

How to turn on/off Zeiss 710 MP in Microscopy Core

revised Feb 2020

Yan.Deng@med.nyu.edu or Michael.Cammer@med.nyu.edu

Call or text Michael at 914-309-3270 or Yan at 347-788-8212

Warning: *Do not unplug USB keys, external HDs, etc. when Zen software is running!!*

Shutdown You are expected to follow these instructions as a checklist.

1. Check the schedule. If somebody is using immediately after you, leave the power switches on but follow all the other instructions below.
2. If using immersion lens, clean it.
3. Switch to 10X lens.
4. Turn focus on lens to lowest position. The touchpad will display a message when it is at the lowest position.
5. Save all your data. Copy to \\research-cifs.nyumc.org\research server, other Internet location, USB key, or external drive.
6. If Ar laser is on,
 - * Make sure the little metal switch on the laser control box is down.
 - * Turn the power knob all the way counter-clockwise (to approx 7:00).
 - * Turn key on power supply counter-clockwise to off.
 - * *Leave the black power switch ON!*
7. MaiTai laser "off" in the Zen software laser window.
8. Quit Zen.
9. If environmental chamber on, turn off.
10. Switches C, B, and A off.
11. Clean up. Clean up means look at all surfaces including the floor and pick up Kimwipes etc.
12. iLab Kiosk signoff.
13. Log out of computer.

How To Turn On System

1. There are four power switches on the table to the left of the computer monitor. The power strip at the left is for the computer. It may be left on all the time.
If it is off, turn it on and press the button on the front of the computer below the table to the left.
2. Main switch **A**. (*Do Not* touch the safety lock key.)
3. System/PC switch **B**.
4. Components switch **C**.
5. *Optional:* Turn on environmental chamber and stage insert.
 - * All doors/panels closed on incubator box. Have all stage inserts, oil, etc in incubator to be at proper temperature. *To minimize focus drift, this chamber should be on for two hours before you start imaging.*

On Zeiss touchscreen:

* Settings > Incubation

* H Dev

* optional H Insert P

6. *Optional:* If you need laser light at 458, 488, or 514 nm:

* Make sure the little metal switch on the laser control box is down.

* Turn the power knob all the way counter clockwise (to approx 7:00).

* The black switch on the power supply needs to be on.

* If the Safety Interlock LED is on, turn the key clockwise. Wait five to ten minutes.

While waiting, continue the startup sequence.

7. Log in as LSM 710 User.

8. iLab Kiosk

9. Run Zen software (icon should be at center of screen).

10. Click "Start System."

While the system is in startup mode, do not touch any microscope controls.

11. *Optional:* If you are using the Multi Photon, turn on the MaiTai laser in the laser panel of the Zen software. This laser takes approximately 10 minutes to turn on. The window will not say "On" until the laser is ready.

General Confocal Best practices:

- The pinhole is what makes the confocal a confocal. Set at 1AU (which means 1 Airy unit) and click the 1AU button each time you change lenses.
If you are opening it for imaging fixed samples, you should go use a widefield fluorescence scope instead.
Except in special case of live cell imaging where you understand that images are not confocal, this is NOT AN ACCEPTABLE WAY TO MAKE IMAGES BRIGHTER. You won't hurt the instrument, but when you write your methods, you won't be accurately describing your microscopy as "confocal".
- Offset. Always use at 0 or 1.
Other numbers are wrong.
- Digital gain. The preset is 1. Leave it there.
- Use the Range Indicator button to make sure you have no [saturated pixels](#). If you see red pixels, you need to turn down the Gain or Laser.
Turning gain down will reduce noise. Less noise means you can scan faster. ([More here.](#))