

CANON HDMI SETUP GUIDE

ODYSSEY™



Canon 5D Mark III
Canon 1DC
Canon C100
Canon C100 MKII
Canon XC10

HD Apple ProRes

1080p23.98,24,25,29.97,50*,60*

720p50/60

4K Apple ProRes (Odyssey7Q+)

convergent
design

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

ProRes

ProRes 422 (HQ)
ProRes 422
ProRes 422 (LT)

4K

Notes about using the odyssey with Canon via HDMI

This guide covers using the Odyssey with the following cameras:

Canon 5D Mark III
 Canon 1DC
 Canon C100
 Canon C100 MKII
 Canon XC-10

The Odyssey7/7Q do not support 1080p59.94 or 4K over HDMI due to a hardware constraint. If Auto HDMI output is used, the camera will output 1080i. (Odyssey7Q+ it will accept 4K or 1080p59.94). Please note that though the Canon 1DC can record 4K internally, the output is HD only.

ProRes Record Times

		24	25	30	50	60
	4K to 4K ProRes	168	161	134		
	4K to HD ProRes	670	643	536	322	268
	HD ProRes	670	643	536	322	268
422	4K to 4K ProRes	220	221	176		
	4K to HD ProRes	1060	1016	848	508	424
	HD ProRes	1060	1016	848	508	424
422(LT)	4K to 4K ProRes	328	316	264		
	4K to HD ProRes	1516	1456	1212	728	604
	HD ProRes	1516	1456	1212	728	604

Note: 4K and 1080p50/60 over HDMI is only supported on the 7Q+, to record 1080p50/60 on an Odyssey7 or Odyssey7Q you must use a HDMI to SDI converter, as 7/7Q are limited to 1080p30 over HDMI due to a hardware constraint.

Note: Odyssey 7 only has 1 SSD slot

FORMAT DETAILS

4K Apple ProRes	3840x2160 10-bit log video, originated from HD 8-bit camera signal, recorded as Apple ProRes compressed 4K video .MOV
4K to HD ProRes	1920x1080, 10-bit log video, originated from 4K RAW 12-bit camera signal, transformed and recorded as Apple ProRes compressed HD video
HD Apple ProRes	1920x1080, 1280x720 10-bit log video, originated from HD 8-bit camera signal, recorded as Apple ProRes compressed HD video .MOV

Frame Rate Support

The following frame rates are supported on the Odyssey while recording from these cameras:

- 1080p59.94/50 (HDMI - Odyssey7Q+ / HDMI to SDI Converter - Odyssey7Q)
- 1080i50/59.94
- 1080p25/29.97
- 1080p23.98 (24p output and 3:2 pulldown)

Typical Download Time in Minutes

Media	USB3.0	Thunderbolt
256G SSD	20	10
512G SSD	40	20
1TB SSD	80	40

Actual transfer rates are dependent on computer system and destination media.

USB 3.0 or Thunderbolt connections are recommended by Convergent Design for efficient data rates.




Camera Settings - Canon 1DC/ 5DMKII

This section applies to the Canon 5D Mark III (firmware v1.2.3) and Canon 1DC (firmware v1.3.5).

Please note that though the Canon 1DC can record 4K internally, the output is HD only.

1. SET CAMERA TO VIDEO MODE

2. SET INTERNAL RECORDING

MENU »  » SET MOVIE SIZE » (1920X30 ALL-I | IPB, 1920X24 ALL-I | IPB ETC)


3. SET HDMI OUTPUT

MENU »  » HDMI FRAME RATE » (AUTO | 24P | 60/50)

4. SET HDMI TIMECODE/CAMERA TRIGGER

MENU »  » HDMI TIMECODE » (TIMECODE ON & REC COMMAND ON)

5. SET CLEAN HDMI OUTPUT & LCD MONITORING

MENU »  » HDMI » HDMI OUTPUT + LCD MONITORING

Note though the Canon 1DC can record 4K internally, the output is HD only.



Camera Settings - Canon XC10

This section applies to the Canon XC10 (firmware v1.0.0.0)

1. SET CAMERA TO VIDEO MODE

2. SET INTERNAL RECORDING

4K RECORDING (ODYSSEY7Q+)

MENU » RECORDING SETUP » 4K/HD» 4K

HD RECORDING

MENU » RECORDING SETUP » 4K/HD» HD

NOTE

To trigger recordings when in 4K CFast Media must be present in the camera, when Triggering HD Recordings SDXC Media must be present in the camera.

3. SELECT DESIRED FRAME RATE

4K FRAME RATE

MENU » RECORDING SETUP » 4K RECORDING » 23.98

HD RECORDING

MENU » RECORDING SETUP » HD RECORDING » 23.98

4. HDMI OUTPUT

THE HDMI OUTPUT WILL FOLLOW THE INTERNAL RECORD OF THE CAMERA.

5. SET HDMI TIMECODE/CAMERA TRIGGER

MENU »  » HDMI TIME CODE » ON


MENU »  » HDMI REC COMMAND » ON



Camera Settings - Canon C100/C100MKII

This section applies to the Canon C100 (firmware v2.0.0.1.00) and Canon C100 Mark III (firmware v1.0.0.1.00).

1. SET INTERNAL RECORDING


MENU »  (OTHER FUNCTIONS) » SYSTEM FREQUENCY » (59.94/50)

2. SET FRAME RATE

C100

MENU »  (OTHER FUNCTIONS) » FRAME RATE » (60i | 50i | pf30 | pf25 | pf24 | 24p)

C100 MKII


MENU »  (OTHER FUNCTIONS) » AVCHD / MP4 » FRAME RATE » (60i | 50i | pf30 | pf25 | pf24 | 24p)

3. SET HDMI TIMECODE/CAMERA TRIGGER

C100

MENU »  (OTHER FUNCTIONS) » HDMI TIMECODE » (60i | 50i | pf30 | pf25 | pf24 | 24p)

C100 MKII



MENU »  (VIDEO SETUP) » HDMI OUTPUT » (NORMAL** OR 59.94* / 50*)

* Only supported by 7Q+


** Normal should be used for all frame rates except for 1080p50/60. (please see Video Cadence, section of the Odyssey Setup)

4. SET CLEAN HDMI OUTPUT

C100

MENU »  (VIDEO SETUP) » CHARACTER DISPLAY » VF
MENU »  (VIDEO SETUP) » HD ONSCREEN DISPLAY » OFF

C100 MKII

MENU »  (VIDEO SETUP) » HD ONSCREEN DISPLAY » OFF

Odyssey Configuration

1. SET ODYSSEY TO HD->HD APPLE PRORES MODE

HD RECORDING

⚙️ » SETUP » CAMERA » CANON » HD/2K->HD/2K PRORES(.MOV)

4K TO HD RECORDING (ODYSSEY7Q+)

⚙️ » SETUP » CAMERA » CANON » 4K HDMI -> HD PRORES(.MOV)

4K RECORDING (ODYSSEY7Q+)

⚙️ » SETUP » CAMERA » CANON » 4K/UHD 4:2:2 PRORES (.MOV)

2. MAKE CAMERA THE RECORD TRIGGER

⚙️ » SETUP » RECORD TRIGGER » CAMERA

3. SET TIMECODE SOURCE

⚙️ » SETUP » TIMECODE SOURCE » SDI/HDMI

The HDMI input is automatically detected when connected to the Odyssey.

*** Note the HDMI input is on the right side of the unit, on the Odyssey7Q+ but is at the bottom of the unit for Odyssey7 and 7Q.*

4. SET PRORES BITRATE

⚙️ » SETUP » VIDEO CODEC » (*SELECT*)

PRORES HQ	The Apple ProRes 422 (HQ) codec offers the utmost possible quality for 4:2:2 or 4:2:0 sources (without an alpha channel) and provides the following: <ul style="list-style-type: none"> • Target data rate of approximately 220 Mbps (1920 x 1080 at 60i) • Higher quality than Apple ProRes 422
PRORES 422	The Apple ProRes 422 codec provides the following: <ul style="list-style-type: none"> • Target data rate of approximately 145 Mbps (1920 x 1080 at 60i) • Higher quality than Apple ProRes 422 (LT)
PRORES LT	The Apple ProRes 422 (LT) codec provides the following: <ul style="list-style-type: none"> • Roughly 70 percent of the data rate of Apple ProRes 422 (smaller file sizes than ProRes 422) • Higher quality than Apple ProRes 422 (Proxy)

5. SETUP AUDIO

CANON 5D MKIII

⚙️ » SETUP » AUDIO SOURCE » ANALOG*

**With the Canon 5D Mark III, the camera does not embedded audio on the HDMI output, thus Analog audio will be needed, unless you are recording audio on a external audio device.*

CANON 1DC/C100/C100 MKII/XC10

⚙️ » SETUP » AUDIO SOURCE » SDI/HDMI

6. FORMAT SSDs

⚙️ » ODYSSEY » SSD'S » FORMAT BOTH

(or FORMAT SSD1 if you do not have a second SSD drive installed.)

7. CONNECT TO CAMERA AND VERIFY STATUS INPUT

CONNECT CAMERA HDMI OUTPUT TO ODYSSEY HDMI INPUT

The status on your Odyssey will display your camera's output.

Example:

HD 4:2:2 CANON 1920 x 1080	PRORES HD/2K HQ
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8. SET HDMI CADENCE

Connect HDMI input, and verify the camera internal record rate matches the input indicator on the Odyssey. If it does not a cadence may be needed to correctly reflect the format in which you wish to record.

⚙️ » SETUP » VIDEO CADENCE » PROGRESSIVE

PROGRESSIVE

Use this setting for 720p50/60, 1080p24**, 25*,30*

**Note typically the camera will need to be set to record 1080p25/30 internally, and the output is set to 1080i.*

***Note that when wishing to record 1080p24, HDMI output can be set to "Auto" or 1080i or 1080p (7Q+ only), therefore Progressive should be used when auto is selected.*

INTERLACED

Use this setting for 1080i50, 1080i59.94 recording

3:2 PULLDOWN*/**

Use this setting for 1080p24 recording when the camera only has a output setting of 1080i, also note the camera must be set to record 1080p24 or 1080p23.98 internally,

Apple ProRes

The Odyssey can record in Apple ProRes 422 (HQ), Apple ProRes 422 and Apple ProRes 422 (LT) compressed codecs. This allows for high quality recording while avoiding high data rates of working with uncompressed video.

NATIVE APPLE PRORES SUPPORT

Adobe CC 2014
Apple FCP X, Aperture
Cineform Studio

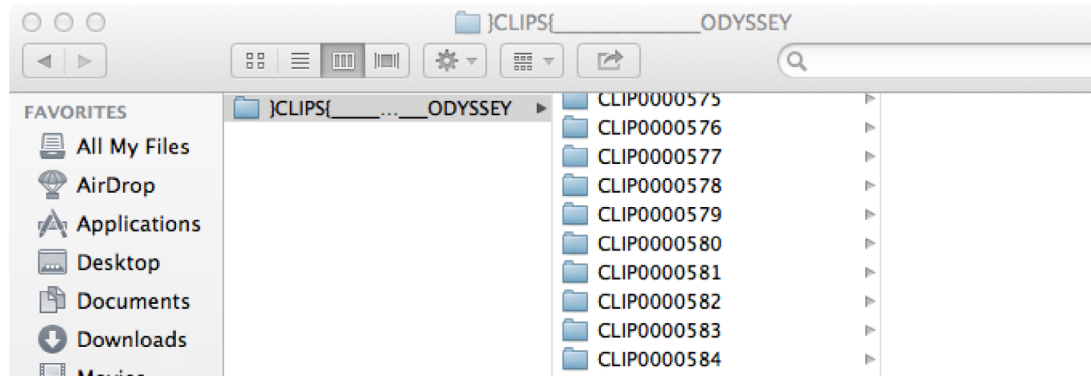
Final Cut Pro 7
Black Magic DaVinci Resolve
The Foundry Nuke

Autodesk Smoke
Sony Vegas

Working with Recorded Files

There are numerous post systems and NLEs that can read natively the various file formats recorded by the Odyssey. Some NLEs may require plug-ins in order to read certain file formats. Blackmagic Design Resolve software is available for free and can read all formats recorded by the Odyssey.

File Structure



Note: To combine files into a single directory use our ProRes Utility.