FEATURES

For the most current version visit www.visionresearch.com
Subject to change Rev Jan 2012

# Burst Mode Acquisition

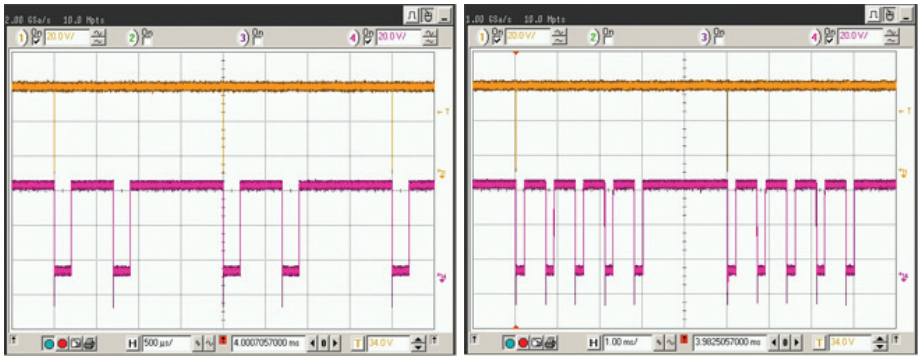
## INTRODUCTION:

The Burst Mode Acquisition feature, designed for use in PIV (Particle Imaging Velocimetry), combustion, or other applications where precise and repeatable frame acquisition is required, has been introduced on selected Phantom v-series cameras.

A Phantom camera using the Burst Mode Acquisition feature will capture a programmable number of frames for each f-sync pulse, (in both internal and external sync modes). The interval between the frames in a burst can be set independently of the sample rate (frame rate).

## GENERAL OPERATION:

When a camera is in burst mode, the camera triggers synchronously with the burst. This ensures that in the resulting cines, there is a stable correspondence between frame numbers and position within a burst. Triggering is done so that the last frame of each cine is the last frame of a burst. Below are two timing examples using Burst Mode Acquisition.



The image on the left shows a two-frame burst with the f-sync rate, (camera/sample rate), set to 500fps, the burst period set to 700 microseconds, and the exposure set at 200 microseconds. The image on the right shows a five-frame burst with the f-sync rate, (camera/frame rate) set to 200fps, the burst period set to 700 microseconds, and the exposure set at 200 microseconds.

Two variables have been added to the PCC (Phantom Camera Control) application to support the Burst Mode Acquisition feature:

- Burst Count - Burst Count sets the number of frames in a burst, (a value of zero disables burst mode completely).
- Burst Period - Burst Period sets the interval between two frames in a burst, in microseconds.

## BURST MODE ACQUISITION APPLICATIONS:

Applications that benefit most from Burst Mode Acquisition include:

- PIV (Particle Imaging Velocimetry) applications.
- Combustion Studies
- Any application where precise and repeatable frame acquisition is required.

AMETEK®
MATERIALS ANALYSIS DIVISION

The Burst Count and Burst Period parameters will be validated by the camera and clamped to ensure valid values. When clamping occurs, the Burst Count has priority over Burst Period, and both will have priority over the exposure time.

### HOW TO SPECIFY BURST MODE ACQUISITION SETTINGS:

The following procedure describes the steps necessary to activate the Burst Mode Acquisition feature:

1. Start the PCC (Phantom Camera Control) application.

2. From the Manager Control Panel select the Phantom 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. From the Live Control Panel click on Advanced Settings.

4. Specify the desired Burst Period.
   The Burst Period sets the interval between two frames in a burst.

5. Specify the desired Burst Count.
   The Burst Count sets the number of frames in a burst, (a value of zero disables Burst Mode Acquisition completely).

6. When used in a PIV study, enable, check, Exposure in PIV Mode. When enabled the frame straddle time will be reduced.

# FEATURES
# Burst Mode Acquisition

### IMPORTANT OPERATION NOTES:

The Burst Count and Burst Period parameters will be validated by the camera and clamped to ensure valid values. When clamping occurs, the Burst Count has priority over Burst Period, and both will have priority over the exposure time.

Behavior of the camera will be modified in the following way: when viewing live images, with a Burst Count larger than one the camera will retrieve images from the most recent burst, starting with the first frame in the burst.

**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.

VISION RESEARCH

AMETEK®
MATERIALS ANALYSIS DIVISION

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

www.visionresearch.com