

MONO3Z Series Printer Firmware

Rev. 1.1



Revision History

| Document number. MNSZ-C04 | | | | | |
|---------------------------|------------|----------------------------------|--|--|--|
| Rev. 1.0 | 07-09-2021 | Initial draft | | | |
| Rev. 1.1 | 06-23-2022 | Update based on Mono3Z-V2 design | | | |
| | | | | | |

Please read thoroughly and contact us if you have any further questions or suggestions at info@monoprinter.com

1. Prepare MNF file within MonoWare

- The first step for printing is to prepare an MNF file from your model.
- Brief step is
 - import models
 - create supports if needed
 - slice models
 - export MNF file with printing parameters.
- For more details, please check a related manual (MN3Z-C03-MonoWare_Job_File)

2. Transfer the MNF file from MonoWare into Mono3Z Printer

- There are two options for transferring files. One is to use a USB stick and the other one is to send the file via network
- Using the USB stick is straightforward.
- If you want to send the file via network, you need to connect the printer with a wireless or wired connection.
- Check the IP address of the printer at the INFO page inside the printer.
- If there is a hostname (ex. mono3z1), you can type the hostname instead of the IP address.

| INFORM | ATION | î |
|--|--|-----------------------|
| IP ADDRESS | 192.168.1.102 / 1 169.254.129.13 | mono3 <mark>z1</mark> |
| LOCAL NETWORK | mono-printer | \bigcirc |
| CONTROLLER VERSION FIRMWARE VERSION PIXEL SIZE AVAILABLE STORAGE (GB) PROJECTOR TYPE | mono3v07zlv2 1.4Z / 1.1S 20 microns 7.7 GB 1CH-LED | |

Fig. 1

- Enter the IP address (or hostname) on the Process window on MonoWare
- When you use the hostname, you need to add .local. For example, you need to use 'mono3z1.local' as an IP address.
- Then connect the printer using the button (marked as blue box in Fig. 2)

| NonoWare 0.41 open_ring.mono | – _ X |
|--|--|
| File Tools Help Language | |
| | 년 년 💭 🖬 🔅 MONO3_24um ▼ |
| Model view Slice view Process | Models Support Slice |
| Printer Name | Support options Image: Support preview Image: Pt Image: Pt |
| Printer Name mono3z4.local Not connected Printing file name 0% 0 / 0 00:00:00 m eq | Tp da. 0.45 Tp length 2.5 Tip sizing 1.0 Upper angle 60 Penetration 0.0 |
| Printer Name | C Thin tip Sranch |
| mono4k-dev.local Not connected Printing file name | Support opacity 100 |
| 0% 0 / 0 00:00:00 find | Preset S M PL XL |
| Printer Name Printer Name Mot connected Printing file name Printing file name Printing file name Printing file name Printing file name Prin | [7:57:36 PM] Initialization completed ▲ [8:5:3 PM] Binary STL file with 1829078 trangle meshes loaded in: 1.47 sec. [8:5:3 PM] open_ring.st has been loaded. [8:5:33 PM] RingBase has been added. |
| | [8:5:55 PM] GlobalBase has been added. |
| | |

Fig. 2

• After the printer is connected, you can transfer the MNF file using the upload button. You will be asked to choose a file to send. If the transfer is successful, the FILE menu will be shown on Mono3 printer firmware.

3. Prepare Mono3 for printing

• Before printing, we recommend you to perform the homing procedure.



Fig. 3

• Place the build platform and pour a resin into the vat.

4. Start printing

- You can start printing by following simple 3 steps.
 - 1) Select a printing file



Fig. 4

2) The confirm printing parameters. If you need to override some parameters, modify them in this step



Fig. 5

3) Then start printing



Fig. 6

• Confirm all parameters are correct. The displayed parameters will be different by printer models.

| V2 mono3z4.local (mono3z4) - VNC Viewer | | - 🗆 X |
|---|---------------------------------------|---------|
| ? | CONFIRM PARAMETERS. | |
| | SLICE COUNTS: 55 UV DAC VALUE: 100 | 0:09:23 |
| Slic | B DAC VALUE: 50 G DAC VALUE: 50 | |
| | R DAC VALUE: 50 Enable wiper: | 0 0% |
| 0/0 | <u>Cancel</u> <u>Y</u> es | |
| | | |
| | Fig. 8 | |

• After you press the 'Yes' button, you will be prompted with a couple of messages like 'platform is moving to start position', 'preparing slices', etc. After these messages, the actual printing will get started.

5. Post-processing

- General procedure can be found on below link
- <u>https://www.matterhackers.com/articles/how-to-print-clean-and-post-process-sla-3d-prints</u>
- Briefly you need to take 3 steps
 - 1) Detach the complete prints from a build plate.

- 2) Immerse the prints in IPA bath for more than 5 mins. Manual agitation will be enough for some resins, however if you are using a wax based resin, ultrasonic double bath will be helpful. In this case, 2-4 mins with the ultrasonic bath will clean the print surface.
- After taking the prints from the IPA bath, remove excessive IPA of the print surface by air blow. The final step is curing with UV. A cheap nail curing station will be enough to cure small prints.