

## FEATURES

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# Firmware Ordered Recording & No GUI Refresh

## FIRMWARE ORDERED RECORDING & MINIMAL GUI REFRESH APPLICATIONS:

Applications that benefit most from the use of On-Camera Controls include:

- Lightening Studies
- Small arms, or projectile environments where quick repetitive testing is required.
- Industrial environments such as packaging, bottling, labeling, etc. where the user wishes to rapidly sample the manufacturing process.
- Any application where capturing events that occur in short burst is required.

### INTRODUCTION:

The ability to Continuously Record events that occur in short burst, such as lightening strikes, to a Phantom camera with MultiCine partitions defined has been greatly enhanced with the addition of the Firmware Ordered Recording and Minimal GUI Refresh features, by significantly increasing the speed at which these events can be recorded and saved to a user-specified hard-drive.

The Firmware Ordered Recording feature reduces the time between takes by instructing a Phantom camera to erase a MultiCine segment upon the completion of saving its stored image data to a specified hard-drive then making it available for recording again.

The Minimal GUI Refresh feature accelerates the cine save process by disabling the save progress indicators from being displayed in the Graphical User Interface. Enabling this command also instructs the Phantom software to stop displaying live images in the Preview Panel during the save cine procedure.

### GENERAL OPERATION:

When a Phantom camera utilizes the MultiCine and Continuous Recording features simultaneously and the camera has finished recording image data to a MultiCine partition, the camera will look for the next empty cine segment to start recording into.

The camera will not erase any cine from the camera's DRAM by itself, unless the Continuous Recording with Auto Save to Flash are enabled, or you instructed the camera to restart recording to a cine segment that already contained a stored cine.

Assuming there are twelve MultiCine partitions and Continuous Recording is enabled;

When the camera is placed into the capture mode the camera will start recording into the first available cine partition, Cine 1. Once the camera is triggered, and the post-trigger frame requirement has been met, the camera will stop recording to that cine partition and immediately start recording into the next available partition, Cine 2, and so on until all MultiCine segments have been written into.

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As long as at least one cine segment is empty, the camera will jump to the next available unused partition. After it finishes recording, and all MultiCine partitions are full, the camera will jump to Preview mode and stay in the Preview mode until the camera is told to do something else or the save process for the last MultiCine partition has completed.

With Firmware Ordered Recording enabled, the software polls the cine partitions, and when it finds one that has recorded image data in it, it will save that image data to the specified hard-drive then deletes it from the camera. Once it is deleted, the camera will re-use that partition automatically, unless the camera has already gone into Preview mode, (then it will need to be told to jump to the cine).

Whenever the camera has an empty cine segment at the end of a recording, jumping to it should take about the same time (20-30ms). it doesn't matter if it's the first jump or the 1000-th.

When the camera looks for a cine to start recording into it always starts from Cine 1 and searches upward, so if the camera receives three quickly triggers, Cine 1, Cine 2, and Cine 3 are filled, and the camera will then start recording into Cine 4. If Cine 1 is saved and deleted, by the software, after Cine 4 is triggered and the post-trigger frame requirements are met, the camera will jump to the first available MultiCine partition, which is Cine 1. As a result, if the saves are fast enough, you may never reach the last MultiCine partition.

Without Firmware Ordered Recording enabled, the software saves segments in order 1, 2, 3, etc. The way the software does this is that does not erase segments after saving until the last segment is in the capture mode. The camera would ignore all other triggers) until the last segment is in the capture mode, when then erases segments all MultiCine partitions except the last, which is still in the capture mode.

### **HOW TO ENABLE FIRMWARE ORDERED RECORDING AND MINIMAL GUI REFRESH:**

The following procedure describes the steps necessary to enable both the Firmware Ordered Recording and Minimal GUI Refresh features:

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#### IMPORTANT OPERATION NOTES:

Firmware Ordered Recording, and Minimal GUI Refresh is most useful when the Continuous Recording and MultiCine features are used simultaneously.

The pre-trigger frame buffer, of the next unused MultiCine partition, must be full prior to applying a trigger signal to the camera.

#### Focused

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



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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. From the Live Control Panel:
  - a. Click on Camera Settings and define the number of Partitions desired.
  - b. Click on Cine Settings and define all of the required capture parameters for each cine segment (partition).
  - c. Perform a CSR (Current Session Reference) on each memory segment.
  - d. Click on Continuous recording, then
    - 1) Specify the Cine file path and save parameters.
    - 2) Enable, check, the Firmware Ordered Recording feature.
    - 3) Enable, check, the Minimal GUI Refresh feature.
    - 4) Enable, check, the Active enable box.
4. Apply a trigger to the camera.
5. To record, edit, and save subsequent cines, apply a trigger to the camera.
6. When finished uncheck, disable the Continuous Recording:
  - a. Active enable box.
  - b. Firmware Ordered Recording enable box.
  - c. Minimal GUI Refresh enable box.
7. Reset the Cine Settings Partitions to 1.