

# Phantom Video Player User Manual

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 PHANTOM<sup>®</sup>  
when it's too fast to see, and too important not to<sup>®</sup>

**AMETEK**<sup>®</sup>  
MATERIALS ANALYSIS DIVISION

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# Phantom Video Player User Manual

*Last Updated: 1/27/2016*

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*by Vision Research*

The Phantom Video Player (PVP) application can be used to control a Phantom camera and/or Phantom CineStations' video output parameters. It can also be used to capture, review, edit, and/or save a Cine recorded into the cameras' RAM to a hard drive, or attached Phantom CineMag. To view live preview images or review the recorded Cine images, PVP will require the use of the video output, (TV monitor/Viewfinder), of the Phantom camera or Phantom CineStation.



**Part**



# 1 Whats New in PCC 2.7

The Phantom (PCC) Camera Control application offers everything that the earlier versions included and much more. Many of the users' requests have been implemented and many aspects of the various Phantom applications have been improved, without sacrificing familiarity and intuitive ease of use.

The question 'What's new in PCC 2.7' is not so easy to answer. The quickest answer would be that many new features have been added, some of them extremely powerful. We have listened to the feedback from our users and implemented all the most frequently-requested functions, plus many that you never even thought of but will not want to do without.

However, all these changes don't mean that the PCC applications have become unfamiliar – on the contrary. Our top design priority was to maintain the 'look and feel' of the programs and their highly-intuitive interfaces so that users upgrading will feel at home immediately.

This section outlines new features and improvements introduced in the software and various Help Files.

## 1.1 Phantom (PVP) Video Player

The following change has been made to the Phantom (PVP) Video Player Application (Software Version 2.7.756.0):

- **New: Camera Support**

In PVP > Settings, Genlock has three options for ph16 cameras, including the Time Code option.

- **Fix: Image Processing**

The issue of not being able to change the 'Cine' field from 'Live' preview mode to Cine '1' playback mode, has been resolved.

Resolves Ticket #: 99826

**Part**



## 2 Phantom Video Player - Help



Software Version 2.7.756.0  
Updated: Wednesday, January 27, 2016

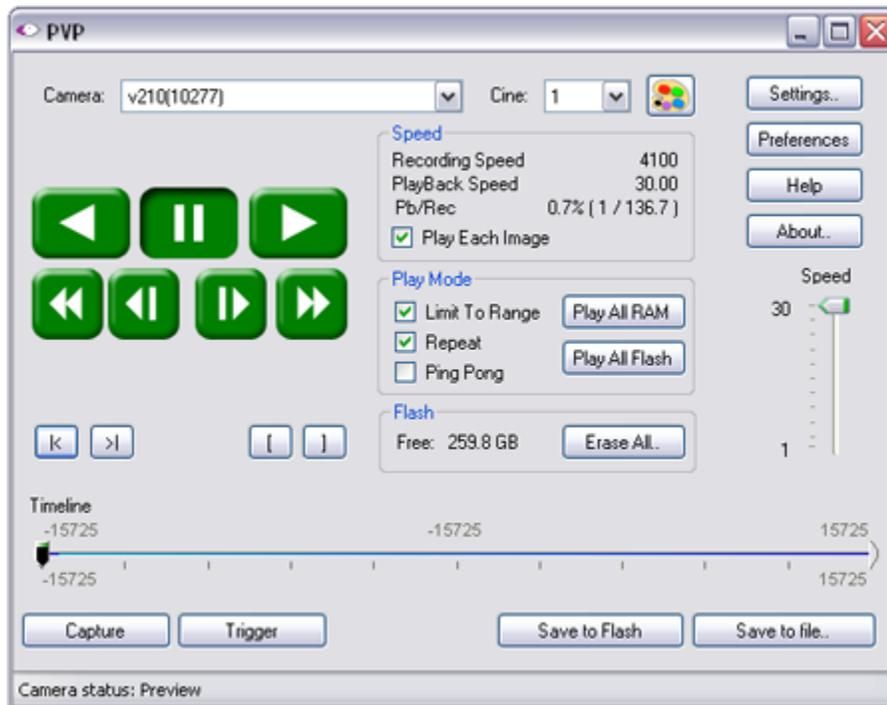
The Phantom Video Player (PVP) application can be used to control a Phantom camera and/or Phantom CineStations' video output parameters. It can also be used to capture, review, edit, and/or save a Cine recorded into the cameras' RAM to a hard drive, or attached Phantom CineMag. To view live preview images or review the recorded Cine images, PVP will require the use of the video output, (TV monitor/Viewfinder), of the Phantom camera or Phantom CineStation.

### 2.1 Software Requirements

1. Net Framework 2.0 (Microsoft free upgrade package) installed in Windows.
2. The same files needed by the PCC.exe or Phantom.exe interface:
  - Ph\*.dll files (Phantom SDK) in the executable's folder.
  - Ph SDK redistributables (LeadTools, lpl .dll files) in the executable's folder.

## 2.2 Using the Phantom Video Player Application

The PVP (Phantom Video Player) application provide the end-suer with the ability to view live images from a Phantom Ethernet camera on an attached monitor or viewfinder. This user friendly application can be used to capture, review, edit, and/or save a Cine recorded into the camera's RAM to a hard drive, an attached Phantom CineMag, or a Phantom CineFlash. PVP is extremely effective when used with the higher resolution cameras since most computer monitors will not refresh the screen images quickly enough to produce a smooth visual display.



Once image data has been captured to the camera's memory, or Phantom CineMag, the end-user can play, edit, and/or save the recorded Cine file directly from the camera's memory, Phantom CineMag, or Phantom CineStation and save the Cine to Phantom CineFlash. The end-user can easily edit the recorded Cine file quickly by simply selecting the range of images to be played back using the video playback buttons. Furthermore, the end-user can assign image processing effects to the images being displayed, or adjust the playback speed through this easy-to-use application.

### NOTE

*This feature is only accessible with Phantom Ethernet model cameras. The Phantom Video Player cannot be implemented with the IEEE 1394 camera models, or the Image<sup>3</sup>.*

### 2.2.1 Starting the Phantom Video Player Application

#### STEP-BY-STEP PROCEDURE

Presently there are three methods to start the Phantom Video Player Application, from the:

1. Phantom Control Unit (PC/Laptop)

- a. Double-mouse click on the PVP icon -  , or
- b. Click on Start>All Programs>Phantom>Phantom Video Player.

## 2. Phantom Camera Control, (PCC), Application

- a. Click on the Video Out button - 

### 2.2.2 Select a Phantom Camera/CineStation for Use

#### STEP-BY-STEP PROCEDURE

1. Click the down-arrow to the right of the Camera field, then
2. Select the Phantom camera or Phantom CineStation to be used from the pull-down selection list.

### 2.2.3 Adding a Simulated Camera

The Add Simulated Camera button is used to specify which Phantom camera model the user wishes to simulate.

#### STEP-BY-STEP PROCEDURE

1. Click the Add Simulated Camera,  , button.
2. When the Add Simulated Camera dialogue window appears:
  - a. Click on the down-arrow to the right of the Camera Model data entry field, and select the camera model you wish to simulate from the pull-down selection list, then
  - b. Enter the serial number of the Phantom camera being simulated in the Serial field. If you are not trying to simulate an actual Phantom camera that is not connected to the Phantom Control Unit, and are simply simulating a Phantom camera model, assign any serial number for the simulated camera.

#### NOTE

***Multiple Phantom cameras and/or Image3s can be simulated. However, if the user does not specify a unique serial number the camera will not be added to the Manager Panel, Cameras group tree.***

- c. Click the Add Simulated Camera button.

RESULT: The simulated camera will be displayed under the Cameras group tree in the Manager Panel.

- d. Click the Close button.

## 2.2.4 Define the Settings (Video Out Parameters)

### STEP-BY-STEP PROCEDURE

1. Click on the Settings Button.
2. In the PVP Settings dialogue window:
  - a. Select the Video System:
    - 1) Click the down-arrow to the right of the Video System field, then
    - 2) Select the video format that matches the attached monitor or viewfinder.  
For a detailed description of the Video Systems supported.
  - b. Enable, (check), the Test Image enable box to display a calibration Test Bar image on the attached monitor, viewfinder, or recorder, (optional).
  - c. Select a value for the Zoom: Fit or 1 to display a 1:1 image on the attached monitor or viewfinder and facilitate a focus operation.
  - d. Select the desired Anamorphic Ratio
  - e. Define the desired OSD options:
    - 1) Enable, (check), the Digital OSD, (Digital Output), or Analog OSD (Analog Output), enable box to display the On-Screen Display information from the attached monitor or viewfinder.
    - 2) Enable, (check), the OSD Opaque enable box to obtain a uniform gray background for the On-Screen Display information.
  - e. Define the Video Outputs:  
For a detailed description of the Video Outs settings.
    - 1) 4:4:4:(B)
    - 2) 4K (B)
    - 3) Click the Modes radial button to select if:
      - a) All outputs play the selected Cine, or
      - b) SDI1 & Analog display Live and SDI2 plays selected Cine, or
      - c) Cine play on VF/Monitor, or
      - d) Cine play on Rec output.
  - f. Specify a Production Area (optional):
    - 1) Define the size of the production area:
      - a) Click the down-arrow next to the Size data entry field, then
      - b) Select the required size from the pull-down selection list
    - 2) Offset the production area:
      - a) Either enter a value, or use the up down arrows, to offset the production area on the x-axis, then
      - b) Either enter a value, or use the up down arrows, to offset the production area on the y-axis.
  - g. Enable Gen Lock (optional)
  - h. Specify Anamorphic ratio when available.
  - i. Select a VF mode when available.

## 2.2.5 Set the Phantom Video Player Preferences

### STEP-BY-STEP PROCEDURE

The Preference dialogue window allows the end-user to select the Language PVP will use. As of this writing only English, Spanish and Japanese are supported.

1. Click the down-arrow, and select the language required for the pull-down selection list:
  - a. Window Settings
  - b. English
  - c. Japanese
  - d. Spanish

## 2.2.6 Capture a Cine

### STEP-BY-STEP PROCEDURE

#### ***Loop Mode***

Once the requires the recording parameters have been define using the PCC (Phantom Camera Control) software:

1. Click the Capture button to place the camera into the recording mode.

Notice the PVP application provides camera status information, (the operational state of the camera), at the bottom of the GUI (Graphical User Interface), just below the Abort Capture button.
2. Click the Abort Recording button to cancel the capture process, or
3. Apply a trigger to the camera:
  - a. Click the Trigger button to provide a 'soft-trigger'.
  - b. Apply a switch closure, to provide a 'hard-trigger' that is connected to the capture cable trigger connector, or direct trigger interface of the camera.
  - c. Apply a TTL (transistor-to-transistor logic) pulse, to provide a 'hard-trigger' that is connected to the capture cable trigger connector, or direct trigger interface of the camera.
  - d. Use the Image-Based Auto-Trigger feature to provide a 'soft-trigger' to the camera.
4. Once the recording process stopped the camera status will be set to Preview.

#### ***Run/Stop Mode***

Once the requires the recording parameters have been define using the PCC (Phantom Camera Control) software:

1. Click the Record button to start recording image data directly into an attached Phantom CineMag.

Notice the PVP application provides camera status information, (the operational state of the camera), at the bottom of the GUI (Graphical User Interface), just below the Record button.
2. Click the Stop Recording button to stop recording image data to the Phantom CineMag.
3. Once the recording process stopped the camera status will be set to Preview.

## 2.2.7 Review/Edit a Recorded Cine

### STEP-BY-STEP PROCEDURE

1. Select a Cine.
  - a. Click the down-arrow next to the Cine field, then
  - b. Select the Cine to be reviewed/edited from the pull-down selection list.

Cines stored in the camera's memory buffer will be displayed as a number, (i.e., 1, 2, 3, etc.), while Cines being read from a Phantom CineMag will be displayed as Fn, (i.e, F1, F2, F3, etc.).
2. Perform a Quick Search
  - a. Place the cursor over the Timeline slider.
  - b. Hold down the left mouse key, then
  - c. Drag the slider across the timeline until the subject of interest as been located.
3. Set the desired playback options.
  - a. Set the playback Speed.

By default PVP is set to play every frame recorded. The Speed slider indicates the rate at which the Cine is being played back.

    - 1) To decrease the playback speed:
      - a) Place the cursor over the Speed slider.
      - b) Hold down the left mouse key, then
      - c) Drag the slider downward to the desired playback rate.
    - 2) To increase the playback speed:
      - a) Disable, uncheck, the Play Each Image enable box, then
      - b) Place the cursor over the Speed slider.
      - c) Hold down the left mouse key, then
      - d) Drag the slider upward to the desired playback rate.
  - b. Select the desired Play Modes:
    - 1) Enable, (check), the desired Play Mode(s), including:
      - a) Limit To Range

When enabled the selected Cine file plays the frames in the selected range once only ,or all the frames if there is no selected range.
      - b) Repeat

When enabled the select Cine file plays all the frames in the Cine file, or the frames in the selected range continuously starting each time with the first frame of the Cine, or selected range. The Cine file plays until the last frame of the Cine, or selected range is reached, then starts from the first frame again.

When playback is reversed, playback will start with the last frame of the Cine, or selected range, until the first frame and continue playing until the playback process is paused by the end-user.
      - c) Ping Pong

When enabled the select Cine file plays continuously all the frames in the Cine, or in the range, starting with the first frame until the last frame, and continuing backward

from the last to the first frame and so on.

2) Play All RAM

When the Play All Flash button is selected, all the Cines that are stored in the camera's Flash memory will be played.

3) Play All Flash

When the Play All RAM button is selected, all the Cines that are stored in the camera's memory buffer will be played. Therefore, if the camera has been configured to use multiple memory partitions (MultiCine), all the Cines will be played back.

4. Play the Cine



Play Fast Rewind button to decrement the images being reviewed. The Cine file will play backwards the total number of Cine frames/1000, no less than 10 frames, auto adjusting to Cine size.



Play Fast Forward button to increment the images being reviewed. The Cine file will play forward the total number of Cineframes/1000, no less than 10 frames, auto adjusting to Cine size.



Standard Play Rewind button to play the Cine file in reverse. The Cine file will play backwards one images at a time.



Standard Play button to play the Cine file. The Cine file will play forward.



Pause button to stop or pause the playback process.



Step Backward button to rewind only one image. The Cine file will move backward one image and stop.



Step Forward button to advance forward one image only. The Cine file will move forward one image and stop.

5. Set the Mark In point of the Cine

a. Advance the Cine file to the first image you desire to save for the Cine clip via the Playback buttons, or performing a quick search, then

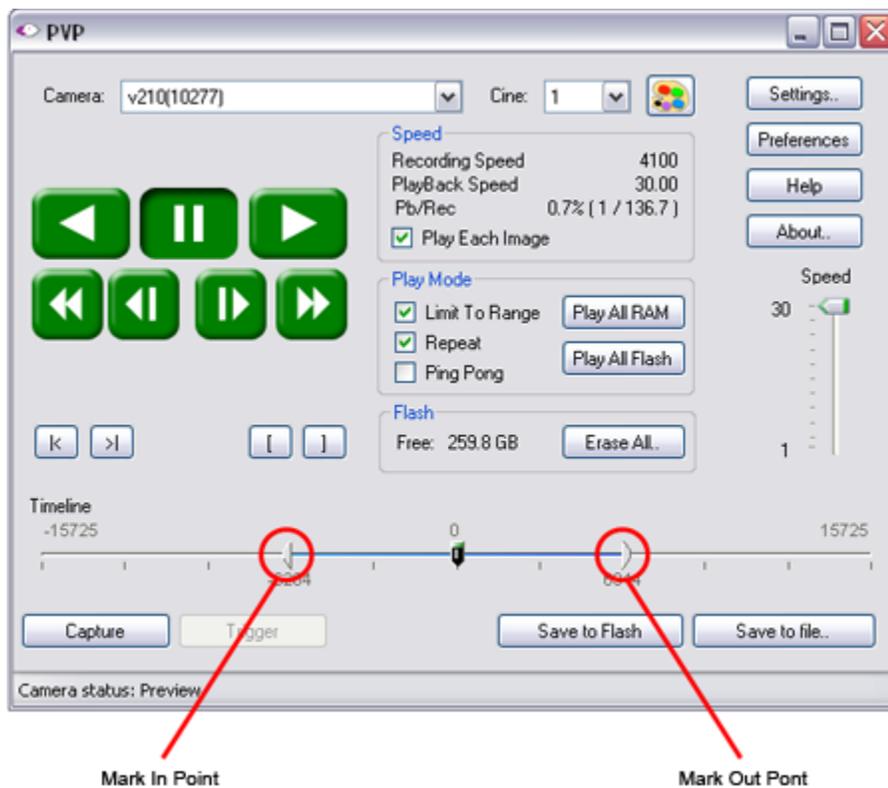
b. Click the  Mark In button.

6. Set the Mark Out Point of the Cine

1. Advance the Cine file forward until you reach the last image of the Cine file you wish to save in the clip, then

2. Press the Pause button.

3. Click the  Mark Out button.



The blue portion of the line, in the Cine editor bar, represents the edited Cine file. The number displayed at the left end of the Cine editor bar refers to the first image in the entire Cine sequence. The number at the right end of the bar refers to the last image in the entire Cine sequence. The number just above the editor bar, in the center of the bar, indicates the number of the image presently being displayed in the playback panel. The numbers below the editor bar indicate the first and last image numbers of the edited Cine file, respectively. Zero represents the first image after the moment of trigger was detected by the camera regardless of what sample rate or resolution settings were set to in the camera. Negative numbers represent pre-trigger frames and positive numbers represent post trigger frames.

#### 7. Verify the edited Cine

- a. Ensure the Limit To Range mode is enabled, checked.

When selected, (checked), the Limit to Range option forces the playback controls to play only the images between the Mark-In and Mark-Out entry points specified by the end-user.

- b. Ensure the Play Each Image option is enabled, checked.

This insures that every frame, between the Mark-In and Mark-Out points will be played back for review.

- c. Click the  Jump to Start of Cine button.

- d. Play the edited Cine file using the video control buttons.

#### NOTE

***If the edited Cine is acceptable, continue the Save a Cine procedure, if the edited Cine is not acceptable continue to the next step.***

8. Re-Edit the Cine (if required)
  - a. Disable, (uncheck), the Limit to Range option.
  - b. Click the  Jump to Start of Cine button.
  - c. Advance the Cine to the first image to be saved via the playback control buttons, or by performing a Quick Search, then
  - d. Press the Pause button.
  - e. Click the  Mark In button.
  - f. Advance the Cine forward until the last image of the Cine to save in the clip, then
  - g. Press the Pause button.
  - h. Click the  Mark Out button.
  - i. Review the edited file.

### 2.2.8 Save Cine to File

The option is used to save the Cine based on where the Cine being saved has been recorded to. If the Cine is stored in the memory buffer of the camera, the end-user has the option to save the Cine to a hard drive, or an attached Phantom CineMag. However, if the Cine being saved was recorded into a Phantom CineMag the only option will be to save to a hard drive.

#### STEP-BY-STEP PROCEDURE

1. Click the 'Save Cine../ button, or the down-arrow in the 'Save Cine' and select the 'Save to File' option from the pop-up selection list
2. In the 'Save In' data entry field of the Save Cine dialogue enter the full path of the folder the Cine is to be save in, or use the navigation buttons (right of the 'Save In' data entry field) to locate the folder.
3. Enter a 'Filename' for the Cine being saved.
4. Select the format from the 'Save as Type' pull-down selection list.
5. Define the range of images / frames to save using the 'Range Option' pull-down selection list, see [Saving Cine Procedures>Save Cine Dialogue Window Options>Range OptionsRange Options](#) for details.
6. Specify the 'Decimate by' factor, see [Saving Cine Procedures>Save Cine Dialogue Window Options>Decimate By](#) for details on this feature.
7. Define all desired 'Save Options', see [Saving Cine Procedures>Save Cine Dialogue Window Options>Save Options](#) for details on the various 'Save Options'.
8. Click the 'Save button'.
9. Repeat until all Cine files have been saved.

#### 2.2.8.1 Save Cine Dialogue Window Options

It is from the 'Save Cine' dialogue window that we specify the destination location, the file name and format, along with other parameters of the file(s) being saved. Following is brief descriptions of the

various options, including:

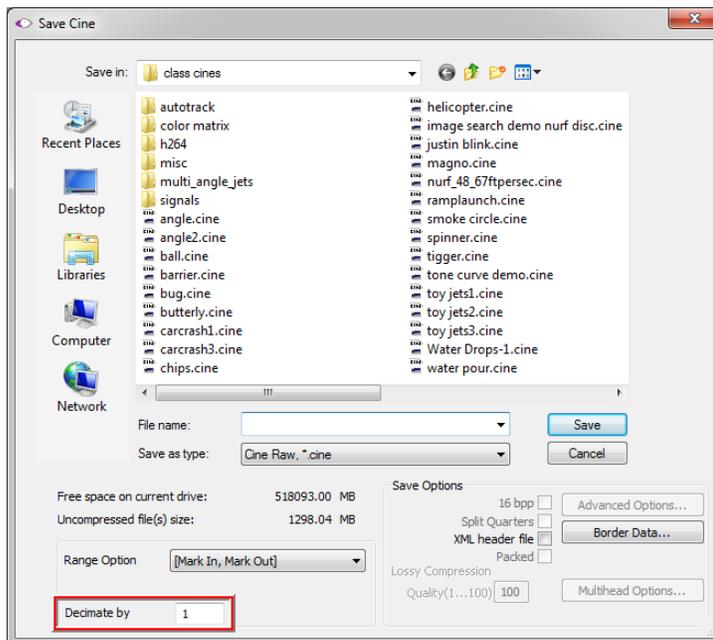
#### 2.2.8.1.1 Range Options

The 'Range Options' are used to specify the range of images (frames) to be saved. Options included:

1. [Mark-In, Mark-Out] - save the edited Cine images.
2. Full Cine - saves all frames in camera RAM (memory buffer).
3. User Defined - saves a user-defined range of images in the [first , last] fields. These fields specify the [first, last] image numbers to be saved. For example, if the event begins at image number -507 and ends at 10,832, any images prior to -507, and / or after 10,832 will be discarded (unsaved).

#### 2.2.8.1.2 Decimate By

The decimation factor is an integer number greater than or equal to 1. It can be configured from the Save Dialog Window, under the Range Option.



It allows reducing the number of images that will be saved to file by the specified factor. The default, neutral value is 1. It means each image from the specified range will be saved to file. A decimation factor of 2 means that one in two consecutive images will be saved to file, the other one will be dropped.

The table below shows which images will be selected to be saved to file for various decimation factors and for the input range [0, 18]. The red numbers correspond to frames which will be dropped. For example, if using the decimation factor 3, the images that will be saved to file will be images with numbers: 0, 3, 6, 9, 12, 15, 18.

DECIMATION FACTOR	IMAGE NUMBERS																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
3	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
6	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

### ***Image Numbering for the Decimated Cine Files***

Consecutive Cine images are always identified by consecutive image numbers. The same rule must be obeyed by decimated files. For non-neutral decimation factors, some images will be dropped during the save to file operation. Therefore a new method of numbering the images must be employed.

The basic rule is:

***input image number  $i$  will have number  $i / \text{decimation on output}$ .***

In other words, the images of the destination file are numbered based on the following rules:

- the numbering begins from input image 0
- the input image 0 corresponds to the output image 0
- the first input image to the right of image 0 that will be selected considering the decimation factor will have the number 1
- the second input image to the right of image 0 that will be selected considering the decimation factor will have the number 2
- similar to the left of image 0 (-1, -2, etc)

The following table illustrates how the destination file images will be numbered.

DECIMATION FACTOR		-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	SRC IMG NUMBER
	2		-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9
			-4		-3		-2		-1		0		1		2		3		4		Destination Img Number
3		-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	Selected Img Number
			-3				-2			-1		0		1			2			3	Destination Img Number
4		-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	Selected Img Number
				-2				-1			0				1				2		Destination Img Number
5		-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	Selected Img Number
						-1					0					1					Destination Img Number

If the save range does not contain the image 0 the algorithm previously described advances to the left or to the right of 0 until it reaches the input save range.

#### NOTE

**The first and the last images to be saved, as specified in the save dialog window, may not always actually get saved, depending on the decimation factor. Considering the examples in the table above, if the decimation factor is 5 and the save range is [-8, 6] the actual range of images that will be saved will be [-5, 5] with the decimation 5, meaning images: -5, 0, 5. As it can be seen, images -8 and 6 will not be saved in the destination file.**

#### 2.2.8.1.3 Save Options

The following briefly describes the various 'Save Options'.

##### 2.2.8.1.3.1 16 bpp

This feature will automatically be enabled (checked) when the 'Bit Depth' option is set to greater than 8-bits. For step-by-step procedure to set the Image Pixel Bit Depth.

##### 2.2.8.1.3.2 Split Quarters

Applicable for Phantom v5 / v6 Series camera only. Presently disabled.

##### 2.2.8.1.3.3 XML Header

When enabled (checked) to created an XML file, which can be used as can be a source of data for other applications, describing the header along with the Cine image information.

To view this XML language file afterwards, double-click the file name in Windows Explorer.

#### 2.2.8.1.3.4 Packed

When enabled (checked) the Cine file (from a ph16 camera, Phantom CineMag, CineFlash or 10Gb connected camera) will be saved in a Packed RAW Cine file format.

#### 2.2.8.1.3.5 WAV Audio File

When enabled (checked) an audio.WAV file will be saved along with Raw packed 10 bit (default), or ProRes HQ 10 bit (requires a Phantom CineMag IV to record to) Cine files.

This option is only applicable with Phantom Flex4k camera model if the Audio option is enabled in Advanced Settings.

#### 2.2.8.1.3.6 Lossy Compression Quality

These fields are used to specify the 'Lossy Compression Quality' when saving a Cine file in one of the following file formats; Cine JPG, JPEG, LEAD, LEAD JFIF, LEAD JTIF, JPEG, or JTIF.

#### 2.2.8.1.3.7 Advanced Options...

This option is only available if the file format selected is an interpolated one (other than RAW). It allows the end-user to select one of five color interpolation algorithms (Best, Good, Medium, Fast, Fastest) to apply to the Cine file during the save process.

#### **NOTE**

***Once a Cine file has been saved with a interpolated format (non-RAW) another algorithm cannot be re-applied to it by saving it again. In this case, the algorithm's options will be ignored.***

#### 2.2.8.1.3.8 Border Data

PCC allows the end-user to add information about the Cine file being saved / converted into a border area outside the Cine(s).

### **STEP-BY-STEP PROCEDURES**

1. Specify the 'Style' (the area the border information is displayed):
  - a. None - no border data is displayed; however, if the Cine has a 'measurements' or 'signals' graph associated with it will be included.
  - b. Standard - when selected the specified 'Common Options' will be displayed just below the image area.
  - c. Military - when selected the specified 'Common Options' will be displayed to the right the image area, along with a user-entered 'header' (displayed above and below image area), and footer (displayed below the image area).
  - d. Car Engine - when selected the specified 'Common Options' will be displayed above the image area, along with the user-defined 'Car Engine' data / text.
  - e. Include the Displayed Measurements and Signals - when select any 'collect point (tracking) measurements or signal (Range Data / Data Acquisition Unit) sampled values associated with the file will be saved as a 'Graphic' chart.
2. Select the desired 'Common Options' (the information displayed in the border area):

- a. Font Size - specifies the font size the 'Annotation Text' fields will be displayed at.
  - b. Annotation Text - specifies the information included in the border data when selected.
    - 1) Time Format - indicates the type of time stamp information to be displayed:
      - a) No Time Stamp - no time stamp information will be displayed.
      - b) Absolute Time - display date and time (to the nano-second) the image was recorded.
      - c) From Trigger - displays time difference from when displayed image was recorded to when the camera was triggered.
      - d) From Image - displays time difference from when displayed image was recorded to the image number specified in the 'From First Image' data entry field (by default the first full image after trigger, the trigger ( $t_0$ ) frame).
      - e) From First Image - displays the time difference from when the displayed image was recorded to when the first image of the Cine was recorded.
    - 2) File Name - displays the name of the file / image specified in the 'File Name' data entry field, in the 'Save Cine' dialogue window.
    - 3) Image Number - indicates the image number of the image being displayed.
    - 4) Image Number From First - indicates the number images, the image being displayed is, from the first image being saved.
    - 5) Camera Version - indicates the 'Hardware Version' (camera model) used to record the file being saved.
    - 6) Acquired Resolution - displays the width x height the file was recorded at.
    - 7) Rate - indicates the 'Sample Rate' setting the displayed image was recorded at.
    - 8) Exposure - indicates the 'Exposure' setting the displayed image was recorded at.
    - 9) EDR Exposure - indicates the 'EDR' (Extreme Dynamic Range) exposure setting the displayed image was recorded with.
    - 10) First and Last Image - indicates the 'first / last' image numbers of the images contained within the saved file.
    - 11) Duration - indicates the duration of the saved file.
    - 12) Signals - displays the values of all signals sampled by an attached Data Acquisition Unit for the displayed image.
    - 13) Range Data - displays range data (i.e, azimuth / elevation) information embedded in the file being saved.
    - 14) Description - displays the description entered in the 'Play>Cine Info.>Description' field.
  - c. Display Logo - used to embed a 'Logo Image File' (watermark) to the images being saved.
    - 1) Position - specifies the X - Y coordinates (placement) of the 'Logo File Image'.
    - 2) Transparency (range 0 - 1) - specifies the degree of 'Transparency' of the 'Logo File Image'.
    - 3) Logo File Name - used to specify the location / name of the 'Logo File Image'.
  - d. Advanced Positioning
    - 1) Destination Resolution - specifies the Width x Height (size) of the 'Border Data' window.
    - 2) Source Image Position - specifies the X - Y coordinates (placement) of the mages in the "Border Data' window.
    - 3) Annotation Text - specifies the X - Y coordinates (placement) of the selected "Annotation Text' fields in the "Border Data' window.
3. Preview - click the 'Preview' button to display a preview image of the 'border data' settings.

4. Ok / Cancel - click the 'OK' button to apply save the 'border data' with the file(s) being saved, or 'Cancel' to not apply 'border data'.

#### 2.2.8.1.3.9 Multihead Options

Applicable for Phantom v5 / v6 Series camera only.

When saving Cine files from Phantom v5 / v6 Series cameras the system will (by default) save the images from all four imaging heads into a single Cine file. Unique Cine files, for each of the imaging head, can be saved by selecting which camera 'Head(s)' to save in the Mutlihead Options dialogue window.

## 2.2.9 Apply Image Processing Effect (Image Tools)

### STEP-BY-STEP PROCEDURE



1. Click on the Image Tools, , button, then
2. Apply the desired Adjustments.

Move the appropriate slider, to apply the desired image processing adjustment to the images being displayed in the active Preview or Playback Panel. The sliders can be used to adjust the following image processing adjustments:

- a. Brightness (%)

This slide bar is used to adjust the brightness of monochrome or color images. The factory default value is set to 0.00 percent. Moving the slide bar to the left, in the negative direction from 0.00 percent, results in the images being displayed darker, while moving the slide bar to the right or in a positive direction from 0.00 percent results in the images being displayed lighter.

- b. Gain

This slide bar is used to adjust the contrast of monochrome or color images. The factory default value is set to 1.000. Moving the slide bar to the left from 1.000 results in the images being displayed with less contrast, while moving the slide bar to the right from 1.000 result in the images being displayed with greater contrast.

- c. Gamma

This slide bar is used to adjust the gamma correction of monochrome or color images. The factory default value is set to 2.222. Moving the slide bar to the left from 2.222, results in the images being displayed with fewer gamma corrections, while moving the slide bar to the right from 2.222 results in the images being displayed with greater gamma correction.

- d. Saturation

This slide bar will only be displayed with color cameras. It is used to adjust the color saturation of the images being displayed. The factory default value is set to one. Moving the slide bar to the left, results in the images being displayed with less brilliant color, while moving the slide bar to the right results in the images being displayed with more brilliant color.

- e. Hue (°)

This slide bar will only be displayed with color cameras. It is used to adjust the color hue of the images being displayed. The factory default value is set to 0.0 degrees. Moving the slide bar the dominant color will change.

- f. Manually perform Post Interpolation White Balance or White Balance adjustments.

Because of the different 'colors' of various types of light sources, a color cameras' preview images may have a color tint that may not appear quite right during setup. The Phantom camera has several adjustments methods to assist in correcting image color. Using the fast and easy to use White Balance control should be the first step in color adjustment.

1) Post Interpolation White Balance

This will be displayed for an interpolated (ProRes) CineMag file. You can change the white balance by moving Gain Red and Gain Blue sliders.

2) White Balance

White balance on ph7 cameras cines can be modified by moving Gain Red and Gain Blue sliders. White balance on ph16 cameras can be modified also by moving Temp (K) and Tint sliders.

Temp (K) – is the Color temperature in Kelvin allowing the end-user to better match for lighting conditions. Color temperature only effects the red and blue color components.

Tint - Adjusts the magenta and green on top of the color temperature.

3) Default White Balance

Selecting the Default White Balance button will set the white balance setting back to the factory default settings.

3. Specify the Advance Adjustment

Access to the Advanced Adjustments dependent on the camera model the images in the preview panel or playback panel are being generated from, not all cameras support the ability to set the following Advanced Adjustments:

a. Flare (%)

A Flare slider can be used to adjust the Flare video adjustment.

b. Pedestal

Adjusting the pedestal values redefines separate video monitor RGB (Red, Green, Blue) brightness adjustments. The Pedestal option allows the end user to adjust a percentage of the:

1) Red Pedestal

2) Green Pedestal

3) Blue Pedestal

c. Gain

Different devices detect or reproduce a given R G, B, (Red, Green, Blue) value differently, since the color elements (such as phosphors or dyes) and their response to the individual R, G, and B levels vary from manufacturer to manufacturer, or even in the same device over time. Adjusting the R, G, and B gains can be used to increase or decrease the individual R G, B, levels.

d. Gamma

The R G, B, (Red, Green, Blue) gamma adjustments can be used to bring out details of the images by adjusting the non-linear relationships between the R G, B, signal levels and the brightness of their output, (a small signal level change at low voltage produces a larger variation in brightness than the same change in level at high voltage. Adjusting these gamma settings is the compensation for this non-linearity. Only available when Gamma value in Adjustments subpanel is equal to 1.

4. Adjust the Tone

Tone is a lookup table that is applied to all three color (R, G, B) components that allow the

end-user to convert any input value to any output value to create a tone curve applied to the images being outputted from the camera. The horizontal input is on the 0x axis while the vertical input is on the 0y axis. Both inputs are assumed to have conventional values set from 0.0 to 1.0, (1.0 correspond to the maximum pixel value, i.e., 255 on 8-bits or 4095 on 12-bits).

The end-user only needs to specify a few intermediate points to create a unique tone curve. The software fills the intervals between the points using spline functions. As the point coordinates are entered into a table, the software updates the tone curve and provides the end-user with visual feedback of the tone curve shape.

- a. To create a Tone Table (tone curve)
  - 1) Right mouse click along the curve, then drag the point(s) to change the position.
    - The XY graph represents the tonal range from shadows (left) to highlights (right).
    - Points above the line increase brightness; points below decrease it.
  - 2) Alternatively you can create a tone curve by filling the numeric table with point-coordinates with values between 0.0 and 1.0:
    - 1) Click on the data entry field in the row just below the X column to adjust the vertical input, then
    - 2) Enter a value between 0.0 and 1.0.
    - 3) Click on the data entry field in the row just below the Y column to adjust the horizontal input, then
    - 4) Enter a value between 0.0 and 1.0.
    - 5) Press the Enter key to apply the curve.
- b. To delete a point in the Tone Table:
  - 1) Click the down-arrow to the left of the Tone Table select, then
  - 2) Highlight the point to be removed in the Tone Table, then
  - 3) Press the Delete key.
- c. To reset the tone curve back to the tone curves' conventional values (0.0 to 1.0) click the Reset button.
- d. To Save the tone curve along with other image adjustments:
  - 1) Enter a name for the tone curve in the Label entry field, then
  - 2) Click the Save button located at the bottom of the Image Tool dialogue window.

#### NOTE

Cines saved with tone curve adjustments will retain the tone curve as part of the Cine file meta-data. The tone curve associated with an opened saved Cine file can be redefined as per the end-user preference.

7. Click the Rest button to reset the tone curve back to the tone curves conventional values (0.0 to 1.0)
5. Adjust the Color Matrix.
 

There are maximum four color matrices that can be created or edited. The matrix drop-down is used to select a matrix.

The associated G-R, B-R, R-G, B-G, R-B, and G-B fields, below the matrix number field, are the specific color matrix variables. G-R represents green into red, B-R represents blue into red and so forth.
  6. Use the Save button to save the Image Tools Settings to a file.
 

At the time of this writing the Save button is not available for all camera models.

7. Use the Load button to recall image tools settings that have been saved to an Image Tools Settings file.

At the time of this writing the Load button is not available for all camera models.

8. Click the Default button to reset all Image Tools options back to the factory default settings, except for the:
  - a. Post Interpolation White Balance or White Balance, and
  - b. Color Matrix settings.

### 2.2.10 Erase All Flash

The Erase All option is used to purge all Cine files stored in a Phantom camera's optionally installed integrated non-volatile Flash memory module, Phantom CineMag, or Phantom CineFlash.

#### STEP-BY-STEP PROCEDURE

1. Click the Erase All .. button.

**RESULT:** An Erasing Flash message along with an Erasing Flash progress indicator will be displayed. Any Cine file stored in the selected camera's integrated non-volatile Flash memory, Phantom CineMag or Phantom CineFlash will be erased.



**Part**



### 3 Service & Support



## AMECARE Service Offerings

**Maintenance, Support and Education that delivers ultimate satisfaction and operational confidence for the user**

Product and operator performance directly impact your goals and objectives. To ensure maximum product uptime and operator success, Vision Research offers a complete line of service programs, extended warranties and training classes to meet your specific product or operational needs. Our professional, factory trained service engineers and educators will deliver this training and support through a network of service centers, on-line/self-serve content and user community forums that will help you achieve the results you need.

Customer Service – General inquires, technical troubleshooting or ‘how to’ questions? We’re here to help. Our support centers are staffed from 8:00 AM to 5:00 PM Local Time.

- Professional Repair Services – Fast, accurate and competitively priced repairs for all of your product needs
- Extended Warranties – Designed to add peace of mind and extend the factory warranty coverage that eliminates unexpected out of pocket expenses
- Customer Training – Delivered in a Basic and Advanced format designed to get you quickly using our cameras or to explore the depths of our comprehensive feature set
- On-Site Predictive Support and Training – is designed for customers who have 5 or more cameras. This optional service program offers our customers the opportunity to receive a 1 day visit for refresher training, camera inspection, firmware upgrades and general maintenance
- Loaner Product – Minimizes lost productivity by minimizing project downtime. Should an unexpected camera failure occur, a loaner camera will be dispatched to a customer’s site to restore business continuity while your product is in for servicing

[View](#) a list of AMECare documents available for download

## 3.1 Service Centers



Updated: 11/08/2013

### Contacting Vision Research Service Centers

#### GLOBAL HEADQUARTERS

**Vision Research, Inc. - Wayne, New Jersey**

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For answers to most questions, please visit us at:

[www.visionresearch.com](http://www.visionresearch.com)

For general product, account, order/RMA status inquiries and other non-technical questions please e-mail us at:

[customer.support@visionresearch.com](mailto:customer.support@visionresearch.com)

For technical product support, product operation or applications support please e-mail us at:

[technical.support@visionresearch.com](mailto:technical.support@visionresearch.com)

#### LIVE CUSTOMER AND TECHNICAL SUPPORT

**Serving the Americas and Asia Pacific:**

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## 3.2 Phantom Certification Program

Vision Research proudly offers a new program that delivers a comprehensive training solution for users of Phantom cameras. The Phantom v-Series Camera Certification Training Program is a two-tiered training program that can reduce in-house training expenses and enhance your workforces' productivity. Phantom v-Series Camera Certification Training Program

Our Phantom v-Series Camera Certification Training Program helps engineers and technicians better understand Phantom cameras, as well as the use of Phantom software, accessories, and applications for high-speed imaging; that will deliver high quality technical and product education you require.

Our instructors provide an in-depth customer-focused hands-on learning experience for our Phantom products as well as the basics in photography through a combination of lectures; exercises, labs, and training solutions. Class size is limited to eight students per session to ensure that each student receives the individual attention he or she may need.



"Our Phantom v-Series Camera Certification Training Program helps engineers and technicians better understand Phantom implementations, use of Phantom software and hardware, and applications," says Frank Mazella, Chief Instructor for Vision Research, "and delivers high quality technical and product education our customers' require. We believe this will allow them to maximize the use of our products and the effectiveness of their personnel."

If you are interested in attending, or have any question regarding the training, please contact your local Vision Research sales representative; or, use our "[Contact Us](http://www.visionresearch.com/Contact-Us/Contact-Form/)" form (<http://www.visionresearch.com/Contact-Us/Contact-Form/>) to request more information.

For a schedule of our training classes go to: <http://www.visionresearch.com/News--Events/Events/Training/>

If you are in need of training for television or motion picture production applications, please contact [AbelCine](#) if you are in the US or Canada, or your local Phantom sales representatives worldwide.

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