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## Equipment

### IL Cameras ship from Fastec with:

1. CAT 6 Ethernet cable (6')
2. 12v Power Supply with Lemo camera connector
3. USB Flash Drive with Software and Manuals
4. 16GB SDHC SD card
5. Lemo to 3 x BNC I/O cable (Trigger-in, Sync-in, Sync-out)
6. C-mount body cap
7. 3/32 Allen wrench for C-mount back-focus adjustment

### IL Options and Accessories:

1. F-mount or PL-mount (mounted on camera) If present, C-mount, adjustment shims and, 5/32 wrench will be included.
2. WiFi USB adapter
3. Lemo to 6 x BNC I/O cable (Trigger-in, Trigger-out, Sync-in, Sync-out, Arm-in, Arm-out)
4. Trigger Switch
5. Additional 16GB or 32GB SDHC SD card
6. Lenses
7. Tripod and/or Magic arm
8. Lights and light stands



### Control PC Requirements:

1. Windows PC (running Win7, 8, or 10), or Mac PC (Mountain Lion or higher)
2. 6 GB of memory for 1-camera systems, 2GB additional memory recommended for each additional camera
3. Gigabit Ethernet controller. Support for gK Jumbo packets is recommended. (qualifying Thunderbolt-2 and USB-C to Gig-E adapters are available)
4. PC storage for image files: SSD recommended

# IL Quick-Start

## Camera LEDs, I/O

1. Power LED
2. Network Activity LED
3. Storage Activity LED
4. Camera Status LED
5. Sync Activity LED



1. USB OTG (Micro A/B)
2. SDHC (SD-Card slot)
3. GigE Port (RJ45)
4. Sync I/O, Trigger (Lemo)\*
5. HDMI Port (Type A)
6. DC Power In (Lemo)\*\*
7. On/Off button



\*Warning: LVTTTL 3.3v max

\*\*10vdc to 26vdc

# IL Quick-Start

## Software

Before setting up the ILx, you must first install the Fastec FasMotion Controller software on a Windows PC or Mac.

With it you may configure all recording parameters including Recording Mode, Session Length, Resolution, Frame Rate, Exposure, Color Balance, Autosave, Trigger point, and Sync options.

### To install the Windows version onto a PC:

1. Run the FasMotion install file, FasMotion\_2.4.2.exe (or some other version), on your PC. You may wish to copy the install file to a secure location on your PC for storage.
2. Follow the prompts to install and run FasMotion.

### To install the Mac version:

1. Copy the FasMotion\_2.4.2.dmg (or some other version), to your Mac.
2. Double click on the .dmg file to install.
3. Move the FasMotion icon to the Applications folder. Once installed, FasMotion will look and behave the same on a PC and Mac. All instructions below, as well as those found in the IL3 / IL4 / IL5 Operator's Manual are applicable to either version.

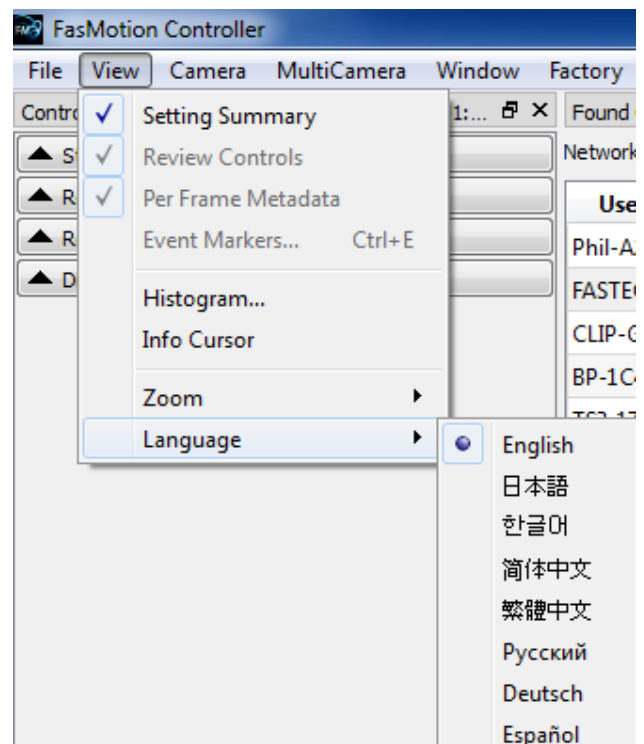
### Network Setup on the Computer:

1. Disable all network adapters on the computer (including WiFi) except for the one to be used for the camera.
2. Configure Local Area Connection Properties for Internet Protocol Version 4 (TCP/IPv4) to obtain an IP address automatically (DHCP).
3. In Advanced settings for the Gig-E adapter , turn on "Jumbo Frames" (9000k) if available. (For more network settings, please refer to the Operator's Manual.)
4. Connect the camera to the computer's Gig-E port using CAT-5e or CAT-6 Ethernet cable.

## Language

### To Set the Language for FasMotion:

1. Select "Language" from the View menu in FasMotion.
2. Select the language of your choice.



# IL Quick-Start

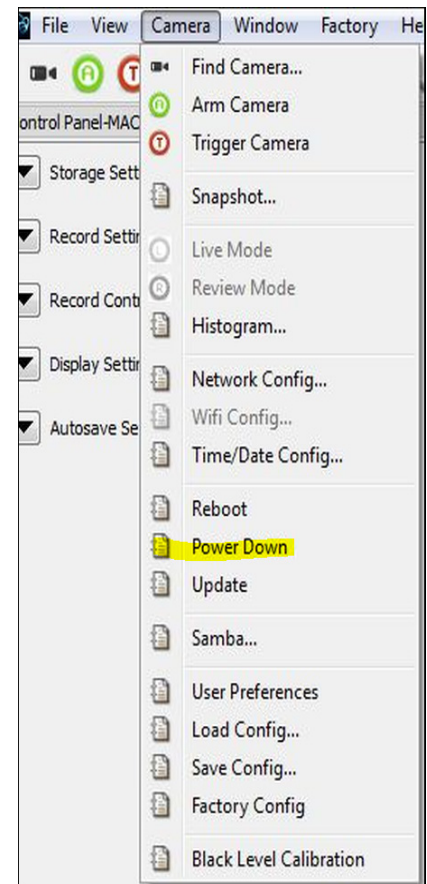
## Power

### Power up the camera:

- The camera will begin to boot up as soon as power is applied. During the power-up cycle, first the Camera LED will go green for a about 15 seconds, then the Power LED will go green and stay on. Within about 45 seconds both the Camera LED and the Power LED will be green. At this point the camera is booted up.
- The On/Off button on the camera may be used to turn the camera off and on while connected to power.

Once connected to FasMotion, the camera may be powered down via the software: Camera/Power down

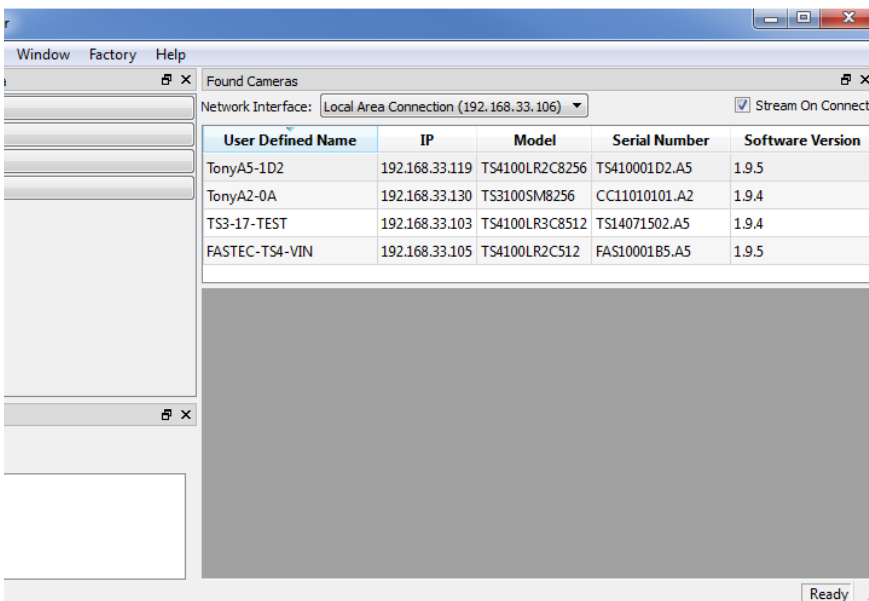
**Note: If the camera is shut down by simply removing the power, the camera's current configuration will not be saved.**



## Connect

Connect the IL camera directly to the network interface of the PC or to a connected wired network using the CAT 6 cable provided with the camera.

All IL and TS cameras on the network should appear in the "Found Cameras" window in FasMotion.



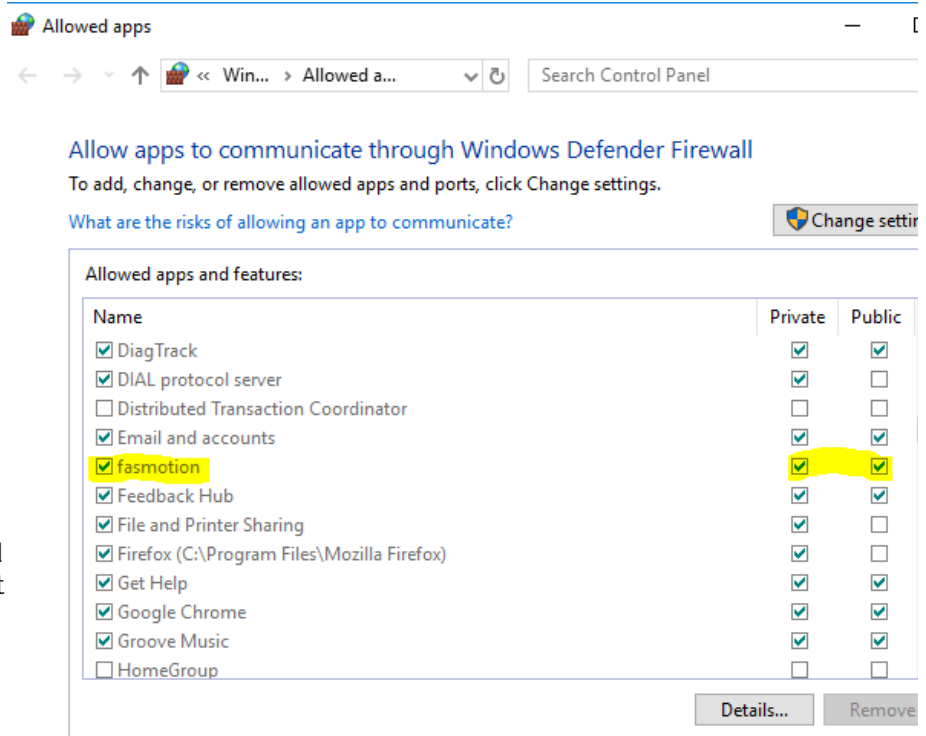
Cameras are listed by name and other identifying information including IP address, serial number, etc.

Double-click on the line for any camera you wish to open in FasMotion.

# IL Quick-Start

## If the camera window opens without an image:

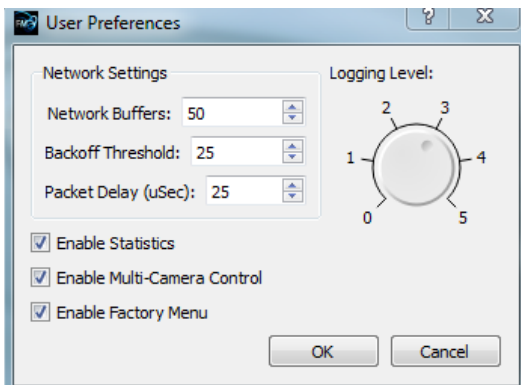
- Check that **all** instances of FasMotion are included in the "Allowed programs to communicate through Windows Firewall"
- Disable unused NICs including WiFi



## If the camera does not appear in the Found Cameras window:

- Make sure you have selected the correct Network interface from the drop-down list
- If there is a direct connection between the camera and PC, you may need to reboot the PC with the camera connected and powered on in order to get a connection

## Preferences

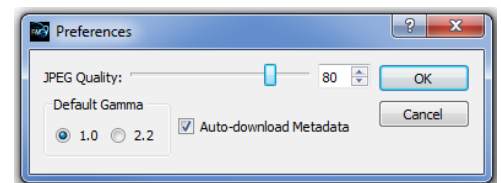


### User Preferences opens from the File menu:

- Network settings for optimizing UDP transfers from the cameras. See Appnote 5 in the Operator's manual for details.
- Enable check boxes for Statistics (logs file download statistics), Multi-Camera Control, and the Factory Menu (for service and support)
- Logging Level control (for service and support)

### Camera Preferences dialog opens from the Camera menu:

- JPEG quality controls the relative size and quality of JPEG and AVI files saved from the ILx. The range goes from 1 to 100. The default setting, 80, is a good compromise between quality and size.
- Set the Gamma to the setting in which the displayed image (on the computer display or HDMI monitor) best matches the scene. Most LCD and LED monitors will look best at 2.2. Use 1.0, the default, if in doubt to preserve image quality, then adjust as a post-process via the Display tab.
- Auto-download Metadata automatically downloads metadata used by FasMotion track the location of I/O data used for creating markers in Playback.



## Record Setup

### Open the Record Settings Tab on the Control Panel

#### Resolution, Frame Rate and Exposure:

- Use the Frame Aspect Ratio pull-down to select the shape of your Region of Interest (ROI)
- Adjust the Width and Height sliders or for the required resolution.
- Select the Frame Rate for your recording using the Frame Rate slider or edit box.
- Adjust the Shutter Speed to get the proper exposure for your recording.
- Cameras with the Dual Mode, "D" option, may be used in either "Basic" mode, or "Long Recording" mode, controlled by the LR Mode check box on the Record Settings tab. (This setting is grayed-out on the IL3.) When this selection is changed, the camera will reboot into the selected mode. When going from "Long Recording" to "Basic" mode, the SSD will have to be reformatted before it can be accessed.

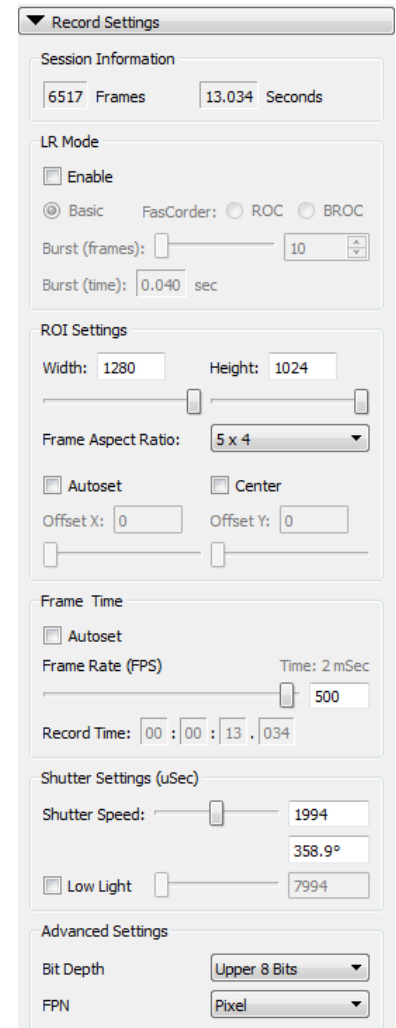
**In Long Recording** (LR) mode, select Basic or FasCorder ROC (Record on Command) or BROCC (Burst Record on Command) via the radio buttons on the Record tab.

For Standard and Long Record Basic mode recordings:

- Click on the Green Arm button  to begin recording.
- Click on the Red Trigger button  to record post-trigger frames and end the recording.

For **Long Record FasCorder ROC** recordings, the Arm button is used to begin the session, and then the Trigger button toggles the camera between recording and paused states. Click on the Arm button again to stop the session and go to Playback.

**BROCC** recordings work similarly: Arm to begin and end sessions, but the camera records a specified number frames (a burst of frames) each time it receives a trigger.

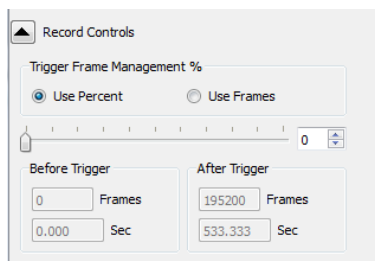


The Record Settings window is divided into several sections:

- Session Information:** Displays 6517 Frames and 13.034 Seconds.
- LR Mode:** Includes an 'Enable' checkbox, radio buttons for Basic (selected), FasCorder, ROC, and BROCC. It also has sliders for Burst (frames) at 10 and Burst (time) at 0.040 sec.
- ROI Settings:** Includes Width (1280) and Height (1024) sliders, a Frame Aspect Ratio dropdown set to 5 x 4, and checkboxes for Autoselect and Center. Offset X and Y are both set to 0.
- Frame Time:** Includes an Autoselect checkbox, a Frame Rate (FPS) slider set to 500, and a Record Time display showing 00:00:13.034.
- Shutter Settings (uSec):** Includes a Shutter Speed slider set to 1994, a display for 358.9°, and a Low Light checkbox with a slider set to 7994.
- Advanced Settings:** Includes a Bit Depth dropdown set to Upper 8 Bits and an FPN dropdown set to Pixel.

## Triggering

### Open the Record Control Tab to Set the Trigger Position For Standard and LR Basic Recordings:



The Record Controls window shows the Trigger Frame Management % section with two radio buttons: 'Use Percent' (selected) and 'Use Frames'. Below this is a trigger slider set to 0%. Under the slider, there are two columns: 'Before Trigger' and 'After Trigger'. The 'Before Trigger' column shows 0 Frames and 0.000 Sec. The 'After Trigger' column shows 195200 Frames and 533.333 Sec.


- With the trigger slider all the way to the left (0%), the (Armed) ILx will begin recording images when a trigger is received. It will stop as soon as the session buffer is full.
- With the trigger slider all the way to the right (100%), the (Armed) ILx will begin recording images into a circular buffer and will stop recording when it receives a trigger.
- With the trigger slider at 50%, the (Armed) ILx will record into 1/2 the session length into a circular buffer, then record the last 1/2 of the session after it receives a trigger.









Trigger position is not used for LR FasCorder (ROC or BROCC) recordings.

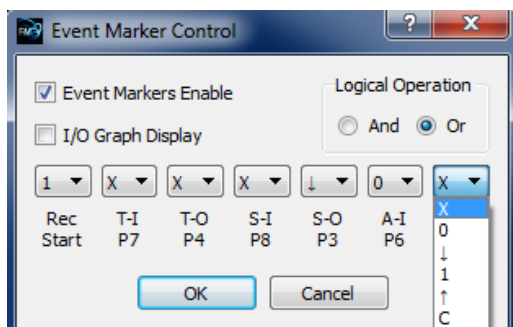
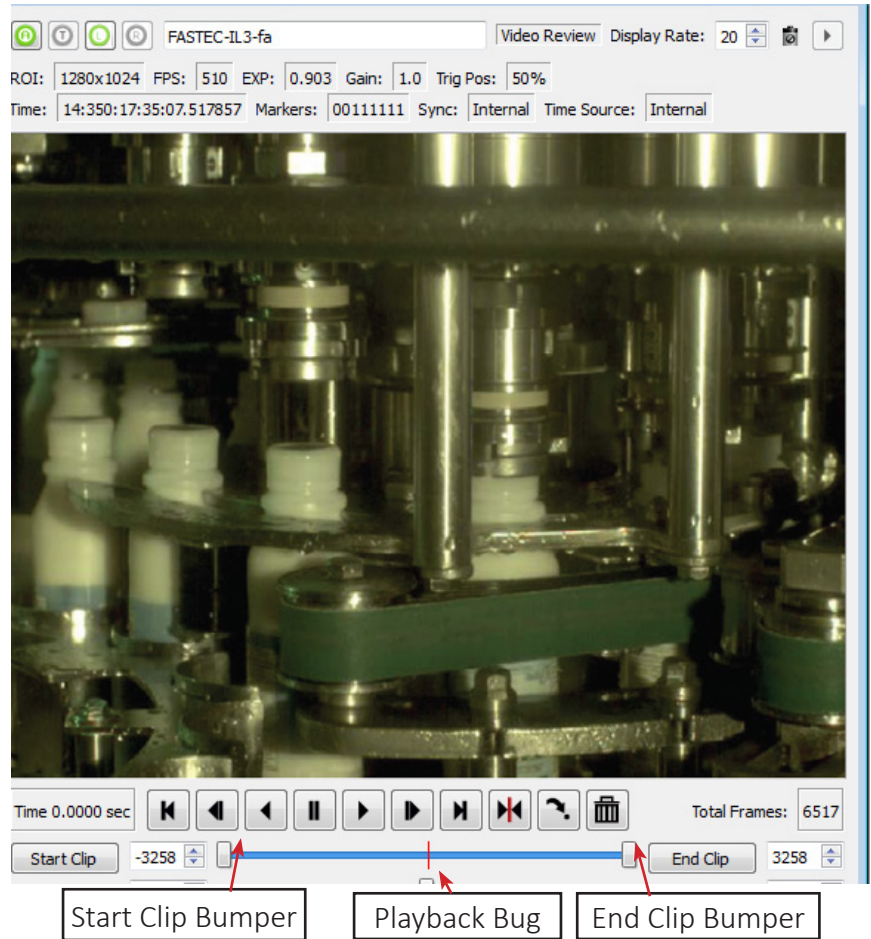


## Playback



### Playing Back captured Video:

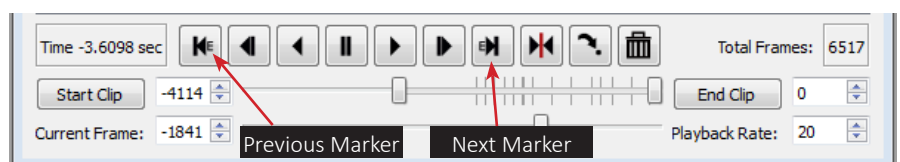
Video Controls will become available immediately when a capture has been completed, when a CAP file has been loaded into memory, when a video has been selected for playback via "Open Video File..." from the File menu, or when the operator clicks on the Red Review button .

- The Playback Bug can slide to any frame of the video. The Start and End Clip Bumpers can be moved to limit the playback to any portion you choose. The bumpers may be moved with the mouse or by clicking on the Start Clip or End Clip buttons, which move the chosen bumper to the present frame. Start and End Clip locations are also used to choose the portion of the recording to be saved.
- The playback buttons function as follows:
  -  move to beginning
  -  one frame back
  -  play backwards
  -  pause
  -  play
  -  one frame forward
  -  move to end
  -  move to trigger frame.



**Event Markers** may be enabled via the Event Marker Control dialog accessed via the image window context menu.

If Event Markers are enabled,  and  buttons are used to jump between events. Notice in the figure, below, that the icons now include the letter "E."



## Save Video

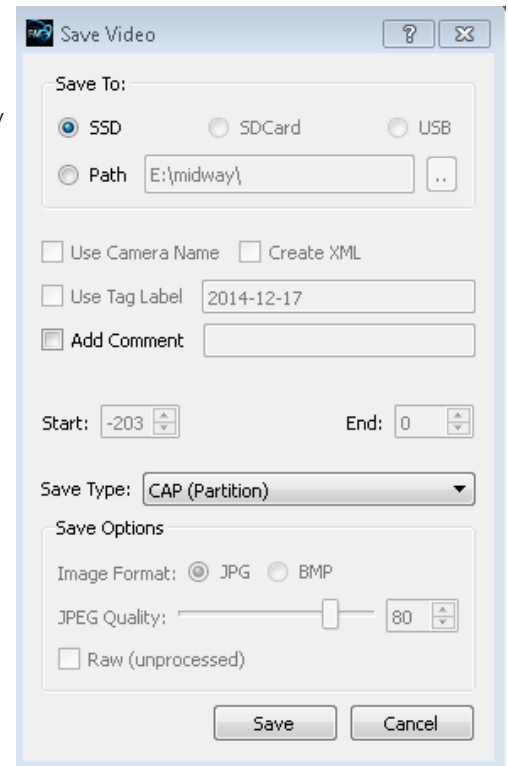
### Saving captured video:

The Save Video dialog box opens by selecting "Save Video File..." from the File menu or the image window context menu, or by simply typing Ctrl+S.

1. Set the target location from the radio buttons: Path (to a computer drive), SSD (to the camera's internal hard drive), SD Card (to an SD Card in the camera), or USB (to a USB device connected to the camera).
2. Adjust start and end frames (this can also be done using the bumpers in the playback controls).
  - This feature is not available for CAP (Partition) files
3. Select the "Save Type"--this may be AVI, DNG, BMP, JPEG, TIFF, or CAP file (available file types vary depending on media).
4. Click on "Save" to begin the transfer.

### Some Save options depend on file types chosen:

- If an AVI file is saved to the computer (Path), the Image format choices are JPG (compressed MJPEG images) or BMP (un-compressed bitmaps).
- If a JPG Stack or and AVI/JPG is saved, the JPEG Quality slider becomes active, allowing adjustment of the compression/quality.
- If a TIF Stack is saved, the Raw (unprocessed) check box becomes active. Note that the TIF(raw) format is a mono (not colorized) image.
- TIF-Raw, DNG, and CAP files are the only file types not subject to processing on the camera. They are also the only file types in which the full bit depth is maintained. (All other file types are saved in 8 bits.)



## Contact Us!

*We want your experience with FASTEC cameras to be as pleasant and productive as possible!*

*We are also very interested to know how your camera is working for you and if there is anything we can do to improve your results, whether that is helping you find the best lens, or helping with camera setup.*

*Do not hesitate to reach out to us:*

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