

# USB 3.0 Camera Firmware Updater

## Release Notes

### 1. Update from initial release 1.0.0 to 1.0.0.2364 (June 2016)

Changes in this version of the Firmware Updater utility are limited to the Lt1265R camera model. Alterations apply to the Firmware, FPGA1, and FPGA2. However, this updater utility continues to provide the most up-to-date content for the supported camera models: Lt425, Lt225, Lt365R, Lt665R, Lt965R, Lt16059H, INFINITY3-3UR, INFINITY3-6UR, and INFINITY3S-1UR

#### Firmware

- Fix for the Lt1265 decimation issue introduced a bug where decimation stopped working
- Metadata timestamps now supported.
- Set the snapshot count to default value of 1 when LucamCameraReset is used.
- Remapped the gains for saturation at unity gains and matched responsivity with the most sensitive clock (clock 0)
- Camera now reconnecting automatically to the host after USB cable is disconnected while external power applied.
- Camera now resumes streaming after it is unplugged while in snapshot mode.
- Timestamp value now readable.
- Interrogated camera now returns correct FPGA version.
- Allow both LEDS to be toggled and read.
- Calculated and measured frame rates now match, while subwindowing.
- Added a call to disable HDR mode in LucamReset().
- Corrections applied such that the auto functions no longer return a frame mean that is double the target
- Disabled ILook-up Table (LUT) when gamma/contrast/brightness set to defaults.
- Added support for the 2 additional bits of color gain
- Auto exposure flicker adjustment
- Fixed an issue where unplugging the camera while in still mode and reconnecting it, the video failed to stream.
- Adjusted the AUTO\_IRIS\_MAX property, which was not honoured as the max iris value for the iris auto mode.
- Enabled camera time-stamp functionality by setting bit 2 in FPGA register 0xE8 on camera boot-up. This allows us to use LucamGetTimestamp function and query camera for time-stamp since power-up sequence.
- Corrected situation where LUT could be wrong when brightness was negative if contrast was not set to 1.0
- Video mode is set up to decimate then read data, but Still mode is set to read data then decimate.

- Firmware change made to swap the read and decimate registers in still mode
- Iris range issue has been corrected in snapshot mode
- Fixed issue with LUCAM\_STILL\_EXPOSURE\_DELAY value
- Increased minimum required number EOF interrupts to 4, so auto-processing (exposure, gain) kicks in
- Disabled USB3 low power modes
- Added auto gain minimum value
- Increased time delay used when switching from single tap , clock 0 video mode to quad tap clock 2 snapshot modes. Previous delay for this configuration was not long enough and taps were visible in image snapshot.
- Added auto-exposure/auto-gain to snapshot mode.

## **FPGA1**

- Fixed a bug in time stamps
- Add missing ts\_period in register map

## **FPGA2**

- Fixed ss\_trig\_delay at lowest clock rate in CCD\_TIMING\_GEN
- ft\_controller updated