VISION RESEARCH

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FEATURES

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Frame Rate Profile

INTRODUCTION:

Frame Rate Profile allows the user to define up to 5 different sample rates that automatically change, at user specified points, during the capturing process of post trigger frames. For example, the liftoff of a rocket might require a very high recording speed, then less speed as it rises, but then again, a higher speed during the first stage separation. This function also helps extend recording time and helps keep file sizes as small as possible. The Frame Rate Profile feature is not available with all Phantom cameras.

GENERAL OPERATION:

The Frame Rate Profile feature allows the end-user to define up to five different frame rates that automatically change, at specified points, during the capturing process of post trigger frames. (The first profile can be applied to Pre-Trigger frames while the remaining four profiles will be applied to Post Trigger frames only.) Changes to the frame rate will only be applied to Post Trigger frames.

To use the Frame Rate Profile feature the end user will need to specify the:

1. Number of profiles to be used during the capture process.

2. Desired variable used to define the profile(s), options include the:

   a. Image number the defined profile will change on or an image number percentage from post trigger frames.

   b. Time, in seconds, from the trigger.

   c. Image number percentage from post trigger frames or a time percentage from post trigger duration.

3. Sample rate or frame rate the images will be recorded at.

The recording duration will vary based upon the amount of memory in the camera, along with the resolution and frame rate settings, and a Rate Profile Graph will display an active graphical representation of the defined profiles.
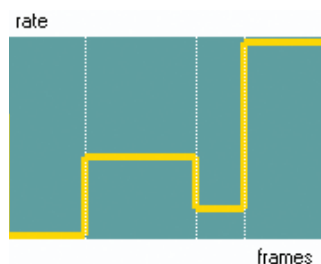
The yellow line indicates the defined frame rates for each of the profiles. The starting point of the line represents the Sample Rate set, and used by Profile 1, under Live Control Panel>Cine Settings Selector.

The white dotted lines represent the beginning of the specified Image or Time variables starting with Profile 2.

FRAME RATE PROFILE APPLICATIONS:

Applications that benefit most from Frame Rate Profile include:

• Projectiles where high speed imaging is required during deployment and targeting but not during travel down the range.

• Rocket or missile launches that have stage separation requiring high speed imaging but not as it rises.

• Any application requiring multiple frame rates during test

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HOW TO SPECIFY A FRAME RATE PROFILE:

The following procedure describes the steps necessary to define the Frame Rate Profile settings:

1. Start the PCC (Phantom Camera Control) application.
2. From the Manager Control Panel select the Phantom camera to be defined by moving the mouse over the desired available Phantom camera you wish to control, then double-click the left mouse key.
3. Click the Live Control Panel Tab.
4. Click on the Cine Setting selector.
    a. Set the Sample Rate to the fastest sample rate, (frame rate), the Frame Rate Profile feature will record at.
    b. Select the desired Exposure Time at the fastest Sample Rate, then
    c. Specify the number of Post Trigger frames.
    d. Set the Sample Rate to the initial recording speed.
    e. Take note of the Duration time.
5. Click on the Frame Rate Profile Selector and define the Frame Rate Profile parameters:
    a. Enter the number of Partitions, or number of profiles to be used during the capture process.
    b. Select the desired header variable used to define the profile(s) by clicking on the down-arrow to display a pull-down selection list including the following options:
        1) Image # - specifies the first post trigger frame, or image number, the profile will change at.
        2) Time (s) - specifies the absolute time from the moment a trigger signal is detected.
        3) Image % - specifies a percentage of the image number from the number of post trigger frames.
        4) Time % - specifies a percentage of time from the post trigger duration.

NOTE: If the header variable is changed for the first column, the remaining values will be updated according to selected variable. Small changes can occur, because of a rounding process, when switching from, and then back to Image #.

If the exposure you set is greater that the maximum available value for any of the frame rate values in the Frame Rate Profile, the program will automatically reduce that frame rate to a compatible level.

    c. Place the cursor into the first field to be edited and define the:
        1) Desired Image or Time variables the Rate, (Frame Rate/Sample Rate), is to change at, then
        2) Enter the required Rate.
    d. Under the Cine Settings selector, note the Duration time.
    e. Repeat Steps 3, 4, and 5 until all the profiles have been defined.

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IMPORTANT OPERATION NOTES:

Frame Rate Profile can only be applied to Post Trigger Frames.

Focused

Since 1950, Vision Research has been shooting, designing, and manufacturing high-speed cameras. Our single focus is to invent, build, and support the most advanced cameras possible.

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