"WARNING Turn Off Camera Data" appears if a camera selection has been made in the 13.1 Camera Data menu parameter, but a recording is attempted via the physical record button on the front panel or via the record button in the web UI. To perform manually initiated recordings, enter 13.1 Camera Data and select "None."

"WARNING LUT Error" appears if a LUT file type that is not supported or a LUT file type that is supported but is not formatted correctly is loaded using the web UI.

"WARNING Invalid Selection" may appear if unsupported menu selections are made for video input, record type, encode type, etc.

MEDIA menus

As the name implies, these menu parameters display choices related to media storage and the type of encoding to be used. There are also menus for naming reels, clips and takes.

Media Menu Parameters

12.1 Media State

This parameter applies to using the Ki Pro Quad to transfer data.These are the options:

Record-Play (default)	Use media to record and play video.
Data-LAN	LAN data may be uploaded/downloaded to/from Ki Pro Quad.

For normal video operation, select *Record-Play*. For data transfer using an Ethernet LAN, choose *Data-LAN*. The Data Media State allows valid media to be copied to or from the Ki Pro Quad. Valid media files for copy to Ki Pro Quad are the following:

- QuickTime files that are full raster—4096-by-2160 (4K), 3840-by-2160 (Quad HD), 2048-by-1080 (2K), 1920-by-1080 (HD), and 1280-by-720 (HD).
- QuickTime files that are encoded as:

  Apple ProRes 444

  Apple ProRes 422

  Apple ProRes 422 (Proxy)

  Apple ProRes 422 (LT)

  Apple ProRes422 (HQ)

Files must be Ki Pro Quad supported frame rates and must use 24-bit 48kHz audio (2 or 8 channel), if audio is included. Files copied to Ki Pro Quad that do not meet these criteria may not appear in the web UI or front panel UI when you review clips.

If the state is designated as Data, the Transport functions are locked; in other words, media cannot be recorded or played back as video. You can still access MEDIA menu parameters, however, so you can reset the parameter. If the you attempt to playback or record while in the Data mode, a "CHANGE MEDIA STATE" prompt alerts you that you cannot use the transport functions. Additionally, the front panel UI states that the unit is in a "DATA MEDIA STATE" in an obvious way as opposed to presenting the typical clip, reel, timecode, etc. usually seen on the front panel.

After you select the Data state, you can connect the Ki Pro Quad to a host computer via the Ethernet connection. The Ki Pro Quad will allow access to the selected media designated by the lit LED. In other words, if the #2 media module is selected on the Ki Pro Quad, that would be the volume mounted by the host computer operating system.

The DATA MEDIA STATE does not survive reboots or power cycles of the device. After such an event, it returns to the default *Record-Play* mode.

IMPORTANT: *When the Ki Pro Quad is in the Media State and the Data - LAN selection is used, only the web UI for control and configuration of the Ki Pro Quad may be used for data transfer. The web UI will present "Upload+" and "Download+" buttons in the All Clips portion of the UI. If the Data-LAN state is not active, these buttons do not appear in the web UI.*

12.2 ROLLOVER This parameter determines whether the Ki Pro Quad is configured to support recordings that continue when the selected Pak media becomes full.

OFF: When the Rollover parameter is set to OFF, the Ki Pro Quad performs recordings normally and when the Pak media reaches the 10% of capacity "Media Full" point, recordings do not continue onto additional media.

ON: When the Rollover parameter is set to ON recordings create "appended" files on additional Pak media.

Example: a recording is begun on the first piece of Pak media, S1, and is called "SC1ATK1". When this piece of Pak media reaches capacity, the second piece of Pak media (S2) is seamlessly engaged and begins an appended recording, "SC1ATK1+1". This can continue until this piece of media reaches capacity.

IMPORTANT: *If a piece of media is inserted for a rollover and it does not meet the following criteria, rollover recordings will not be possible:*

- The rollover media needs to have already been formatted in the Ki Pro Quad
- The rollover media needs to be completely empty; no clips can already be on the media

If the Rollover parameter is set to ON and rollover media does not meet the criteria noted, warning alarms may appear such as:

- WARNING Media Unformatted
- WARNING Rollover Media Not Empty

14.1 ENCODE TYPE This parameter defines the Apple ProRes encoding method. These are the options:

ProRes 444 (default)	Record media as Apple ProRes 444 files.
~~ProRes 422~~	Record media as Apple ProRes 422 files.
ProRes 422HQ	Record media as Apple ProRes 422 (HQ) files.
~~ProRes 422LT~~	Record media as Apple ProRes 422 (LT) files.
ProRes 422PX	Record media as Apple ProRes 422 (Proxy) files.

15.1 PLAY MEDIA This parameter determines behavior during playback. These are the options:

One (default) All Playlist	Plays one clip and then stops playback All/Playlist—Plays the current clip and then continues playing the next clip on the Ki Pro Quad media or the playlist. Note that with this setting, Ki Pro Quad will play all clips back regardless of format or framerate—but you may notice the video monitor reset for format/framerate changes. If all clips are the same format and framerate or conversion is applied to the output for clips with the same Hz, then clips play out smoothly one after another.

15.2 LOOP PLAY This parameter turns looped playback on and off. These are the options:

OFF (default) ON	Play clip(s) and then stop playback when complete Play clip(s) and then loop back and repeat playback

15.3 PLAYLIST This parameter displays the name of the selected playlist. These are the options:

variable	The name of the selected playlist appears. If no playlist is selected via the web UI controls, then no name appears. The user cannot select or create playlists from the front panel UI; these tasks are handled using the web UI.

15.4 DROPPED FRAMES This parameter determines how playback handles dropped frames. These are the options:

CONTINUE STOP	In the unlikely event that the playback of a clip(s) begins to drop frames, this parameter allows users to define whether the playback continues or stops.

16.1 FORMAT MEDIA This parameter is used to format the currently selected media. These are the options:

KEEP MEDIA (default) FORMAT MEDIA	No action (do not format the media selected) Format the selected media (you will be prompted Confirm Erase S1? or Confirm Erase S2?—Hold up Adjust button to confirm))

16.2 DELETE CLIPS This parameter can be used to delete all of the clips on the media. These are the options:

KEEP CLIPS (default) DELETE ALL	No action (do not delete clips) Delete all clips on the storage device when DELETE CLIPS is pressed or Adjust up arrow is pressed and held for 2 seconds

Ki Pro Quad media can be used to hold data other than Apple ProRes QuickTime recordings. If other files are saved to the PAK media, they should be placed outside of the "AJA" folder. Any material inside of the "AJA" folder will be erased if a MEDIA>Delete Clips>DELETE ALL is performed.

17.0 REEL NAME

This parameter determines the reel name associated with all clips generated while using this setting. These are the options:

001 to 999 (default = 001)	Press ADJUST button up or down to change the REEL NAME value from 001 to 999.

The reel name is a number between 001 and 999. It is historically linked to the naming conventions used for film and tape-based media. The REEL NAME is an incrementing three digit value that works with EDLs. For this reason, the parameter does not have a "NONE" selection—all clips will be associated with a REEL NAME. The REEL NAME parameter determines the name that the media will have if it is formatted and will appear when the media is mounted on a computer.

17.2 CLIP NAME

This parameter determines the clip name associated with all clips generated while using this setting. The clip name is either "Clip" or "SC". These are the options:

SC (default)	Clips generated will have filenames beginning with "SC"
Clip	Clips generated will have filenames beginning with "Clip"

Clip Naming—Two Examples

The following two examples show how clip names are generated. Each example is based on the collective settings for these parameters:

- REEL NAME
- CLIP NAME
- CLIP NUMBER
- CLIP NUMBER APPEND
- ALPHA APPEND VALUE

In both examples that follow, "TK" is a default append to the naming convention just prior to the auto-incrementing TK value (which can be manually overridden via parameter 17.8 Take).

Ki Pro Quad offers these parameter choices for easy identification of the QuickTime files, so that the names can logically match the shooting script, and are acceptable when imported into various non-linear editors such as Final Cut Pro 7's Browser window, Final Cut Pro X's Events, Avid Media Composer's Bins, etc. The Final Cut Pro 7 Browser window provides columns of data used to describe the media. In the most minimal form, "Name", "Media Start", "Media End" and "Reel" are the required pieces of information for a Final Cut Pro clip to be properly perceived as "valid" media. Additional information or "QuickTime metadata" is useful and can be mapped into the myriad choices provided in the Final Cut Pro Browser column headings. Final Cut Pro X also uses such information and can provide even more support for QuickTime file metadata

Example 1 Using the factory default AJA parameter settings:

REEL NAME	001
CLIP NAME	SC
CLIP NUMBER	1

CLIP APPEND	ALPHA
ALPHA APPEND	A
TAKE	1

The resulting clip would be named and displayed as: "SC1ATK1". The media would be named "001" if mounted on the OS X desktop as a volume.

Example 2 Using customized settings:

REEL NAME	002
CLIP NAME	Clip
CLIP NUMBER	12
CLIP APPEND	NONE
ALPHA APPEND	B
TAKE	1

The resulting clip would have the following naming convention: "CLIP12TK1". The media would be named "002" if mounted on a desktop as a volume.

17.3 CLIP NUMBER

This parameter determines the clip number, from 1 to 999, that follows the CLIP NAME, and is associated with all clips generated while using this setting. These are the options:

1 to 999 (default = 1)	Press ADJUST button up or down to change the CLIP NUMBER value from 1 to 999.

17.4 CLIP APPEND

This parameter is used with parameter 17.5 ALPHA APPEND to append a text value after the CLIP NUMBER or have no text appended. These are the options:

ALPHA (default)	The text value entered in ALPHA APPEND is appended to the CLIP NAME and CLIP NUMBER
NONE	No text is appended to the CLIP NAME and CLIP NUMBER

17.5 ALPHA APPEND

This parameter is used with parameter 17.4 CLIP APPEND to append a text value after the CLIP NUMBER. These are the options:

A to Z (default = A)	Press ADJUST button up or down to change the ALPHA APPEND value from A to Z. Alphabetic values increment with A and Z wrapping around.

17.8 TAKE

This parameter determines the TAKE number, from 1 to 999, that follows the CLIP NAME and CLIP NUMBER, followed by any ALPHA APPEND (if selected), generated for all clips while using this setting. These are the options:

1 to 999 (default = 1)	Ki Pro Quad automatically generates a TAKE number. Press ADJUST button up or down to change the TAKE value from 1 to 999, if a value other than the automatically generated value is desired.

Ki Pro Quad follows these Clip and Take rules when using standard naming conventions:

1. Ki Pro Quad will not overwrite an existing clip.
2. The Take number will auto-increment past existing numbers for the "prefix" as defined by the Reel Name, Clip Name, Clip Number, Clip Append, Alpha Append, and Take settings.
3. If the number is at "999", Ki Pro Quad will record a clip with take 999, but then cannot auto advance so the second attempt to record will generate a "Name In Use" alarm. This prompts you to select a new Clip Name, Clip Number, Clip Append, Alpha Append, and/or Take settings so that a new unique "prefix" is created. This action ensures files are unique and understandable, and that clips are never overwritten.

Custom Clip Naming

Users can elect to give their clips names other than the standard criteria provided by AJA. IMPORTANT: Certain characters may not be allowed or supported if entered for a clip name. Examples include: punctuation marks (other than internal spaces or periods), special characters (like @), and non-ASCII UTF-8 characters are rejected outright. Note: non-UTF-8 characters appear in some languages, like Chinese and Japanese, and are not supported.

Custom clip names can be created via the front panel UI menu parameters (19.1, 19.2, and 19.4) through the use of the SELECT and ADJUST up/down arrows. Users may find that the more efficient method to perform custom clip naming is via the web UI entry fields.

NOTE: When entering characters for a custom clip name, you must scroll through all characters using the Adjust buttons until you reach the end of the name space before the name is accepted.

19.1 CUSTOM CLIP

This parameter enables or disables whether a custom clip name can be used via menu parameters 19.1, 19.2, and 19.4, or via the web UI. These are the options:

OFF (default)	Enable defining of custom clip name
ON	Disable defining of custom clip name

19.2 CUSTOM NAME This parameter defines a custom clip name. The custom name is defined via the front panel select and adjust up/down arrows. The default is "CUSTOM". These are the options:

variable Set by i2MAP application Software	Using the adjust buttons, enter a custom clip name. Using the adjust buttons and the top Select button, select the characters for the name. The adjust buttons scroll through the choices and the top Select button advances to the next character. While selecting characters, the character being changed will flash to show its position. Certain characters may not be allowed or supported if entered for a clip name. Examples include: punctuation marks (other than internal spaces or periods), special characters (like @), and non-ASCII UTF-8 characters are rejected outright. Note: non-UTF-8 characters appear in some languages, like Chinese and Japanese, and are not supported. Default: CUSTOM

19.4 CUSTOM TAKE This parameter defines a custom take. The custom take number is defined via the front panel select and adjust up/down arrows. These are the options:

1 to 999 (default = 1)	Press ADJUST button up or down to change the TAKE value from 1 to 999, if a value other than the automatically generated value is desired.

22.1 GANG CLIP NAME This parameter is used when performing gang recording via multiple Ki Pros and/or Ki Pro Quads (refer to Controlling Multiple Ki Pros later in this manual). If the desire is to have clips named the same across all Ki Pro ganged units' recordings, then use the "Master Name" selection in this parameter. If the desire is to have clips named independently on Ki Pro units, then "Slave Name" should be selected. Selecting "Slave Name" means that the recording will take its name from the individual Ki Pro's parameters and not accept the value pushed to the Slave by the Master Ki Pro. These are the options:

Master Name (default)	Enable clips to be named the same across all Ki Pro ganged units
Slave Name	Name clips independently on Ki Pro units

NOTE: Most gang controls are only available in the web user interface.

CONFIG menus

When we talk about menus, we discuss the Parameter Number and Name on the top line of the display and the Parameter Setting(s) possible as shown on the bottom line of the display; remember, the current setting is what is shown.

As in the MEDIA menus already presented, pressing one of the parameter *Adjust* buttons changes the current CONFIG parameter's value to a new one from the Ki Pro Quad's list of choices—repeating the list if you continue to press *Adjust*—or adjusting a numerical value up or down.

The exact choices displayed will vary depending on the parameter. Most adjustment choices made with the Adjust buttons take effect immediately and will be subsequently stored into the Ki Pro Quad's non-volatile memory if they remain unchanged for 3 seconds.

If a Select or Adjust button is held down continuously, the changes will begin to happen automatically - with acceleration if applicable.

Holding down both the Adjust (up) and Adjust (down) buttons—*at the same time* —will set that parameter back to its factory default value.

The CONFIG menu is for system set-up and configuration. Each parameter is numbered, just like the MEDIA menus.

CONFIG Menu Parameters

Many of the CONFIG menu parameters are used together to configure the type of Ki Pro Quad recording and associated conversion formats used on the input or output for a particular workflow.

1.1 RECORD TYPE

This parameter defines the frame recording method. RECORD TYPE can be configured to record the incoming video signal in a "NORMAL" manner, "PsF" signal if the incoming source is 1080psf 29.97 (for example), or variable frame rate (VFR).

NORMAL (default)	Record standard format as input
PsF	Record progressive segmented frame
VFR	Record variable frame rate

NOTE: A 23.98Hz source is automatically treated as PsF, regardless of this setting. For 29.97 Hz or 25 Hz, "NORMAL" means encode as interlaced and "PSF" means encode as progressive. This only applies to 1080 formats. The following details clarify each case:

- 1080PsF 23.98 incoming video > Normal selected > 1080p 23.98 recorded to disk.
- 1080i 25 incoming video > PsF selected > 1080p 25 recorded to disk.
- 1080i 29.97 incoming video > PsF selected > 1080p 29.97 recorded to disk.
- 1080PsF signal is recorded to disk as progressive; progressive material on disk may be played back as PsF or progressive on the video outputs; this selection can be made in parameter 1.3 Progressive Playback.

NOTE: VFR (Variable Frame Rate) recording makes use of meta data embedded in the RP188 data stream on the SD-SDI/HD-SDI input, allowing for the frame rate to change actively. Examples of cameras offering variable frame rate include Panasonic AJ-HDC27 and several cameras from the Panasonic HPX line.

Select cameras that output 1080p within a 1080i signal are also supported by the VFR selection. For the Canon EOS C300, 1080p 23.98 may be extracted from the 1080i 29.97 signal and 1080p 24 may be extracted from the 1080i 30 signal. For the Canon EOS C300 formats of 1080p 25 and 1080p 29.97, set the Record Type to PsF to produce progressive frame recordings.

1.3 PROGRESSIVE PLAYBACK This parameter defines the format applied when progressive media is played from storage. These are the options:

Progressive (default)	Playback as standard progressive frame
PsF	Playback as progressive segmented frame (regardless of what was recorded when input)

NOTE: HDMI output of progressive material requires the use of 1080p Playback set to Progressive; HDMI only tends to support true progressive or interlace video, not PsF.

1.4 IN CONVERT This parameter sets input conversion to one of the available selections. These are the options:.

None (default)	The input is not converted
4K Crop to Quad HD	Converts and crops 4K input to Quad HD
4K/Quad HD to 2K/1080	Converts 4K input to 2K or Quad HD input to HD

Note that the 4K Crop to Quad HD selection and the 4K /Quad HD to 2K/1080 selections have no impact if 2K or 1080 video is input. By default, the Ki Pro Quad will output 2K on the SDI monitor and HDMI monitor outputs if the incoming signal is 4K (4096x2160) or 2K (2048x1080) and no "IN CONVERT" is applied. Also by default, if the incoming signal is Quad HD (3840x2160) or HD 1920x1080P, the Ki Pro Quad outputs 1080 HD on the SDI and HDMI Monitor outputs.

Also, if the 4K Crop to Quad HD "IN CONVERT" selection is used, the Ki Pro Quad will output 1080 HD on the SDI and HDMI Monitor outputs.

1.5 OUT CONVERT This parameter sets output conversion to one of the available selections. These are the options:

None (default)	The output is not converted
2K Crop to 1080	Converts and crops 2K output to 1080 HD
4K Crop to Quad HD	Converts and crops 4K output to Quad HD

NOTE: The 4K Crop to Quad HD selection has no impact if a 2K or 1080 video source is used. Also, the 2K Crop to 1080 has no impact if a Quad HD or 1080 video source is used.

By default, the Ki Pro Quad outputs 2K on the SDI and HDMI Monitor outputs if the incoming signal is 4K (4096x2160) or 2K (2048x1080) and no "OUT CONVERT" is applied. Also by default, the Ki Pro Quad outputs 1080 HD on the SDI and HDMI Monitor outputs if the incoming signal is Quad HD (3840x2160) or HD (1920x1080).

1.6 SDI OUT This parameter sets the SDI output format.These are the options:

SDI 1-4 RGB (default)	Sets SDI 1-4 outputs to RGB (supports up to 4K 29.97fps)
SDI 1-4 YCbCr	Sets SDI 1-4 outputs to YCbCr (supports up to 4K 59.94fps)
SDI 1-2 RGB	Sets SDI 1-2 outputs to RGB (supports up to 2K 29.97fps)
SDI 1-2 YCbCr	Sets SDI 1-2 outputs to YCbCr (supports up to 2K 59.94fps)
SDI 1 RGB	Sets SDI 1 to RGB (supports up to 2K 29.97fps)
SDI 1 YCbCr	Sets SDI 1 to YCbCr (supports up to 2K 59.94fps)

NOTE: *While the Ki Pro Quad can accept input signals of up to 4K (4096x2160) 59.94fps, 4K and Quad HD recordings are limited to frame rates of 29.97fps or lower. The Ki Pro Quad can be used as a pass-through or "debayer converter" device for 4K or Quad HD 50fps and 59.94fps signals.*

NOTE: *The Ki Pro Quad can perform RGB to YCbCr color space conversions, but it cannot perform YCbCr to RGB color space conversions. This means that if the input signal is YCbCr, you cannot select an RGB output and produce a proper output.*

NOTE: *SDI 1 RGB and SDI 1 YCbCr high frame rates (in excess of 29.97fps) are supported by 3G-SDI. Be sure to connect the AJA Ki Pro Quad to a 3G-SDI capable device in these cases. If a 3G-SDI capable device is not available, RGB and high frame rate YCbCr may be output via SDI 1 and SDI 2 as "dual link" 1.485Gbps."*

1.64 3G SDI Level

This parameter allows the 3G SDI output to be configured for either Level A or Level B. While many 3G SDI devices will support both Level A and Level B, some devices may need a specific 3G SDI selection to operate as expected.

Level B (default)	For use with devices that accept or require Level B.
Level A	For use with devices that accept or require Level A.

1.66 HDMI Out

This parameter determines whether scaled or full raster video will be output.

NOTE: *The Full Raster selection only has an impact on the output when a 4K or Quad HD video source is used.*

Scaled (Default)	The HDMI output is limited to 2K or HD.
Full Raster	The HDMI output may produce 4K or Quad HD.

Limitations to be aware of when Full Raster is selected and a 4K or Quad HD video source is used:

- HDMI full raster output is disabled when the video source is a 4K RAW signal that must be debayered. For example, when the Ki Pro Quad is used with the Canon C500, 4K or Quad HD HDMI output during E-to-E or recording is not supported. If realtime debayer, recording and 4K or Quad HD HDMI monitoring is needed, consider the use of the AJA Ki Pro Quad 4x SDI outputs connected to an AJA Hi5-4K Mini-Converter. Note: 4K or Quad HD HDMI output is possible during playback when Full Raster is selected because debayer processing is no longer required.
- If Full Raster is selected and the video source is 4096x2160 at any frame rates other than 23.98 or 24 fps, then the output is disabled. HDMI 1.4 only provides support for 4K 4096x2160 at 24Hz. However, the Ki Pro Quad may be configured for an In Convert>4K Crop to Quad HD or an Out Convert>4K Crop to Quad HD so that 4096x2160 signals greater than 24Hz may be output as Quad HD 3840x2160.
- The maximum supported frame rate for 3840x2160 is 30Hz as specified by HDMI 1.4.
- Full Raster output disables the Super Out feature; superimposed timecode and transport state is not possible with a 4K or Quad HD HDMI output.

Helpful HDMI configuration guidelines:

- Determine your video source format and frame rate.
- Decide whether you want a Full Raster or Scaled output.
- Determine whether your connected device can support 4096x2160 or 3840x2160; remember that 4096x2160 is only supported for 24Hz.
- Remember that the Progressive Playback menu parameter needs to be configured for Progressive for HDMI output.

1.8 SDI/HDMI Monitor Output Sets the format of the SDI/HDMI Monitor outputs. These are the options:

Normal (default) Out Convert	No conversion is applied to the monitoring output Scaled video is additionally cropped to 1080 (if the source is not already 1080)

1.9 SUPER OUT This parameter provides superimposition of timecode and transport state (Record, Pause, etc.) onto the SDI or HDMI monitor outputs. Note that Super Out applies only to the 2K/1080 SDI/HDMI monitor outputs, not the 4x 3G-SDI outputs or 4K/Quad HD HDMI output. The 4x 3G-SDI outputs are always "clean" outputs. These are the options:

Off (default) SDI Monitor HDMI Monitor SDI/HDMI Monitor	Superimposition is disabled Superimposition is enabled for the SDI output Superimposition is enabled for the HDMI output Superimposition is enabled for the SDI/HDMI outputs

2.1 VIDEO INPUT This parameter selects a video input source from the video input connectors that are available. This selection impacts the type of video that can be recorded and/or passed through. These are the options:

SDI 1 RAW (default)	Sets SDI 1 to RAW input
SDI 1 RGB	Sets SDI 1 to RGB input
SDI 1 YCbCr	Sets SDI 1 to YCbCr input
SDI 1-2 RAW	Sets SDI 1-2 to RAW input
SDI 1-2 RGB	Sets SDI 1-2 to RGB input
SDI 1-2 YCbCr	Sets SDI 1-2 to YCbCr input
SDI 1-4 RAW	Sets SDI 1-4 to RAW input
SDI 1-4 RGB	Sets SDI 1-4 to RGB input
SDI 1-4 YCbCr	Sets SDI 1-4 to YCbCr input

NOTE: The only RAW input currently supported by the Ki Pro Quad is the output of the Canon C500 camera when using 4K or Quad HD modes.

NOTE: Choosing the correct video input is a key component of successfully using the AJA Ki Pro Quad. Be sure to determine the correct signal type being provided by your camera or video source before configuring the 2.1 Video Input selection; if an incorrect selection is made, unexpected or undesirable recordings may result. If you are unsure of your signal type, you may use the built-in confidence monitor and the STATUS menu to help determine the correct selection.

2.12 Ignore ANC This parameter need only be changed if the incoming signal supplied to the Ki Pro Quad is misidentified. Misidentified signal formats can be caused by inaccurate ancillary (ANC) data. Typically, the VPID (video payload identifier) information in ancillary (ANC) data being supplied by the video source is accurate, but when it is not, this menu parameter may be configured to ignore the inaccurate ancillary (ANC) data or VPID information. The Ki Pro Quad will then rely solely on the 2.1 Video Input selection to determine the correct video format.

OFF (default)	The Ki Pro Quad uses VPID to determine the incoming video format.
ON	The Ki Pro Quad ignores VPID and instead uses the Video Input selection.

2.2 AUDIO INPUT This parameter selects an audio input source from the audio input connections available, including embedded SDI audio (which requires an SDI video source) or analog audio (via the XLR connections).

SDI (default)	Selects SDI embedded audio from the SDI input connector (if SDI video input is selected)
XLR	Selects the XLR input for audio input

NOTE: XLR input could be microphone level or line level, depending on the connector panel switch setting.

2.3 AUDIO CHANNELS This parameter selects the use of either two or eight audio channels. Generally, when working with camera sources, there are only one or two audio tracks being produced, and therefore 2-channel would be the appropriate selection. In post production use, there are often more channels of audio required, so 8-channel audio may be the appropriate choice in such situations. Ki Pro Quad only allows for the selection of either 2 channels or 8 channels of audio to be written to the QuickTime file that is recorded. Therefore, if the source has more than 2 channels of audio, but less than 8 channels of audio that need to be preserved, the CONFIG Menu parameter 2.3 Audio Channels would need to be set to "8 Channels."

NOTE: Not all devices support 8-channel audio. Ki Pro Quad does not provide a "mixdown" option for 8- channel recordings on output, so be sure to use devices that support 8-channel audio via SDI if the 8 channels recorded are desired.

NOTE: If 8 Channels are selected for 2.3 Audio Channels, but 2.2 Audio Input is set to XLR, a Warning prompt will appear on the display: "Warning 2 Channel Format." Clear this warning by selecting SDI audio as the input source in 2.2 Audio Input or by selecting 2-channel audio in 2.3 Audio Channels.

2 Channels (default)	Selects recording of 2 audio channels
8 Channels	Selects 8 audio channels (valid for SDI embedded audio only)

4.1 ANALOG AUDIO This parameter configures the analog audio signal levels for input and output. These are the options:

+24dBu (default)	Selects pro-level USA signal levels of +24dBu
+18dBu	Selects pro-level Europe signal levels of +18dBu
~~+15dBu~~	Selects pro-level German signal levels of +15dBu
+12dBu	Selects consumer signal levels of +12dBu
	Note: Maximum amplitude (0 dBFS)

Professional audio equipment has much higher levels than consumer equipment: a 0 VU reading corresponds to +4 dBu. Connecting a professional +4 dBu device to a consumer audio input -10dBV (-7.8 dBu) may cause overloading, whereas the output of a consumer device probably does not have sufficient power to drive a professional audio input. With consumer and semi-professional audio equipment, a VU reading of 0 dB is typically referenced to -10 dBV. 0 dBu = 0.775 VRMS. These settings are valid with the panel Mic/Line switch set to "Line." (The Mic settings are lower input level settings for use with condenser and dynamic microphones—use Mic +48 for powered condenser mics and Mic for dynamic microphones.).

6.1 GENLOCK This parameter selects the source of reference to genlock to during playback.

NOTE: Ki Pro Quad always genlocks to the selected video input during capture; genlock may only be needed during some playback configurations (such as in a facility with a variety of other equipment).

For general monitoring purposes, genlock is not required. These are the options:

~~INPUT~~	Use the currently selected input as the Genlock source
FREERUN (default)	Free run mode: Ki Pro Quad syncs to its own timebase and is not locked to an external source
Ref In	Use the Ref Input as the Genlock source

8.0 TC IN This parameter selects the source of timecode from those available. These are the options:

TC VALUE (default)	Uses the value specified in parameter 8.1 TC Value
SDI RP188	Uses the value from the SDI input
~~LTC~~	Uses the value from the LTC input
TIME OF DAY	Sets timecode to the device clock value (55.6 Time Set)

8.1 TC VALUE This parameter selects an hour value from which timecode begins incrementing. These are the options:

00:00:00:00 to 23:00:00:00 (Default: 01:00:00:00)	Use the ADJUST buttons to select a timecode hour. For example: 01:00:00:00, 02:00:00:00, etc.

set by i2MAP Application

8.2 TC TYPE This parameter selects drop frame or non-drop frame timecode. These are the options:

NDF (default)	Selects Non-drop Frame timecode
DF	Selects Drop Frame timecode

NOTE: If the menu parameter 8.0 TC In is set to SDI RP188 or LTC, the TC Type selection does not apply. TC Type only applies to the TC Value or the Time of Day value generated by the Ki Pro Quad.

8.3 ARM RECORDING This parameter selects how recording may be initiated—either by pressing the physical record button or by incrementing start/stop timecode values. These are the options:

REC KEY (default)	Start when Record button is pressed
TC/REC KEY	Start on Time Code or Record button

If arm recording on timecode, parameters 8.0, 8.1. and 8.2 must be set to a qualified source and type of timecode. You should use timecode that starts and stops, like that produced by record run timecode; freerun timecode is not viable for this feature since it does not produce start and stop values.

9.0 INTERVAL RECORD The Ki Pro Quad can be used to create timelapse recordings via the 9.0 Interval Record, 9.1 Interval Frames and 9.2 Interval Time selections. These are the options:

OFF (default)	Normal recordings are produced.
ON	Timelapse recordings are produced.

Example of timelapse recording selections:

The incoming video signal is 1080i 29.97 fps, the record button is depressed, and the recording is then stopped 90 seconds later with the following settings:

9.0 Interval Record > On
9.1 Interval Frames > 1
9.2 Interval Time > Second

The resulting recording would be 90 frames in duration, would have a frame rate of 29.97 fps, and would appear to be "undercranked" or "sped up" when compared to a normally created recording.

NOTE: Selecting an interval frame number that exceeds the incoming video frames per second will result in normal video. "Overcranking" or "slow mo" is not supported by the interval recording feature.

9.1 INTERVAL FRAMES Determines how many frames from the incoming video will be used for the recording. These are the options:

Incrementing Value	Sets number of frames to use for the recording.

9.2 INTERVAL TIME Determines the time period from which the interval frames are selected. These are the options:

Second	The second from which interval frames are selected.
Minute	The minute from which interval frames are selected.
Hour	The hour from which the interval frames are selected.

13.1 CAMERA DATA Some cameras produce SDI ancillary data, such as start/stop commands, that may be useful when interfacing with the Ki Pro Quad. The CONFIG menu parameter 13.1 Camera Data is designed to address this use of SDI ancillary data. The default for this parameter is "None"; when this is selected, no camera metadata is passed to any of the Ki Pro parameters even if a camera with SDI ancillary data is connected to the Ki Pro Quad. If an appropriate camera is present and sending appropriate SDI ancillary data to the Ki Pro Quad and that camera manufacturer/model is selected from the list, the Ki Pro Quad will respond to as many parameters as are applicable.

These are the camera choices and the functionality they support:

NONE (default)	Camera metadata is not passed to any of the Ki Pro Quad parameters even if a camera with ancillary data is connected to the Ki Pro Quad.
Canon XF	Canon XF-series cameras with SDI outputs will provide ancillary data that produces start/stop commands but not clip naming.
Canon C300	Canon C300 cameras provide ancillary data that produces start/stop commands but not clip naming.
Canon C500	Canon C500 cameras provide ancillary data that produces start/stop commands; at this time clip naming is not supported.
Pana AF100	Panasonic AG-AF100 series cameras provide ancillary data that produces start/stop commands but not clip naming. If the camera is configured for 720p 23.98 (24), 720p 25 or 720p 29.97 (30) recording, this Camera Data setting will also allow the extraction of these frame rates for recording on the Ki Pro Quad.
Sony F3/F55	Sony PMW-F3 and Sony PMW-F55 SDI outputs will provide ancillary data that produces start/stop commands; at this time clip naming is not supported.
ARRI Alexa	ARRI Alexa cameras provide ancillary data that produces start/stop commands; at this time clip naming is not supported.

The Camera Data menu parameter has domain over an array of other Ki Pro Quad parameters; selecting Camera Data supersedes other parameter selections if valid ancillary data is present and the camera is selected from the menu parameter choices. Note that you may want to manually select 8.0 TC In>SDI RP188 when you wish to obtain timecode from an SDI camera source even if you use the Camera Data selection.

NOTE: The initial firmware version for Ki Pro Quad does not offer support for RED cameras like other Ki Pro products; this support will be added in a later free firmware update for Ki Pro Quad.

Important Notes About Cameras Supported by 13.1

The following notes describe the functionality of various cameras supported by Ki Pro Quad parameter 13.1.

Canon XF: Because the Camera Data parameter requires the use of SDI, only the XF series cameras that feature SDI outputs can be used with this feature. These cameras provide ancillary data that produces start/stop commands but not clip naming.

Canon C300: These cameras provide ancillary data that produces start/stop commands but not clip naming. The Canon EOS C300 outputs 1080i by default, but can produce true progressive video within this interlaced output. The extraction of 1080p 23.98 from within 1080i 29.97 and 1080p 24 from within 1080i 30 is automatic if the camera is properly configured and the Camera Data selection is set to Canon C300; users do not need to manually set the Record Type parameter separately. However, for 1080p 25 that is output as 1080i 25 and 1080p 29.97 that is output as 1080i 29.97 from the camera, users need to manually select "PsF:" in the Record Type (1.1) menu parameter even if they have selected the Canon C300 in the Camera Data parameter. This selection is required because there is no ancillary data indicating these frame rates within the SDI output of the camera.

13.3 LUT Enable

This parameter allows the use of an input or output lookup table (LUT) with RGB video. For details, see the explanation following tables 13.3 and 13.4 below. These are the options:

Off (default)	Disables use of LUTs.
Input	Enables use of an input LUT.
Output	Enables use of an output LUT.

13.4 LUT File

This parameter specifies the name of the LUT file, if used. These are the options:

None (default)	No LUT file used.
LUT Name	Shows the specified LUT file name. LUT files are loaded via the web browser user interface.

Since the Ki Pro Quad may work with log RGB video without a linear look applied, the use of LUTs may be desirable to either "bake in" a look or, more commonly, monitor material with a "normal" look.

Note that you may only enable either an Input LUT or an Output LUT; this is done so that two LUTs cannot be applied at the same time resulting in applying a "double LUT" to an image. When an Input LUT is applied, it impacts the encoded video and thereby all outputs. An Output LUT only impacts the video outputs, not the recordings. Additionally, a LUT can only actually be applied to an RGB or log RGB video source. If a LUT is loaded, but YCbCr video is used, there is no impact or effect on the YCbCr video; LUTs are ignored for YCbCr sources.

LUTs are not loaded via the front panel UI; LUTs may only be loaded via the web UI. Selections are provided in the web UI alongside the 13.4 LUT File parameter. "Choose File" appears when the LUT Enable selection is set to either Input or Output.

A Factory Reset re-sets both 13.3 and 13.4 menu parameters to *Off* and *None*, respectively. A LUT loaded to the Ki Pro Quad survives power cycling the unit though.

Only one LUT may be loaded to the Ki Pro Quad at a time. This single LUT may be used for either the input or output. If you do not wish to apply a LUT, simply don't select it with the 13.3 LUT Enable parameter.

The Ki Pro Quad supports the import of .txt and the .lut extension files.

NOTE: The 1D LUTs should be formatted with the following conditions: 1024 values (10-bit), 3-column tab delimited text file with either .txt or .lut file extensions.

32.0 Loss of Video

This parameter selects whether recording continues when valid video is not present. These are the options:

Stop Rec (default)	Recording stops when video is lost
Cont Rec	Recording continues when video is lost

NOTE: If CONT Rec is selected, and a loss of video is encountered, a graphic with the text "LOSS OF VIDEO" superimposed over color bars will appear. Be sure to check your source and video connections if you are experiencing a loss of video.

41.1 VIDEO SG FRMT

This parameter determines the video format output from Ki Pro Quad's internal test signal generator. This parameter is used with parameter 41.2 to determine the type of video test signal output by Ki Pro Quad.

NOTE: While the Ki Pro Quad may be configured for a YCbCr or RGB signal generator, the output is ultimately determined by the selection made in the 1.6 SDI OUT menu parameter.

Example: The 41.1 VIDEO SG FRMT is set to 1080p 23.98 RGB and the 1.6 SDI OUT is set to SDI 1 RGB, then the output will be RGB. If the 41.1 VIDEO SG FRMT is set to 1080p 23.98 RGB and the 1.6 SDI OUT is set to SDI 1 YCbCr, then the output will be YCbCr even though the signal generator was configured for RGB.

These are the options:

720p 50 720p 59.94 1080p 23.98 1080i 25 1080i 29.97 720p 60 1080PsF 23.98 1080PsF 24 1080i 30 1080p 24 1080p 25 1080p 29.97 1080p 23.98 RGB 1080p 24 RGB 1080p 25 RGB 1080p 29.97 RGB 1080PsF 23.98 RGB 1080PsF 24 RGB 1080PsF 25 RGB 1080PsF 29.97 RGB ~~1080p 50~~ 1080p 59.94 ~~2K p23.98~~ 2K p23.98 RGB 2K p24 2K p24 RGB 2K p25 2K p25 RGB 2K p29.97 2K p29.97 RGB 2K PsF 23.98 2K PsF 23.98 RGB 2K PsF24 2K PsF24 RGB	2K PsF25 2K PsF25 RGB 2K PsF29.97 2K PsF29.97 RGB QHD p23.98 QHD p23.98 RGB QHD p24 QHD p24 RGB QHD p25 QHD p25 RGB QHD p29.97 QHD p29.97 RGB QHD PsF23.98 QHD PsF23.98 RGB QHD PsF24 QHD PsF24 RGB QHD PsF25 QHD PsF25 RGB QHD PsF29.97 QHD PsF29.97 RGB 4K p23.98 4K p23.98 RGB 4K p24 4K p24 RGB 4K p25 4K p25 RGB 4K p29.97 4K p29.97 RGB 4K PsF23.98 4K PsF23.98 RGB 4K PsF24 4K PsF24 RGB 4K PsF25 4K PsF25 RGB 4K PsF29.97 4K PsF29.97 RGB	Select the video format desired for test signal output.

41.2 VIDEO SG This parameter determines the video signal output from Ki Pro Quad's internal test signal generator. This parameter is used with parameter 41.1 to determine the type of video test signal output by Ki Pro Quad. These are the options:

OFF (default)	Turn test signal output OFF.
~~Black~~	Video test signal output is color black.
75% Bars	Video test signal output is 75% color bars. This 75% amplitude,100% saturation test signal is useful to check low frequency response and video tilt as well as the performance of video clamping.
100% Bars	Video test signal output is 100% color bars. This 100% white full-field bars test signal is helpful to check chroma amplitude versus overall video level.

NOTE: The signal generator acts as a "substitute" for the video input. Because of this, if the Video SG is configured for Black, 75% Bars or 100% Bars, you may record these signal generators as a

file. Additionally, if the 41.1 Video SG Frmt parameter is configured for an RGB format, then the 1.6 SDI Out menu parameter should be set up for an RGB output if RGB is desired. Note that it is also possible to configure the SDI Out for YCbCr when the Video SG Frmt is configured for RGB, but a color space conversion will be applied to the video output.

41.3 AUDIO SG This parameter determines the audio signal output from Ki Pro Quad's internal test signal generator. These are the options:

OFF (default)	Turn audio test signal output OFF.
~~Silence~~	Output an audio test signal containing silence only.
1 kHz	Output a standard 1 kHz test signal tone.

50.1 IP CONFIG This parameter determines the type of TCP/IP network configuration used by Ki Pro Quad. These are the options:

STATIC ADDR	Assign a static IP address manually (parameters 50.2, 50.3, and 50.4 will have to be entered to accomplish this).
DEFAULT ADDR	Use the factory default static IP address: 10.65.74.65
DHCP (default)	Select automatic IP address assignment from DHCP server on LAN. NOTE: if Ki Pro Quad cannot find a DHCP server to communicate with, it will select the default factory IP address of 192.168.0.2.

NOTE: With parameters 50.1, 50.2 and 50.3, there is no timeout when editing—changes made while in these menus will be saved and activated when the menu is exited.

50.2 IP ADDRESS This parameter determines the static IP address used by Ki Pro Quad for TCP/IP networking.

variable 134.89.32.54	Using the adjust buttons, enter an IP address compatible with your LAN (if you have one). If direct connecting to a computer, enter a legal IP address that you'll also enter in the computer's web browser. This is only needed for Static IP configurations. NOTE: If 50.1 is set to *DHCP* and there is a DHCP failure, then the default IP address is: 192.168.0.2 NOTE: If 50.1 is set to *Default Addr*, the default static IP address is: 10.65.74.65

NOTE: For parameters 50.2, 50.3, and 50.4, you will be setting IP addresses that consist of "octets" separated by a period (i.e., 10.0.181.0). When editing these, the Select button selects the octet and then the Adjust buttons select the desired number. Pressing Select Up again advances to the next octet. At the final octet, the address will flash—pressing Select Up at that point confirms the setting. When these parameters are edited, you can abort the editing process by backing out (press the Select down arrow button repeatedly until the edit passes the first octet). You'll notice that after completing the edit on the last octet, the display will blink—this is an indication that the edited IP address is about to be saved. You can save the edited IP address (press the Select arrow up to save) or choose not to save by pressing the Select arrow down button.

50.3 SUBNET MASK This parameter determines the subnet mask used by Ki Pro Quad for TCP/IP networking.

variable 255.255.254.0	Using the adjust buttons, enter a subnet mask compatible with your LAN (if you have one). This is only needed for Static IP configurations. NOTE: If 50.1 is set to *DHCP*, the default *Subnet Mask* will be assigned by the DHCP server NOTE: If 50.1 is set to *Default Addr*, the default *Subnet Mask* is: 255.0.0.0

Please read the "Note" about editing IP addresses in parameter 50.2 as it also applies to parameters 50.3 and 50.4.

50.4 STATIC GATEWAY This parameter determines the gateway or router used by Ki Pro Quad on your LAN for TCP/IP networking.

variable 134.89.32.1	Using the adjust buttons, enter a gateway compatible with your LAN (if you have one). This is only needed for Static IP configurations. NOTE: If 50.1 is set to *DHCP*, the default *gateway* will be assigned by the DHCP server NOTE: If 50.1 is set to *Default Addr*, the default gateway is: 10.0.0.1

NOTE: Without a properly configured default gateway (whether you have a router/gateway or not), Ki Pro Quad will be unable to see other Ki Pros on the network, although you may still be able to control the Ki Pro Quad via a web browser. Also, without a proper gateway defined, the discovery feature "Available Ki Pros—Click to Refresh" on the Network web page will not work correctly and list other Ki Pros or FS1s on the network.

50.5 SYSTEM NAME This parameter defines a name for Ki Pro Quad and gives it a unique identifier. This same name is used both when displaying systems via the web interface.

variable i2MAP	Using the adjust buttons, enter a name for Ki Pro Quad. Using the adjust buttons and the top Select button, select the characters for each of the up to 20-character name. The adjust buttons scroll through the choices and the top Select button advances to the next character. While selecting characters, the character being changed will flash to show its position. The character set allowed is: 0 through 9, '-',", A through Z (uppercase) and a through z (lowercase). *Default:* Ki Pro Quad

50.6 MAC ADDRESS

This parameter is an information only field showing the MAC address of the Ki Pro Quad's ethernet adapter.

Information only display 00:0C:17:2E:00:B4	Selecting this parameter allows you to view Ki Pro Quad's ethernet MAC address. The MAC address is a unique value associated with the internal ethernet network adapter. MAC addresses are also known as hardware addresses or physical addresses. MAC addresses uniquely identify an ethernet adapter on a LAN. MAC address format: MM:MM:MM:SS:SS:SS. The value is 12-digit hexadecimal, where the first half identifies the manufacturer and the second half identifies the unique serial number.

50.9 User Authentication

This parameter enables or disables an authentication login requirement when using the web UI. By default this parameter is set to Disabled.

DISABLED

If you select Login via the front panel interface and then attempt to use the web UI interface, you will be asked for a login password. The web browser will present the login screen requesting that a password be entered before you can access any other parameter or configuration screen.

The password is initially set to the default value: password.

If you select Login for the User Authentication parameter via the web UI, you may enter a user selected password. As long as the menu parameter is not changed to Disabled, the password requirement will remain in effect. Any time the web UI is accessed, the login password will be requested before additional access to any other web UI parameter or configuration screen will be granted. If you enter a user selected password, be aware that this password will be retained and you will need to remember the password. If the user entered password is forgotten, you may clear it by performing a Hard Factory Reset.

NOTE: A standard Factory Reset does not clear the user entered password. To perform a Hard Factory Reset, enter the 99.0 Factory Reset parameter, and unlike a typical Factory Reset where only the ADJUST (up) button is held for 2 seconds, hold both the ADJUST (up) and the ADJUST (down) buttons simultaneously for 2 seconds.

55.4 DATE SET

This parameter manually sets the calendar date of the internal Ki Pro Quad clock. The value is defined as YYYY/MM/DD (year/month/day).

variable set by i2MAP application	Using the adjust buttons, enter a calendar date for Ki Pro Quad. Using the adjust buttons and the top SELECT button, select the characters for each category (YYYY/MM/DD). The adjust buttons scroll through the choices and the top SELECT button advances to the next character. While selecting characters, the character being changed will flash to show its position. When finished, the final press of the SELECT up button will flash the whole value, hit SELECT once more to confirm and the next menu parameter will appear.

55.6 TIME SET This parameter manually sets the calendar date of the internal Ki Pro Quad clock, when setting manually (NTP not used).

variable set by i2MAP application	Using the adjust buttons, enter a time for Ki Pro Quad's clock. Using the adjust buttons and the top Select button, select the characters for each digit (hours/minutes). The adjust buttons scroll through the choices and the top Select button advances to the next character. While selecting characters, the character being changed will flash to show its position. When finished, the final press of the SELECT up button will flash the whole value, hit SELECT once more to confirm and the next menu parameter will appear. Time is set using a 24 hour format (military) and must be set to GMT time. NOTE: there are many websites that will assist you in converting your local regional time to GMT (UTC). AJA does not endorse any particular one, but here are two examples: http://tycho.usno.navy.mil/zones.html http://hurricanes.noaa.gov/zulu-utc.html

70.2 DISPLAY INTENSITY This parameter determines the brightness of the alphanumeric LCD display and front panel backlit buttons. A dimmer display uses less power.

variable 3	Using the adjust buttons, you can dim or brighten the alphanumeric display and activity indicator LEDs in steps from 1 (dim) to 8 (brightest) Default: 6

70.3 FAN SPEED This parameter determines the speed of Ki Pro Quad's internal cooling fan. In some environments where audio recording is occurring close to the Ki Pro Quad unit, it may be desirable to set the fan speed to "QUIET AUTO" for optimum quiet operation during recording.

NORMAL (default)	Fan runs at normal fixed speed for optimum cooling.
QUIET AUTO	Fan runs at normal speed until recording begins; then the fan ramps down to a slower speed for optimum quiet.
NORMAL AUTO	Fan runs at variable speeds for optimum cooling.

80.1SERIAL NUMBER This parameter displays this Ki Pro Quad's unique serial number.

4K000430

80.2 SW VERSION This parameter displays Ki Pro Quad's software version level.

5.2.0.29

91.1 RECALL PRESET This parameter recalls the Ki Pro Quad to a previously saved preset configuration stored using parameter 92.1. Use the ADJUST buttons to set the number of the Preset register you wish to recall. To recall, press the SELECT up (^) button, and then press the ADJUST up (^) button. The message *[COMPLETE]* is displayed after a successful recall.

92.1 STORE PRESET This parameter saves a preset configuration to the selected storage register. Use the ADJUST buttons to set the number of the Preset register. To store, press the SELECT up (^) button, and then press the ADJUST up (^) button. The message *[COMPLETE]* is displayed after a successful store.

All above settings saved as preset 1