



A Guide to the [Sony A7III](#) Creative Media Centre Sheffield Hallam University

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Sony A7 Mirrorless camera

This guide is intended to help you go through the set-up and correct operation of the Sony A7 Mk III, in order so you can optimise your filming and produce the best results. Alongside the induction you have had, and the online manual, you should have everything you need to produce great looking footage.

This guide will not cover everything in the menu system as it is a very extensive and complex menu, but it will cover the most important settings that you need to attend to.

In order to produce 4k video that is exquisite, super sharp and well balanced, whether shot at night or during the day; the camera needs to be setup properly. If you wish to take this further, you can colour grade the footage afterwards which adds the icing on the cake. Colour grading is not an essential process to producing great films, as the A7's standard video settings will produce high quality video easily by itself. That said, grading footage in post gives it a cinematic look that is not realistically achievable via standard settings without any further work. Colour grading can add the final touches and stylistic look to film that really makes it stand out. To be able to take footage through the colour grade process, some changes need to be made in the settings.

Whilst this guide will not go into colour grading, it will talk about the camera settings required to produce the best results in colour grading for a high grade cinematic appearance.

The A7 III has the following specifications:

- 24.2MP 35mm Full-frame CMOS sensor with a back illuminated design
- ISO sensitivity range up to 51200, (expandable ISO from 50-204800 for stills)
- 693 phase detection and 425 contrast-detection Auto Focus points
- 4k HDR movie recording
- Sony E-Mount lenses – As well as our Sony lenses, it will work with all our Canon/Sigma/Samyang/Tokina/Zeiss lenses with the included Metabones adapter.



1. View Finder
2. Tiltable LCD Monitor
3. Multi Selector
4. AF-On for AF activation
5. AEL Button
6. Movie Record Button
7. Multi-functional Dial
8. Play Button
9. Menu
10. C3 & C4 Custom Buttons
11. Centre Button
12. Function Button



13. On/Off
14. Shutter Release
15. C1 & C2 Custom Buttons
16. Program Dial
17. Aperture/Shutter Speed Dials
18. Exposure Adjustment Dial
19. Hot Shoe Mount



20. Sensor (DO NOT TOUCH)
21. Lens Release Button
22. Hand Grip
23. Mic Input
24. Headphone Output
25. HDMI Output
26. USB-C
27. Charging LED
28. USB Multi



Settings Reset

It's possible to set the A7 up so that its perfect for video and photography at the same time, if you happen to need to use both. You can also save these settings to an external SD card to recall them next time you loan a camera out.

The First of 2 steps are to factory reset the camera. There is such an extensive menu, you do not know what settings have been changed or how the last user set the camera up. If you have your own, then once the A7 is setup, you do not need to do this but when loaning out a camera, always carry out this process. It will save you a lot of trouble, like finishing a shoot and realising you recorded the footage in the wrong log type or with the wrong settings.

The following will reset the camera.

Menu: Setup7: Setting Reset

You should now have a camera set to default settings. Follow the next steps to setup the A7 so it is ready to use.

Step 2 is to format both memory cards. It is important to do this because if the file system has been changed due to being formatted or changed on a Mac or PC and is not compatible, it may not store the images or video correctly and also may not be recoverable. You may get to the end of your shoot and then realise you can't access anything you have filmed.

Menu: Setup5: Format/Slot 1 or Slot 2

Camera 1 Settings:

There are settings in Camera 1 that refer to the photography side of the camera, but there are also functions that need to be adjusted/setup for film.

Quality/Image Size 1:

RAW File Type: Compressed/Uncompressed.

If you are intending to take photos you will need to choose a format, it defaults to JPEG. (Image size = 50 MB approx. Uncompressed RAW /25MB Compressed RAW).

JPEG Size: L:24M

Aspect Ratio: 3:2

APS-C/Super 35mm:

Tip: Take advantage of the cropped sensor function when using a full frame lens to obtain extra zoom. Assign to a custom button to switch in and out of crop sensor mode. A 1.5x crop on a full frame sensor has the effect of increasing zoom. It only works on full frame lenses, although there is an effect on the resolution. This can be used in video mode. **Remember to turn it off** when you are finished. The icon on screen is very small and not that clear, so when rushed on set it could be left on by mistake.

APS_C S35 Shooting: Manual

APS_C S35 Shoot: Manual: Off

Quality/Image Size 2:

Long Exposure NR:

Noise reduction for JPEGs only.

High ISO NR:

JPEGs only once again.



Colour Space: sRGB or AdobeRGB.

I would always go with AdobeRGB as it is a bigger colour space. It depends what view you take. But bear in mind that you can always decrease data within an image, you can't however increase it once it has been shot as it won't be there in the first place.


Shoot Mode/Drive 1:

This page allows you to save specific camera configurations to 2 memory locations on the camera and an extra 4 on an SD card, for quick switching between different settings.

By using memory locations 1 and 2 on the cameras dial, you could have setting 1 set up as 4K 25fps, 100mbit, and setting 2 as S&Q (Slow motion) 100fps 16mbit. You can then switch between them quickly on the fly, instead of having to re-program the entire camera for a different scene or shot type. There are also 4 other memory locations, that allow you to recall settings which are saved to an SD card.

MR  /  **Recall:**

Recall camera configurations from M1 to M4 from an SD card.

MR  /  **Memory**

Save camera configurations to position 1 or 2 on the dial on top of the camera, and an additional 4 to an SD card in locations M1 to M4. Once you have save settings to some of these locations, the 'Recall' part of the menu will become available.

Select Media:

Allows you to select what card you are recording media too.

AF1:**Focus Mode:**

Continuous AF or Manual Focus

Tip: If you select 'Continuous Auto Focus' and then turn on 'Touch Operation' in the 'Setup 2' menu, you can simply touch the screen to focus on the part of the image you want and it will also track your finger across the screen. 'Flexible Spot' or 'Expand Flexible Spot' are best for this, although it does work when using the other focus area options.

Focus Area:

Select between: Wide/Zone/Centre/Flexible Spot/Expand Flexible Spot

Swt. V/H AF Area:

AF Point + AF Area. This sets the camera so that if you turn the camera on its side, the AF point will shift according to screen orientation and the ideal focus point. Not that important unless your photographing.

Tip: If you are shooting in manual focus mode, you can still make use of the cameras Auto Focus Continuous (AF-C) mode without switching out of manual focus by setting up a custom button function. This allows you to use AF quickly to get focus but stay in manual mode. This only works if you switch to manual focus in camera and not on the lens itself.

With the camera set to Movie mode; Go to: Camera 2: Custom Operation 1/Custom Key (Video). Go to Page 3, and set 'AEL Button' (or another of your choice) to 'AF/MF Control Hold'.

Set the camera to MF in the menu, not by using the switch on the lens. Now when in MF, when you press the AEL button and keep it pressed, it will behave like it is in AF-C. As soon as you release the button, it is back to MF. Pressing the AEL button in this way doesn't offer you focus lock via the green indicator as with normal AF mode. However, if you hold down the AEL button and then press the shutter button at the same time, it will give you the focus lock. Once achieved you just let go of both buttons.

AF2:

AF Illuminator

Improves focusing in low light dark conditions by using a red light to aid focusing. If the red light is annoying or intrusive, turn it off here. More related to photography once more, but just in case it's good to turn this off.

AF track sens:

This has 5 settings, and it adjusts how much interference it takes the AF to change to a new focus point, if something moves in front of the camera. This is mainly for the photography side of things. As there is also a setting in camera 2 menu for a similar thing.

Locked On
2
Standard
3
Responsive

Exposure1

Metering Mode:

Multi:

This divides the screen into multiple areas and measures the whole screen area and adjusts accordingly for the average. If there are lots of bright parts to your image it may underexpose or lots of darks it may overexpose. You can use the exposure compensation dial on top of the camera to bring the exposure back to where you want it to be.

Centre:

Measures the whole area, but emphasises the central area.

Spot: Large of Standard size

Measures the spot area and exposes for that part of the image. Good for high contrast images such as a subject that is well lit, surrounded by a dark background.

Entire Screen Avg:

Averages the entire screen.

Highlight:

Takes the exposure off the brightest parts of your image and makes sure they are correctly exposed.

Tip: When in Spot metering mode; Set Focus Area to 'Flexible Spot' or 'Expand Flexible Spot', and then set the 'Spot Metering Point'; (in the 'Exposure 2' menu) to 'Focus Point Link'. The spot metering is then taken from the focus area. So, where ever you place the focus area on screen, the exposure will adjust according to the position it is in.

Exposure 2:

Spot Metering Point: Centre/Focus Point Link

See tip above.

Colour/WB/Img. Processing:

White Balance:

Set your white balance on a custom setting. That way it will not change if lighting conditions change on set. This can cause issues in grading afterwards, so it is important to set your white balance first before every scene.

Priority Set in AWB:

Ambience (If you must use auto WB)

Creative Style: Standard – Leave this set to standard.

Picture Effect: Off

Picture Profile: This is the key to good pro looking footage. This will be discussed later in this document.

Focus Assist:

Focus Magnifier:

Good way to check focus.

AF in Focus Mag: On

MF Assist:

On

Peaking Setting:

Allows you to check focus once again.

Peaking Display: On/Off

Peaking Level: Low/Mid/High

Peaking Colour: Red/Yellow/White

Camera 2 Settings:

Movie 1:

Exposure Mode:

Choose Manual for best control.

Can also choose from: Program Auto / Aperture Priority / Shutter Priority

File Format:

XAVC S 4K - 3840 x 2160

XAVC S HD – 1920 x 1080

AVCHD (50i 17M(FH) or 50i 24M(FX) – 1920 x 1080

XAVC S 4K or HD are best. Remember you can always downscale to HD, whereas you cannot upscale HD to 4K, due to the pixels being increased in size, the resolution will be poor. That said, 4K is a vastly more intensive process to work with in post-production and requires extra work in order to utilise properly.

If you do shoot in 4K, remember the file sizes are very large, and due to the codec used - (H.264), you would need proxy files to edit with. Although one thing to note; Due to the vast amount of data being uncompressed, Proxy files are generally bigger in size than the original files. You will need a large amount of hard drive space; at least 1.5 to 2 times the size of the original files at a minimum, by the time you have the original files and proxy. That is with a proxy resolution of roughly 960x540, down from 3840x2160, which is fine to edit with, but if you go bigger on the proxy resolution, your hard drive will need to be 4 to 5 times bigger.

XAVC S is recorded in H.264 which uses 'Long GOP compression' to compress a high amount of data in to a small space. Which is why it being very processor intensive is difficult to work with due to the high amount of information being uncompressed. Hence, the best way to edit this type of file, is to transcode it or create proxy files in another file format such as CineForm or ProRes.

A good option is set the A7 to create its own proxy files whilst shooting. As creating proxy files can take a lot of time depending on how much footage you have. So, unless you have a very high spec computer, you will be waiting for it to finish before you can begin editing. The only drawback with this; is when shooting at 4K; you can get 40 minutes of footage on each card in the A7. So, backing up footage and re-using the cards on set may be required.

One more thing, if you do create proxies afterwards, make sure the aspect ratio is the same. Otherwise you'll get framing issues when editing. Remember, Ultra-High Definition 4k has a different aspect ratio to full scale 4K.

Record Setting:

XAVC S 4K
25 FPS @ 60 or 100(Mbps)

XAVC S HD
25fps @ 16 or 50(Mbps)
50fps @ 25 or 50(Mbps)
100fps @ 60 or 100(Mbps)

AVCHD (50i 17M(FH) or 50i 24M(FX)
50/60i @ 17 or 24(Mbps)

S&Q Settings:

Frame Rate: 3, 6, 12, 25, 50 or 100FPS

Proxy Recording:

On.
(This allows you to records Proxies alongside 4K). File size is 720p. Turn this off if you wish to create them afterwards. Just bear in mind that creating proxies can take a very long time, so if you can do it whilst filming, it may save you a lot of waiting.

Movie 2:

AF Drive Speed:

Slow (3-4 sec's)/ Normal (2-3 sec's) / Fast (1 sec)
This specifies how quickly the camera will autofocus from the current focus point to another, so near to far or vice-versa. Works well with the 'Touch screen' focus function turned on. You can then use the screen to tap where you want it to change or for focus transitions.

AF Track Sensitivity:

Responsive / Standard
This changes how quickly the camera responds to focus adjustments

Auto Slow Shut:

When on, this automatically slows the shutter speed when filming in dark locations, which can reduce noise.
When off, the camera will record smoother motion and less object blur.

This would also be affected by what picture profile you have selected on the camera, which will go a long way to reducing noise.

Audio Recording:

On

Audio Rec. Level:

Default is okay, adjust if required.

Movie 3:

Wind Noise Reduction:

Off (Turn this off, it's not pleasant. Added to this, it is always advisable to use an external microphone, as on-board mics are generally not very good.)

Marker Display:

On (This puts various frames, aspect ratio or guidelines on the screen. Changed by going to the menu below.)

Marker Settings:

Centre: Off/On – Adds a centre Mark

Aspect: 2.35:1

Safety Zone: Set this to what you like – Gives you an in guide as to what is in frame

Guide Frame:

Move w/ Shutter:

Start recording with shutter button, as well as movie button.

Shutter/SteadyShot

SteadyShot

This function is mostly automatic and links with stabilisation in the lens. You can turn it to manual and select the focal length of the lens you are using if the lens is not a Sony.

Zoom:

Zoom Setting: On:

ClearImage Zoom

Display/Auto Review1:

Finder/Monitor:

Auto / Viewfinder only / Monitor Only

Zebra:

Zebra: On/Off

Zebra Level: 70% - 100% plus 2 custom settings

Grid Line:

Rule of 3rds Grid plus other options. This is very helpful for framing, probably more so than the markers mentioned earlier.

Exposure Settings Guide:

On (Can be helpful, but can also be a hindrance.)

Display/Auto Review2:

Cont. Shoot. Length:

Always display

Auto Review:

On/Off plus time shown

Custom Operation1:

Photo Custom keys:

This is where you set up your custom buttons.

Movie Custom Keys:

Movie is set to follow Photo unless you change it.

Function Menu Set:

Allows you to choose what is displayed when pressing the 'Fn' (Function) button. It is worth taking the time to set this up as it can provide very quick access to all the settings you might want to change at the touch of one button.

Dial Setup:

This allows you to select what way around you want the Av and Tv wheels to work.

Av/Tv Rotate:

You can reverse the directions of these wheels if you prefer it the other way.

Playback1:

Rating Set(Cust Key):

This allows you to adjust the rating system. A good way is to only have 1 & 2 stars selected. This way you can 2 star anything you know you will definitely use, and 1 star things you are not sure about, but might come back too. Helps in post when looking for the good shots.

Setup

Setup1:

Monitor Brightness:

Can change depending on lighting conditions.

Gamma Disp. Assist:

Auto / S-Log2 / S-Log3 / HLG2020 / HLG709.

This allows you to view raw footage you are capturing as it would look in the standard Rec709 display profile. You can select between different log modes to match the log format you are recording in. This can be helpful for setting the right exposure for your footage instead of having to set it based upon washed out flat log footage.

Setup2:

Display Quality:

High

NTSC/PAL Selector:

PAL

Cleaning Mode:

Vibrates sensor to help remove dust particles and dirt.

Touch Operation:

On (This is a really great feature and is very useful. See the tip mentioned earlier in this document.)

Setup 3:

Touch Panel/Pad:

Touch Panel Only

TC/UB Disp. Settings:

Configure Time Code settings and display format.

HDMI Settings:

HDMI resolution

Sets the resolution for the HDMI output.

HDMI Info. Display.

Turn on/off the information on the screen.

TC Output:

Turns on TC output for external synchronisation to another camera or an audio device.

Setup5:

Date/time Setup:

Set this, you'll thank yourself in post later.

Copyright Info:

Fill in details.

Format:

Format cards – Format cards every time before you start shooting.

File Number:

Set the file numbering or reset it. Failure to do this means you get the same file names corresponding to different shoots on different days. Create a system before shooting with a number or something that can immediately be recognised as a different day or location by an alpha-numeric sequence. Again, you will thank yourself later.

Set File Name:

Name the files according to the scene.

Setup6:

Rec. Media Settings:

You can control the way the camera records to both cards in this menu. Whether to duplicate, JPGs on to card1, RAW on Card 2, Movies card 1, RAW + JPGS card 2, etc. Otherwise set to standard turn on Auto Switch Media to jump to the next card once the first card is full.

Setup7:

Setting Reset:

Good idea to perform so you know exactly how the camera is setup. You do not know what the last user has done to the settings.

My Menu Setting:

Allows you to add the menu items you use most to your own menu for quick access.

Setting up a Picture Profile

If you want to take advantage of modern production processes and produce a great looking film, colour grading in post is an absolute essential process in order to produce a professional looking film that looks fantastic.

In order to do that, you need to use Picture Profiles and Log footage when filming, so it can then be taken into colour grading in the right format.

Log footage comes in many different forms, depending on the manufacturer of the camera, but the main types are Cine4, S-Log-2, S-Log-3, and also V-Log, C-Log to name but a few. Manufacturers tend to have their own formats.

Cine4: Less dynamic range, but you get less noise in the shadows and it is less work to grade afterwards, so good to use for starting out in colour grading.

S-Log 2: Great dynamic range in highlights and shadows, for many this is the best of both. You have to over expose it by 2 stops. This profile is not as good for footage at night due to the noise levels produced because of the 2 stop increase in exposure.

S-Log 3: Even more dynamic range and contrast, once again the drawback to this is that it can create more noise in the shadows than S-Log 2.

I have not researched C-Log, V-Log or others thus far, but they are designed to perform similar jobs to the profiles above.

Custom White Balance Settings

One thing you can do to ensure all your shots are balanced going in to post; is to set the white balance to custom for each location you shoot at. This way all shots will be exposed to the same level and the camera will not automatically shift during a scene if set to auto. This results in extra work in post to balance and colour grade correctly.

Standard TV, smartphone and general displays use Rec709, which has 6 stops of light. Whereas S-log 2 has 12 stops of light. Log footage records a larger amount of light, with which colour grading can be carried out. Whereas there are limited processes that can be done to Rec709 footage due to the limited stops of light.

Bitrate vs noise level:

There is a strong correlation between these 2. The higher the bitrate, the lower the noise. The lower the framerate, the more bits per second per frame you will get. So 100Mbps at 24 fps would produce less noise than 100Mbps at 48fps. So, in this case, the best setting is 4k, 100Mbps/24fps.

HD vs 4k

Realistically, you should always shoot at the highest quality you can. You can always downgrade to a lower more manageable quality footage afterwards, but you can't upgrade. 4K renders a cleaner image across the board so would ideally be the best. Additionally, if shooting at night, always shoot in 4k.

That said however, there are problems inherent with working at higher resolutions and they can be project breakers if not thought about in advance.

Such an example is hard drive space; 4k footage takes up a tremendous amount of space, depending on the format and codec. Not only that, but they would require proxy files in order to edit with. Proxy files can take up (+/-) 2 times the space of the original files, which would mean a lot of hard drive space is required.

The specification of the computer being used to edit on is also a factor as well as the editing software itself. A slow computer could take days or more to create proxy files depending on how much footage you have.

Then there is the export process which again, if you have 4K source footage, could take a very long time with a slow low spec computer, potentially days.

Another thing to do is try using an Atomos external monitor to take advantage of the higher bit rate (10bit vs 8bit), although it doesn't carry many benefits save being wrapped in 422 codec; although this does get you a better colour profile. The noise produced is of a very similar level.

Ideas for Night Time shooting profiles

Here are some ideas for profiles you can use at night. They are only ideas and I would always test first to see what is best for your project.

Cine4

Black level: +5
Gamma: Cine4
Black Gamma: Range: Middle, Level: +6
Knee: Manual - Manual Set: Point 80%, Slope: +2
Colour Mode: S-Gamut3.Cine
Saturation: +3
Colour Phase: +3
Colour Depth: R+1, G -2, B +3, C +3, M+3, Y 0.

Still

Black level: - 2
Gamma: Still
Black Gamma: Range: middle, Level: -2
Knee: Auto

(Might be worth playing with following settings in manual or to see what else works)

Manual (Knee deals with highlights)

Manual Set: Point 80%, Slope: +2 (Nice highlight roll off)

Colour Mode: Pro
Saturation: -4
Colour Phase: 0
Colour Depth: R+3, G +1, B -1, C -4, M -4, Y +3
Detail: -7

Ideas for Day time shooting profiles

Some ideas for daytime shooting profiles, once again these are only ideas and it's up to you to test and see what works.

S-Log 2 – 120fps or in daylight

Black level: +5
Gamma: S-log2
Black Gamma: Range: Wide, Level: +5
Knee: Manual - Manual Set: Point 80%, Slope: +2
Colour Mode: S-Gamut3.Cine
Saturation: +3
Colour Phase: +3
Colour Depth: R+2, G 0, B +3, C +3, M+2, Y +2.

S-Log 3 – 120fps or in daylight

Black level: +5
Gamma: S-log3
Black Gamma: Range: Wide, Level: +5
Knee: Manual - Manual Set: Point 80%, Slope: +2
Colour Mode: S-Gamut3.Cine
Saturation: +3
Colour Phase: +3
Colour Depth: R+1, G 0, B +3, C +3, M+2, Y +2.

Cine4

Black level: +2
Gamma: Cine4
Black Gamma: (Deals with darks) Range: Wide, Level: +4
Knee: Manual (Knee deals with highlights)
Manual Set: Point 80%, Slope: +2 (Nice highlight roll off)
Colour Mode: Pro
Saturation: -5
Colour Phase: 0
Colour Depth: R+3, G +1, B -1, C -4, M -4, Y +3
Detail: for 4k use: -6, for 120fps Slow motion use: 0