

PCC Revision 3.3 Release Notes

Full version: 3.3.781.0

Includes notes from 3.0 and 3.1

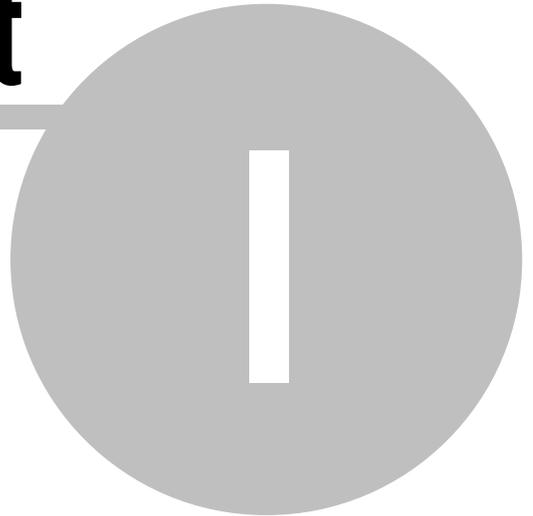
Vision Research

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Part



1) What's new in PCC (Phantom Camera Control) 3.3

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

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

New camera & CineMag Support

- Full support has been added for v2640 and v1840, including the CineMag files when accessed in a CineStation IV
- Support has been added for 8TB CineMag V recording media
- Support for VEO4K-L camera models has been added
- Support has been added for VEO E-310L and VEO E-340L cameras

New feature support

- A new P12L format is available, in addition to the standard P10 packed format, when saving Cine raw files from RAM. This is a linear format meant to provide efficient file downloading while retaining 12bit image data. This is available for cameras running a minimum of firmware version phfw.112
- Added support for auto exposure "Lock on Trigger" for certain cameras with this feature included
- Simulated cameras now include Programmable I/O in VEO4K and v2640
- Simulated cameras now include all v2640 modes including HS, Binned and Brightfield modes.

Improvements

- EULA acceptance change: On the initial start of PCC or CV the program will verify the EULAs has been accepted. The user must accept it to use PCC/CV. This is a one time operation. Once it has been accepted the user will not see the dialog again
- Added Trigger Frame Position checking. This is accessed in the Preferences menu. When the total number of frames changes this can cause the trigger position to change to an undesirable value. A new preference setting called "Persistent Trigger Position" has been added. Enabling this will cause the position to maintain its relative position when the number of frames changes.
- Improved detection of DAQ signals
- Changed the default Color Interpolation Algorithm to "Best"

Bug fixes

- Multi Cine Save default format would default to interpolated Cine file format. This has been fixed so the default is Cine Raw
- Cines recorded with lower than 100fps would report incorrect frame rate in exposure. This has been fixed.
- When logo is added to border data the application would crash when converting to .avi. This has been fixed.
- Corrected some errors in logging output
- Fixed issues with mode switching and the displayed mode (GS, Rolling, HS, Binned, etc)

1.2 PCC Release note archive

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

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

1.2A) PCC (Phantom Camera Control) 3.1

The following changes have been made to the Phantom (PCC) Camera Control Application - Help (Software Version 3.1.772 and 3.0.769.0), including:

- **New: Camera Support**

Support for the Phantom v2640 camera model has been added (HWVer: 30001), along with support of the VEO4K-L camera model (HWVer 7502).

- **New: EULA Acceptance**

On initial use of the PCC (Phantom Camera Control) and CV (Phantom CineViewer) applications the end-user will verify the EULAs has been accepted. The end-user must accept it to use PCC / CV. This is a one time operation. Once it has been accepted the user will not see the dialog again.

- **New: Camera Control Panel Help Removed**

The legacy 'Camera Control' has been removed from the Help pull-down selection list.

- **Fix: Incorrect 'Base EI' Value**

PCC now displays the correct base EI (Base Exposure Index) value when changing 'Sensor Mode' for the VEO4K and Flex4K camera models.

1.2B) PCC (Phantom Camera Control) 3.0

The following changes have been made to the Phantom (PCC) Camera Control Application - Help (Software Version 3.0.769.12), including:

- **New: Camera Support**

Support for the following camera models have been added (Model / Hardware Version Code):

Phantom Miro N5 and N-JB (Junction Box) / 2501

Phantom Flex4k-GS / 4001

Phantom VEO4K 590L / 590S, VEO4K 990L / 990S, VEO4K-PL / 7501

- **New: Simulated VEO Camera Feature**

Simulation of Programmable I/O for Phantom VEO camera models has been added.

- **New: Phantom Global / Rolling Shutter Control**

The Flex4K-GS and VEO4k have the unique ability to switch between global and rolling shutter. Change the mode in 'Camera Settings > Sensor Shutter Mode'. Once selected it takes a few seconds to load, and then the camera must be chosen again from the top Camera drop-down menu.

In global shutter mode, the Phantom camera can be used by industrial and scientific applications where a rolling shutter cannot be used due to possible motion artifacts and the progressive-scan behavior of each exposure. While

rolling shutter cameras typically achieve higher dynamic range and lower noise, the way the electronic shutter integrates can be problematic for high-precision measurements and scientific applications.

- **Change: Low Light Feature Functionality**

The 'Low Light' feature is permitted only when the camera is in 'preview' mode. If the 'low light' feature is selected while a Phantom camera is in the recording (capture) mode a 'Low light is not permitted during recording anymore.' message will be displayed. 'Low Light' is intended for setup only, and this change in functionality was implemented to prevent Cines from accidentally being recorded with wrong settings.

- **Change: Camera Enumeration**

Camera Enumeration refers to the way networked cameras are accessed within PCC. The new behavior is particularly useful when working with several cameras at the same time within the application. Even with a single camera, users will notice that the software recovers from a camera being disconnected much more gracefully than in earlier versions.

Previously, Phantom cameras would be removed from the 'Manager' tab 'Cameras' list when a camera disconnected from the control computer / camera network. PCC now maintains disconnected Phantom cameras and marks them as 'Offline', and displays both the Preview and Play Panels with a yellow border when cameras are disconnected.

When re-connected the camera(s) will be 'revived' automatically by the software, which places them in the same position on the list, with their previous camera number.

PCC has also removed the 'Refresh button, and changed the following nomenclatures (not functionality):

'All network cameras' to 'All discovered cameras'

'Camera Visibility' to 'See Cameras Option'

'See all available cameras' to 'All discovered'

'See only previous camera' list to 'From visible list'

Lastly, the list of 'Visible camera' is enforced exactly as set by the user when defined using the 'From visible list' option. If cameras are absent from the list at PCC startup, they are simulated and revived when they reconnect if they are disconnected later they will go offline and be revived when reconnected.

- **New: Diagnostics and Utilities within Nucleus Program**

Vision Research has added two new tabs to the Nucleus application within PCC software:

Diagnostics - allows the end-user to view / save diagnostic values that are constantly being updated for the selected camera, and / or display one of eight different 'Test Patterns' (stored in the camera's non-volatile memory area. The results of the diagnostics can be written to / appended to / viewed from a user-specified log file.

Utility - allows an end-user to load a camera change file supplied via Vision Research if required.



The Diagnostics and Utility features are typically used in conjunction with Technical Support .

- **New: Cine Settings > Exposure Index Options**

EI (Exposure Index) is a reference value for the ISO level at the current image settings. The effective EI value is referenced after the image processing (Image Tools) settings are dialed in.

On cameras that support Exposure Index, PCC includes the ability to apply EI tone curves to increase the effective ISO of the camera up to 5X the base value. Directly below the Exposure Index pull-down selection list, PCC displays the combined value that takes into account other image processing settings. This is the effective Exposure Index value, which should be used for determining lighting and aperture.

- **Change: Trigger Functionality with multi-cine partitions. Available on select cameras with firmware greater than phfw.100**

This new trigger functionality improvement eliminates the short delay previously required to trigger a camera between recording to the next partition. This is referred to as 'seamless-cine-switching'. Triggers are also stored and Cines are queued up, to ensure no important frames are missed in between Cine segments.

- **New: High-Voltage Trigger Signal Support**

Rising / Falling HV - HV is high voltage and is tested up to 28volts (airborne voltage) on cameras that have it. Usually on an aircraft, the trigger is a switch closure to 28 volts, or it's left open circuit. The circuit typically registers at about the 6+ volts range – so anywhere from 6V to 28V will cause a trigger.

- **Updated: Range Data**

Range Data can now be applied to partitioned memory. Previously the Range Data feature was only for non-partitioned RAM.

- **Updated: Continuous Recording**

Continuous Recording mode will remain active after camera reboot in case of power failure or accidental loss of power.

- **Fix: Multiple Border Data Issues**

- The issue that caused PCC to no longer respond after attempting to add 'car engine' Border Data has been resolved.
- The issue of a user assigned Border Data logo not being able to display correctly with Miro C110 camera models with phfw.63 firmware installed has been resolved. Note: The Border Data options will only be available when the 'Save as file type' format is an interpolated format.
- Resolved the issues associated with saving Border Data with the Miro C210 and Miro C210J camera models.

- **Fix: Signal (Data Acquisition Unit) Issues**

The issue associated with the exporting 'sample time' from an NI DAQ (National Instrument Data Acquisition Unit) has been resolved, along with the issues associated with channel naming and scaling has been resolved.

- **Fix: ProRes Image Display**

The issue associated with every second ProRes formatted image has been resolved.support.

Part



2) Changes to Phantom Nucleus (Camera Repair and Firmware update Utility)

New in version 3.3

- Added display of the camera uptime and count of startups to the nucleus menu. These counters are only applicable to cameras that support this feature and that were built starting approximately September 1 2018
- Added “Get All Info” button in the diagnostic tab

2A) Archived Changes in Nucleus from version 3.1

- **New: Camera Repair and Firmware Upgrade (Nucleus) Features**

Vision Research has added two new features to the Camera Repair and Firmware Upgrade (Nucleus) applications:

Diagnostics - allows the end-user to view / save diagnostic values that are constantly being updated for the selected camera, and / or display one of eight different 'Test Patterns' (stored in the camera's non-volatile memory area. The results of the diagnostics can be written to / appended to / viewed from a user-specified log file.

Utility - allows end-user to load a camera change file supplied via Vision Research if required.



The Diagnostics and Utility features are typically used in conjunction with Technical Support .

- **New: Camera Information Field**

The PhFW version information field has been added to the Phantom Nucleus dialogue window displaying the firmware version of the associated Phantom camera.

- **New: 10Gb Ethernet IP Address User Modification Support**

The ability to modify the 10Gb Ethernet address of Phantom cameras is now supported. This may be necessary when networking more than two cameras on multiple NICs on a single computer system.

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