



Using a Redlake X3 High-Speed Camera with MiDAS DA

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Abstract

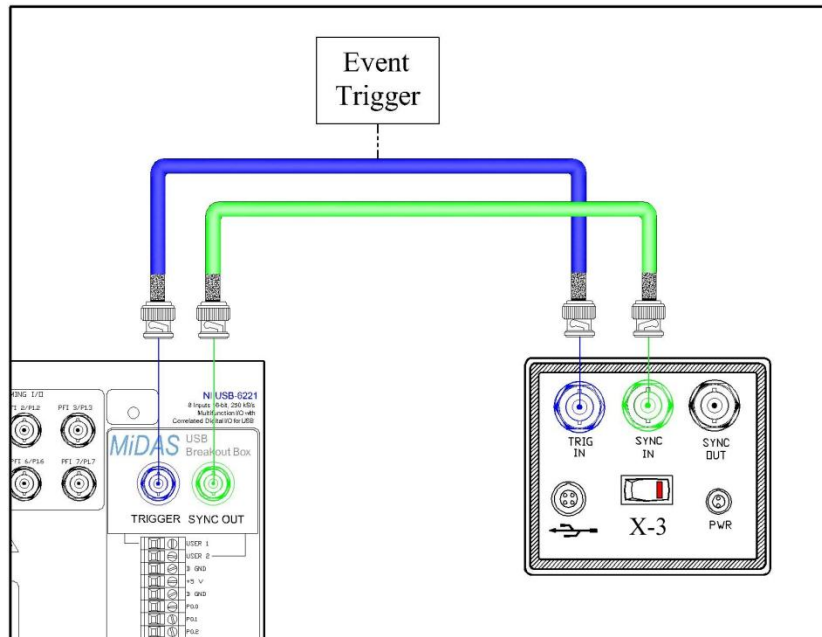
This camera connection guide describes the hardware connections and software settings for using MiDAS DA software with an IDT/Redlake X3 model high-speed video camera running IDT Motion Studio software. This document includes the settings for putting the camera into Slave/External Sync mode.

Instructions

Note: Before connecting your camera, install your data acquisition hardware, MiDAS DA, and Motion Studio software. Turn the camera power on. If this is the first time you are using the camera, try it first with the Motion Studio software before attempting to use the camera with MiDAS DA.


Decide your measurement settings in advance, including the video frame rate, data samples per frame (or total data rate), duration of recording and trigger percentage.

1. Locate the MiDAS DA breakout box connector labeled **Sync Out**. Connect a BNC coaxial cable from **Sync Out** to the connector on the Redlake X3 camera labeled **Sync In**. Next, locate the MiDAS DA breakout box connector labeled **Trigger**. Connect a BNC cable from **Trigger** to the connector on the camera labeled **Trig In**, as shown on the following page.



2. Launch MiDAS DA and configure the number and type of sensor input channels.

Note: For more information on configuring data channels, refer to the MiDAS DA User Guide.

3. In MiDAS DA, enter the video rate into the Sync Out Rate (Hz) field, and the samples per frame in the samples/frame field. Next, use the slider bar or the Trigger Percentage field to set your trigger percentage. Select a Trigger Type from the dropdown menu.
4. Click the green **Record**  button at the bottom left-hand corner of the MiDAS DA window. MiDAS DA will start the data acquisition and also begin sending sync pulses to the camera.
5. Launch the IDT Motion Studio software. Under the Camera tab, enter your video rate, exposure, and any other settings.
6. In the Motion Studio software, under the Record tab, set Record Mode to **Circular**. Set the number of Frames to adjust the record length. Set the Frame Sync to **External**. Set the Sync Cfg to **Pulse High** and the Trigger Cfg to match your Trigger Type setting in MiDAS DA.

*Note: The value entered for the Buffer Size (in seconds) setting in the MiDAS DA **must be greater** than the number of Frames (in seconds) in the Motion Studio software. Also, the value entered for Post-Trigger in MiDAS DA **must be greater** than the entry for Post-Trigger in Motion Studio. If not, the camera may not receive enough sync pulses and will not complete a recording.*

7. In the Motion Studio software, click the red **Record**  button to start recording video.
8. Trigger your recording either by clicking the **Trigger**  button in MiDAS DA or by pressing your external trigger.

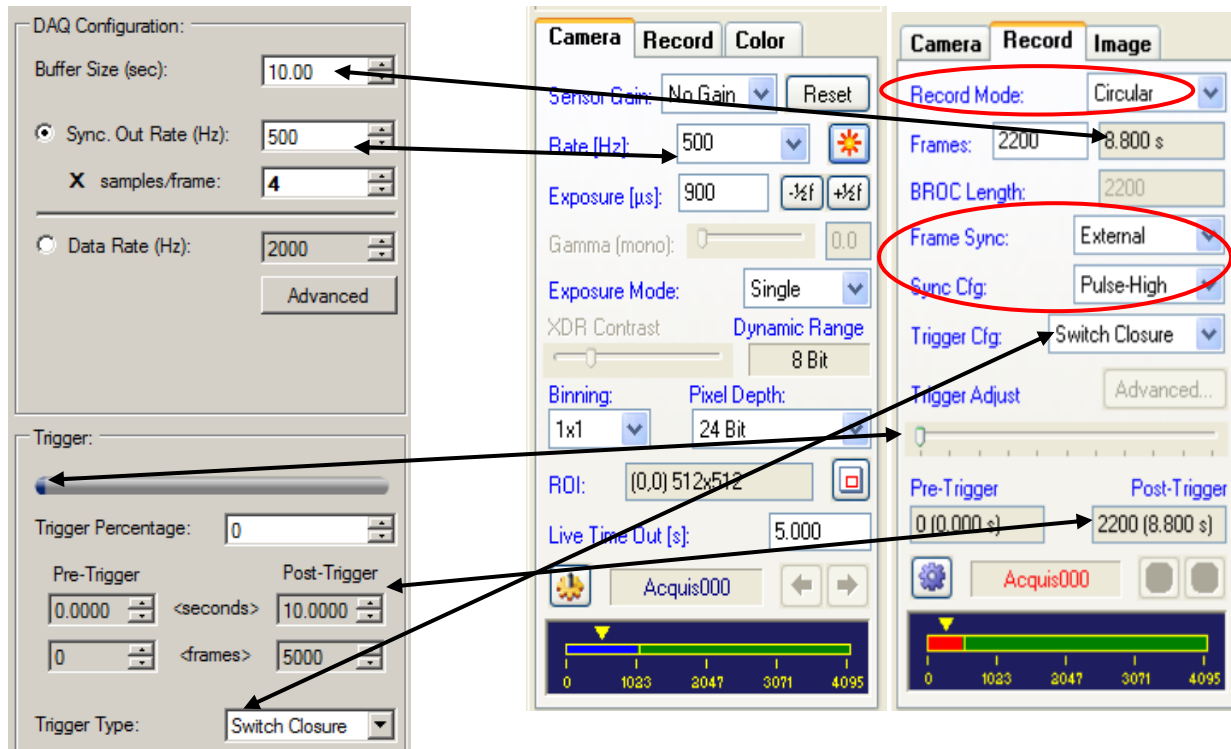
Note: For more information regarding triggering in MiDAS DA, consult the MiDAS DA User Guide.

9. After recording, use the Motion Studio software to trim the video to the specific frames that you wish to use with MiDAS DA. Save the video to a hard drive.
10. Import your video into MiDAS DA either by dragging and dropping it into the MiDAS DA workspace or by clicking **File ► Project ► Add Video** from the menu bar. Once your video is imported, the Playback window will appear. Click the **Play**  button to simultaneously play your synchronized video and data.

Note: The MiDAS DA and Motion Studio software settings are summarized on the following page.

MIDAS DA Settings

IDT Motion Studio Settings



MIDAS DA / IDT Motion Studio Settings	Relationship
Buffer Size (sec) / Frames (determines recording length for MIDAS DA and camera)	MIDAS DA must be greater than the camera.
Sync Out Rate (Hz) / Frame Rate (Hz)	Must be equal
Post-Trigger	MIDAS DA must be greater than the camera.
Trigger Type / Trigger Cfg	Must be the same
Trigger Percentage / Trigger Adjust	We recommend that these settings match.

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