FEATURES

Event Marking

INTRODUCTION:

The Event marking feature provides a mechanism that can be used to tag image frames as 'event' frames whenever a TTL (Transistor-Transistor Logic) signal pulse change is detected over the event interface. This mechanism is an extension of the time stamp system; event signal tags are treated very much like timestamps and range data.

Primarily this feature is used to tag events of significance during recording, which makes it easier to the jump from one event to the next, during playback of a recorded Cine.

For example, machine-gun testing where there may only be a few frames where the bullet is visible followed by a large number of unchanging frames before the next bullet becomes visible.

It can also be used to ease the process of performing timing measurements by calculating the duration between the marked start / end event images using the PCC (Phantom Camera Control) software.

GENERAL OPERATION:

The event signal is an active-low, isolated from the camera ground, input whose state is recorded at the end of each exposure. The signal must be active when the strobe[1] goes high, and be at least 30µs long to guarantee it is properly recorded.

PROVIDING AN EVENT SIGNAL:

The Event marker signal is provided to the camera's event interface through an attached capture cable, BoB (Break-out Box), or Mini BoB.

With Phantom Miro M/R/LC-Series cameras the Aux interface in used in place of the event interface. The auxiliary interface can be used to supply different signal types (Strobe, Event, Memory Gate); therefore, it must be defined, in the PCC (Phantom Camera Control)software what signal is being supplied to the interface:

1. From the 'Live' tab in PCC, with the camera selected and displaying a live image, click the 'Advanced Settings' selector.

2. Scroll down and locate the 'Aux pin is:' field.

3. Click the down-arrow in the data entry field, and

4. Select 'Event' in the pull-down selection list (Figure 1)

EVENT APPLICATIONS:

Applications that benefit from Event Signal include:

- Small arms rapid fire test

- Cyclical test

- Vibration test

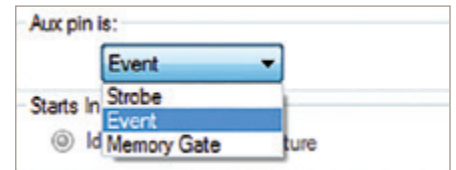- Any application where marking the start / end of events are required

---

[1] Strobe is an isolated open collector output signal, with 1k pull-up. When asserted (low) Strobe indicates that the camera integrates (the shutter is open). Strobe is low for the duration of the exposure.

AMETEK®
MATERIALS ANALYSIS DIVISION

FEATURES

Event Marking

HOW TO LOCATE EVENT FRAMES:

The Image Search feature can look for images that are tagged as event frames based on a change in the Event binary input signal.

1. From the 'Play' tab, with the recorded Cine being displayed in a play panel, right mouse click on the Play or Rewind button to search the file in the forward or backward direction respectively, then

2. In the popup window list, select 'Skip to Event', to search for images that are tagged as event images, then

3. Select the event the software is to search for from the popup selection list (Figure 2):

   a) Event 0 - there is an event (input Event In is low)

   b) Event 1 - there is no event (input Event In is high)

   c) Event change - the input Event In passes from 0 to 1 or from 1 to 0.

The software will search through the Cine until it detects a match to the selected search parameter.

HOW TO DISTINGUISH EVENT FRAMES:

The 'Frame Info' displays information about the image (frame) displayed in the 'Play' panel (Figure 3).

1. From the 'Play' tab, with the Cine advanced to an event frame, click on the 'Frame Info' selector.

2. Locate the 'Time' field. Frames tagged as an event frame will append the event maker 'E' to the 'Time' field.

HOW TO DETERMINE THE EVENT DURATION

1. From the 'Play' tab, follow the 'How to Locate Event Frames' process to locate the start event frame (Event 0), then click on the 'Frame Info' selector.

2. In the 'Elapsed Time from Image#' field enter the image number displayed above the center of the 'Cine Editor Bar'.

3. Locate the end of the event frame (Event 1).

PCC calculates and displays the time difference (Figure 3) between the image number specified in the 'Elapsed Time from Image#' field (the start of the event) and the current image (the end of the event) to the right of the 'Elapsed Time from Image#' field.

Figure 1: Aux Interface slection list

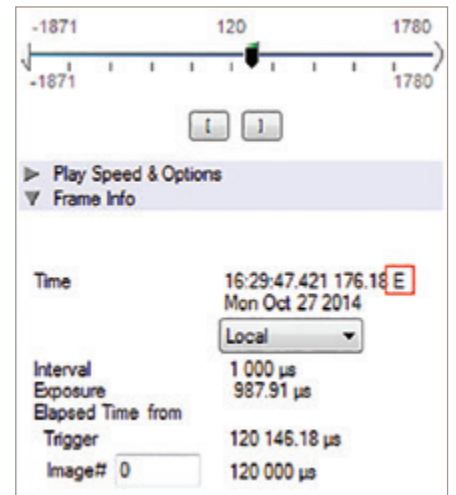*Figure 2: Skip to Event selector*

Figure 3: Frame Info

ViSiON **RESEARCH**

AMETEK®
MATERIALS ANALYSIS DIVISION

100 Dey Road
Wayne, NJ 07470 USA
+1.973.696.4500
phantom@visionresearch.com

www.**vision**research.com