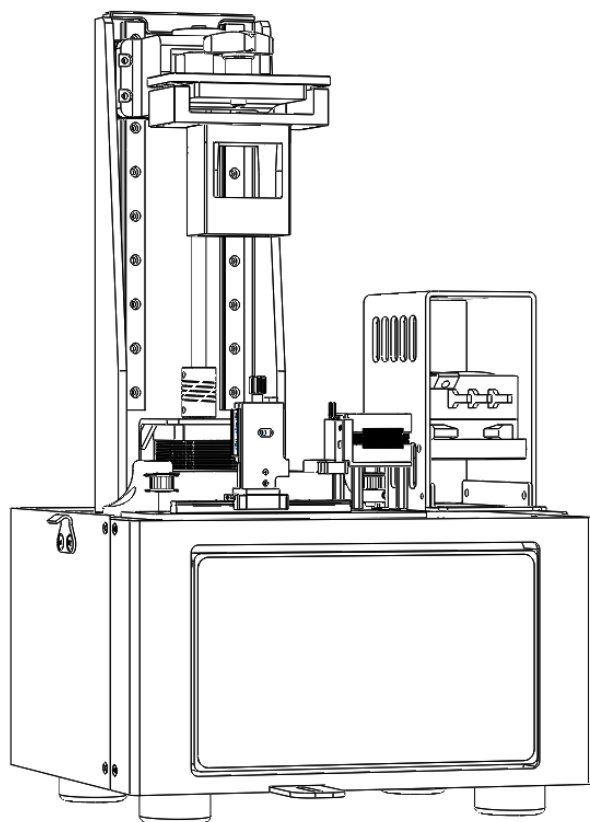


MonoPrinter.com

# MONO3Z Series Printer Firmware

Rev. 1.2



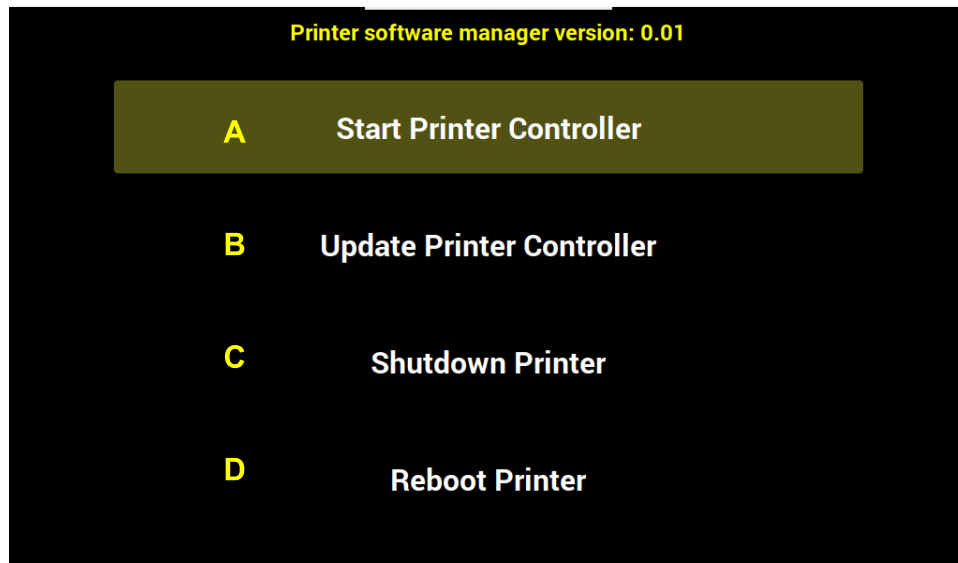
Revision History

Document number: MN3Z-C02

Rev. 1.0	11-18-2020	Initial draft
Rev. 1.1	06-23-2022	Update based on Mono3Z-V2 design
Rev. 1.2	08-08-2022	DMD EVM display mode & lightmask setting added (FW:1.7Z)

Please read thoroughly and contact us if you have any further questions or suggestions at [info@monoprinter.com](mailto:info@monoprinter.com)

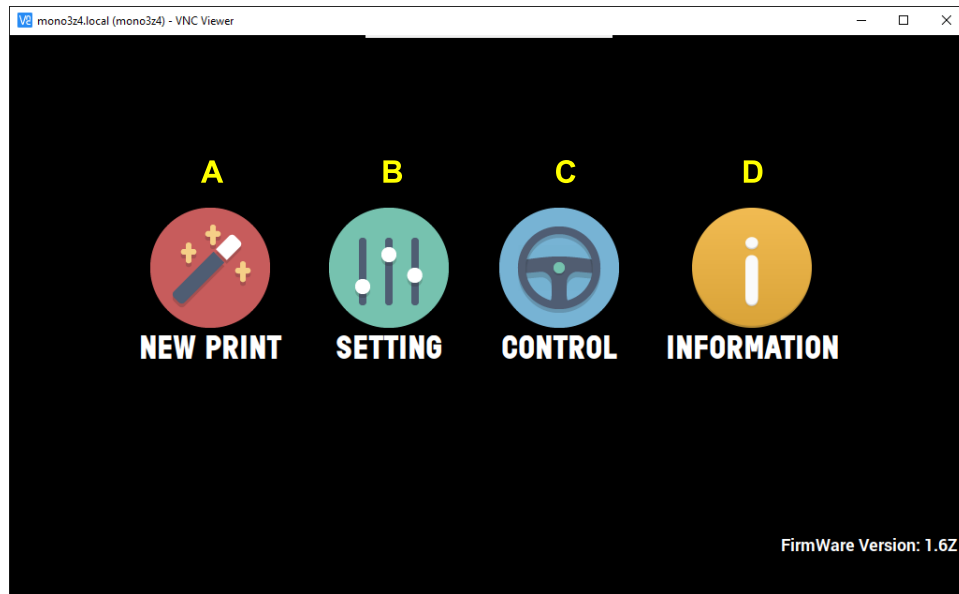
## 1. Printer controller manager screen



Initial screen shows four simple menus each explaining itself.

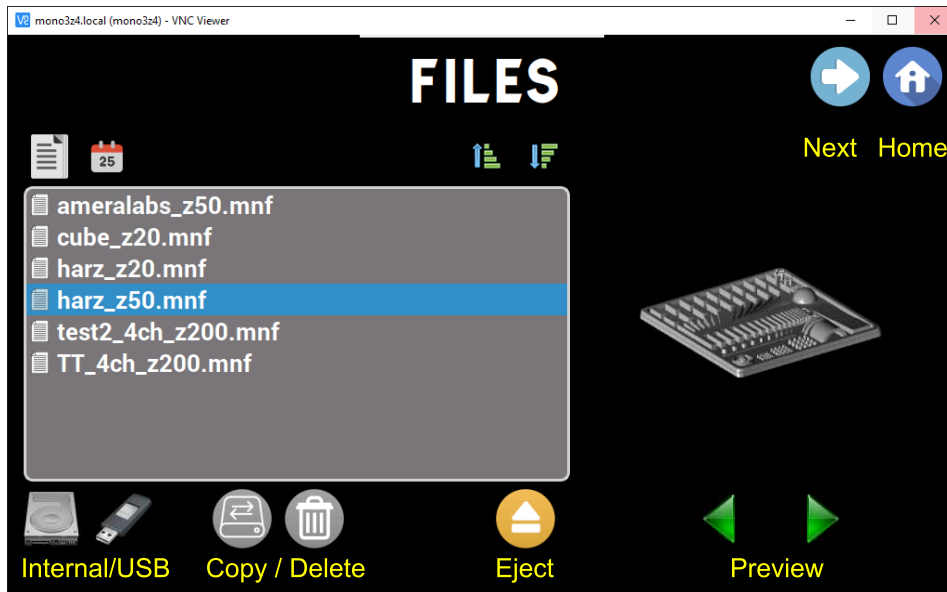
- A. Start Printer Controller: This will launch the printer controller software (printer firmware).
- B. Update Printer Controller: If you need to update the printer controller, you may put a USB stick on the printer with an update file (\*.mpi). Only single update file on the USB root will be used for updating the printer controller
- C. Shutdown Printer: This will shut down the printer. Shutting down will take about 1 minute. Please turn off the power after a couple of minutes.
- D. Reboot Printer: This will reboot the printer.

## 2. Main menu of the printer controller

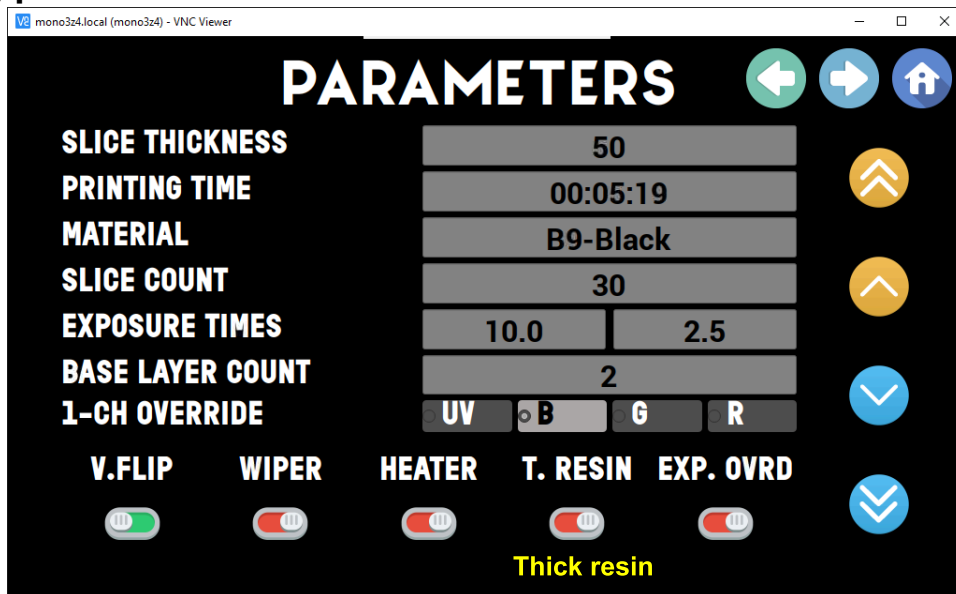


- A. New print: This will guide you to select a printing file, to confirm printing parameters, and then to monitor printing status.
- B. Setting: You can set printer parameters that generally affect all printing processes such as lift speed, down speed, hold times between steps, etc.
- C. Control: You can check printer status, and confirm if the printer is ready for printing. General control such as moving a mixer and z-axis will be done here.
- D. Information: You can check printer software and firmware versions here. IP address or wireless network connection is done here

### 3. Files menu

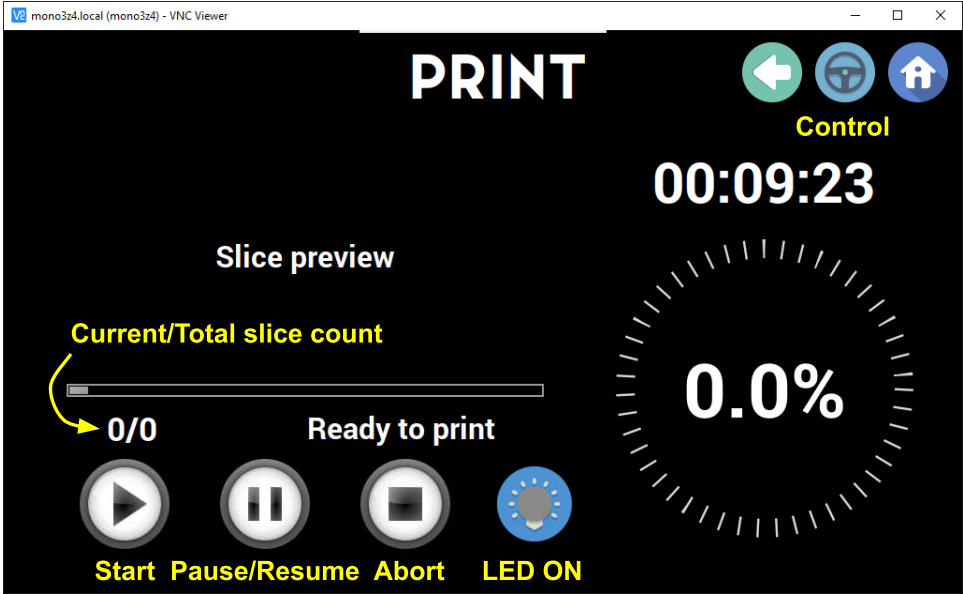


### 4. Printing parameters



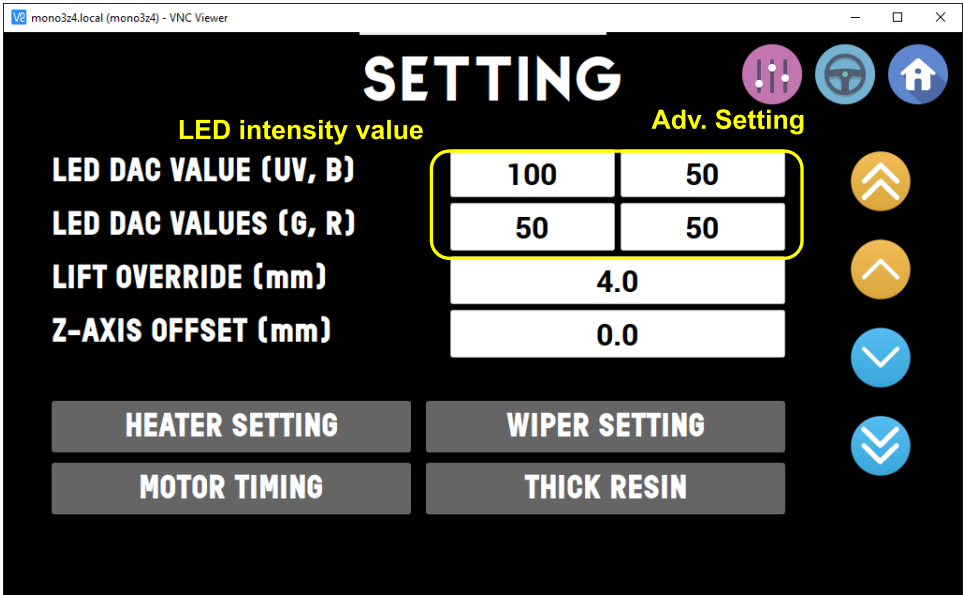
- Vertical flip: Normally “Enabled” to obtain a print without mirroring
- Heater: This setting enables only the chamber heater. Heating parameters should be set under Setting/Heater menu.
- T. Resin: If you enable the thick resin option, pre-exposure hold times and exposure times for bottom layers will be extended. Related parameters should be set under Setting/Thick resin
- Exposure override: You can change three parameters (exposure times / base layer count) when this button is enabled.

### 5. Printing status



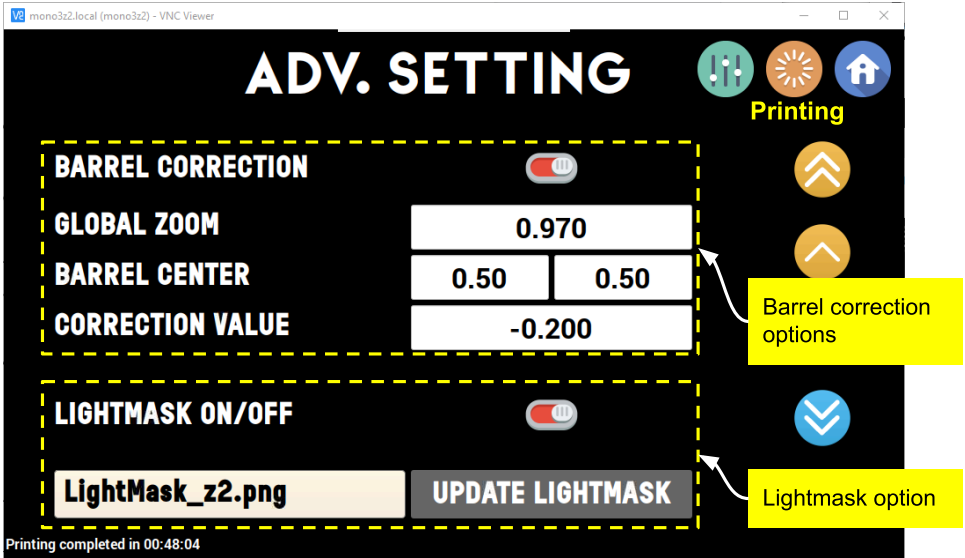
- Homing: If you have not done homing before starting printing, the printer will automatically perform homing before starting.

6. Setting page



- LED DAC Values: These are LED intensity settings. Maximum value is 2300.
- Z-Axis Offset: When you set this to non-zero value, the total height of the z-axis will be 151+value (mm). For example, if you set it as -0.5, the total z-axis travel length will be 150.5 mm.

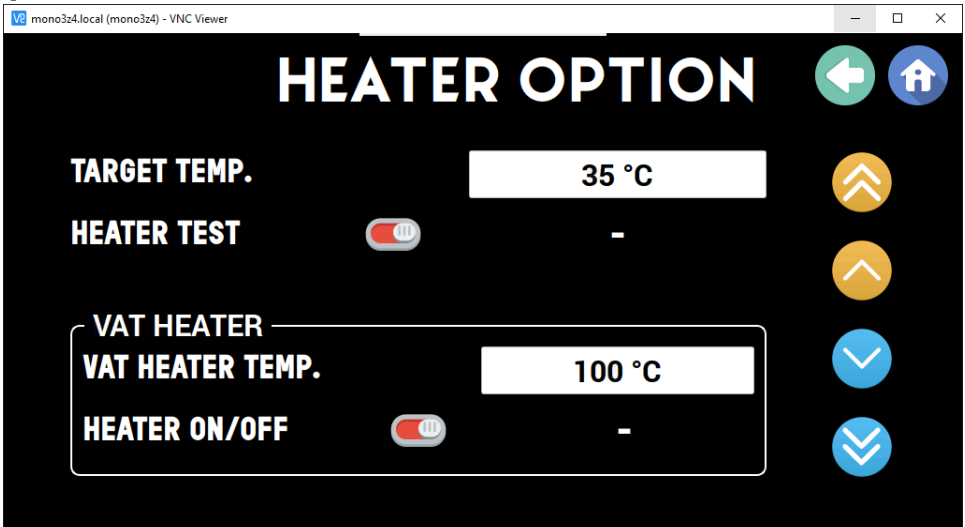
### 7. Advanced settings



The Mono3Z series does not need the barrel correction options. Turn off the setting unless advised.

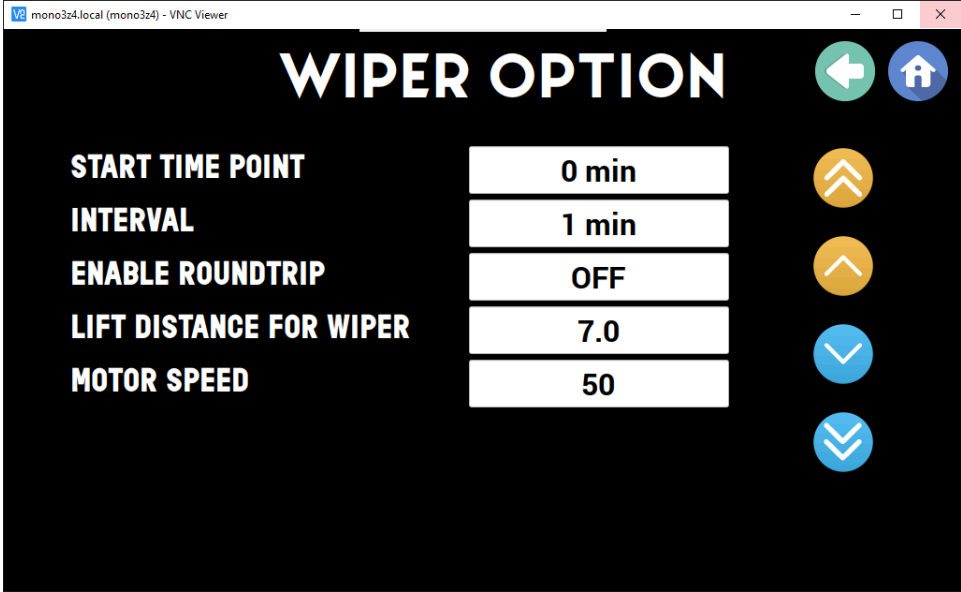
- This page sets barrel correction parameters.
- Global zoom: Default value is between 0.96 ~ 0.97.
- Barrel correction center X, Y: default X is 0.5, default Y is 0.5 ~ 0.7
- Barrel coefficient: default is -0.2 ~ -0.1. This should be negative. The barrel correction is sensitive to this value, so change it slightly and check the actual barrel corrected grid.

### 8. Heater options



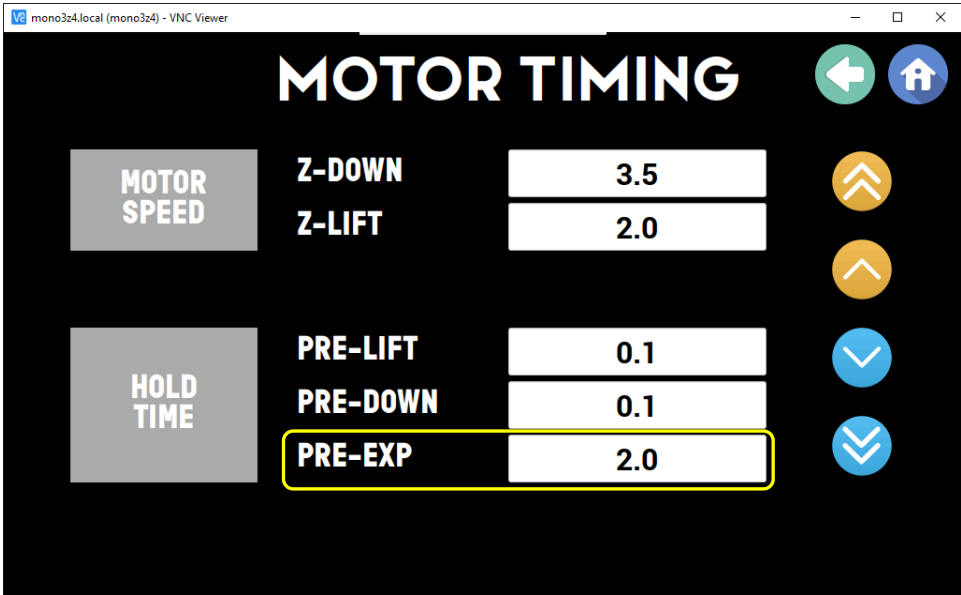
- Target temp. and heater test is used to set the chamber heater temperature and test it.
- Vat heater: if a user wants to use the heated vat, turn on this option before starting printing. The heater will be turned off when a printing process is ended or aborted.

### 9. Wiper options



- You can set up wiper parameters on this menu.

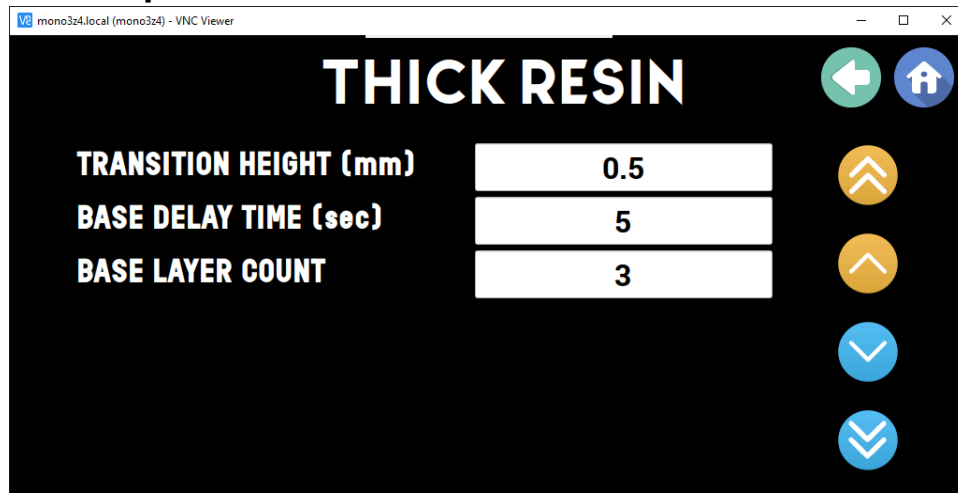
### 10. Motor timing options



- Normally 'Pre-Exp' hold time is used to allow stabilization of the build platform before the following exposure.
- Thick resins require a longer 'Pre-Exp' hold time than thin resins.

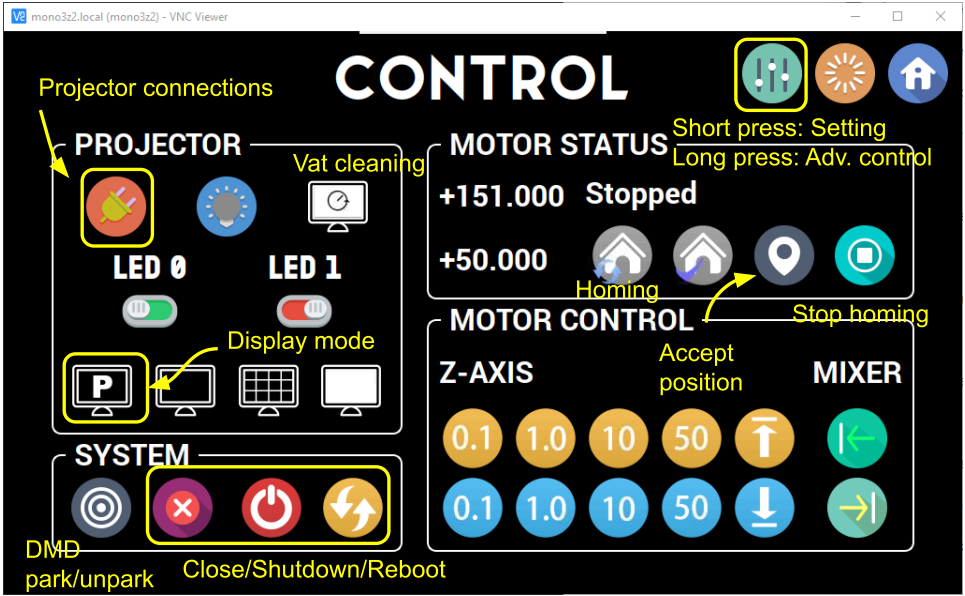


## 11. Thick resin options



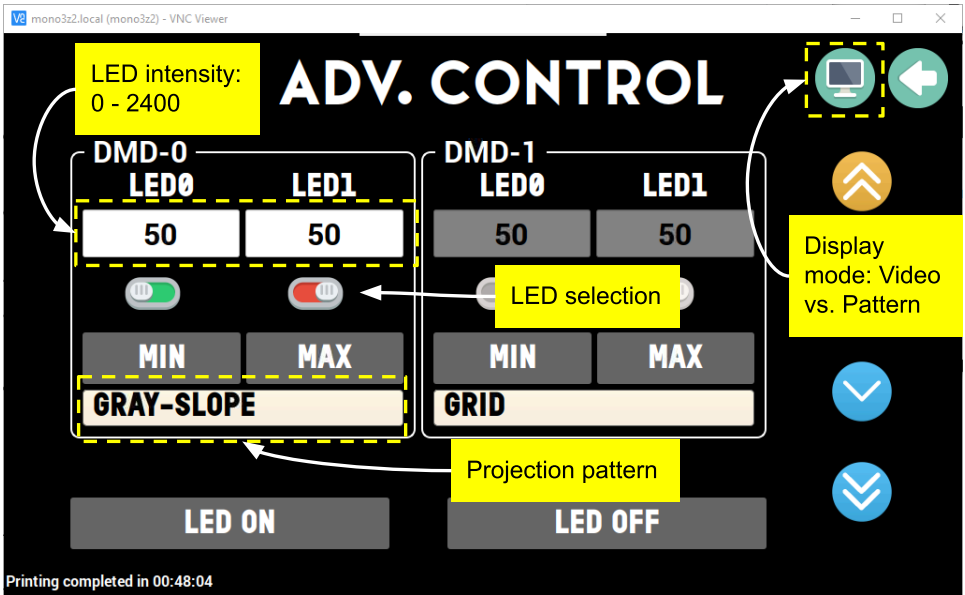
- This option is useful for high viscous resins (thick resins). This option will elongate the Pre-Exp hold time to allow build platform stabilization, and it will also modify lower height exposure times.
- Transition height: A maximum height that thick resin option is applied.
- Base delay time: The initial Pre-Exp hold time on top of existing Pre-Exp time.
- Base layer count: The base layer count for the maximum Pre-Exp hold time specified in [D]. After these layers, the Pre-Exp time will be linearly decreased until the height specified in [C].

12. Control page

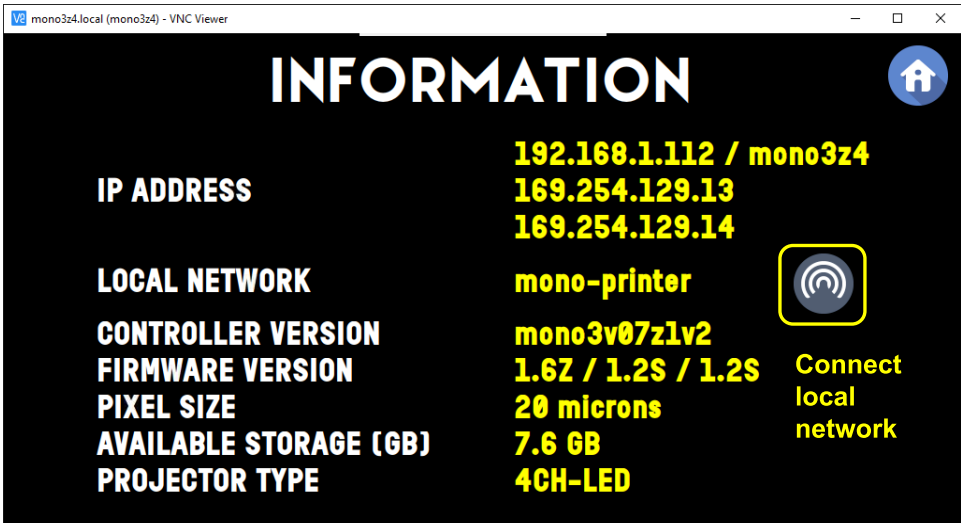


- Vat cleaning: This will show another window where you can set from 10 to 120 sec continuous exposure. This will cure bottom resins. Remove the cured resin film after the exposure.
- Test projections (from left to right): black screen, grid screen, all white screen. These buttons show an image and turn on LED power when pressed.
- Homing: This will perform the homing on the z-axis.
- Accept the current position as home (Z-axis=151.00, Wiper=50.00)
- *Display mode: P for pattern mode, V for video mode. The mode will be changed to 'P' automatically after 1 minutes from starting the projector.*

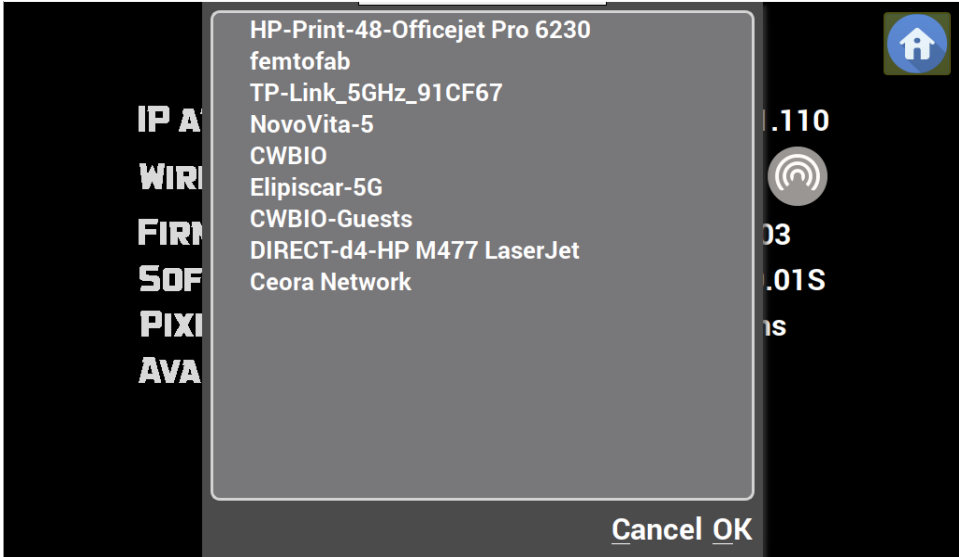
13. Advanced controls



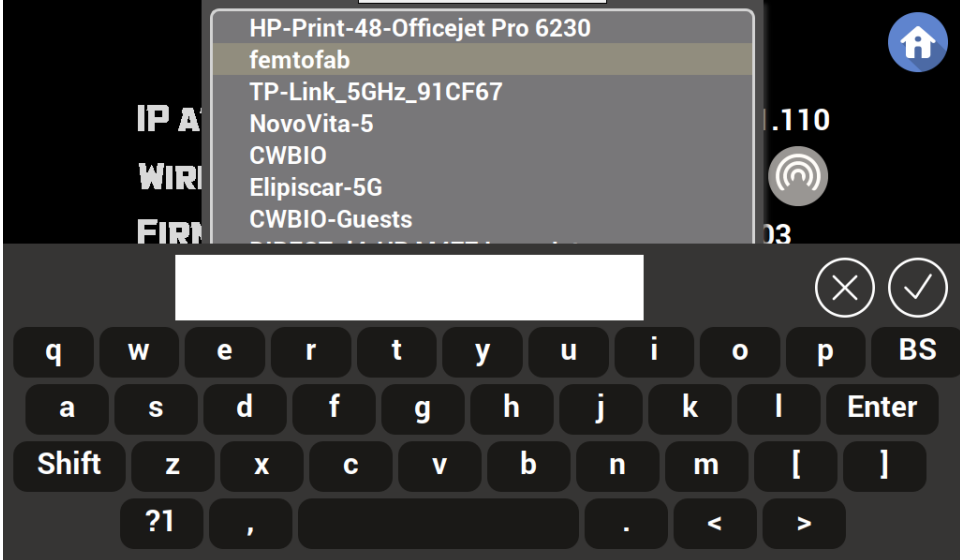
14. Information page



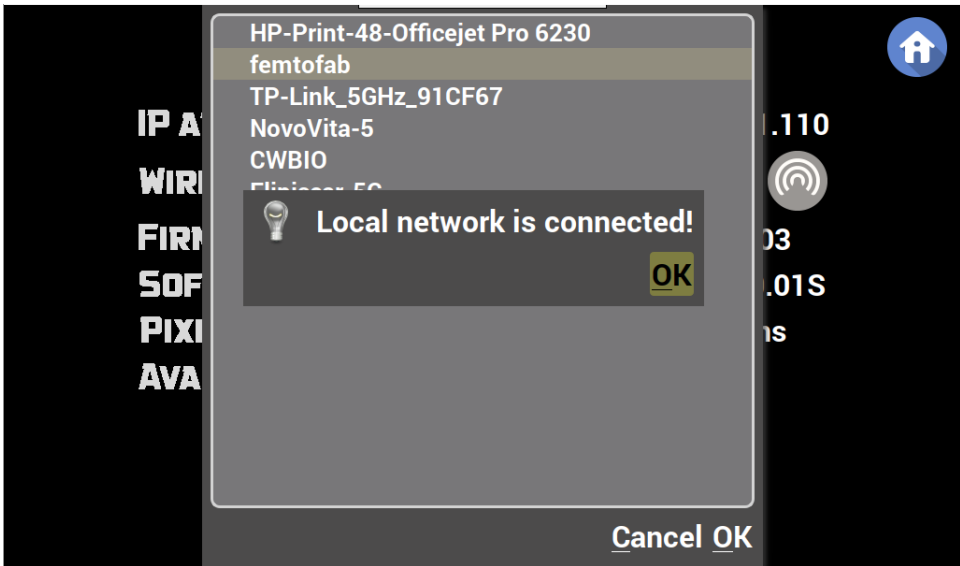
15. Wireless network setting



- When you push the wireless scan button, the above results will pop up after 1-2 mins. If you can't see the results, please retry.
- If your wireless network is not stable or weak, purchase a USB-wifi dongle and plug it into the printer's USB port.



- If you select your SSID, you are prompted to enter a passcode. Type the code and press the accept button.



- It usually takes 5 mins to connect your local network. If you fail to connect, reboot the printer and check the connection.

**16. Closing remarks**

- If you have any issues while using the printer, please contact us at [info@monoprinter.com](mailto:info@monoprinter.com)