QTake User Guide 1.4

IN2CORE

Table of Contents

QTAKE USER GUIDE 1.4 5
ABOUT 5
SOFTWARE REQUIREMENTS 5
RECOMMENDED VERSIONS OF QTAKE MONITOR AND QTAKE SERVER 5
UPGRADING FROM QTAKE 1.3 5
HARDWARE 6
HARDWARE CONFIGURATIONS 6
QTAKE HDX1 6
QTAKE HDX2 7
QTAKE HDX4 / 4KX1 8
QTAKE HDX8 / 4KX2 8
VIDEO CARDS 9
CONNECTION DIAGRAM 11
QTAKE RENTAL SHOP 11
QTAKE MODULES 12
BASE 12
EDIT 12
COMPOSITE 12
OUTPUT 13
EXPORT 13
LINK 13
X2 13
MUXER 13
STREAM 13
SCOPES 13
X4 14
X8 14
CGI 14
GRADE 14
AVID 14
INSTALLATION 14
BEFORE YOU START 15

TOUCHSCREEN UI 17
USER INTERFACE 17
CONTROL SURFACES 19
C-MOTION 19
TANGENT DEVICES - ELEMENT 19
AVID ARTIST TRANSPORT 19
CUSTOM UI LAYOUT 19
VISUAL KEYBOARDS 20
KEYBOARD SHORTCUTS 20
SCREEN ZONES 21

TOP BAR 23
HELP 23
ROOMS 23
FILE 23
SHOOT 23
EDIT 23
COMPOSITE 23
STUDIO 23
STATUS 23
LIST 24
CLIP LIST FILTER 25
FX 26
FX HISTORY 29
BLUR/SHARPEN 29
DIRECTIONAL BLUR 29
GAUSSIAN BLUR 29
NOISE REDUCTION 29
SHARPEN LUMA 29
UNSHARP MASK 30
ZOOM BLUR 30
COLOR 30
CDL - COLOR CORRECTION 31
COLOR MATCH 32
COLOR OUTPUT 32
CONTRAST CURVE 33
CURVES 34
HIGHLIGHT AND SHADOWS 35
HLS - HUE, LUMA, SATURATION. 36
HUE > HUE 36
HUE > LUMA 37
HUE > SAT 38
LUMA > SAT 39
LUT 40
SAT > SAT 41
TEMPERATURE AND TINT 41
VIBRANCE 42
VIDEO RANGE 42
WHITE BALANCE 42
MATTE 43
ALPHA 43
EXTRACT MATTE 43
GARBAGE MATTE 44
STYLIZE 45
PHOTOCOPY 45
VIGNETTE 45
TRANSFORM 46
ANAMORPHIC 46
CORNER PIN 46
CROP 46
DEINTERLACE 47
DEMUX 47
DVE 47
LENS DISTORTION 48
MIRROR 48
QUAD 48
VR VIEW 49
META 49
EDIT METADATA GROUPS AND FIELDS 49
TALK 50

TASKS 51
RENDER 51
HIDE 52
FULL 52

FILE ROOM 53
QTAKE MENU 53
USER MENU 53
AUTO-LOAD 54
PROJECT MENU 54
CREATE NEW PROJECT 55
TITLE 56
STORAGE 56
MEDIA 57
SLATING 57
VIDEO AND AUDIO SETTINGS 57
CAMERA AND MEDIA SETTINGS 57
H264 PROXY SETTINGS 58
COMMON PROJECT SETTINGS 58
3D SBS MUXED INPUT 59
EDIT PROJECT 59
CAMERA METADATA COMPARISON TABLE 59
RED CAMERA SUPPORT 60
ARRI CAMERA SUPPORT 60
SONY CAMERA SUPPORT 61
CANON CAMERA SUPPORT 62
FULL RANGE VIDEO 62
INFO MENU 63
LICENSE 63
SEND REPORT 63
PREFERENCES 64
OPTIONS MENU 65
VIEW MENU 67
GPU OUT MENU 67
IMPORT MENU 69
IMPORT 69
IMPORTING STILLS 69
LINK 70
DRAG AND DROP IMPORT AND LINK 70
DISK SELECTION 70
FILENAME PARSING 71
3D LAYOUT 71
STILL IMAGES 71
IMPORT CDL 71
IMPORT/LINK FROM QTAKE 72
EXPORT MENU 72
EXPORT TO FCP 73
FINAL CUT PRO 7 73
FINAL CUT PRO X 73
EXPORT TO AVID ALE 74
EXPORT EDL 74
EXPORT TO QTAKE XML 75
REPORT MENU 76
PDF REPORT 76
EDIT TEMPLATES 77
REPORT LAYOUT 78
SCREENSHOT 78
CLIP REPORT 78
LINK MENU 79
GPI MENU 79
GPI INPUT 80
GPI OUTPUT 80
VIDEOHUB MENU 81
VIDEOHUB SETUP 81
LIVE PASS 82
PREPARE LIVE PASS 82
USE LIVE PASS 82
PRESETS AND GROUPS 83
STREAM MENU 83
ADD CLIENT 84
LOCAL STREAMING 85
CLOUD STREAM 86
STREAM SETUP 86
MONITOR MENU 88
TALKBACK MENU 88
SCOPES MENU 88
QOD MENU 89
AVID MENU 89
WEB MENU 90

SHOOT ROOM 91
RECORD MENU 91
REC SYNC 91
RECORD CONTROLS 91
RECORD MULTI IN & OUT 92
BIT DEPTH 92
CODEC 92
TERADEK CUBE SUPPORT 92
FRAME MENU 93
VIEW FX MENU 94
COLOR CORRECTION 94
DVE - IMAGE TRANSFORMATION 94
MASK - FORMAT MASKING 95
OSD - ON-SCREEN DISPLAY 95
GRID 96
MIX 96
PATCH MENU 97
CLIP MENU 97
CLIP NAMING CONVENTION 98
CLIP ID BROWSER 98
CLIP SELECT 98
VISUAL CLIP BROWSER 98
EDITING CLIP DATA 99
EDITING CLIP DATA FOR MULTIPLE FILES 100
REVEAL IN FINDER 100
DELETING SELECTED TAKES 100
RELINK CLIPS 101
EXPORT CDLS AND LUTS 101
MOVING TAKES TO SEQUENCE 101
EXPORTING TAKES TO FILE 101
MOVING TAKES TO REFERENCE 101

DATA MENU 101
CAM 101
SHOT 101
NOTE 102
MEDIA 102
SCENE MENU 102
PLAY MENU 102
PLAYBACK MULTIPLE IN & OUT 103
SLIDER MENU 103
PLAYBACK RANGE 103
SUBCLIPS 104
THUMBNAILS 104
CONTROL MENU 104
CLIP SYNC 104
PLAY SYNC 104
SYNC SETUP 105
SHUTTLE MENU 106
CHAPTERS MENU 106
AUDIO MENU 106
VIDEO OUT MENU 107
SIMULTANEOUS SDI INPUT & OUTPUT 108
NDI OUT MENU 108
DOCK MENU 108
QUAD MENU 109
MUXER MENU 109
DEMUX 109
REMUX 109
3D TOOLS MENU 110
RAMP MENU 110
3D VIEW MENU 110
MEDIA MENU 111
ZOOM MENU 112

EDIT ROOM 113
SEQUENCE MENU 113
DUPLICATE SEQUENCE 114
EDIT MENU 114
INSERT 114
OVERWRITE & REPLACE 115
SPLITTING CLIPS 115
REORDERING CLIPS 115
DELETING CLIPS 115
CHANGING THE CLIP SPEED 115
TRIMMING 115
TRIM CLIP 115
TRIM CUT 116
EDIT 3D MENU 116

COMPOSITE ROOM 117
COMPOSITE MENU 117
RECORD COMPOSITE 117
BLEND MENU 118
KEY MENU 118
CHROMA+Z KEY 119
WIPE MENU 119
CGI MENU 119
IMPORT CGI SCENE 119
CGI CONTROL 119
NAVIGATING 3D SCENE 120
MOTION CONTROL 120

STUDIO ROOM 122
STUDIO MENU 122
LIVE EDITING 122
FOLLOW ACTIVE VIEW 122
USE INPUT SELECTOR 122
DISK EDITING 122
TRIM MODE 123
OVERTRIM 123
EXPORT EDL 123
SEND TO SEQUENCE 123
GPU OUT 123

QTAKE PREFERENCES 124
GPU GROUP 124
H.264 GROUP 124
VIDEO BOARD GROUP 125
SDI METADATA GROUP 126
SDI OUTPUT GROUP 126
MUXER GROUP 127
FILE GROUP 127
PLAYBACK GROUP 128
GUI GROUP 128
AUTOLOAD GROUP 129
RECORD GROUP 129
EXTERNAL GROUP 130
HIT GROUP 130
RIG GROUP 130
LIVEGRADE GROUP 131
DIAGNOSTICS GROUP 131

APPENDIX A - QTAKE MONITOR 132
INSTALLATION IPAD/IPHONE/OS X 132
IPAD/IPHONE SYSTEM REQUIREMENTS 132
SETUP 132
ENABLE REMOTE 132
LAUNCH QTAKE MONITOR ON THE IPAD 132
APPROVE THE CONNECTION FROM QTAKE 133
USING QTAKE MONITOR 134
CONTROLS IN QTAKE MONITOR 135

APPENDIX B - QTAKE 3D CONTROL 136
ABOUT 136
SETUP 136
USING QTAKE 3D CONTROL 136
H.I.T. 136
PLUS 3D 137
SETTINGS 137

APPENDIX C - QTAKE OUTPUT DEVICE 139
ABOUT QOD+ 139
HOW IT WORKS 139

SYSTEM REQUIREMENTS 139
QTAKE REQUIREMENTS 139
KNOWN ISSUES 139
TROUBLESHOOTING 139
TECHNICAL SPECIFICATIONS 140
FEATURES 141
QOD+ INSTALLATION 142
MAC PRO 142
QOD STATUS 142
GENERAL OPERATION 142
DISPLAY MENU 142
PULLDOWN REMOVAL 143
FIRMWARE UPDATE 143
QTAKE USB CONTROL 143
SERIAL NUMBER 143
QOD RESOLUTION 143
TEMP 143
QOD AUDIO 143
FIRMWARE 144
RESET 144
GPU OUT SETTINGS 144
STANDALONE OPERATION 144
QOD PREFERENCES 145
QOD+ DIP SWITCH CONTROL 146

QTAKE USER GUIDE 1.4

ABOUT

QTAKE is the most advanced software designed and developed for video assist professionals. It is used to log, capture, playback, edit and process video output of the digital cinema cameras as well as traditional film cameras with a video tap. Main purpose of the video assist system is to provide immediate playback for director, but QTAKE goes far beyond that. It provides unique database that can be customized to fit any project, special playback features like multiple in/out ranges, the best wireless monitoring over the local network or cloud.
The ability to capture metadata from camera and other on-set devices, makes QTAKE an essential part of the workflow that fills the gap between production and postproduction. VFX supervisors around the world rely on QTAKE to perform realtime on-set compositing with support for motion control and motion tracking systems, GPI triggering and CGI integration.
In addition to impressive video assist software, QTAKE ecosystem now includes **QTAKE SERVER** and **QTAKE MONITOR** applications that provide unmatched on-set collaboration using low-latency streaming, independent playback and metadata editing.
Thank you for taking your video assist services to a new level.

QTAKE offers unique stereoscopy support including industry standard 3D output either in live or playback mode, as well as various 3D alignment modes using PLUS 3D VIEW.

SOFTWARE REQUIREMENTS

QTAKE requires macOS **10.12.6** (Sierra) or **10.13.6** (High Sierra) or **10.14.3** (Mojave). AJA video cards require driver version **15.0.1**. We recommend using 4K mode or QUAD firmware on cards that support it. Avoid using UFC firmware. Blackmagic Design video cards require driver version **10.11.4**. Deltacast video cards require VideoMasterHD redist **V6.10**.

RECOMMENDED VERSIONS OF QTAKE MONITOR AND QTAKE SERVER

QTAKE Monitor iOS **3.3.0** or later. QTAKE Monitor macOS **1.4.5** or later. QTAKE Server **1.4.2** or later.

UPGRADING FROM QTAKE 1.3

If you are upgrading from QTAKE 1.3, please note that the database will be migrated to a new model (910 to 910a) during first start of QTAKE 1.4. Migration is a safe process, which preserves all users and projects.

Old database will be backed up to **/APPLICATIONS/DATA/PREVIOUS VERSIONS** subfolder, before the migration process. In case you need to run old QTAKE 1.3 again (not recommended), please move all files from this subfolder one level up (into **/APPLICATIONS/DATA**).

HARDWARE

The basic configuration of a working QTAKE system consists of a computer, a video capture card for input (and optionally output), storage for the recorded and imported media, GPU output device and optionally external audio device. Recording, processing and outputting multichannel HD and 4K video is taxing these components and while some older computers will work with standard playback requirements, adding image processing, compositing or higher quality codecs could result in dropped frames if the system is not up to the task.

QTAKE works with a multitude of Apple Mac computers, video cards, audio devices and GPU output converters. Listed below are recommended hardware configurations for HDx1, HDx2, HDx4 (4Kx1) and HDx8 (4Kx2) version of QTAKE.

WHAT IS THE DIFFERENCE?
You can find a breakdown of the different modules and a side by side feature comparison at: https://qtakehd.com/features/

WHAT ABOUT THIS DEVICE?
You can always find up to date hardware recommendations at: https://qtakehd.com/hardware/

HARDWARE CONFIGURATIONS

Following configurations are recommended to achieve optimal performance of QTAKE. Performance varies greatly depending on the selected video codecs and image processing requirements. Generally, we recommend getting the top of the line Mac models in order to allow enough headroom for complex projects.

QTAKE HDX1

QTAKE HDx1 records output from a single camera, but it provides two independent viewers and outputs and supports GPU OUT.

CPU
Intel dual-core i7

RAM
8GB memory

GPU (alternatives)
AMD Radeon R9 or higher
NVIDIA GeForce GT 650M or higher

MEDIA STORAGE (recommended read/write speed of 150 MB/s)
External USB 3 or Thunderbolt Drive

VIDEO CARD I/O

1x AJA IoXT

QTAKE HDx1 requires one 1-channel video card. In case of live processing without QOD+, either one full duplex, or two 1-channel, or one 2-channel card is required.

PROCESSED GPU OUTPUTS
IN2CORE QOD+

ANALOG AUDIO IO
Focusrite Scarlett 2i2 (or any other external audio card with Core Audio driver)

QTAKE HDX2

QTAKE HDx2 provides recording from two cameras. It provides two independent viewers and outputs and supports GPU OUT.

CPU
Intel quad-core i7

RAM
8GB memory

GPU (alternatives)
AMD Radeon R9 or higher
NVIDIA GeForce GT 750M or higher

MEDIA STORAGE (recommended read/write speed of 150 MB/s)
External USB 3 or Thunderbolt Drive

VIDEO CARD I/O (alternatives)
2x AJA IoXT

QTAKE HDx2 requires two 1-channel or one 2-channel video card. In case of live processing without QOD+, either one full duplex 2-channel, or one 4-channel, or two 2-channel cards are required.

PROCESSED GPU OUTPUTS
IN2CORE QOD+

ANALOG AUDIO IO
Focusrite Scarlett 2i2 (or any other external audio card with Core Audio driver)

CAN I REUSE THE SAME HARDWARE IF I UPGRADE TO HDX4?
System recommendations for HDx4 are similar to those for a MacPro based HDx2 system. If you plan on upgrading in the future you can save some time and effort by following the HDx4 recommendations when building a HDx2 system. HDx2 supports up to 4 channels of

processed GPU output. However using 4 channels requires powerful graphics hardware

QTAKE HDX4 / 4KX1

4K SDI signal is practically the same as four HD SDI signals. That's why the hardware configuration for HDx4 is the same as for a single camera 4K system.

CPU
Intel 6-core Xeon

RAM
16GB memory

GPU
AMD FirePro D500 or higher

MEDIA STORAGE (recommended read/write speed of 300 MB/s)
External USB 3 or Thunderbolt Drive

VIDEO CARD I/O
Deltacast DELTA-3G-elp 40

QTAKE HDx4 requires two 2-channel or one 4-channel video card. In case of live processing without QOD+, either one full duplex 4-channel or two 4-channel cards are required.
QTAKE 4Kx1 requires 4K video card. In case of live processing without QOD+, either one 4K full duplex or two 4K cards are required.

PROCESSED GPU OUTPUTS
IN2CORE QOD+

ANALOG AUDIO IO
Focusrite Scarlett 2i2 (or any other external audio card with Core Audio driver)

QTAKE HDX8 / 4KX2

This version of QTAKE supports recording of dual 4K video signal.

CPU
Intel 8-core Xeon

RAM
16GB memory

GPU
AMD FirePro D700 or higher

MEDIA STORAGE (recommended read/write speed of 600 MB/s)
External USB 3 or Thunderbolt Drive

VIDEO CARD I/O (alternatives)
2x Deltacast DELTA-3G-elp 40

> QTAKE 4Kx2 requires two 4K video cards. In case of live processing without QOD+, two full duplex 4K cards are required.

PROCESSED GPU OUTPUTS
2x IN2CORE QOD+

ANALOG AUDIO IO
Focusrite Scarlett 2i2 (or any other external audio card with Core Audio driver)

VIDEO CARDS

Following SDI video cards are natively supported in QTAKE. Additionally, QTAKE can capture video coming from NDI®, RTSP (Teradek Cube), QLS (QTAKE Live Stream), or video cards supported by the macOS system, such as USB-3 connected Teradek Bolt Receiver.

Interface	Timecode	ARRI/Sony/Canon Metadata	ARRI/Sony Record Flag	RED SDI Record Flag and CMF	Independent Inputs	4K Input	3G SDI Input	SDI Passthrough	Number of Channels in Constant Playout Mode	Number of Inputs/Outputs	
PCIe	●	●	●	●	●	●	●	●[1]	4	4	**AJA Corvid 44**
TB	●	●[5]	●	●			●	●[1]	1	2/2	**AJA IoXT**
TB	●	●	●	●	●	●	●	●[1]	2	4	**AJA Io4K**
TB3	●	●	●	●	●	●	●	●[1]	2	4	**AJA Io4K Plus**
PCI	●	●	●	●		●	●	●[1]	2	4	**AJA Kona 3G**
PCI	●	●	●	●	●	●	●	●[1]	2	4	**AJA Kona 4**
PCI	●	●[5]		●	n/a			●	n/a	1/1	**AJA Kona LHi**
PCI	●[7]	●[6]		●	●			●[2]	1	2/2	**BMD Decklink Duo**
PCI	●[7]	●[6]		●	●		●	●[3]	2	2/2	**BMD Decklink Duo2**
PCI	●[7]	●[6]		●	●			●[2]	2	4/4	**BMD Decklink Quad**
PCI	●[7]	●[6]		●	●		●	●[3]	4	4/4	**BMD Decklink Quad2**
TB[8]	●[7]	●[6]		●	n/a			●[2]	n/a	1/1	**BMD UltraStudio Express**
TB[8]	●[7]	●[6]		●	n/a			n/a	n/a	1/0	**BMD Mini Recorder**
TB	●[7]	●[6]		●	n/a	●	●	●[2]	1	1/1	**BMD UltraStudio 4K**
PCI	●	●	●	●	●	●	●		n/a	4/0	**Deltacast 3G-elp 40**
PCI	●	●	●	●	●		●		2	2/2	**Deltacast 3G-elp-d 22**
PCI	●	●	●	●	●		●		n/a	2/0	**Deltacast 3G-elp 20**
PCI	●	●	●	●	●		●		1	1/1	**Deltacast 3G-elp 11**
PCI	●	●	●	●	●		●		n/a	1/0	**Deltacast 3G-elp 10**
PCIe	●	●	●	●	●	●	●		4	8/8	**Deltacast 3G-elp-d 8c**
PCIe	●	●	●	●	●	●	●		2	4/4	**Deltacast 3G-elp-d 4c**

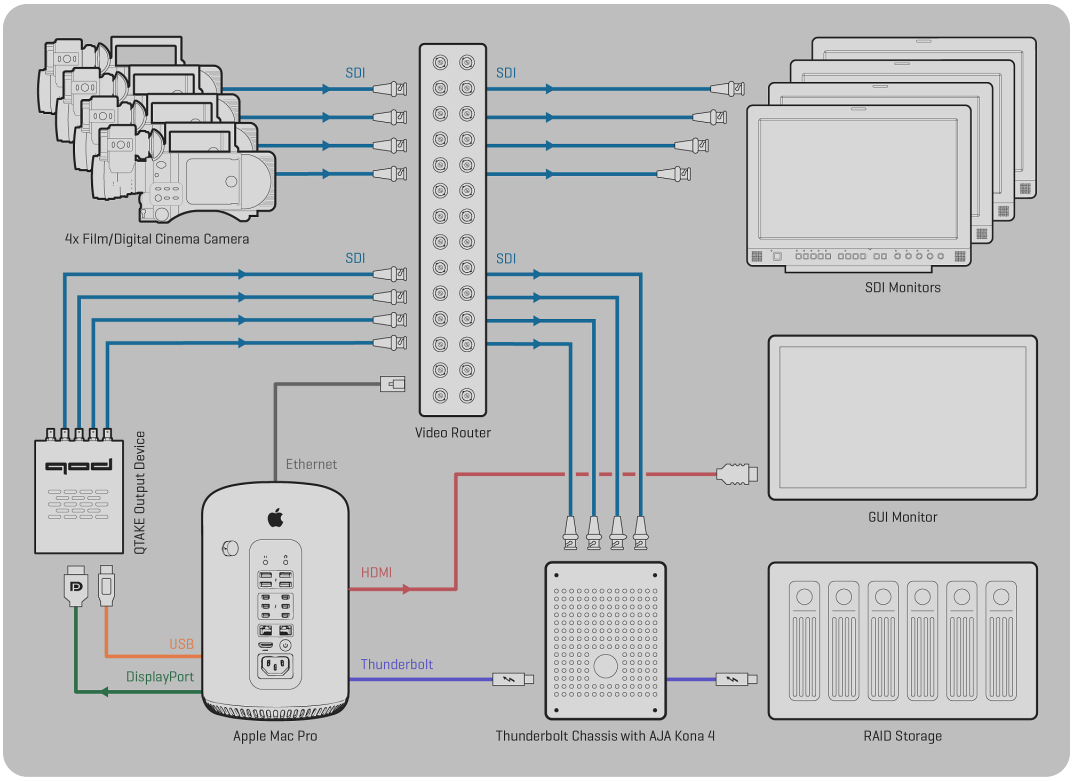
1. Multi-channel SDI Passthrough requires frame-synced inputs.
2. Not possible to mute SDI passthrough audio.
3. Passthrough video has 2 frames of delay.
4. Input formats are limited to same clock family.
5. Only ARRI Metadata and only with camera set to output PsF.
6. Only available in 10bit mode.
7. Does not support VITC1 timecode.
8. Bus-powered device, no loopback TB port.

WHAT IF I USE MORE THAN ONE VIDEO CARD?
The information in the table is only valid as a comparison between single cards. QTAKE can use multiple video cards to allow for up to 4 inputs and outputs.

OUTPUT
The term "output" in this chart is only referring to SDI output from the video card. GPU output from QOD+ is independent from video card outputs.

CONNECTION DIAGRAM

Below is an example of the full QTAKE HDx4 system configuration based on Apple Mac Pro.



QTAKE RENTAL SHOP

Modules for QTAKE or entire QTAKE bundles can be rented through the QTAKE Rental Shop. In order to rent modules you will need to create a shop account and register one or more DONGLE IDs or

COMPUTER IDs to it. Once an ID is registered to your account you can rent modules through the shop adding additional features and functionality to your QTAKE package with a few simple clicks.

You can also create a QTAKE Shop account and register your dongle or computer directly from QTAKE. See the LICENSE section for more information.

To create a shop account, register machines and rent modules visit: QTAKE Shop

For instructions on how to use the shop please see: INSTRUCTIONS

QTAKE MODULES

Basic QTAKE system can be used as a simple record and playback system, but it goes far beyond that. You can configure QTAKE to fit all your needs by adding modules for editing, compositing, streaming or any other feature that your next project requires.

BASE

This is the main module of the QTAKE application. It is built on top of a powerful clip database that lets you to manage clips and their metadata. Using BASE module you can set-up any SD or HD/2K resolution project, capture camera output and instantly playback clips at variable speed in a flexible, custom designed dual-view UI. Use multiple in/out ranges, chapters and sub-clips to navigate long clips. Quickly access any clip using tree-based visual browser or a filtered and sorted table browser.

Powerful GPU-driven processing provides real-time CDL color correction, 1D and 3D LUTs, image transformation and various image effects. QTAKE Views are capable of displaying any combination of live and disk source, just like using a hardware matrix switcher.

BASE module includes SDI metadata readout from ARRI, RED, CANON and SONY professional digital cinema cameras. This allows you to use auto-record and original camera media filenames to improve production workflow.

EDIT

With addition of this module, you can quickly create sequences of clips to check continuity, avoiding the slow process of exporting footage to external NLE. EDIT module is a single track editor, capable of inserting, replacing and reordering clips. You can change the speed of each clip and use fast dual-view trimmer to visually adjust each cut for frame-accurate result. Sequence can be exported to a 3rd party applications as an EDL or a Final Cut Pro sequence to speed-up the postproduction process.

COMPOSITE

This module provides real-time overlay of any two sources to create VFX shots during filming. Custom offsets and GPI triggering allow you to control the background playback. Multiple blend modes, blue/green-screen keyer with de-spill, luma keyer and wipe transition will help you fulfill

any director's request. Use the RENDER function to create composites with unlimited number of layers.

OUTPUT

With OUTPUT module you can output full-screen video to external monitors. It uses secondary port of the graphics card to provide low-latency monitoring solution. Adding a QOD+ hardware device to your system provides four independent 3G-SDI outputs with embedded audio. For 3D stereo projects, OUTPUT module provides muxed output formatted for a 3D monitor.

EXPORT

Using this module you can export your project to Final Cut Pro, Adobe Premiere or Avid Media Composer with all metadata and bins for recorded scenes and shots. Since QTAKE captures media filenames from digital cinema cameras, you can use captured files for offline editing ready to be conformed using original camera media.

LINK

You can connect 2 or more QTAKE systems using network to provide video assist for multiple cameras. Using LINK module allows you to capture and playback up to 36 video feeds simultaneously by controlling eight slave systems from a single master QTAKE. Playback of all systems is synchronized with frame precision.

X2

This module adds dual camera capture and playback functionality. Each video input can be configured independently to provide recording of two different formats. X2 module also enables stereoscopy mode with local or remote HIT control for parallel stereo productions, providing industry standard 3D output in live, capture and playback mode.

MUXER

Record two 3D rigs on a single Mac using 2x dual channel or single four channel video input card. QTAKE will capture two video feeds into side-by-side clip and allow HIT control for each 3D pair. MUXER module provides independent convergence settings, demuxing and remuxing, without the need for an external 3D processing device.

STREAM

This module allows you to use macOS and iOS devices as wireless monitors. It provides low latency streaming to up to 16 Macs, iPads or iPhones. In addition, one device can use TALKBACK feature to transmit voice communication between director and QTAKE operator. Using this module you can capture directly from Teradek Cube over WiFi, without a video card. Paired with QTAKE Server, it allows streaming over the internet to remote clients world-wide.

SCOPES

SCOPES module provides means to analyze live or playback image using realtime waveform, vectorscope and histogram tools. Each tool has a selectable mode of operation and adjustable

intensity with optional output to external monitor. In addition, SCOPES module provides adjustable FALSE COLOR mode for analyzing image exposure.

X4

Capture, process and playback one 4K or four HD channels using a single QTAKE system. Perform live cut of four video feeds. Handle two stereoscopic rigs. Requires X2 module and 4-input video card. QOD+ is recommended for low latency processed output with four independent channels.

X8

The ultimate video assist system for two 4K or eight HD cameras. Four channel stereoscopic capture and playback. Eight track live video editing. Requires X4 module and 8-channel video interface. For low latency processed output with 8 independent channels we recommend 2x QOD+.

CGI

CGI module allows you to import 3D scene and have QTAKE render it in realtime, just like if it was a playback of the pre-rendered 3D scene, but with one huge difference: you can freely position virtual camera to match video or use MoCo camera to make it follow external positioning data. Using this module, QTAKE can read data from Marc Roberts Motion Control, C-Mocos or Technodolly and apply the same camera movement to a 3D scene.

GRADE

This module provides sophisticated color-grading effects that can be applied to live signal or playback, including the state-of-the-art COLOR MATCH effect that will automatically grade your clip to match the reference image. In addition to internal QTAKE processing, color correction can be dynamically uploaded to external LUT devices, such as Fuji IS-mini, Teradek COLR, FSI DM250 or exported as a 3D LUT to a 3rd party application.

AVID

One of the most popular non-linear editing systems used in the film production is the Avid Media Composer. AVID module provides advanced support for this editing platform by transcoding QTAKE media to native Avid DNxHD/DNxHR® codec. In addition to manual export of selected clips, you can turn on auto-export to automatically transcode each new QTAKE clip to Media Composer compatible MFX file.

INSTALLATION

The first time you run QTAKE you will be presented with a End User License Agreement. QTAKE will also create a folder called QTAKE in the /Applications folder of your system drive. In this folder the following subfolders will be created:

/APPLICATIONS/QTAKE

/CDL [contains CDL color corrections, only created when a CDL correction is saved]
/CERTIFICATE [contains SSL certificate that ensures secure communication between QTAKE and QTAKE Monitor]

/DATA [contains database files]
/BACKUP [QTAKE creates a backup every 20 hours and keeps a total of 5 backups]
/DEFAULTS [contains QTAKE project default settings]
/DOCS [contains QTAKE User Guide]
/FXPRESETS [This folder contains all the CLIP FX PRESETS that have been saved]
/GPI [contains GPI settings]
/KEYBOARD [contains keyboard shortcuts]
/LAYOUT [contains GUI layouts]
/LICENSE [contains your QTAKE license files]
/LOG [contains the Qtake_Log.txt file]
/APPLICATIONLOGS [contains log message output from QTAKE]
/CRASHREPORT [temporary storage for crash reports]
/LOGO [place an image file named Logo.png here to create a custom NO VIDEO INPUT screen]
/LUTDEVICES [contains configuration settings for LUT devices]
/LUTS [copy your .cube LUTs to this folder]
/PREFS [contains editable initialization preferences]
/PROJECTS [contains Project folders with thumbnails]
/TANGENT [contains configuration files for Tangent Devices, created when a controller is configured]
/VIDEOHUB [contains videohub settings]

MACOS USER ACCOUNT
The QTAKE application should be used only from one system account. Using multiple accounts will cause file permissions problems. Instead of creating multiple system accounts you should create multiple QTAKE users.

QTAKE PREFERENCES
Preferences (**PREFS**) are shown in MAGENTA throughout this user guide. Changes to PREFS can be made either by editing your QTAKE_Prefs file or by changing their value in the PREFS window. See the PREFERENCES section for more details.

BEFORE YOU START

For performance reasons make sure to **UNCHECK** the following features in the macOS System Preferences:

ENERGY SAVER - PUT HARD DISK(S) TO SLEEP WHEN POSSIBLE
ENERGY SAVER - AUTOMATIC GRAPHICS SWITCHING
It is also recommended to set the **COMPUTER SLEEP** and **MONITOR SLEEP** to NEVER, as well as to disable any screen saver. Turn off **SPOTLIGHT** indexing service for your media drives in the System Preferences, by putting the drive into the Privacy section.

DON'T SET SYSTEM AUDIO INPUT OR OUTPUT TO AJA DEVICE!
QTAKE is using AJA devices directly. Allowing system to send audio to AJA device can lead to

corrupted audio output.

Touchscreen UI

QTAKE is primarily designed for use with a touchscreen monitor. This provides users with high level of interactivity, comfort and speed. However, software can be easily used with standard input peripherals, like keyboard and mouse. Almost every control has it's dedicated **keyboard shortcut** to make your work faster using the keyboard. While QTAKE allows you to customize these shortcuts this document will refer to the default values.

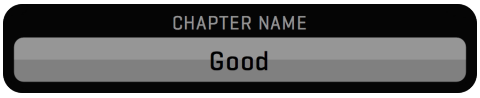
USER INTERFACE

The application does not use standard OS controls. We have designed custom, finger-sized controls to accommodate the touch nature of the UI as well as resolution independence.

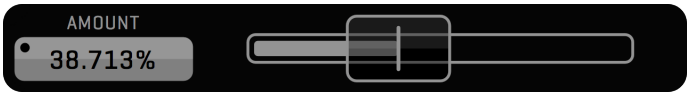
BUTTON is a basic element of the UI. By pressing and releasing a button you activate a specific command. Some buttons have a secondary function, activated by a "long click" (hold the button depressed for 1 second). Buttons that contain secondary function are marked by a little dot in their lower right corner.

SEGMENTED BUTTON is the set of buttons used to select single of two or more options. By selecting one segment of this button you automatically deselect previously selected option.

INPUT FIELD is used to enter numeric or alphanumeric values for various data fields. By pressing this button you invoke on-screen keyboard used to enter characters in touch-screen application. Note that you can also use a physical keyboard to enter values. Some input fields act as toggle switches where each click cycles through the available options.



SLIDER is a special purpose control used to adjust numeric values. Dragging the slider knob to the left side decrements value. By dragging to the right side you increment the value. Filled area of the slider bar indicates where the selected value falls within the range of values. Most sliders also have an associated input field next to it that lets you enter an exact value.

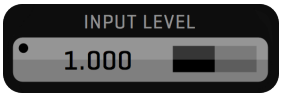


Some sliders can be set into **AUTO** mode. In auto mode the slider will transition between the **START** and **END** values without requiring interaction from the user. To enable auto mode click on the associated input field and toggle **AUTO** to YES. Alternatively, double click the slider to start auto mode without entering the on-screen keyboard. The **LOOP MODE** changes how the slider moves and it can be set to **LOOP** (from start to end), **PONG**(from start to end, then back to start) and **A/B**

(alternates between start and end values). **TIME INTERVAL** sets the interval between transitions.

User interface controls are disabled (greyed out) for the commands that can not be executed in the current context

ENHANCED INPUT FIELD is used to enter numerical values. The button has three separate functions. By pressing the buttons left side (where the value is displayed) you invoke an on-screen keyboard similar to a regular input field. By long clicking the left side of the button you reset the field to its default value. And finally by pressing and holding the right side of the button you invoke a **RADIAL SLIDER** that lets you input values by moving the cursor or your finger around its center. The radial slider lets you return to the previous value by moving the cursor or your finger to its center.



LABEL is used to display various states/values of the system. By clicking on some labels you can cycle through various display options.

TOOLBAR is a set of buttons grouped to form a complex function, like PLAYBACK. Sometimes it features dual arrow icon to provide access to 2nd set of controls.

MENU BUTTONS are used to toggle display of toolbars. They can be locked to disallow accidental

clicks.

CONTROL SURFACES

In addition to keyboard, mouse and touchscreen control. The software can also be controlled by various third party hardware controllers. Any controller that emulates keyboard key presses will work in QTAKE. See the section called KEYBOARD SHORTCUTS for more information on assigning button functionality. Native support also exists for the following devices:

C-MOTION

QTAKE supports the use of C-Motion hand units to control 3D HIT. To connect the hand controller to QTAKE you will need a Serial to USB converter. To enable C-Motion control use the following preferences:

Serial_Port_1=
Serial_Port_2=
Serial_Type=cmotion

TANGENT DEVICES - ELEMENT

QTAKE supports the element-Tk for CDL color corrections and the element-Mf for playback control, Jog and Shuttle transport as well as 24 customizable keys (12 + 12 with the use of the A modifier key). To enable the use of either of these element control surfaces use the following preference:

Use_Tangent_Surface=1

AVID ARTIST TRANSPORT

QTAKE now supports Avid Artist Transport Control Surface to improve user interface control - mainly playback control using dedicated Jog and Shuttle wheels. You can use Avid Control software to customize functionality of this hardware controller. To enable Avid Artist Transport support, use following preference:

Use_Avid_Surface=1

JOG SHUTTLE
There are many other control surfaces, panels and keyboards that will work with QTAKE using their own mapping tools that simulate keystrokes.

CUSTOM UI LAYOUT

By pressing a MENU button user enables or disables corresponding toolbar. Button will change its background color from grey to green. If you press MENU button again you will hide it's toolbar. Users can arrange toolbars for each room simply by displaying them in the correct order.

Toolbars always appear from left to right. If you hide any toolbar, all other boxes are moved to fill the gap. There is an arrow on top of each Menu title that indicates if the toolbar will appear in the upper or lower zone. You can toggle the arrow direction by a long-click on the MENU button.

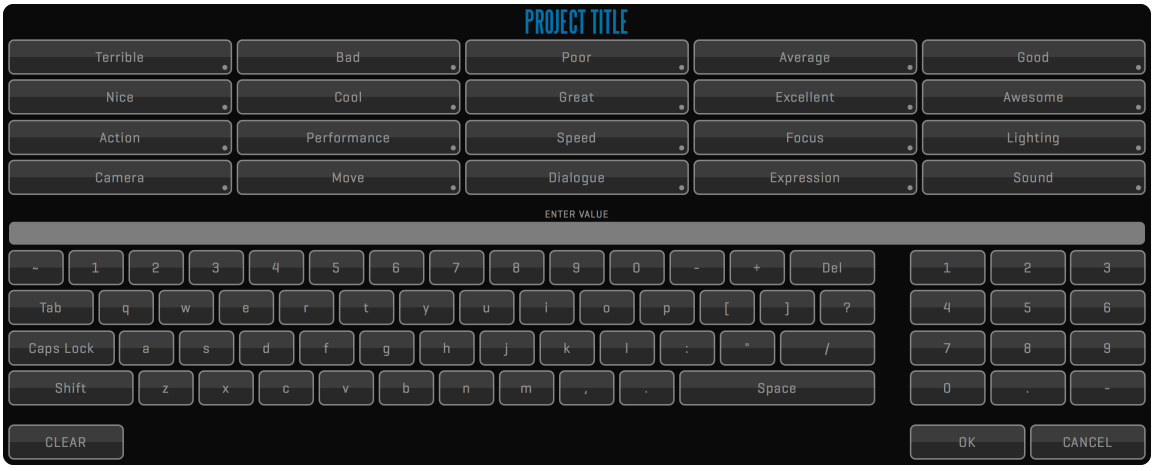
You can prevent Menu Boxes from accidental hiding by pressing the **LOCK** button.

Each ROOM in the application can have its own layout. The orange **LAYOUT** button allows you to save and recall up to eight different layouts. Click the LAYOUT button to reveal the current layout and the eight slots where you can store layouts, by default named LAYOUT 1 - LAYOUT 8. The currently selected layout is highlighted in orange. The first, - (dash) layout, will become active when you modify a saved layout. To store the current layout long-click one of the slots, now you are able to rename your layout and save it. On the right side of the bar you can **CLEAR** or **RESET** the currently configured layout to the default state of the current room.

FAST KEYBOARD ACCESS TO LAYOUTS
You can bind keyboard shortcuts to your layouts for quick access (default shortcuts Alt+1-8)

VISUAL KEYBOARDS

Visual keyboards are used for data input. They are displayed by pressing the data input fields. Above the input field there is a set of keyword buttons containing commonly used values, words or phrases. These buttons can be customized by entering the desired phrase in the input field and long clicking on the button you wish to change. When using physical keyboard you can disable visual keyboards by turning off the **SHOW KEYBOARD** setting. You still have access to the keywords by right clicking on the field you are editing.

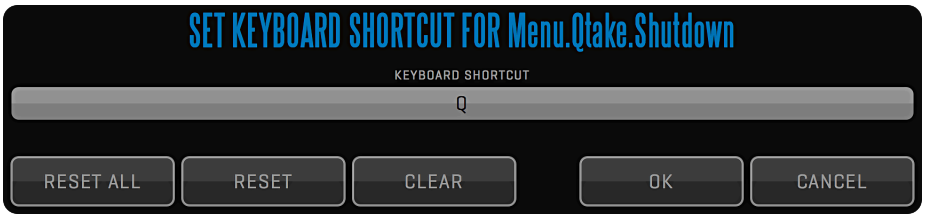


KEYBOARD SHORTCUTS

Hotkeys (or keyboard shortcuts) in QTAKE are configurable and saved per user allowing each user to customize their work environment. Reveal hotkeys for each control element by pressing the Fn

key on your keyboard. While holding this key each command TITLE is temporarily replaced by it's keyboard shortcut representation.

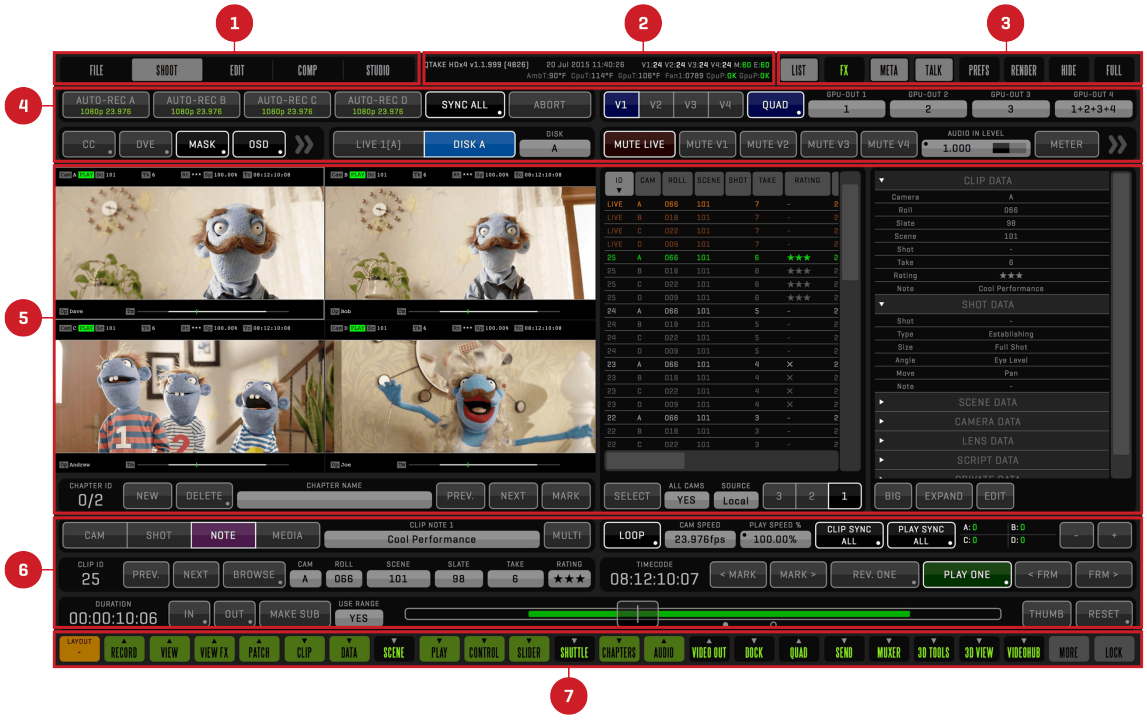
If you click a button while holding down your **Fn** key a popup window will appear that lets you define a new keyboard shortcut for that button. In this window you also have the ability to **CLEAR** (remove any existing shortcut from that button), **RESET** (set default shortcut for that button) / **RESET ALL** (set default shortcuts for all buttons).



KEYBOARD SHORTCUTS CONTEXT
Keyboard shortcuts have to be unique for each button in each room, because all rooms make up a single context. Exceptions are windows that appear on top of the standard UI. Windows are modal and therefore allow the hotkeys from the main context to be re-used.

SCREEN ZONES

Screen area is divided into seven zones.



1. ROOM BUTTONS ZONE
   This is the zone where you choose what part of the application (ROOM) you want to work in.

2. STATUS BAR ZONE

System status and log messages are displayed in this zone.

3. SPECIAL BUTTONS ZONE
   This zone contains the most commonly used commands, such as toggling the display of sidebars or hiding the application.

4. UPPER TOOLBARS ZONE
   This is the zone where toolbars appear when you click MENU buttons set to top mode.

5. VIEWS ZONE
   This zone is used to display video content, as well as sidebars.

6. LOWER TOOLBARS ZONE
   This is the zone where toolbars appear when you click MENU buttons set to bottom mode.

7. MENU BUTTONS ZONE
   The green and black Menu buttons control what UI elements are displayed in each room.

TOP BAR

Top bar menu contains the most common commands in QTAKE.

HELP

Help screen is used to display QTAKE manual directly inside the application.
Press the **HELP** button to scale down QTAKE interface and load the User Guide. Press the **HELP** button again to close it. Help screen will allow you to browse the manual using PREVIOUS and NEXT rounded buttons at the bottom of the page that will jump through the sections. Top rounded button will show you your current position in the document. Clicking this button will open the Table Of Contents and allow you to jump directly to desired section.
BACK and **FORWARD** buttons are used to navigate through the history of visited parts of the manual.
Turn on the **UI MODE** to automatically highlight part of the manual that explains currently clicked button in the QTAKE user interface. Use the right click (or left click and drag the cursor out of the button area) if you want only help highlighted without activating the primary function of the button.

ROOMS

Main menu of the application consists of 5 Rooms:

FILE

This is the initial room, where you create users and projects, adjust system settings and import / export files. Keyboard shortcut is Shift-1.

SHOOT

This room is used to record and playback clips, enter clip data and adjust various display options. Keyboard shortcut is Shift-2.

EDIT

Edit room is used to make sequences of clips. Keyboard shortcut is Shift-3.

COMPOSITE

This room is used to prepare your VFX shots by creating various overlays of two video layers. Keyboard shortcut is Shift-4.

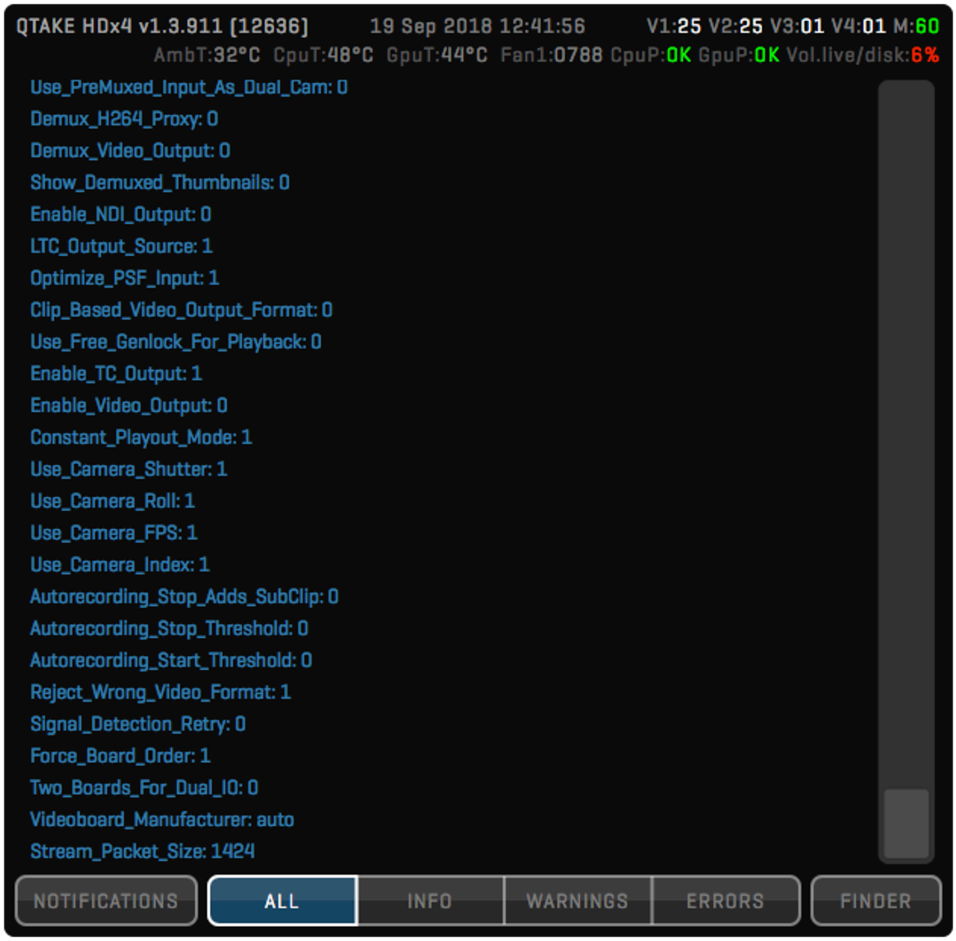
STUDIO

The Studio room allows you to record and cut up to 4 live video feeds. Keyboard shortcut is Shift-5.

STATUS

The STATUS BAR is located along the top of the interface, next to the ROOM buttons. This area is

used to display information about the current state of QTAKE. The first row contains QTAKE version number, current date and time and performance information. The **V** numbers correspond to the number of frames processed in each view. **M** corresponds to the number of frames sent to the GUI monitor and **E** corresponds to the number of frames sent to the external GPU output.



The second row contains hardware status information such as the ambient temperature (as read by the computer's internal sensors) and fan speeds. **CPUP** and **GPUP** indicate the state of system frequency throttling. Any value other than **OK** indicates that the system is reducing the frequency of the respective component due to risk of overheating. If you are using default system audio device as your QTAKE output device (which is not a recommended practice), you will also see the volume level displayed here. Click the status bar to show the expanded log message view. Log view can be set to display **NOTIFICATIONS** or to filter log messages based on their type: **ALL**, **INFO**, **WARNINGS** and **ERRORS**. The **FINDER** button is used to hide QTAKE and reveal the current log file in the Finder.

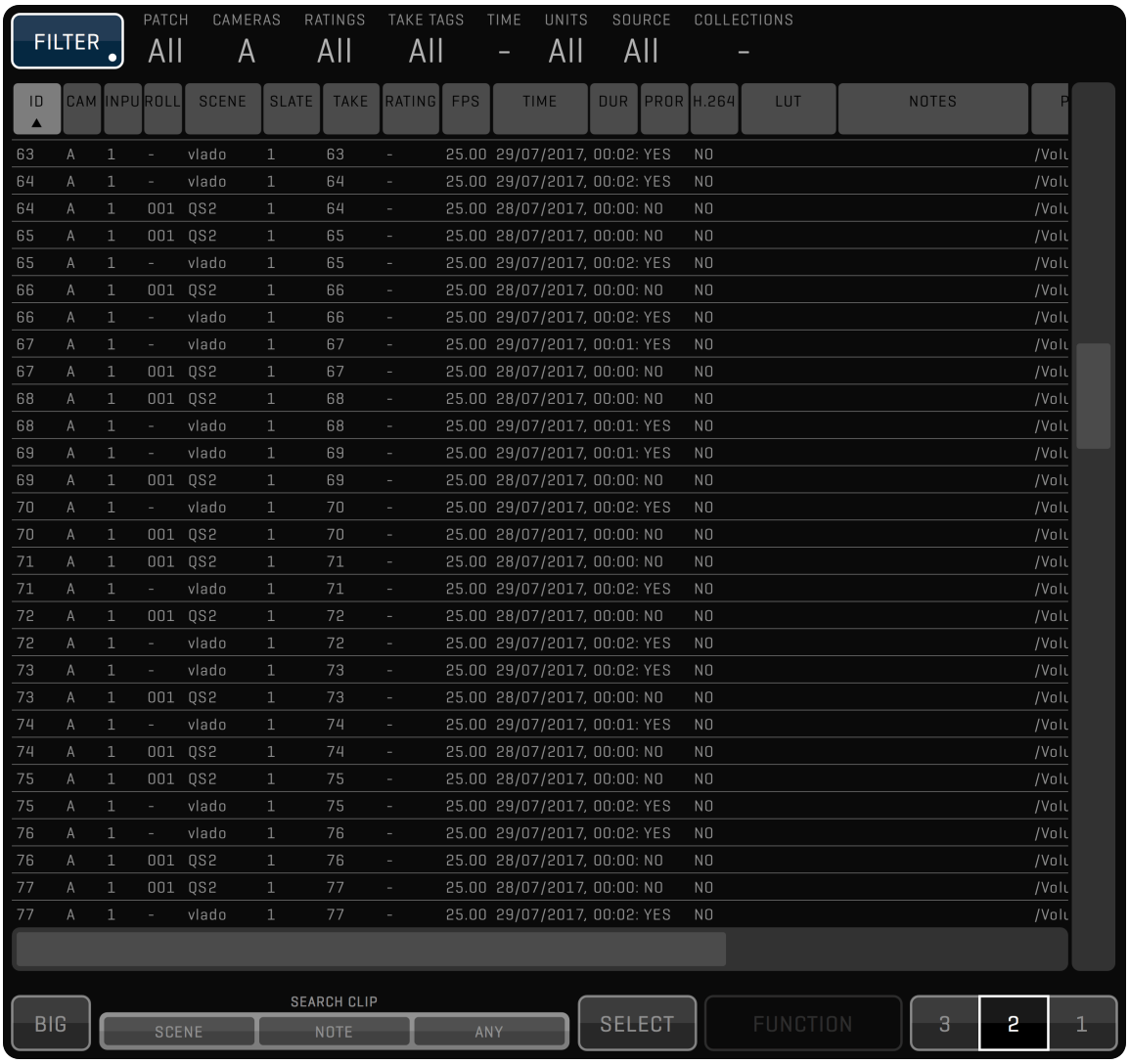
LIST

Clicking the **LIST** button in the special buttons zone (or long clicking the **BROWSE** button) will open the clip list browser window. This browser gives you an overview of the recorded clips in a convenient list form. Clips are sorted by clicking on any of the column headings. List layout can be customized by moving the columns left or right and by resizing each column.

Clicking any row will load respective clip into active view. Dragging cursor through the list will

temporarily display thumbnail of the selected clip. Releasing the mouse button will load selected clip into active VIEW. Releasing the mouse button outside the LIST will cancel loading and keep the current clip in the VIEW. By selecting LIVE clip from the list, you can patch current VIEW to live input.

Long click the **FX** button the make the FX side bar visible in the full-screen mode.



CLIP LIST FILTER

User can filter clips by using the **FILTER** options.

PATCH allows filtering by active view patch. **CAMERAS** filter clips by selected camera letters. To filter clips by the number of stars, use **RATINGS** filter. **TAKE TYPES** will filter pick-ups, part takes and reference takes. **TIME** filter is used to filter clips by the time they were recorded. **ORIGIN** filter is based on how the clip was created. To show clips from the main or second unit, use **UNITS** filter and if you want to show clips from specific QTAKE system, use **SOURCE** filter. **BINS** are like folders, they allow user to group clips that have no metadata to be grouped by. Use **SMART BINS** to group clips dynamically by their metadata using simple or complex filtering rules in the SMART BIN editor.

The segmented button labeled **3 2 1** lets the user set the horizontal size of the list browser. Note that some functionality is hidden when horizontal size is set to 2 or 1.

The **BIG** button resizes each row of the list to enable them to be used with a touch screen.

The **LIVE CLIPS SORT** menu can help you to quickly set the order of your LIVE clips.

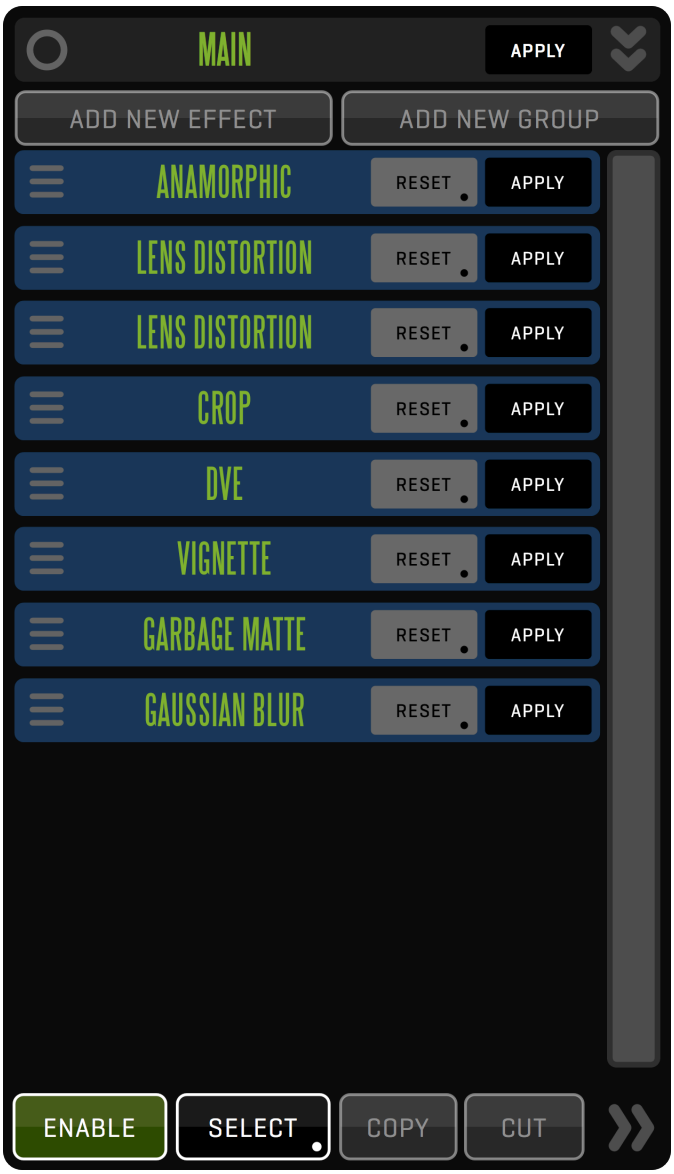
The **SEARCH CLIP** input field lets the user filter displayed clips by searching for SCENE, NOTE or ANY. To disable the filter simply long click the SEARCH CLIP button again.

The **SELECT** button lets you select multiple clips to perform a function on. In addition, metadata can be edited for selected clips using **META** sidebar, **CLIP** and **DATA** menu bars.

The **FUNCTION** button displays the menu options for the selected clip/s.

FX

CLIP FX is the stack of image processing effects that are applied to a clip in a viewer. These effects only apply to the active clip and are separate from any effects applied through the VIEW FX menu. Like metadata, effects that are added to live clip will be added to all clips that are recorded using the same input. Effects in the stack will be applied in the top-to-bottom order.



Clicking the **FX** button in the top bar section of the interface brings up the CLIP FX sidebar in the VIEWS ZONE. The CLIP FX sidebar is divided into **GROUPS** to help keep your effects organized and to allow linking certain parts of the effects stack between multiple cameras. It contains a single group called MAIN by default.

> Long click the **FX** button the make the FX side bar visible in the full-screen mode.

By clicking the **ADD NEW EFFECT** button in the CLIP FX sidebar you can choose and add an effect to the active clip. Effects will be placed into the current GROUP.

The **ADD NEW GROUP** button lets you add groups to the current group.

Long-clicking the GROUP will let you add a custom name to that GROUP. Clicking a GROUP will enter it and the CLIP FX sidebar will display all effects contained within that group. The GROUP title bar will change to display an arrow icon (<) and a number indicating the sub-level of the group in the CLIP FX hierarchy. Clicking the arrow will take you back to the parent GROUP. Each sub-GROUP

can be linked to clips in other views by using the **LINK** button. Long-clicking the LINK button will allow you to select which views are linked, similar to CLIP SYNC or REC SYNC. If a GROUP with the same name, or effects contained in that GROUP are not present in the clip of the linked view, they will be automatically created.

The **SELECT** button lets you SELECT effects and **COPY** or **CUT** them. **PASTE** will add the effects to the current GROUP of the active clip. This allows you to move effects between GROUPS and clips.

ENABLE (shortcut **Ctrl-F**) button lets you globally enable or disable all CLIP FX.

You can disable individual effects or groups by clicking its **APPLY** button. Long-clicking **RESET** button will reset all parameters of the effect. In order to remove an effect from the stack grab its handle (the three horizontal bars on the left side of the effect heading) and drag the effect out of the side bar, towards the views. The handle also lets you change the order of effects in the sidebar.

All GROUPS and most CLIP FX can **SAVE** and **LOAD PRESETS**. GROUP PRESETS can be accessed by entering the GROUP and clicking the arrows (**»**) on the top right of the title bar. The SAVE button will save all CLIP FX belonging to that GROUP into a named PRESET. The LOAD button will bring up the PRESET LIBRARY window where you can SELECT, RENAME and set a TITLE for each of your GROUP PRESETS. Clicking a PRESET will LOAD that PRESET and apply it to the GROUP. When saving changes to a PRESET you can choose to overwrite the current PRESET. Overwriting a PRESET will update all clips with that PRESET. CLIP FX PRESETS can be accessed by clicking the SAVE or LOAD button under the effects title bar. They function in the same way as GROUP PRESETS but will only save or load the parameters of a single effect.

In the CLIP FX sidebar you can apply the following effects, click on each heading to reveal the controls:

EFFECT OPACITY AND MATTE
Almost every effect has the option to apply opacity and a matte extracted via Extract Matte or

Garbage Matte. This allows for a wide array of effects application for different portions of the whole clip.

FX HISTORY

FX sidebar contains HISTORY BROWSER that allows you to go back to any previous change made to your effect stack. This is similar to undo/redo functionality found in other applications, but way more powerful, because it lets you see the visual representation of every step.

BLUR/SHARPEN

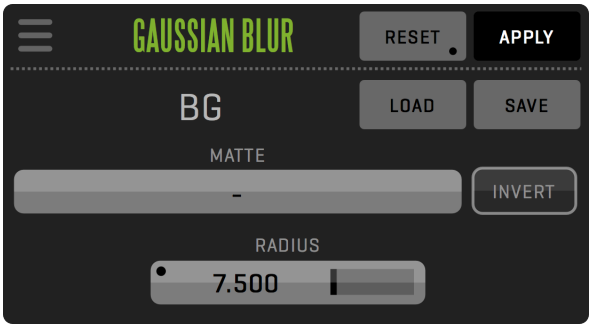
This category of effects contains tools that handle blurring and sharpening of the image.

DIRECTIONAL BLUR

This effect applies directional blur to the clip. It allows you to set the **RADIUS** and the **ANGLE** of the blur.

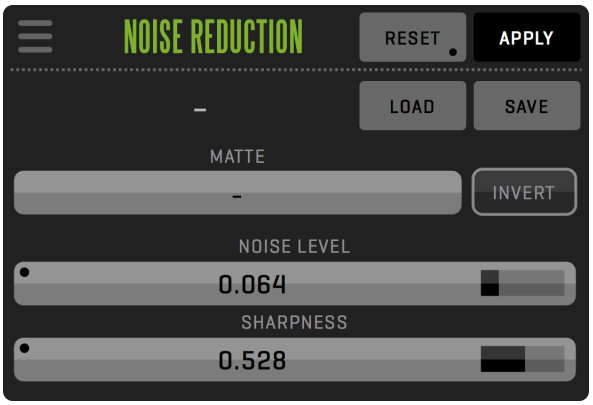
GAUSSIAN BLUR

This effect applies a gaussian blur to the clip. It is useful for simulating the out-of-focus background in a composite.



NOISE REDUCTION

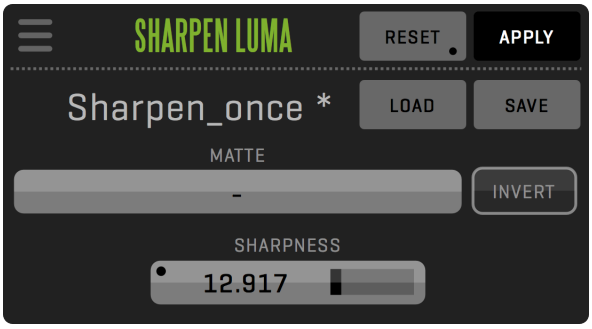
This effect reduces the image sensor noise in the video.



SHARPEN LUMA

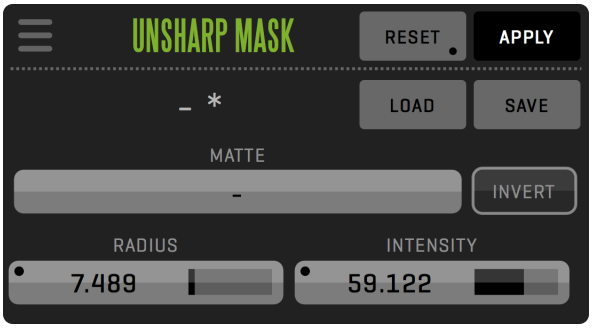
This effect is used to sharpen the luminance part of the image without affecting the chroma

channel.



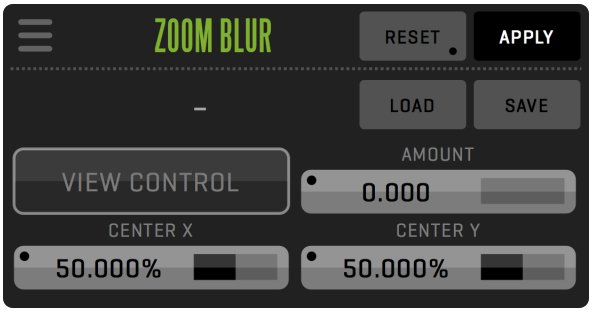
UNSHARP MASK

This effect amplifies the high-frequency components of the image resulting in a clearer representation.



ZOOM BLUR

This simulates the effect of zooming the camera lens while exposing the image.



COLOR

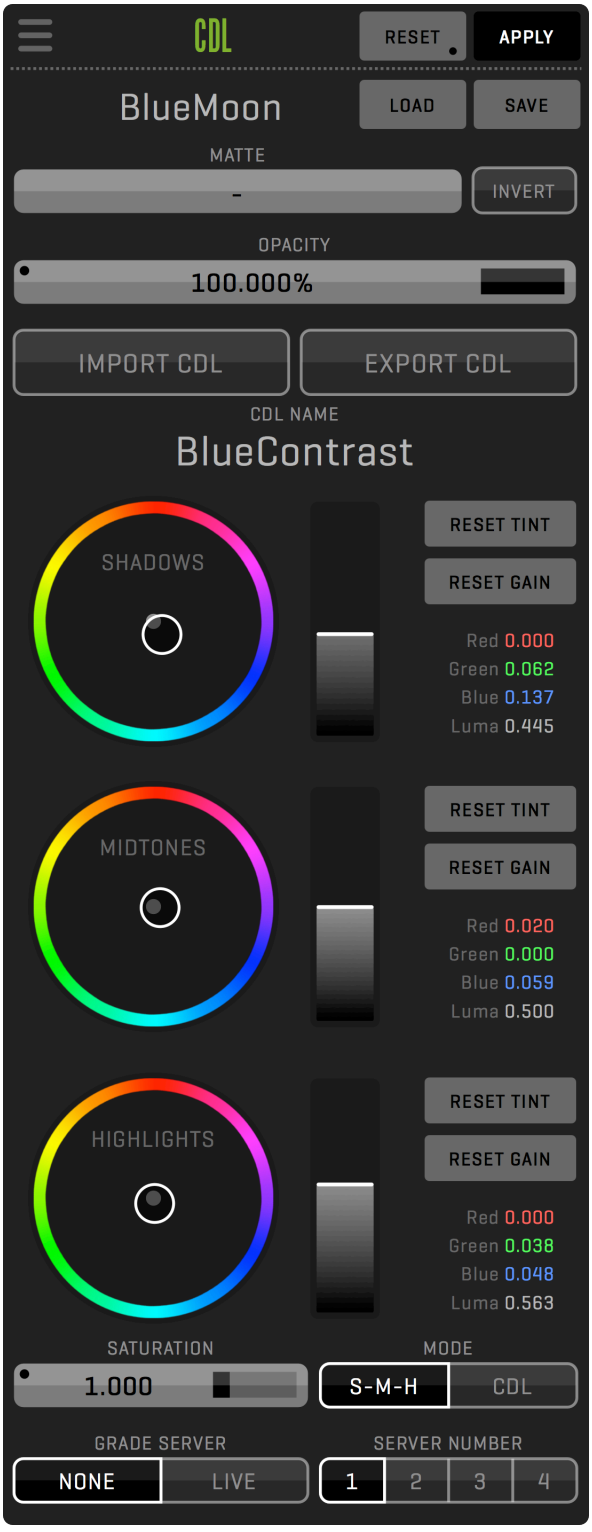
This category contains effects used for color correction.

The most common CDL and LUT effects are available in the BASE module, but the rest of the color tools (including control of the external LUT boxes) require **GRADE** module license.

Many of the advanced color effects use a curve view to allow adjustments to the effect. Adjustable points in the curve are represented by an orange circle. Drag the point to adjust its position in the curve. Add another point by clicking on the curve. To remove a point drag it outside of the curve view.

CDL - COLOR CORRECTION

ASC Color Decision List 1.1 is a widespread color correction standard. This simple, but powerful 3-way corrector can be used to color grade each individual clip. You can import externally created **CDL** xml files by either hiding QTAKE and dragging them to the QTAKE icon in the dock or copying them to /Applications/QTAKE/CDL. The **IMPORT CDL** and **EXPORT CDL** buttons lets you save and recall imported and previously created CDL corrections in the **COLOR CORRECTION LIBRARY**.



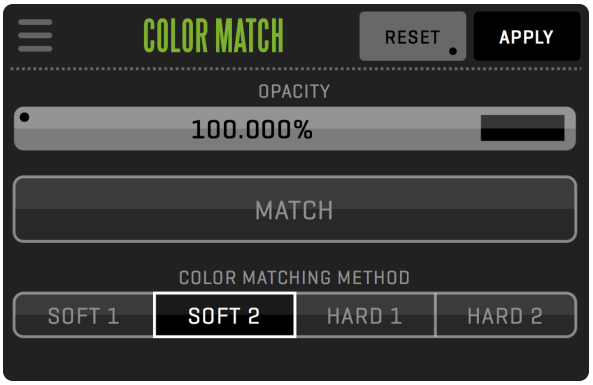
The CDL clip effect can also be tied to a DIT using the **LIVEGRADE PRO** software. This allows QTAKE

to mirror and store CDL adjustments done in Livegrade Pro software. To enable this functionality set the IP address and port number of the LIVEGRADE server in preferences.

LiveGrade_Host_1=localhost
LiveGrade_Host_2=localhost
LiveGrade_Host_3=localhost
LiveGrade_Host_4=localhost
LiveGrade_Port_1=6666
LiveGrade_Port_2=6667
LiveGrade_Port_3=6668
LiveGrade_Port_4=6669

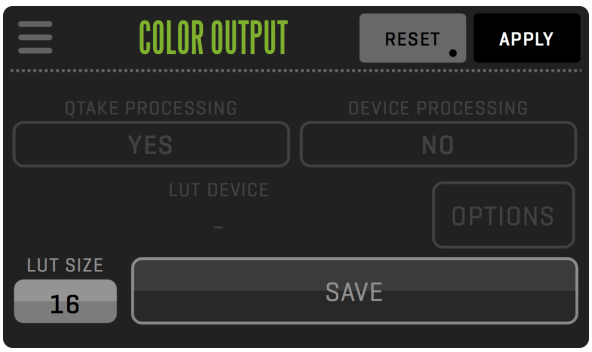
COLOR MATCH

This powerful effect alters color components in order to match the image in a REFERENCE view. Select the view to use as a reference and click **MATCH** button to produce the result. COLOR MATCH can use one out of four different color matching methods.



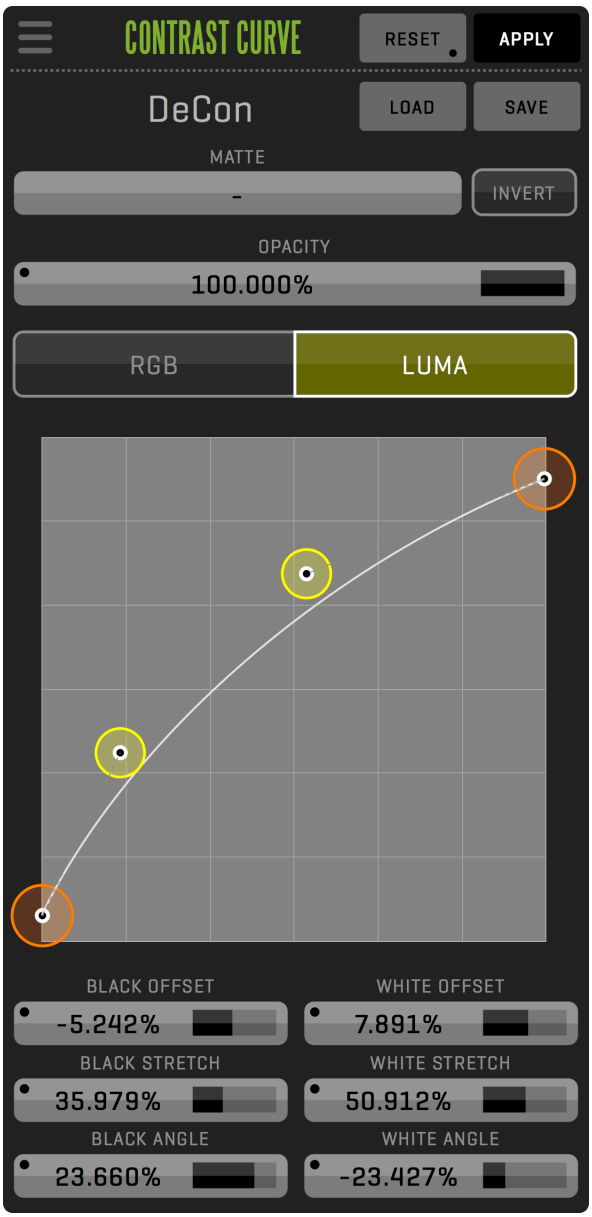
COLOR OUTPUT

The COLOR OUTPUT effect allows you to create and **SAVE** look-up tables (LUTs) based on color effects above it in the CLIP FX sidebar. Only color effects can be saved as LUTs, spatial effects such as DVE and VIGNETTE will not be incorporated in the LUT. Effects that are included in the LUT have blue title text. The COLOR OUTPUT effect also lets you control external LUT boxes such as the Fuji IS-mini or Teradek Colr. In order to control an external LUT box it needs to be connected over network or USB. QTAKE will automatically identify devices found via USB or Bonjour. Click the **LUT DEVICE** label to bring up a window listing all identified LUT boxes. If your device is not present you can add it to the list by clicking the NEW button and manually typing in the address. The **IDENTIFY** button will help you keep track your connected devices. When enabled the selected device will output the red channel of the input image. Some LUT boxes can apply the CDL values separately from the LUT. The CDL effect will have teal colored title text when this is the case. The **QTAKE PROCESSING** and **DEVICE PROCESSING** buttons lets you choose whether QTAKE, the LUT box or both should apply color effects to the image. The **LUT SIZE** selection box lets you define how many “steps” there are in the 3D LUT. Values that fall between these steps will be interpolated. When using an external LUT box QTAKE will automatically set the LUT SIZE to a compatible value.



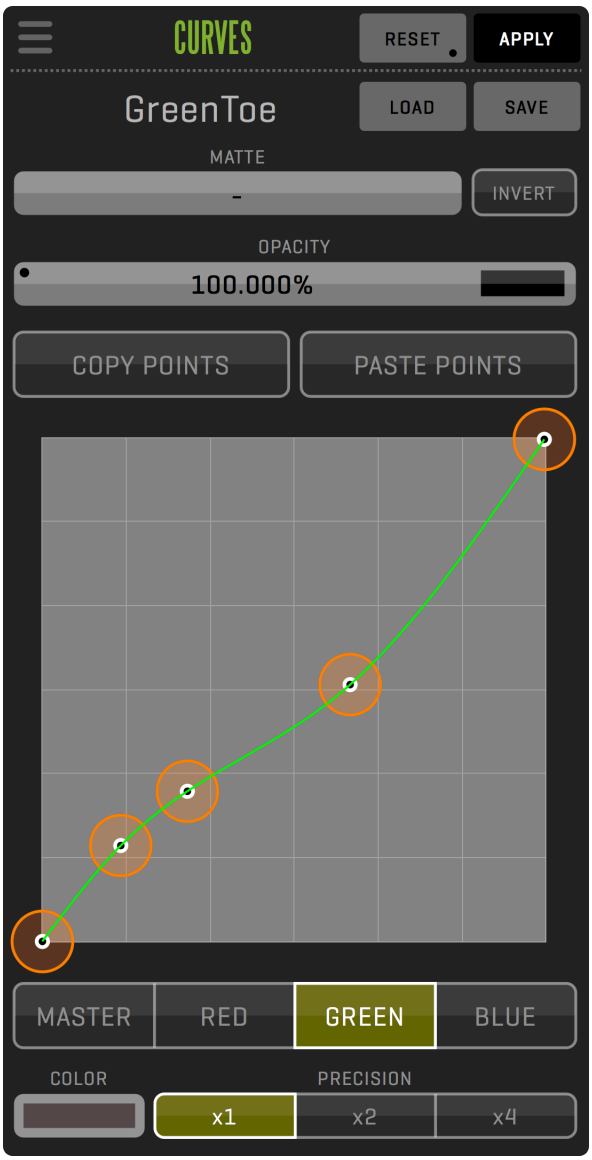
CONTRAST CURVE

This effect is similar to the **CURVES** effect. But the additional handles, sliders and numerical input fields allows a highly adjustable and accurate contrast adjustment. The orange control points allow you to adjust the BLACK OFFSET and WHITE OFFSET while the yellow handles allows you to shape the curve in the graph display. You can select whether the contrast should affect **LUMA** or the **RGB**. Selecting LUMA will retain the original saturation of the image while selecting RGB will apply the curve equally across all color channels.



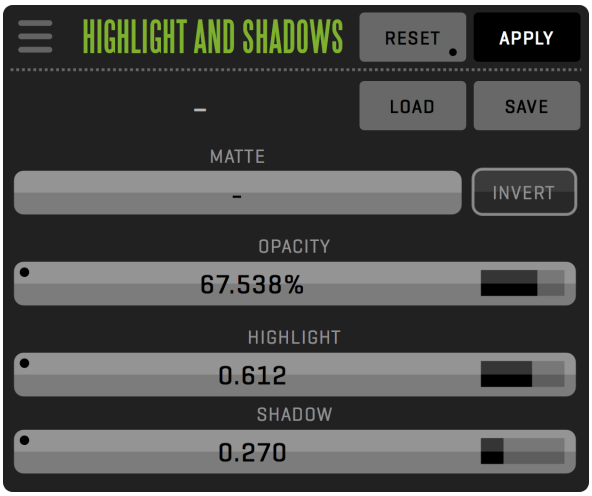
CURVES

The **CURVES** effect allows you to apply an **RGB** curve to the clip. In simple terms the curve can be though of as a means to apply variable gain to the image. The horizontal axis represents the color values in the original (input) image, from 0% on the left to 100% on the right. The vertical axis represents the color values of the resulting (output) image, from 0% at the bottom to 100% at the top. A neutral curve, where the output is identical to the input is represented as a straight, diagonal line. The segmented button at the bottom of the effect lets you switch between adjusting the **MASTER** curve or **RED**, **GREEN** and **BLUE** color channels individually. **COLOR** field lets you sample the color from the image to set the point on the curve.



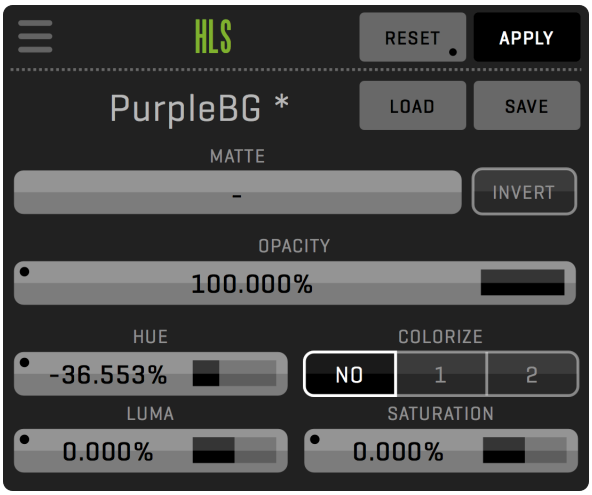
HIGHLIGHT AND SHADOWS

This effect provides adjustment of the **HIGHLIGHT** and **SHADOW** portions of the image. It is used to simply control the gain of the very dark or very light areas without affecting the rest of the image.



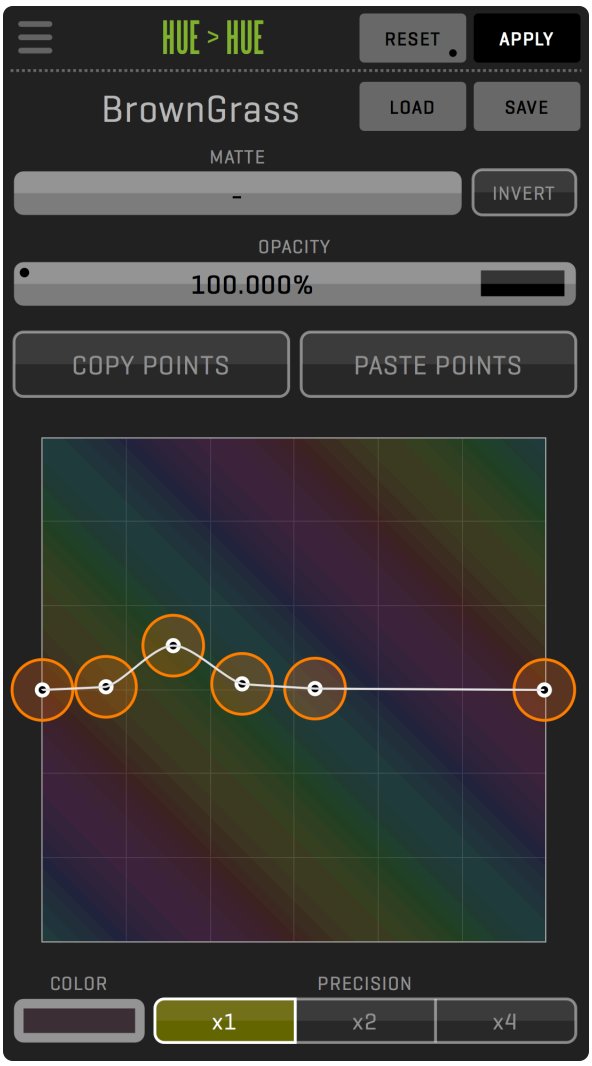
HLS - HUE, LUMA, SATURATION.

This effect allows you to perform adjustments of the **HUE**, **LUMA** and **SATURATION** channels. The **COLORIZE** button shifts all colors in the input image to hues of a single color, controlled by the **HUE** button.



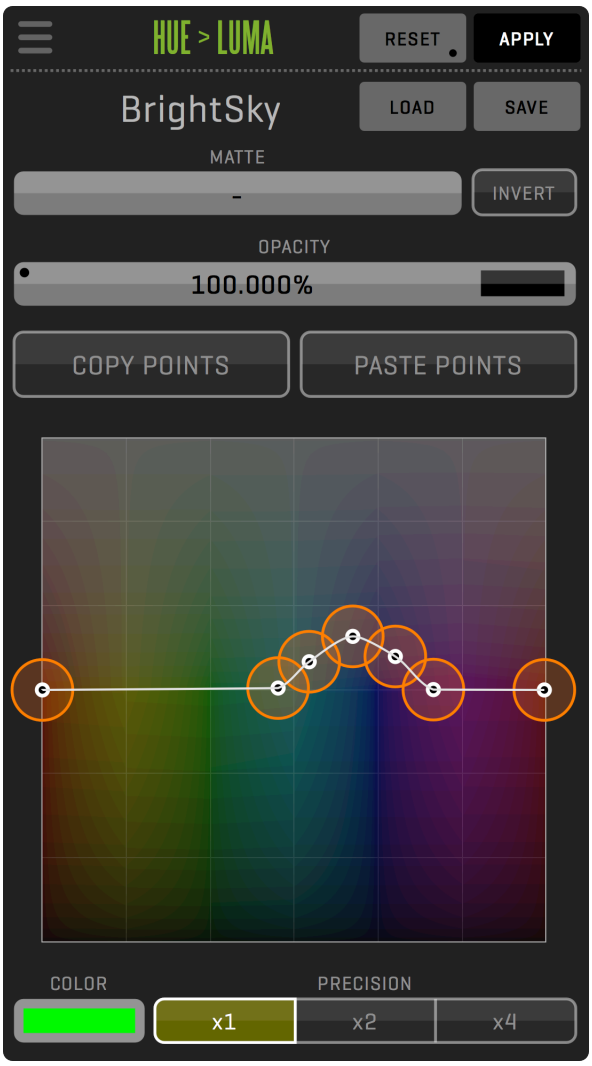
HUE > HUE

This effect allows you to selectively shift colors of the image. The horizontal axis represents the different hues in the original image. Moving the curve along the vertical axis allows you to adjust the hues of the resulting image. The **COLOR** picker allows you to add a point to the curve by sampling the image in the view.



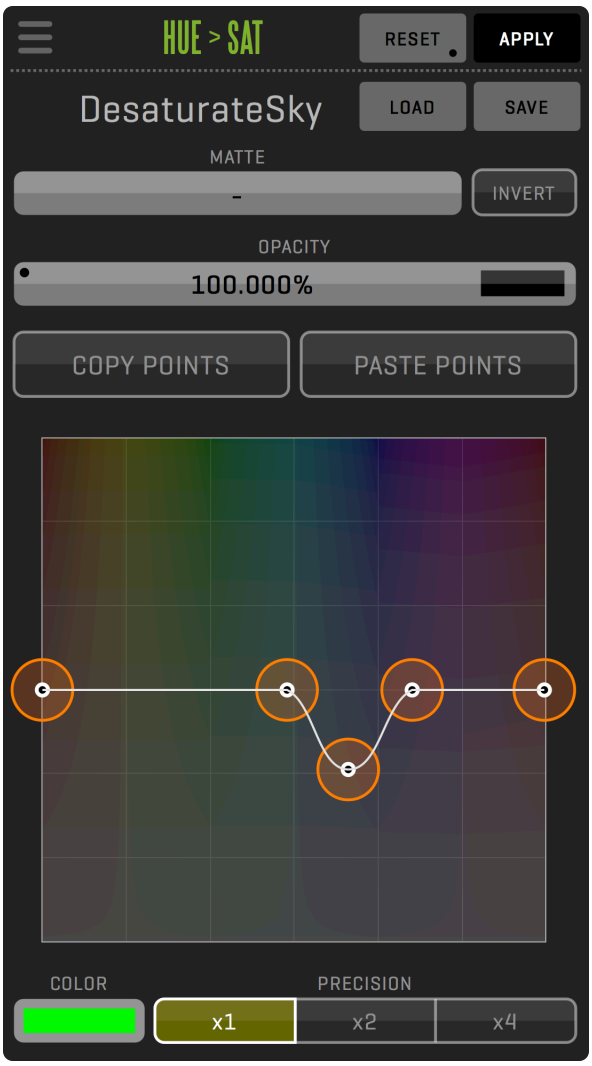
HUE > LUMA

This effect adjusts the lightness of selected hues based on the curve displayed. The horizontal axis represents the different hues in the original image. Moving the curve along the vertical axis adjusts the lightness of those hues.



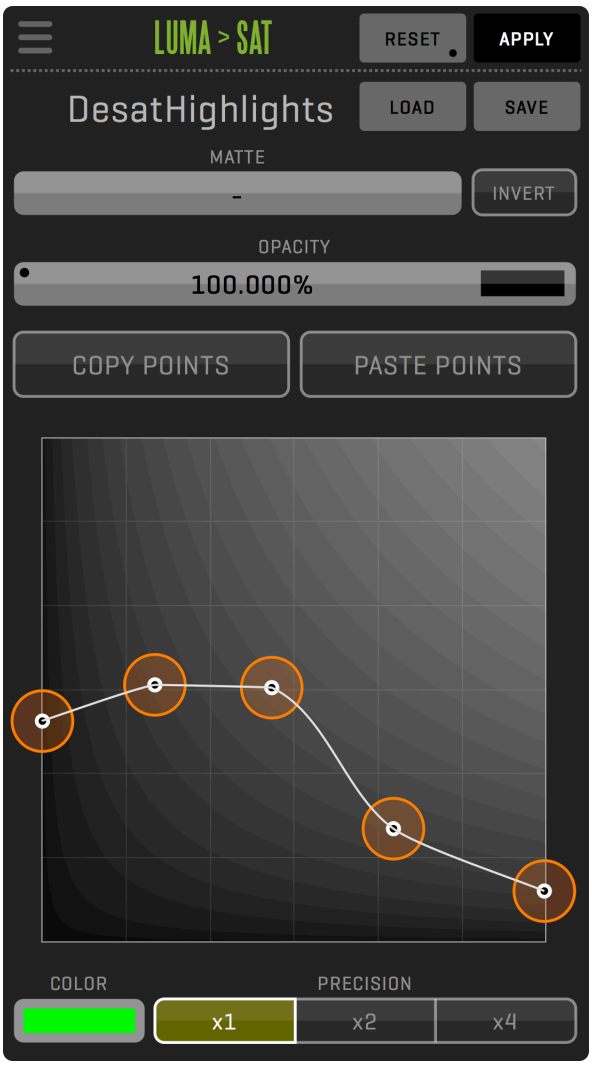
HUE > SAT

This effect allows you to selectively increase or decrease the saturation of hues within the image. The horizontal axis represents the different hues in the original image and the vertical axis represents the saturation change of those hues.



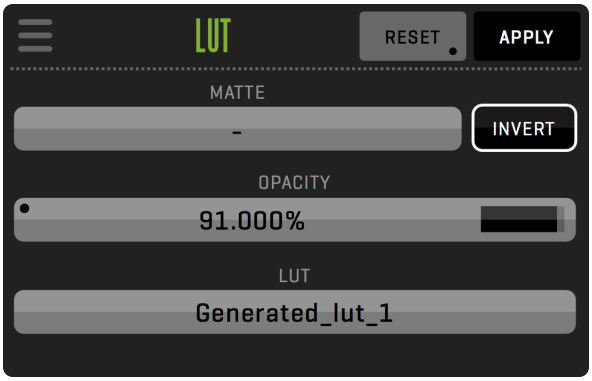
LUMA > SAT

This effect adjusts the saturation based on the luminosity value of the original image. The horizontal axis represents the luminosity values of the input image and moving the curve increases or decreases the saturation in selected parts.



LUT

Allows you to browse for and apply a look-up table to the current clip. QTAKE supports 1D and 3D LUTs in Iridas .cube format.



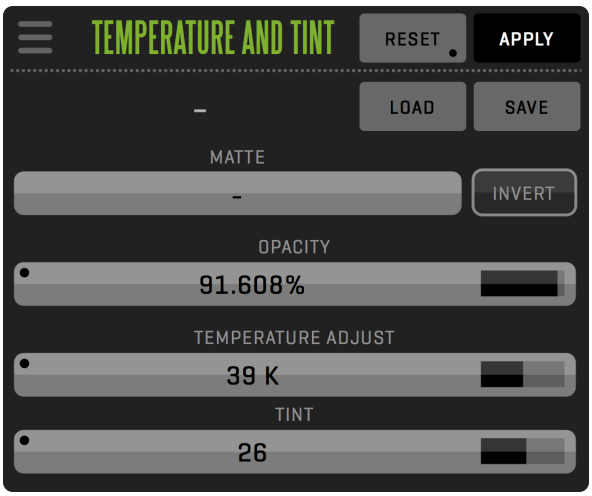
IMPORTING LOOK UP TABLES (LUT)
To be able to use a LUT, place it in the /Luts subfolder of the application directory and restart QTAKE. Alternatively, drag the LUT files onto QTAKE dock icon.

SAT > SAT

The saturation versus saturation curve adjusts the output saturation based on the input saturation.

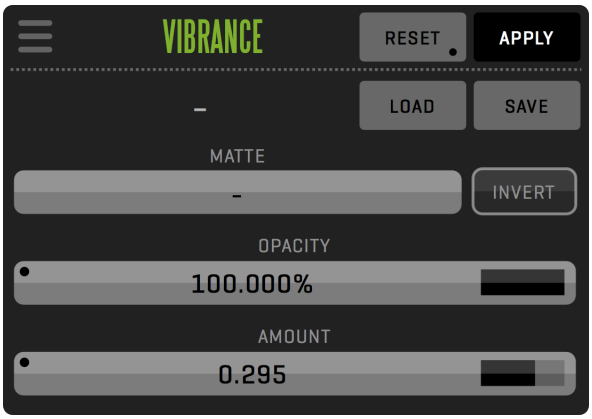
TEMPERATURE AND TINT

Use this effect to make the image hues warmer or cooler by adjusting **COLOR TEMPERATURE** value. **TINT** will shift hues towards green or magenta.



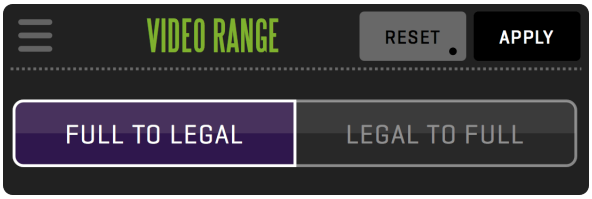
VIBRANCE

This effect will saturate colors of the image without over-saturating the skin tones.



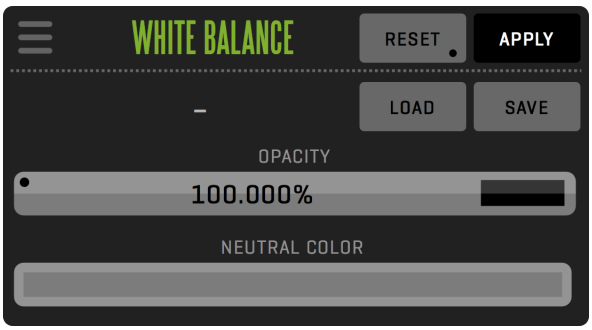
VIDEO RANGE

This effect lets you transform full range values to legal range values or legal range values to full range. This is useful for imported footage that might not correspond to the video range used in the project.



WHITE BALANCE

This effect automatically adjusts the color temperature based on color sampling of the **NEUTRAL COLOR** in the image. Use this effect to if the image looks too cold or too warm.



MATTE

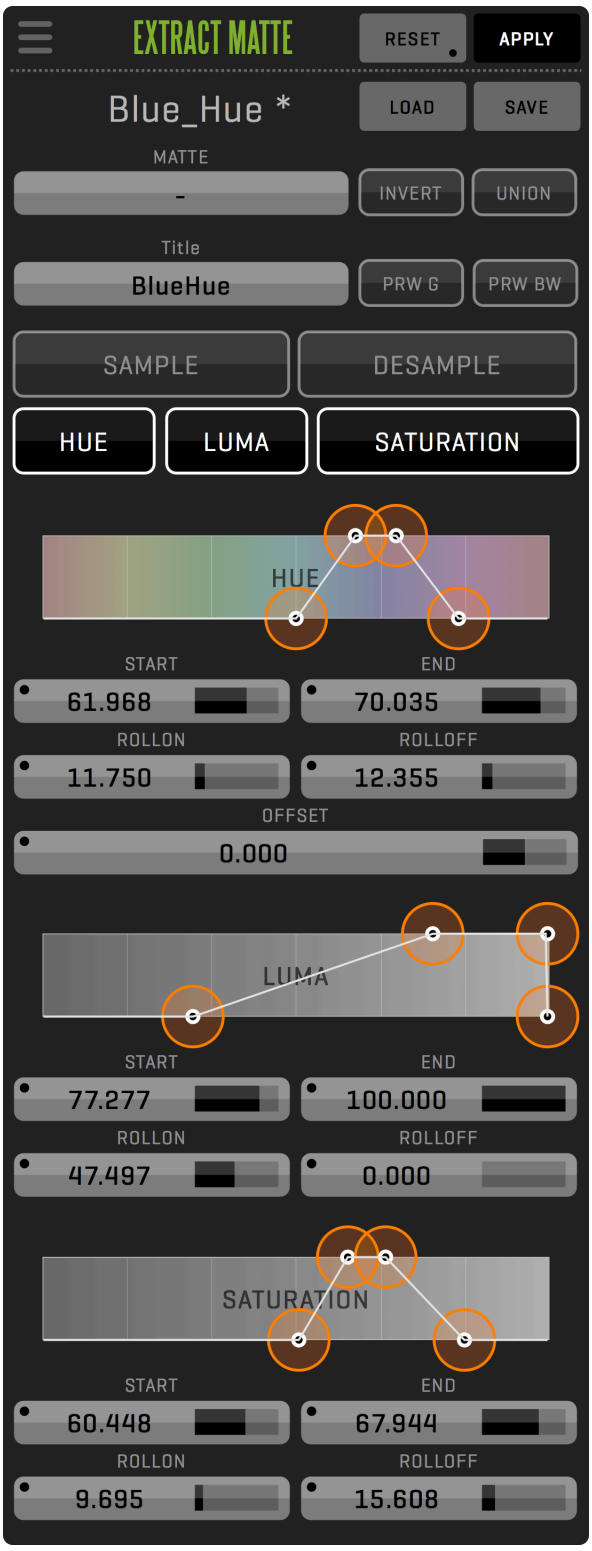
This category contains effects that handle masking of the image area. Mattes can be used to apply effects only to certain parts of the image.

ALPHA

Alpha effect is used to premultiply or un-premultiply alpha channel. This is useful when recording or importing video with transparency (RGBA), because the source can have different alpha premultiplication than needed.

EXTRACT MATTE

This effect does not affect the image in any way, instead it isolates areas of the image based on LUMA, HUE and SATURATION values. The isolated area or matte can then be used as a qualifier in other effects. This tool can be used to perform selective color correction, if the mapping curves don't produce desired effect.

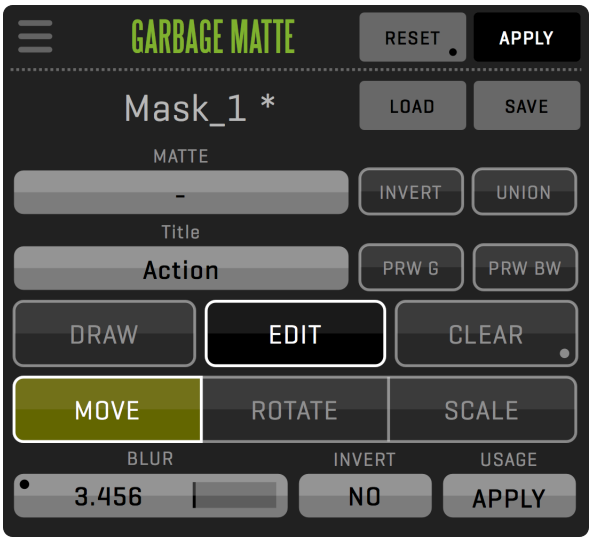


GARBAGE MATTE

Lets you create a mask for the active clip. Select **DRAW** and click on the image to create points in the mask, to "close" the mask click on the first point you created.

In **EDIT** mode you can **MOVE, ROTATE** or **SCALE** the mask. To manipulate a smaller section of the mask select the points individually or click and drag a box to select multiple points at once. Clicking inside the mask selects every point in the mask and clicking outside it deselects all.

The **CLEAR** button lest you remove selected points or by long clicking clear the entire mask. Adding points is done by long clicking between two existing points. You can also **BLUR** and **INVERT** the mask.



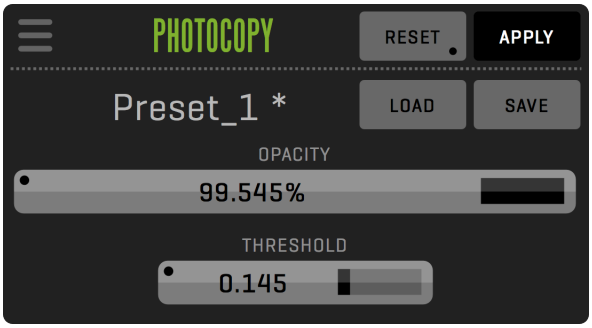
KEY ONLY mode is used in the COMPOSITE ROOM to limit the CHROMA KEY effect to a specified region of the keyed image. Unlike a regular GARBAGE MATTE the masked out area while in KEY ONLY mode specifies an area that will remain unaffected by the CHROMA KEY. This is useful if you are keying a small part of the image like a window or a doorway.

STYLIZE

This category contains effects that perform expressive image manipulation.

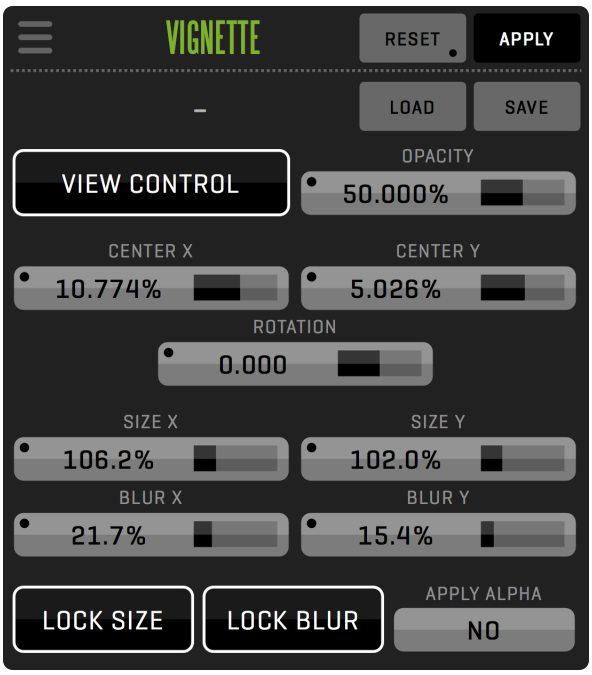
PHOTOCOPY

The PHOTOCOPY effect will reduce the colors of the clip to a black and white image. The THRESHOLD value adjusts the brightness level where the transition between black and white occurs.



VIGNETTE

This effect creates a circular mask that causes the image to fade towards black near the corners of the view. Using the sliders allows to to adjust the rotation, size, transparency and the amount of blur of the vignette.

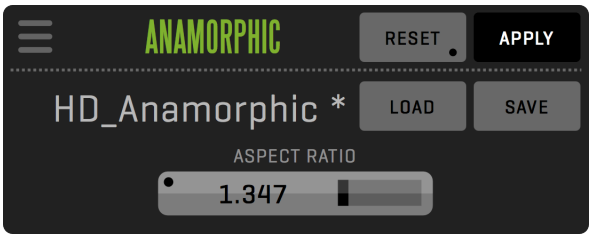


TRANSFORM

This category contains effects that alter spatial representation of the image.

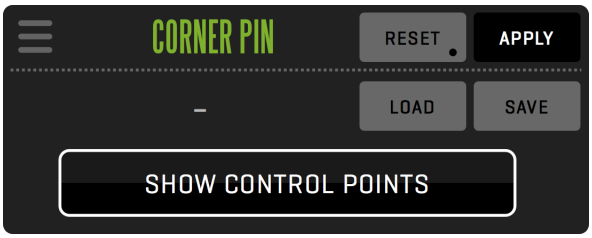
ANAMORPHIC

If you are shooting with anamorphic lenses, you can use the **ANAMORPHIC DESQUEEZE** effect to specify the amount of stretch needed to display the image with a correct aspect ratio.



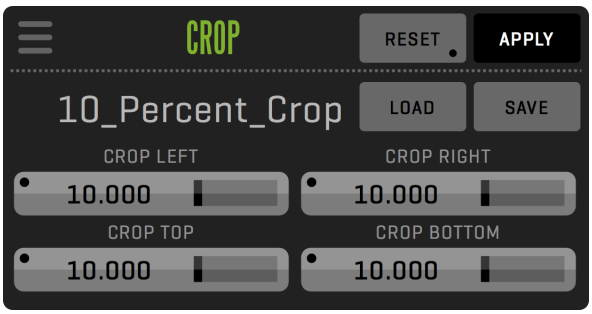
CORNER PIN

This effect allows you to distort the image by dragging its corners. This is commonly used to match the perspective for a billboard mapping. Enable **SHOW CONTROL POINTS** to display the corner points.



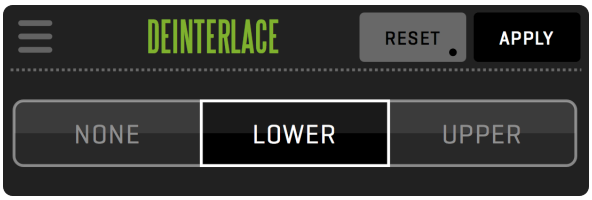
CROP

Allows you to CROP the video by adjusting **CROP TOP**, **CROP BOTTOM**, **CROP LEFT** and **CROP RIGHT** values.



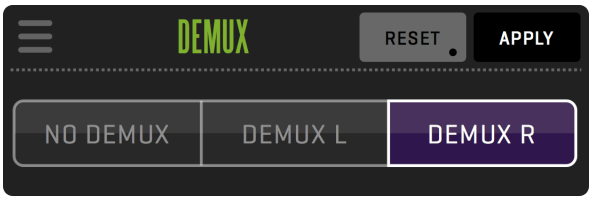
DEINTERLACE

Use this effect to remove interlaced video fields that can cause jitter on still or speed changes. The segmented button allows you to select **UPPER** or **LOWER** field to be used to interpolate missing lines for full vertical resolution.



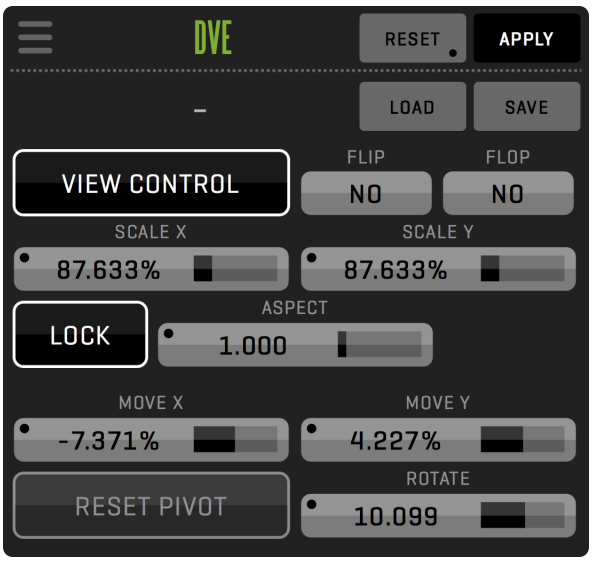
DEMUX

This effect is used to convert muxed 3D stereoscopic side-by-side image to a single camera (left or right eye) 2D representation.



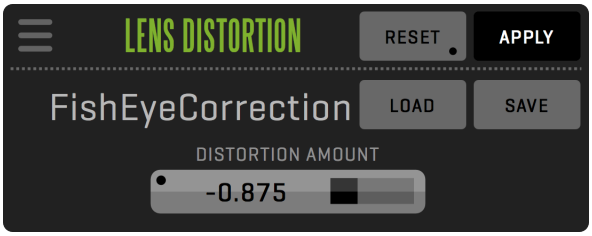
DVE

With the DVE controls located in the CLIP FX sidebar you have access to per clip DVE functionality. These settings will, unlike the VIEW based DVE settings, be specific to the active clip. Like the VIEW based DVE you have the ability to scale, position, rotate, and mirror the video frame by adjusting the following parameters: **SCALE X, SCALE Y, MOVE X, MOVE Y, FLIP, FLOP, ROTATION.**



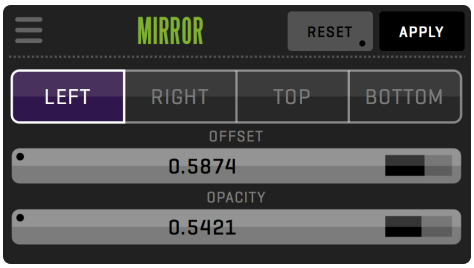
LENS DISTORTION

Allows you to simulate or remove lens distortion from the video by adjusting the **DISTORTION AMOUNT** value.



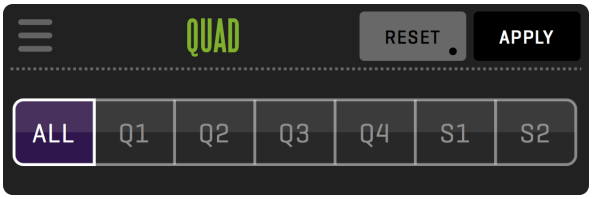
MIRROR

Enables the usage of the mirror effect with adjustable offset and orientation.



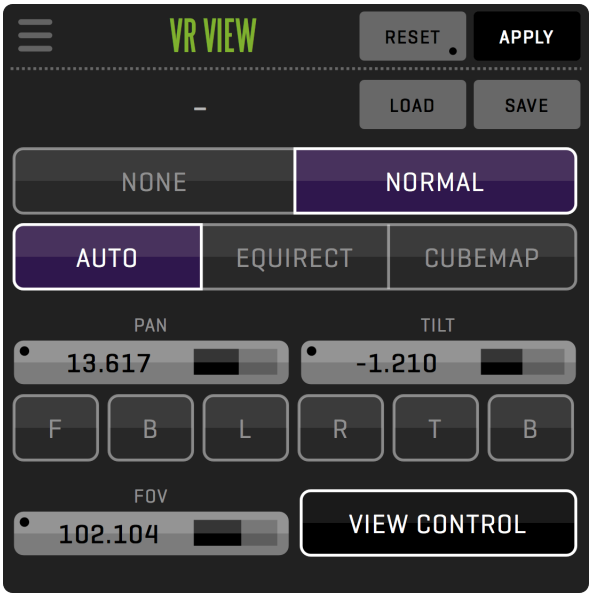
QUAD

The CLIP FX QUAD menu replicates the QUAD menu functionality but on a per clip basis.



VR VIEW

Converts video with equirectangular projection to video with rectilinear projection. This allows you to view and playback VR360 video. The **NONE** and **NORMAL** buttons turn the effect on and off. **PAN, TILT** and **VIEW CONTROL** lets you adjust the virtual camera orientation. You can switch between some common orientations by using the **F** [front], **B** [back], **L** [left], **R** [right], **T** [top], **B** [bottom]. buttons. The **FOV** value sets the field of view or the "focal length" of the virtual camera.



META

The **META** sidebar provides a convenient way to view and edit all metadata of the clip in the active view. If the **SELECT** mode is enabled in the **LIST**, META sidebar will display aggregated values for all selected clips. This allows you to check if all selected clips have the same value or change the values for multiple clips at the same time.

The metadata is divided into categories called **GROUPS**, that can be collapsed to allow the user to fit just the relevant information into a single list. When using QTAKE Server, each group has separate permissions, so admin can control metadata access per user role.

In addition to clip metadata, **META** sidebar allows you to edit project metadata using the **PROJECT** tab.

> Long click the **META** button to make the META sidebar visible in the full-screen mode.

EDIT METADATA GROUPS AND FIELDS

You can add custom fields to any metadata group by clicking the **+** [plus] symbol on the right side of each category heading. New fields will be shared among all QTAKE Server users that have permissions for the group containing these fields. There is also a **PRIVATE DATA** group that is not shared with other users and you can use it to store your private notes.

When adding a custom field the user is presented with a dialog that lets him set the **NAME** of the

field, its **TYPE** and any additional attributes for that field type, such as entries for a multi-choice field.

TALK

TALK button is used to toggle the talkback from QTAKE operator to QTAKE Monitor user. If this button is active and your talkback input device is set correctly, you voice is transmitted to a designated iOS device. This feature is used to talk to director. For more details see the TALKBACK Menu.

TASKS

This button will display a list of existing background tasks of the current session. Background tasks include file copy, upload, download, image processing and media transcoding operations. You can use **TASKS** window to check the progress of the specific task. Additionally, you can **PAUSE** tasks, if they are affecting your system performance or even **CANCEL** tasks, if the results are no longer needed.

RENDER

Rendering is used to process out the VIEW content to a QuickTime movie file. One of the main purposes of the **RENDER** function is to store your VFX composite to a clip, so you can use it in EDIT or in a multi-layer COMPOSITE.

To enable rendering you have to select DISK mode for the VIEW you want to render. To render a composite you have to select DISK mode for both VIEWS. Pressing RENDER button (located in the upper GUI area) will open the RENDER dialog for the clip in the active VIEW.

The **RENDER FORWARD** option lets you set the render direction, either forward (**YES**) or reverse (**NO**).

The **CHAPTER FRAMES ONLY** option will render only chapter frames, allowing you to easily create stop-motion animation video.

SELECT DATA SOURCE lets you set from which VIEW clip metadata for the rendered clip will be applied. This is useful if you render multiple foregrounds on a single background.

SCENE PREFIX and **SCENE SUFFIX** lets you add a short prefix or suffix to the SCENE data of the rendered file. This can aid you in organizing rendered material.

You can also **SELECT AUDIO SOURCE** and **SELECT TIMECODE SOURCE** for the rendered clip.

Finally select your desired **RENDER CODEC** and **QUALITY**. You can abort rendering at anytime by pressing the CANCEL button in the render progress window.

NOTE
QTAKE will respect clip speed setting for rendering.

HOW TO VIEW RENDERED CLIP?
Rendered clip will not load into the VIEW automatically. If you want to playback rendered composition, you need to load it into the VIEW using CLIP BROWSER, POP-UP BROWSER, LIST BROWSER or using PREV. / NEXT buttons.

HIDE

Allows you to minimize QTAKE without exiting the application. Please note that QTAKE uses kiosk mode when active, which prevents other applications to be displayed in front of the QTAKE interface. Therefore, in order to interact with the desktop or other apps, you need to click **HIDE**.

DISABLE KIOSK MODE
In case you prefer using Cmd-Tab to switch between applications, you need to disable kiosk mode using this preference: Kiosk_Mode=0

FULL

Toggling the **FULL** button (or pressing **F** key) will switch your UI between a regular and a full-screen mode. This will allow you to view the image content scaled to full screen size, by hiding the rest of the interface.

Special case is the **LIST**, **FX** and **META** sidebar. Each of them can be set to remain displayed in the full-screen mode by long-clicking their respective top bar buttons. The underline will appear under the button title, indicating the full-screen mode of the sidebar.

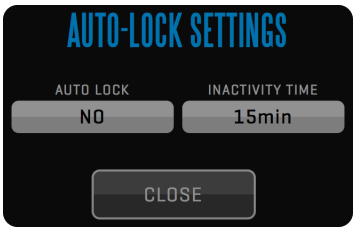
FILE Room

File room is used to setup the project, import or export files and access various settings needed for your work environment.

QTAKE MENU

The QTAKE menu allows you to quit QTAKE application by clicking the **QUIT** button (keyboard shortcut is **Q**).

Additionally, you can lock the screen by clicking the **LOCK** button. Long-clicking this button brings up the **AUTO-LOCK SETTINGS** window where you can enable automatic screen locking after specified amount of inactivity time. To unlock the screen you will need to enter your password.

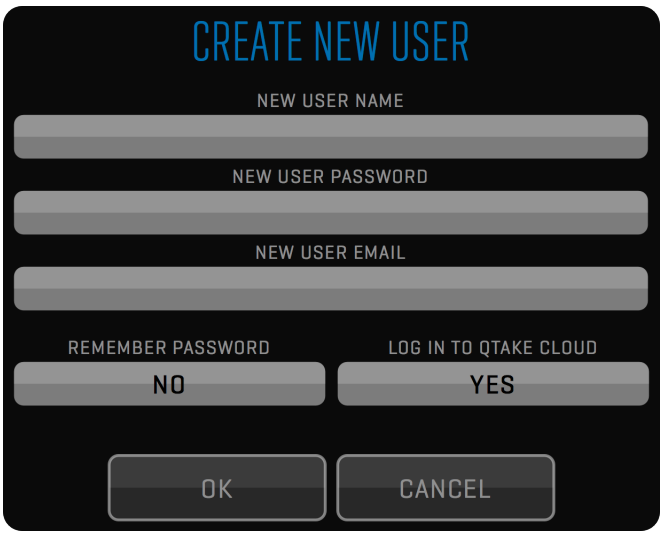


The menu also displays the amount of storage left on your projects media drive. Clicking the label will toggle between displaying **FREE DISK SPACE TIME** and **FREE DISK SPACE SIZE**. The time value is calculated from the average bitrate of the selected codec multiplied by the number of inputs supported by the version of QTAKE you are using. A popup will appear warning you when the free disk space is running out.

USER MENU

Before using QTAKE you need to load existing user or create a new one in the USER menu. Click the **OPEN** button to open the window containing users browser and related functions.

Click the **NEW** button to create new user. Users are identified by a **NEW USER NAME** attribute, which is why each user name has to be unique.



Users can optionally specify a **NEW USER PASSWORD**. Password protected user accounts cannot be opened without entering the correct password, unless **REMEMBER PASSWORD** option is turned on. The **NEW USER EMAIL** field requires user to enter his email address. User's email and password are used as the login credentials of the QTAKE operator when connecting to a **QTAKE SERVER**. You can also select the option to **LOG IN TO QTAKE CLOUD** from this menu, which is required for CLOUD STREAM. Clicking the **EDIT** button in the OPEN USER window will let active user access this window at any time if the change to above fields is required.

Interface layouts, user options and keyboard shortcuts are stored as user data when you close the application. This allows each user to have QTAKE customized to his preference.

After deleting a USER, every PRIVATE project created by that user is deleted, including project media files!

AUTO-LOAD

When starting the application, users can use the auto-load feature to automatically load last user and project. To use this set the following preference:

AutoLoad_Last_Project=1

PROJECT MENU

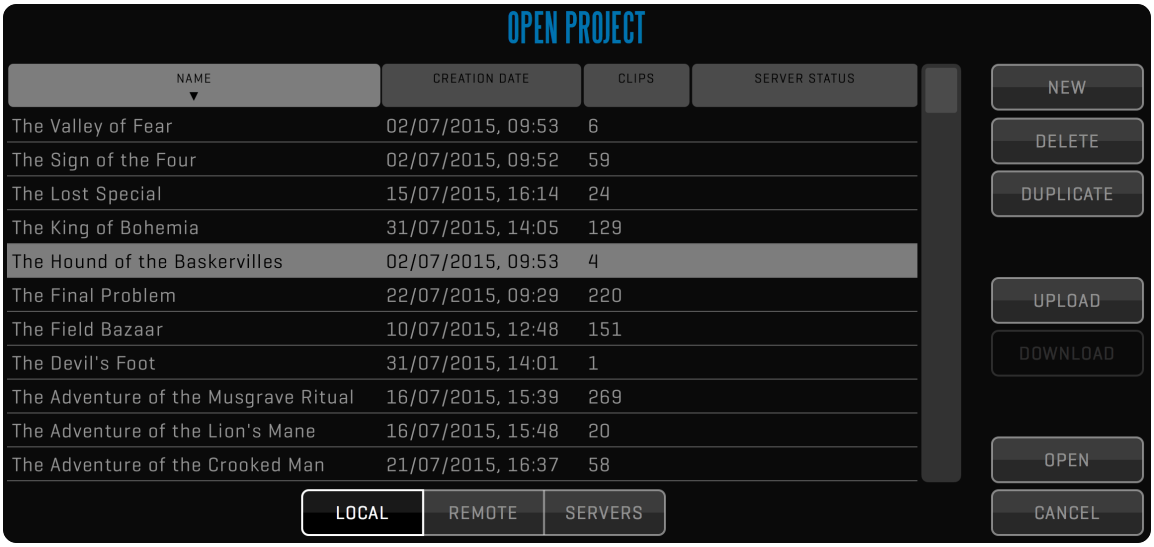
The **OPEN** button in the PROJECT menu opens a list of available projects. **EDIT** button lets you edit the settings of the active project.

On the right side of the **OPEN PROJECT** window there are buttons to create a **NEW** project, **DELETE** and **DUPLICATE** the selected project, **UPLOAD** the selected project to a QTAKE Server or **OPEN** the selected project.

Deleting a project will also delete all associated media files!

Duplicating a project will copy all project settings to a new project. This allows you to create template projects that can speed up your workflow.

The segmented button along the bottom of the window controls the contents of the list. **LOCAL** displays projects that exist on your machine. **REMOTE** displays projects that are available to download from QTAKE Server. **SERVERS** will automatically list any QTAKE Servers that are found on the local network. To connect to a QTAKE Server that is not listed, click the **ADD** button to enter IP address or a domain name.



CREATE NEW PROJECT

Project window is used to set the most common properties of the project.

TITLE

Each project is identified by its **PROJECT TITLE**, which has to be unique. Toggling the **PRIVATE** button to YES will limit access to the project to the user that created it.

> If you need to change the project name for PDF reports, please change the value of the **PROJECT NAME** metadata field in the META sidebar.

STORAGE

Project title is also used to create project folder on your **PROJECT STORAGE** volume. Changing **INDEPENDENT H264 PATH** to **YES** lets you set the **H264 PROXY PATH** independently from the main project storage.

> QTAKE will not allow you to record media to a system drive. Please use a separate drive as your project media storage.

MEDIA

The **DOWNLOAD REMOTE PRORES** input field controls when QTAKE will download recorded media from QTAKE Server. **DOWNLOAD REMOTE H.264** controls the same for proxy media.

SLATING

Use the **SLATING SYSTEM** field to select US or UK slating. Additionally, you can specify **SCENE SHOT DIVIDER** when using there is a need to separate scene and shot names.

VIDEO AND AUDIO SETTINGS

The segmented **INPUT** button lets you configure your capture **A/V DEVICE** as well as other settings for each input. **INPUT SOURCE** can be set to **SDI**, **NDI®** (IP video standard by NewTek™), **CUBE** (h264 wifi transmitter by Teradek), **QTAKE** (QTAKE Live Stream) or **SYSTEM** (any AV device recognized by MacOS). Most of the following settings can be controlled only in case of an SDI input.

> If you are using separate video card for each input you will need to set the following preference:
> Two_Boards_For_Dual_IO=1

After selecting correct **VIDEO INPUT** and **AUDIO INPUT**, you can use **DETECT** button to set the format based on the input signal. Set **AUTOMATIC CHANGE** to YES to have QTAKE automatically reconfigure your video card based on the input signal format.

> Some video cards will limit the formats that can be selected for different inputs of the same card.

The **COLOR SPACE** selector lets you switch between **YUV** and **RGB** to match your input format. **VIDEO DELAY** field will make video input delayed by specified number of frames.

TIMECODE and **TIMECODE TYPE** lets you select the timecode input. If your input signal does not contain timecode you can use wireless timecode from Timecode Buddy by setting **TC BUDDY** to **YES**. QTAKE will automatically find any Timecode Buddy devices on the same network.

GENLOCK is used to set the clock mode of your SDI outputs. **FREE RUN** will use internal timing, **REF IN** will sync outputs to external reference signal and **VIDEO IN** will use the video input signal to drive the output clock. Set the **FRAME SYNC** to YES if you want QTAKE to match the timing of all inputs.

CAMERA AND MEDIA SETTINGS

The right side of the project window lets you set your **CAMERA MODEL, CAMERA LETTER** and the recording **CODEC** for your media files. **STEREO 3D**, **MULTI VIEW** and **VR 360** fields are used to identify the type of content in the current input.

If the selected camera supports embedded metadata in the SDI feed you can set QTAKE to **READ SDI DATA** and also choose to name your recorded media by **QTAKE** or **CAMERA MEDIA FILENAME**.

For further information see CLIP NAMING CONVENTION. If you are using **METACODER** device to preserve the metadata in the wireless SDI signal, set this option to Video or Audio, depending on selected mode inside MetaCoder device.

Enabling **REVERSE PULLDOWN** will only record unique (non-duplicated) frames from the camera output in order to match the frames recorded by the camera, either in standard camera frame rate or in vari-speed and speed-ramp modes, up to the frame rate of the signal format.

> For example, if the camera is recording 40fps into 24fps project, user should set the **CAMERA TIMEBASE** to 24 and use the 3G-SDI signal from the camera output (that allows transfer of 60 frames per second). QTAKE will record 40 unique frames from the 60Hz signal and it will stretch the audio to match the slow motion video. Playback from QTAKE will look the same as if you were playing back from the camera.

If you need to up-convert or down-convert live or playback signal, set the **SECONDARY VIDEO FORMAT** and select which outputs should use it. If these settings are greyed-out, it means they are not available on your video cards.

H264 PROXY SETTINGS

RECORD H264 enables QTAKE to record a secondary, highly compressed file, along with your regularly recorded media. This proxy file will be placed in a subfolder of your project folder called **/H264**. With the use of QTAKE Server this enables you to stream recorded clips to iOS devices. The buttons in this sections allows you to set the **H264 MEDIA FILENAME, RESOLUTION** and **QUALITY** of these files.

The source image for the H.264 encoder is the content of the VIEW. This means that the proxy recording will "burn in" any applied effect or LUT into recorded media file, so you should take care not to change the settings while recording.

To simplify navigating the H.264 proxy files on the media drive, user can set the following preference:
H264_Folder_Structure=1

This will create subfolders for camera letter and roll:
H264_Folder_Structure=2

This will create subfolders for camera letter, scene and shot.To disable OSD burn-in on the H.264 proxies set the following:
H264_Proxy_OSD=0

COMMON PROJECT SETTINGS

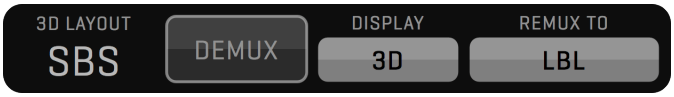
COPY TO ALL button allows you to copy the settings of the current input to all remaining inputs.

The **SAVE** button will save the current project setup as the default. The default setup will be used as a starting point when creating a NEW project - unless project was created by duplicating another project.

If you have multiple audio devices connected you can choose what output device QTAKE will use when in LIVE or DISK mode with the **LIVE AUDIO OUTPUT DEVICE** and **DISK AUDIO OUTPUT DEVICE** buttons.

3D SBS MUXED INPUT

The **MUXER** module enables muxed 3D capture. QTAKE uses dual or quad channel video cards to provide side-by-side capture of 2 SDI inputs. Select **SDI MUXED SBS** video input to enable this recording mode.



1. Feed L camera to SDI1 In, R camera to SDI2 In for each Kona 3G.
2. Select Kona SDI Muxed SBS video input in PROJECT Window.
3. Set **GPU-OUT** to VIEW1, **GPU-OUT2** to VIEW2.
4. Output Side-by-Side or REMUX to Line-by-Line.
5. You can **DEMUX** to Left only or Right only.
6. Use 3D (L) and 3D (R) output modes to preview single camera on a 3D monitor.
7. MUXER can be applied to S1 and S2 modes of QUAD SPLIT.
8. Independent AXIAL (Convergence) and FLIP/FLIP settings for each 3D rig.

DUAL 3D STEREO CAPTURE
Muxed capture mode enables recording of two 3D rigs using single QTAKE HDx4 system.

EDIT PROJECT

Use the **EDIT** button to adjust any settings to the project. Note that changing the format will have impact on sequences. New sequence is derived from the current project settings.

Clicking the **PROJECT STORAGE** input field will let you choose a new storage volume for your project. QTAKE will record subsequent media to the project folder on your newly selected volume. Disconnecting your old storage volume will cause any media residing on that volume to be marked as offline (purple outline) in the browser.

CAMERA METADATA COMPARISON TABLE

This is a comparison table detailing what embedded metadata QTAKE can read from various cameras.

	RED	ALEXA	SONY	CANON
TIMECODE	YES	YES	YES	YES
RECORD START/STOP	YES	YES	YES	YES
FILE NAME	YES	YES*	YES*	YES*
INDEX	YES	YES*	YES*	YES*

	RED	ALEXA	SONY	CANON
ROLL	YES	YES*	YES*	YES*
SHUTTER	-	YES*	-	-
FPS	-	-	YES*	-
LENS DATA	-	YES*	YES*	-

BMD VIDEO CARDS METADATA
Blackmagic Design video cards will only receive SDI metadata when QTAKE is set to capture in 10bit

RED CAMERA SUPPORT

RED Digital Cinema Cameras provide some exciting workflow features. QTAKE is able to use special flags implemented into camera SDI feed. The following features are enabled:

AUTO-RECORD

You can enable auto-record for REC cameras in User OPTIONS Menu. Make sure you have the corresponding input set to correct camera type.

REVERSE PULLDOWN

RED ONE camera outputs 720p50 or 720p59.94 video signal. This means that some frames in output are duplicated. QTAKE can identify duplicated frames and record only "valid" frames. This feature supports regular camera frame rates as well as vari-speed and ramps up to 60fps!

R3D FILENAME READOUT

QTAKE can read the filename of the clip being recorded on RED cameras through the SDI. Editorial can link clip data from QTAKE media to actual R3D files, using matching timecode. QTAKE will also parse the filename and derive **CAMERA LETTER** and **ROLL** number.

To disable recording of these parameters set one or more of the following to =0.

Use_Camera_Index=1
Use_Camera_Roll=1

To enable advanced RED camera support, set the correct camera type in the project window and enable **READ SDI DATA** for that input. Use **MEDIA FILENAME** button to select standard QTAKE file-naming convention or the camera media filenames.

For 100% timecode accuracy please use JAM SYNC option in RED ONE and external timecode reference.

ARRI CAMERA SUPPORT

Just like with RED cameras, QTAKE can read Alexa metadata flags from the SDI feed. To enable this feature, set the correct **CAMERA MODEL** for the corresponding input in the project window and turn on the **READ SDI DATA**.

AUTO-RECORD

Auto-record for the ARRI Alexa camera is located in the OPTIONS menu. Make sure you have the corresponding input set to correct camera type.

ARRI METADATA

Following metadata is available from ARRI Alexa cameras: camera filename, camera letter, sensor FPS, magazine roll number and shutter speed. These camera settings are transferred to QTAKE and corresponding input fields are filled automatically.

To disable recording of these parameters, set the following preference values to zero:

Use_Camera_Index=1
Use_Camera_FPS=1
Use_Camera_Roll=1
Use_Camera_Shutter=1

> To enable metadata readout please set the Alexa monitor output (MON OUT) to PsF (23.98, 24 or 25) for AJA IoXT video card.

> Blackmagic Design video cards needs to be set to 10bit mode in order to read ARRI Alexa camera metadata. Record flag is not available on BMD video cards.

SONY CAMERA SUPPORT

QTAKE can also read Sony metadata flags from the SDI feed. To enable this feature, set the correct camera model for the corresponding input in the project window and set **READ SDI DATA** to **YES**.

AUTO-RECORD

You can turn on auto-record in the OPTIONS menu. Make sure you have the corresponding input set to the correct camera type.

SONY METADATA

QTAKE can read the filename of the clip being recorded on Sony cameras through the SDI. QTAKE will also parse the filename and derive **CAMERA LETTER** and **ROLL** number from the **CAMERA MEDIA FILENAME**.

To disable recording of these parameters set one or more of the following to =0.

Use_Camera_Index=1
Use_Camera_Roll=1

> Kona LHi is not able to read RECORD START/STOP flag from Sony Cameras.

> Blackmagic Design video cards needs to be set to 10bit mode in order to read CAMERA MEDIA FILENAME from the SDI metadata. RECORD flags are not available on Blackmagic Design

video cards.

CANON CAMERA SUPPORT

QTAKE can also read Canon metadata flags from the SDI feed. To enable this feature you will need to set the correct camera model for the corresponding input in the project window and set **READ SDI DATA** to **YES**.

AUTO-RECORD

You can turn on auto-record in the OPTIONS menu. Make sure you have the corresponding input set to the correct camera type.

CANON METADATA

QTAKE can read the filename of the clip being recorded on Canon cameras through the SDI. QTAKE will also parse the filename and derive **CAMERA LETTER** and **ROLL** number from the **CAMERA MEDIA FILENAME**.

To disable recording of these parameters set one or more of the following to =0.

Use_Camera_Index=1
Use_Camera_Roll=1

Kona LHi is not able to read RECORD START/STOP flag from Canon Cameras.

Blackmagic Design video cards needs to be set to 10bit mode in order to read CAMERA MEDIA FILENAME from the SDI metadata. RECORD START/STOP flags are not read on Blackmagic Design video cards.

FULL RANGE VIDEO

SDI video usually contains image data encoded in YCbCr color space. QTAKE converts the image into RGB color space in order to perform GPU based processing. Standard YCbCr conversion uses SMPTE levels, which means that the legal range YCbCR will be converted to full range RGB. However, some cameras use full range YCbCr to store the higher luminance range. QTAKE supports conversion to RGB using full range YCbCr to avoid clipping of super-blacks and super-whites. This is controlled using the preference:

Use_Full_Range_Video=1

When using FULL RANGE VIDEO preference, your video card output and QOD+ will be automatically set to match the input, but if you are using 3rd party GPU to SDI converters, you may need to set the correct video range using the following preference:

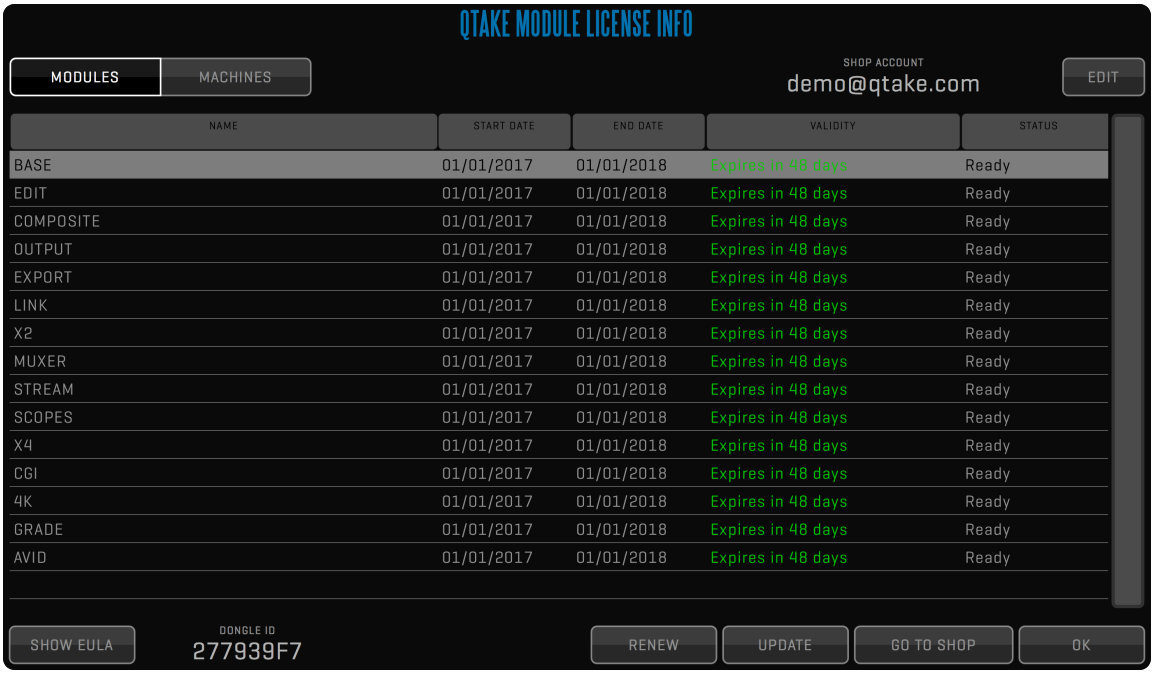
Legal_Range_GPU_Output=0

INFO MENU

This menu is used to check the license information of the system, send the logs to support department and set the preferences that control the operation of the software.

LICENSE

You can view your application license information by clicking the **LICENSE** button in the INFO Menu. You can also review the end-user license agreement by clicking **SHOW EULA**.



LICENSES

A QTAKE license can either be tied to a DONGLE ID or a COMPUTER ID. If a license is tied to a DONGLE ID you can move that dongle and license file to a different computer at will. If a license is tied to a COMPUTER ID it will only work on that particular computer but then you do not have to worry about misplacing the dongle.

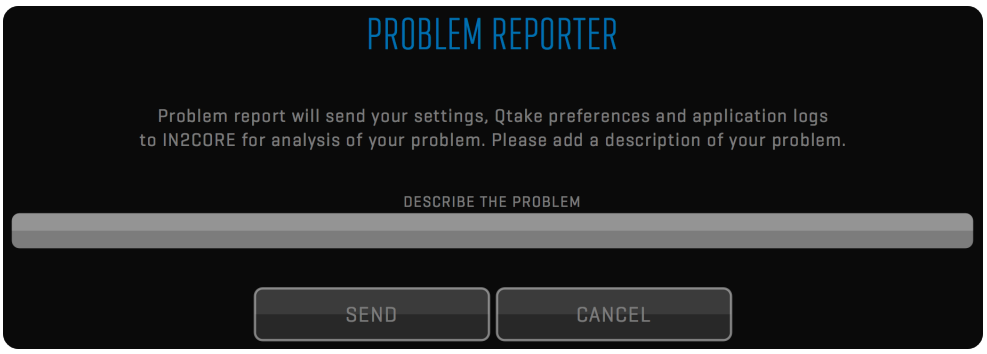
RENTAL SHOP

To create a QTAKE Rental Shop account, register machines and rent modules you can also visit the QTAKE Shop directly at: https://shop.qtakehd.com

For instructions on how to use the shop, please see: https://shop.qtakehd.com/instructions

SEND REPORT

The **SEND REPORT** button allows you to conveniently send your settings, QTAKE preferences and logs to IN2CORE for a detailed problem analysis. You can also enter the specific details and problem description in the window field.

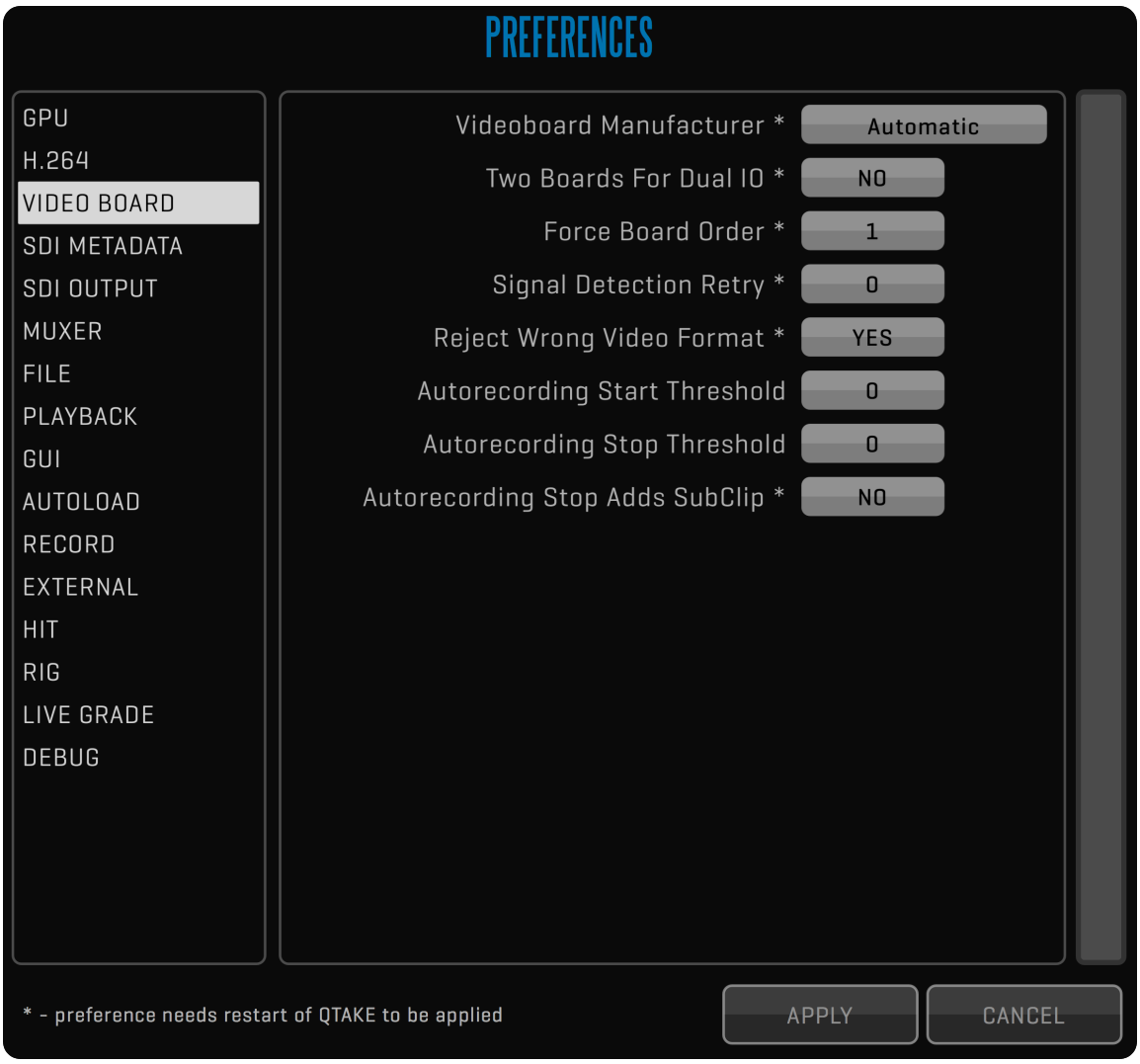


PREFERENCES

Application preferences are located in the **APPLICATIONS/QTAKE/PREFS** folder. To avoid conflicts each version of QTAKE will create its own preference file. HDx1 preferences are called: QtakeHDx1_Prefs.txt, HDx2 are called: QtakeHDx2_Prefs.txt, etc.

If you delete this file, QTAKE will generate a new one with default values next time you run QTAKE. Changes to QTAKE preferences can either be made in the PREFERENCES section in the INFO module or by editing the preferences file using any text editing application.

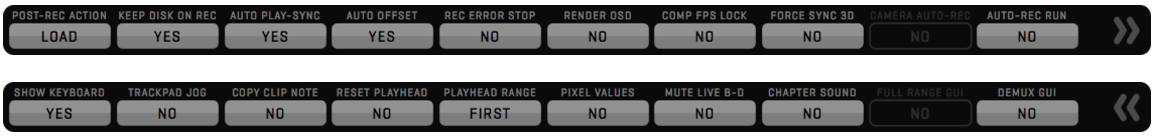
QTAKE will load this file upon application start. See the QTAKE PREFERENCES section for more information.



DON'T FORGET TO RESTART!
QTAKE loads the preferences when the application starts meaning you will have to restart QTAKE if you edit the file while the application is running. When using QTAKE to change the preferences you may be prompted to restart. Options requiring a restart are marked by an asterisk.

OPTIONS MENU

You can use the following user OPTIONS in QTAKE application - settings are stored for current USER.



POST-REC ACTION
Select what action should be performed after recording a clip. LOAD will load the recorded clip into the view. PLAY will initiate the playback.

KEEP DISK ON REC
Turn this option on to disable automatic patch to LIVE when recording starts.

AUTO PLAY-SYNC
Turn on to automatically enable PLAY SYNC button for synced recordings.

AUTO OFFSET
Turn on to automatically set a PLAY SYNC offset when two clips are recorded simultaneously or when recording a composite.

REC ERROR STOP
Turn on to automatically stop recording when the input signal is lost. If this option is turned off, QTAKE will duplicate the last frame in case of the drop out.

RENDER OSD
Turn on to burn in OSD information when rendering a clip.

COMP FPS LOCK
Turn on when using video card output for the composite. This will ensure composite rendering will use the frame-rate of the video card.

FORCE SYNC 3D
Enable accurate display sync of both views. You need genlocked cameras to make this work correctly in LIVE.

CAMERA AUTO-REC
Enable automatic record function for supported cameras.

AUTO-REC RUN
Enable record trigger by running timecode.

SHOW KEYBOARD
Turn on to enable touchscreen visual keyboard for each data entry.

TRACKPAD JOG
Hold **Fn** key and drag your finger across the touchpad to jog through the clip.

COPY CLIP NOTE
Turn on to copy NOTE from previous take for each new recorded clip.

RESET PLAYHEAD
Resets the playhead position on clip **LOAD ONLY** or **LOAD+PATCH**.

PLAYHEAD RANGE
Moves the playhead to the first or last range IN point when the clip is loaded or patched to, based on RESET PLAYHEAD option.

PIXEL VALUES
Turn on to display AXIAL, GRID and DVE MOVE values in pixels instead of percentage.

MUTE LIVE B-D

This option will automatically mute LIVE audio from all inputs except the first one to eliminate slight echo in multi-input setups.

CHAPTER SOUND
This is used to enable audio beep on chapter marks. Useful as audible signals for action on VFX shots.

FULL RANGE GUI
This option will perform full to legal range conversion of the views in the GUI (enabled when Use_Full_Range_Video=1).

DEMUX GUI
This option demuxes SBS images in the user interface.

VIEW MENU

VIEWS are the heart of the QTAKE Advanced Digital Video Assist. They use GPU power to perform real-time image processing of video frames. Think of the VIEWS as of internal video monitors that can display any video source. Set the source for each VIEW in the PATCH Menu. Every command is performed on a selected/active view. Active view is marked by a white border.

Select active VIEW by pressing the corresponding segment in VIEW Menu, or by clicking any VIEW in the Views Zone directly. Keyboard shortcuts 1, 2, 3 and 4.

You can use VIEWS in either **SINGLE**, **DUAL** or **QUAD** VIEW mode, by pressing the corresponding button or by double-clicking the View. Keyboard shortcut is 5.

GPU OUT MENU

One of the main QTAKE features is the ability to process live video feed. This allows the system to apply color correction to live video or to output live chroma key compositing with a live or pre-recorded background.

To achieve low latency processed live monitoring, QTAKE uses video card for input and graphics card for output. However, graphics card usually provides HDMI or DisplayPort outputs that support only limited cable length (up to 10m). In order to provide professional video output from your GPU, you need to convert the output signal to SDI. There are many HDMI or DisplayPort to SDI converters, but only QOD+ (QTAKE Output Device) is natively supported in QTAKE to provide up to 4 independent SDI outputs with embedded audio, frame-rate control and precise color conversion. See QTAKE USB CONTROL for more information.

Each VIEW can be monitored in fullscreen mode using secondary outputs of your graphics card. These outputs are used to enable monitoring for the Clients or the Director. Each GPU OUT can be set to different layout.

AUTO Output layout follows the operator screen
SINGLE Outputs the selected view in fullscreen
DUAL Outputs two views on a single output
TRIPLE Outputs three views
QUAD Outputs four views
3D Outputs stereoscopic output

When the layout is set to output multiple views (**DUAL, TRIPLE** or **QUAD**) the content of each section can be set independently. The **BORDER** value determines how much space is added between the views. In TRIPLE or QUAD view you have the option of setting **ASYMMETRIC** layout of the output. This allows you to focus on one view while still displaying the other views on the same monitor.

When GPU OUT is set to 3D layout you also have the ability to set the **3D OUTPUT MODE** to match the 3D input format that your monitor expects. **SINGLE EYE OUTPUT** enables viewing of a single eye on a 3D monitor.

Along the bottom of the window are options for QOD+ output. See APPENDIX C - QTAKE Output Device for more information.

3D STEREOSCOPIC VIDEO OUTPUT
3D Output can be used with 3D monitors that support side-by-side, line-by-line or DLP mesh input. QTAKE will make sure both video channels (left and right eye) are in sync in LIVE, RECORD or PLAYBACK mode. Use RECORD SYNC for recording and PLAY SYNC for playback. Enable CLIP SYNC for synchronized browsing of left and right eye clips.

If you need to render out combined 3D frame, you need to use STEREO Menu in COMPOSITE Room, instead of 3D video output.

ROTATED
Allows you to maximize the screen space available to display video by rotating the sections 90 degrees. This requires you to also mount the output monitor accordingly.

IMPORT MENU

This menu groups import functions of QTAKE. Import is used to load external assets into QTAKE system or to transfer project from another QTAKE system.

IMPORT

The IMPORT button is used to import QuickTime movie files into QTAKE. Import will create a copy of selected file and store it in the project media folder. When importing multiple clips QTAKE will first add entries into the database and then copy the media files. If you shut down QTAKE while the media is being copied QTAKE will resume the copy operation when started. For best results, use movies that have the same resolution and timebase as your QTAKE project.

IMPORTING STILLS

Still images are imported as Quicktime movies. Select desired scaling and duration in the import dialog.

Imported and linked files will automatically be sorted and assigned QTAKE IDs based on the creation date of the files.

IMPORTING LOOK-UP TABLES (LUT)
To import a LUT place it in the /Luts subfolder of the application directory and restart QTAKE.

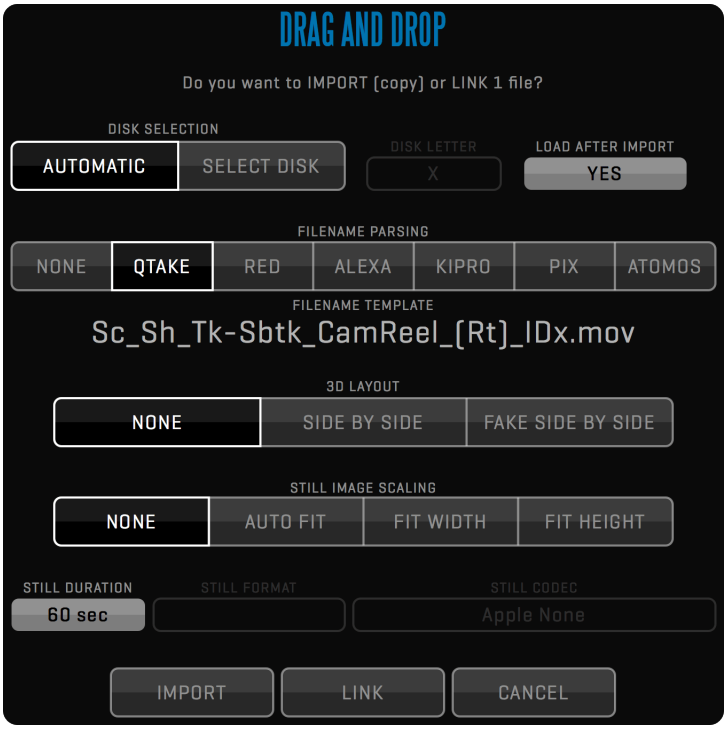
IMPORTING XML METADATA
You can import clip XML files generated by the preference:
Generate_XML_Per_Clip=1
Use drag and drop onto the QTAKE dock icon. This will import the clip and all it's metadata.

LINK

LINK button is used for the same purpose as Import, but linking does not create a copy of the selected files in your media folder. This makes linking much faster than importing. The downside is that the media resides in it's original location and you can easily loose the link to these clips if you disconnect the drive or move the media.

DRAG AND DROP IMPORT AND LINK

Both LINK and IMPORT can be performed by hiding QTAKE and dragging the files onto the QTAKE dock icon. In addition to QuickTime movies you can import still images, audio files and CDL color corrections. When dragging a media file to the QTAKE dock icon the **DRAG AND DROP** window will appear, letting you set options such as **FILENAME PARSING**, **STILL IMAGE SCALING, STILL IMAGE DURATION**. Importing a still image can be useful for reference frames, logos or background images for VFX shots.



DISK SELECTION

QTAKE can mark imported files with a specific CAMERA LETTER by clicking **SELECT DISK** and specifying the desired DISK in the **DISK LETTER** input box. Selecting **AUTOMATIC** will assign a disk letter according to filename parsing method.

FILENAME PARSING

When using drag and drop import QTAKE has the ability extract metadata from the filename of the imported material but the user has to select the correct parsing filter.

> Some external recorders have the ability to read Camera Media Filename and rename files accordingly. When importing files that are named by camera filename use the appropriate camera import filter even if they were recorded on one of the devices in the list.

NONE The NONE filter will mark the imported clips as belonging to a scene called Import.

QTAKE The QTAKE filter uses the native QTAKE naming convention. Files will be organized in the same way as they were created. Scene_Shot_Take-Sbtk_CamReel_[Rt]_IDx.mov

RED The RED filter will import media with RED filenames to a scene called RED (magazine number), The Camera position will be used as shot and clip number as take. CamReel_[CLR]Clip_MMDDXX.mov

ALEXA The Alexa filter will import Alexa files to a scene called Alexa (reel number). CamReelCClip_DDMMYY_CamID.mov

KIPRO The Ki Pro filter will use Scene and Take numbers as entered. SCSceneTKTake.mov

PIX The PIX 220 or 240 needs to be set to Reel_Scene_Take naming. QTAKE will then use those values. Reel_Scene_Take.mov

ATOMOS The Atomos filter uses Scene, Shot and Take numbers. UnitName_SceneNum_ShotNum_TakeNum.mov

3D LAYOUT

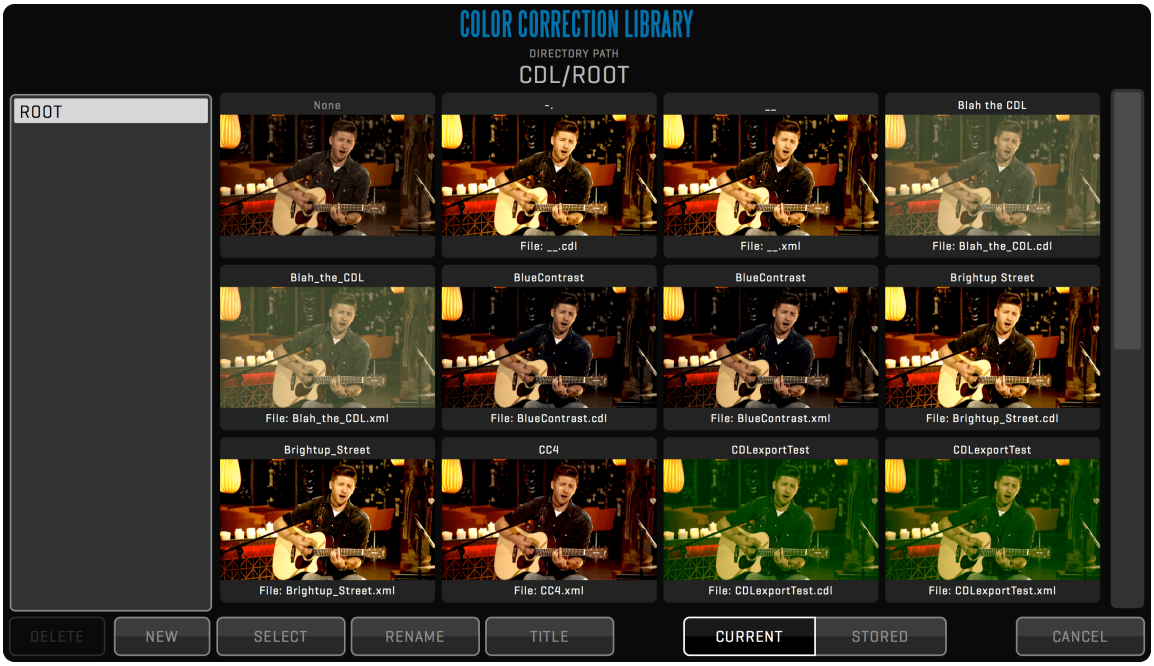
When Importing stereoscopic footage, recorded as muxed side by side, set the segmented button to **SIDE BY SIDE**. Non-muxed footage can be imported as **FAKE SIDE BY SIDE**. This can be useful when using 2D footage as a background plate for a stereoscopic chroma key.

STILL IMAGES

QTAKE can import various still image formats. On import the image is converted to a QuickTime movie. Adjust the duration of this movie by entering the desired number of seconds in the **STILL DURATION** input field. To adjust the scaling of the imported image in relation to the VIEW use the **STILL IMAGE SCALING** segmented button. QTAKE will preserve the transparency of imported images.

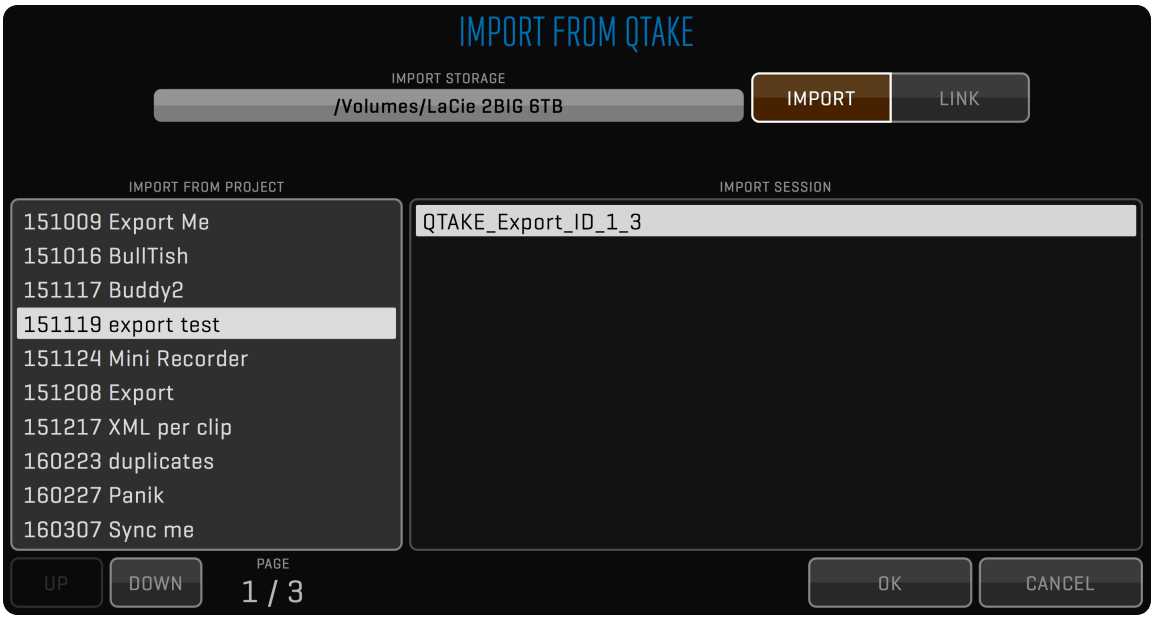
IMPORT CDL

Dragging to the QTAKE Dock Icon can be used to import CDL color correction settings in XML format. QTAKE supports both single corrections (.CDL) and color correction collections (.CCC). Imported CDL color corrections will be placed into the **COLOR CORRECTION LIBRARY**. This library can be accessed from the **CDL COLOR CORRECTION** section of the **CLIP FX** sidebar.



IMPORT/LINK FROM QTAKE

Import/Link from QTAKE is used to import clips and associated metadata that were exported using **EXPORT TO QTAKE XML**. This is useful when you need to transfer clips and data from one QTAKE system to another. Select the storage volume by pressing **IMPORT STORAGE** field. Then select the project and the session to **IMPORT** or **LINK** clips and metadata. If you select IMPORT option, clips will be copied to your local project storage.



EXPORT MENU

EXPORT Menu allows you to export your project to **FINAL CUT PRO XML, AVID ALE** or to another QTAKE system. You can also Export individual sequences as **EDL** files.

EXPORT TO FCP

QTAKE can export the current project to Final Cut Pro 7 or Final Cut Pro X. The exported XML file is located in your project folder (Volumes/ YOUR PROJECT STORAGE VOLUME/Q TAKE Projects/YOUR PROJECT TITLE/Export FCP(X)/). This XML can then be imported into FCP(X).

FINAL CUT PRO 7

Bins are created for each scene/shot/take to help you navigate through the footage. All clips are linked to QTAKE media files. Optionally you can select to export the FCP XML with **CAMERA MEDIA** file-names to make it easier to reconnect to the original footage. Metadata is exported with each clip and mapped into FCP data fields that can be accessed in the Bin. Any sequences created in the EDIT room will also be exported.

FINAL CUT PRO X

To help you organize the material each clip is exported with all the metadata entered into QTAKE including chapters, notes and multiple IN/OUT points. Once imported into Final Cut the clips can be sorted and grouped by Scene/Shot/Take or original filenames. Optionally you can select to export the FCP XML with **CAMERA MEDIA** filenames to make it easier to reconnect to the original footage. The metadata that Final Cut supports is mapped into the corresponding fields within the application.

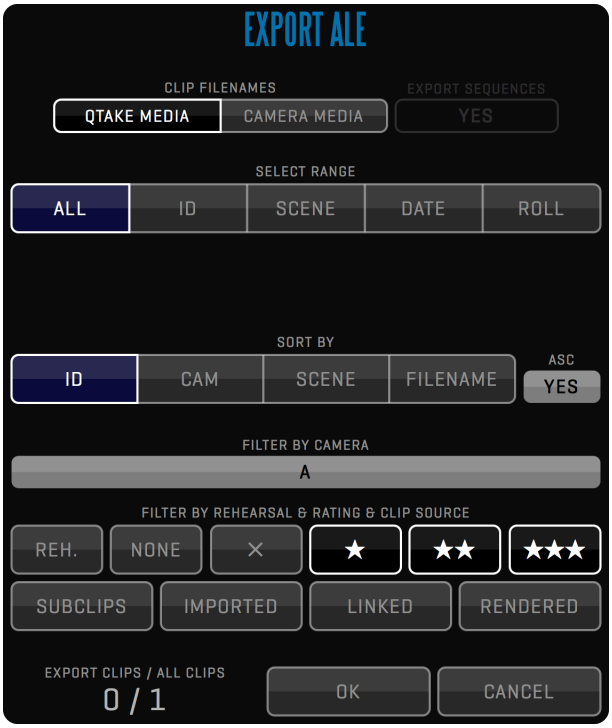
Other metadata, including custom fields can be accessed from the **QTAKE METADATA VIEW** in Final Cut. Any sequences created in the EDIT room will also be exported.

EXPORT TO AVID ALE

QTAKE can also export the current project to an **AVID ALE** file. The exported ALE file is located in your project folder (Volumes/ YOUR PROJECT STORAGE VOLUME/QTAKE Projects/YOUR PROJECT TITLE/ Export ALE/) When Exporting you are presented with a setup dialog. From here you can choose whether to export with **CAMERA MEDIA** filenames, if you plan on reconnecting with the original camera media, or **QTAKE** file-names, if you plan on using QTAKE media for your offline.

You can also select what RANGE to export, either by dates, Roll numbers, Scene or Id. How you want the ALE sorted and If you would like to filter out takes based on various criteria.

The resulting ALE file will contain many of the metadata fields available to you in QTAKE, ensuring that the editor can pickup where the onset production left off.



Some columns, like Scene and Take might not be displayed in the default bin column layout. These will have to be enabled manually in Avid Media Composer.

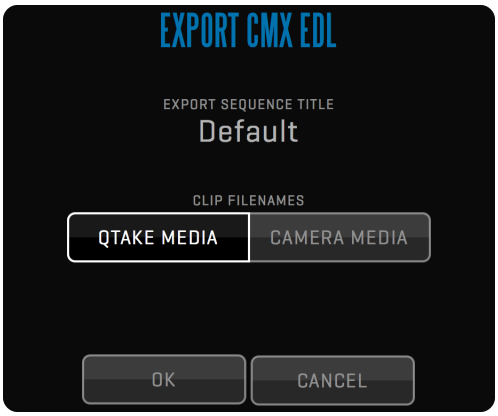
The exported ALE will contain the values of the first CDL correction applied to each clip.

ALE export does not support sequences. Please use EDL export for that purpose.

EXPORT EDL

Exports the current Sequence to CMX3600 Edit Decision List. You can choose between **QTAKE MEDIA** filenames or **CAMERA MEDIA** filenames. Exported EDL will be saved to your project folder **/EDL** subfolder.

The exported EDL will contain the values of the first CDL correction applied to each clip in the sequence.



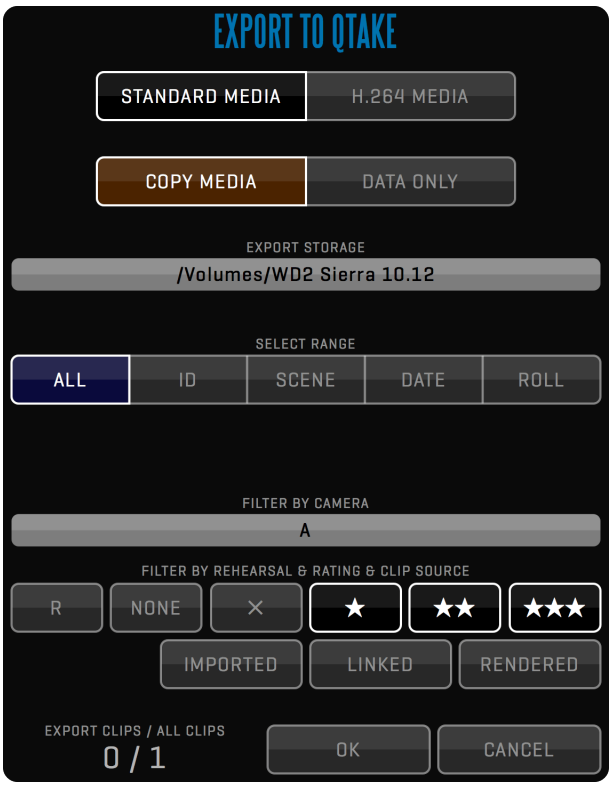
EXPORT TO QTAKE XML

This function will let you export clips and meta-data to another QTAKE system (such as 2nd unit).

Select **EXPORT STORAGE** (usually external drive volume) and choose if you want to **COPY MEDIA** or **DATA ONLY**. The Latter is used to export data to some Asset Management Systems or some other forms of production database.

Select **ALL** clips or range of clips you want to export based on **ID, SCENE, DATE** or **ROLL**. You can further filter your selection based on **CAMERA** and **RATING** and clip origin (**IMPORTED, LINKED, RENDERED**).

QTAKE will generate an XML file with all meta-data for selected clips. After the XML file is generated, the process of copying media will start in the background, this enables you to continue to work while the media transfer is in progress. Since the format is standard XML it can easily be parsed by third party applications such as Colorfront On-Set Dailies.



The copy process uses your media drive, so you may not have sufficient speed for recording if your raid is not fast enough to handle both tasks at the same time.

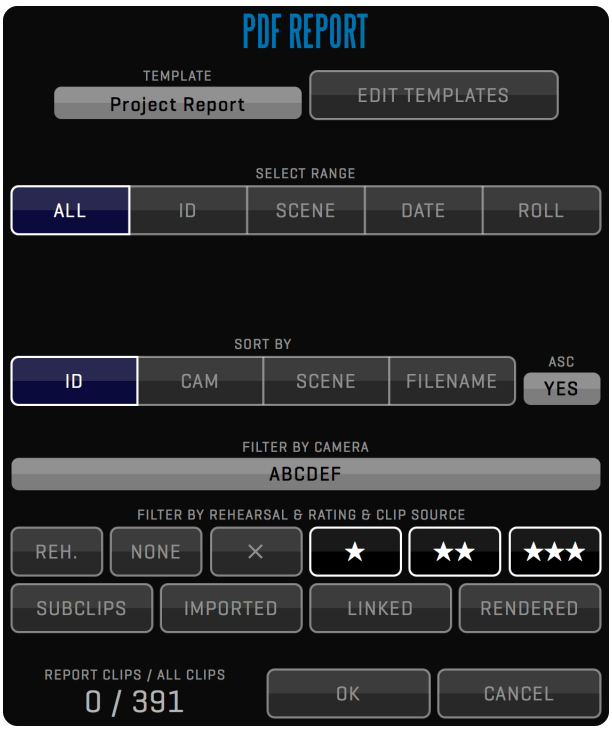
Developers who are interested in learning more about the XML structure can request a copy of the specification at office@in2core.com

REPORT MENU

This menu contains commands for generating PDF reports and screenshots.

PDF REPORT

QTAKE can generate custom PDF reports with thumbnails and metadata for each clip. You can specify the range of clips and filter clip selection by various attributes. PDF files are saved to a subfolder of your project folder called **/REPORTS**. PDF Reports are generated based on a template. You can create new templates by clicking the **EDIT TEMPLATE** button. This provides custom reports for different departments.



EDIT TEMPLATES

QTAKE comes with two pre-made PDF Report templates. Project Report and Camera Report. To create a new PDF report template first select the report you would like to base your new report on and click DUPLICATE.

The left half of the template editor controls what metadata fields are included and the sorting order of the clips in the report. Use the segmented button to choose whether the fields should be added to the page header or the individual clip entries in the report. To add a field select it from the **AVAILABLE FIELDS** list and use the arrow button (>) to add it. When the report is in Flow Layout both the Page Header and the clip entires have a heading and a data section. These are separated by a horizontal line in the **INCLUDED FIELDS** list.

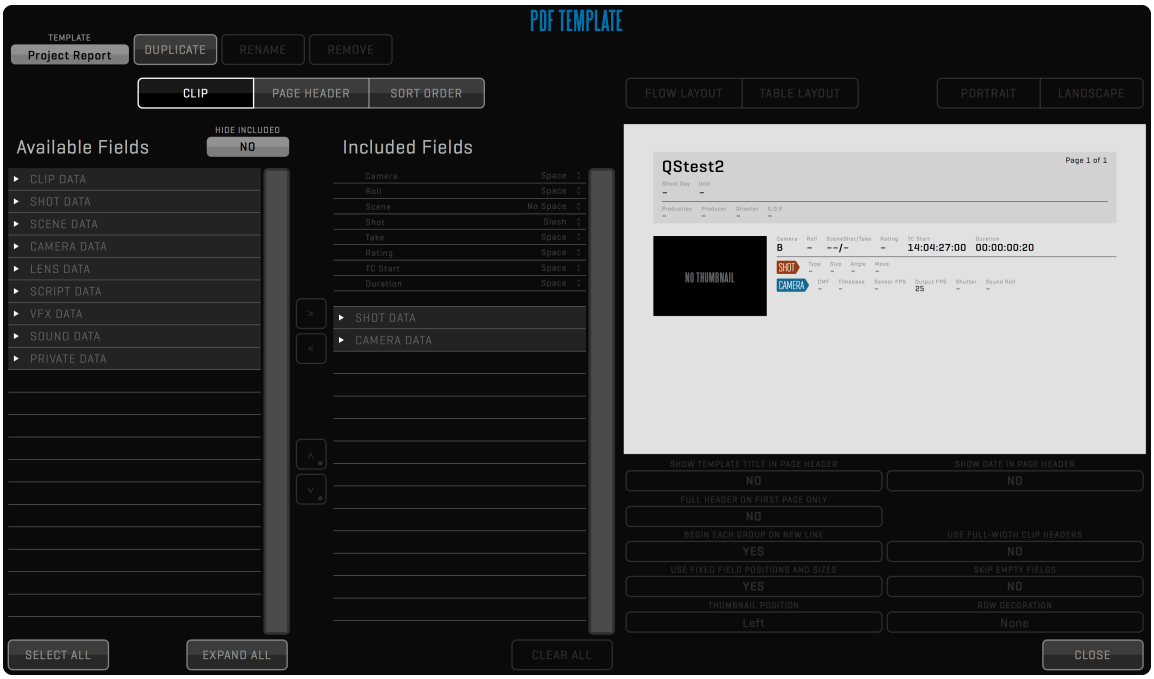
Drag the field to move it between the data section and the heading. Each field in the Included Fields list also has a drop-down menu to define its relation to the next field. The options are **NO SPACE, SLASH, SPACE** and **NEW LINE**.

Fields added to the Page Header will show up in the gray section of the preview. The Page Header will be repeated at the top of each page in the report. The header would normally be populated with fields from the Project Data group but you can optionally add fields from other groups. If fields with multiple values are added the header will show all values separated by commas.

The **SORT ORDER** tab lets you control the sorting of clips and the page breaks of the report. Clips in the report are sorted, in order from top to bottom, by the fields in the Included Fields list. There is a horizontal bar dividing the Included Fields list into two sections just like in the Clip and Page Header. Fields added above this line will cause the report to be divided into sections separated by page breaks based on their values.

REPORT LAYOUT

The right half of the template editor contains a preview of the report, and controls for the page layout of the report. A segmented button near the top lets you choose between a Flow Layout and a Table Layout for the report. Click TEMPLATE and select the Camera Report for an example of a report in table layout. You can add the name of the template and the date when the report was generated to the report header by setting **SHOW TEMPLATE TITLE IN PAGE HEADER** and **SHOW DATE IN PAGE HEADER** to YES. Setting **FULL HEADER ON FIRST PAGE ONLY** to YES will remove fields below the horizontal line in the Page Header tab on all pages of the report except for the first.



The bottom row of controls allows you to change the layout of the clip entries. Setting **BEGIN EACH GROUP ON A NEW LINE** to NO allows for more compact layout by putting the metadata groups closer together. **USE FIXED FIELD POSITIONS AND SIZES** will make sure the fields stay in the same place in each clip entry by adjusting the size of the field in the report to accommodate the clip with the largest amount of characters in that field. **USE FULL-WIDTH CLIP HEADERS** will adjust the thumbnail to allow more information in the header. **SKIP EMPTY FIELDS** will remove fields without data from the report. You can also adjust the thumbnail position and row decoration for the clips.

SCREENSHOT

Use **SCREENSHOT** button in REPORT Menu to store the current frame of the active VIEW to jpeg file. Screenshots are saved to current Project folder into **/SCREENSHOTS** subfolder using clip filename and timecode. When PLUS 3D is enabled the screenshot will depict the PLUS 3D view. Long click this button to generate screenshots for all views.

CLIP REPORT

The **CLIP REPORT** button in the REPORT menu creates a PDF file with screenshots and metadata for the two clips loaded into VIEW 1 and VIEW 2. Clip reports are saved to the /Clip report subfolder

of the current Project folder.

LINK MENU

Link feature is used to control two or more QTAKE systems.

Follow these steps to start network job:

1. Make sure every machine is on the network.
2. Run QTAKE on all machines you wish to link, open user and project.
3. Press MASTER button on master machine (displays “Master Active” in Connection Status).
4. Press SLAVE button on slave machine (“SLAVE #: OFF”, where #is the number of the slave - in order of connection).
5. To activate slave press NUMBER button on master machine (turns green) - now the slave can accept commands.
6. Repeat steps 4,5 for each slave.

You can activate/deactivate slave machines by clicking their number buttons on the master QTAKE.

Following functionality is supported through the LINK:

Select ROOM (File room or Shoot room, Edit and Composite are disabled on slaves when active)
Entering CLIP DATA (scene, shot, take, rating) that is common to every camera
RECORD, RECORD SYNC, RECORD ABORT
All PLAYBACK commands
Selecting ACTIVE VIEW, DUAL VIEW
BROWSE CLIP (based on clip data, so make sure you don’t have two clips with the same data)

HOW IT WORKS?
Master machine is advertising its presence on the network using MASTER button. Slave machine uses SLAVE button to find the master on the network and make a connection. Master confirms connection and activates the slave. You can control up to 8 slave systems. If you choose HDx1 to be master, then you can control only HDx1 slaves. QTAKE LITE can only control a single slave unit.

GPI MENU

General Purpose Interface is used for simple communication with external devices. Most commonly this is used with Motion Control Rigs. QTAKE uses **SOFTRON GPI COMMANDER 2** to receive and send GPI signals via USB. By short-clicking **GPI INPUT** or **GPI OUTPUT** button, you can enable or disable GPI input or output.

GPI INPUT

GPI input is used to execute selected command when the corresponding trigger is received. You can enable this functionality globally by clicking the **GPI INPUT** button. Long-clicking this button will open GPI INPUT SETUP window.

For each input command you need to create new row by clicking the **NEW** button. **ACTIVE** option lets you enable or disable each row. **GPI INPUT** is used to select what input is triggering selected command. **COMMAND** field provides following choices:

RECORD - Starts or stops recording
ADD FRAME - Adds one frame when using Frame Recording
ADD CHAPTER - Adds a chapter marker
PLAY - Starts or stops playback
INC FRAME - Moves playhead one frame forward
DEC FRAME - Moves playhead one frame backwards
STUDIO CUT TO - Performs cut to selected input during live cut
SET IN MARK - Sets an IN point
SET OUT MARK - Sets an OUT point

Each command can be further controlled by selecting **MODE** option:

START - Start the selected command on received pulse
STOP - Stop the selected command on received pulse
TOGGLE - Changes state of the command on received pulse
HOLD - Starts the command while the GPI is active, stops when the GPI becomes inactive

GPI OUTPUT

GPI output is used to send the trigger when selected command is executed. You can enable this functionality globally by clicking the **GPI OUTPUT** button. Long-clicking this button will open GPI OUTPUT SETUP window.

For each output command you need to create new row by clicking the **NEW** button. **ACTIVE** option lets you enable or disable each row. **GPI OUTPUT** is used to select what output is being triggered by the selected command. **COMMAND** field provides following choices:

RECORD - Trigger on record
PLAY - Trigger on playback
CHAPTER - Trigger on chapter marker

Each command can be further controlled by selecting **MODE** option:

START - Triggers puslse on start of the command
STOP - Triggers pulse on stop of the command
TOGGLE - Triggers pulse on change of state of command
HOLD - Starts the command while the GPI is active, stops when the GPI becomes inactive

VIDEOHUB MENU

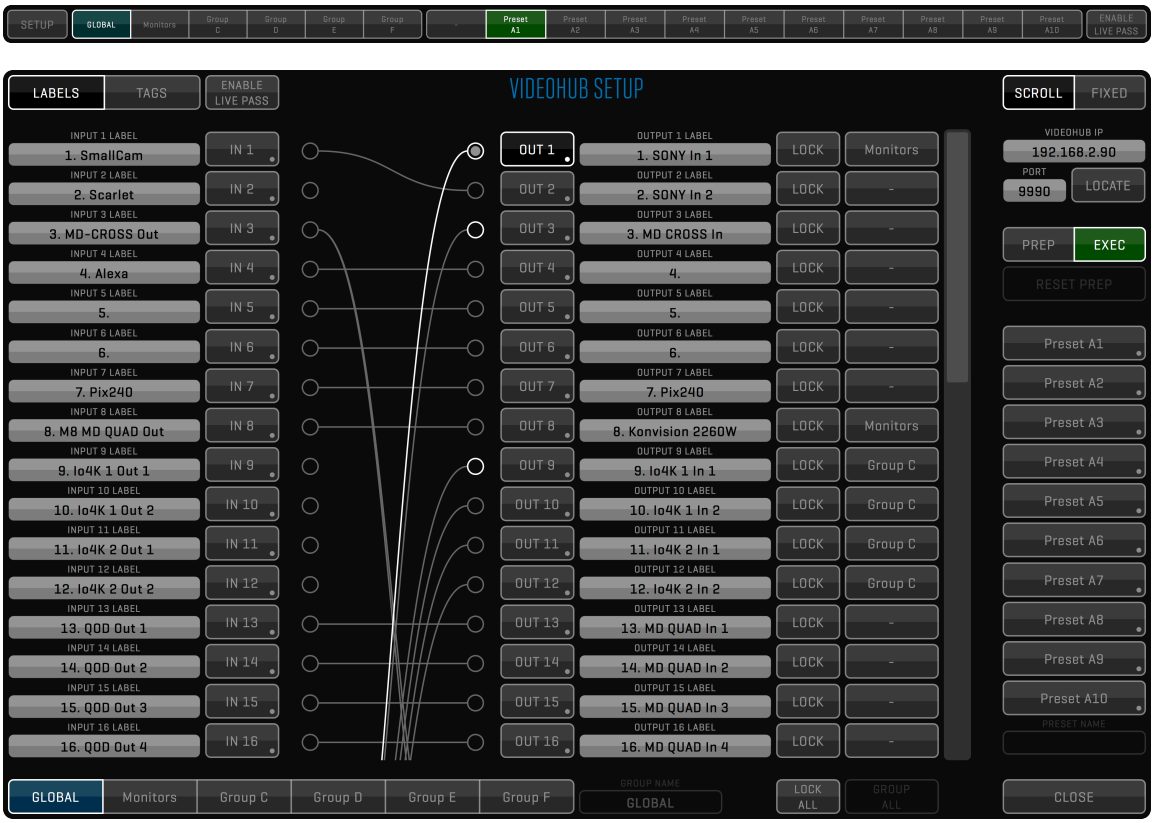
The VIDEOHUB menu enables direct control of Blackmagic Design Videohub and AJA Kumo SDI routers from within QTAKE. Up to 64 inputs and 64 outputs are supported.

Pressing a **GROUP** button in the left segmented button will show the 10 **PRESETS** in that GROUP on the right. Press **SETUP** to configure your routing, groups and presets. See the section below.

VIDEOHUB SETUP

Set the correct **VIDEOHUB IP** address and **PORT** number in the appropriate input fields. You can alternatively press the **LOCATE** button to list any video routers on the local network. Routing is performed by clicking the output node first and then selecting the input. Linking two inputs/outputs is done by long clicking the button associated with the input/output and then selecting other input/output to link. Linked inputs/outputs are routed together. The **PREP** and **EXEC** buttons let you first PREPare multiple routes and later EXECute the actual routing all at once. Press the **RESET PREP** button to revert any changes made during PREP. The segmented button top left corner of the VIDEOHUB SETUP window lets you change between editing **LABELS** and **TAGS**. When set to LABELS you can customize the labels for inputs and outputs to help you organize your

videohub routing. Pressing TAGS lets you assign what inputs and outputs are connected to your video card. Tagging the videohub inputs and outputs in this way is necessary to be able to use LIVE PASS functionality.



LIVE PASS

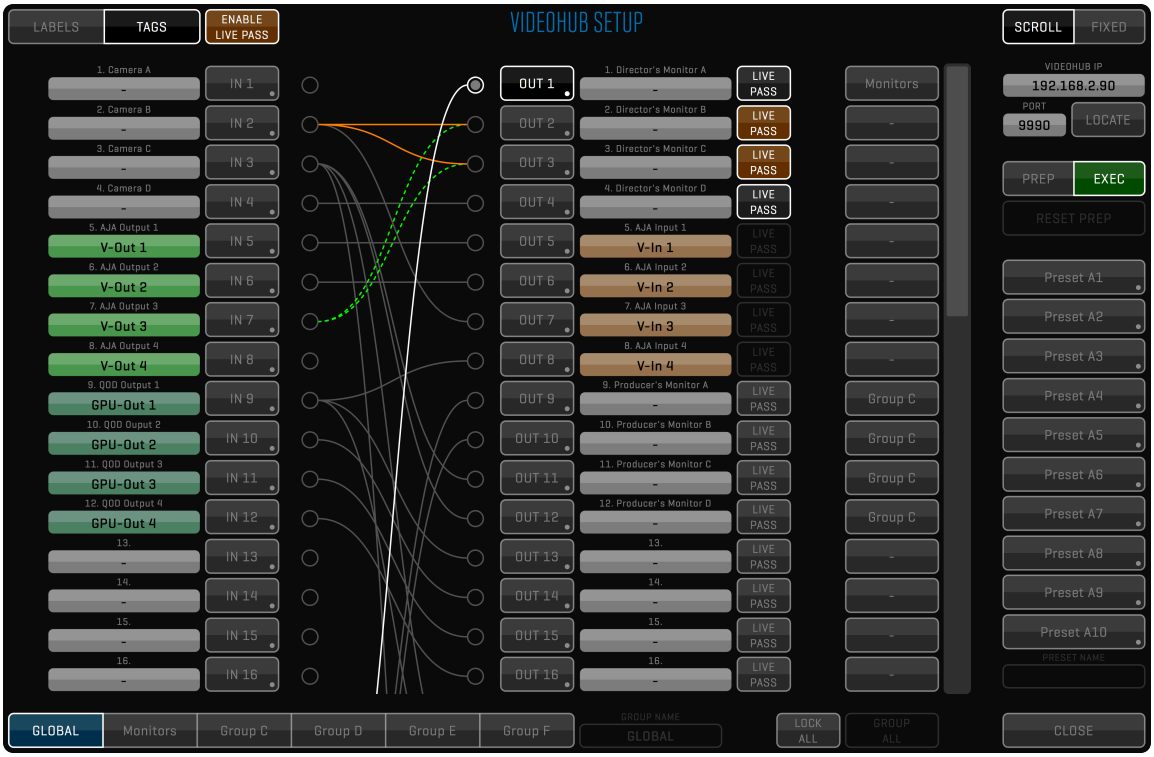
QTAKE can perform context aware videohub routing in order to bypass the video card for selected outputs when a view is patched to LIVE. This is useful to avoid having to manually re-route the videohub when you want a low latency camera feed during record and video card output during playback.

PREPARE LIVE PASS

First, you need to prepare **LIVE PASS** functionality. Click TAGS button in the top left corner of the **VIDEOHUB SETUP** window. Select correct tag for each videohub connector that is connected to your video card(s). For videohub inputs connected to video card outputs select **V-OUT** tag with the corresponding output number. For videohub outputs connected to video card inputs select **V-IN** tag with the correct input number. You only need to do this once if you did not change your internal cabling.

USE LIVE PASS

You can assign what outputs should bypass the video card by enabling the **LIVE PASS** button next to the TAG. The **ENABLE LIVE PASS** button lets you enable or disable the LIVE PASS behavior globally. Outputs that have the LIVE PASS button enabled will show two routes. One green and one orange, representing the **DISK** route and the **LIVE** route. The non-dotted line indicates the outputs current routing.



PRESETS AND GROUPS

The current routing can be saved into a **PRESET**. Long click one of the PRESET buttons to save the current routing. Load a PRESET by clicking on the associated button. When loaded you can change the **PRESET NAME**. Along the bottom of the window are six GROUP buttons. Each **GROUP** can have a subset of the videohubs outputs assigned to it and can have up to 10 PRESETS saved. The **GLOBAL** group is the exception to this, the PRESETS in this group apply to all outputs. To assign videohub outputs to one of the other GROUPS, select the GROUP and press the button next to the **LOCK** button.

DEFAULT PORT NUMBERS
AJA Kumo default port: 80
BMD videohub default port: 9990

The **LOCK** button will lock an output to an input. While locked the route is not available for routing.

STREAM MENU

Using the STREAM Menu, you can enable video streaming and remote control of QTAKE using custom UDP protocol based on XML. The **STREAM** button also enables bonjour network advertising, allowing devices to discover and connect to a computer running QTAKE.

You can use the **QTAKE MONITOR** or the **QTAKE 3D CONTROL** apps for iPhone and iPad to connect to QTAKE. QTAKE Monitor allows you to use an iPad or an iPhone as a wireless monitor. See Appendix A - QTAKE Monitor for more information about the app.

The QTAKE 3D Control app is used to control post-convergence (HIT) and PLUS 3D VIEW. See Appendix B - QTAKE Monitor for more information.

The sixteen numbered buttons (1-8 on the first page and 9-16 on the second page) in the STREAM menu allows you to grant or deny access to any connecting devices. You can also enable TALKBACK from a single QTAKE Monitor app by long clicking it's button. Long clicking the **STREAM** button opens the **STREAM SETUP** window.

> You can control the name of the machine running QTAKE as it appears in the apps by going to System Preferences - Sharing and changing the Computer Name field.

ADD CLIENT

QTAKE allows you to add devices directly from QTAKE by using the **ADD** button. There are two ways to connected a device running QTAKE Monitor:

Tap the **SCAN PROJECT LINK** under Projects in QTAKE Monitor and point the device's camera at the QR code.
Use the **COPY LINK** button to send a connection link, then open the link on the device running QTAKE Monitor.

LOCAL STREAMING

As soon as the first QTAKE Monitor connects, QTAKE starts streaming over the network using proprietary QLS (QTAKE Live Stream) protocol. QLS uses encoder parameters selected in the H264 PROXY SETTINGS. QTAKE Monitor can be set to monitor up to 4 streams, corresponding to 4 views in QTAKE. Each stream has to be enabled in the **STREAM SETUP** window.

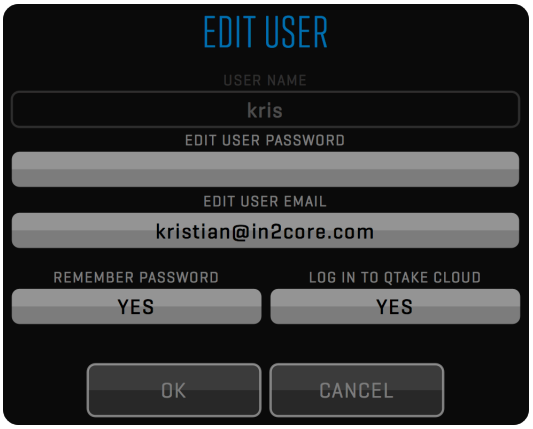
H264 ENCODER
Please note that QTAKE uses the same encoded frames for streaming and recording proxy clips, to use the CPU processing power in a most efficient way.

WIFI NETWORK
For the best streaming results, use high-quality, high-throughput professional access points from Ruckus or Ubiquity Networks when creating your WiFi network.

CLOUD STREAM

In addition to local network streaming, QTAKE provides streaming to clients outside of the local network, using internet connection. This is called **CLOUD STREAM**, because QTAKE Cloud is used to connect QTAKE with a remote client. In order to initiate cloud streaming, QTAKE and QTAKE Monitor users have to be logged into QTAKE Cloud and **CLOUD STREAM** option has to be enabled in the **STREAM SETUP** window. Active clients connected over the internet will be indicated by magenta color.

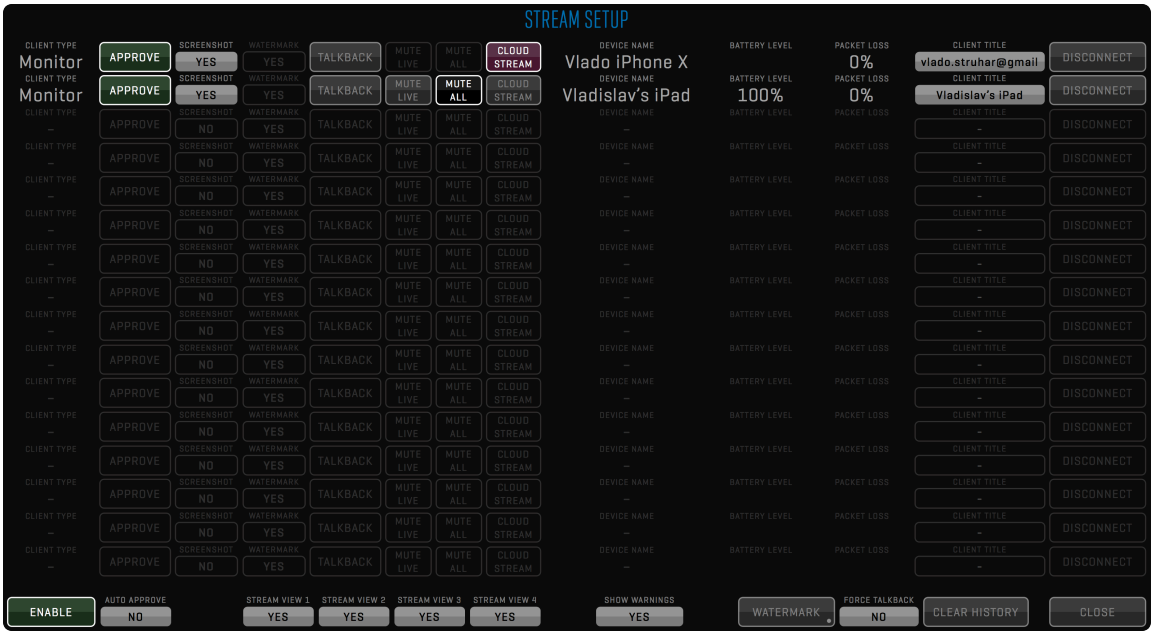
CLOUD STREAM LICENSE
Cloud streaming from QTAKE is licensed via the SERVER module. As with other modules, flexible licensing options are available through the QTAKE Rental Shop.



QTAKE CLOUD LOGIN
Click the **OPEN** button inside the USER menu to access **EDIT** window. Turn on **LOG IN TO QTAKE CLOUD** option to enabled cloud connection for streaming over the internet.

STREAM SETUP

This window lists all clients running **QTAKE MONITOR** or **QTAKE 3D CONTROL**. You can **APPROVE** clients, grant permission to take **SCREENSHOT**, turn on the **WATERMARK**, enable **TALKBACK**, activate **MUTE LIVE**, **MUTE ALL** and enable **REMOTE STREAM** for each client individually. The setup window also allows you to set an easy to remember **CLIENT TITLE** for each connected client and manually **DISCONNECT** devices that are no longer wanted to free up slots in the list.



Stream can be enabled by default on each startup by using the preference:
Enable_Remote_Control=1

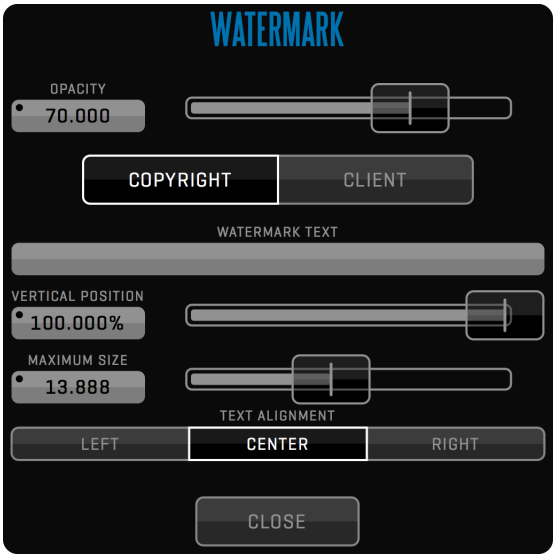
You can enable talkback directly from the STREAM menu by long clicking a specific connected device.

ASSIGN 3D HIT VIEW

Selects what view or views the QTAKE 3D Control application will control.

WATERMARK

Long click the **WATERMARK** button to configure the Copyright and User Name watermark text, position and size.

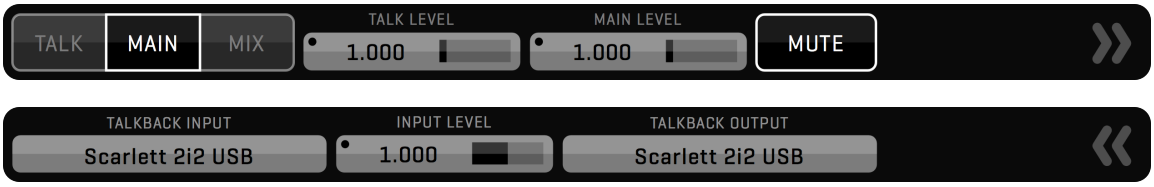


MONITOR MENU

The MONITOR menu lets you remotely control some settings of the QTAKE Monitor app, such as active view and multi-view option. Turning on the **LOCK SCREEN** option will prevent accidental inputs from the QTAKE Monitor user. **SELECTED QTAKE MONITOR** picker is used to select which client is being controlled. **USE TALKBACK DEVICE** lets you select the one that is designated as a TALKBACK client.

TALKBACK MENU

QTAKE supports bi-directional TALKBACK to and from QTAKE Monitor. The TALKBACK menu lets you select a TALKBACK OUTPUT device and a TALKBACK INPUT device to use with the TALKBACK feature. The output and input devices cannot be set to the same device that is set as your **LIVE OUTPUT AUDIO DEVICE, DISK OUTPUT AUDIO DEVICE** or **AUDIO INPUT** respectively. See the PROJECT Menu section for more information on audio output and input devices.



The segmented button lets you select source between **TALK** for talkback only, **MAIN** for live and playback audio only and a **MIX** between the two. **TALK LEVEL** and **MAIN LEVEL** lets you set the volume of the two sources. **MUTE** allows you to mute all audio output from the **TALKBACK AUDIO DEVICE**. The second page of the TALKBACK menu lets you select a **TALKBACK INPUT** device and set the **INPUT LEVEL**.

> Bi-directional talkback requires QTAKE Monitor version 2.5 or later.

SCOPES MENU

The SCOPES menu lets you analyze the incoming video signal with the help of realtime **WAVEFORM, VECTORSCOPE, HISTOGRAM, FOCUS PEAKING** or **FALSE COLOR**. Scopes can be turned on (with **SCOPE** button), output (with the **OUT** button), positioned (with the **PLACE** button) and adjust the **OPACITY** of the analysis individually for each VIEW. In False Color mode you have the ability to customize the values for the LOW, MID and HIGH zones individually. The analysis is by default performed after any VIEW FX and CLIP FX are applied. The **SOURCE** button allows you to analyze the "clean" video input. Additionally you can also enable/disable **HDR** Mode.

The following **MODE**s and **OPTION**s are available:

WAVEFORM[Luma, Chroma, YCbCr Parade, Red, Green, Blue, RGB Overlay RGB Parade]
VECTORSCOPE

HISTOGRAM [Red, Green, Blue, RGB Overlay RGB Parade]
FALSE COLOR
FOCUS PEAKING

QOD MENU

QTAKE can change settings and control the QOD+ via USB connection. Settings can be changed from the QOD menu in the **FILE** room. See APPENDIX C - QTAKE Output Device or the QOD+ User Guide for more information. The QOD menu displays the following information:

SERIAL NUMBER
Serial number of the QOD+.

QOD RESOLUTION
Current input resolution of the QOD+.

TEMP
Internal temperature of the QOD+.

QOD AUDIO
This button controls the audio input and embedded audio output of the QOD+. Your options are:

NONE - No audio is embedded on the output.
AUDIO - The analog line audio input is embedded on all SDI outputs.
DISPLAYPORT 2/8 - Each SDI output use 2 of the 8 audio channels available from the DisplayPort input. This allows each view to have independent embedded audio.
DISPLAYPORT 8/8 - All 4 SDI outputs uses all of the 8 audio channels available from the DisplayPort input.

UPDATE FIRMWARE
Use this button to update firmware of the QOD+. After updating firmware, you need to quit QTAKE and power-cycle QOD+. After QOD+ is detected by the operating system, you can start QTAKE application.

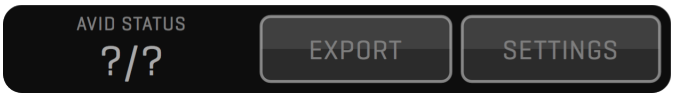
RESET
Performs a soft reset of the connected QOD+.

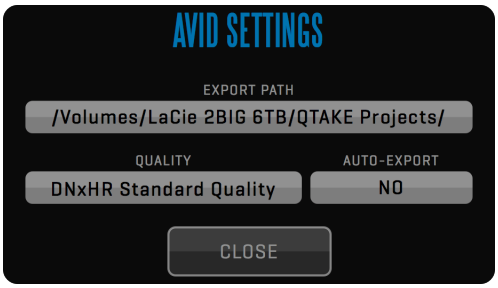
More information can be found in the QOD+ User Guide. It can be downloaded from:
https://in2core.com/download/docs/QOD+User_Guide.pdf

AVID MENU

The AVID menu lets you export Avid DNxHD/DNxHR® files in AMT format to be used in Avid software. The **AVID STATUS** will display the number of clips exported out of the total number of clips in your project. Clicking **EXPORT** will start exporting clips. QTAKE will place exported clips into a subfolder

of your media folder called **/AVID EXPORT**.
Clicking the **SETTINGS** button will bring up the **AVID SETTINGS** window. Here you can adjust the compression **QUALITY** of the exported files and turn on **AUTO-EXPORT**. The following QUALITY settings are available:





LOW BANDWIDTH DNxHR LB (8-bit 4:2:2) Offline Quality
STANDARD QUALITY DNxHR SQ (8-bit 4:2:2) (suitable for delivery format)
HIGH QUALITY(8BIT) DNxHR HQ (8-bit 4:2:2)
HIGH QUALITY(12BIT) DNxHR HQX (12-bit 4:2:2) (UHD/4K Broadcast-quality delivery)

When AUTO-EXPORT is set to **YES**, QTAKE will automatically start exporting clips as soon as they are recorded.

WEB MENU

The WEB menu is used to display a webpage in the active VIEW. User can enable or disable web view by clicking the **WEB** button. The **WEB ADDRESS** input field is used to enter the URL of the web page. It is possible to interact with the web page by clicking links and using text input fields. The BACK (**<**) and FORWARD (**>**) buttons are used to navigate through the web view history.

SHOOT ROOM

This room is used for general video assist work - recording and playback.

RECORD MENU

Pressing the **RECORD** buttons (R key for VIEW 1, T key for VIEW 2) will initiate the capture process. The recording VIEW will automatically patch to LIVE.

CAN I RECORD WITHOUT THE VIEWS PATCHING TO LIVE?
Yes. If you turn on the **KEEP DISK ON REC**, automatic patching to live on recording start will be disabled. Please note that this is not possible if using half-duplex cards, such as AJA with VIDEO OUT active.

REC SYNC

Enable **REC SYNC** (key Y) to record all Views that have signal in sync. If SYNC ALL is enabled, you can press either RECORD button to start recording all inputs. Long clicking the SYNC button will toggle it from **SYNC ALL** to **SYNC PAIR**. SYNC PAIR is often used in 3D productions. Clips recorded with SYNC enabled will automatically have a sync OFFSET, so you can immediately play them back in sync.

With RECORD SYNC is enabled, entering clip data in LIVE mode will also copy this data to other views, with the exception of CAMera letter and ROLL number. QTAKE will also ask if you want to copy the active views clip data to the other views when SYNC is enabled.

RECORD CONTROLS

During recording process you can use following features:

IN & OUT ON THE FLY
During recording you can set the IN and OUT (I and O keys) points to mark the important part of the clip.

CHAPTERS ON THE FLY
Besides the IN and OUT points you can create CHAPTER MARKS during recording (J key) to help you quickly navigate to the interesting parts of the shot during playback (< and > keys).

SUBCLIPS ON THE FLY
If you press MAKE SUB button (P key), the subclip is created based on IN and OUT marks. If there is no OUT mark, subclip range is determined by the IN mark and the current time. After creating the subclip, new IN mark is set at the end of the subclip range. You can repeat this action to create the subclip for each take of the series. In addition, CHAPTERS are created for each IN and OUT point used to create subclip.

CREATE THUMBNAIL

Press the THUMB button (**U** key) to set current frame as the thumbnail for the recorded clip. If you don't specify thumbnail time, IN point will be used to generate a thumbnail.

ABORT RECORD

You can abort recording any time by pressing the ABORT button in the RECORD toolbar. Current clip will be discarded. Keyboard shortcut is **Esc**.

RECORD MULTI IN & OUT

When shooting series or multiple actions in a single take, you can use multiple IN and OUT points to mark more than one selection. After pressing IN and OUT points for the first time, this selection is automatically stored and you can set a different IN and OUT points.

BIT DEPTH

Video is usually recorded in YCbCr mode. You can choose to record in either 8-bit or 10bit mode. 10bit mode will store video in a higher quality, but it also requires more disk space and more processing power.

This is controlled using the preference:

Use_10bit_Capture_Mode=1

CODEC

QTAKE records clips to Apple QuickTime file format. You can compress video to various codecs during record. Select the codec that best fits your postproduction workflow or make your selection based on space and quality requirements. QTAKE lets you use any of the following codecs: Apple ProRes Proxy, Apple ProRes LT, Apple ProRes, Apple ProRes HQ, Apple ProRes4444 and H.264. The codec that requires least CPU resources is Apple ProRes Proxy.

You can specify a different capture codec for each input. When creating a new project the default recording codec is controlled by the preference:

Default_Codec=Apple ProRes Proxy

TERADEK CUBE SUPPORT

QTAKE can record RTSP stream from Teradek CUBE over wifi, without the need for additional video input hardware. To enable the Teradek CUBEs video input you will need to enter the RTSP address in the PROJECT window. The Teradek CUBE has a bonjour enabled web interface that is used to setup the device and update it's firmware.

Step by step for connecting Teradek CUBE to QTAKE:

1. **CONNECT TO THE CUBES ADMIN INTERFACE**. Click the Show All Bookmarks item in Safaris Bookmarks toolbar and select your Cube device from the devices listed under the bonjour heading. For troubleshooting your connection refer to the Teradek Cube manual.
2. **MAKE SURE TERADEK CUBE IS RUNNING THE LATEST FIRMWARE**. Note that the text on

the bottom of the Info > About window in the admin interface should say "your device firmware is up to date."

3. **SET YOUR COMPRESSION PROFILE**. Go to Video Setup > Encoder Settings and set it to Baseline.
4. **DISABLE QUICKVIEW**. You will need to disable Quickview for proper operation of the Teradek Cube in 1080 resolution. Go to Video Setup > Stream Settings, then click on the QuickView Stream tab and set the radio button to disabled.
5. **MAKE NOTE OF CUBE SETTINGS**. Write down your Primary (RTSP) address and your Output Resolution from the Dashboard section of the admin interface.
6. **SET UP QTAKE**. Start QTAKE and set Teradek Cube option to YES in your project window. You will need to enter your Primary stream address and set the video format with the format selector. Please refer to the Teradek CUBE manual for more information regarding setup.

CUBE video reception is dependent on wi-fi signal strength. Using a router with external antennas can improve performance.

Only hardware that supports VDA decoding of H.264s can use other Profiles than Baseline.

QTAKE uses "LIVE555 Streaming Media" software licensed under LGPL. Live Networks, Inc. https://www.live555.com/

FRAME MENU

QTAKE can be used to record clips frame-by-frame for stop-motion animation:

1. Press **FRAME REC** Button to enable frame recording mode.
2. **REC** Button will change to **FRAME** Button.
3. Press FRAME Button to add single frame.
4. Repeat step 3 until you reach the end of recording.
5. Press FRAME REC Button again to finish recording (or **ABORT** to discard the whole clip).

You can also setup up frames to be recorded at set intervals, so called time-lapse recording.

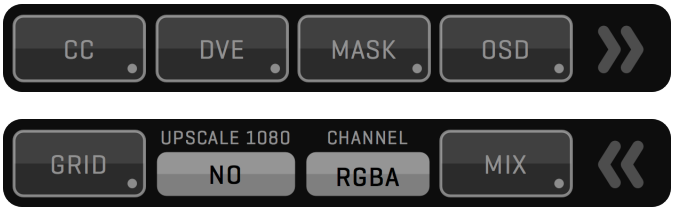
1. Long click the **FRAME REC** button to enable **TIMER REC**.
2. Enable TIMER REC. REC button will change to TIMER.
3. Enter desired interval in **TIME-LAPSE INTERVAL**.
4. Press TIMER to start the timer and start capturing.
5. Press TIMER again to stop recording.
6. Disable TIMER REC to finish the recording.

VIEW FX MENU

The VIEW FX menu allows you to enable, disable and setup effects applied to the active view. The menu contains two pages, use the » or « buttons to change page. VIEW FX differ from FX in that they are tied to a particular view and any content in the view will have the effect applied. The available effects are:

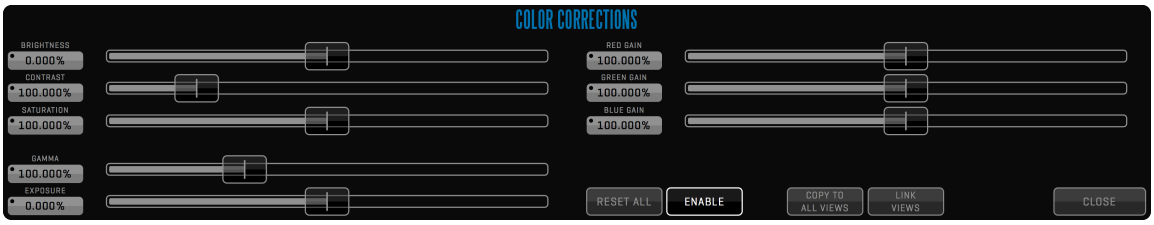
CC - Color correction
DVE - Digital video effects such as scale and crop
MASK - Format/aspect masking and guides
OSD - On-screen display of metadata
GRID - Alignment grid
MIX - Still image mix and overlay
UPSCALE 1080 - Global upscale of view content to 1920x1080
CHANNEL - Isolate a single color channel

Long click any of the buttons (marked with a dot) to adjust effect settings (see below).



COLOR CORRECTION

Use the **CC** button to adjust (long-click) and apply (short-click) basic color correction to current VIEW.

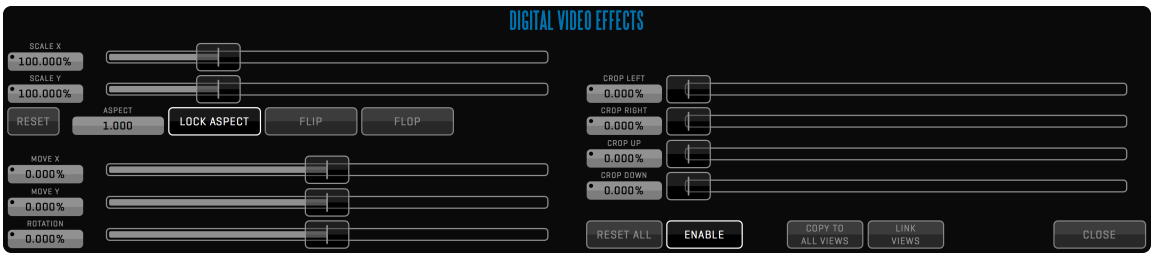


You can adjust various image attributes in this pop-up window: **GAMMA, EXPOSURE, BRIGHTNESS, CONTRAST, SATURATION, RED GAIN, GREEN GAIN** and **BLUE GAIN**.

If you need to perform the same picture adjustment on both Views simultaneously press the **LINK VIEWS** button, to apply the current adjustment to the other view press the **COPY TO OTHER VIEW** button.

DVE - IMAGE TRANSFORMATION

Use the **DVE** button to adjust (long click) and apply (short click) Digital Video Effects on the view.

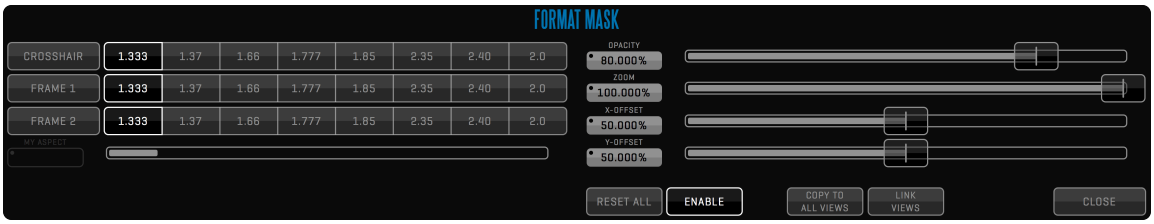


You can scale, position, rotate, mirror and crop the video frame by adjusting the following parameters: **SCALE X, SCALE Y, MOVE X, MOVE Y, FLIP, FLOP, ROTATION, CROP TOP, CROP BOTTOM, CROP LEFT, CROP RIGHT.**

To perform the same picture adjustment on both Views simultaneously press the LINK VIEWS button, to apply the current adjustment to the other view press the COPY TO OTHER VIEW button.

MASK - FORMAT MASKING

Use the **MASK** button to adjust (long click) and apply (short click) visual guides and format masking on the view.

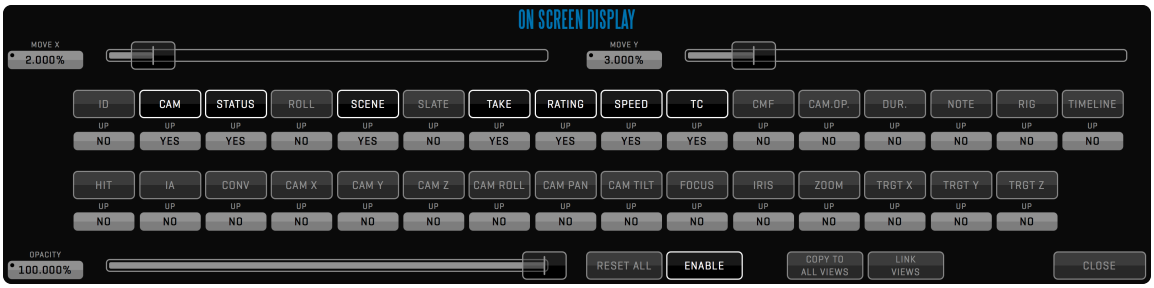


MASK out the area that is outside the framing by picking the standard or custom video and film formats. In addition to mask, you can also overlay **CROSSHAIR** and two sets of **FRAME-LINES**.

You can further adjust the mask with **ZOOM, POSITION** and **OPACITY**.

OSD - ON-SCREEN DISPLAY

Turn on the **OSD** button to display VIEW status and clip information. Long click to adjust OSD contents. The **MOVE X** and **MOVE Y** sliders let's the user reposition the OSD display. The **OPACITY** slider controls the transparency of the OSD.

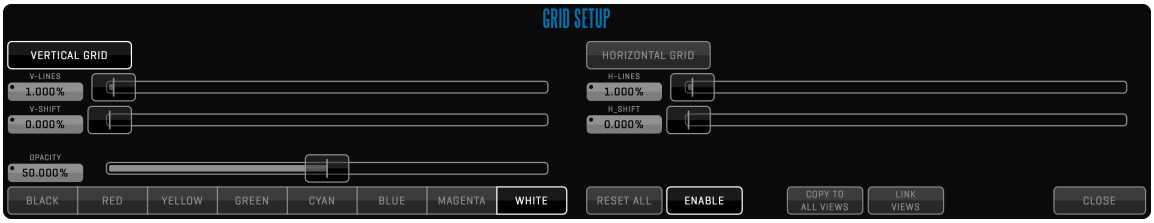


Following attributes can be displayed along the upper or lower edge of the video: **CLIP ID, CAMERA, STATUS, ROLL SCENE+SHOT, TAKE+SUBTAKE, RATING, SPEED, TIMECODE, CAMERA MEDIA FILENAME, CAMERA OPERATOR NAME, DURATION, NOTE, RIG, TIMELINE, HIT, INTER AXIAL, CONVERGENCE** and **CAMERA POSITIONING DATA (CPD)**.

Both SCENE and SHOT information are contained in the OSD - SCENE field. This means that Scene 12, Shot A will be displayed: 12A. To add a dash (-) between SCENE and SHOT values set the following preference:
Use_Scene_Shot_Divider=1

GRID

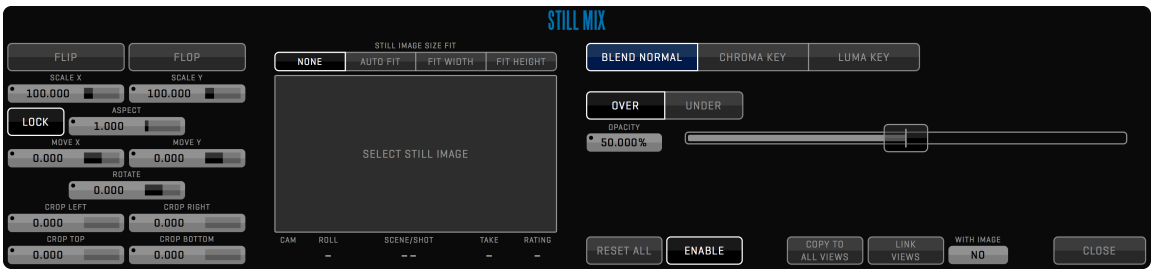
Use adjustable horizontal or vertical overlay **GRID** to help align images. Short click the GRID button to apply, long click to adjust GRID spacing and color.



You can independently set **VERTICAL GRID** and **HORIZONTAL GRID** by setting grid line distance based on percentage of the image width. You can also set overall **OPACITY** and **COLOR**.

MIX

Enabling **STILL MIX** lets you overlay a static image on a view or key the VIEW contents over a static background. Click **SELECT STILL IMAGE** to bring up the clip browser. From here you can select any clip in your database, including imported footage.



The sliders on the left hand side of the Still Mix setup window lets you **SCALE, MOVE, ROTATE** and **CROP** the still frame.

BLEND NORMAL lets you overlay the still image on the contents of the view. You can control the blending by adjusting the **OPACITY** slider and selecting if you want the image to blend **OVER** or **UNDER** the source. The OPACITY slider can be set to **AUTO** mode. See the USER INTERFACE section for more information about AUTO SLIDERs. STILL MIX supports alpha channel in imported material.

CHROMA KEY lets you key the contents of the VIEW over the selected still image. Click the **COLOR** button to pick the hue you want to key out. **ALPHA** lets you view the alpha channel of the current key and the **BLACK** and **WHITE** sliders allows you to adjust the key in order to patch holes.

STILL MIX uses the selected clip's thumbnail frame (defaults to IN-point or first frame if no IN-point is found) as the reference frame. Setting a new **THUMB** in the source clip will allow you mix the content of the view with that particular frame.

You can LINK VIEWS and COPY TO OTHER VIEW just like with other VIEW FX. The **WITH IMAGE** button lets you choose whether the source image and any scaling or cropping is LINKED or COPIED along with the BLEND or CHORMA settings.

PATCH MENU

Each VIEW is like a monitor with two inputs.

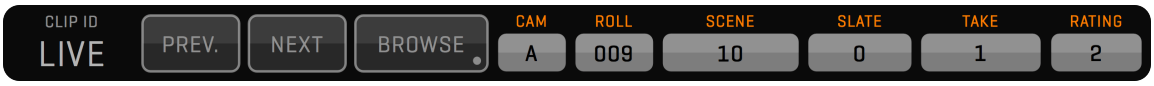
The PATCH menu lets you switch the active view's source between **LIVE** (shortcut **9**) and **DISK** (shortcut **0**). When in LIVE, the **INPUT** button lets you select what input to monitor by selecting it's number. When the active view is patched to DISK the DISK selector lets you select the camera letter or AUTO.

When a VIEW is patched to DISK, PREV and NEXT will only load clips that have the same camera letter.

If you select AUTO in the disk selection window PREV and NEXT will ignore camera letter and instead load clips based on INPUT, meaning that if you record camera A, B and C all on the same input, PREV and NEXT will call up those clips in chronological order.
Pressing the arrows (») on the side of the PATCH menu displays the second page of the menu. The patch rules allows yo to define the behavior of QTAKE when loading a clip into a view for both CLIP SYNCED and non-CLIP SYNCED operation. **BY CLIP** will change the patched DISK letter of the view based on the clip that you are loading. **BY VIEW** will load the clip into a view with a matching DISK letter.

CLIP MENU

Every clip consists of video and audio media and metadata stored in the database. You can enter clip metadata before, during or after recording. The CLIP menu lets you enter the following standard information about each clip: **CAMERA, ROLL, SCENE, SHOT/SLATE, TAKE** and **RATING**.



A take can be marked as a **REHEARSAL** and tagged with **REF** (for reference), **P/T** (for part take) and **P/U** (for pick-up) in the TAKE window. Takes tagged with REF will automatically show up in the REFERENCE section of the browser.

The **TAKE** value is automatically incremented if entered in LIVE mode, before or during recording. If RECORD-SYNC is enabled, clip data entered in LIVE mode is automatically copied to other camera clip.

Extended clip data can be accessed in the **META** sidebar and the **DATA** menu.

UK SLATING
You can replace the SHOT field with a SLATE field to conform with UK (European) slating. The SLATE field will auto increment each time SCENE is changed. Slating system can be changed in the project window SLATING section.

The SHOT value can still be entered in the META sidebar.

CLIP NAMING CONVENTION

Recorded clips are stored as Quicktime movie files encoded with the selected codec. All clips are located in **QTAKE PROJECTS/PROJECT_NAME/MEDIA** folder on the Volume you selected when creating the project.

Clip filename is generated (and updated) using the following structure:

Scene_Shot_Take-Sbtk_CamReel**(RT)**ID.mov

When CAMERA MEDIA is set as the MEDIA FILENAME type in the project window clips will be named according to corresponding clips on the camera magazine. This only applies to clips that are recorded while QTAKE receives valid record flag and filename metadata embedded in the SDI output of the camera. Clips that are recorded while the camera is not recording will be named by the standard QTAKE clip naming convention.

IMPORT CLIPS and LINK CLIPS function can parse multiple types of filenames, select the appropriate import parsing filter in the Import dialog. See IMPORT QT MOVIES for specifics on each parsing filter.

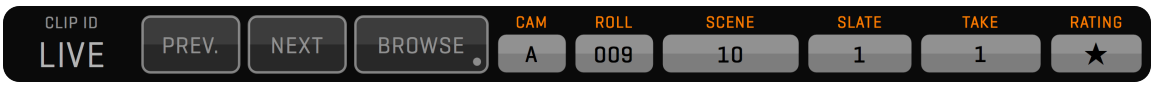
If the file is linked, it's filename is not updated.

CLIP ID BROWSER

Click the **CLIP ID** number (or press the **G** button on the keyboard) to display textual clip browser. Select the clip and press OK button (or double click the item in the list) to load the clip into the active VIEW.

CLIP SELECT

Use **PREV.** and **NEXT** buttons (or **Up** and **Down** arrows on the keyboard) to select and load specific clip into the active VIEW. All metadata fields will display information for selected clip.



VISUAL CLIP BROWSER

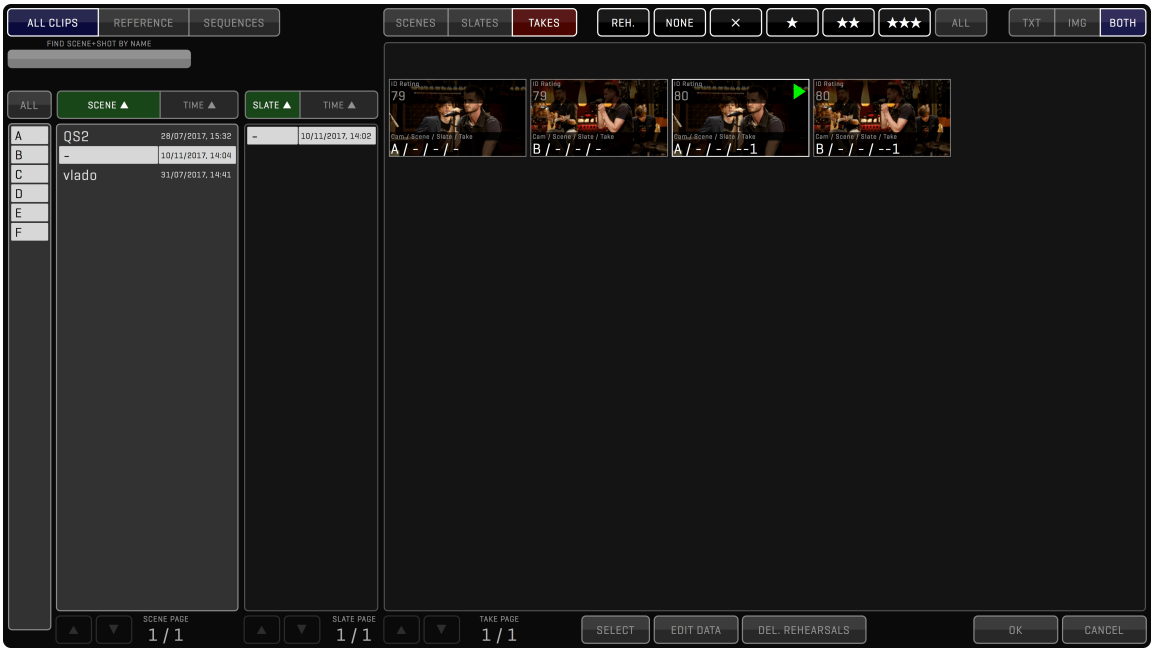
If you have more clips recorded you should use the **BROWSE** button to open our tree-based visual clip browser. When the **ALL CLIPS** button is active, every clip is retrieved from the database and displayed in the Clip Browser. If you select the **REFERENCE** button, you can quickly access clips

marked as reference. Enter the SCENE+SHOT to immediately select the scene and shot by name.

Clip Slate Information is divided into 3 windows: SCENE, SHOT and THUMBNAILS. Thumbnail window usually displays TAKES, but it can also display Scenes or Shots by clicking the appropriate segmented button. When you choose the Scene, Thumbnail Window will switch to Shots and than to Takes. The active take has a thicker white outline, if a take has a purple outline the media associated with that clip could not be located.

Use the filter tool to display the selection of takes, based on RATING or REHEARSAL attribute.

By clicking the take thumbnail, the clip BROWSER closes and selected take is loaded into current VIEW. You can use keyboard arrows to navigate inside each window. Press **TAB** or click the window to put it in focus. Press the **SPACE** key on your keyboard, or click to load the take.



Press the **SELECT** button to enable clip selection. Select clips by clicking on their thumbnails (or by pressing the **SPACE** key on the keyboard). Enable the camera letters from which you want to select clips. Choose another SCENCE or SHOT to select takes from multiple scenes/shots. When clips are selected the bottom row of buttons will changed to reflect actions that can be carried out on multiple clips. For details about these actions see the next section.

EDITING CLIP DATA

You can edit basic clip data directly in the BROWSER. First you select the clip, press the **FUNCTION** button and then select the **EDIT MULTI DATA** option.

EDITING CLIP DATA FOR MULTIPLE FILES

First **SELECT** the takes that you want to edit, then click **EDIT MULTI DATA**. A dialog similar to the EDIT CLIP DATA dialog will appear but with each element blanked out. When editing the TAKE attribute a secondary option called **INCREMENT** will appear. To number your takes sequentially select YES. Note that the order you selected the files is the order they will be numbered.

REVEAL IN FINDER

Pressing the **FINDER** button will hide QTAKE and show your selected clips in a finder window. Useful for copying key shots to an external drive for instance.

DELETING SELECTED TAKES

You can delete selected clips by clicking **DELETE** button. This will delete media files from the

storage. This operation cannot be undone.

RELINK CLIPS

Enables you to relink selected clip/s.

EXPORT CDLS AND LUTS

You export CDLS and LUTS by selecting selecting the clip/s, pressing the **FUNCTION** button and selecting the export option.

MOVING TAKES TO SEQUENCE

If you need to quickly put selected clips into the sequence, press **TO SEQUENCE** button. Clips are inserted into the current sequence in the order they were selected.

EXPORTING TAKES TO FILE

Click **TO FILE** button to export multiple takes to iPhone/iPod or AppleTV compatible .m4v format. If you choose to export a file to QT Movie, you can add LUT and OSD to the video frames. Press the **BACKGROUND** button to start the export in the background. Export to file uses IN and OUT marks to define the export range of each clip.

MOVING TAKES TO REFERENCE

You can move selected clips to Reference Zone by clicking **TO REF** button. Access reference clips by clicking the **REFERENCE** button.

DATA MENU

The DATA menu is used to store the most common metadata. It contains segmented button to let you switch between camera, shot, note and media category. All of this metadata can be also accessed via META sidebar.

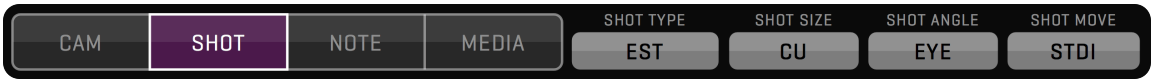
CAM

CAMERA SPEED, LENS, F-STOP, SHUTTER, M.O.S.

SHOT

SHOT TYPE: EST - Establishing Shot, TWO - Two Shot, POV - Point of View, OTS - Over The Shoulder, VFX - Visual Effect, FG - Foreground, BG - Background.
SHOT SIZE: XLS - Extreme Long Shot, LS - Long Shot, FS - Full Shot, MLS - Medium Long Shot, MS - Medium Shot, MCU - Medium Close Up, CU - Close Up, BCU - Big Close Up, XCU - Extreme Close Up.
SHOT ANGLE: WORM - Worm's POV, LOW - Low Angle, EYE - Eye Level, HIGH - High Angle, BIRD - Bird's POV, CANT - Canted Shot.
SHOT MOVE: STAT - Static Shot, PAN - Panning, ZOOM - Zooming, TRCK - Tracking, TILT - Tilting,

STDI - Steadicam, TECH - Technocrane, CAR - Camera Car, HELI - Helicopter.



NOTE

You can also enter a CLIP NOTE for each take. Ctrl+Enter lets you enter a line break and create multi-line notes.

MEDIA

MEDIA is used to display the filename of the associated camera media of the RED or ALEXA cameras. In order to extract metadata you need to select the correct CAMERA MODEL and enable READ SDI DATA in the Project Window. While the camera is not recording the filename will be shown in brackets to indicate that changes might occur.

SCENE MENU

The SCENE menu enables quick navigation between scenes and shots. Default shortcuts are **Ct-Up**, **Ct-Down** arrows to navigate between SCENEs and **Alt-Up**, **Alt-Down** to navigate between SHOTs. The **SORT BY** button lets you toggle between **NAME** and **DATE** sorting and the **LOAD** button defines what TAKE to load when navigating to another SCENE.

PLAY MENU

After recording, QTAKE can automatically switch to DISK or PLAY mode, based on **POST-REC ACTION** in the OPTIONS menu. Timecode label displays current timecode either in LIVE or DISK mode. Clicking the TIMECODE label will toggle the display between timecode and frame number. Following playback commands are available:

PLAY - play forward [**Space**]
REVERSE - play in reverse [**Ct-Space**]
MARK - jump to previous IN point [**[**] or to next OUT point [**]**]
FRAME - go to previous frame [**Left**] or to next frame [**Right**]
SKIP - skip backwards [**Ct-Left**] or forward [**Ct-Right**] using number of seconds specified in the **SKIP TIME** field.

If the playback was active prior to using **FRAME** and **SKIP** commands, it will stop. Jumping between ranges will keep the playback active.

Second page of the PLAY menu also contains powerful **SLAVE PLAYBACK** command that will automatically seek to correct frame based on external timecode. This feature is also known as "timecode chase" and it is used to slave the playback to external master source, such as another player or a motion control rig.

QTAKE will remember where the playhead was located last time you had a clip loaded but if you prefer to have the playhead automatically jump to the IN point enable the **RESET PLAYHEAD** option and select which range to reset to using **PLAYHEAD RANGE** option in the OPTIONS toolbar.

Looping, speed and synchronization of multiple players is available in the CONTROL toolbar.

Scrubbing/jogging through the clip is done by dragging the TIME SLIDER in the SLIDER toolbar or dragging the cursor horizontally through the VIEW.

Shuttling through the clip is available in the SHUTTLE toolbar.

Ramping the speed of the clip is available in the RAMP toolbar.

PLAYBACK STATE
Playback state keeps active when browsing through the clips. If the playback hasn't been stopped, it will continue with new clip after loading into VIEW.

PLAYBACK MULTIPLE IN & OUT

If you have marked multiple ranges within a clip you can use **<MARK** and **MARK>** buttons to move between the selections. Long-click the PLAY Button to switch from **PLAY ONE** to **PLAY ALL** mode. Short click **RESET**to delete current selection, long click RESET to delete all selections. Selected IN-OUT range (SUBTAKE) number will be displayed in OSD (in TAKE field). Turn off the **USE RANGE** option in the SLIDER to allow playback outside of the marked ranges.

SLIDER MENU

You can use the TIME SLIDER to scrub through the clip, or just drag your finger/mouse pointer across the VIEW. If you try to scrub during playback, play is paused and it will resume when you finish scrubbing.

PLAYBACK RANGE

The active part of the clip is defined by the IN and OUT points and it is visually presented by the solid bar inside the TIME SLIDER. Every clip is played from IN to OUT point. You can go past this range by scrubbing or by using the SHUTTLE, but playback outside of the range is possible only if you disable **USE RANGE** option.

IN and **OUT** buttons (with I and O hotkeys) are used to create ranges during recording or during playback. Long clicking IN or OUT button will reset active IN or OUT point. Use **RESET** button (Backspace) to remove the active range, long click it to remove all ranges from the active clip.

Click the **DURATION** label to toggle the display between timecode and frame number.

SUBCLIPS

To take this even further, you can make subclips based on IN and OUT points. Press the **MAKE SUB** button to create a subclip including copy of all metadata. When the subclip is the current clip, this button changes to **MASTER** button. Pressing this button loads the master clip of the current subclip into the active VIEW. In addition, IN and OUT points are set to display which part of the masterclip makes the content of the subclip.

THUMBNAILS

Press the **THUMB** button (U hotkey) to update browser thumbnail image of the selected clip to current frame.

CONTROL MENU

Inside the CONTROL menu you will find the **LOOP** button. Press it to enable seamless re-start of playback after reaching the OUT mark. Long click the **LOOP** button to switch it to **PONG** mode. In this mode, the clip will play in reverse when it reaches the OUT mark and forward again when it reaches the IN mark.

A section of two data entries is used to control playback speed:

CAMERA SPEED - enter camera speed to simulate different camera speed.
PLAY SPEED % - Allows you to adjust the playback speed in percentage. PLAY SPEED can also be set to negative values to allow reverse playback without using **REVERSE** button.

CLIP SYNC

Press the **CLIP SYNC** button for comfortable, synchronized clip loading. With CLIP SYNC enabled you need to load only clip from one camera and the synced views will load corresponding clips (with matching ID) automatically.

Long click the **CLIP SYNC** button to display sync options.

PLAY SYNC

Two or more clips can be played back in sync. For synced playback you need to specify **OFFSET**. The right section of the CONTROL menu is the OFFSET display end entry. Clips recorded at the same time automatically get an offset in relation to each other. Use **AUTO PLAY-SYNC** in the OPTIONS

toolbar to automatically enable **PLAY SYNC** mode for sync-recorded clips. The **AUTO-OFFSET** option will enable automatic offset even if the clips are not recorded in sync.

To specify the OFFSET manually and play two or more clips in sync, follow these steps:

1. Load the clips you want to play in sync into your VIEWs.
2. Find the sync point for each clip.
3. Press the OFFSET display to store the time difference between clips.
4. PLAY SYNC button is automatically enabled for synchronized playback.
5. Press any button in the PLAY Menu for synchronized playback commands.

To specify the OFFSET automatically by timecode, use this Preference:

Set_Play_Sync_Offset_By_TC=1

Set to =1 if you want QTAKE to determine PLAY SYNC OFFSET using timecode of the clips. QTAKE will automatically MUTE clips in V2-4 when playing back clips with the same ID in sync. You can override this by setting:

Enable_Play_Sync_Auto_Mute=0

WHY DID MY IN AND OUT POINTS CHANGE?
When you PLAY SYNC two or more clips QTAKE will adjust IN and OUT points so that only overlapping sections of the clips are enabled for playback. You can change this behavior in the preferences by setting: PreRoll_And_PostRoll_For_PlaySync=1 This will adjust all synced clips to match the longest one.

Use the + and - buttons to adjust the offset of the active view in relation to the other views.

REV. PLAY OR NEGATIVE PLAY SPEED?
Enabling PLAY SYNC will keep playback synchronized when using PLAY or REV. PLAY. If you want to synchronize one clip playing forward with another clip playing in reverse you can achieve this by entering a negative PLAY SPEED for one of the clips.

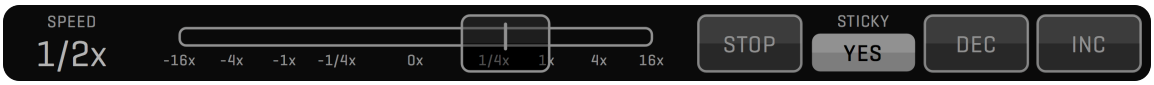
SYNC SETUP

QTAKE will by default synchronize actions across all views (1+2+3+4) when a sync button such as REC SYNC or CLIP SYNC is enabled. The SYNC SETUP window lets you exclude views or break down the views in to smaller groups. Long-click one of the sync buttons to enter the SYNC SETUP window. The views indicated in blue belong to the current sync group. Click one or more of the views to to exclude it from the group.

Views that are excluded from a sync group can in turn be added to their own group by closing the SYNC SETUP window, activating the view and entering the SYNC SETUP window again. The sync buttons will indicate what views are part of the current group in parenthesis under the button title.

SHUTTLE MENU

Using SHUTTLE menu, you can play through the whole clip using variable speeds ranging from 1/16x to 16x. Note that this way of transport doesn't play audio and doesn't respect IN and OUT points.



CHAPTERS MENU

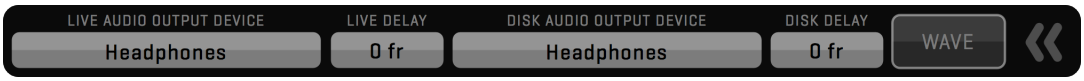
When recording series or long takes, you might have problems finding the right part of the clip.

In the CHAPTERS menu you can create (shortcut J) and delete (shortcut Ctrl+J) QuickTime compatible chapters for each clip (chapters are stored in the media files and can be retrieved with QuickTime Player). Each chapter can have it's own name. QTAKE will parse the chapter names for the key words GOOD and BAD and display a green or red chapter marker if found. If you would like to add a chapter directly with either of the key words the keyboard shortcuts are Ctrl-Alt-G for GOOD and Ctrl-Alt-B for BAD. Chapters can also be used to trigger GPI Outputs which lets you sync external equipment to playback.

You can jump between the chapters with the PREV. NEXT buttons and use the MARK button to set the IN and OUT points based on current and next CHAPTER markers.

AUDIO MENU

The AUDIO menu mainly controls various aspects of QTAKE audio output. The following controls are available in the AUDIO menu (use the » arrows no navigate to the second page of the menu):



MUTE LIVE Disables live audio output (shortcut N). Input audio is still recorded, but it is not routed to audio output.
MUTE V1 - MUTE V4. Disables audio playback of VIEW1 - 4
AUDIO INPUT LEVEL Adjusts audio input level. This will affect the level of your recorded audio.
METER Enables audio level metering for LIVE and PLAY mode (key Ctrl-M).

LIVE AUDIO OUTPUT DEVICE Select the system device to use for analog audio output.

LIVE DELAY Adjusts the delay between LIVE video and audio.

DISK AUDIO OUTPUT DEVICE Select the system device to use for analog audio output.

DISK DELAY Adjusts the delay between playback (DISK) video and audio.

WAVE - Enables a waveform display of the audio track below each view.

WHY IS THE WAVE BUTTON INACTIVE?
In order to use the waveform audio display you will need to set:
Enable_Audio_Waveform=1

However you should be aware that enabling audio waveform will increase the performance requirements for the system.

AUDIO INPUT is set in the PROJECT window.

VIDEO OUT MENU

This menu is used to activate SDI outputs from the video card. To enable video card outputs globally, turn on this preference:

Enable_Video_Output=1

Each video card output is controlled independently from the VIDEO OUT Menu. When **V-OUT** is disabled in DISK mode, your video card outputs live passthrough, same as in LIVE mode.

Most video cards are half duplex - they can either capture or playback. This means you won't be able to monitor processed LIVE image (only clean live passthrough) through the video card in this mode.

There are also limited compositing capabilities, because QTAKE uses VIEW2 (SDI2) for composite. This means you can only mix LIVE A on top of DISK A or B.

VIEW1 is mapped to SDI1 OUTPUT, VIEW2 to SDI2 OUTPUT, etc. When the VIEW is in LIVE mode, you will see unprocessed passthrough signal on the SDI Output. When the VIEW is in DISK mode, your video card is switched to playback and you will now see the processed image on the SDI Output.

AUDIO
Some half duplex video cards only one audio stream (even though there are 2 video streams inside) you can capture only one audio (which is copied to both A & B clips). Same goes for playback. If you playback both VIEWS, you will hear only the sound of the ACTIVE VIEW. Also, Kona will switch either to INPUT audio or OUTPUT audio based on the LAST PATCH action.

Audio is embedded into SDI output, both in live and disk mode

PROS:
Using fully processed SDI playback directly from video card without DVI TO SDI converters Monitoring unprocessed LIVE feed (zero delay) and processed PLAYBACK on the same wire (no need for SDI switcher)

CONS:
When using a single AJA video card for two channels the inputs need to be genlocked for passthrough to function properly. Inability to monitor processed LIVE feed. Limited compositing capabilities (due to half-duplex nature of the card) Limited auto-rec (since a half duplex video card cannot read SDI input while in playback)

SIMULTANEOUS SDI INPUT & OUTPUT

QTAKE can use multi-channel video cards to allow simultaneous SDI input and output, or a single multi channel card like Kona 4, Io4K or IoXT to allow simultaneous single channel input and output. Using QTAKE in this way enables processed live output.

However in this mode, each video card can only serve a single camera per card (the exceptions being Kona 4 or Io4K in QUAD mode and BMD Decklink QUAD). For dual camera support you have to install two dual channel video cards (or a single Quad channel card). This will also enable independent format for each camera (some restrictions apply, see VIDEO CARDS for more details)

To enable 2 cards support, set this preference:

Two_Boards_For_Dual_IO=1

This is an alternative to using DVI outputs converted to SDI, although additional image processing pipeline will add 2-3 frames of delay compared to DVI output.

To enable simultaneous SDI input and output, set this preference:

Constant_Playout_Mode=1

NDI OUT MENU

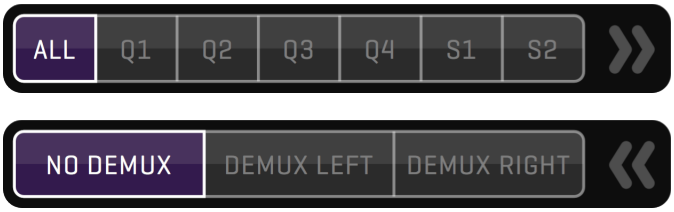
This menu is used to turn on NDI outputs. NDI is an IP Video standard created by Newtek to provide high quality video delivery on the local network.

DOCK MENU

The DOCK menu gives the user a convenient way to store and recall up to 16 clips without having to enter the browser. Long clicking a slot will store the clip currently loaded into the active view in that slot. The **MODE** button allows toggling between **IMAGE, TEXT** (Camera Letter / Scene / Shot / Take) or **BOTH**. The **CLEAR** button will clear all clips from the dock.

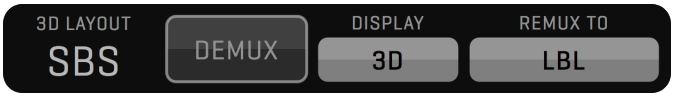
QUAD MENU

When using QUAD SPLIT unit to record 4 cameras using single QTAKE input, you can select which quadrant to blow-up to full size. Use S1 or S2 to blow-up stereoscopic pairs Q1+Q2 or Q3+Q4. **DEMUX LEFT** and **DEMUX RIGHT** lets you stretch the Left or Right eye for 2D output. This also lets you use a muxed signal as two separate cameras by demuxing left and right sections of the image to your two views.



MUXER MENU

With MUXER menu you can capture muxed side-by-side 3D clips. Each clip recorded in muxed mode will get an SBS attribute. You can set the clip to **SBS** by clicking the MUXED label. This is useful when importing SBS footage. When clip is set to SBS, QTAKE will process each side separately in DVE, MASK, GRID, OSD and WIPE functions to provide correct result. Next click on the MUXED label will set to clip to **FSBS** (fake side-by-side) which will duplicate left side to right side of the image and place them side-by-side. This is useful when using 2D image in a 3D SBS project.



DEMUX

Press **DEMUX** button to un-squeeze either side of the muxed clip. This is used to view single camera. Select which camera to monitor using **DISPLAY** button - this way you can display selected camera on a 2D monitor. If **DEMUX** button is disabled DISPLAY will copy selected camera to other half of the image to enable single camera display on a 3D monitor (without the need to exit 3D mode of the monitor).

REMUX

If your 3D monitor doesn't support SIDE-BY-SIDE input mode, you can remux GPU Output to (this doesn't affect video board output):

LBL - for 3D monitors that support only LBL input. **DLP** - for 3D monitors that support only DLP input. **2D LEFT** - if you want to display only left eye on a standard 2D monitor. **LBL SWAP** - same as LBL but with left and right eye swapped. **DLP SWAP** - same as DLP but with left and right eye swapped. **2D RIGHT** - if you want to display only right eye on a standard 2D monitor.

WORKING WITH MUXED 3D The project window lets you set the camera layout for each input. When receiving a premuxed, side by side signal set LAYOUT to **3D SBS**. There are a couple of settings in the preferences that control the behavior of QTAKE in relation to muxed material.

Show_Demuxed_Thumbnails=0

Set to =1 if you want to display demuxed thumbnails of the muxed clips.

Demux_SDI_Output=0

Set to =1 if you want to output demuxed image from video board output. This will enable simultaneous 3D (from GPU) and 2D (from Video Board) output.

3D TOOLS MENU

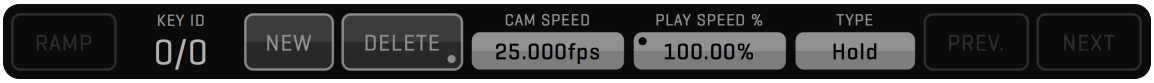
When shooting stereoscopic projects, you can set following parameters for clips:

FLIP - horizontally flips the image of the current clip (original QT file is transformed).
FLOP - vertically flips the image of the current clip (original QT file is transformed).
H.I.T. - adjust the 3D convergence by horizontal shift (also known as H.I.T or POST-CONVERGENCE).

QTAKE also features dedicated keystrokes for incrementing/decrementing axial (**Alt-Left**, **Alt-Right**). This is useful for external controllers, which can map button clicks to standard keystrokes.
AUTO-SCALE To avoid black edges when setting AXIAL (convergence), you can set SCALE to scale the IMAGE or MASK based on shift amount.

RAMP MENU

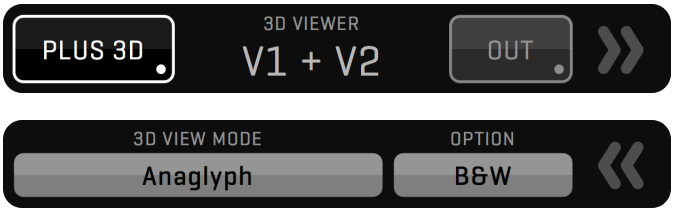
The RAMP menu allows you to create speed ramps in a clip. Clicking the **RAMP** button enables or disables the RAMP, when **RAMP** is enabled the active part of the clip turns green. Note that you can only create or edit keyframes when the RAMP button is disabled.



The **NEW** button creates a keyframe at the position of the playhead. By adjusting CAM SPEED or PLAY SPEED of a keyframe you can set the playback behavior of the clip from that key frame forward.
The **HOLD** or **LINEAR** value alter the playback behavior between two key frames. HOLD will play at the speed value of the last keyframe until the playhead encounters another keyframe. LINEAR will create a linear speed ramp between the current keyframe and the next. **PREV.** and **NEXT** lets you jump quickly between keyframes.

3D VIEW MENU

3D VIEW menu is an additional tool to help you analyze 3D images.



Press the **PLUS 3D** button to enable 3D VIEW in DUAL or QUAD VIEW mode a separate image window called the 3D VIEW will appear to display various modes of stereoscopic image representation (selected by **3D VIEW MODE**):

ANAGLYPH - Color separation in most popular red/cyan color channels.
DIFFERENCE - Grey difference of left and right camera view.
INTERLACE - Line by line mux of left and right camera view.
BOX BLEND - Left and right camera image is blended through a checkerboard.
DISSOLVE - Left and right camera image is blended using 50/50 dissolve.
WIGGLE - Each camera view is displayed for selected amount of frames.
DUAL - Each view displayed side by side.
SBS - Stereoscopic side by side mode.

Use **OPTION** field to customize selected 3D display mode. You can discard DUAL or QUAD VIEW and display only 3D VIEW by holding PLUS 3D button. Button title will change to **3D SOLO**. If you want to return to DUAL or QUAD VIEW + 3D VIEW, long click this button again.

Using **OUT** button, you can send 3D VIEW to 1st GPU-OUT. 3D VIEW can also be sent to your SDI output by long clicking the **V-OUT** button. When using non-muxed 3D, Left eye image is in VIEW1 and Right eye image is in VIEW2 (respectively VIEW3 and VIEW4 for the second 3D rig), the 3D VIEW will take left and right image and use them to create a stereoscopic image. When using muxed inputs, each VIEW contains Left and Right eye image in side-by-side muxed mode. In this case, PLUS 3D VIEW will take both images from the ACTIVE VIEW. You can override this by forcing PLUS 3D source to specific VIEW using the preference:

Force_Plus3D_From_View=0

When set to zero, PLUS 3D will use ACTIVE VIEW as source. Set it to 1, 2, 3, or 4 to specify what VIEW to use as the 3D VIEW source.

MEDIA MENU

A single Take in QTAKE can have multiple media files associated with it. If for example you are recording H.264 proxies you would have both the **RECORDED** media file and an **H.264 PROXY** file connected to that specific take. The MEDIA menu allows you to switch between these different media files for the Take loaded in the active view. The FORMAT and CODEC sections display relevant information about the currently loaded file.

The **RENDER PROXY** button allows you to re-render the H.264 proxy file for that particular Take. This can be handy if you inadvertently changed something while recording or if you want to re-render the proxy with new OSD information burned in. A dot will appear on the RENDER PROXY button if you have clips in your project that do not have H.264 proxies. Long-clicking the RENDER PROXY button will create H.264 proxies for any clips that are missing them.

ZOOM MENU

The ZOOM menu lets you ZOOM the VIEWS IN or OUT and offset. This only affects the operator monitor (GUI). While in DRAW or EDIT mode of the GARBAGE MATTE the ZOOM value is automatically set to 75%.

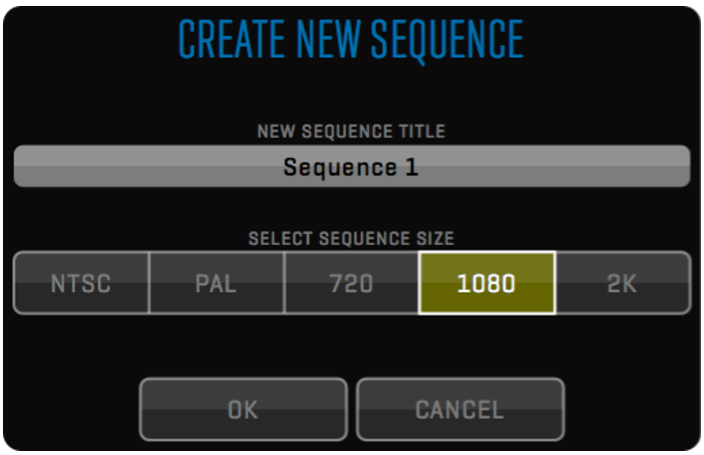
EDIT Room

QTAKE features integrated single-track non-linear editor. In the EDIT room, DUAL VIEW is used to display PLAYER (left side) and RECORDER (right side) monitors, as in a standard editing applications. The visual timeline displays thumbnails for each clip of the sequence. When you select the timeline clip, it's data is displayed in the CLIP menu and the SLIDER bar shows the partial length of selected clip in the sequence. Playback commands now apply just to the part of sequence marked by current sequence clip. To quickly jump between clips in the sequence use the **PREV.** and **NEXT** buttons (or **Up** and **Down** arrows on the keyboard). If you want to play the whole sequence, just click on the VIEW 2 and press the **PLAY** button.

When selecting a clip in the visual timeline only that clip is selected. To select the whole sequence click on View 2.

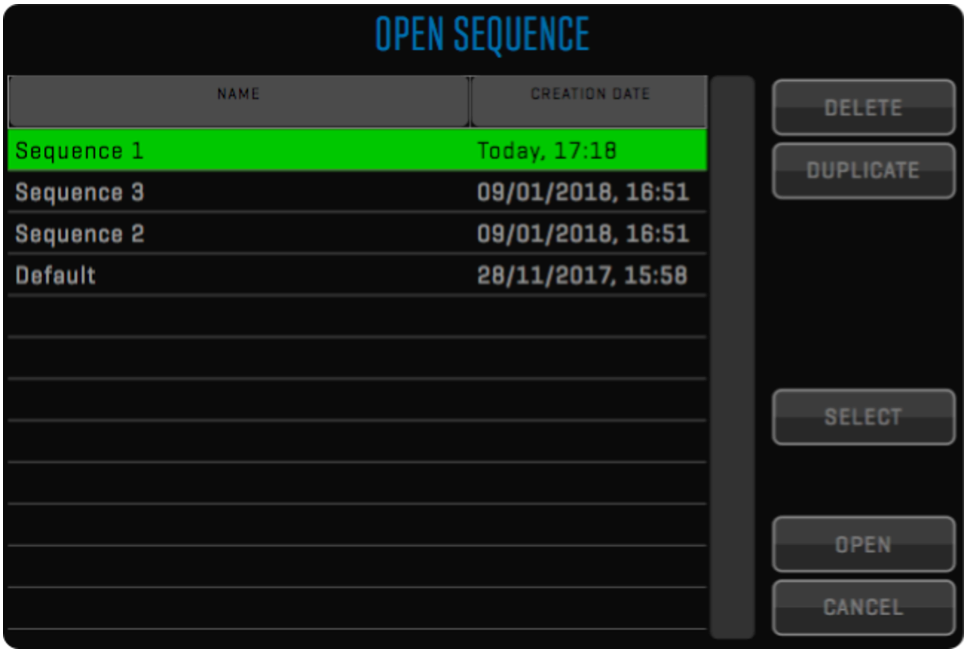
SEQUENCE MENU

Use this menu to crate new sequence and browse through existing sequences.



DUPLICATE SEQUENCE

Sequence can be duplicated by clicking **DUPLICATE** button, which is located in the OPEN SEQUENCE window. This is useful when creating another version of the cut.



EDIT MENU

All tools required to create a sequence of clips are located in the EDIT Menu. Editing process begins by placing clips into the sequence.

INSERT

Sequence editing process consists of few easy steps:

1. Load the clip into VIEW 1
2. Mark IN and OUT points for the clip
3. Press the **INSERT** button

The clip is appended to the current sequence and the new thumbnail appears in the timeline. If you

want to insert the clip to a specific place in the sequence, select any thumbnail and the new clip will be inserted in front of selected timeline clip.

OVERWRITE & REPLACE

If you want to change the sequence clip, perform step 3 with **OVER** or **REPLACE** button.

If you want to keep the length of the sequence clip press **REPLACE** button. Only IN mark is used from the source clip and the new OUT mark is calculated according to selected sequence clip.

If you want to change the clip without keeping the destination length, press the **OVER** button.

SPLITTING CLIPS

You can **SPLIT** clips to create two separate clips. The location of the SPLIT is determined by the playhead.

REORDERING CLIPS

You can easily reorder clips in the sequence by selecting the clip on the timeline and pressing the **LEFT** or **RIGHT** button to move the clip accordingly.

DELETING CLIPS

Select the sequence clip on the timeline and press **DELETE** button to remove it.

CHANGING THE CLIP SPEED

Inserted clip retains it's speed. If you want to change the speed of the sequence clip, just type the new CAMERA SPEED value inside the CONTROL menu.

TRIMMING

You can fine-tune your sequence by trimming the clips on the timeline. Trimming is the process of adjusting the start and the end of the clip by adding or removing frames from each side. By clicking the **TRIM** side of the **EDIT/TRIM** segmented button, the EDIT toolbar changes the layout according to context. In QTAKE you can trim either clip or cut. Trim is applied by switching back to EDIT Mode.

TRIM CLIP

When the single clip is selected you will see it's starting frame in VIEW 1 and it's ending frame in VIEW 2. Yellow brackets appear over the timeline thumbnail. Use numeric **L-TRIM** and **R-TRIM** buttons to add or subtract frames from the selected side. The amount of trim is displayed in frame units. You can also perform the trim by dragging the video inside VIEWS.

Press the **LOCK** button to keep the length of the clip - if you add few frames to the end of the clip, the same amount of frames is subtracted from the beginning.

TRIM CUT

Select next or previous clip to activate Cut Trimming. Yellow brackets are placed between selected clips. Now you can adjust the ending frame of the left clip and the starting frame of the right clip. Press the **LOCK** button to keep the summary length of two clips.

EDIT 3D MENU

When shooting stereoscopic projects, you can use EDIT 3D menu to playback stereoscopic sequence.

After editing single camera (left eye) in classic edit mode, press the **3D PLAYBACK** button to enter dual camera playback. Entering this mode will generate sequence for the right eye. You can use all playback commands in 3D PLAYBACK mode.

COMPOSITE Room

Composite module is used to perform real-time overlay of the two video sources. VIEW 2 is the background layer and VIEW 1 is the foreground layer. Use **PATCH** selector to define video source for each VIEW/LAYER. You can use any combination of LIVE and DISK sources.

COMPOSITE MENU

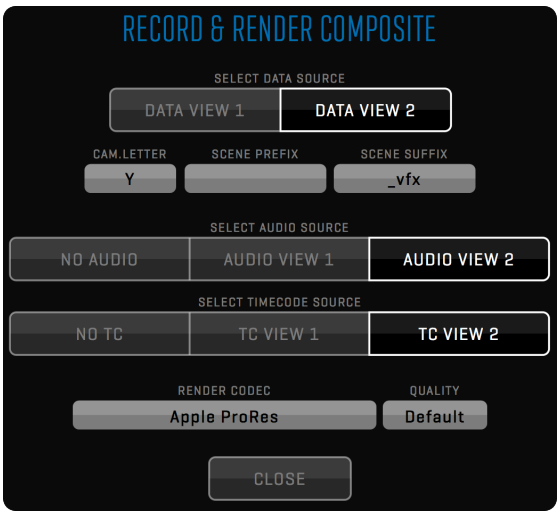
The COMP menu lets you organize your composites by allowing you to create **NEW** ones and load previously created ones. Any VIEW effects and **BLEND, CHROMA KEY** and **WIPE** settings are saved with the current composite. You can **COPY** the current settings and **PASTE** them into a new composite.

The **BROWSE** button also lets you **DELETE** old composites. When recording a foreground in view 1 but monitoring the result in view 2 you can enable OSD FROM VIEW 1 in order to see relevant information in the composite view.

There are 4 menus with effects to create composites.

RECORD COMPOSITE

Composite is a non-destructive blend of foreground and background, allowing you to adjust the offsets or blend modes later, during the playback. In case there is a need to “flatten” the composition and export a single composited clip, you can use the RENDER function in the top bar. However, sometimes it is required to have the flattened composite available immediatelly. In that case, you can turn on **RECORD** option available in the COMP toolbar. This will record the output of the live composite into a new clip. To adjust recording or rendering options, click the **SETTINGS** button located next to record option. Recording composite will start and stop at the same time regular recording is started and stopped. It is not possible to adjust parameters of the recorded composite, but each unflattened composite can be stored and if there is any change needed, layers can be adjusted and composite can be re-rendered into new clip.



STORING COMPOSITES
Composite is automatically stored. Create new composite using the COMP menu to avoid overwriting previously stored composite.

BLEND MENU

BLEND is used to combine foreground and background layers with Photoshop-like blending modes: **NORMAL, SCREEN, ADD, OVERLAY, MULTIPLY, DIFFERENCE, MIN** and **MAX**. The amount of blend is controlled by the **OPACITY** slider located in the BLEND menu toolbar. The opacity can also be set to **AUTO** mode to allow transitions without user interaction. See the USER INTERFACE section for more information about automatic sliders.

KEY MENU

You can perform real-time chroma or luma keying with QTAKE with the KEY menu. Select the foreground source in the VIEW 1 and the background in the VIEW 2.

Step by step CHROMA key:

1. Select **CHROMA** as your key mode.
2. Use the **COLOR** picker or the **HUE** input field to select desired key color.
3. Press the **ALPHA** button for visual matte control (dark areas represent transparent parts of the image).
4. Adjust **WIDE** and **PUNCH** attributes to fine tune your ALPHA mask.
5. Adjust **BLACK** and **WHITE** values to widen fully transparent and fully opaque areas.
6. Press the ALPHA button again to display the final composite.

The **DESPILL** value seldom needs to be adjusted. If you notice discoloration around the edges

of your keyed subject decreasing de-spill can rectify the result.

CHROMA+Z KEY

In addition to regular chroma key, users working with external CGI source can use the depth channel captured as alpha component of the RGBA input. This function allows advanced composition where certain elements of the CGI background appear in front of the live action.

WIPE MENU

WIPE transition is used to perform split-screen composite. Follow the next steps:

1. Select the **WIPE** button.
2. Slide the **AMOUNT** until you reach the split point you want.
3. Slide the **ANGLE** to adjust the angle of the split.
4. Slide the **SMOOTH** to set the amount of split-line feather.
5. Use the **SWAP** button to swap foreground and background images.

All the sliders in the WIPE menu can be set to **AUTO** mode to allow adjustments without user interaction. See the USER INTERFACE section for more information about AUTO SLIDERs.

CGI MENU

CGI module is used for realtime 3D scene rendering. Instead of pre-shot or pre-rendered background, you can now import 3D scene into QTAKE and use virtual camera to change the viewing angle.

IMPORT CGI SCENE

QTAKE supports 3D scenes saved in Collada (.dae) format. Drag your collada file to QTAKE dock icon to import it. 3D scene will be logged into QTAKE database, so you can load it into any view just like any other clip.

CGI CONTROL

All 3D scene controls are located in the CGI Menu. They will allow you to adjust various parameters of the scene cameras. All settings will be automatically stored for each camera.

You can select active camera using **CAMERA** field.

FREE CAMERA
Free camera let's you position virtual camera freely.

MOCO CAMERA
MoCo camera is used to position camera by using external positioning data.

SCENE CAMERA

You can also select any camera imported with the scene.

Using **VIEW** field, you can select orthogonal view of your scene. Options include **LEFT, RIGHT, TOP, BOTTOM, FRONT** and **BACK** views. Each view can be moved and zoomed independently. When using MOCO camera, this field will change it's function to DATA SOURCE.

NAVIGATING 3D SCENE

If there is any animation included in the 3D scene, you can use PLAYBACK functions, like with regular clips. However, instead of scrubbing, the 3D scene will change the camera position when dragging the mouse in the VIEW. Dragging the mouse will orbit around target point, which is placed in the center of the scene by default.

Here is the list of 3D navigation controls using mouse and keyboard.

MOUSE DRAG
Rotates camera around target point (orbiting).

CTRL + MOUSE DRAG
Moves camera and target point in XZ axis (left/right and forward/backward).

CMD + MOUSE DRAG
Moves camera and target point in Y axis (up/down).

MOUSE WHEEL
Changes camera distance from the target point.

CTRL + MOUSE WHEEL
Changes camera field of view (zoom).

CMD + MOUSE WHEEL
Changes camera roll (rotates around camera optical axis).

ALT + ANY OF ABOVE
Performs the same action with higher precision.

> While dragging mouse in the VIEW to change the camera position, TARGET point and floor GRID will be displayed automatically.

MOTION CONTROL

In most cases, you will use CGI background with external positioning data. A live camera can be placed on the motion control rig or use various realtime tracking systems to determine it's position and rotation. QTAKE can receive positioning data stream and apply it to virtual camera. This will make your background move the same way as your live (or playback) view.

SDI POSITIONING DATA
If present, external positioning data will be parsed from ancillary space in the SDI stream.

MARC ROBERTS MOTION CONTROL

Using network connection you can read positioning data from the FLAIR software used to control MRMC rig. To enable data from this device, use this preference:

Rig_Type=mrmc

CMOCOS MOTION CONTROL

You can also use UDP stream from CMOCOS motion control rig to control your virtual camera. To enable data from this device, use this preference:

Rig_Type=cmocos

Using **DATA SOURCE** field you can select which VIEW is the source of positioning data for your 3D scene.

Using the segmented button you can select which submenu to show. Options include **ROTATE, MOVE, TARGET, LENS, 3D** and **MOCO** submenus.

ROTATE

In this submenu you can adjust **PAN, TILT** and **ROLL** of the active camera. Unlike dragging mouse in the view to orbit camera around target point, this controls will do nodal rotation around the center of the camera. That means your target point will be moved.

MOVE

Using this submenu you can move camera in X axis (left/right), Y axis (up/down) and Z axis (forward/backward). This will also move the camera target point.

TARGET

Use this submenu to move the camera target independently of the camera itself.

LENS

This submenu contains controls of the Field Of View (**F.O.V.**), **FOCUS** distance and **TARGET DISTANCE**.

3D

Each virtual camera can be used as a stereographic camera. In 3D submenu you can control **INTERAXIAL** distance and **CONVERGENCE**. Using CONVERGENCE MODE you can select to use **PARALLEL** mode or **MANUAL** convergence adjustment. If you want to use automatic convergence, select FOLLOW FOCUS mode or FOLLOW target mode.

MOCO

Use this submenu to match the scale of your virtual scene to your external positioning data. QTAKE uses centimeters as the scene translation units and degrees as rotation units.

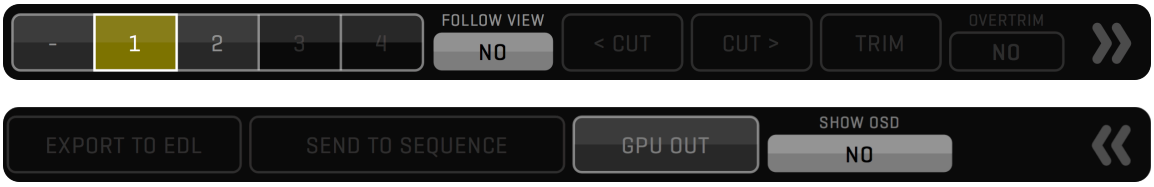
STUDIO Room

Studio room is used to perform live editing. When shooting multiple cameras, you will be able to create the sequence simply by switching between four inputs during recording. QTAKE will record all four inputs as usual, but in addition, it will record information about each cut.

On the right side, you will see additional view that represents your program output. Under the views there is a timeline, with four tracks. Each track represents one input. Selected input for each segment will be highlighted. Program output is not recorded - it is generated on the fly. This makes it easy to adjust your sequence after recording.

STUDIO MENU

All buttons needed to control studio style live editing are located in the STUDIO menu.



LIVE EDITING

Start making your live cut by pressing any **RECORD** button. In this room, **RECORD SYNC**, **CLIP SYNC** and **PLAY SYNC** are enabled automatically and can not be turned off.

There are two ways of performing the edit during recording:

FOLLOW ACTIVE VIEW

Turn on **FOLLOW VIEW** option to make cuts by selecting active view. This is more intuitive way of making cuts during recording, but note that during playback you won't be able to select active view, because it will follow the timeline.

USE INPUT SELECTOR

Turn off **FOLLOW VIEW** option to make live cuts using dedicated segmented button. Selected view will be marked by a thick yellow border.

DISK EDITING

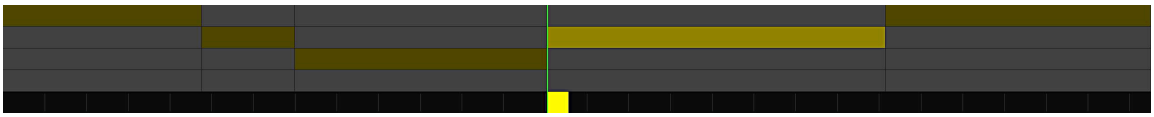
After recording is finished, you can patch views to DISK (or have it patched automatically using **POST-REC ACTION** option). Timeline highlights will change to green color. You can now use playback functions, just like with any other clip. The green playhead line will show current position in the timeline. Use **CUT** buttons to navigate between the cut points. Program output will always show selected track.

In order to change active track for any segment, just double click the timeline track you wish to select.

WHY CAN'T I SELECT ACTIVE VIEW?
If the view is patched to DISK, you need to turn off **FOLLOW VIEW** option in order to select the view that is not presenting active track for current timeline segment.

TRIM MODE

If you wish to modify your cut points, press the **TRIM** button. Timeline highlights will change to yellow color. Yellow trim head will appear in the timeline.



You can modify selected cut by dragging the trim head. You can drag the trim head during the playback, cut changes will be performed immediately without stopping the playback. In case the playback is stopped, playhead will follow the trim head to show you the current frame.

OVERTRIM

Note that in regular trim mode you won't be able to drag the cut point beyond adjacent cut, because this would overwrite the next segment of the timeline. If you still want to do this, you need to turn on the **OVERTRIM** option.

EXPORT EDL

Similar to a regular EDIT sequence, STUDIO sequence can also be exported to EDL. Pressing the **EDL** button will pop up the dialog window, where you can select which filenames to use for clips in the sequence.

SEND TO SEQUENCE

You can send the live cut timeline to EDIT room for further refinement using the **SEND TO SEQUENCE** button.

GPU OUT

In order to send the program view to GPU OUTPUT, press the **GPU OUT** button. In case GPU OUT button is not highlighted, you will see the program output only in the QTAKE UI screen. Currently, there is no way to send the program view to video card output.

QTAKE Preferences

This section provides description and default value for each QTAKE preference. Setting the preference in the GUI window to YES will set the file value to 1, setting to NO will set it to 0.

GPU GROUP

Enable_GPU_Output=1
Set this to =0 to disable graphics card output.

Use_Multisync_GPU_Output=0
Set to =1 to enable synchronized output from multi-output graphics cards.

Wait_For_Vertical_Sync=1
Set this to =0 to disable synchronizing of video redraw to vertical refresh of the external monitor. Use only for testing purposes. Disabling this preference will cause image tearing on GPU OUT.

Wait_For_Vertical_Sync_GUI=0
Set this to =1 to enable synchronizing of video redraw to vertical refresh of the GUI monitor. Disabling this preference will cause image tearing in the user interface.

GPU_Vertical_Sync_Mode=1
Set this to =0 to disable GPU Vertical Sync, =1 for Automatic Vertical Sync and =2 to Force Vertical Sync.

GPU_Flush_Buffer_Mode=1
Set this to =1 (New) to improve graphics performance.

Use_Full_Range_Video=0
Set this to =1 to enable Full Range video processing. Default value (zero) uses SMPTE legal levels, which will clip the super-black and super-white values.

Legal_Range_GPU_Output=0
Set this to =1 to output legal range RGB through the GPU output.

Readback_Mode=0
Controls how frames are read back from the GPU. =0 Automatic (based on GPU manufacturer), =1 PBO, =2 Direct. Change this value if you experience incorrect video output.

QOD_GPU_Vendor=0
Sets the manufacturer of your GPU. =0 equals automatic detection, =1 AMD, =2 NVIDIA, =3 Intel.

H.264 GROUP

Generate_XML_Per_Clip=0
Set this to =1 to save metadata XML for each clip. These xml files and the associated clips can be imported to another project by dragging them to the QTAKE dock icon. Clips imported this way will retain all metadata associated with them. Note that you might need to RECONNECT the media if the current path of the media does not match the path in the xml.

Enable_H264_Proxy=1

Set this to =1 to enable parallel recording of H.264 processed clips, ready for streaming.

H264_Processed_Image=1

Controls whether clip effects are "burned-in" on the recorded h264s proxies. Please note that setting this preference to =0 will disable streaming of the playback video.

H264_Only_Audio_Channel1=0

Set this to =1 to record only first audio channel to H.264 clips.

H264_Folder_Structure=0

Set to =1 to create subfolders /CAMERA_LETTER/ROLL. Set to =2 to create subfolders /CAMERA_LETTER/SCENE/SHOT.

H264_Proxy_OSD=1

Set to =0 to disable OSD burn-in on H264 proxies.

H264_Proxy_Watermark=0

Set to =1 to burn-in the STREAM watermark on recorded h264s.

Upload_H264_While_Recording=1

QTAKE will continuously upload segments of the h264 proxy files to QTAKE Server while recording. Set to =0 to disable upload while recording. QTAKE will still upload the finished clip to QTAKE Server after recording has ended.

Stream_Packet_Size

Use this preference to limit the stream packet size if your network rejects default size packets.

VIDEO BOARD GROUP

Videoboard_Manufacturer=auto

If you have multiple video cards from different manufacturers connected you can explicitly state which cards QTAKE should use. The options are: =aja for AJA video cards , =bmd for Blackmagic Design video cards, =dc for Delta Cast video cards or =auto for QTAKE to use the first video card it finds.

Two_Boards_For_Dual_IO=0

Set to =1 if using two video boards.

Force_Board_Order=1

Forces the order your video boards appear in QTAKE, based on serial number. Set to =1 for descending and =2 for ascending order.

Signal_Detection_Retry=0

Sometimes it takes longer than one frame for AJA cards to adopt to a new input format. Side effect of this can be corrupted audio. If you experience such issues, set this preference to =25.

Reject_Wrong_Video_Format=1

Set this to =0 to allow the input of non-compliant signal. Note however that this solution should be used only as a last resort, because it can lead to unstable performance. We recommend re-

clocking your signal to make it recognized by hardware.

Autorecording_Start_Threshold=0
Set this to the number of frames by which you wish to delay recording start. Can add robustness in bad signal conditions.

Autorecording_Stop_Threshold=0
Set this to the number of frames by which you wish to delay recording stop. Can add robustness in bad signal conditions.

Autorecording_Stop_Adds_SubClip=0
When using subclips, set to =1 to add a subclip at the end of the recording if the camera is set to auto-record.

SDI METADATA GROUP

Use_Camera_Index=1
Use_Camera_FPS=1
Use_Camera_Roll=1
Use_Camera_Shutter=1
Set this to =1 to enable readout of Camera Index, FPS, Roll and Shutter from ARRI, RED, SONY and CANON cameras.

SDI OUTPUT GROUP

Constant_Playout_Mode=0
Set to =1 for simultaneous input and output with compatible cards. This mode enables processed live output.

Enable_Video_Output=1
Set to =1 to enable video outputs. In case this is set to zero, video board outputs only live passthrough. If set to =0 other preferences affecting Video Output will be ignored.

Enable_TC_Output=1
Set to =1 to enable timecode output. Only applies to certain video cards.

Use_Free_Genlock_For_Playback=0
Set to =1 to switch to free genlock automatically when in DISK mode. This will solve the Kona SDI output issues if camera is disconnected and you have no external reference signal. This setting is ignored when Constant_Playout_Mode is set to =1

Clip_Based_Video_Output_Format=0
When mixing various video formats in a single project, you can set this option to =1 to enable automatic switching of output video format based on clip resolution and timebase. If set to =0, QTAKE will scale all clips to match the SDI output resolution. This setting is ignored when Constant_Playout_Mode is set to =1

Optimize_PSF_Input=1
Set it to =1 to improve performance with PSF format input.

LTC_Output_Source=1

Sets the source of the analog LTC output based on the video output of the video card. =1 LTC matches the first output of the video card. =2 LTC output matches the second output of the video card. This setting applies for all video cards.

Enable_NDI_Output

Set it to =1 to enable NDI output.

MUXER GROUP

Show_Demuxed_Thumbnails=0

Set to =1 if you want to display demuxed thumbnails of the muxed clips.

Demux_Video_Output=0

Set to =1 if you want to output demuxed image from video board output.

Demux_H264_Proxy=0

Set to =1 to record demuxed H.264 proxies.

Use_PreMuxed_Input_As_Dual_Cam=0

Set to =1 to enable special mode of QTAKE HDx1 using premuxed input for dual camera ingest.

Demux_ScreenShot=0

Set to =1 to demux screenshots of SBS 3D muxed clips.

FILE GROUP

Use_10bit_Capture_Mode=0

Set the capture mode to 10bit. This will also set the internal processing pipeline to floating point precision.

Audio_File_Format=auto

Sets the audio recording format. =auto will set the recording format to match the input audio. =16bit, =24bit, =32bit will record audio as integers at the selected bit-depth. =32bit-float will record audio as 32bit float.

Ignore_External_Timecode=0

Set to =1 to override embedded timecode. System clock is used instead.

Import_CPD_From_ProRes=0

Set to =1 to import camera positioning data from imported ProRes files.

ScreenShot_File_Format=jpg

Selects file format for screenshots. Options are =jpg for JPEG, =png for Portable Network Graphics, =bmp for Bitmap, =jp2 for JPEG 2000, =gif for Graphics Interchange Format and =tiff for Tagged Image File Format.

ScreenShot_Compression_Quality=10

Set JPEG compression quality for Screenshots [1..10]. Lower number means lower quality.

ScreenShot_Video_Range=2

Set to =0 for auto, =1 for legal, =2 for full range video.

PLAYBACK GROUP

PreRoll_And_PostRoll_For_PlaySync=0

Set to =1 to enable Pre-roll and Post-roll for Play Synced clips.

Use_Audio_For_Varispeed=0

Set to =1 to allow vari-speed audio from 50% to 200% clip speed.

Enable_Play_Sync_Auto_Mute=1

QTAKE will mute view 2-4 when playing back clips with play sync enabled to avoid the same audio playing from multiple views. Set this to =0 to disable this feature.

Set_Play_Sync_Offset_By_TC=0

Set to =1 if you want QTAKE to determine PLAY SYNC OFFSET using timecode of the clips.

GUI GROUP

Enable_Audio_Waveform=0

Set to =1 to enable waveform display under Views.

Force_Plus3D_From_View=0

With muxed clips, PLUS 3D VIEW is rendered using Active View. Use this preference to force it to a specific View.

Use_Film_Style_Scene_Sorting=1

Set to =1 to ignore letters before numbers when sorting Scene names. For example: 33, A33, 34.

OSD_Speed_In_FPS=0

Set to =1 if you want to display OSD speed in FPS, instead of percentage.

Imperial_Distance_Units=0

Will convert values (such as focus distance) to imperial units.

GPU_Out_1_Label=GPU-OUT 1
GPU_Out_2_Label=GPU-OUT 2
GPU_Out_3_Label=GPU-OUT 3
GPU_Out_4_Label=GPU-OUT 4

Use this settings to edit GPU-OUT label string (i.e. DIRECTOR, CLIENT).

GUI_Background_Red=0.120
GUI_Background_Green=0.120
GUI_Background_Blue=0.120

Set each color channel to value 0 - 1 to set the custom background color.

Use_Colored_Time_Slider=1

Set to =1 to use colored time slider (green=playback, red=record, blue-green=ramp, yellow=trim)

Limit_Cursor_To_GUI_Screen=1

Set to =1 to limit cursor movement to GUI screen.

GUI_Screen_Blocks_Count=4

Adjusts the number of menu "blocks" on a single horizontal row. Default value is 4 but can be set to up to 8 to support ultra widescreen displays. This preference will effectively scale the GUI to fit more content.

GUI_Menu_Blocks_Limit=4

Adjusts the number of "blocks" the menu bars are allowed to occupy. The rest of the horizontal space will be used by side windows such as the LIST, FX and META. Default value is 4, but can be set to up to 8.

SmartAssist_Mode=0

Use following values if using OVIDE hardware for QTAKE: =1 (SmartAssist HD2), =2 (SmartAssist 4), =3 (SmartAssist Evo 2), =4 (SmartAssist Evo 4).

On_Screen_Controls=0

Enables playback control overlay on the views. =0 Off, =1 Disk only, =2 Live & Disk.

Kiosk_Mode=1

QTAKE runs in kiosk mode by default. Set this preference to =0 to disable kiosk mode. This will allow you to Cmd-Tab between running applications or display window of another application in front of QTAKE UI.

Enable_FX_History=0

Enables CLIP FX history, where each change is saved in chronological order allowing you to go undo changes or revert to a previous state.

AUTOLOAD GROUP

AutoLoad_Last_Project=0~

Set to =1 to automatically load user and project after starting QTAKE.

Autostart_Stream=0

Set to =1 to enable Stream function automatically after starting QTAKE.

RECORD GROUP

Prevent_Media_Drive_Sleep=0

Prevent Media Drive Sleep by recording a small file each specified number of seconds. Set to =0 to disable.

Encoding_Buffers_Count=10

Allows a specified number of frames to be buffered before encoding. This preference adds robustness for low performance CPUs.

Recording_Buffers_Count=30

Allows a specified number of frames to be buffered before they are written to disk. This preference

adds robustness for low performance media drives.

Stop_Recording_On_System_Slow=1
Set to =1 to allow recording to continue even if QTAKE is dropping frames.

EXTERNAL GROUP

Use_Videohub=0
Set to =1 to enable control of the BMD Videohub or AJA Kumo SDI routers.

Use_Avid_Surface=0
Set this to =1 to enable QTAKE control using Avid Artist Transport surface.

Use_Tangent_Surface=0
Set this to =1 to enable QTAKE control using Tangent Devices element-Tk and element-Mf surfaces.

Enable_Bonjour_Services=1
QTAKE advertises its presence on the local network via a service called Bonjour. This allows QTAKE Monitor clients to connect without knowing the IP address of the QTAKE machine. Set to =0 to disable the Bonjour service.

Require_QR_Code_Verification =1
Set to =0 to use QTAKE Stream without the client verification by QR code.

HIT GROUP

Use_HIT_Per_Frame=0
Set to =1 to enable recording of HIT values frame by frame. This feature also provides playback of 3D clips with HIT value changing over time.

Serial_Type=et
Set serial port protocol. =et for Element Technica controller or =cmotion for C-Motion hand unit.

Serial_Port_1=
Serial_Port_2=
Set serial port numbers when using HIT controller from Element Technica or C-Motion.

RIG GROUP

Rig_Type=3ality
Set UDP communications protocol. =3ality for 3ALITY SIP, =stereolabs for Stereolabs Pure, =mrmc for MRMC Motion Control or =cmocos for CMOCOS Motion Control.

Rig_Port_1=0
Rig_Port_2=0
Rig_Port_3=0
Rig_Port_4=0
Set UDP port numbers to connect to 3ality SIP, Stereolabs Pure, MRMC Motion Control or CMOCOS

Motion Control.

Rig_Host=0
Defines IP address of the external system that sends data to QTAKE over UDP communications protocol.

LIVEGRADE GROUP

LiveGrade_Host_1=localhost
LiveGrade_Host_2=localhost
LiveGrade_Host_3=localhost
LiveGrade_Host_4=localhost
LiveGrade_Port_1=6666
LiveGrade_Port_2=6667
LiveGrade_Port_3=6668
LiveGrade_Port_4=6669
Defines address and port number for Pomfort LiveGrade hosts. These preferences are used to receive live clip CDL values from the DIT.

Enable_QTAKE_LUT_server=0
Set to =1 to enable external apps to send the LUT to QTAKE using designated API.

LutServer_Port=6670
Defines port number for QTAKE LUT server.

DIAGNOSTICS GROUP

Report_Main_Thread_Blocking=0
This is used to test performance of QTAKE and send report if the user interface is blocked. —

Appendix A - QTAKE Monitor

The QTAKE Monitor application for the iPad, iPhone and Mac OS X functions as a remote wireless monitor for QTAKE allowing for up to sixteen remote clients to take part in the creative process.

INSTALLATION IPAD/IPHONE/OS X

Download the app from the Apple APP STORE on your selected device.

IPAD/IPHONE SYSTEM REQUIREMENTS

iPad 4, iPad Air, iPad Mini (with Retina display), iPhone 5s or iPhone 5c with iOS 7.

SETUP

You will need to establish a network connection between the computer running QTAKE and the iPad running QTAKE Monitor. A standard wifi router will do the job.

Launch QTAKE and create a new PROJECT or load an already created project.

ENABLE REMOTE

To enable remote discovery via Bonjour you will need to enable **REMOTE CONTROL**.

Find and click the REMOTE menu button on the bottom row of the interface, this will display the REMOTE menu. Now click the **REMOTE CONTROL** button to enable it. See REMOTE CONTROL for more information.

LAUNCH QTAKE MONITOR ON THE IPAD

The QTAKE Monitor application uses bonjour network discovery to find QTAKE projects on the network. That means that both the Mac running QTAKE and the iPad running QTAKE Monitor needs to be connected to the same network.

Launch QTAKE Monitor on the iPad, a window listing available QTAKE projects will appear. Tap on the project name to connect.

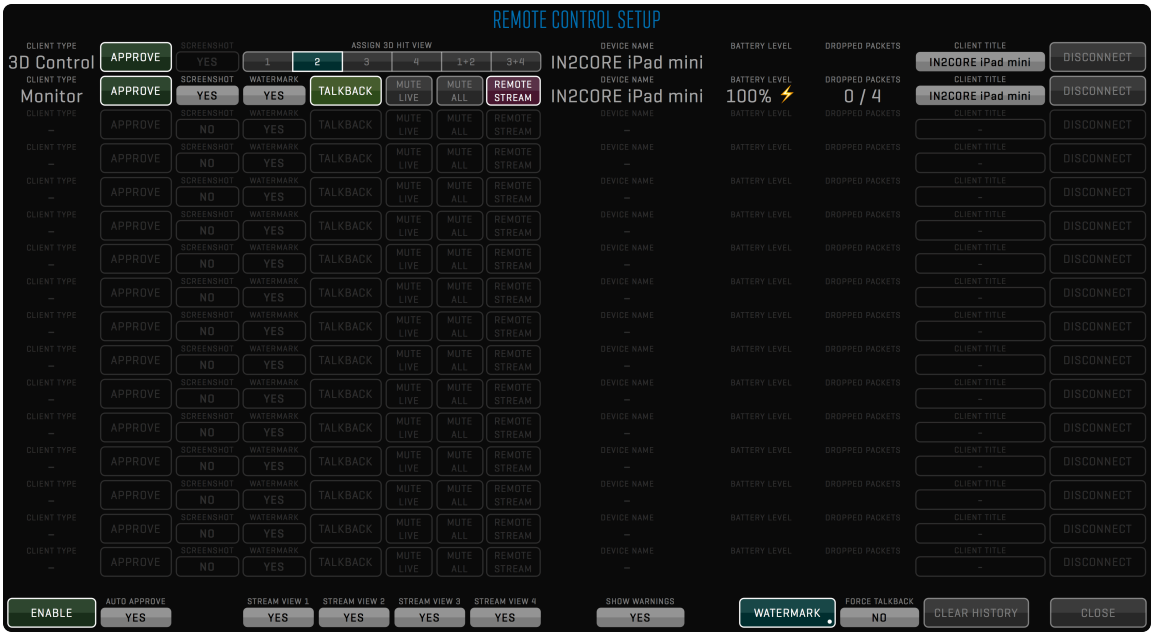
QTAKE Monitor will now display two windows with the text “Waiting for approval...”.

QTAKE Monitor can be found in the Apple App Store. Either search for "QTAKE Monitor" or go to: https://appstore.com/qtakemonitor

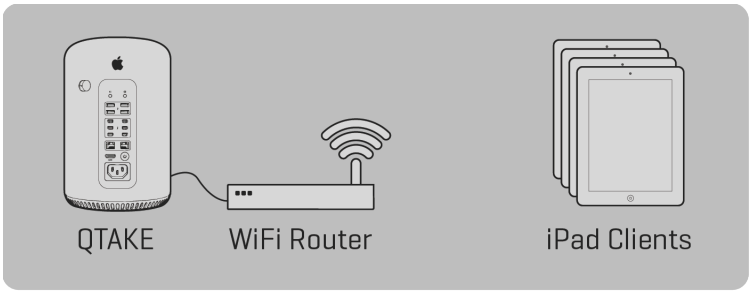
APPROVE THE CONNECTION FROM QTAKE

When an iPad or iPhone attempts to connect to QTAKE one of the sixteen buttons in the REMOTE menu will become active displaying the name of the device attempting to connect. The connection can be approved by clicking on the button. This will start streaming video to the QTAKE Monitor application.

Long clicking the **REMOTE CONTROL** button brings up the REMOTE CONTROL SETUP window. From here you can get an overview of the clients connected to QTAKE. This window also allows you to enable TALKBACK from one of the connected clients as well as setting a CLIENT TITLE that will appear in the REMOTE menu. **DISCONNECT** allows you to manually disconnect a client to make room for other clients to connect. Note that an active client will try to reconnect even after being disconnected.



When TALKBACK is enabled that client will see a **TALK** button in the iPad app (bottom right of the interface) this can then be used by the iPad client to talk back to the QTAKE operator. Only one client at a time can have TALK enabled. TALKBACK can also be enabled directly from the REMOTE menu by long clicking the corresponding client button. The button will appear brighter and "Talk" will be added to the label as an indicator that TALKBACK is enabled. See the TALKBACK section for more information on setting up TALKBACK in QTAKE.



You can control the name of the machine running QTAKE as it appears in the app by going to System Preferences - Sharing and changing the Computer Name field.

USING QTAKE MONITOR

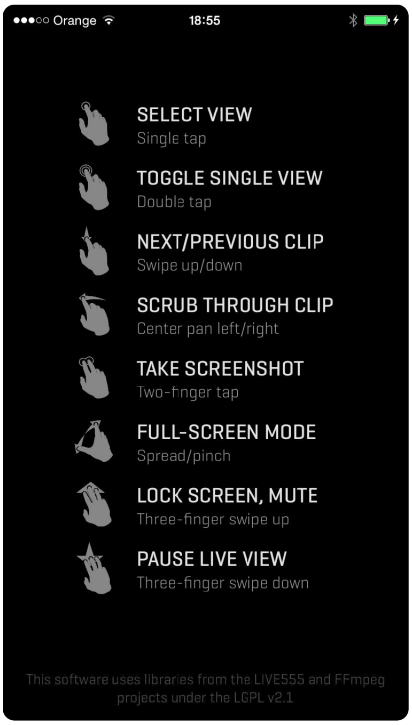
QTAKE Monitor supports up to four views, just like QTAKE HDx4. These views are by default

mirroring the four views of the connected QTAKE system.

CONTROLS IN QTAKE MONITOR

By tapping **OPEN** button you can select source for each view. By assigning each view to a different source stream a single QTAKE Monitor can be used with multiple QTAKE systems. At the bottom of the Source list you can access the HELP screen.

Tapping a view will make that view active. QTAKE Monitor will only play audio from the active view. - Double tapping on either view will toggle between DUAL/QUAD and SINGLE view.
By swiping down using three fingers you can pause that view.
By swiping up using three fingers you can lock the screen or mute the audio.
A reverse pinch will bring a view into fullscreen mode. - Two-finger tap will take a screenshot.
Some features might not be available in the OS X version of QTAKE Monitor



Appendix B - QTAKE 3D Control

ABOUT

The QTAKE 3D Control application for the iPhone and iPad functions as a remote interface to adjust H.I.T. (Horizontal image translation) or stereoscopic post convergence from an iPhone or iPad. The application is available to download for free from the Apple App Store.

SETUP

The QTAKE 3D Control application uses bonjour network discovery to find QTAKE hosts on the network. That means that both the Mac running QTAKE and the iPad or iPhone running QTAKE 3D Control needs to be connected to the same network. To enable the Bonjour discovery of the QTAKE host from the QTAKE 3D Control application you will need to enable **REMOTE CONTROL** in the FILE room.

Launch QTAKE 3D Control on the iPad or iPhone, a window listing available QTAKE hosts will appear. Tap the name to connect to that QTAKE host.

QTAKE 3D Control will now display the text "Waiting for approval..."

When an iPad or iPhone attempts to connect one of the 8 buttons in the REMOTE menu will become active with the text **3D** and the connection can be **APPROVED** by clicking on it. Long clicking the REMOTE CONTROL button will open the **REMOTE CONTROL SETUP** window. See the REMOTE CONTROL section for more information.

USING QTAKE 3D CONTROL

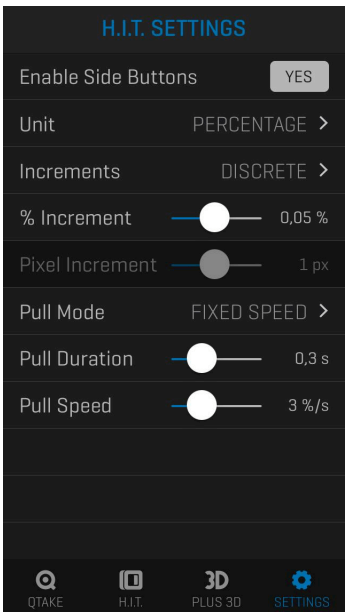
H.I.T.

When the QTAKE 3D Control has been approved it will present one or two scaled sliders depending on what views have been assigned in the REMOTE CONTROL SETUP window. Each slider controls the H.I.T. of one stereoscopic rig. By dragging up or down on the slider you can move the two sides of the image in the view closer together or further apart.

Double-tapping the slider will reset it to 0.00 and Two-finger tapping on the slider will lock the slider.

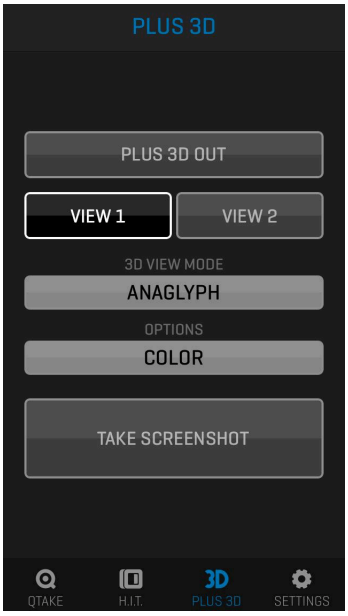
The **+** (plus) and **-** (minus) buttons allow you to increment or decrement the H.I.T. value step by step.

The buttons along the side of the slider allow you to store (by holding the button) and recall (by pressing the button) H.I.T. values.



PLUS 3D

The **3D** icon on the bottom left of the app lets you control the various 3D analysis modes of the 3D VIEW menu in QTAKE. The display modes available are **NONE, ANAGLYPH, DIFFERENCE, INTERLACE, BOX BLEND, DISSOLVE, WIGGLE** and **DUAL**. See the section on 3D VIEW for more details about the display modes.



SETTINGS

The H.I.T. SETTINGS view lets you control various aspects of the apps behavior. You can enable or disable the PRESETS, + (plus) and - (minus) buttons in the H.I.T. view via the **ENABLE SIDE BUTTONS** control. You can switch between PERCENTAGE and PIXEL units for the sliders, choose how much to increment per button press and adjust the **PULL MODE, DURATION**, and **SPEED** used when tapping a PRESET button.


0,81%
1,17%
1,00%
0,66%
0,00%
Hold to store
Hold to store
Hold to store
Hold to store
Hold to store
Hold to store
Hold to store
Hold to store
3
2
1
0
-1
4
3
2
1
0
-1
QTAKE
H.I.T.
3D
PLUS 3D
SETTINGS


0,81%
1,00%
0,66%
0,00%
Hold to store
Hold to store
3
2
1
0
-1
QTAKE
H.I.T.
3D
PLUS 3D
SETTINGS

Appendix C - QTAKE Output Device

ABOUT QOD+

QOD+ is the ultimate QTAKE Output Device. It was developed by IN2CORE to provide superior hardware solution for GPU driven low latency video output. It supports up to four independent 3G SDI outputs or a single UHD output.

HOW IT WORKS

QOD+ converts DisplayPort output of your Mac to four independent SDI outputs supporting all standard HD-SDI and 3G-SDI frame-rates. When QOD+ is connected to your Mac it is detected as an external monitor. QOD+ can operate in two modes. Either "standalone", where settings are adjusted by the DIP switches on the side of the device or "connected" where the QOD+ is controlled by QTAKE via USB connection. Only QTAKE version 1.2 or later supports "connected" mode.

SYSTEM REQUIREMENTS

Apple Mac computer with DisplayPort or Thunderbolt output running OS X 10.10.5 or later.

QTAKE REQUIREMENTS

QTAKE version 1.2 or later.

KNOWN ISSUES

Apple MacPro (late 2013) with D500 or D700 GPU requires OS X 10.10 in order to correctly output 3840x2160 resolution. When using this MacPro configuration with OS X 10.9.5, QOD+ outputs 2 and 4 will exhibit interlacing artifacts on the right edge of the screen. The only way to fix this OS X Mavericks issue is to use QOD+ in triple channel output mode by setting it to 1920x3240 resolution.

Apple MacPro (late 2013) will output only 6 audio channels (instead of declared 8 audio channels) over DisplayPort output. This issue has been reported to Apple, but has not been resolved yet.

SDI Timecode output from QOD+ is currently not available. This feature will be added using future firmware update.

DisplayPort output from QOD+ is currently not available. This feature will be added using future firmware update.

TROUBLESHOOTING

If your QOD+ is not detected by OS X or QTAKE please use following steps to reset it:

1. Quit QTAKE
2. Turn off QOD+
3. Turn DIP Switch 1 to position ON, all other DIP Switches to position OFF
4. Turn on QOD+
5. Turn all DIP Switches to position OFF

6. Start QTAKE

TECHNICAL SPECIFICATIONS

VIDEO INPUT:
DisplayPort with 8 channels of embedded audio

REFERENCE INPUT:
HD Tri-level sync input

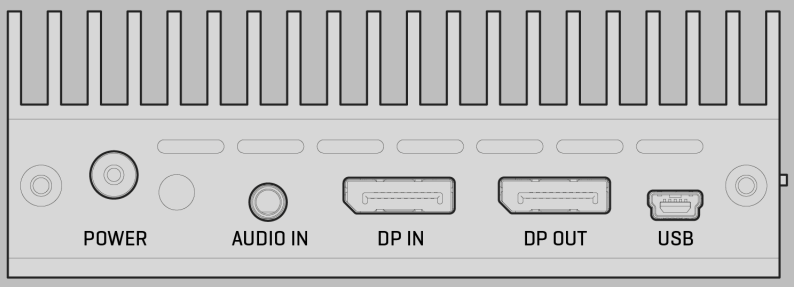
INPUT FORMATS:
HDx2 3840 x 1080 - HDx3 1920 x 3240 - HDx4 3840 x 2160

VIDEO OUTPUT:
4x 3G-SDI with embedded audio DisplayPort loop with embedded audio

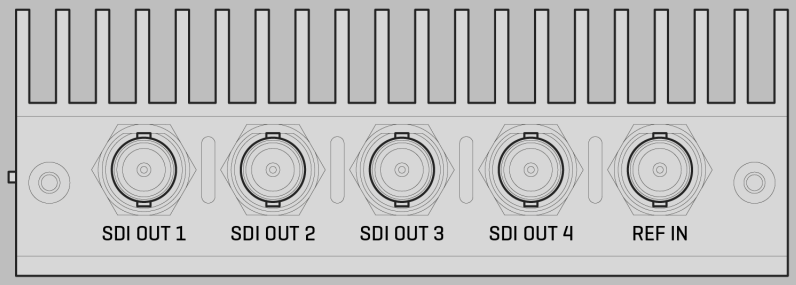
AUDIO INPUT:
DisplayPort embedded audio, up to 8 channels - 3.5mm stereo analog audio

DIMENSIONS:
122 x 170 x 28mm (4.8" x 6.7" x 1.1") - Weight 430g

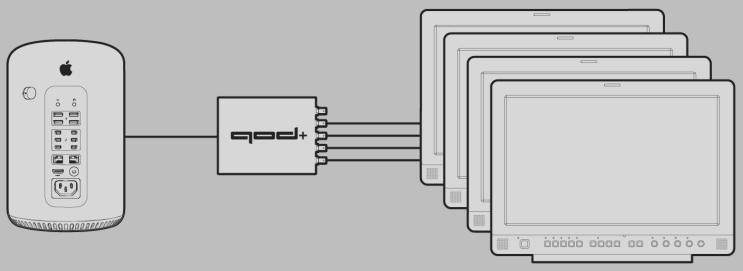
POWER:
Universal Power Supply (included) - 100-240V, 50/60Hz AC input - 12V, 24W max DC output



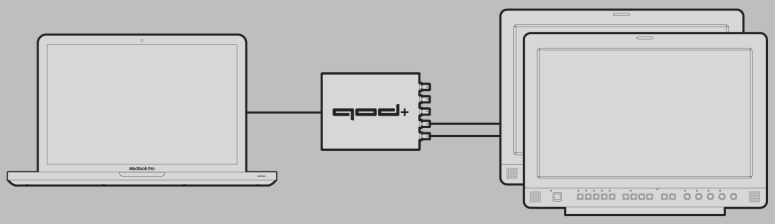
Back view



Front view



Quad output configuration



Dual output configuration

FEATURES

Four independent SDI outputs
Low latency of just 1 frame (when not using pulldown removal)
SDI embedded audio

SDI embedded timecode
Thunderbolt compatible DisplayPort input
Analog audio input
Genlock input
Support for HD-SDI and 3G-SDI formats (currently only 1080 full HD)
Interlaced, Progressive or PsF output
UHD output support up to 60fps
USB control directly from QTAKE software
DIP switch control for standalone operation
Single, compact, DC powered unit
Future-proof design upgradable by firmware

QOD+ INSTALLATION

QOD+ installation requires few simple steps:

1. Connect the DisplayPort cable to the **DP IN** port on the QOD+ and connect the other end (mini DisplayPort) to a DisplayPort/Thunderbolt port on your Mac.
2. Connect the USB cable to the port labeled **USB** on the QOD+ and the other end to an available USB port on your Mac.
3. Connect the power supply to the QOD+.
4. Start up the Mac.

MAC PRO

New Mac Pro computers have three thunderbolt busses on the back. To avoid the QOD+ showing up as your primary monitor it should be connected to Thunderbolt bus 0 (bottom two thunderbolt connectors) and your GUI screen to bus 1 or 2. That also means you should not connect your primary monitor (GUI) to the HDMI output of your Mac Pro. See this Apple knowledge base article for more details:https://support.apple.com/kb/HT5918

QOD STATUS

The RGB led next to the power jack indicates the operational state of the QOD+. When the device is booting the led will flash white. Red indicates that the QOD+ is waiting for input signal and Green indicates that signal is acquired.

GENERAL OPERATION

When the QOD+ is plugged into the DisplayPort/Thunderbolt port of your Mac, the operating system will detect it as a new monitor. You can verify that OS X has detected your QOD+ in the **SYSTEM PREFERENCES > DISPLAYS** or use the Display Menu application (see below).

DISPLAY MENU

If you need to change the input resolution of the QOD+ without QTAKE, use an application called **DISPLAY MENU**. Display Menu can be downloaded from the App Store for free. QOD+ supports following resolutions: **1920 X 1080** - Single HD output, all SDI outputs will output the same image **3840 X 1080** - Dual HD output, SDI output 3 and 4 will mirror outputs 1 and 2.

1920 X 3240 - Triple HD output, SDI output 4 will mirror output 1.
3840 X 2160 - Quad HD output, each SDI output is independent.

PULLDOWN REMOVAL

To ensure smooth output from QOD+, the device removes duplicated frames from the DisplayPort input signal. This results in an output format that perfectly matches the source. QTAKE enables this feature automatically upon startup if there is an active USB connection to the QOD+. To enable pulldown removal without USB control, please refer to the STANDALONE OPERATION chapter of this user guide.

FIRMWARE UPDATE

QOD+ contains programmable chip that can be upgraded by user to apply bug fixes or additional functionality. Firmware update is performed using QTAKE, which is bundled with the latest firmware binary. Do not attempt to downgrade the QOD+ by updating the firmware from an older version of QTAKE.

QTAKE USB CONTROL

QTAKE controls the QOD+ operation via USB connection. Settings can be changed in the QOD menu in the **FILE** room. The QOD menu displays the following information:

SERIAL NUMBER

Serial number of the QOD+.

QOD RESOLUTION

Current input resolution of the QOD+.

TEMP

Internal temperature of the QOD+. QTAKE will notify the user with a message in the status bar if the temperature of the QOD+ exceeds 76 C. The QOD+ will shut down if the internal temperature reaches 85 C to prevent damage to internal components.

QOD AUDIO

This button controls the audio input and embedded audio output of the QOD+. Your options are:

NONE - No audio is embedded on the output.
AUDIO IN - The analog line audio input is embedded on all SDI outputs.
DISPLAYPORT2/8 - Each SDI output uses 2 of the 8 audio channels available from the DisplayPort input. This allows each view to have independent embedded audio, but limited to stereo.
DISPLAYPORT 8/8 - All 4 SDI outputs use all of the 8 audio channels available from the DisplayPort input.

FIRMWARE

Use this button to update firmware of the QOD+. After updating firmware, you need to quit QTAKE and power-cycle QOD+. After QOD+ is detected by the operating system, you can start QTAKE application.

RESET

Performs a soft reset of the connected QOD+.

GPU OUT SETTINGS

QOD+ output channels are controlled using the **GPU OUT** window. **QOD FORMAT** can be set to either 1080p, 1080i or 1080psf. **QOD FPS** can be set from 23.98 to 60 or AUTO. Setting QOD FPS to **AUTO** means that QOD+ will output signal at the same frequency as the clip in the corresponding view. The **QOD AUDIO** setting is the same as in the QOD menu and applies to all outputs.

STANDALONE OPERATION

There are 12 DIP switches on the side of the QOD+ that can be used to set the QOD+ into standalone operation mode. QOD+ will ignore commands and communication sent through the USB interface when set to standalone mode. The DIP switches control the following options: **(1 = ON, 0 = OFF)**.

	DIP Switches	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Note**
OUTPUT FORMAT	USB Control	0	0											Ignores DIP switches
	Progressive	1	0											Standalone mode
	PsF	0	1											Standalone mode
	Interlaced	1	1											Standalone mode
INPUT COLOR	RGB Legal Range			0	0									
	RGB Full Range			1	0									
	Reserved			0	1									
	Reserved			1	1									
FRAME MODE	Drop frame mode					0								
	Non-drop frame mode					1								
OUTPUT FPS	Reference Input						0	0	0					
	24fps(23.976fps)						1	0	0					Depends on Frame Mode
	25fps						0	1	0					
	30fps(29.97fps)						1	1	0					Depends on Frame Mode
	50fps						0	0	1					
	60fps(59.94fps)						1	0	1					Depends on Frame Mode
	DisplayPort input						0	1	1					
	Reserved						1	1	1					

	DIP Switches	1	2	3	4	5	6	7	8	9	10	11	12	Note
AUDIO INPUT	None									0	0			
	DisplayPort audio 8/2									1	0			
	Analog audio Input									0	1			
	DisplayPort audio 8/8									1	1			
PULLDOWN REMOVAL	No pulldown removal											0	0	
	Flag pulldown removal											1	0	
	Reserved											0	1	
	Test pattern output											1	1	

QOD PREFERENCES

These QTAKE preferences are relevant to the operation of QOD+. Use the **PREFERENCES** button in the INFO menu to open the window with preferences and set the requires options.

Alternatively, you can use the Text Edit application to edit the content of the preference file. QTAKE preferences are located in the **APPLICATIONS/QTAKE/PREFS** folder. If you delete this file, QTAKE will recreate one with the default settings. Changes will take effect next time QTAKE starts.

Enable_GPU_Output=1
Set to =1 to enable QTAKE graphics card output. Essential for QOD+ operation.

Wait_For_Vertical_Sync=1
Set to =1 to avoid tearing on QOD+ output.

GPU_Vertical_Sync_Mode=1
Set this to =0 to disable GPU Vertical Sync (not recommended), =1 for Automatic Vertical Sync and =2 to Force Vertical Sync.

Use_Full_Range_Video=1
Set this to =1 to enable full range video processing. Default value (=0) uses SMPTE levels (legal range).

Legal_Range_GPU_Output=0
Set to =1 to enable legal range GPU output.

QOD_GPU_Vendor=0
Sets the manufacturer of the host GPU to ensure QOD+ compatibility. =0 equals automatic detection (recommended), =1 AMD, =2 NVIDIA, =3 Intel.

GPU_Out_1_Label=GPU-OUT 1
GPU_Out_2_Label=GPU-OUT 2
GPU_Out_3_Label=GPU-OUT 3
GPU_Out_4_Label=GPU-OUT 4
Use this settings to edit GPU-OUT label in the VIEW menu (i.e. DIRECTOR, CLIENT).

QOD_Panorama=1

Use this preference for switching to horizontal layouts.

QOD+ DIP SWITCH CONTROL

When using QOD+ with another software or in case there is no USB connection available, users can set the operational modes via DIP switches. Please refer to an image below to set the requested modes. More details in the STANDALONE OPERATION section.