal

Displays the current input signal format, including frame rate, resolution and scan mode. No Input will be displayed when there is no input connected.

HDMI Standard

When connected to an HDMI source, tap on HDMI Standard to toggle between the following:

- HDMI 1.4,
- HDMI 2.0

SDI MULTILINK

When connected to an SDI source, the Input menu will have an additional section called SDI MULTILINK. The SHOGUN STUDIO 2 supports dual and quad link SDI input. By default, SDI sources will use a single input signal, to switch to Dual or Quad link, tap Mode under SDI MULTILINK. When using Multilink each input must be the same framerate/resolution and synced to a reference signal. Only channels 1 and 2 of SDI embedded audio, plus analogue audio are recorded in multilink mode. When in Multilink mode you have access to all monitoring, recording and output features available in single channel mode. The SDI signal over IN1 will act as the master reference for Timecode and Trigger in both Quad and Dual link modes.

Mode

Tap Mode under SDI MULTILINK to set the mode for Multilink. You will be taken to the Input Source screen to select your configuration.

The following will be displayed at Mode in these situations:

HDMI:HDMI mode has been selected.

Single: 12G-SDI 1 or 12G-SDI 2 has been selected.

Dual: Dual link 6G-SDI has been selected.

Quad: Quad link 3G-SDI has been selected.

4x ISO: Switching 4x3G-SDI has been selected

When using Multilink, each input must be the same frame rate and resolution and be synced to a reference signal.

When using the Switching 4x3G mode, it is not necessary to sync to a reference signal.

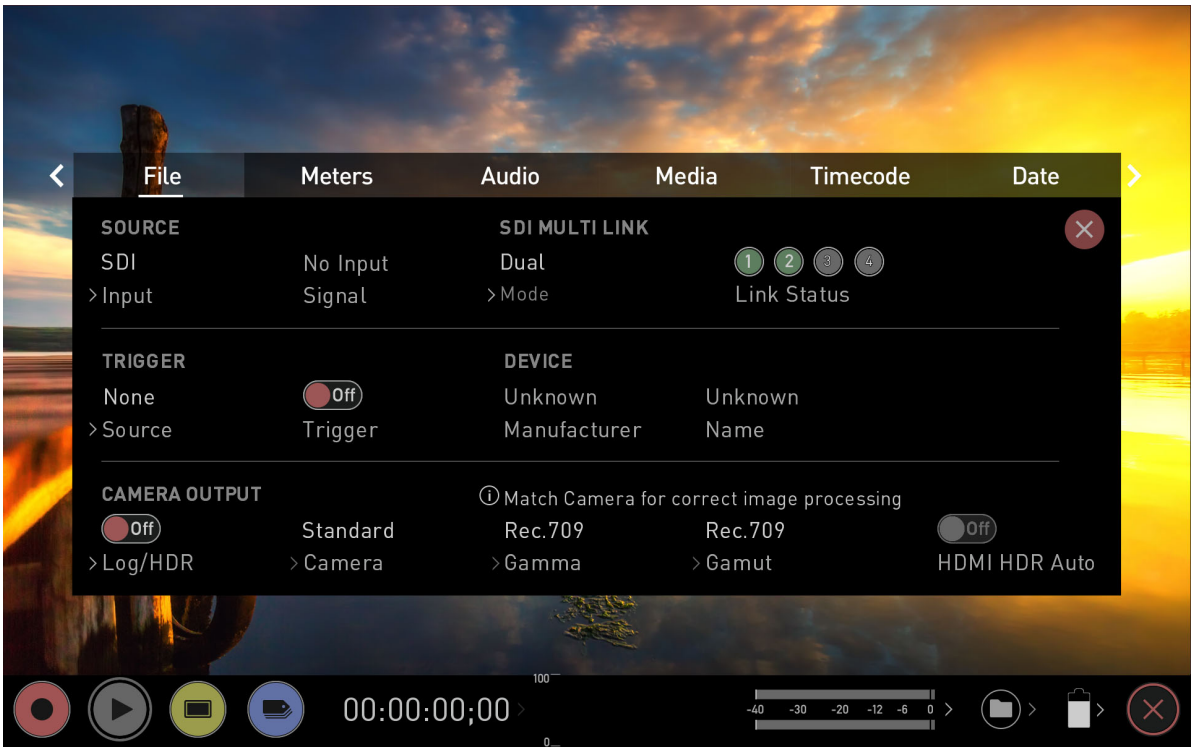
In terms of audio, only channels 1 and 2 of SDI embedded audio plus analogue audio are recorded. In this mode, you have access to all monitoring, recording and output features available in single channel mode.

Single (Single Link) mode

When you have selected Tap 12G SDI 1 to select the SDI channel Source – 12G-SDI 1 or 12G-SDI 2.Select channel Source – 1 or 2.

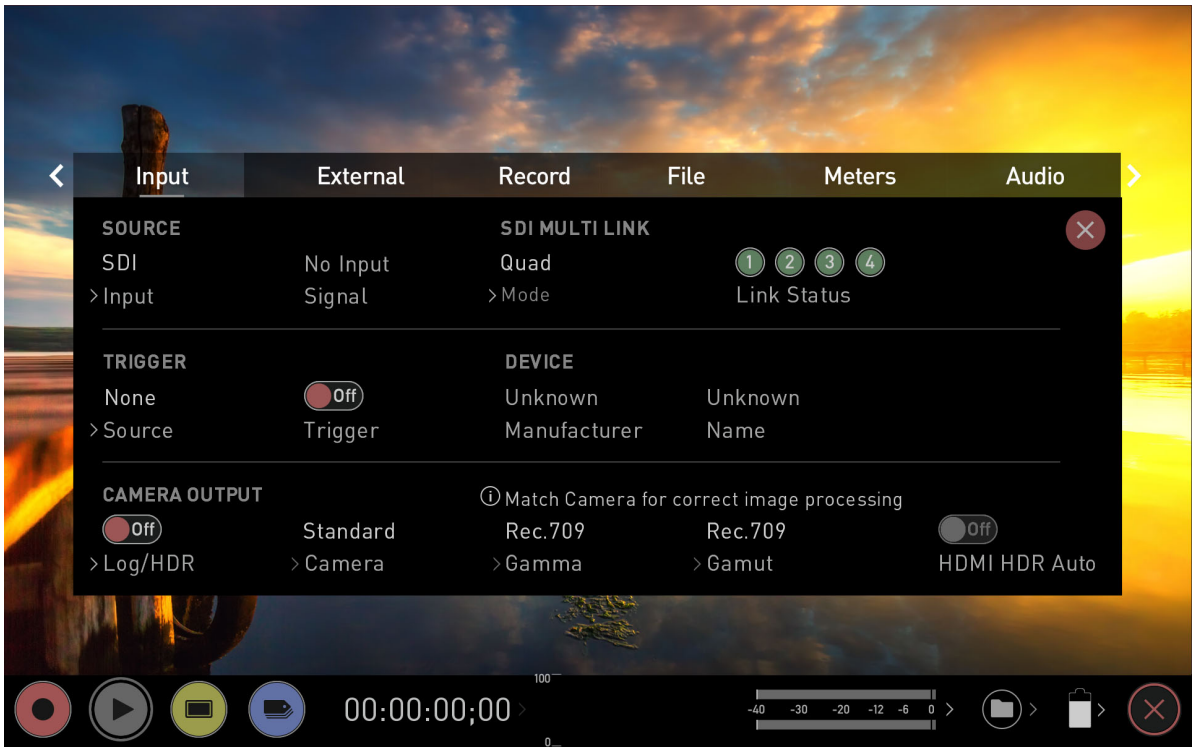
Dual (Dual Link) mode

To monitor or a record a dual link SDI signal, connect the SDI inputs to the 12G inputs IN1 and IN2, 3G IN3 and IN4 are unused in Dual Link mode. When a Dual Link signal is detected, the indicators for channel 1 and channel 2 will be green.



Quad (Quad Link) mode

When the device set to Quad Link mode, a 4x 3G or 4 x HD SDI signal can be received. SDI input signals must be connected in the correct order to input IN1, IN2, IN3, and IN4 to use Quad Link. When a Quad Link signal is detected, the indicators for channels 1-4 will be green.



4x ISO (Switching 4x3G SDI) mode

When the device is set to Switching 4x3G SDI mode, you can connect up to four separate 1080p60 signals to the SDI inputs for switching between those inputs to create one video output. This means that you can do a multicamera production where you can easily switch between multiple camera angles, as well as pre-recorded content and presentations that are running on a computer. These types of productions are common for recordings of live events, or any scenario where it would be beneficial to switch between multiple cameras or sources.

All inputs MUST have an identical frame rate and resolution. For example, 59.94p, 29.97p and 23.98p, cannot be mixed with 60p and 24p.

SDI input 1 is the master input and needs to have a constant signal connected in order to derive sync for all of the other inputs. Therefore it is important that the SDI cable is properly connected to SDI 1 to ensure that the signal is locked. A loose connection may cause synchronization issues with the other inputs.

The 3G-SDI output standard on connected cameras should be set to level A. 3G-SDI inputs using Level B in dual stream or BL may not be supported. If level A is not available on a connected camera, the frame rate must be set to a maximum of 1080p25/29.97/30.

The indicators for channels 1-4 will be green and yellow. For more information, refer to the Switching section.

When connecting sources to the inputs for switching, you must ensure the following:

- All sources must be connected to your device via SDI to be available for switching. To use HDMI cameras and other HDMI sources, convert the signal to SDI first with an HDMI to SDI signal converter.
- The SDI signal connected to SDI 1 will act as the master reference for Timecode and Trigger, and needs to have a constant signal connected in order to derive sync for all of the other inputs. Therefore it is important that the SDI cable is properly connected to SDI 1 to ensure that the signal is locked. A loose connection may cause synchronization issues with the other inputs.
- The maximum resolution and frame rate of each connected source for switching is 1080p60, which is 4 x 1080p 60fps feeds.
- All inputs MUST have an identical frame rate and resolution. For example, 59.94p, 29.97p and 23.98p cannot be mixed with 60p and 24p.
- The 3G-SDI output standard on connected cameras should be set to level A. 3G-SDI inputs using Level B in dual stream or dual link modes may not be supported. If level A is not available on a connected camera, the frame rate must be set to a maximum of 1080p25/29.97/30.

Channel Source

Indicates the input channels being used for the current signal, and will appear when using single inputs for 12G-SDI 1 and 12G-SDI 2.

Link Status

Appears when using the Dual link, Quad link or Switching 4x3G modes, to indicate the input channels being used. Colors indicate the role in a Server/Client relationship. The input with a green circle around it indicates the Server, whilst Client channels will have yellow circles around the input number.

TRIGGER

The SHOGUN STUDIO 2 can be remotely triggered to record from your camera. Select the correct triggering option for your camera and set Trigger to ON.

Source

The SHOGUN STUDIO 2 can be remotely triggered to record from your camera. For HDMI inputs, tap Source to cycle through the following trigger sources:

- **HDMI**: If HDMI timecode is selected, you have the choice to start and stop recording remotely from the source camera timecode.
- **None**: Select to disable the record trigger.
- **Timecode**: For older cameras or cameras that don't have Start/Stop flags for triggering recording, the rolling timecode trigger will trigger recording automatically on the SHOGUN STUDIO 2 when it detects rolling timecode on the camera.
- **Camera Manufacturer**: When you have an SDI signal connected to your SHOGUN STUDIO 2, and have selected SDI at Input, you will be able to tap Source to cycle through camera manufacturers as well as Timecode or None as the source of a trigger.

Trigger (On/Off)

When you have selected a trigger source, you can enable or disable the trigger by tapping the ON/OFF switch.

Note that where you have selected a camera manufacturer, you cannot disable the trigger

DEVICE

Manufacturer: Displays the camera or device manufacturer.

Name: HDMI Devices will display an EDID Device name if the information is available from the HDMI device connected. Not all cameras carry an EDID device name. For cameras such as the Panasonic LUMIX GH5 this will display as 'Unknown'.

A green tick on Source indicates the SHOGUN STUDIO 2 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.

CAMERA OUTPUT

For the best image processing results it is essential to match the SHOGUN STUDIO 2 settings to the camera/input settings. Choose to use Log/HDR, camera type, Gamma, Gamut or enable HDMI HDR auto if required. Your SHOGUN STUDIO 2 will recognise most cameras when correctly attached via a compatible HDMI cable.

Log/HDR

Turn on to enable HDR image processing inside the SHOGUN STUDIO 2. Bring the control of post into your shoot - record, preview and review using HDR.

Camera

Tap to scroll through to the manufacturer of the camera providing the input. Sony, FujiFilm, Canon, Panasonic, ARRI, RED and JVC.

Gamma (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.

Gamut

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.

HDMI HDR Auto

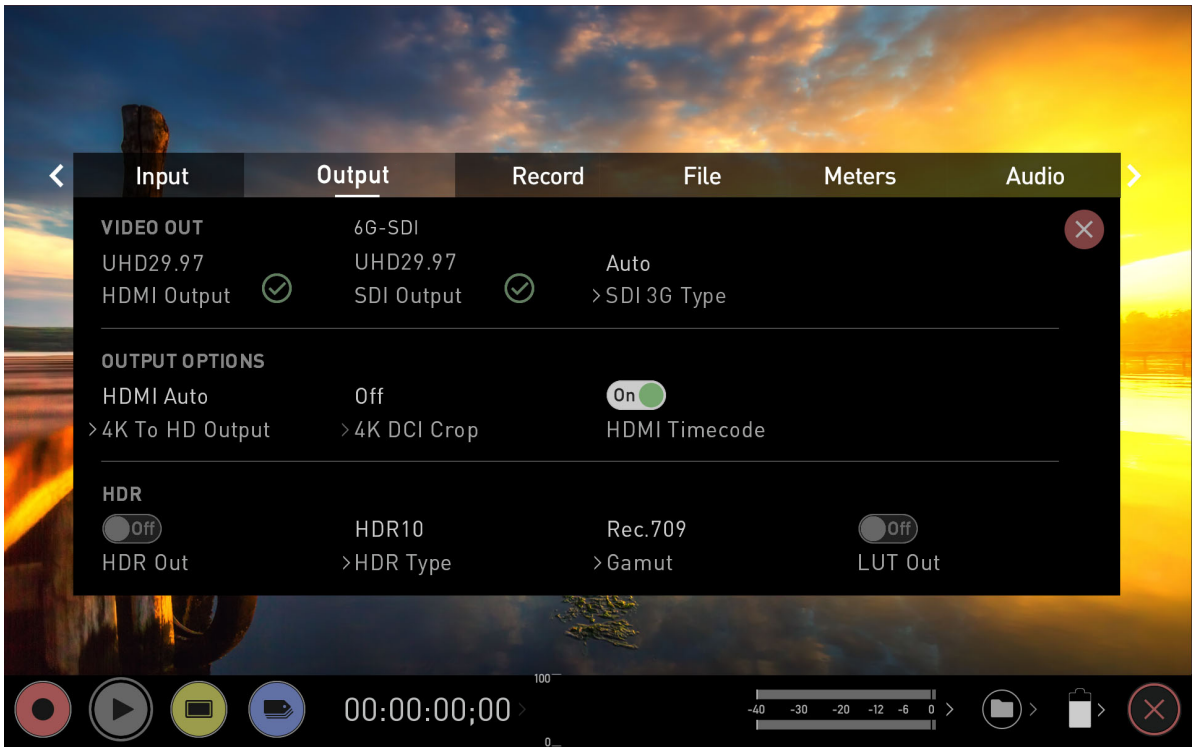
HDR is detected when there is a compatible input signal. It is important that this is OFF if the camera is not outputting HLG or PQ. It should not be used for regular Log.

About Log/HDR

A better understanding of Log and HDR will enhance your workflow and ultimately allow you to capture maximum amount of detail during recording, and save you time in post production. To understand more about the importance of this function please refer to the "Understanding HDR and Log" on page 128 section.

Output Menu

This menu displays the active video format being output over HDMI or SDI. A 4K to HD down conversion can be applied to the output, which allows you to send a 4K input signal to a HD device. When working in HDR a signal will be output with the HDR flag to activate the correct settings on a compatible HDR display. This can be useful if you wish to monitor log footage in the studio.



VIDEO OUT

This section displays the resolution of the Input. When processing options are applied below it will be adjusted accordingly.

HDMI Output

Displays the resolution and frame rate of the HDMI Output from your SHOGUN STUDIO 2.

SDI OUTPUT

Displays the resolution and frame rate of the SDI Output from your SHOGUN STUDIO 2.

SDI 3G Type

Allows you to specify the 'SDI 3G Type' for compatibility with equipment that expects a specific type of 3G-SDI video. Tap to cycle through the options:

- Level A,
- Level B or
- Auto.

OUTPUT OPTIONS

4K to 2K Output

Allows you to scale 4K or UHD inputs for output. This will scale 4K to 2K and UHD will be scaled to HD 1080p.

DCI Crop

When enabled, this setting trims the 17:9 DCI input to 16:9 converting the signal to UHD. When 4K to 2K Output is On, the output will down scale to HD.

HDMI timecode

Allows for the embedded timecode or in unit generated timecode to be looped out. The option is present to allow you to turn the timecode as this can disrupt some consumer equipment that is not intended to receive embedded timecode. Tap to toggle between on/off.

HDR

Here you are able to set a conversion from your LOG input to a HDR display standard such as HLG or PQ. You can also define the output color gamut from your camera's gamut to a

display standard for BT2020, DCI-P3 or Rec709.

HDR Out

Enable or disable HDR on the output.

HDR Type

Allows you to select the HDR type to output. Tap to cycle through PQ, HLG and Dolby.

Dolby Vision play out

Engage the HDR Out switch if you are feeding HDR footage to the device from a camera or games console that supports HLG or PQ HDR output using the appropriate metadata flags. Ensure that Dobly Vision is supported on the recieving TV/Monitor, select DOLBY at HDR Type and enable 'HDR Out' in the Output menu.

Dolby Vision external playout of recorded files is officially supported for RAW, ProRes RAW, DNxHR. If you are feeding Log video to the unit be sure that this setting is off.

Gamut

Allows you to select the Gamut of the signal that is output. Tap to cycle through Rec.709, BT.2020 and DCI-P3.

LUT Out

Allows you to loop out LUTs that are applied to your image, so that they are also applied to the Output signal.

Switcher Menu

The switcher menu will appear in the menu system after you have selected ‘Switching 4x3G SDI’ as the input source. In this mode, you can connect up to four video inputs and 'switch' between those inputs to create one video output. This means that you can do a multicamera production where you can easily switch between multiple camera angles, as well as pre-recorded content and presentations that are running on a computer.

These types of productions are common for recordings of live events, or any scenario where it would be beneficial to switch between multiple cameras or sources.

The switcher menu will only be visible once you have selected ‘Switching 4x3G SDI’ as the input source.

RECORDINGS

During switching, you can record up to four separate ISO streams, as well as a program stream to your SSD media at the same time.

ISO Recordings

The recordings section allows you to select which of your inputs to record as ISO recordings. These are isolated recordings of each individual camera or source, that you can use in post production to refine your program. Tap on the numbered inputs to toggle recording for each input. When the numbered inputs are surrounded by a red circle they are armed for recording, whereas a grey number by itself indicates that it is not armed for recording. Inputs that have a red cross through the number are not connected. The input that is the currently selected source will have a white outer circle surrounding it.

Program Recordings

The section also allows you to record the program stream. This is the final output video that has all of the cuts between cameras and other inputs, contained within one video file. Tap on Program to toggle the recording of the program stream on and off. When the button is red, it is armed for recording. Tap it again to disable recording of the program stream to your SSD.

AUDIO

In this menu you can set how the analog and digital audio channels are allocated to your recording. Whilst in switcher mode you can record an embedded digital stereo pair for each input, and also embed the analog input within each ISO recording as well as the Program recording.

Analog Audio

The icons indicate the status of connected analog audio. If the icons are grey, analog audio is not armed. To Arm them, tap Go to Audio to be taken to the audio menu.

In the audio menu, the first set of audio meters on the left are the analog audio channels. Tap the L REC and R REC icons under the meters to toggle recording on and off for the left and right channels of analog audio. When armed, the icons will be red, and black and white when not armed for recording.

Once activated in the audio menu, your channel settings will be displayed under AUDIO on the switching page as follows:

Both Red – Left and Right analog channels armed for recording.

L red – Only the Left channel is armed for recording.

R Red – Only the Right channel is armed for recording.

Arming the analog inputs will record the analog audio to each ISO recording as well as the program recording. Analog audio will be located on tracks 1&2 with embedded digital audio moving to tracks 3&4. If you are not intending to use the analog Audio inputs it's best practice to turn them off.

Digital Audio Source

Under AUDIO, you can also choose the embedded digital audio track to record to the program file. Tapping Digital Audio Source cycles between the options:

• None No embedded digital sources will be recorded in the program file. Only the analogue inputs, if armed, will be recorded in the program file. Embedded digital sources will only be recorded in the ISO files.

• Follow Switched Source

Audio will follow video, so when you switch to a different input, the source for audio will come from the input you switched to.

• Choose 1,2,3,4

Allows you to select which channel's audio to use as an embedded digital audio source when switching between the sources.

Tap on the numbered inputs to select the source to use the audio from, and a white circle will surround the red circle to confirm the source.

Inputs that have a red cross through the number do not have a source connected to them, and inputs that are not armed for ISO recording will not be surrounded by a red circle.

Record Menu

Space Remaining

Indicates the expected recording time remaining on the inserted media at the current settings. Changing your recording settings may extend or decrease your available recording times.

Pre-Roll (On/Off)

Whilst enabled, the input is constantly being 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 determine the number of seconds being cached for Pre-Roll. Using a lower bit rate codec setting and shooting at a 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 a few seconds slow hitting the record button when something interesting happens you will still capture the shot.

With this option turned on you will see a red Pre-Roll icon flash in the top left hand corner of the display.

A white circular arrow will also appear around the record button.

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.

CODEC (Recording Format)

Codec Format

To select a codec tap on the currently displayed codec to toggle between the options:

- Apple ProRes®,
- Apple ProRes RAW,
- Avid DNxHD® and
- CinemaDNG

After selecting a codec, you will be prompted to tap Confirm to switch to that codec.

If you select an optional codec like Avid DNx, ProRes RAW or H.265, you will be prompted to activate the codec at my.atomos.com as these codecs must be activated before use.

Compression

Tapping on this setting allows you to toggle the compression for the following codecs:

Apple ProRes

Apple ProRes is built in to the SHOGUN STUDIO 2 and offers three levels of compression (HQ, 422 & LT).

Avid DNx

Avid DNx requires free activation via my.atomos.com and includes DNxHD with four levels of compression (220x, 220, 145, 36) and DNxHR for 4K/UHD inputs with four levels of compression (HQX, HQ, SQ and LB). DNxHD 220x/DNxHR HQX are 10-bit, whilst all others variants are 8-bit and DNxHD36 is a proxy codec.

Apple ProRes RAW

Apple ProRes RAW also requires free activation via my.atomos.com and includes two compression options: ProRes RAW and ProRes RAW HQ. Compression artifacts are very unlikely with ProRes RAW, and extremely unlikely with ProRes RAW HQ.

Cinema DNG

Cinema DNG is built in to the SHOGUN STUDIO 2 and is available for SDI sources.

Record Format

Displays the resolution and frame rate that is being recorded to your media.

Pulldown Format

The record menu allows you to apply pulldown removal if recording from a source that applies pulldown to the output signal. Tap Pulldown Format to cycle between the options.

For 3:2 Pulldown removal, movement in the frame may be required to accurately lock signal, simply wave your hand in front of the camera to achieve lock.

What is Pulldown?

Many professional and consumer cameras available today do not send true 1080p24, 1080p23.98, 1080p25, 1080p29.97 or 1080p30 signals to their HDMI outputs. Instead they send 1080i59.94 in NTSC regions (e.g. USA, Japan), and 1080i50 in PAL regions (e.g. 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.

Camera Setting	Pulldown	SHOGUN STUDIO 2 2 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 SHOGUN STUDIO 2 to record the actual frame rate such as 1080p23.98, not the1080i59.94 to disk. In many cases, it is not possible for the SHOGUN STUDIO 2 to detect when pulldown has been applied to the video, so you will have to set the correct mode of removal on the SHOGUN STUDIO 2 to match the setup of your camera.

With some cameras, the SHOGUN STUDIO 2 can detect and remove the pulldown automatically, in which case the mode you expect (e.g. 1080p23.98) will display on the SHOGUN STUDIO 2 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*

1080p23.98 or 1080p24

If you have set 1080p23.98 or 1080p24 in your camera and your SHOGUN STUDIO 2 displays 1080i59.94 or 1080i60, then you can easily remove the pulldown by following these steps:

1. 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.
2. Your SHOGUN STUDIO 2 needs to analyze the video for about 1 second, in order to detect the pulldown sequence and remove it.
3. 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 SHOGUN STUDIO 2 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, it is 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 SHOGUN STUDIO 2.*

Some cameras use a variant of pulldown removal, for example Panasonic Advanced pulldown. The SHOGUN STUDIO 2 does NOT support this format, and it will not be detected.

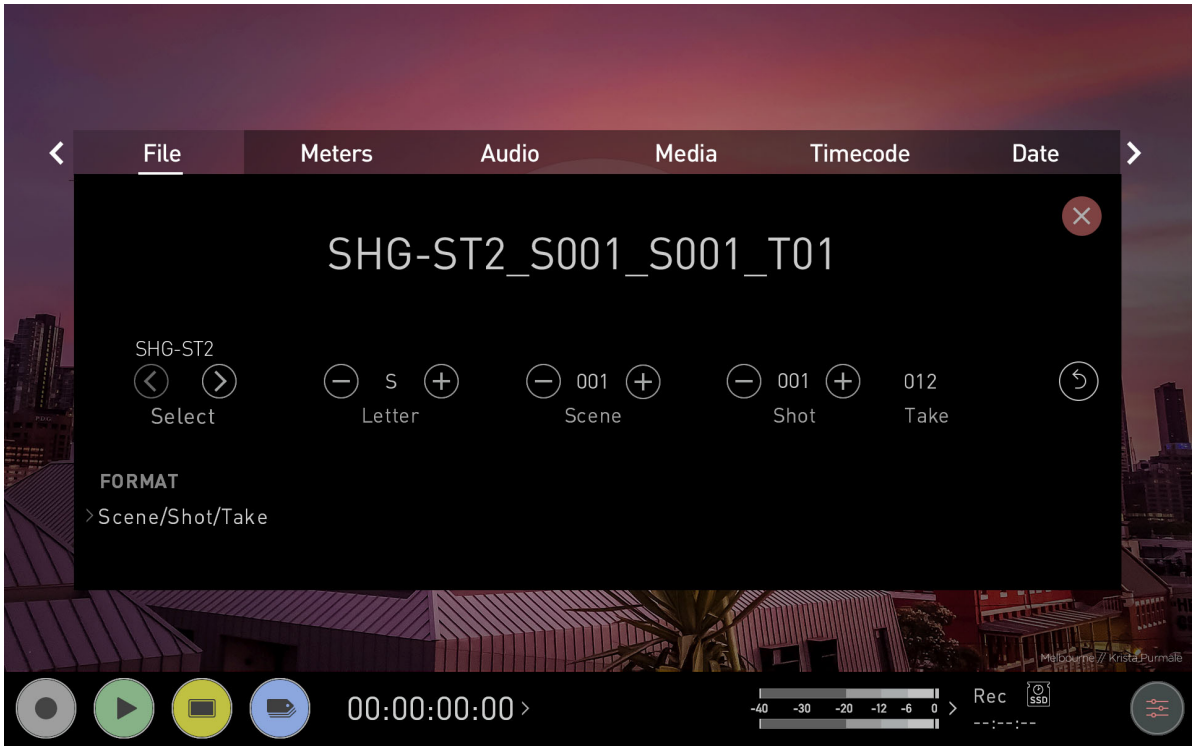
Standard Panasonic pulldown is supported, ensure in the Panasonic camera settings that pulldown is not set to Advanced.

1080p25, 1080p29.97 or 1080p30

For these modes, access the Record Menu tab and simply press the Record Format options 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.

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

File Menu



This menu allows you to change the unit name for your SHOGUN STUDIO 2. It also gives you the ability to dictate the scene and shot number that will be recorded.

Unit Name

Creating a unique name for each SHOGUN STUDIO 2 you are using can be very useful when using multiple devices or with multicam shoots.

The unit name serves two main purposes:

- Drive Naming: Giving the unit a unique name aids with identification. Once you have given it a name all drives subsequently formatted in the SHOGUN STUDIO 2 will bear this name as a prefix.
- File Naming: The current unit name appears at the start of the recorded clip name.

< >:

Use the arrow icons to select a letter in the current unit name. The selected letter will appear at the Letter setting.

Letter

- / +:

Use these icons to move forward or backwards through the letters of the alphabet. Doing so will update the letter you selected with the arrows in the Unit Name setting.

Scene

Allows you to adjust the Scene number that will form part of the recorded clip filename: _ **S001**_S001_T001.MOV

- / +:

Use these icons to increase or decrease the numerical value for the Scene number up to 999. The value you select will be shown in the file name at the top of the screen during recording,

Shot

Allows you to adjust the Shot number that will form part of the recorded clip filename: _ S001_**S001**_T001.MOV

- / +:

Use these icons to increase or decrease the numerical value for the Shot number.

Take

Takes that form part of the filename are automated:_S001_S001_**T001**.MOV

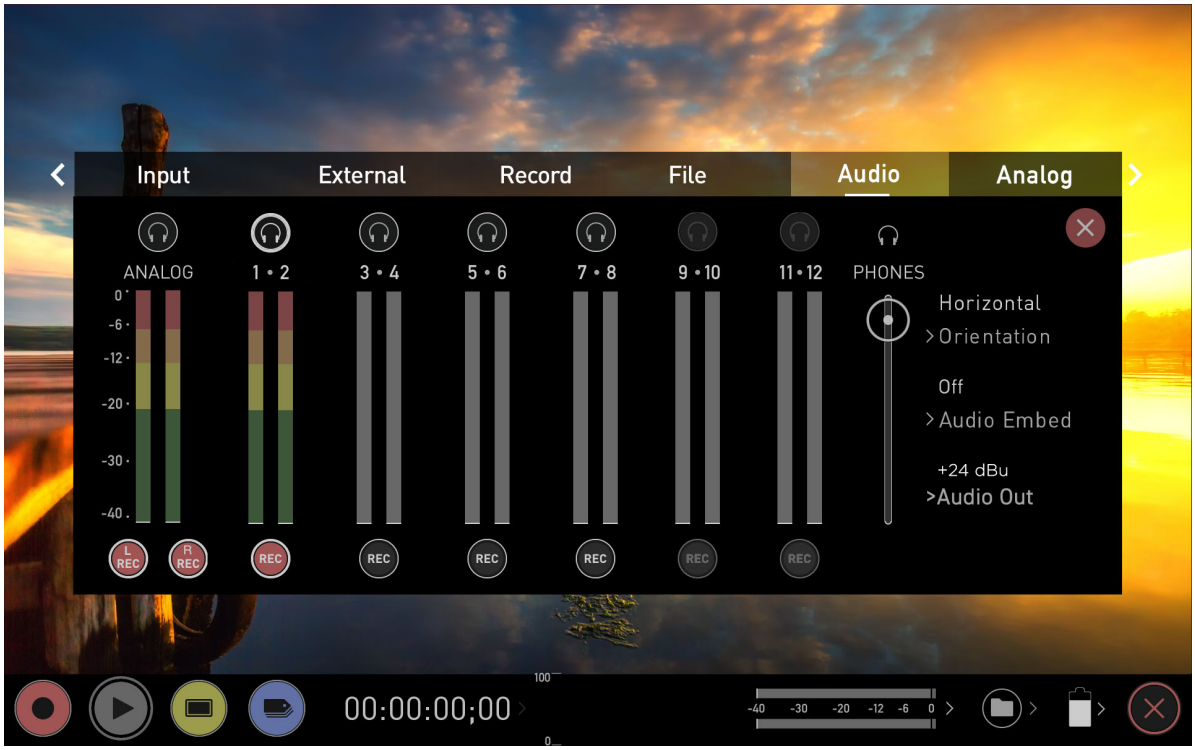
Format

Tap to cycle through the file naming format options:

- **Scene/shot/take:** Allows you to accurately name planned shots as if you were using a conventional slate.
- **Rolling scene/shot/take:** Adds the ability to maintain continuous rolling file naming and take counts after re-formatting a drive.
- **Red/Arri:** Selecting this option will allow your recordings to use the same name as the files recorded in camera.

Red/ Arri file naming is only supported when the signal is connected via SDI.

Audio Menu



In addition to selecting the Audio tab from the menu tabs across the top of the screen, you can also access the Audio menu by tapping the audio meters (as shown below) in the GUI on the record, monitor and playback home screens. From this panel you can manage up to 12 digital channels (via SDI input) and 8 digital channels (via HDMI input) as well as 2 analogue audio channels (via the XLR Mic/ Line in).

Audio Meters

The audio meters the display the audio levels for all active audio channels. This allows you to monitor all channels visually

Headphone icons

To monitor the audio, tap the headphone icon next to the channel you wish to monitor from the headphone output. Only one channel (stereo pair) may be monitored at any time using headphones connected to the 3.5 mm headphone jack on your SHOGUN STUDIO 2.

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. See image above.

REC icons

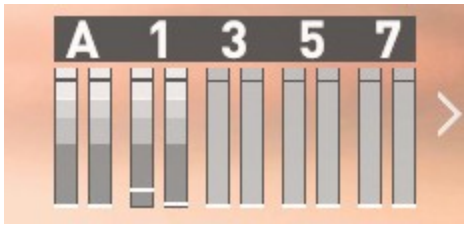
These icons allow you to select the channels of audio to record. Tap the record button for each channel that you want to record and it will turn red to indicate the fact that it is being recorded. You can record multiple channels of audio by tapping multiple REC buttons.

Orientation

Allows you to select the orientation for audio meters on the SHOGUN STUDIO 2 display at the bottom of the screen. Tap to cycle through the options:

- **Horizontal:** Displays the 2 channels you are actively monitoring.

- **Vertical:** Displays 8 channels + 2 analog Channels.



Audio Embed

Allows you to embed the analog audio channels into the digital signal, so that when you output the video signal over HDMI/SDI this audio is also output as part of the digital signal. The available options will depend on how many channels of audio are coming in. Tap to cycle through the options.

With SDI inputs, your SHOGUN STUDIO 2 can record 12 embedded audio channels, instead of the usual 8 channels of audio when using HDMI.

If analog audio is recorded it will be placed as track 1-2 with embedded audio moving to 3-4. Note if analog channels are turned on but no audio is present, in many video players you will not hear silence as they often just play the first stereo pair. In an NLE you can easily access all the recorded tracks.

Audio Out

Allows you to set the level to be sent over XLR cables connected to the 2x XLR outputs. Tap to cycle through the options. The XLR outputs are for monitoring and the audio channel routed to them can be selected via the headphones selection.

Analog Menu

This menu page provides settings for analog audio that is connected

Analog Audio Meters

These meters display the audio levels for the left and right channels of analog audio.

Headphone icon

Tap the headphone icon to monitor the analog audio from the 3.5 mm headphone output on your SHOGUN STUDIO 2. For more information on meters and monitoring, refer to "Audio Menu" on page 79

Left Gain / Right Gain

- / +:

Use these icons to adjust the gain applied to the left and right analog audio channels. Once you have selected the input line level that matches your input at Audio In, analog gain can then be tuned by incremental increase or decrease of up to +/- 20dB individually for both left and right channels.

Audio Delay

- / +:

Use these icons to adjust the audio delay by whole frames. This option allows you to delay the analog audio with respect to the digital audio so that it is in sync with your video source.

Audio In

Tap on Audio In to select the input level that matches your input type.

Options available are:

- **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.
- **Line Level (-10 dBu):** Sets the analogue input channel to Line Level via the XLR breakout cable.
- **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.*

> *SHOGUN STUDIO 2 Mic input supports dynamic and powered microphones only. When using these, audio must be set as Mic Level*

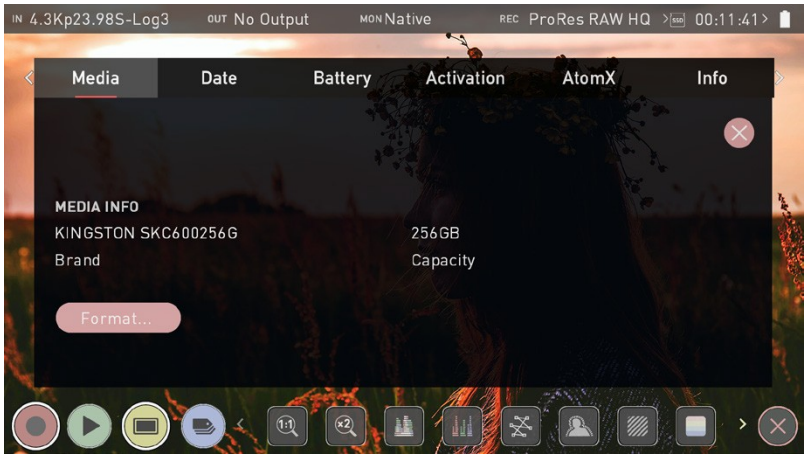
Audio during Playback Mode

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

Phantom Power

You can choose to deliver phantom power over the XLR/MIC input. Tap Off to toggle Phantom Power On.

Media Menu



MEDIA INFO

Brand

Displays the brand and other information like model number for inserted media. Information about compatible media is available at: atomos.com/compatible-drives

> *If you do not see your media information, there may be a problem with the connection or drive. Try removing the drive and reattaching the drive. Ensure correct alignment of your media.*

Capacity

Displays the total capacity of inserted media.

Format

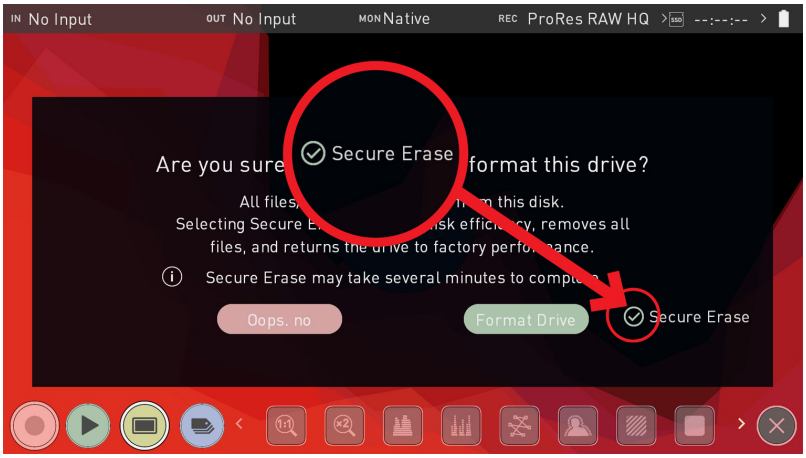
Tap to format the media inserted in your SHOGUN STUDIO 2. A confirmation screen will ask you to confirm that you want to format the media, and gives you an option to cancel if you pressed the button by mistake. Make sure your drive is correctly inserted and all data from previous shoots has been securely backed-up.

The SHOGUN STUDIO 2 uses the exFAT file system for broadest compatibility across MacOS and Windows.

When you first insert a drive you may be presented with 'Invalid media'. This means that the drive has not yet been formatted and you simply need to format your drive before using it.

Secure Erase Format

For drives that carry the ATOMOS Logo such as the G-Technology 4K SSD, Angelbird 4KRAW, AtomX SSDmini by Angelbird and Sony, an option for Secure Erase is presented. This allows for the entire drive including the drive cache to be formatted. This will erase ALL content on the drive meaning nothing can be recovered. The benefit of this is to optimize performance. It will wipe all data off the drive (which may also be useful as a additional security measure) and reset it back as close as possible to factory conditions.



Timecode Menu

Timecode Display: Displays the current timecode. The position of the timecode display will depend on the screen mode you are using. In monitoring mode it appears in the center top, below the info bar. In home screen mode the timecode display sits on the bottom near the REC PLAY MON EDIT icons.

Touching the Timecode display on the home screen, just below the information bar will take you to the Timecode setup screen

The timecode modes that are supported:

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

Hour / Minute / Second / Frame

These settings will be enabled when using the Auto Restart mode, and allow you to define a timecode that will be used for all clips whenever you press record. Use the - and + icons above each unit to adjust the numerical values for the hour, minute and seconds sections. Refer to Auto Restart mode below for more information.

Source

Tap to cycle through the timecode modes:

HDMI

HDMI/SDI embedded Timecode:

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

Trigger from HDMI Timecode:

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 set the HDMI Timecode switch to on. When enabled, pressing the camera Record Stop/ Start button will make the SHOGUN STUDIO 2 start and stop recording simultaneously as the timecode starts and stops.

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

Note that whilst camera triggers are also looped out on HDMI not all wireless systems carry the trigger on to other devices so it's worth testing your system before a shoot if you pan to use it in this way to record proxies.

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.

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 SHOGUN STUDIO 2 clock has been set correctly. This can be set in the "Date Menu" on the next page

> *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 SHOGUN STUDIO 2 has been out of record.*

> *In Time of Day mode, the controls on the Timecode Setup Screen for adjusting the start-point of the SHOGUN STUDIO 2's Timecode are not available, as the Timecode is set by the SHOGUN STUDIO 2's internal clock.*

Auto Restart

With this setting, the Timecode will reset to the timecode you have defined whenever you press record. All your clips start with this same timecode. Use the - and + icons above each unit to adjust the numerical values for the hour, minute and seconds sections.

LTC

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.

Use Drop Frame

Allows you to use drop frame timecode type.

HDMI Timecode

Allows you to output the timecode chosen here on the HDMI Output of the SHOGUN STUDIO 2.

Date Menu

Allows you to adjust the date and time shown by the clock in the device. 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.

TIME

Time Format

Tap to cycle between 12H and 24H time formats.

Hour/Minute/Second

- / +:

Use these icons for each setting to set the time used on the SHOGUN STUDIO 2. This will also change the time of day Timecode.

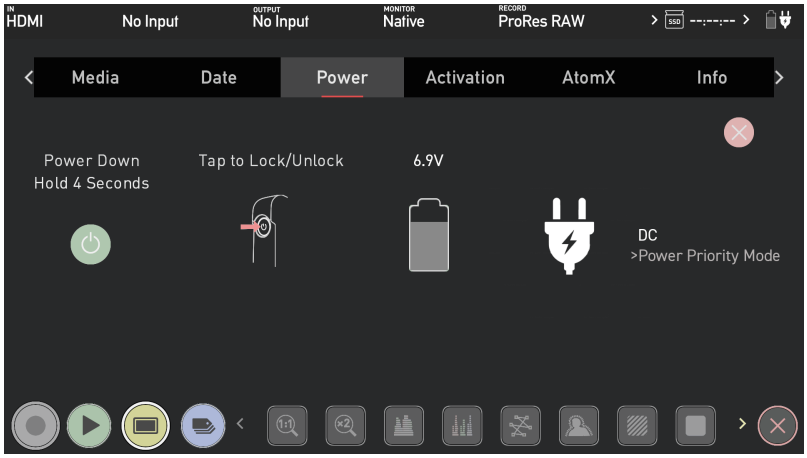
DATE

Month/Day/Year

- / +:

Use these icons for each setting to set the date on the SHOGUN STUDIO 2.

Battery Menu



Power Down

On the left of the screen is a power icon. Tap and hold this button for 4 seconds to shut down the unit.

Tap to Lock/Unlock

This image provides information on how to lock and unlock the display of your SHOGUN STUDIO 2.

Battery

When a battery is attached to your SHOGUN STUDIO 2, the Battery icon on the Power menu screen indicates the remaining power in the attached battery. The numerical figure above the battery icon will indicate the remaining power in volts whilst the shading inside the battery icon provides a visual indication of the current power level.

> *SHOGUN STUDIO 2 2 uses standard NP-F/L-Series compatible batteries.*

DC Power

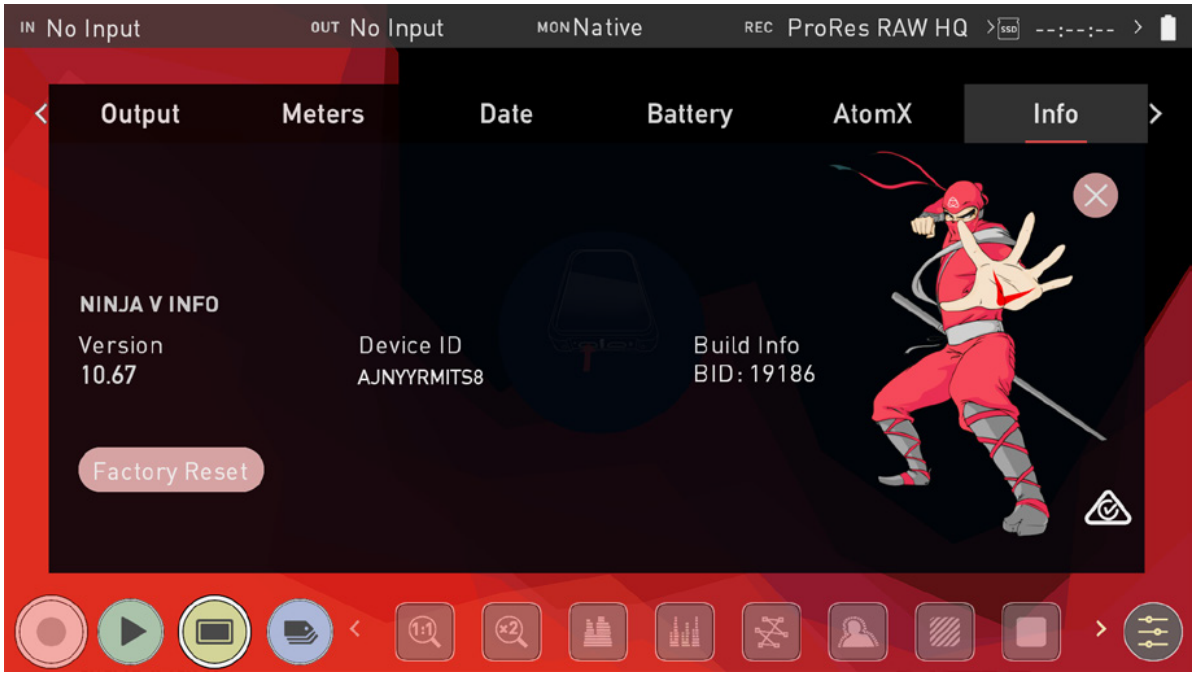
The power plug icon represents DC power.

Power Priority Mode

This setting allows you to select which power source to use when you have both DC power and a battery attached to your SHOGUN STUDIO 2. Tap Power Priority Mode to toggle between the following options:

- DC : When DC (Power plug icon) is selected, the plug icon will be white.
- Battery : When Battery is selected, shading inside the battery icon will be green.
- Manual: In Manual mode, you can manually select which power source to prioritize by tapping on either the battery or power plug icon.

Info Menu



SHOGUN STUDIO 2 Info

Shows the software (firmware) version and unique device ID (DID) of your SHOGUN STUDIO 2 device. This will be required to activate additional codecs and features. For more information refer to Activation Menu. You can also check on the ATOMOS website to ensure you are running the latest firmware: www.atomos.com/support

Factory Reset

Allows you to revert your SHOGUN STUDIO 2 to it's factory condition. All user settings will be lost.

> *Before performing a factory reset, unpair your device from the cloud*

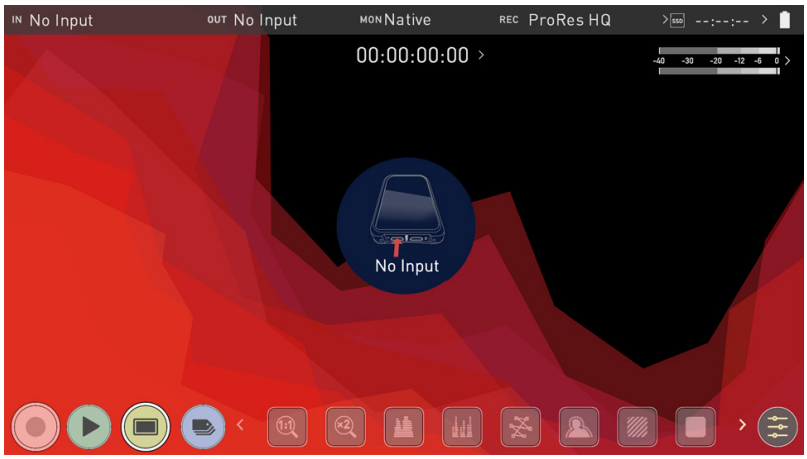
Setting up for recording

As soon as you connect a supported signal to the SHOGUN STUDIO 2 input and have inserted a formatted drive the following will happen:

- The REC icon will be illuminated (red)
- The input source & format will be shown in the top left corner of the information bar (in monitor mode)
- Audio input meters will be responding to the source.

Ready to Record (monitor mode/home)

Ready to Record (monitor mode/features)



No Input / No Disk / No Disk Formatted

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.

SHOGUN STUDIO 2 2 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. SDI Camera Trigger
5. Via LANC serial port

> *Some cameras perform optimally when triggering from the camera and not the recorder.*

Home page Touch Screen

SHOGUN STUDIO 2 2 Start and Stop record control can be triggered by pressing REC (Record)

and STOP to end recording

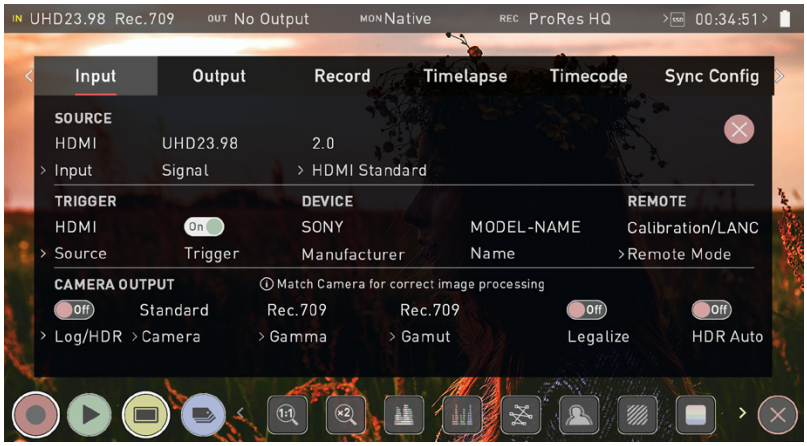
HDMI Rolling Timecode Trigger Record

If the camera is in Record Run mode, recording can be stopped or started by a moving Timecode via HDMI. When enabled the camera and the SHOGUN STUDIO 2 will start and stop recording simultaneously.

> *Rolling Timecode trigger is for use in older cameras with TC only and no trigger. If your camera is set to FREE RUN this trigger will start recording immediately. Please be aware that 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.*

HDMI Camera Trigger Record

The HDMI Camera trigger is available for supported cameras. There is a flag within the digital signal that lets the SHOGUN STUDIO 2 know the start/stop record has been pressed on the camera; in turn this will trigger the SHOGUN STUDIO 2 to start/stop recording at the same time as the camera.



SDI Camera Trigger record

The SDI Camera trigger is manufacturer-specific, so you will need to select the appropriate manufacturer for your camera from the input menu. There is a flag within the digital signal that lets the SHOGUN STUDIO 2 know that the start/stop record has been

pressed on the camera; in turn this will trigger the SHOGUN STUDIO 2 to start/ stop recording at the same time as the camera.

Monitoring Features

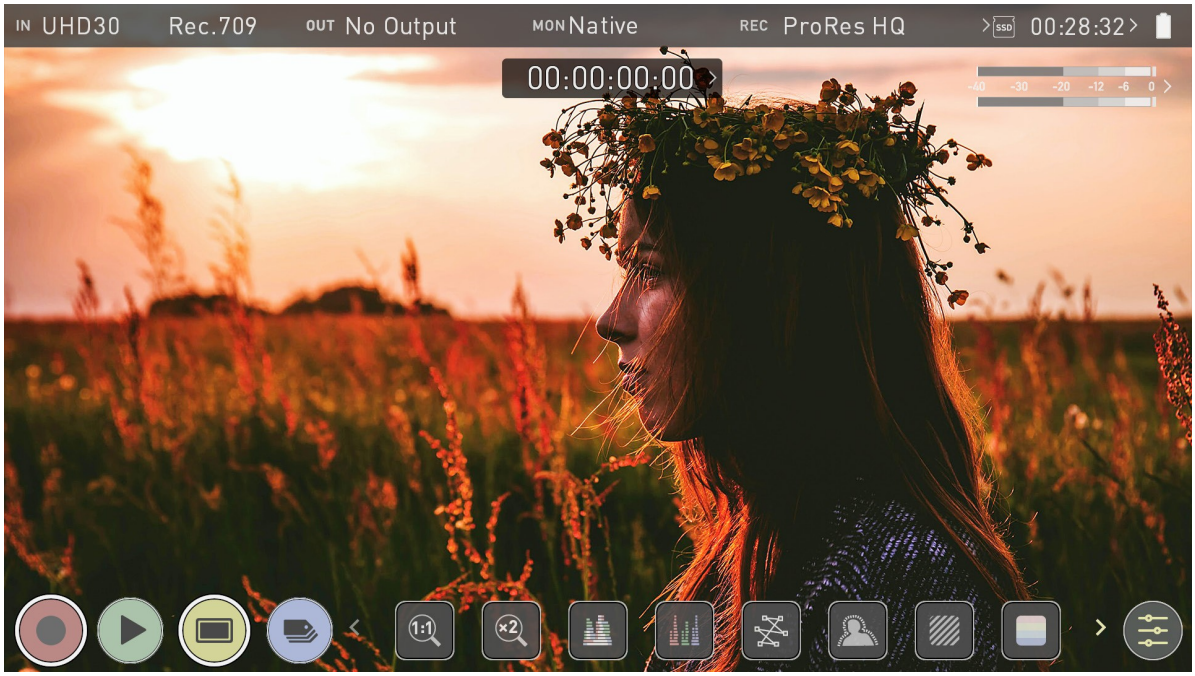
At the bottom of the Monitoring screen are the Monitoring Features, accessible by toggling the yellow MON icon. Monitoring Features do not affect your recorded file and can be turned on and off, or adjusted whilst recording. Not all Monitoring features are available at first glance.

To reveal all Monitoring features, SWIPE MONITORING FEATURE ICONS TO THE LEFT. The icons will behave in a carousel like manner and you can swipe left and right to access any of the features. At the bottom right is the settings button. Press Settings to adjust behaviours of Monitoring Tools.

Tapping on the icons will enable/disable the feature, and in some cases will cycle through the options. Many of the tools can be used simultaneously to assist with focus, exposure, framing and more.

> *Monitoring Features do not affect your recorded file and can be turned on and off, or adjusted whilst recording.*

Monitor Mode / Features



Monitoring Features Activation Icons

Luma Waveform:
A great way to visualize the dynamic range of your image.

RGB Parade:
Monitor the level of red, green and blue from an input source.

Vectorscope:
This is useful for checking if an image is under orover saturated.

Focus Peaking:
Ensure your recordings are always in focus.

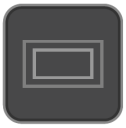
Zebra Pattern:
Use Zebra to check exposure and set exposure levels.

False Color:
A visualization exposure across theimage

Blue Only Exposure:
Obeserve the noise content of a video image

Zoom 1:1:
Punch in and check critical focus

Zoom 2:1:
Toggle 2:1 to magnify the screen.



Cinema Guides
Cine or TV frame guides.

Safe Areas
Action area and title safe areas displayed.

Anamorphic Desqueeze
Allows you to see a correctly squeezed image when using anamorphic lenses

The Monitor Features will only be illuminated and available if there is an input signal detected.

Zoom

Zoom mode enables you to punch in and check critical focus

1:1 Toggle 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.

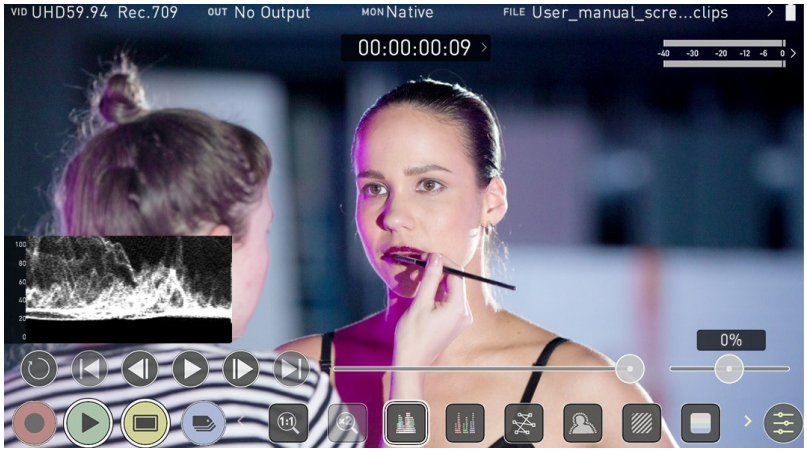
2:1 Toggle to magnify the screen. The indicator box shows the location of the screen you are viewing, and you can move the zoomed location by dragging across the screen or selecting a portion of the indicator box. 4K 2:1 shows 1/16 of the 4K UHD image.

Waveform (WFM) and Vectorscope

These traditional scopes provide a visual representation of your image. You can customize the settings for Waveform Monitoring in the "Waveform tab" on page 111 of the settings menu.

Luma Waveform

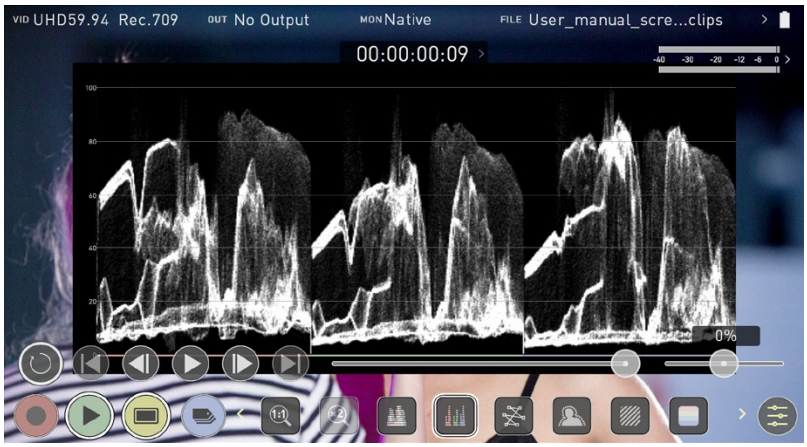
The Luma or Luminance Waveform is a great way to visualize the dynamic range of your image, allowing you to protect exposure of both your highlights and shadow detail. It's particularly useful when shooting with a low contrast LOG curve and works in perfect partnership with HDR to illustrate and highlight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



The WFM monitor tool is not currently available for 8Kp30 and 6Kp60 RAW inputs.

RGB Waveform

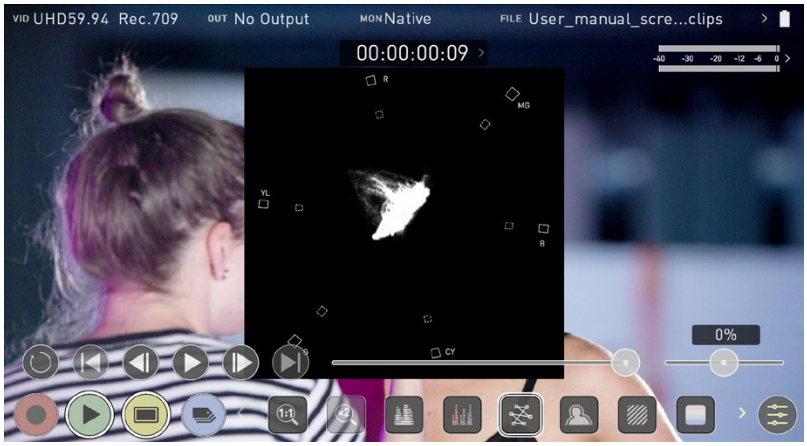
RGB Waveform will monitor the level of Red, Green and Blue from an input source. The RGB channels are displayed side by side and each channel color is shown under the corresponding waveform. This can be used to check the white balance. Just point the camera at something white and the Red, Green and Blue 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. If the MON button is pressed the WFM will move in to the bottom icon line up.

Vectorscope

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

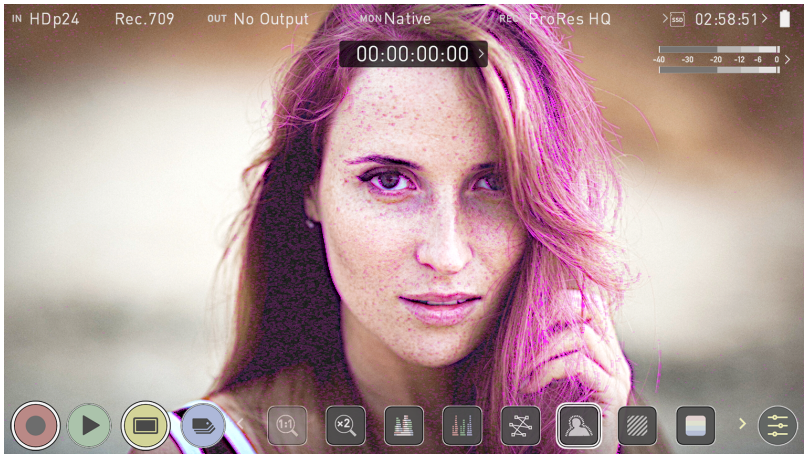


Focus Peaking, Zebra and False Color

ATOMOS 10 features monitoring tools that help with making your shot picture perfect. Easily access Focus Peaking, Zebra, False Color 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 de-squeeze functions are also available.

Focus Peaking

The focus peaking feature provides you with visual guides that enhance the areas in your shot that are in focus. The parts of the image that are in focus are highlighted by the selected color. You can customize the settings for focus peaking in the "Focus Peaking tab" on page 112 of the settings menu.

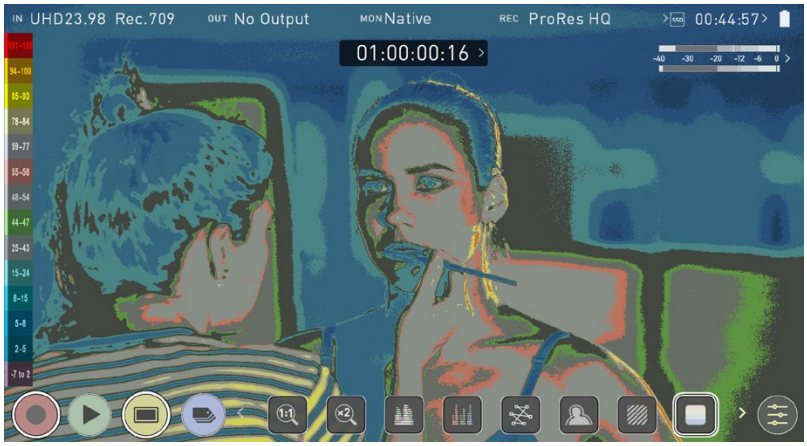


Zebra

The Zebra feature overlays a diagonal pattern over the parts of the image that are exposed +-5% of the target level set. This allows you to see at a glance, where parts of the image have reached a certain exposure level. You can customize the settings for the zebra function in the "Zebra tab" on page 115 of the settings menu.

False Color

The False Color feature allows you to quickly expose your image by seeing an overall representation of brightness grouped into meaningful colors.

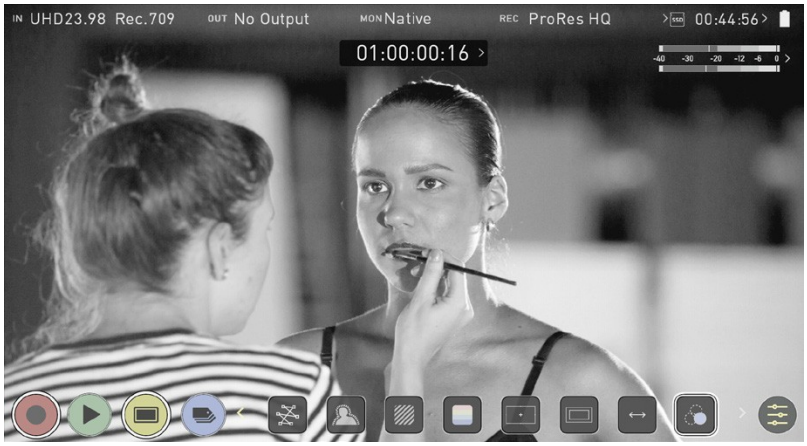


False Color Scale

The False Color Scale on the left-hand side of the screen is a legend that correlates brightness values in the image with specific colors. The numbers in this scale represent the IRE %. As an example, mid grey is present between 44-47 IRE (green), underexposed footage is -7 to 2 IRE (purple), and overexposed footage is from 96-109 IRE (bright orange).

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.



Frame Guides, Safe Areas & Anamorphic De-Squeeze

ATOMOS 10 has advanced frame guides and safe areas. You can select from common cine, social or TV frame guides. The aspect ratio markers are very useful with the Anamorphic De-Squeeze tool to preview crops that could be made in post.

Cine and Social Frame Guides

Tap the Frame Guides icon to cycle through the frame guides.

Safe Area Guides

Action safe area and title safe areas are proportional to the selected frame guide based on SMPTE standards. To turn on the safe area markers tap the Safe area icon once for the Action area and again for the title safe area.

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

Anamorphic De-Squeeze

Allows you to de-squeeze images when monitoring content filmed with anamorphic lenses. Tap the de-squeeze icon to cycle through the options to select the amount of de-squeeze required, so that the image on your SHOGUN STUDIO 2 is not distorted.

The options include:

- 2x,
- 1.8x,
- 1.5,
- 1.33x,
- 1.25x

Scopes are not available when anamorphic de-squeeze is activated.

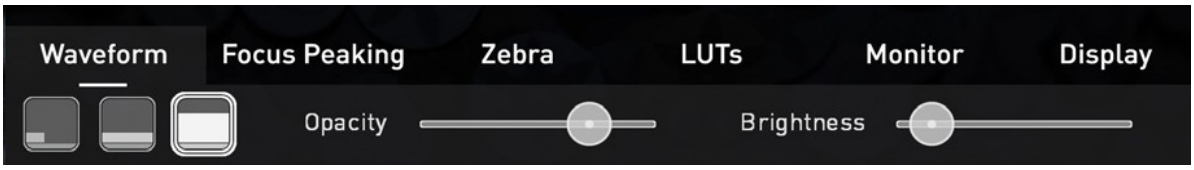
Settings Menu

This menu allows you to adjust the settings and behaviors of the Monitoring Tools that will be used when each monitoring tool is enabled. It also provides settings for LUTs, the display and monitor modes.

To access these settings, tap on MON in the Information Bar across the top of the screen. Alternatively, tap on the yellow settings icon in monitoring mode and then select the desired tab across the bottom of the page.

Waveform tab

To access Waveform Monitoring settings simply tap on the Settings icon and select the Waveform Tab.

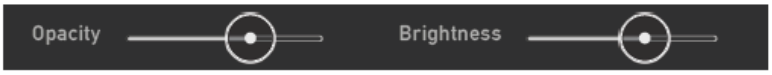


To change the size of the waveform, press on the corner icon, lower screen icon or full Screen icon. The display will update immediately.

The size settings for the Vectorscope are limited to corner and full Screen.

To toggle between Waveform Monitor sizes of 1/4, 1/3 and Full Screen during monitoring, recording and playback, tap on the bottom left corner of the screen. You can also adjust the brightness and opacity of the waveform display whilst recording, monitoring or during playback.

The Brightness slider directly controls the intensity of the waveform while the opacity slider adjusts the transparency values of the waveform display on screen. Experiment with these controls to achieve your desired monitoring setup.



Focus Peaking tab

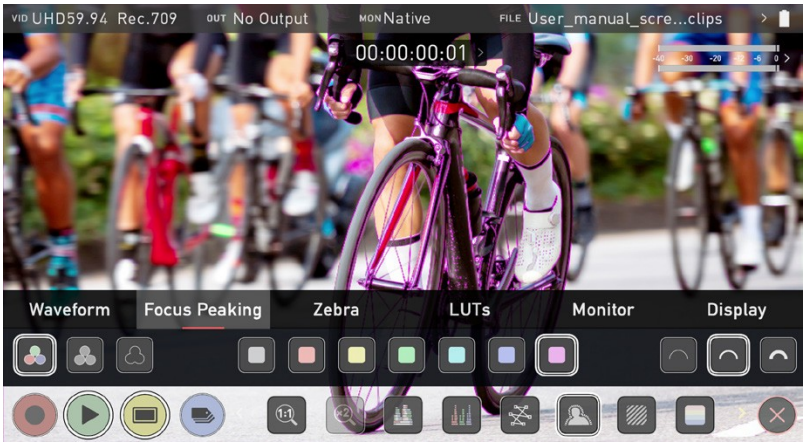
To access the focus peaking settings, simply tap the Settings icon and select the Focus Peaking Tab. These settings allow you to customize how peaking is displayed. There are multiple display modes and you can select the color and width of peaking indicators.

Mode

Tap on these icons to switch between the focus peaking modes:

Focus Peaking Color

This option overlays the focus peaking indicators on top of the color video image.

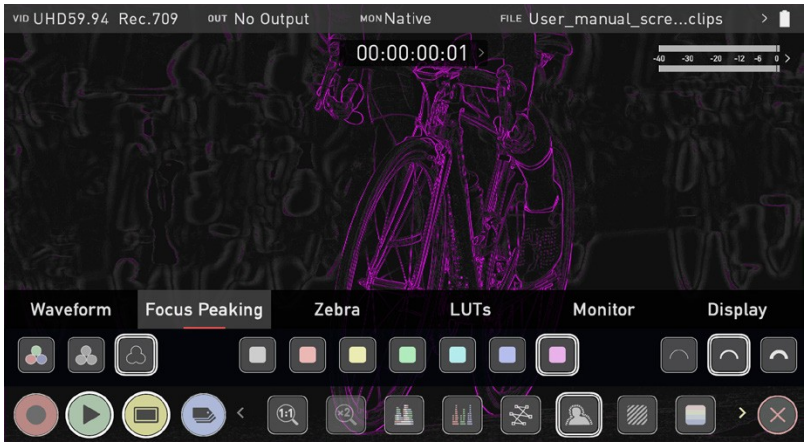


Focus Peaking Mono

This option overlays the focus peaking indicators on top of a gray-scale image.

Focus Assist Outline

This option overlays the focus peaking indicators on top of an outline of the image.



Outline Color

Adjusts the color used for peaking. It can be helpful to adjust this color so that areas in focus stand out from the color of the background.

Outline Width

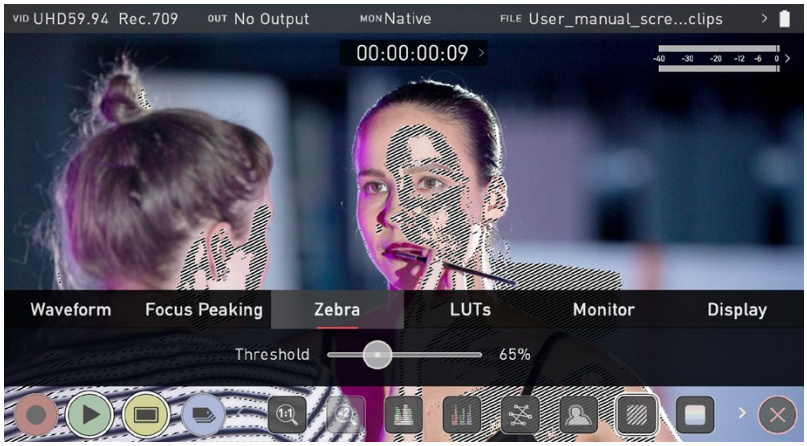
Adjusts the width used focus peaking indicators on screen. Tap to select the desired width.

Zebra tab

To access the Zebra settings, tap the Settings icon and select the Zebra Tab.

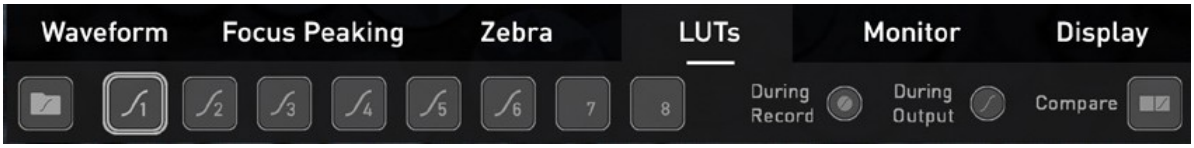
Zebra Threshold

These settings allow you to select an exposure level in your image where you want the Zebra indicators to appear. A setting of 95-100% is commonly used to indicate areas of the image that are close to overexposure or that are overexposed. The Zebra threshold value can be adjusted by moving the slider left or right.



Settings Menu - LUTs tab

To access the LUT settings, simply tap the Settings icon and select the LUTs Tab.



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.

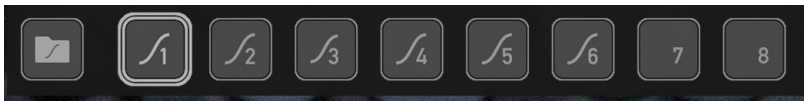
It's worth nothing that not all LUTs are equal and the majority of LUTs are designed to work with in the boundaries of REC.709. This means that whilst they may apply the color adjustments you are looking for they may also effect the luminance of the image and in which case these LUTs should only be used 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 Davinci Resolve, Photoshop or dedicated applications like LUTCalc. To create you 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 your load your LUTs into. 1D LUTs are not supported and will need to be converted via 3rd party software to be imported.

How to import LUTs to your SHOGUN STUDIO 2:

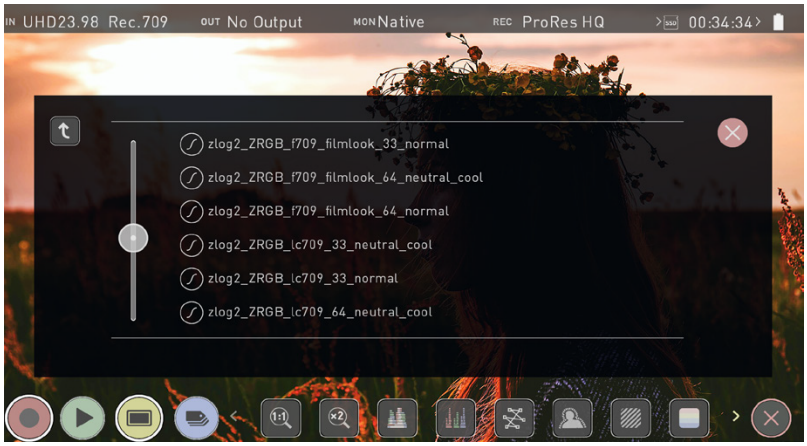
1. Copy the .CUBE files onto your media using a computer and compatible dock.
2. Tap on MON in the Information Bar across the top of the screen to access the monitoring tools settings and select the LUTs tab.
3. Tap on one of the numbered slots to select it. Slots that already have a LUT loaded will have a curve next to the slot number whilst empty slots will not.



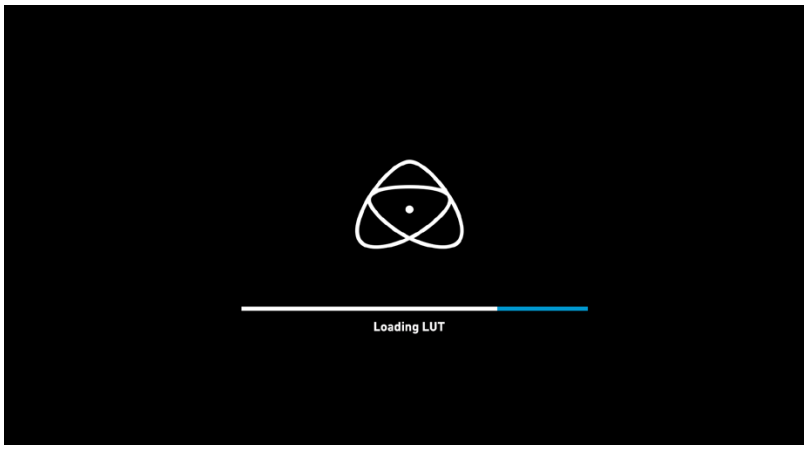
4. Tap on the folder icon to access your media.

> *If you select a slot that already has a LUT loaded, you will be asked to confirm the fact that you want to overwrite the loaded LUT when you tap on the folder.*

5. Navigate through the disk file system to the LUT file to be uploaded, and tap on the name of a LUT to select it. A second tap on the name will import the LUT to the selected slot.



6. A progress bar will appear on screen whilst the LUT loads.



7. The LUT has now been loaded and will be selected by default.
8. Repeat the process to store up to 8 LUTs on your SHOGUN STUDIO 2.

> *Once a LUT is loaded into your SHOGUN STUDIO 2, it cannot be deleted. Loading LUTs into a slot that already has a LUT loaded, will overwrite the loaded LUT.*

How to apply a LUT to your image:

1. Tap on MON in the Information Bar across the top of the screen to access the Monitor Mode menu and select the LUTs tab.
2. Tap on one of the eight slot numbers to select a LUT to be applied to the display. Tapping on slots that have LUTs loaded will preview the name of the selected LUT (above the Menu bar).

> *Slots that have a LUT loaded will have a curve next to the slot number whilst empty slots will not.*

3. Tap on the Monitor tab to open the Monitor Mode menu.

4. Tap on the LUT icon to apply the selected LUT to your image. The name of the currently selected 3D LUT will be displayed next to the LUT icon.

> *The selected LUT file name will display at MON in the Information bar when applied to the image.*

LUT Processing

In the LUTs tab, the settings allow you to choose how the LUT will be applied:

- During recording
- During Output
- Compare

During Record

If this option is selected, your SHOGUN STUDIO 2 will bake the LUT look into the recording. When enabled, a CUSTOM LOOK icon will flash in the top corner of the monitor and

the LUT cannot be activated during recording to avoid any potential issues with the recorded content.

> *Baking a LUT into your recording cannot be undone in post-production, so we advise that you consider your workflow before the use of this option.*

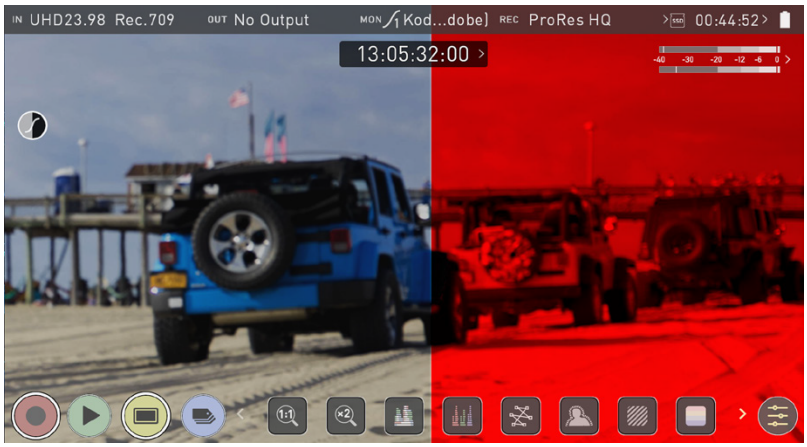
> *Baking the LUT into your recording is not supported when recording with the ProRes RAW codec.*

During Output

OUTPUT LOOK – With this option, the selected LOOK is also applied to the HDMI loop out of the SHOGUN STUDIO 2. This will allow for instant preview 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.

Compare

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 Compare 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 and is not available when LUT is set to record.*

Remember that you can remove all overlays by simply tapping in the center of the screen. Tap again to reveal the overlays.

Settings Menu - Monitor tab

To enter this menu, tap on MONITOR in the Information Bar across the top of the screen. The Monitor Mode menu will open on the bottom of the page. Alternatively, tap the yellow Settings icon and select the Monitor Tab.

> *Before entering into the operation of HDR monitoring, it is important to understand the background of HDR. We advise that you refer to "Understanding HDR and Log" on page 128 to familiarize yourself with the key terms and differences between the existing Rec.709 standard dynamic range (SDR) and the way we view images in High Dynamic Range (HDR).*

Using Standards - Native / Rec.709 / HLG / PQ

ATOMOS 10 uses predefined settings to display your video when viewing in HDR. On the left side of the screen are buttons that correspond with Native, Rec.709 (SDR), HLG and PQ (HDR) levels. For information on the LUT icon and using LUTs, refer to the "Settings Menu - LUTs tab" on page 116 section.

Activating these buttons will display your video according to the levels indicated below, allowing you to adjust your exposure accordingly and take the guess work out of exposing correctly for HDR.

Native Video Source

This option will display the video source without any processing and the SHOGUN STUDIO 2 will behave as expected for a standard broadcast monitor. When connected to a camera this means the image you are viewing is the untouched camera output e.g.. a standard Rec.709 image or a Log image etc. A standard Rec.709 image will look correct and a Log image will look flat.

Rec.709

With this mode selected the SHOGUN STUDIO 2 will map from the camera gamma/gamut so that 100% linear IRE maps the panel's white (1000nits). Everything above is clipped.

HLG (Hybrid Log Gamma)

With this mode selected the SHOGUN STUDIO 2 will map from the camera gamma/gamut so that 1200% linear IRE maps the panel's white (1000nits). Highlights are slightly compressed.

PQ

With PQ mode selected the SHOGUN STUDIO 2 will map from the camera gamma/gamut so that 2000% linear IRE maps the panel's white (1000nits). Highlights have more compression and look similar to HLG, but closer inspection will reveal more detail is visible in specular highlights.

> *Your camera's dynamic range will determine how much more detail is visible between HLG and PQ modes.*

Monitor Options

On the right side of the screen, the monitor tab provides options for the SHOGUN STUDIO 2

Display Off

The Display off function allows for the screen to be turned off without affecting the operation of the unit. When enabled, the screen will turn off whenever you lock the display screen by tapping the power on/off button on the side of the unit. For more information refer to the "Best Practice" on page 31 section.

Tally

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

Flip Screen

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.*

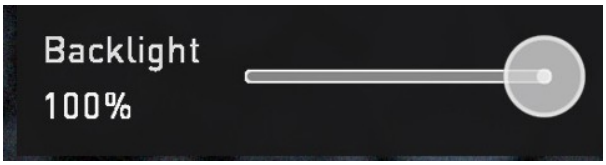
Settings Menu - Display tab

To enter this menu, tap on MON in the Information Bar across the top of the screen or tap on the yellow settings icon in monitoring mode. Then select the Display tab on the bottom of the page.

With this mode selected you have the option to change the screen brightness by adjusting the slider when in Native mode. At 100% brightness, the image will be using the full 3000nit peak brightness of the display. As with any electronic screen device, increasing the brightness will increase the power draw and battery life will be effected accordingly. Adjustments can also be made to the Lift, Gamma and Gain of the display.

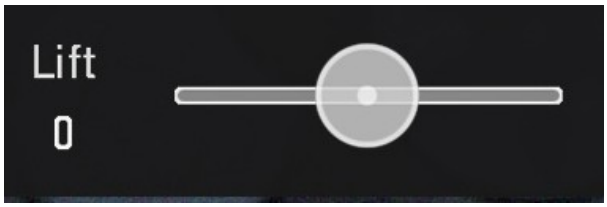
Constant Backlight:

Tap this icon to disable zonal backlighting and optimize the display brightness when increased shadow detail is required.



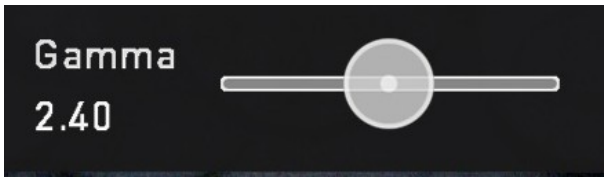
Backlight

Adjust the strength of the backlight. Disabled during HDR monitoring



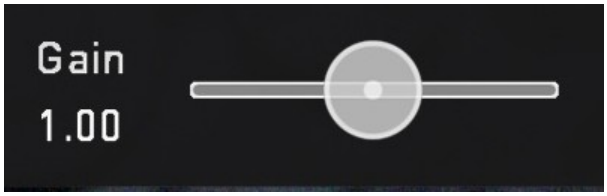
Lift

Increasing lift will brighten the image and lessen the shadows



Gamma

Gamma control allows you to create darker and richer shadows. This may be useful when monitoring in bright daylight conditions.



Gain

Gain will boost the image brightness and affect the highlights

Reset

Quickly return all values to default (Apart from the Backlight setting)

Understanding HDR and Log

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 SHOGUN STUDIO 2 so that you are recording the HDR Log information. For more information refer to the Camera Output section.

Now you are ready to capture Log and simultaneously use ATOMOS 10 image processing to preview the final HDR result in the field, rather than dealing with the washed out look of Log for critical exposure decisions.

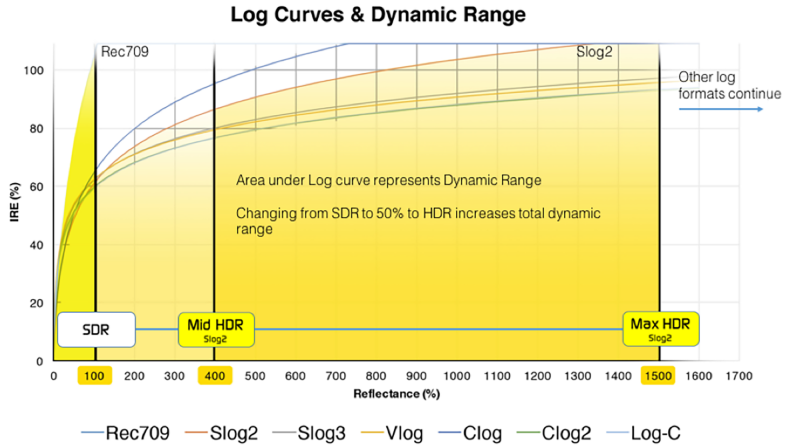
The main impact of HDR is apparent in the specular highlights and bright areas. The areas that would have previously been 'blown out' will now contain visible detail and information to enhance your content. HDR provides more headroom allowing you to show more detail. Experimentation with increased exposures is encouraged.

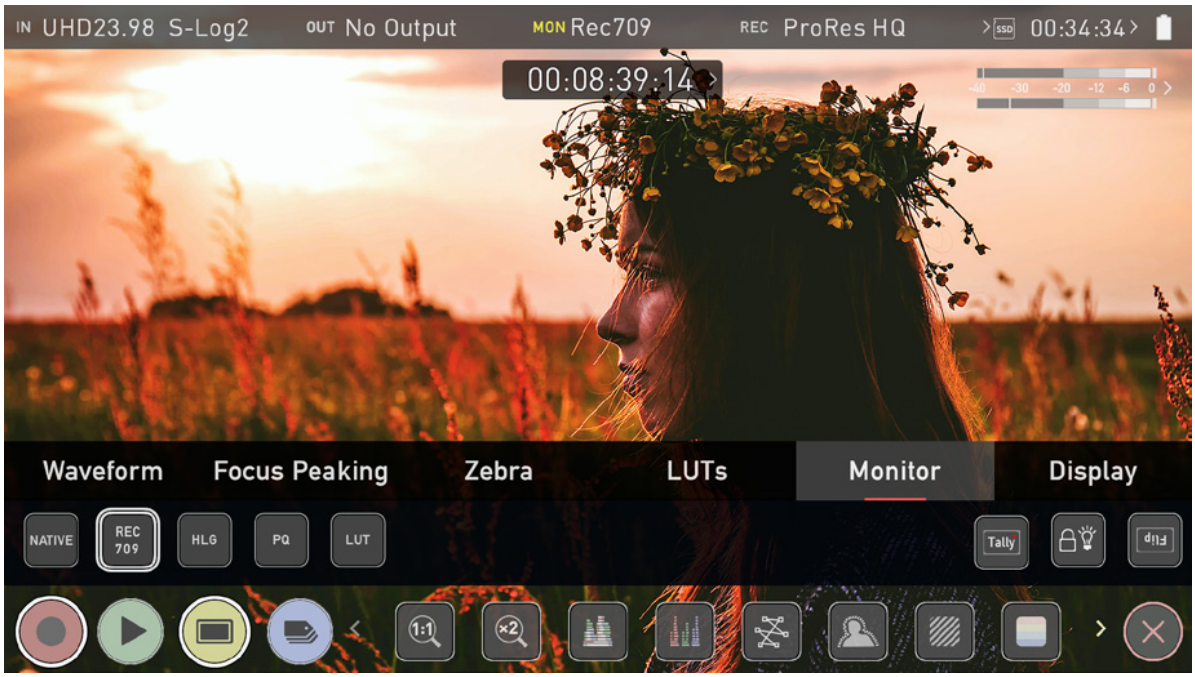
ATOMOS 10 HDR uses an in depth understanding of each Log curve and combines it with the control of the panel processing and backlight in order to apply an increased brightness to the highlight areas of the scene.

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

The AtomOS 10 monitoring mode allows the processing engine of the SHOGUN STUDIO 2 to display the High Dynamic Range capabilities of a Log gamma input. HDR monitoring in ATOMOS 10 is the 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 specular 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 SHOGUN STUDIO 2 look similar, your exposure should be correct but use in conjunction with the waveform monitor to verify.

One of the key elements to understand is that if your camera can shoot in Log then it can already capture more dynamic range than you can display in SDR. Log 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. The image appears washed out and desaturated as each pixel contains more brightness information than SDR can display, if it were to do this it would be brighter than 100% Rec709 and so be clipped. This is illustrated below:




IN UHD23.98 S-Log2
OUT No Output
MON Rec709
REC ProRes HQ
SSD 00:34:34
00:08:39:14
-40 -30 -20 -12 -6 0
Waveform
Focus Peaking
Zebra
LUTs
Monitor
Display
NATIVE
REC 709
HLG
PQ
LUT
Tally
Flip
1:1
×2

Playback mode

Pressing the Play button switches the device into playback mode and the last clip recorded on to the drive will instantly begin to playback. Playback allows you to instantly analyze the content. This is key for establishing if takes are correctly focused, lighting has changed, or previewing recorded content with LUTs applied.

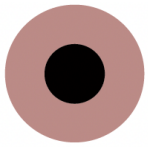
> *The first time the Play button is pressed after recording a clip, the last clip recorded will playback. If you switch back to REC mode after doing this and press the Play button again, the file at the top of the file list will playback.*

Once within Play mode the complete Monitoring and Edit tool sets are available by tapping the buttons. Switch from Monitor to Edit tools by toggling the MON and EDIT buttons. Clips/Playlist can be selected by tapping the folder icon in the lower right of the screen, or skip to the next or previous clip via the on screen controls. Additional controls allow you to scrub through clips, set the playback speed and direction, as well as the ability to set the play mode to Loop.

All these functions can also be used in 'Playout' mode, and your footage can be viewed on a larger screen or monitor for review and appraisal. You can even apply Log curves and LUTs to your clips as they are played back.

Playback Mode / Home

Main Controls



REC (Record):

Jump to Record Home Screen

PLAY:

Play and pause the current clip

MON (Monitor):

Reveal/hide monitoring tools. Toggle on/off

EDIT:

Reveal/hide edit tools. Toggle on/off

Settings

Touch to access Playback settings and tools.

Recorded Files

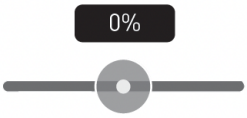
Browse recorded files

Playback Controls

These controls become available during playback.

Scrub bar

Scrub forward and back through the clip.



Speed/direction control

The percentage slider allows for you to set the playback direction and speed. This is perfect for previewing high frame rate at half or quarter speed such as 60p at 30p in either forward or reverse directions.

2x/4x

Playback at 2x or 4x speeds both forward and in reverse.

Next/Previous

Jump to next or previous take.

Advance

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

Loop

Tapping this icon, you can put the clip into loop playback. In and out markers for loop can be placed and cleared using the edit tools. For more information, refer to the Edit section.

Playback

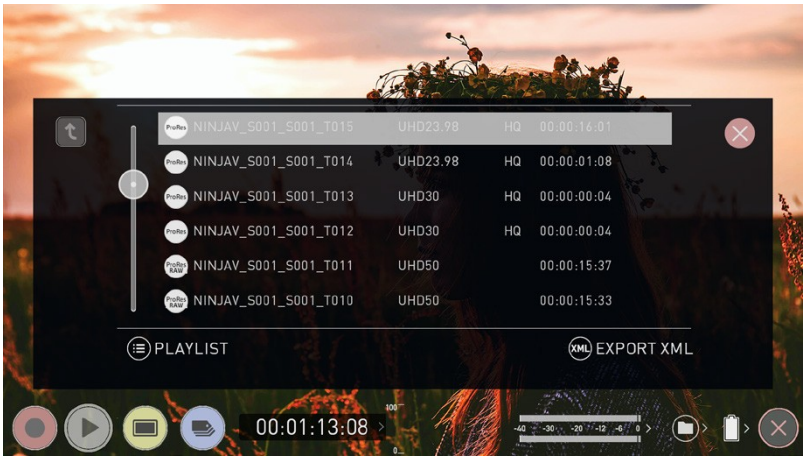
One of the key elements of the SHOGUN STUDIO 2 is the ability to utilize the monitor recorder as a playback and playout device for the content that has been recorded whilst maintaining the same visually lossless high quality images. SHOGUN STUDIO 2 2's play-out capability also allows you to send the live and recorded footage out to a larger monitor or switcher.

Recorded Files

Pressing the filename or folder button will bring up a list of clips available on the drive. This will show clip name (with Scene shot Take numbers) as well as resolution, codec and duration Tap to highlight a clip, this will show a preview of the first frame in the background. To play the selected clip touch the file name again. To play specific files you can also create a playlist. For information on creating a playlist refer to the "Playlists" on page 137 section.

When the playback content list menu is open, playback will automatically stop.

The codec for each clip is displayed in the white circle to the left of each clip's filename



Playlists

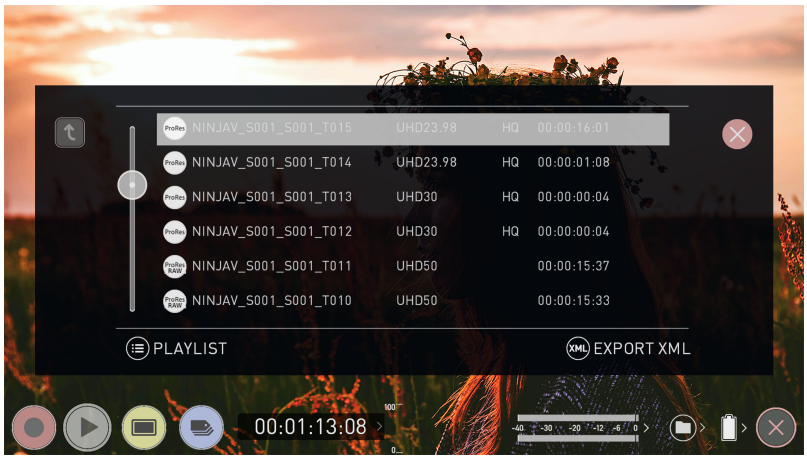
To increase the functionality and flexibility of the playback mode there is also the ability to create a Playlist.

How to create a Playlist

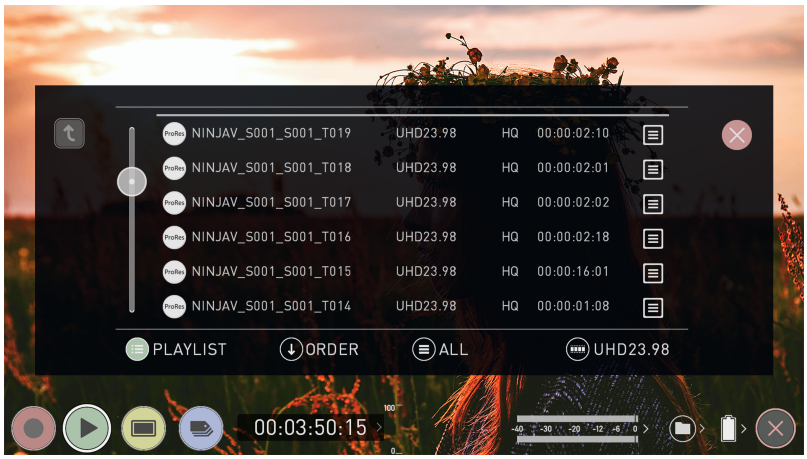
To build a Playlist, open the Recorded Files folder, then press the Playlist button which will turn green and reveal the options available. To return to normal playback of all recorded materials, press the Playlist icon again to deactivate the playlist.

All clips in the Playlist must have the same codec, resolution and frame rate.

The codec for each clip is displayed in the white circle to the left of each clip's filename



Playlist Options



Order

This icon lets you adjust the order in which clips playback. By default the order of recorded clips is based on their file names, with the last clip recorded at the top of the list. Tap Order to toggle the order that clips will be played back in.

Tags

Tap this icon to cycle through the following options to select what will be included in the playlist:

All

Plays all clips on the disk.

Selected

Plays only those clips selected

Favorites

Plays only the clips that are tagged as favorites.

Combined

Plays only the clips that are tagged with favorite and the selected clips

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

Codec Playlist

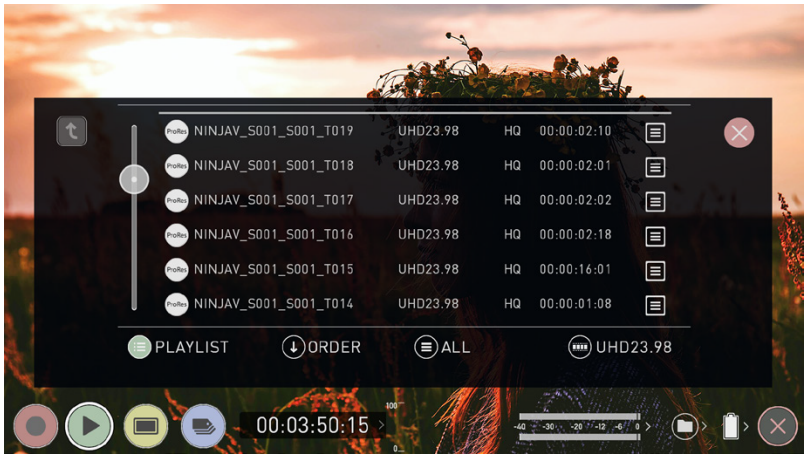
You can select which clips are played back by toggling the available codecs. Only clips of the same resolution, frame rate and codec are supported. The resolution and frame rate is indicated in the bottom right corner of the screen.

Favorite Playlist

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

More information about using the In and Out points, tagging and XML Export is available in the "Using Edit tools during recording, playback and monitoring" on page 158 section.



Playback - Video Format menu

This menu appears when you tap on VIDEO in the Information bar across the top of the screen whilst in Playback mode. It contains information about the settings used in recording the clip.

VIDEO OUT

Format:

Displays the resolution and frame rate used in recording the selected clip.

Codec:

Displays the codec of the current clip.

Compression:

Displays compression settings for selected codec.

Length:

Displays the total length of the clip.

CAMERA OUTPUT

Activating Camera Output will prompt the device to play the file using the original metadata from the source camera and allow for more accurate image processing and display.

Log/HDR (On/Off)

Tap to enable/disable HDR image processing inside the SHOGUN STUDIO 2.

Camera

Tap to scroll through to the manufacturer of the camera providing the input. Options include: Sony, Fujifilm, Canon, Panasonic, ARRI, RED, JVC, Leica, Nikon, ZCAM, Olympus, OMSYSTEM and Rec.2100.

Gamma

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.

Gamut

Select the Color Gamut of the input. Ensure that this matches the input of the camera to ensure accurate monitoring.

Gamut options are not applicable to all cameras / devices

Playback Auto HDR (On/Off)

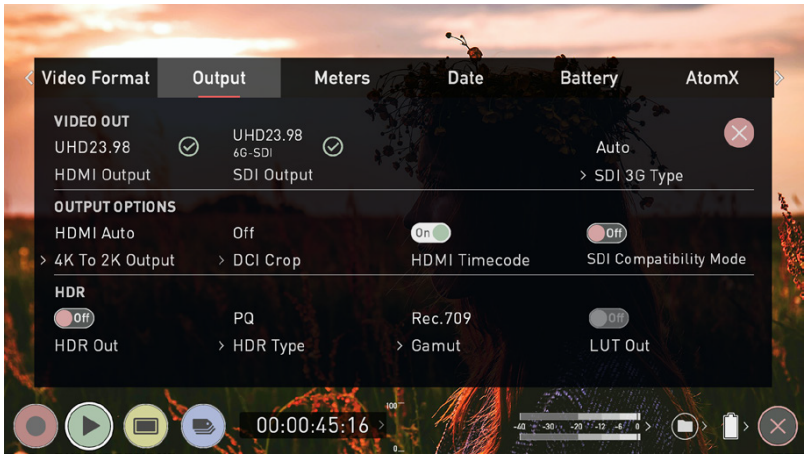
Engage this switch if you are feeding HDR images to the SHOGUN STUDIO 2 from a camera or games console that supports HLG or PQ HDR output directly, using the appropriate metadata flags. If you are feeding Log video to the unit be sure that this setting is off. Tap to enable or disable the setting.

Playback - Output Menu

This menu provides information and settings for the signal that is being output from your SHOGUN STUDIO 2 over HDMI and SDI. The Output menu that appears whilst in Playback mode is similar to the Output menu that appears whilst in the Recording and Monitoring modes.

You may also select your preferred SDI signal type here. When an output device is detected your device will automatically deliver an output signal over either HDMI or SDI.

For more information on these settings refer to "Output Menu" on page 64



HDMI Output

Displays the resolution and frame rate of the HDMI Output from your SHOGUN STUDIO 2.

SDI OUTPUT

Displays the resolution and frame rate of the SDI Output from your SHOGUN STUDIO 2.

SDI 3G Type

Allows you to specify the 'SDI 3G Type' for compatibility with equipment that expects a specific type of 3G-SDI video. Tap to cycle through the options:

- Level A,
- Level B or
- Auto.

GENLOCK SIGNAL

Genlock

Tap to toggle Genlock On or Off. When On, your device will embed an external Genlock signal into the output.

OUTPUT OPTIONS

4K to 2K Output

Allows you to scale 4K or UHD inputs for output. This will scale 4K to 2K and UHD will be scaled to HD 1080p.

DCI Crop

When enabled, this setting trims the 17:9 DCI input to 16:9 converting the signal to UHD. When 4K to 2K Output is On, the output will down scale to HD.

HDMI timecode

Allows for the embedded timecode or in unit generated timecode to be looped out. The option is present to allow you to turn the timecode as this can disrupt some consumer equipment that is not intended to receive embedded timecode. Tap to toggle between on/off.

HDR

Here you are able to set a conversion from your LOG input to a HDR display standard such as HLG or PQ. You can also define the output color gamut from your camera’s gamut to a display standard for BT2020, DCI-P3 or Rec709.

HDR Out

Enable or disable HDR on the output.

HDR Type

Allows you to select the HDR type to output. Tap to cycle through PQ, HLG and Dolby.

Dolby Vision play out

Engage the HDR Out switch if you are feeding HDR footage to the device from a camera or games console that supports HLG or PQ HDR output using the appropriate metadata flags. Ensure that Dobly Vision is supported on the recieving TV/Monitor, select DOLBY at HDR Type and enable 'HDR Out' in the Output menu.

Dolby Vision external playout of recorded files is officially supported for RAW, ProRes RAW, DNxHR. If you are feeding Log video to the unit be sure that this setting is off.

Gamut

Allows you to select the Gamut of the signal that is output. Tap to cycle through Rec.709, BT.2020 and DCI-P3.

LUT Out

Allows you to loop out LUTs that are applied to your image, so that they are also applied to the Output signal.

Playback - Audio menu

The Audio menu that appears whilst in Playback mode is almost identical to the one that appears whilst in the Recording and Monitoring modes. For more information on these settings refer to "Audio Menu" on page 79 section.

Some of the settings that are present in the Audio menu whilst in Recording and Monitoring modes, will not appear in the Audio menu whilst in Playback mode.

Playback - Date

The Date menu that appears whilst in Playback mode is identical to the one that appears whilst in the Recording and Monitoring modes. For more information on these settings refer to the "Date Menu" on page 90 section.

Playback - Battery

The Battery menu that appears whilst in Playback mode is identical to the one that appears whilst in the Recording and Monitoring modes. For more information on these settings refer to the "Battery Menu" on page 91 section.

Playback - Info

The Info menu that appears whilst in Playback mode is almost identical to the one that appears whilst in the Recording and Monitoring modes. For more information on these settings refer to the "Info Menu" on page 93 section.

Some of the settings that are present in the Info menu whilst in Recording and Monitoring modes, will not appear in the Info menu whilst in Playback mode.

Edit Mode

The edit mode allows you to tag your clips during recording and playback, as well as the ability to add in and out-points to recorded clips.

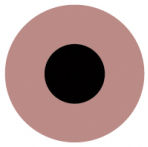
By the pressing the Favorite and Reject icons you can assign a 'good clip' or 'bad clip'. This information can then be imported into a non-linear editing system to speed up the edit process. You can easily see which parts of your recording you have marked to keep or reject.

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. For more information refer to the "Playlists" on page 137 section. ATOMOS 10 has also introduced extended tags to allow you to apply more specific tags that can help facilitate the edit. For more information refer to the "Using Extended Tags" on page 161 section.

SmartLog is compatible with FCP XML (.fcpxml).

Playback Mode / Edit tools

Main Controls



REC (Record):

Press record to start recording

PLAY:

Play and pause the current clip

MON (Monitor):

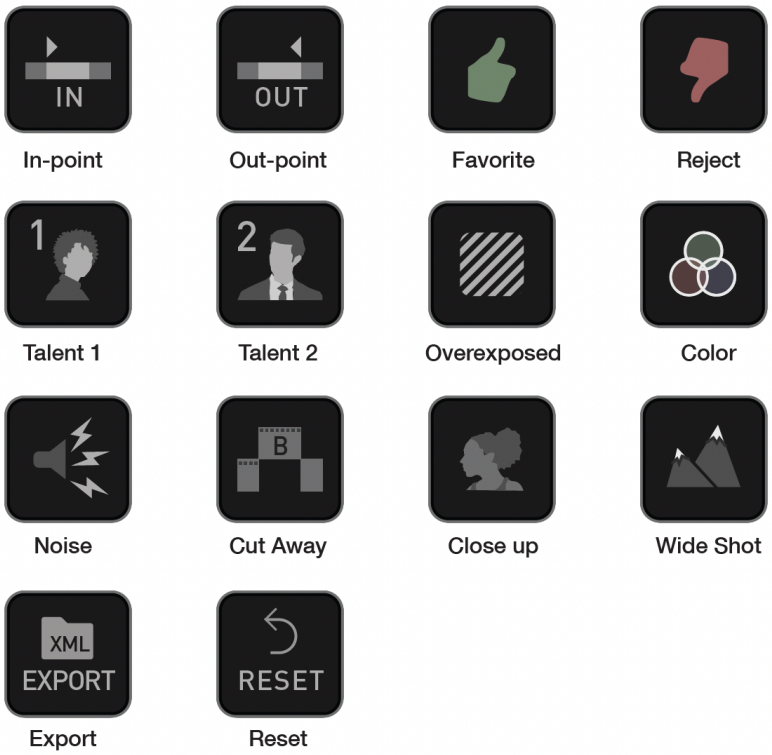
Reveal/hide monitoring tools. Toggle on/off

EDIT:

Reveal/hide edit tools. Toggle on/off

Settings

There are no user accessible settings available for Edit functions in the current ATOMOS firmware.
This may change with future firmware updates.



Markers and Tagging Icons (SmartLog)

Using Markers and Tags you can quickly start the editing and review process right here on your SHOGUN STUDIO 2, avoiding delays incurred when importing inferior and unwanted footage. You can review and tag immediately on-set with your client or director, or work through your takes without having to dump the recorded files to another work-station/NLE.

In-Point

Set the in-point by touching the button at desired point. Simply touch on to indicate in-point. Press a second time to reset in-point

Out-Point

Out-point can be set by simply tapping at desired out-point. To remove, tap again

Favorite

Mark the entire take as a favorite, or you can mark the parts of the take you wish to use. Apply multiple markers within one take if required

Reject

Mark the take/section as a reject

Talent 1

Tag talent or assign another meaning

Talent 2

Tag talent number 2, or assign another meaning, event etc.

Over Exposed

Tag clip as over exposed or out of focus

Color Correction

Tag clip as ‘color’. Use tag to indicate a problematic image or even use for another purpose

Noise

Tag clip as containing background noise or interference

Cut Away

Tag clip as a cut away scene

Close Up

Tag clip as close up for use in edit and post

Wide Shot

Tag clip as wide shot

Export XML

Once your clips have been tagged you can capture all the information and utilize the XML data to speed up edit and post production time.

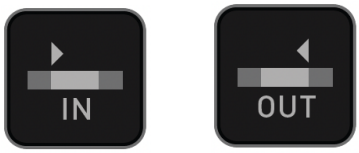
SmartLog is compatible with FCP XML (.fcpxml).

RESET

Pressing the reset button will remove all tags and XML data from a clip. This is useful when dealing with multiple takes or if a clip is tagged incorrectly. Reset will not remove or change in-point and out-point settings. To remove markers you will need to reset the in and out-points

Using Edit tools during recording, playback and monitoring

To access edit tools simply tap the Edit icon during recording, monitoring or playback.



In and Out points

Set in and out points easily during playback. Use the scrub control to accurately find the correct moment while the footage is paused. Once markers are set, the footage will be clipped and only the enclosed footage will play. Reset markers to resume normal play-back.

Favorite/Reject

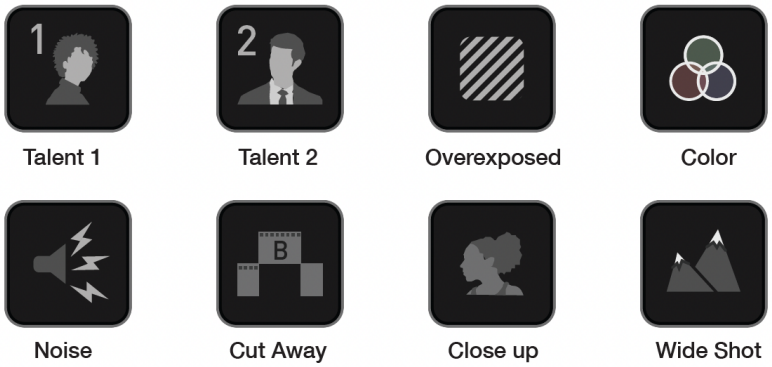
Press Play and when you see the section of the footage you would like to mark as good or bad, press Favorite or Reject and then press again to stop marking that section. Multiple tags can be applied to your clips to provide Timecode accurate meta tags that can be exported to Apple FCP XML.

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

Reset

Tapping the reset button will remove all tags and XML data from a clip. This is useful when dealing with multiple takes or if a clip is tagged incorrectly. Reset will not remove or affect in-point and out-point settings. To remove markers you will need to reset the in and out-points

Using Extended Tags



Aside from Favorite and Reject tagging options, ATOMOS 10 includes extended tags that will greatly assist your edit and workflow processes. Careful consideration and use of tags during monitoring and review can be highly beneficial when you are ready to begin post production.

Tags are useful during playback and allow you to create playlists featuring only selected recordings from your disk. More information about playlists can be found in the Playback & Playout section.

Reset

Tapping the reset button will remove all tags and XML data from a clip. This is useful when dealing with multiple takes or if a clip is tagged incorrectly. Reset will not remove or affect in-point and out-point settings. To remove markers you will need to reset the in and out-points.

Exporting Tags

Once your files have been reviewed you are ready to export the .xml file that contains all information from tags, In/Out points, Favorites and Extended Tags. It is essential to export the .xml file information from each clip will be ready for use in Final Cut Pro and other compatible NLEs

Exporting Tags

1. Tap the Export icon to export the tags you have created to an FCP XML file.
2. 'Please wait' will be displayed on screen whilst an XML file is been created on your inserted media. The length of time required to create the FCP XML file will vary depending on your recording time and the amount of flags applied.
3. Once the XML file has been saved to your media you will be returned to the previous screen.

Importing Tags

The FCP XML file can be instantly accessed by Final Cut Pro when the media is connected to a computer using a compatible dock. The tags will be available upon import of the XML file and can be used to filter and display different parts of your recordings, depending on how you have used the tags to mark and edit the footage. More information about using tags and XML import can be found in the Connecting & Editing section.

SmartLog is compatible with FCP XML (.fcpxml).

Connecting media

The Master Caddy Docking Station allows you to connect your media to your computer. For information on using the Master Caddy Docking Station and the different models available, refer to "Master Caddy Docking Station" on page 21

Attaching Media to a Master Caddy Docking Station:

1. Eject the media from your SHOGUN STUDIO 2.
2. Align your AtomX SSDmini or Master Caddy II so that the SATA III connector lines up with the SATA II connector on the Docking Station. Media can't be inserted the wrong way round.
3. Gently slide your media all the way into the Docking Station until it stops at the end of the drive slot. Ensure that the media is properly attached.

> *Never force the media into the docking station, just in case something isn't set up or aligned properly*

> *The SHOGUN STUDIO 2 disk slot does NOT have a release latch for media. It is a friction-fit system. To remove simply pull the media out using the top and bottom tabs on the media itself.*

Connecting the Master Caddy Docking Station to your computer:

1. Connect the Master Caddy Docking Station to a Mac® or Windows® editing work-station via USB 2.0, USB 3.0 or USB-C 3.1.

2. After a short wait, your disk will be recognized by your operating system and the recorded video will be accessible by the target computer via a standard disk (exFAT) file system.

Once your disk is recognized by your operating system, you can edit directly from the drive or copy the files to your own storage.

Transferring files

To copy files to your computer or other storage location:

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 SHOGUN STUDIO 2 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 to copy, COMMAND + V to paste).

ExFAT compatibility

The SHOGUN STUDIO 2 formats your media as exFAT. We have chosen this file system to overcome the 4GB file limitation of FAT32 and allow for compatibility on both Windows and MAC OS.

The Operating Systems that support exFAT are:

- Windows 10+
- Snow Leopard 10.6.5 or higher
- Lion 10.7
- Mountain Lion 10.8
- Mavericks 10.9 and above

Importing clips

Video Codecs - Supported Applications

We have chosen the Apple ProRes®, Avid DNxHD® and Avid DNxHR+ codecs as our main video codecs since they are visually lossless, as well as being edit-ready formats.

Generally speaking, all major non linear editing applications support Apple ProRes and Avid DNxHD/DNxHR. Applications need to support these codecs inside a .MOV wrapper.

- Final Cut Pro (version 7)
- Final Cut Pro
- Davinci Resolve 8.0 +
- 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

ProRes RAW - Supported Applications

- Apple Final Cut Pro
- Adobe Premiere Pro,
- Adobe After Effects,
- Avid Media Composer,
- GrassValley Edius,
- Assimilate Scratch,
- Baselight Film Light.

Importing SHOGUN STUDIO 2 footage into Final Cut Pro

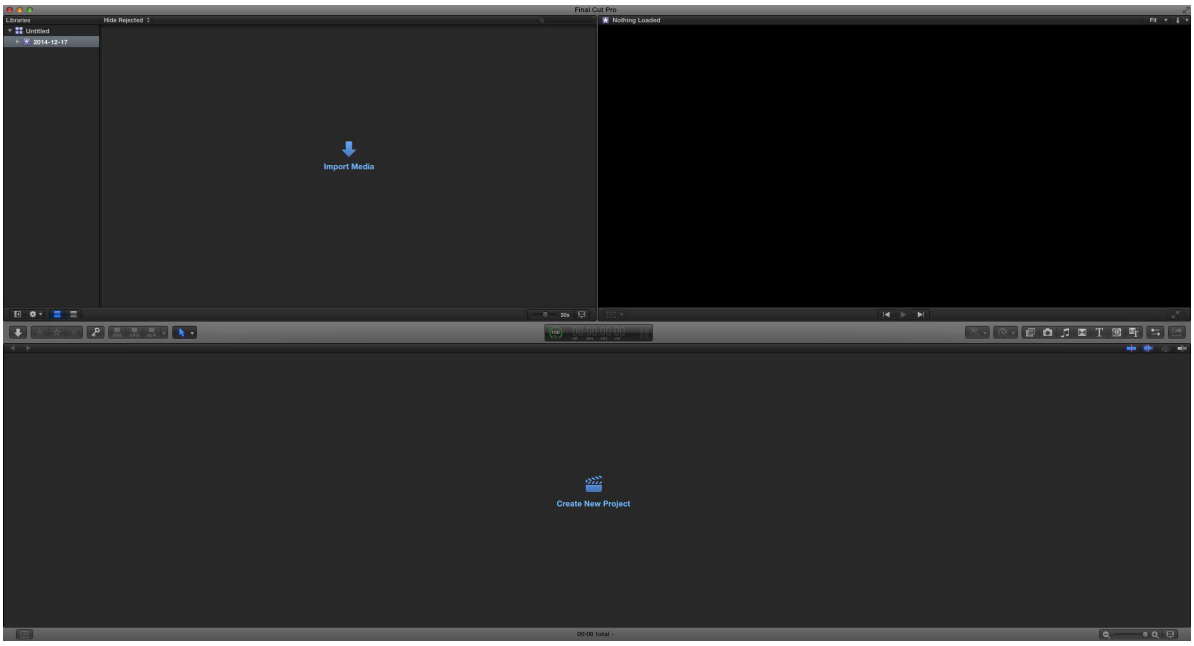
You can import SHOGUN STUDIO 2 footage into Final Cut Pro (FCP) in just a few simple steps.

1. Connect the Docking Station to your Mac. For information on connecting the Docking Station refer to the "Connecting media" on page 163 section.

2. Insert the media with your footage into the Docking Station and you will see the drive appear in your Finder window.

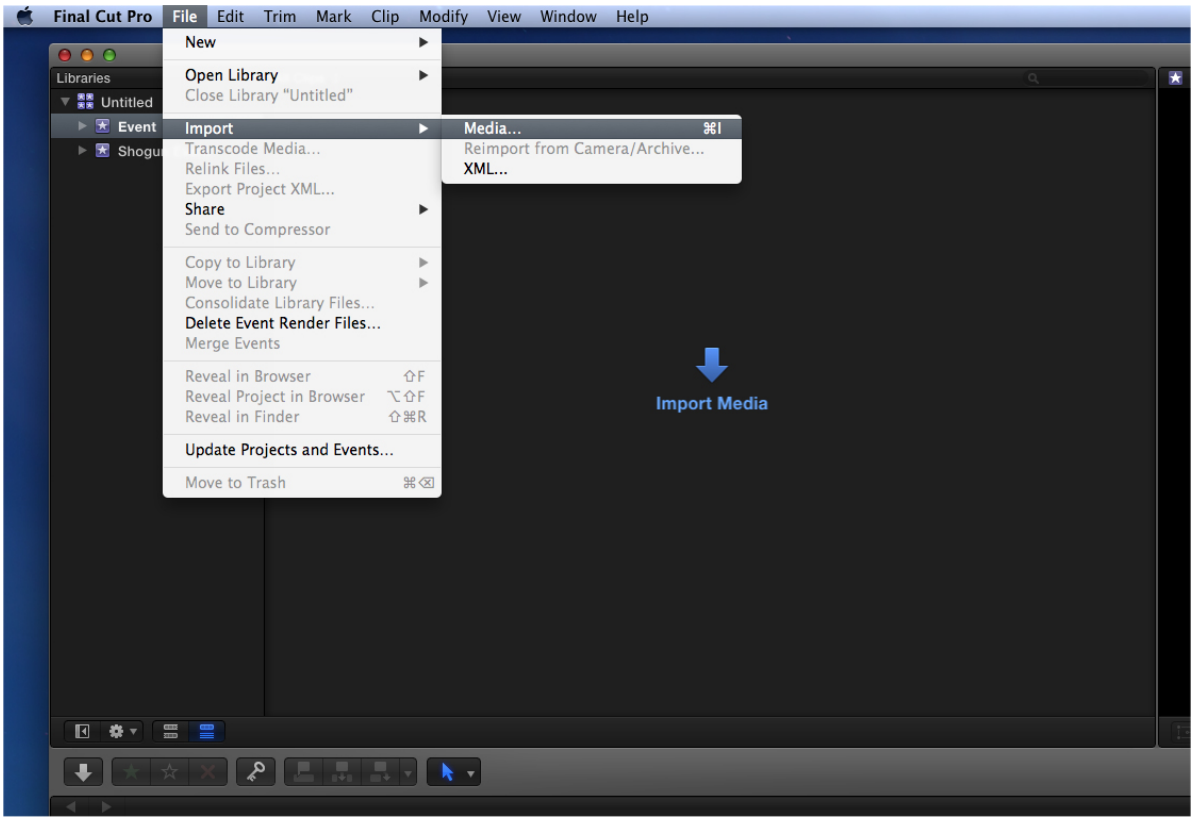
3. Start Final Cut Pro and open your project (or start a new one).

The screen will look like this:

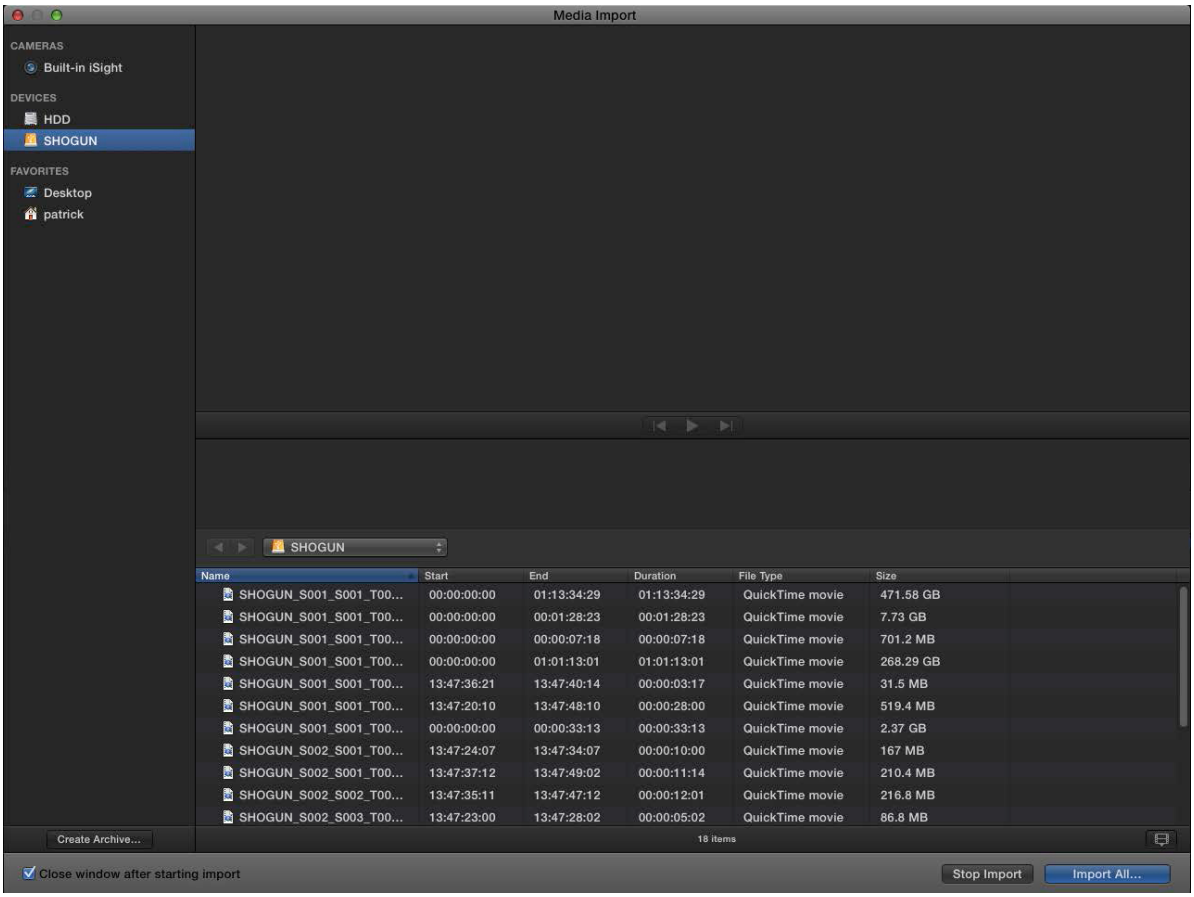


Go to the File menu and select Import > Media

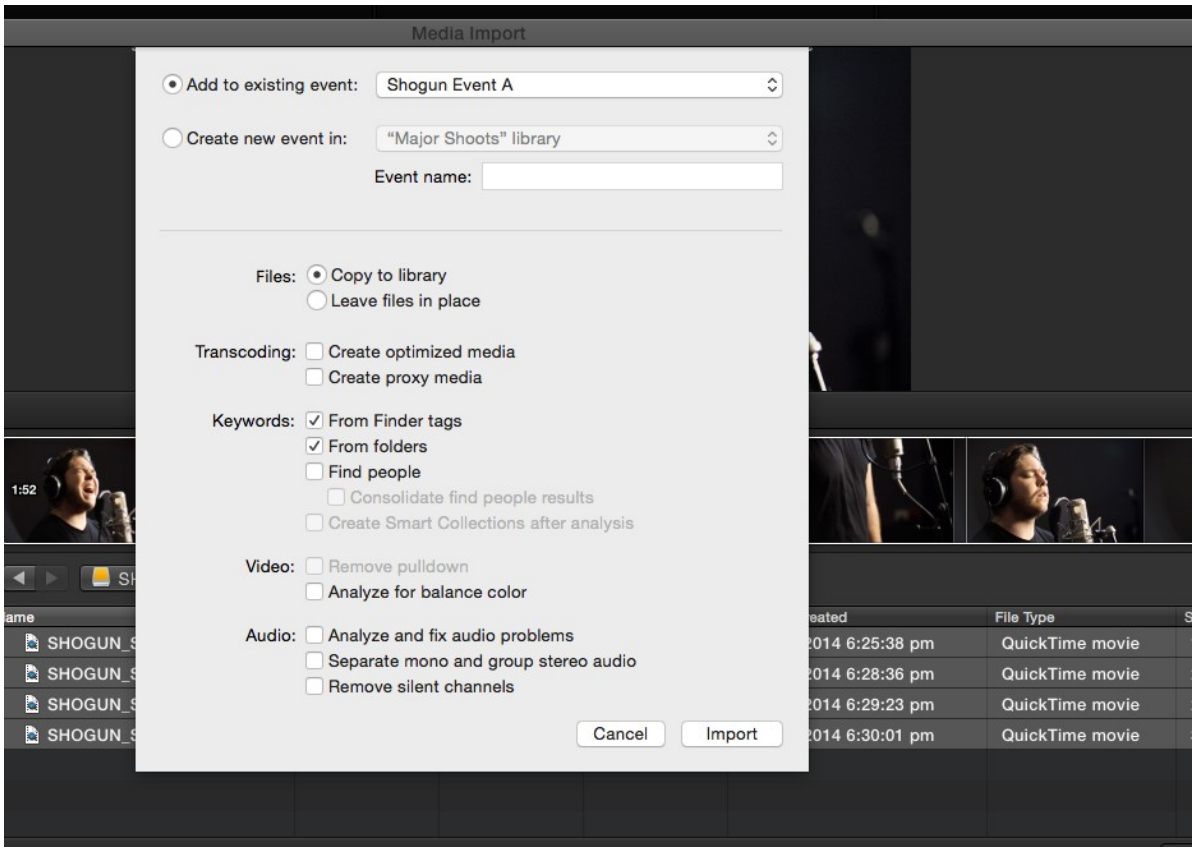
Final Cut Pro will show you a 'browse' window. Look for the SHOGUN STUDIO 2 drive, and click on it.



You'll see the folders in the SHOGUN STUDIO 2 drive. Select the folder containing the footage you want to import. Click on Import All or Import Selected. Individual clips can also be selected.



Choose the Event you wish to import the footage into, or create a new event. Click on Import.



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


Final Cut Pro
Libraries
lib2
Major Shoots
12-11-2014
26-11-20...nScreen
2014-08-19
IBCWelcome
Shogun Event A
All Clips
SHOGUN_S001_S001_T011
Name
Start
End
Projects (1)
Shogun Project A
00:00:00:00
11 Dec 2014 (4)
SHOGUN_S001_S001_T011
00:08:55:15
SHOGUN_S001_S999_T001
00:00:02:20
SHOGUN_S001_S999_T002
00:00:18:00
SHOGUN_S001_S999_T003
00:00:34:17
1 of 5 selected, 01:52:19
SHOGUN_S001_S001_T011
20%
Video
Audio
Info
Share
SHOGUN_S001_S001_T011
00:01:52:19
Color
Balance: Not Analyzed
Spatial Conform
00:10:25:16
Shogun Project A
00:00:00:00
00:00:15:00
00:00:30:00
00:00:45:00
00:01:00:00
00:01:15:00
00:01:30:00
Transitions
All
All
Blurs
Dissolves
Lights
Movements
Objects
Replicator/Clones
Stylized
Wipes
Cross Dissolve
3D Rectangle
Arrows
Band

SmartLog with Final Cut Pro

Prior to importing the XML files into Final Cut Pro, ensure that:

- You have exported the XML file whilst the drive is in your SHOGUN STUDIO 2
- You have connected your Master Caddy Docking Station and inserted your media into the Dock
- You are using an operating system that supports ExFAT
- Your QuickTime version is up to date
- Final Cut Pro has been updated to the latest version

There are 2 ways to import the XML file:

- Directly from the docked hard drive
- Manually into Final Cut Pro

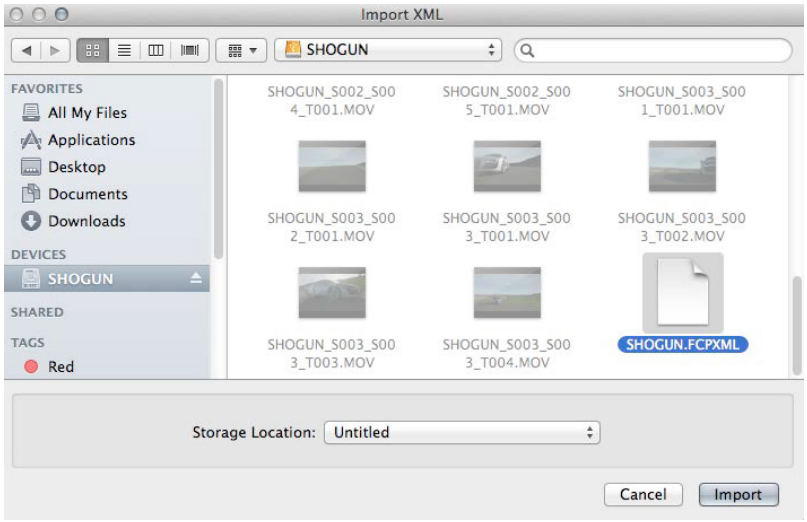
Automatic Import

1. Open the Finder
2. Select the drive (in this example it is EXCVIDEO)
3. Double-click the unitname.FCPXML file
4. This will open Final Cut Pro and import the .xml file
5. Final Cut Pro will make an event of the disk, name and reference all the footage in that event.

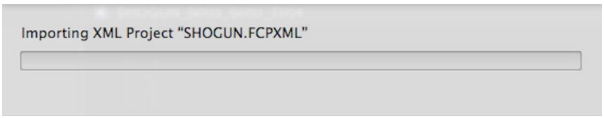
You will notice that on the clips you have added Smart Tags too, with Green and Red indicating Favorite and Reject. You can sort these by using the pull-down menu to show favorites. This will show all the individual favorites as separate clips in the Event Viewer.

Manual

1. Open Final Cut Pro
2. Create a New Project (or you can use an existing project). In this example it is called XML Import
3. Select File> Import> XML

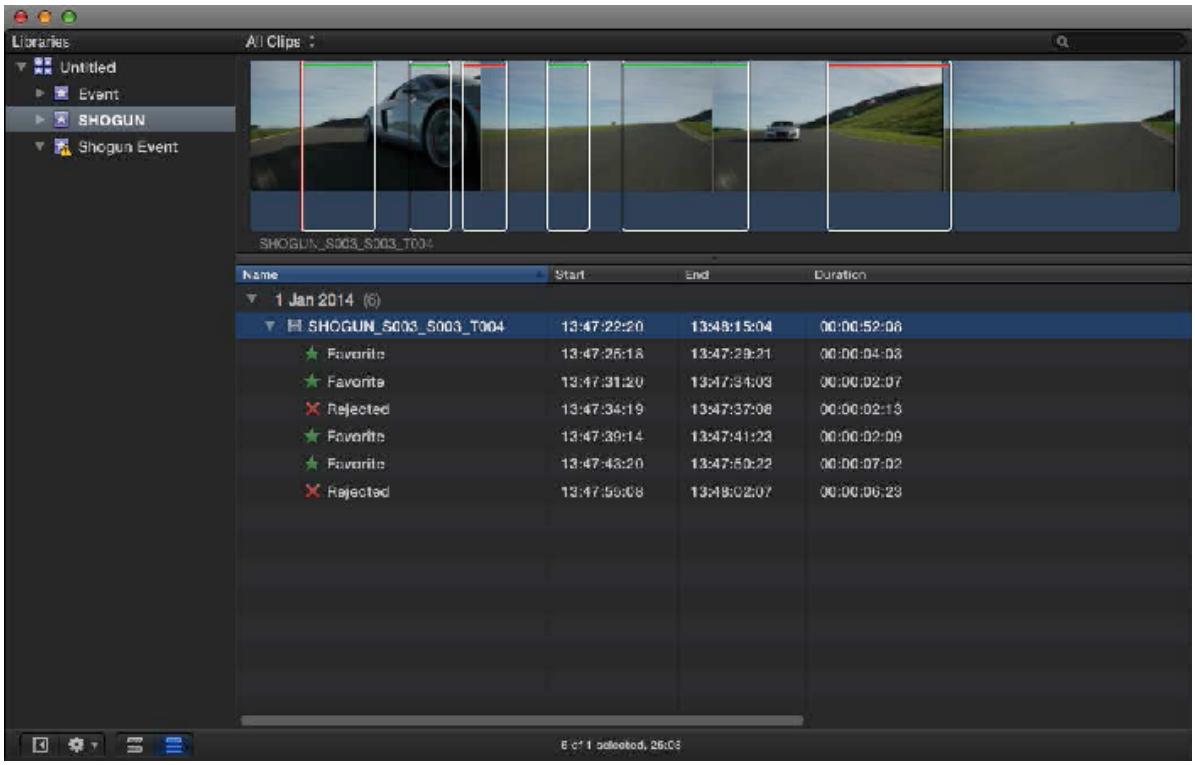


4. Select the SHOGUN STUDIO 2 drive under Devices
5. Choose the unitname.FCPXML, select Import
6. The XML will import

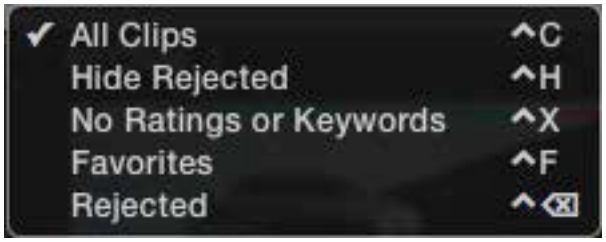


Viewing tags in Final Cut Pro

Once you have imported the XML you can expand the clip to see the Favorite, Reject and other various tags.



You can also filter the view to only see specific tags e.g.. favorite, etc.



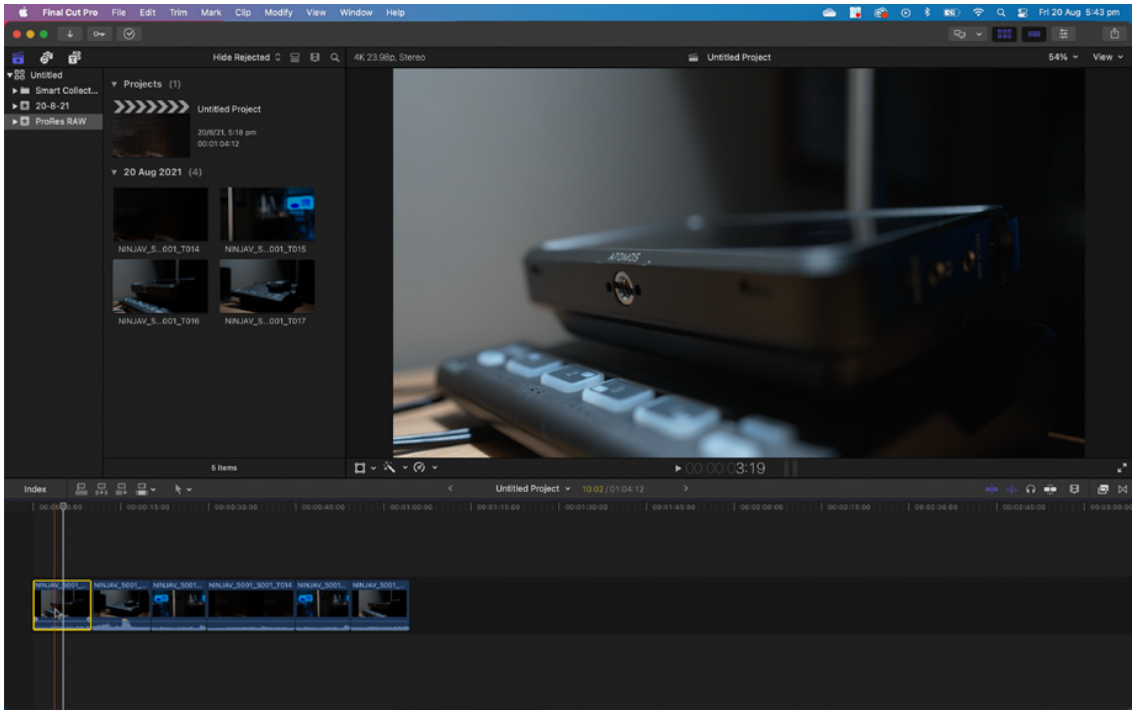
Adjusting ProRes RAW settings in Final Cut Pro

Final Cut Pro allows you to view and adjust the camera settings of ProRes RAW files, like ISO, exposure offset and color temperature in the Inspector tab. The settings that can be adjusted will depend on the camera used with your SHOGUN STUDIO 2 to record ProRes RAW clips. For information on the cameras that record ProRes RAW and the settings that can be adjusted, refer to the 'ProRes RAW video cameras and devices' section in the Apple Support Article.

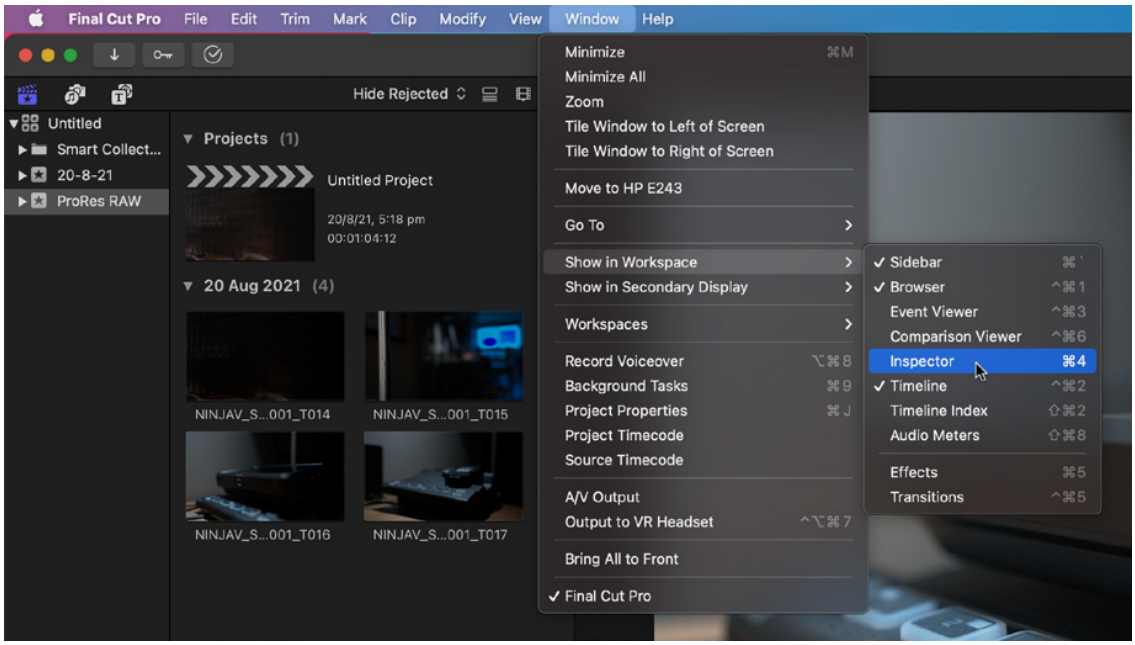
How to adjust ProRes RAW camera settings in Final Cut Pro

1. Import your Apple ProRes RAW clips into Final Cut Pro. For more information on importing refer to the "Importing clips" on page 165 section.

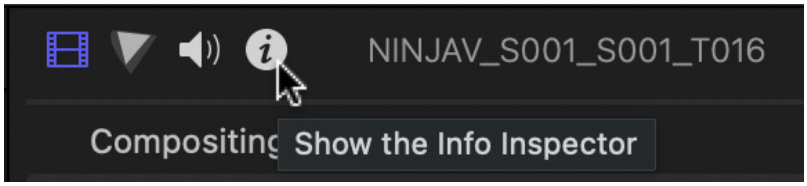
2. Select the clip(s) that you want to adjust in the browser or in the timeline.



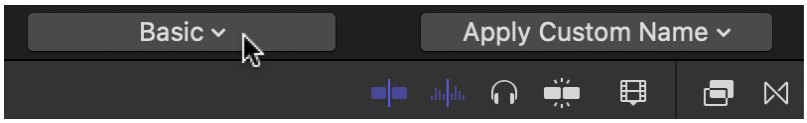
3. Open the Inspector by clicking on Window>Show in Workspace>Inspector



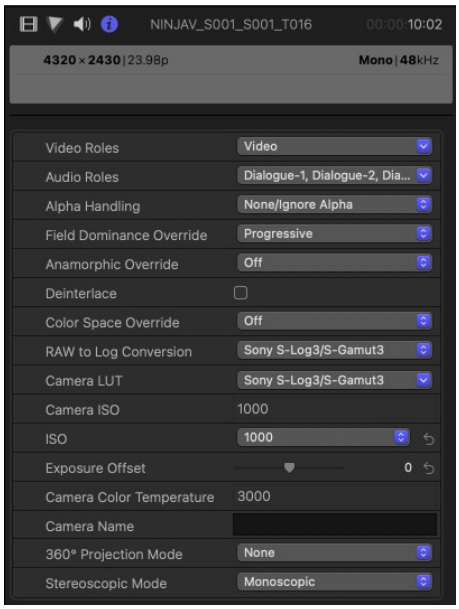
4. Click on the Info button in the Inspector to show the Info Inspector



5. Click on the word Basic at the bottom of the Info Inspector tab to open the Metadata View pop-up menu, and select Settings.



6. The Info Inspector will now display the camera settings of the ProRes RAW clip(s).

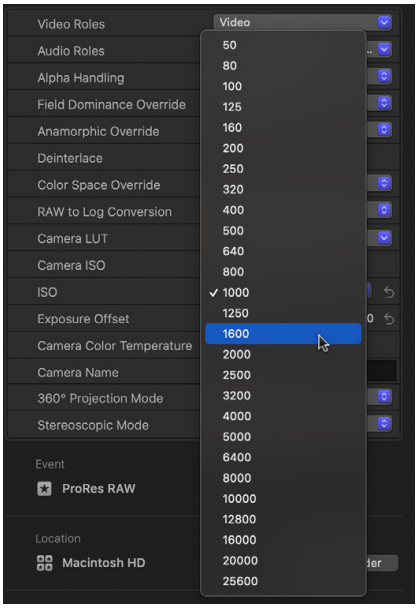


Camera ISO

Displays the ISO setting selected in camera during the recording of the selected ProRes RAW clip(s). This is for information purposes only and is not adjustable.

ISO

This drop-down menu allows you to adjust the ISO setting for the selected clip(s).



Exposure Offset

Adjusts the ISO setting up or down by as much as one stop.

Camera Color Temperature:

Displays the color temperature setting selected in camera during the recording of the selected ProRes RAW clip(s). This is for information purposes only and is not adjustable.

Temperature

Adjusts the color temperature setting for the selected clip(s). This slider only appears where the camera used to record the ProRes RAW clip(s) supports color temperature adjustments.

For more information on the cameras supported and the settings that can be adjusted, refer to the 'Adjust ProRes RAW camera settings in Final Cut Pro' Apple Support Article.

Technical Specifications

Physical Specifications	
Without batteries & media	5.0kg / 11lb
Dimensions (W x H x D mm)	447 x 152 x 280mm, 17.6 x 6.0 x 11.0”(without rack ears), 490 x 152 x 280mm, 19.3 x 6.0 x 11.0” (with rack ears)
Mounting points	Removable rack ears and desktop feet
Dual Screen	Dual Screen, Recorder and switcher
Environmental	
Ambient operating temperature	Up to 40 Degrees Celsius
Construction and Control	
Body	Aluminium alloy chassis
Cooling	Actively controlled fans and heat sink
Tally light	Rear and front (Red border on the display indicates record)
Multi-function button	Trigger dual record
Power	
Continuous power	Dual PSU
DC in connector	Dual IEC C14
Display	
Touchscreen	SuperAtom IPS panel (capacitive touch)
Size	Dual 7.2"
Resolution	Dual 1920 x 1200 px
PPI	327 per screen
Bit Depth	10-bit (8+2 FRC)
Backlight Type	Dynamic zoned back light 3", Dynamic Full Array

	Local Dimming (FALD) 360 Zones
Brightness (cd/m^2 / nits)	1500 / 3000 Peak HDR brightness
Aspect ratio	16:9
Color Gamut	Rec. 709
Calibration support	Atomos Calibrator with Xrite i1 Display Pro / Plus (Retail)
Color Pipeline	
AtomHDR	Yes
Gamma	Sony SLog / SLog2 / SLog3, Canon CLog / CLog2 / Clog3, Arri Log CEI160 / LogCEI200 / LogCEI250 / LogCEI320 / LogCEI400 / LogCEI500 / LogCEI640 / LogCEI800 / LogCEI1000 / LogCEI1280 / LogCEI1600, Panasonic Vlog, JVC JLog1, Red LogFilm / Log3G10 / Log3G12, FujiFilm Flog, PQ (HDR10), HLG, Nikon N-Log
Gamut	Bt2020, DCI P3, PDCI p3 65, Sony SGamut / SGamut3 / SGamut3.cine / Canon Cinema / DCI P3 / DCI P3+ / BT2020, Panasonic V Gamut, Arri Alexa Wide Gamut, Rec709, JVC LS300, Red DragonColor / DragonColor2 / RedColor2 / RedColor3 / RedColor4 / RedWideGamut
3D LUT Display	.Cube format display only
3D LUT Down Stream	Loop out
3DLUT 50/50	Yes
Monitoring Modes	Native / Rec.709 / HLG / PQ / 3D LUT
HDR output Con-version	Log / HLG / PQ / Dolby Vision
Video Input	
HDMI	1 x HDMI (2.0a) 4Kp60 per channel
SDI	Quad link 3G SDI, with 2 x 12G SDI Backwards compatible Auto detection per recorder channel

SDI RAW	Apple ProRes RAW up to 6K
RJ45 / Network	Service only
Bit Depth	8/10-bit Video / RAW up to 16 -bit
Video Chroma Sub-sampling	4:2:2
HDCP copy protection	Not supported
HDR	Yes with Auto detection
Metadata	
HDMI	RAW - white balance, exposure index, shutter speed/angle, iris F stop, ISO, gamma, gamut
SDI	File name from Arri, RED. RAW - white balance, Exposure index, Shutter speed/angle, Iris F stop, ISO, Gamma, gamut
Video Output (Playout)	
HDMI	1 x HDMI (2.0) 4Kp60 per channel
SDI Loop Out	2 x 12G SDI Backwards compatible Auto detection
SDI Play Out	2 x 12G SDI Backwards compatible Auto-detection level A and B selectable
Video Chroma Sub-sampling	422
Bit Depth	10-bit Video
Web Streaming	
USB UVC	Optional via Connect 4K or ZATO
Video Signal Conversion	
HDMI to SDI	Yes video and RAW
SDI to HDMI	Yes video and RAW
Audio In/Out	
Audio Quality	24-Bit / 48kHz
Audio Codec	PCM

HDMI	8ch 24-bit, input dependent
SDI	12ch 24-bit, input dependent
Analog Audio in	2 x XLR Per recorder channel
Analog Audio out	2 x XLR Per recorder channel
Headphone out	3.5 mm jack 2ch
Timecode / Sync	
Embedded	HDMI and SDI
Time of day	Yes, Time and Date
LTC	LTC via BNC in/out Record mode
Genlock	GenLock in/out Playback mode
Resolution and Frame Rates (Record, Monitor & Playback)	
6K RAW	RAW only up to 6K via SDI only
4K DCI	23.98/24/25/29.9/30/50/59.94/60p
4K UHD	23.98/24/25/29.9/30/50/59.94/60p
2K DCI 2046 x 1080	2k DCI: 23.98/24/25/29.9/30/50/59.94/60p / Sony FX9 RAW up to 180p
FHD 1920 x 1080 Progressive	23.98/24/25/29.9/30/50/59.94/60/100/120p
FHD 1920 x 1080 PsF	Converted to P and looped out PsF
FHD 1920 x 1080 Interlaced	23.98/24/25/29.9/30/50/59.94/60i
1280 x 720p	50/59.94/60p
Recording Codec	
Cinema DNG	For SDI RAW inputs Only
Apple ProRes RAW	ProRes RAW, ProRes RAW HQ
Apple ProRes	HQ / 422 / LT
Avid DNxHD	DNxHD 220x, 220, 145, 36
Avid DNxHR	DNxHR LB, SQ, HQ, HQX

Playback	
Playlist	Yes, Selected, Favorites or Combined
Loop playback	Yes, with custom in and out points
Apple ProRes RAW	Yes, with linear PCM audio
ProRes HQ / 422 / LT	Yes, with Linear PCM audio
Avid DNx HD/HR	Yes, with Linear PCM audio
Recording Functions	
Pre Roll	Yes (HD 8s, 4K 2s) - Not available in RAW
ISO Record	Up to 8 x up to 1080p 60 (3G SDI Level A ONLY) 4 Per recorder channel
Switched Program Record	Yes Up to 1080p 60
Multi Input / Switching	
SDI A/B toggle	Yes, up to 12G SDI per input
Dual Input display	Via Multi ISO input mode
Multiple SDI input	Up to 4 x up to 1080p 60 (3G SDI Level A ONLY)
Input transitions	Auto or manual XML transition
Monitoring	
SDR	Native, 709, LUT
HDR	HLG, PQ Rec2020
De-Interlace	Selectable mode
Supported media	
Interface	SATA 3
Master Caddy I	Not Compatible
Master Caddy II	For 2.5” Drives in MasterCaddy II
SSDmini	Yes BUT only with handle adapter
File System	ExFAT
File Naming	

Standard	Unit name - Scene, Shot, Take.
Via SDI	File name for Arri and RED
On Screen Tools	
Waveform	Yes, 3 size / position
RGB parade	Yes, 3 size / position
Vector scope	Yes, 2 size / position
1 x Zoom	Yes. 1:1 Pixel mapping for 4K
2 x Zoom	Yes
Focus peaking	Color selected / threshold setting / color / mono / edges only
False color	Yes, with false color scale
Zebra	Yes, adjustable
Isolate color channel	Blue Only
Cine Frame Guides	16:9, 2.4:1, 2.35:1, 1.91:1, 1.85:1, 4:3
Social Frame guides	9:16, 1:1, 1.91:1, 4:5
Safe areas	Action and Graphic
Grid markers	9 grid
Anamorphic desqueeze	1.25x 1.33x , 1.5x ,1.8x ,2x
Display Flip	Vertical only
Onboard Signal Processing Options	
Pulldown Removal	24/25/30pSF > 24/25/30p (2:2 pulldown) 60i > 24p (3:2 pulldown)
4K UHD Downscale for HD	Loop out - 4K UHD to FHD
DCI Crop	Loop out - 17:9 to 16:9 Crop
Remote control	
HDMI	Auto HDMI Trigger, Supported Protocols - Canon, Sony, ATOMOS Open Standard

SDI	SDI trigger camera selectable
Serial 2.5mm Jack	LANC control and calibration via optional USB to serial cable
RJ45	Service only
RS422	Yes, Qualified controllers only
Supported Applications	
XML	Cut tag EDL and Multcam with transitions in FCPX XML
Apple ProRes RAW	Apple Final Cut Pro, Adobe Premiere, After Effects, Avid Media Composer, GrassValley Edius, Assimilate Scratch, Baselight Film Light.
Video Codecs	All NLE applications that support Apple ProRes and Avid DNx in .MOV wrapper
What's in the box	
Accessories included	SHOGUN STUDIO 2 2 unit, 2 x rack ears with screws, 4 x rubber feet with screws, 2 x IEC power cable, 2 x HDMI cable, 5 x Master caddy II
Optional extras	Powerkit, UltraSync One, USB to serial cable, USB-C Dock, HDMI cables, SDI Cables
Warranty	
Standard	1 year. Extended to 3 years on product registration

Construction note: Your SHOGUN STUDIO 2 is designed to operate in ambient temperatures up to 40°C/104°F.

Please note: Specifications are subject to change without notice. All information assumed correct at time of publishing.