# SRRF-Stream+
# Quick Start Guide
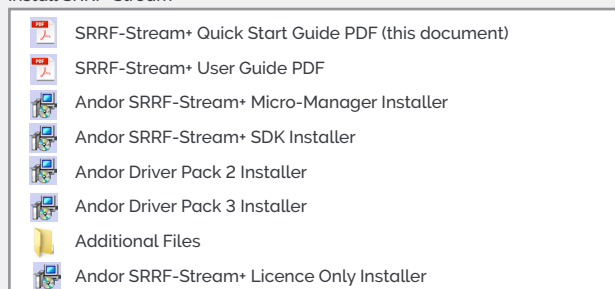
**OXFORD** INSTRUMENTS **ANDOR**

SRRF-Stream+ Real-Time Super-Resolution Microscopy Software for iXon Ultra & Life and Sona, Zyla 4.2 PLUS & ZL41 Cell sCMOS series cameras. SRRF-Stream+ can be operated via: **Micro-Manager, SDK** and within **Fusion software**. Please refer to the appropriate setup instructions in this guide to setup SRRF-Stream+ for your camera depending on the control software.  SRRF-Stream+ is compatible with MicroManager 1.4 and 2.0 versions.
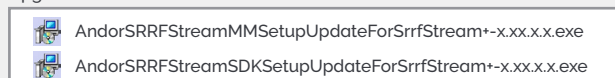
## Supplied Contents

Andor SRRF-Stream+ software is supplied with:

Install SRRF-Stream+

- SRRF-Stream+ Quick Start Guide PDF (this document)
- SRRF-Stream+ User Guide PDF
- Andor SRRF-Stream+ Micro-Manager Installer
- Andor SRRF-Stream+ SDK Installer
- Andor Driver Pack 2 Installer
- Andor Driver Pack 3 Installer
- Additional Files
- Andor SRRF-Stream+ Licence Only Installer

Upgrade from SRRF-Stream to SRRF-Stream+

- AndorSRRFStreamMMSetupUpdateForSrrfStream+-x.xx.x.x.exe
- AndorSRRFStreamSDKSetupUpdateForSrrfStream+-x.xx.x.x.exe

## Upgrade

Upgrade from Andor SRRF-Stream to SRRF-Stream+. If installing to the same location as SRRF-Stream this will over-write any pre-existing file. To retain curent version install to a different location, or back-up SRRF-Stream files to another location.

**Micro-Manager** users run:
*AndorSRRFStreamMMSetupUpdateForSrrfStream+-x.xx.x.x.exe*

**SDK** users run:
*AndorSRRFStreamSDKSetupUpdateForSrrfStream+-x.xx.x.x.exe*

## Using SRRF-Stream+ in Fusion

Fusion software is used with the Dragonfly Microscopy System. You will need a valid license to run SRRF-Stream+ within Fusion. The license is supplied with the USB provided.

1. Ensure Fusion is not currently open.
2. Locate the *Andor SRRF-Stream Licence Only Installer* file on the USB provided. Run the Installer.
3. Fusion can now be launched again.
4. The SRRF-Stream option should now be found in the Global section of the Channel Manager when the licenced camera is selected for the specified channel.
5. For further help and support please refer to the Fusion guide:
   https://fusion.help.andor.com/display/fusionum/SRRF-Stream

## Using SRRF-Stream+ with SDK

1. Run the executable *AndorSRRFStreamSDKSetup-1.x.x.x.exe* supplied from Andor – admin permissions are required. This contains the licence file linked to the camera.

For help and support please refer to the SRRF-stream+ SDK guide PDF in the directory the SDK was installed into. Typically this is "C:/Program Files/Andor SRRF Stream"

## Notes

- PC requirements: As per camera requirements but with minimum 4 GB RAM and 200 MB free disc space to install software.
- Graphics Processing Unit (GPU): NVIDIA CUDA compatible GPU card with minimum Compute Capability 3.0 and minimum 8 GB on board RAM is required for full field of view dual camera SRRF.

**Refer to the supplied SRRF-Stream+ user guide for information on how to get the best results from SRRF-Stream+.**

# SRRF-Stream+
# Quick Start Guide

## Using SRRF-Stream+ with Micro-Manager

**Install Micro-Manager**

1. Install the latest nightly build of Micro-Manager x64, MMSetup_64bit_2.0.1_20211217.exe or later (using default settings) from https://valelab4.ucsf.edu/~MM/nightlyBuilds/2.0/Windows/.
2. If Micro-Manager launches, just exit.
3. Run the installation file dependent on your camera type.

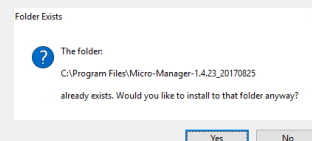| iXon Ultra & Life | *AndorDriverPack2Setup-2.xxx.xxxxx.x.exe* | Sona, Zyla or Zl41 | *AndorDriverPack3Setup-2.xxx.xxxxx.x.exe* |
|---|---|---|---|

Change the installation directory offered to the Micro-Manager installation directory, confirm overwriting if asked and then select your Camera Type. The latest file version can be found at andor.oxinst.com/downloads.

4. Ensure the camera is switched on and connected.
5. Re-launch Micro-Manager and go through Hardware Configuration Wizard (if configuration doesn't exist) using Tools>Hardware Configuration Wizard…, Create new configuration, select Andor… (Consider saving the config file in a Documents folder location).
6. Set memory options (Tools -> Options-> Sequence Buffer Size) to 1 – 2 GB on a machine with 4 GB installed memory. On machines with 8 GB or more installed memory, a buffer size of 4 GB will be sufficient. Never allocate 100% of Physical Memory as the Operating System and other applications will require RAM as well.
7. Images can now be taken using Micro-Manager (without SRRF-Stream). (Micro-Manager manuals are available at andor.oxinst.com/third-party-software-matrix).
8. Close Micro-Manager.
9. Run the executable *AndorSRRFStreamMMSetup-1.x.x.x.exe* supplied from Andor – admin permissions are required. This contains the licence file linked to the camera.
10. Click Next, and then select the Micro-Manager install directory location and select Next again.
11. A warning will appear informing you the folder already exists and still install – click Yes:
12. The final screen shows the destination – if all is correct, click Install.
13. Micro-Manager can now be launched again – SRRF-Stream will be listed under Tools -> Device Property Browser.

**Run SRRF-Stream in Micro-Manager**

1. Launch Micro-Manager, open Tools>Device Property Browser and scroll down to the SRRF properties (available as part of the Andor camera device adapter).
2. Change the "SRRF | Enable" property to Enabled:

**To Run Live Mode**

Click Live to show SRRF processed images in real-time (original data is not stored in Live mode).

**To Save your Data**

In order to save the original data during an acquisition, choose either All or Averaged from the "SRRF | Save Original Data | Option" property, and adjust the path as required.

**To Use Multi-D Acq**

1. Click the Multi-D Acq. button.
2. Setup the experiment.
3. Click Acquire!
4. Further instructions on how to use SRRF-Stream can be found at the Micro-Manager SRRF-Stream Wiki page: https://micro-manager.org/wiki/Andor_SRRF-Stream.

**Quick Trouble Shooting Guide for Common Issues Running SRRF-Stream in Micro-Manager**

- If the GPU card is unsuitable Tools>Device Property Browser will state "Computer not CUDA compatible. No CUDA enabled card was found!".
- If the computer needs to be updated the property Browser will state "Computer not CUDA compatible. No CUDA driver was found!". In this case the required drivers can be downloaded from https://www.nvidia.com/download/index.aspx
- When "Save Original Data | Option All" is selected, large amounts of storage space will be required. If the Number of Frames per Time point is set to 100, then 100 images will be saved for every SRRF image generated.