How to Start the Visar IOC

In order to record the Visar cameras in the DAQ, the Visar IOC needs to be properly set up. This guide is a step-by-step description of how to setup the Visar PC and initialize the Visar IOC for correct operation.

Please note that this assumes that the Visar cameras have actually been turned on. This is usually done by a beamline scientist. Please see VISAR Turn On Procedure for details on how to turn on the Visar.

As of 2/3/2022, MEC has two visar cameras:

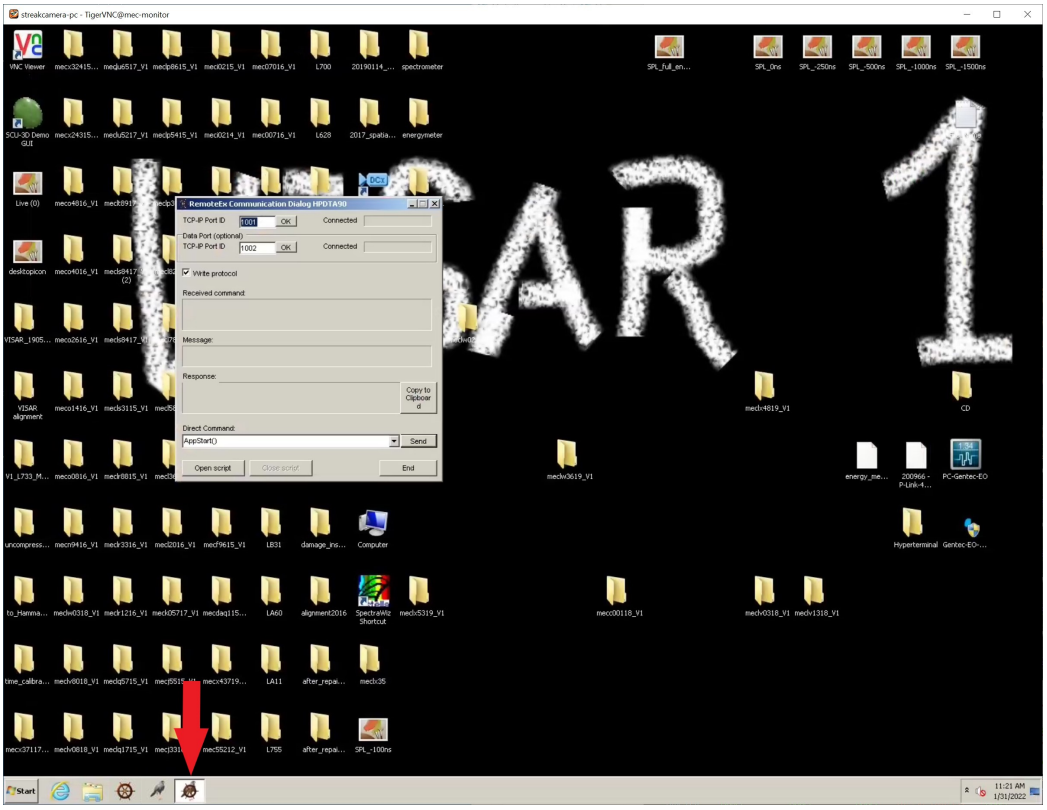
- Visar 1, which runs on a PC named win-ics-mec-visar1 (172.21.46.71) and has an ioc running on daq-mec-misc01 on port 32999.
- Visar 2, which runs on a PC named win-ics-mec-visar2 (172.21.46.88) and has an ioc running on daq-mec-misc01 on port 32998.

These PCs are on the ICS network, which is only reachable from a few console machines, such as mec-daq. The current version of the IOC can be found in **/reg/g/pcds/epics/ioc/mec/visar/R1.0.4**.

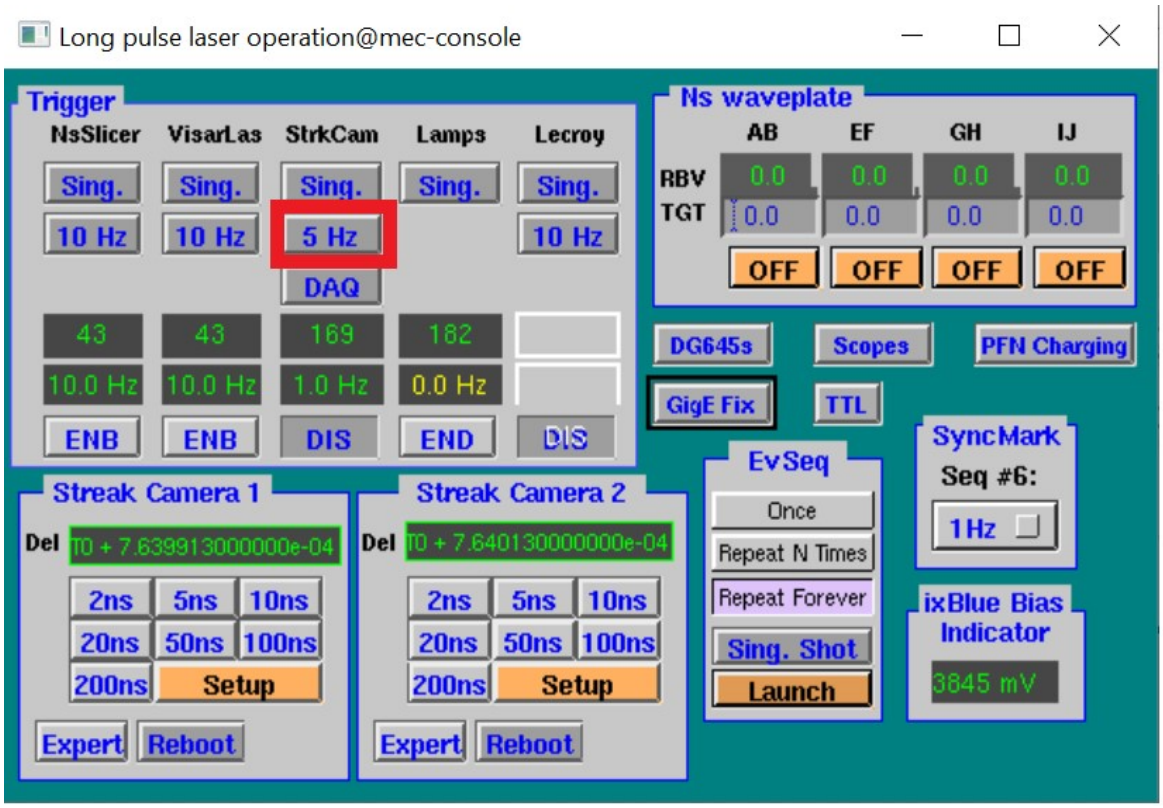
This information may change, so please double-check before running the commands below.

Step-by-step guide

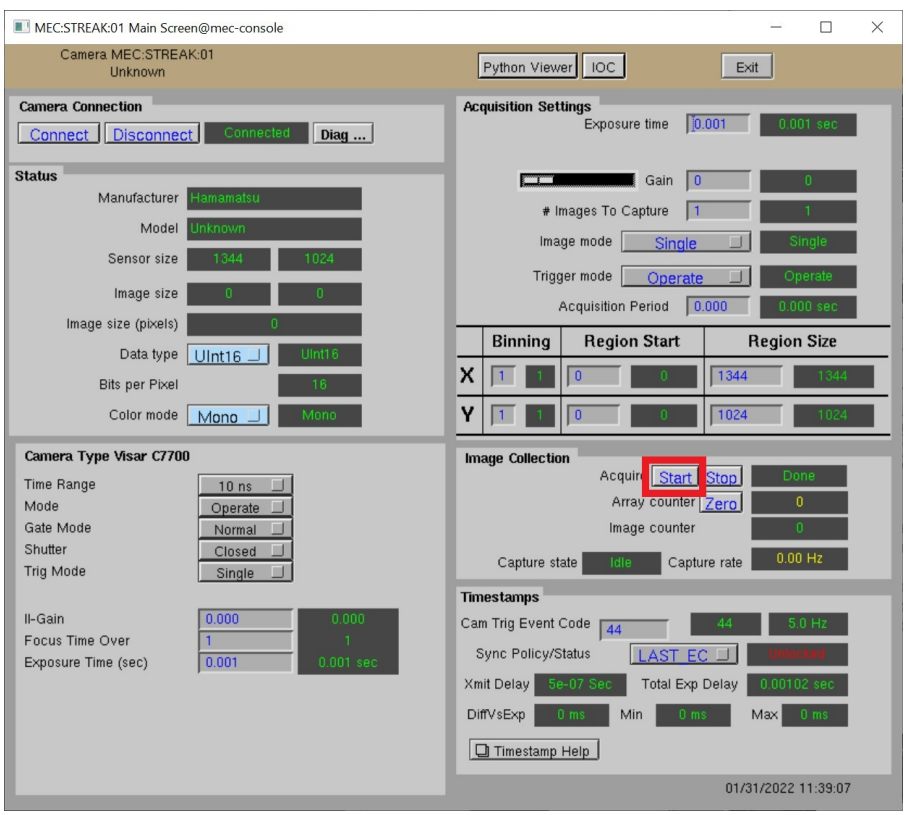
- To begin with, stop the IOC. Run "**imgr ioc-mec-streak-0${X} --disable**" (with **${X}** set to either "1" or "2") to stop it.
- Connect to the Visar PC by running "**vncviewer PCHOST**" on mec-daq. The password is "Mechutch".
- Stop the Visar applications so nothing is running.
- Start the Visar "RemoteEx" application. This screenshot shows what the application looks like once opened, and the red arrow points to the icon which opens it.



- Pull up the "Long pulse laser operation" screen, and make sure the "StrkCam" is enabled ("DIS" shows as the button option) and the trigger rate is non-zero. If it is zero, hit the "5 Hz" button to start generating triggers. (Remember to reset the mode after the IOC has been correctly started.)



- Make sure the visar is powered and turned on!!!
- Restart the IOC. Run "**imgr ioc-mec-streak-0${X} --enable**" (with **${X}** set to either "1" or "2"). The full visar application should start on the PC.
- Once the IOC has completely started, pull up the edm screen by running "**camViewer -m -c Streak_${X}**" (with **${X}** set to either "1" or "2").
- Hit the acquire "Start" button on the edm screen. The PC should open an updating image display window and the image counter on the edm screen should start to increase. If this doesn't happen, see the trouble shooting guide below. (If the window does not open on the PC, check the synchronization options. If the window opens and the image updates but the counter doesn't change, check the scan mode and acquisition options.)



- Make sure that the DAQ configuration file (**/reg/g/pcds/dist/pds/mec/scripts/mec.cnf**) has the visar enabled. The visar lines look something like:

```
  ## DETECTOR - VISAR
  {host:'daq-mec-misc01',      id:'visar1',  flags:'psu', env:'PATH='+epics_base_path, cmd:pdsapp_path+'/pvdaq -
i MecTargetChamber/0/StreakC7700/1 -b MEC:STREAK:01 -B IMAGE1 -n 64 -z 2818048 -f 1 -r'},
  {host:'daq-mec-misc01',      id:'visar2',  flags:'spu', env:'PATH='+epics_base_path, cmd:pdsapp_path+'/pvdaq -
i MecTargetChamber/0/StreakC7700/2 -b MEC:STREAK:02 -B IMAGE1 -n 64 -z 2818048 -f 1 -r'},
```

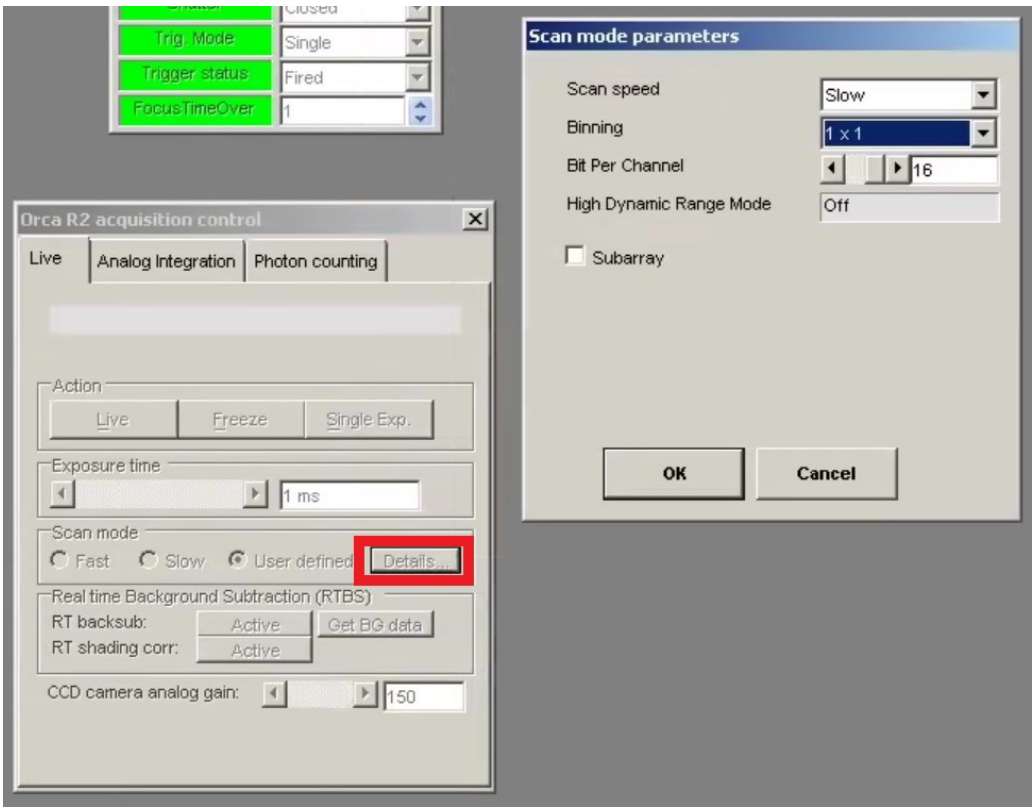
If these are commented out with an initial "#", delete the "#" and restart the DAQ. The visar cameras should then appear in the partition and be recordable.

Troubleshooting guide

There are several settings that may make the Visar IOC malfunction. If you are not getting frames in the IOC, but the PC application seems to be running, here are a few things to check. Stop acquisition before trying to change any of these settings!

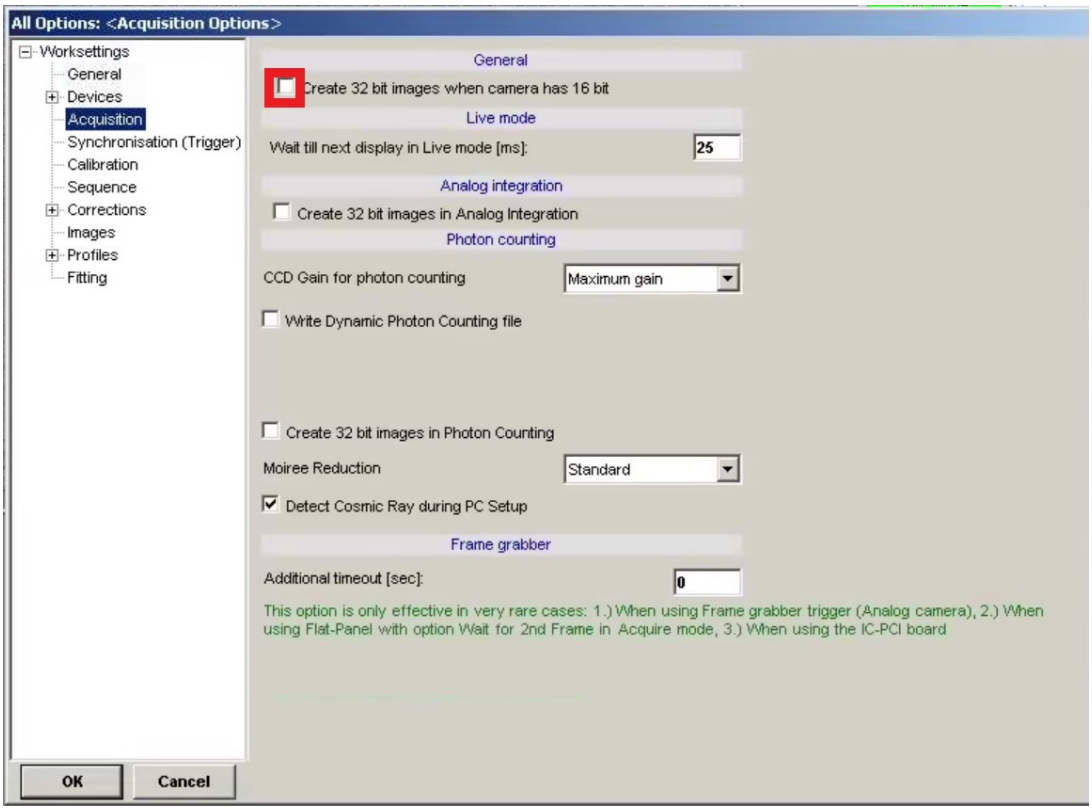
Scan Mode

From the "Orca R2 acquisition control" window, make sure that the scan mode is "User defined". The "Details..." button should give the following settings:



Acquisition Options

From the "File" menu, pull up the "Options" window, and look at the "Acquisition" settings. The important one is the first... do **not** create 32-bit images when the camera has 16-bit.



Synchronization Options

From the same "Options" window, look at the "Synchronization (Trigger)". The screen should look like the following:

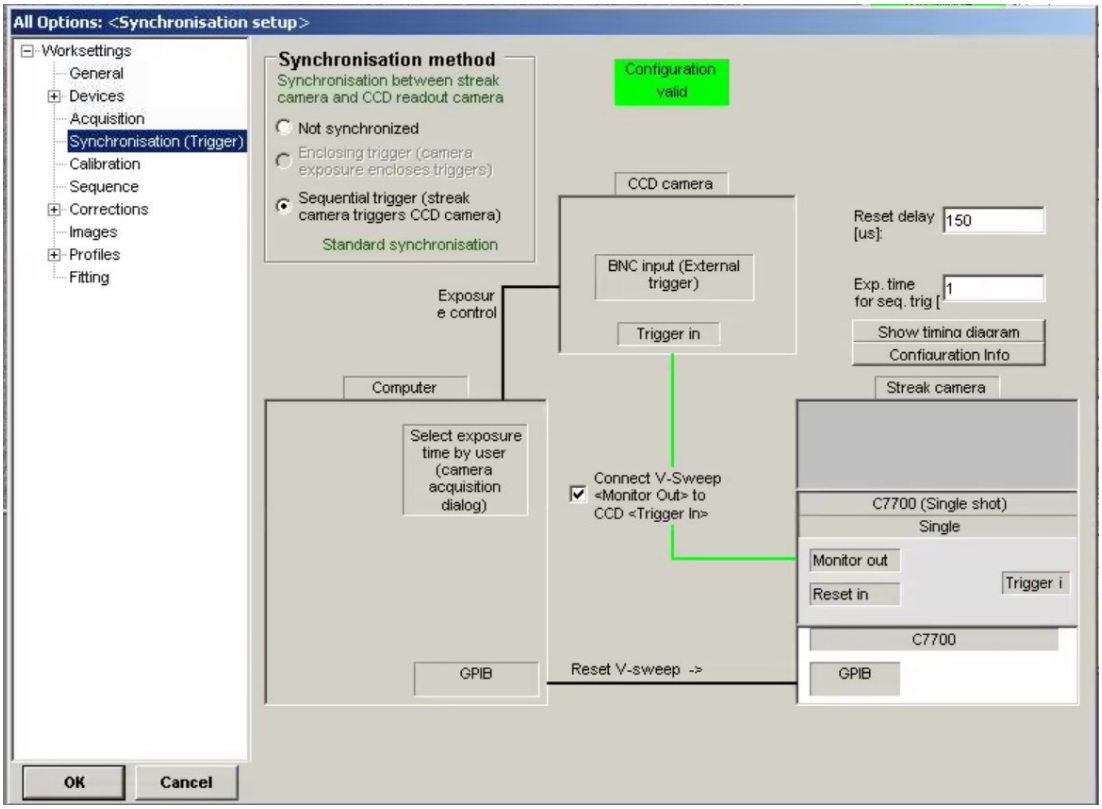
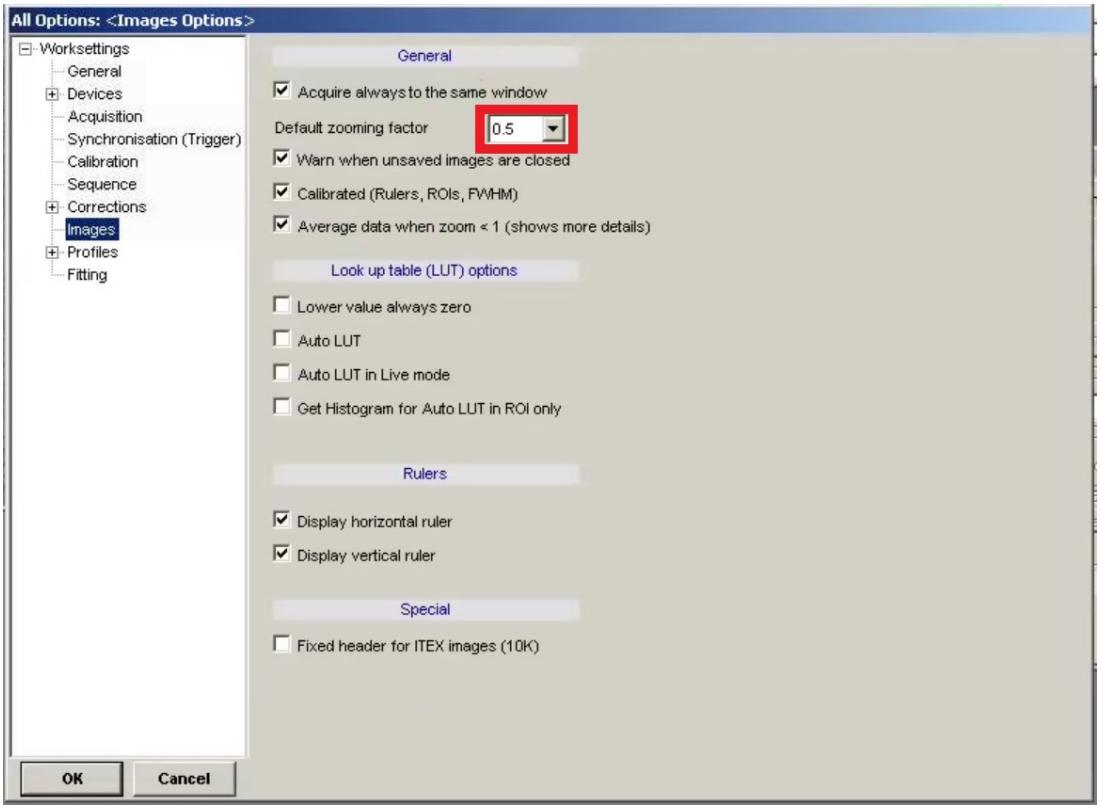
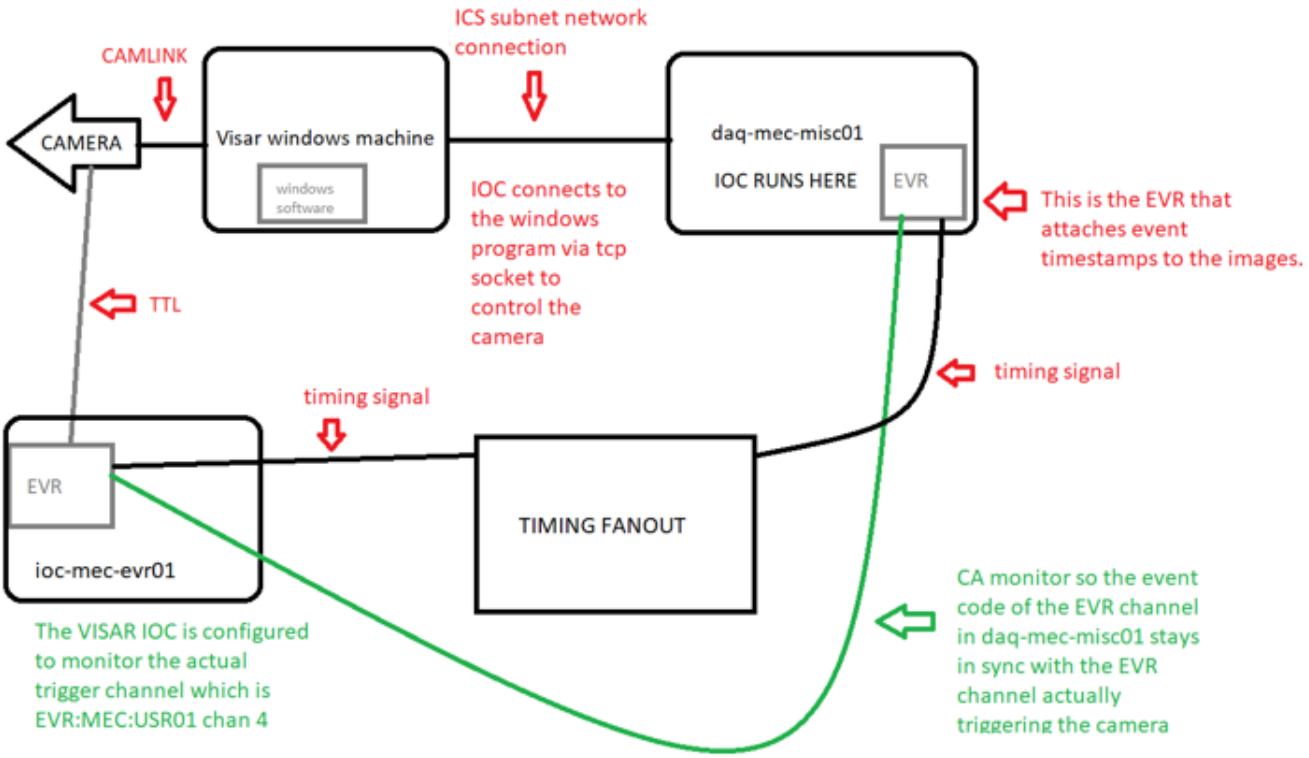


Image Options

Generally speaking, the visar display should show a half-size image. While this won't fix anything if the IOC is malfunctioning, the same "Options" window has an "Images" setting that should be:



Physical Setup



Related articles

- How to Start the Visar IOC
- VISAR Turn On Procedure