



Using an IDT Redlake HS-1 High-Speed Camera with MiDAS DA

Date Published: March 2010

Revised: December 2012

Abstract

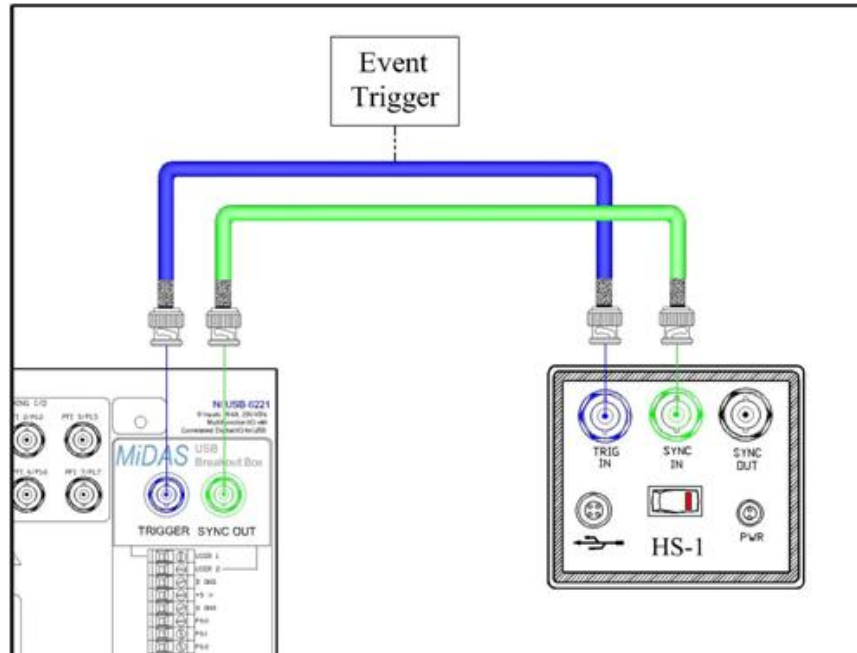
This camera connection guide describes the hardware connections and software settings for using MiDAS DA software with an IDT/Redlake HS-1 model high-speed video camera running IDT MotionPro X Studio software. This document includes the settings for putting the camera into Slave/External Sync mode.

Instructions

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


Decide your measurement settings in advance, including the video frame rate, data samples/frame (or total data rate), record length 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 IDT/Redlake HS-1 camera labeled **Sync In**. Next, locate your 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 window. This will start the data acquisition and also begin sending sync pulses to the camera.
5. Launch the IDT MotionPro X Studio software. Under the Camera tab, enter your video rate, exposure, and any other settings.
6. Click the Record tab and 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 MotionPro X Studio software. Also, the value entered for Post-Trigger in MiDAS DA **must be greater** than the entry for Post-Trigger in MotionPro X Studio. If not, the camera may not receive enough sync pulses and will not complete a recording.*

7. In the MotionPro X 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 using an external trigger.

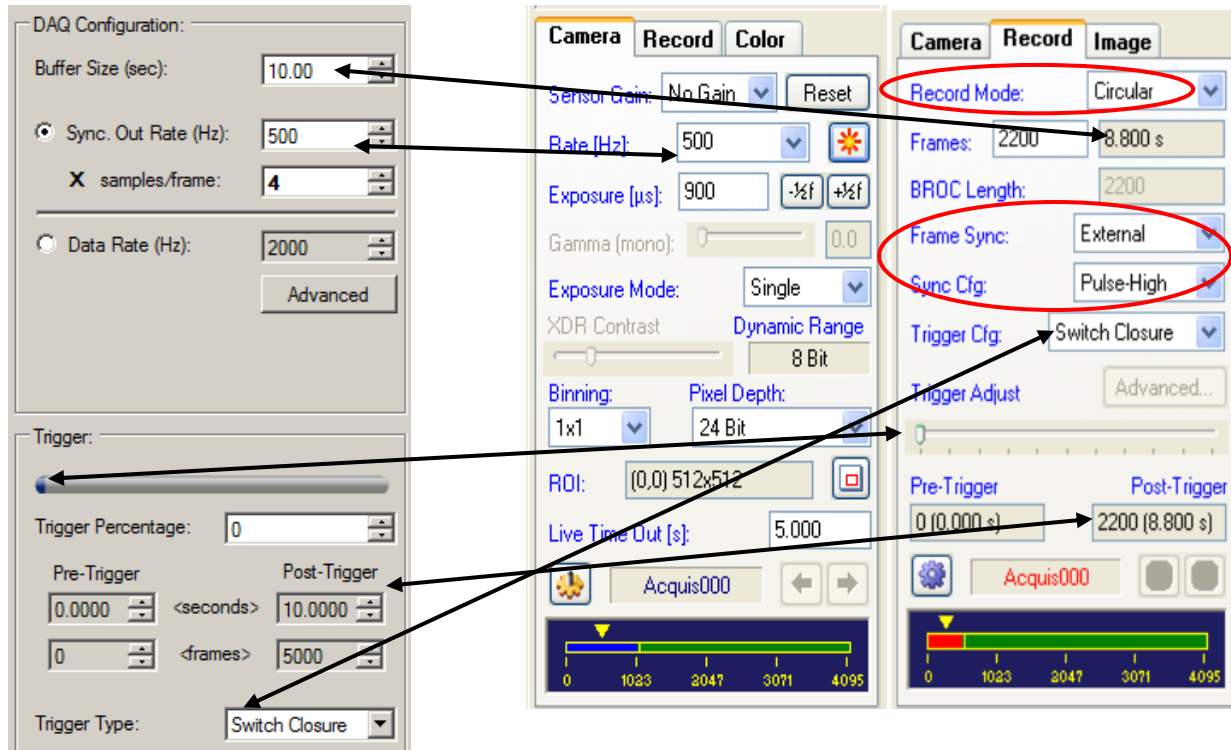
Note: For more information on triggering in MiDAS DA, refer to the MiDAS DA User Guide.

9. After recording, use the MotionPro X software to trim the video length to the specific frames that you wish to use with MiDAS DA. Save the video file 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 the **Project** tab in the menu bar and selecting **Add Video**. Once your video is imported, the Playback window in MiDAS DA will appear. Click the **Play**  button in MiDAS DA to simultaneously play your synchronized video and data.

Note: The MiDAS DA and MotionPro X software settings are summarized on the following page.

MiDAS DA Settings

IDT MotionPro X Studio Settings



MiDAS DA / IDT MotionPro X 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.

This camera connection guide is copyrighted by Xcitex Inc. and is supplied without specific warranty to any purpose and based on information currently available at the time of this writing. All specifications stated herein are subject to change without notice.

For further information on Xcitex products, visit www.xcitex.com or send an email to info@xcitex.com.

Xcitex Inc.
25 First Street, Suite 105
Cambridge, MA 02141 USA

