

ODYSSEY 7Q™



4K RAW up to 60p
4K RAW burst up to 120p
4K RAW to 4K Apple ProRes 422 (HQ)
2K RAW up to 240p
4K RAW to HD Apple ProRes 422(HQ) up to 60p
1080p video to Apple ProRes 422(HQ) up to 60p

convergent
design

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ProRes

4K



RECORDING TIMES

Maximum record time in minutes, recording to two 512G SSDs (1TB)

RECORD TIME

		FRAMES PER SECOND								
		23.98	25	29.97	50	60	100	120	200	240
REC MODE	4K RAW	62	60	50	30*	25*	155 Takes	155 Takes		
	2K RAW	200	192	160	96	80	48	40	24*	20*
	4K2HD	775	744	620	372	310				
	HD DPX	87	84	70	42	35*				
	HD ProRes	775	744	620	372	310				

* Two SSDs are required to capture

FORMAT DETAILS

4K RAW	4096x2160, 12-bit linear data, recorded as Uncompressed .DNG
2K RAW	2048x1080, 12-bit linear data, recorded as Uncompressed .DNG
4K to HD	1920x1080, 10-bit log video, originated from 4K RAW camera signal, transformed and recorded as Apple ProRes 422 (HQ) compressed HD video
HD DPX*	1920x1080, 12-bit log video, originated from HD 8-bit camera signal, recorded as Uncompressed .DPX
HD ProRes 422	1920x1080, 10-bit log video, originated from HD 8-bit camera signal, recorded as Apple ProRes 422 (HQ) compressed HD video

* HD DPX files at 60p are “packed” on SSDs due to high data rate. Use free CD Data Unpacker utility software to unpack files after transfer.

TYPICAL DOWNLOAD TIME IN MINUTES

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

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

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



ODYSSEY7Q SUPPORT FOR FS700

		FS700(R) Mode	Resolution	Bit- Depth	Frame Rates	Support	Two SSD's Required
RAW*	4K RAW	4K RAW	4096 x 2160	12-Bit	23.98p, 24p, 25p, 29.97p, 50p, 59.94p	CinemaDNG	50p / 59.94p
	4K HFR	4K HFR	4096 x 2160	12-Bit	100p, 120p	3-4 sec Burst (CinemaDNG)	YES
	2K RAW	2K RAW	2048 x 1080	12-Bit	23.98p, 24p, 25p, 29.97p, 50p, 59.94p, 100p, 120p	CinemaDNG	NO
	2K HFR	2K HFR	2048 x 1080	12-Bit	200p, 240p	3.7 / 4.4 second burst (CinemaDNG)	200p / 240p

* FS700 RECORDING OPTION REQUIRED (Activation key can be purchased through website)



FS700 CONFIGURATION

1. SET UP THE FS700 FOR RAW RECORDING

MENU » REC/OUT SET » REC SET » RAW SET

Select any of the following frames rates that you wish to record on Odyssey7Q:

NTSC	4096x2096/24p
	4096x2096/30p
	4096x2096/60p
	2048x1080/24p
	2048x1080/30p
	2048x1080/60p
PAL	4096x2160/25p
	4096x2160/50p
	2048x1080/25p
	2048x1080/50p

Once the selection is made you will need to press EXEC on the camera, to return to live / record.

2. SET GAMMA (REQUIRED FOR RAW RECORDING)

PICTURE PROFILE » PP7 » SETTING » GAMMA » S-Log2

PP7 is the default profile for S-Log2, Note that only S-Log2 is supported when recording RAW.

Once the camera is set to the desired frame rate, then connect to the Odyssey7Q

3. SET THE S&Q BUTTON FOR RAW HIGH SPEED

MENU » OTHERS » RAW S&Q BUTTON SET » 4K/2K SUPER SLOW

(BACK) » REC Command » ON

NOTE: In 4K Super Slow the camera only outputs a maximum of 4K 60p, thus this mode will use internal buffering, and then will need to playback the footage to an Odyssey7Q. In 4 Super Slow, the Odyssey7Q Trigger must be set to Camera.

MENU » RECORD » TRIGGER » CAMERA

NOTE: For 2K up to 240fps sustained, or 4K up to 60p sustained, but 4K 100/120 7-8 second burst.



4. SETUP FS700 HIGH FRAME RATE

MENU » CAMERA SET » SLOW AND QUICK » RAW 2K SUPER SLOW » EXECUTE

Select your desired frame rate*:

NTSC	120 240
PAL	100 200

TIME SAVER TIP: A quicker way of doing this is once the S&Q is set to RAW HIGH SPEED, you can press and hold the S&Q button, then once the RAW Super Slow frame is highlighted, you can now switch from 120 to 240. (or 100 to 200 in record.)

TO ACCESS HIGH FRAME RATES:

» Press the S&Q button » Select 120fps or 240fps

The Odyssey7Q also has the ability of recording the buffered 4K 100/120 p from the FS700. If you wish to record this set the camera to 4K RAW, and enable S&Q. Then the Odyssey7Q will record 4K100/120, for up to a 4 second burst.

RAW 4K SUPER SLOW 120FPS AND 100 FPS

Start Trigger - > 440 Frames
End Trigger -> 440 Frames
End Half Trigger -> 220 Frames

Start Trigger Processes 440 frames from when RECord button is pressed.
End Trigger Sends a buffer of the 440 frames prior to hitting the REC button.
End Half Trigger sends a buffer of the 220 frames prior to hitting the REC button.

120fps is 3.7 seconds record time - (440 frames) - 60fps playback
100fps is 4.4 seconds - (440 frames) - 50fps playback

5. PAL: 25P, 50P, 100P AND 200P

MENU » OTHERS » 60i/50i SEL » YES

6. SETUP RECORD TRIGGER (FS700 REC BUTTON)

MENU » REC/OUT SET » VIDEO OUT » SDI/HDMI CONTROL » ON

7. DUAL RECORD: FS700 INTERNAL + ODYSSEY7Q

MENU » REC/OUT SET » RAW REC CONTROL » RAW+HD
(BACK) » REC/OUT SET » HD SIMULTANEOUS REC » ON

Note: The clip name from the FS700 is not sent over the SDI to the Odyssey7Q, thus if you wish to use the internal media as an offline, you will need to rename the internal



ODYSSEY7Q CONFIGURATION

1. SET ODYSSEY7Q TO FS700 MODE

⚙️ » SETUP » CAMERA » SONY FS7/FS700 » FS RAW-->RAW (.DNG)

The unit will restart

NOTE

When selected for the first time (or after an update) it may take up to 3 minutes to load.

2. CONNECT ODYSSEY7Q TO FS700

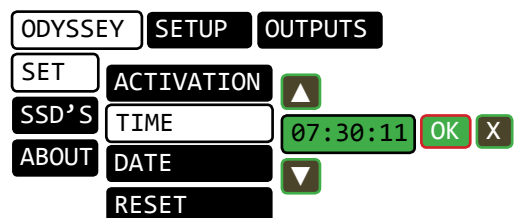
Connect FS700 3G-SDI output to Odyssey7Q SDIA input

NOTE

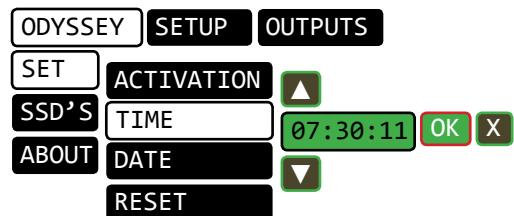
Use only 3G-SDI rated cables from FS700 to Odyssey7Q. Using a 1.5G SDI cable is not recommended and may cause issues.

3. SET DATE & TIME TO MATCH FS700

⚙️ » ODYSSEY » SET » DATE



⚙️ » ODYSSEY » SET » TIME



4. MAKE FS700 THE RECORD TRIGGER

⚙️ » SETUP » RECORD TRIGGER » CAMERA



5. SET TIMECODE SOURCE

⚙️ » SETUP » TIMECODE SOURCE » SDI/HDMI

6. FORMAT SSDs

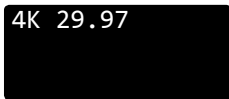
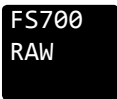
⚙️ » ODYSSEY » SSD'S » FORMAT BOTH (OR FORMAT SSD1 IF YOU DO NOT HAVE A SECOND SSD DRIVE INSTALLED.)

7. CONNECT TO CAMERA AND VERIFY STATUS INPUT

Connect FS700 3G-SDI output to Odyssey7Q SDIA input

Note: Use only 3G-SDI rated cables from FS700 to Odyssey7Q. Using a 1.5G SDI cable is not recommended and may cause issues.

The status on your Odyssey7Q will display your camera's output.

Example:  

NOTE

The recorded file will be RAW (.DNG) 2K or 4K. 2K up to 240fps, 4K up to 60fps (sustained) and 4K 100/120 (3-4 second bursts).



RECORDING ACROSS TWO SSDS

SSD1	SSD2
1, 3, 5, 7...	0, 2, 4, 6...

4K 23.98 to 30p rates = Single Drive

4K 50/59p = RAID (two drives)

2K 200/240p = RAID (two drives)

RAID is set up automatically upon detecting the input signal - no setup is required.

NOTE

You can use any Convergent Design media; they need not be matching (ie, one 256GB card and one 512GB card).



FS700 CONFIGURATION

1. SET UP THE FS700 FOR 4K RAW RECORDING

MENU » REC/OUT SET » REC SET » RAW SET

Select any of the following frames rates that you wish to record on Odyssey7Q:

NTSC	4096x2096/24p 4096x2096/30p 4096x2096/60p
PAL	4096x2160/25p 4096x2160/50p

Once the selection is made you will need to press EXEC on the camera, to return to live / record.

2. SETUP RECORD TRIGGER (FS700 REC BUTTON)

MENU » REC/OUT SET » VIDEO OUT » SDI/HDMI COMMAND » ON

3. SET GAMMA (REQUIRED FOR RAW RECORDING)

PICTURE PROFILE » PP7 » SETTING » GAMMA » S-LOG2

NOTES:

- *Picture Profiles S-Log2, Rec709, Rec709 800% are all supported in this mode.**
- *Custom Profiles are not supported at this time.*
- *Be sure to set the white balance correctly before shooting. Also note that if you wish to trigger the Odyssey via the camera's record trigger please set the following on the FS700*
- *With 4K to HD what you see on the monitor is what will be recorded.*
- *Adjusting settings within each picture profile will not be reflected in the recording since the Odyssey7Q can only detect which profile is set, not the individual attributes.*

4. CONNECT FS700 TO ODYSSEY7Q

Connect FS700 3G-SDI output to Odyssey7Q SDIA input

NOTE

Use only 3G-SDI rated cables from FS700 to Odyssey7Q. Using a 1.5G SDI cable is not recommended and may cause issues.



ODYSSEY7Q CONFIGURATION

1. SETUP FS 4K RAW TO APPLE PRORES 422 MODE

HD RECORDING

⚙️ » SETUP » CAMERA » SONY FS7/FS700 » 4K RAW ->HD PRORES

4K RECORDING

⚙️ » SETUP » CAMERA » SONY FS7/FS700 » 4K RAW ->HD PRORES

2. MAKE FS700 THE RECORD TRIGGER

⚙️ » SETUP » RECORD TRIGGER » CAMERA

3. SET TIMECODE SOURCE

⚙️ » SETUP » TIMECODE SOURCE » SDI/HDMI

4. FORMAT SSDs

⚙️ » ODYSSEY » SSD'S » FORMAT BOTH

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

5. CONNECT TO CAMERA AND VERIFY STATUS INPUT

Connect FS700 3G-SDI output to Odyssey7Q SDIA input

NOTE

Use only 3G-SDI rated cables from FS700 to Odyssey7Q. Using a 1.5G SDI cable is not recommended and may cause issues.

The status on your Odyssey7Q will display your camera's output.

Example:

4K 29.97

FS700
RAW



FS700 CONFIGURATION

1. SET UP THE FS700 FOR RECORDING

MENU » REC/OUT SET » REC SET » HD

Select any of the following frames rates that you wish to record on Odyssey7Q:

NTSC	1080/24p 1080/30p 1080/60p 3840/24p 3840/30p
PAL	1080/25p 1080/50p 3940/25p

NOTE

1080/60p, 1090/50p, 1080/100p, 1080/120p are not supported at this time.

2. SET UP RECORD TRIGGER (FS700 REC BUTTON)

MENU » REC/OUT SET » VIDEO OUT » SDI/HDMI COMMAND » ON

3. SET UP FS700 OUTPUT RESOLUTION

MENU » REC/OUT SET » VIDEO OUT » SDI/HDMI/COMPONENT » 1080P/480P

4. SET UP FS700 OUTPUT FRAME RATE

MENU » REC/OUT SET » VIDEO OUT » 24/30P OUTPUT » 24P/30P



ODYSSEY7Q CONFIGURATION

1. SET ODYSSEY7Q TO HD->HD APPLE PRORES 422 MODE

⚙️ » SETUP » CAMERA » SONY FS7/FS700 » HD->HD PRORES(.MOV)

2. MAKE FS700 THE RECORD TRIGGER

⚙️ » SETUP » RECORD TRIGGER » CAMERA

3. SET TIMECODE SOURCE

⚙️ » SETUP » TIMECODE SOURCE » SDI/HDMI

4. FORMAT SSDs

⚙️ » ODYSSEY » SSD'S » FORMAT BOTH

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

5. CONNECT TO CAMERA AND VERIFY STATUS INPUT

Connect FS700 3G-SDI output to Odyssey7Q SDIA input

NOTE

Use only 3G-SDI rated cables from FS700 to Odyssey7Q. Using a 1.5G SDI cable is not recommended and may cause issues.

The status on your Odyssey7Q will display your camera's output.

Example:

4K 29.97

FS700
RAW



FS700 CONFIGURATION

1. SET UP THE FS700 FOR RECORDING

MENU » REC/OUT SET » REC SET » HD

Select any of the following frames rates that you wish to record on Odyssey7Q:

NTSC	1080/24p 1080/30p 1080/60p
PAL	1080/25p 1080/50p

Note: 1080/100p, 1080/120p are not supported at this time.

2. SET UP RECORD TRIGGER (FS700 REC BUTTON)

MENU » REC/OUT SET » VIDEO OUT » SDI/HDMI COMMAND » ON

3. SET UP FS700 OUTPUT RESOLUTION

MENU » REC/OUT SET » VIDEO OUT » SDI/HDMI/COMPONENT » 1080p/480p

4. SET UP FS700 OUTPUT FRAME RATE

MENU » REC/OUT SET » VIDEO OUT » 24/30p Output » 24p/30p



ODYSSEY7Q CONFIGURATION

1. SET ODYSSEY7Q TO FS700 TO UNCOMPRESSED DPX MODE

⚙️ » SETUP » CAMERA → SONY FS7/FS700 » HD-4:4:4 (.DPX)

Click OK - The unit will restart.

2. MAKE FS700 THE RECORD TRIGGER

⚙️ » SETUP » RECORD TRIGGER » CAMERA

3. SET TIMECODE SOURCE

⚙️ » SETUP » TIMECODE SOURCE » SDI/HDMI

4. FORMAT SSDs

⚙️ » ODYSSEY » SSD'S » FORMAT BOTH

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

5. CONNECT TO CAMERA AND VERIFY STATUS INPUT

Connect FS700 3G-SDI output to Odyssey7Q SDIA input

NOTE

Use only 3G-SDI rated cables from FS700 to Odyssey7Q. Using a 1.5G SDI cable is not recommended and may cause issues.

The status on your Odyssey7Q will display your camera's output.

Example:

4K 29.97

FS700
RAW



COPYING FILES TO YOUR COMPUTER

1. CONNECT SSD DRIVE TO ADAPTER

Connect the Convergent Design 2.5" Premium SSD Media to any off-the-shelf 2.5" SATA adaptor (example: Seagate GoFlex Thunderbolt Adaptor or USB 3.0 Adaptor)

2. CONNECT ADAPTER TO COMPUTER

The SSD will mount within 10-20 Seconds. (You will see this mount on the desktop or within finder on MAC, or within My Computer on Windows machines).

3. COPY FILES FOR PLAYBACK/EDITING

All Clips or Takes are located within the "Clips" directory, navigate to this and copy all of your files to a local or external drive or RAID for playback and/or editing.

FREE SOFTWARE UTILITIES

CD CLIP MERGER *(FREE DOWNLOAD FROM WEBSITE)*

Use the Clip Merger for any Raided Record (ie if your recorded clip required more than one SSD). See the At A Glance Chart, "No. of SSD's Req" column, on page 2.

CD APPLE PRORESS TRANSFER TOOL *(FREE DOWNLOAD FROM WEBSITE)*

Use to combine clips into a single file
Use to copy all files to a single directory without folder structure.

CD DATA UNPACKER *(FREE DOWNLOAD FROM WEBSITE)*

Use CD Data Unpacker to convert "packed" files to "unpacked" data.

DOWNLOAD HERE: <http://convergent-design.com/support/firmware-downloads.html>

ATTENTION MAC OSX USERS

Before installing Convergent Design Software on Mac OSX You must first change the following settings.

- 1) Navigate to **Applications » Utilities » System Preferences**
- 2) Select **Security and privacy**
- 3) Under **General** » Allow applications downloaded from: Select **Anywhere**.
- 4) Now you will be able to run the installer for installing any Convergent Design Applications.



Apple ProRes 422 (HQ)

The Odyssey 7 and 7Q records in Apple ProRes HQ which is a 10 bit 4:2:2 220Mb compressed codec. This will allow for high quality recording while avoiding high data rates of working with uncompressed video. (DPX)

NATIVE APPLE PRORES 422 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

FS700 RAW SUPPORT (DNG SEQUENCES)

All FS700 RAW recording on the Odyssey7Q is recorded as a 12-bit linear CinemaDNG file. With DNG files, timecode and clip metadata is stored in every frame, as well as in the XML file within each clip. All audio is recorded 48Hz 16 bit Uncompressed WAV audio.

It is important to correctly set the white balance of the camera, as this is baked into the RAW file.

NATIVE CINEMADNG SUPPORT

Adobe CC 2014*
Apple FCP X, Aperture

Assimilate Scratch Lab (future update)
Black Magic DaVinci Resolve

**Pending next Adobe CC update.*

FS700 RAW: DEALING WITH RAW FILES

Note that FS700 RAW files are Linear, thus the files need a Gamma 2.2 correction in order to look correct. You may notice when you first import your files that they appear very dark before correction.

FS700 DAVINCI RESOLVE IMPORT SETTINGS

1. Right click on the file and select "Edit CinemaDNG Codec Settings"
2. Then under the CAMERA RAW select be sure CinemaDNG is selected from the drop down menu.
3. Set the Decode using method to CinemaDNG Default* (Also be sure your project is setup correctly)
4. Set the White Balance to As Shot
5. Set the Color Space to Rec709
6. Set the Gamma to Rec709
7. Leave Highlight Recovery off
8. Click Apply

The Media Pool Camera RAW settings are the same as the ones in the color page and these are designed for individual clip adjustment so its better to first set the 'Project Settings', 'Camera RAW' as you need for the whole project.



Select 'Project Settings', 'Camera RAW', 'CinemaDNG' and make sure the 'Decode using' is set to either 'CinemaDNG Default' or "Camera Metadata"

The "Camera Metadata" is the default and the best place to start if you need to change an individual clip with camera RAW.

The Media Pool settings are helpful if you have a mix of different clip types, you can sort by codec, select a group and adjust.

For your convenience, Convergent Design has generated several example LUTs that can be applied to your RAW footage. Keep in mind these LUTs are an approximation, and may need adjustment depending on your application.

These LUTs are available in the Firmware/Downloads section of the Convergent Design website.

**Also note that using camera metadata or CinemaDNG default is also supported.*

TO LOAD 3D LUTS INTO DAVINCI RESOLVE

1. Select the Project Settings wheel, and navigate to Look Up Tables
2. Select Open LUT Folder, and copy the included example LUTs into this folder.
3. Now Select Update Lists
4. Now in the Media Browser you can right click on your RAW file and select 3D LUT and select the LUT you wish to apply from the list.

Note the following about each CD example LUT, and you should adjust the LUT based on your application.

FS700_1.11.100_SLOG.CUBE

This LUT can be applied to view a simulated S-Log2 look based on the RAW recording with the S-Log2 picture profile, also note the image should closely match the internal media.

FS700 FCP X IMPORT SETTINGS

Once you have created a new project be sure to check the following Settings:

1. Under Final Cut Pro select Preferences
2. Be sure the Still Images editing duration is set to 0.0.1 Seconds
3. Select navigate to File and select Import Media
4. Navigate to the Clips directory, and select the Clip Folder contain your FS700 RAW files.
5. At this point you can start correcting the files to a 2.2 Gamma using the Color Board.

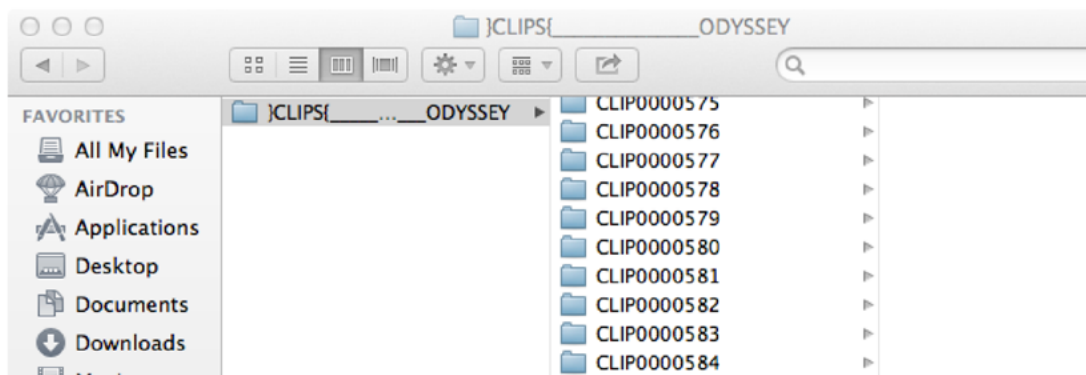
** Note if you are recording the internal media you can import the matching S-Log2 file, and select Match Color for a close approximation of S-Log2, but will most likely need additional tweaking.*



WORKING WITH RECORDED FILES

There are numerous post systems and NLEs that can read natively the various file formats recorded by the Odyssey7Q. 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 Odyssey7Q.

FILE STRUCTURE



UNCOMPRESSED SUPPORT (DPX SEQUENCE)

All Uncompressed recording on the Odyssey7Q is recorded as 10 bit RGB 4:4:4 DPX, this is for all sources regardless if the source is 8 bit, 10 bit, 4:2:2, 4:4:4. With 12 bit camera's the files are recorded as a 16 bit DPX, for more universal compatibility. Also note that with DPX files timecode, and Clip Metadata is stored in every frame, as well as in the XML file within each clip. All audio is recorded 48Hz 16 bit Uncompressed WAV audio.

Also Note 1080p59.94/60p, 1080p119/120 and 12 bit files are recorded as Packed, so our CD unpacker utility will need to be used before the files can be used in any editor.

NATIVE 10-BIT / 16-BIT DPX SUPPORT

Adobe CS6 / Adobe C5CC/2014	Black Magic DaVinci Resolve	Grass Valley Evis (Does not support 16-Bit)
Apple Color	Cineform Studio	The Foundry Nuke
AutoDesk Smoke	ColorFront OnSet Dailies	Xnview(Does not support 16-Bit)
Assimilate Scratch Lab	DJViewer	
Avid DS	Eyeon Fusion	

PLUGINS FOR DPX SUPPORT

Glue Tools
 Apple FCP Pro
 Apple FCP Pro X
 Meta Fuse
 Avid Media Composer



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