# *The MotionMonitor xGen Hardware Guide: Configuring Microsoft LifeCam (and other digital video cameras)*

For computers running a Windows 10 operating system the digital camera settings need to be configured using the *Yawcam* software, found on the desktop of your data collection computer. The settings below were configured for normal lighting environments in order to optimize the measurement rate, video quality and consequently data synchronization, for the digital video captured in *The MotionMonitor xGen*. These settings should be confirmed before any data collection sessions as they are not retained when the camera is disconnected from the computer or when the computer has been powered off. If the camera properties are configured with the Auto settings enabled or such that the camera is receiving too much light, the camera may not be able to operate at the desired measurement rate.

1. Open the *Yawcam* software and select *Device properties* under the *Settings| Device* menu.
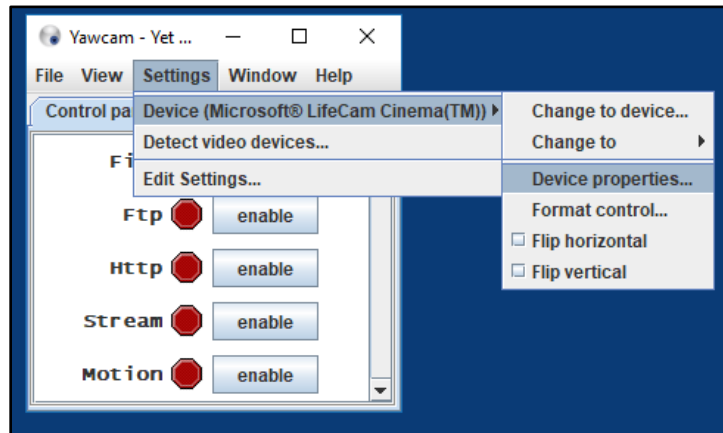

2. The settings for *Video Proc Amp* and *Camera Control* should reflect what is seen in the screenshot below, but may vary based on environmental factors.
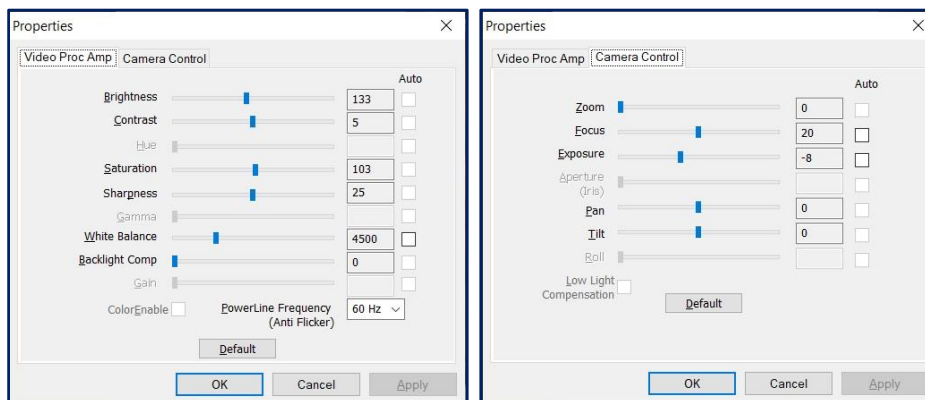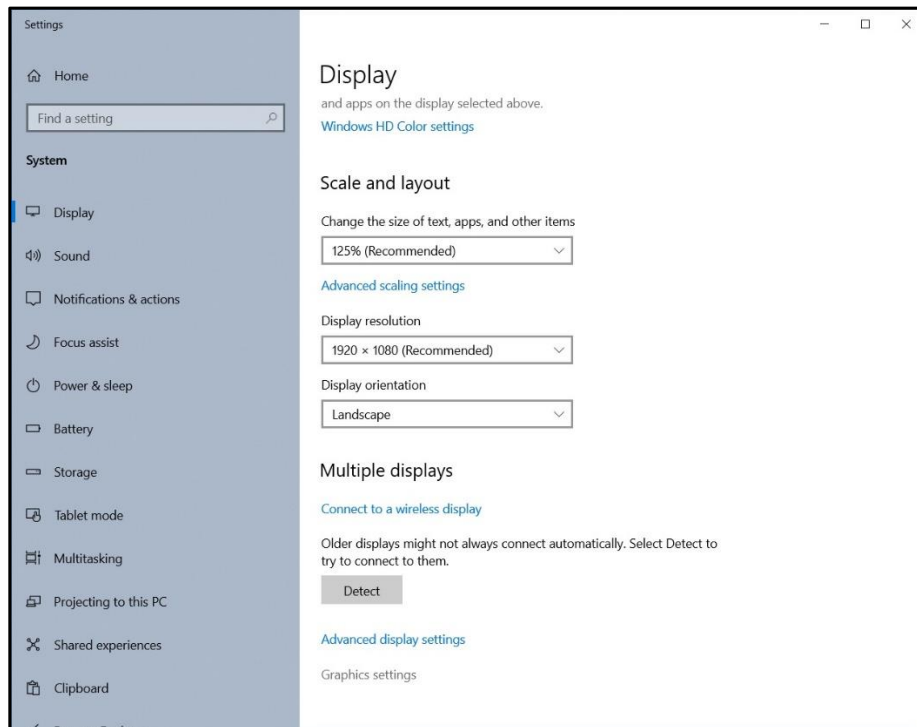
If performing data collection on a laptop system, the following settings must also be confirmed to ensure optimal video performance. These settings should be reviewed before each data collection session, as they are not retained when Windows Updates are performed.
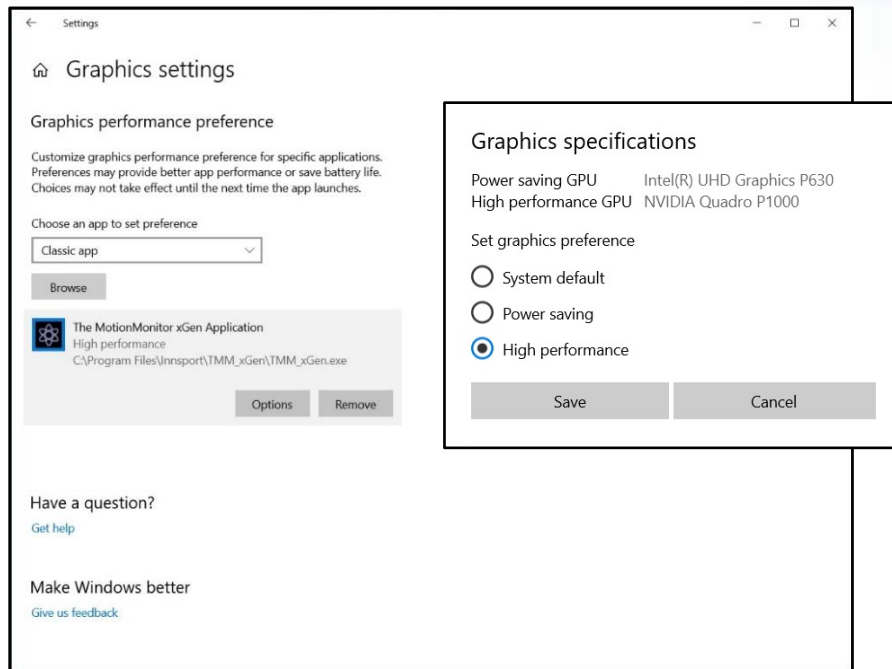
3. Right click on the desktop and select Display settings.
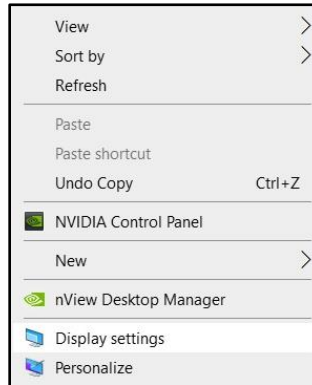
4. Select Graphics settings.

5. Confirm that The MotionMonitor xGen Application is set to "High performance", as shown below.


6. Start The MotionMonitor xGen and go to the Setup Components Window.

7. From the Hardware node in the Setup Components window add the Camera device through the Add button at the bottom of the Components window or right-click on the Hardware node to add the device.
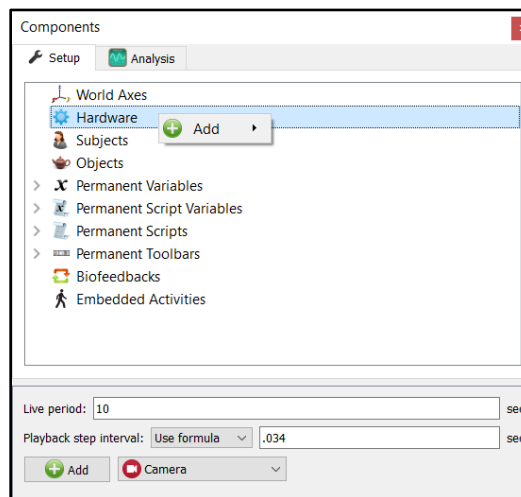
Note that the Playback step interval in the Hardware parameters panel has been set to 0.034 seconds. This interval controls the number of frames that the playback cursor is advanced when clicking on the slider bar with the mouse within an activity. In this example, the step interval was set to 0.034 seconds to match the video speed of 30 frames per second.

8. From the Camera Device parameters panel, click on the Setup arrow to expand the Setup parameters and ensure that "Webcam" is selected from "Camera type" drop list.
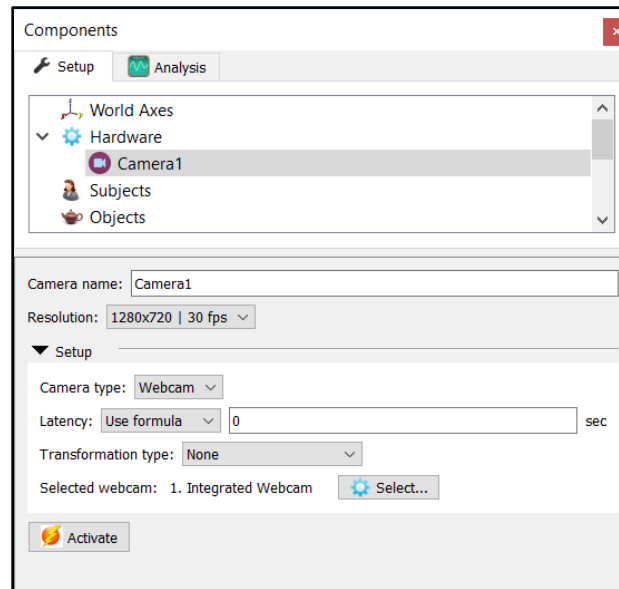

Click on the "Select" button to select from a list of discovered video devices connected to the computer. The "Transformation type" can be selected from the drop-list if a particular video image orientation is desired.

Select the desired resolution and frame rate supported by the selected webcam from the "Resolution" drop list.

The latency edit field should be specified with a positive or negative latency that can be determined experimentally through data recordings. With a latency of 0, if the video is before the other data streams, the latency should be negative. If the video is after other data streams, the latency should be positive. Note that modifying where USB components are connected to a computer can impact system performance and video latency.

Click the "Activate" button when the desired settings have been selected and to view the real time display of the camera or to perform recordings.

9. The time required for processing and alignment of video files can vary depending on the video length, frame rate and resolution. The method in which video files are processed can be selected from the Edit Recording Paramers dialog. Click on the Recording|Edit Recording parameters menu or Edit Recording parameters icon.
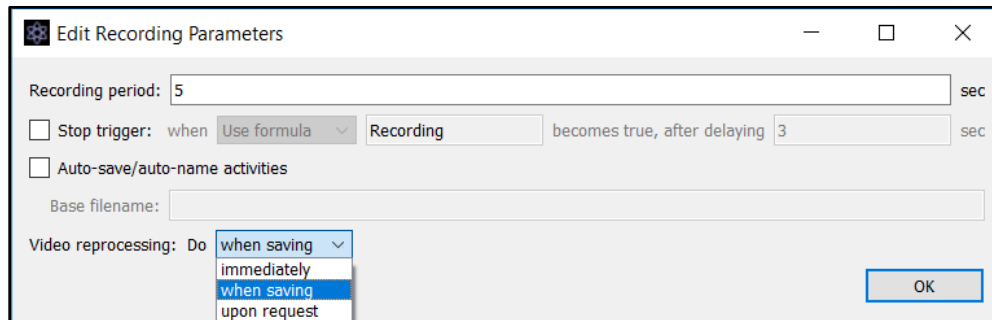
Video files can be processed "immediately" after the recording has completed, "when saving" the activity file or "upon request", which results in the software prompting the user to run the reprocessing each time the activity is opened, until the reprocessing has been performed.

Batch processing of activity files with the video reprocessing set to "upon request" can be performed through the File|Reprocess Video menu in the Live Workspace window.

10. When opening an activity with camera data, the camera window will display information for the video file in the top of the display, including the video file name, resolution and frame rate. At the bottom of the video window, the current time in the activity playback, a progress bar for the current time and the total time of the video file will be displayed.