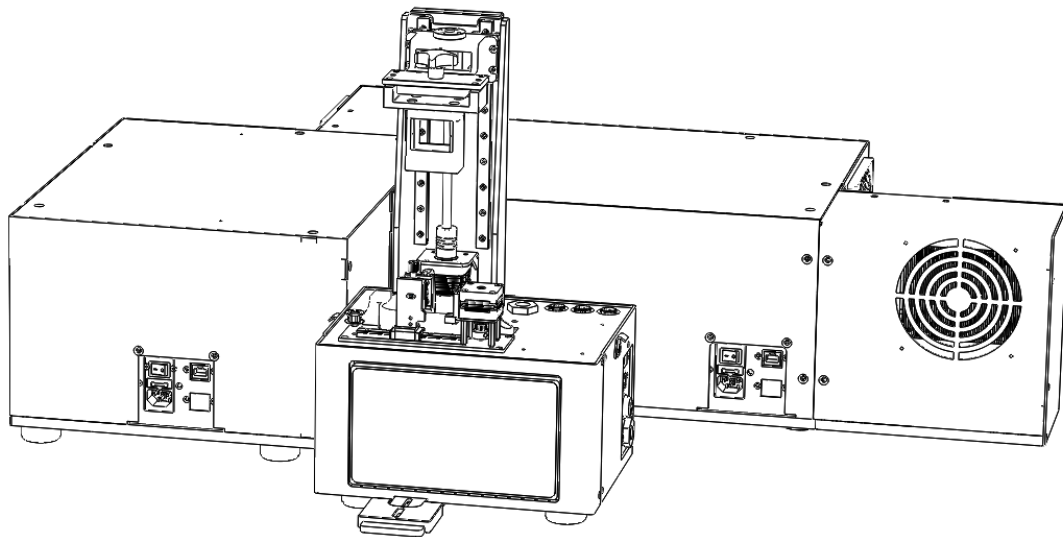MonoPrinter.com

MONO3Z4
4CH Printing File

Rev. 1.1

Revision History

Document number: MN3Z-C08

Rev. 1.0	11-18-2020	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. Model preparation

- In this manual, we will use SolidWorks 2017 (SW2017) to prepare multi-color printing models.
- Open SW2017 and design the model as usual with following exceptions.
- Distinct parts with different colors should not be merged together.
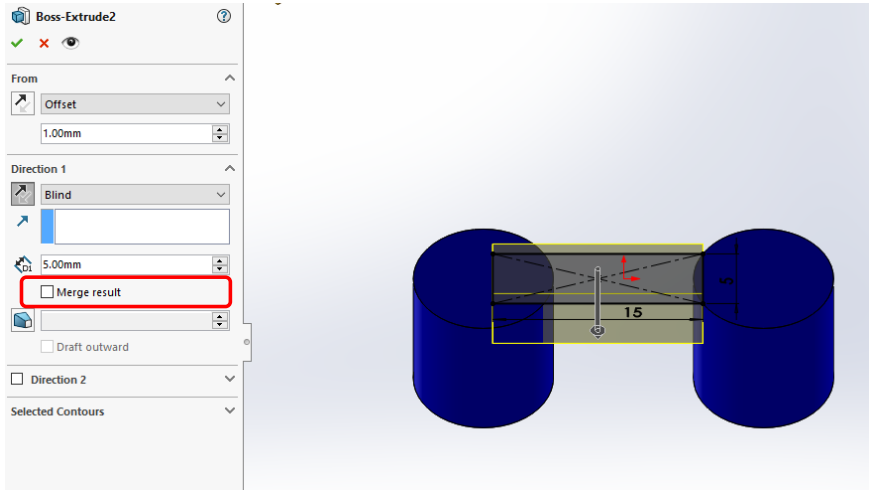

Fig. 1. SolidWorks extrude function with the merge option off

- Turn off 'Merge result' during extruding the rectangular box between two circular pillars.
- Different colors are identified by geometry color inside SW2017.
  - UV: (0, 0, 255)
  - B: (0, 255, 255)
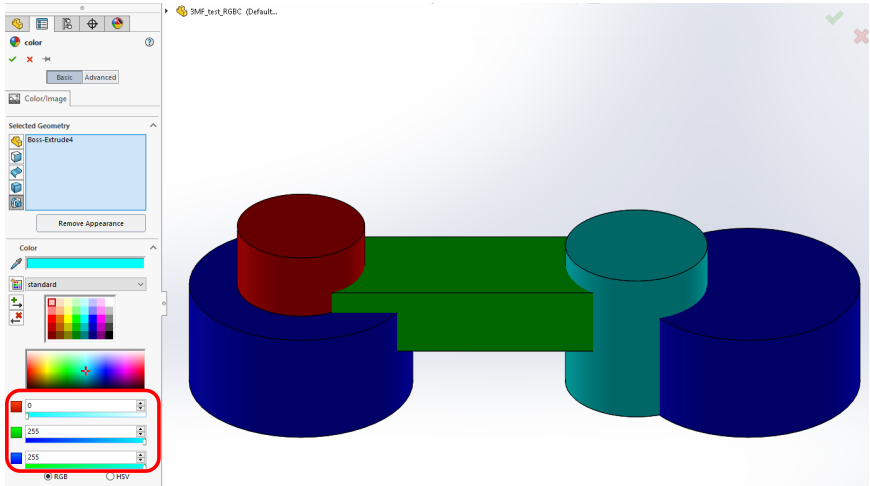 - G: (0, 255, 0)
  - R: (**192**, 0, 0)

Fig. 2. Color coding for Blue LED (0, 255, 255)

- Overlapping parts will be sliced and projected as designed.
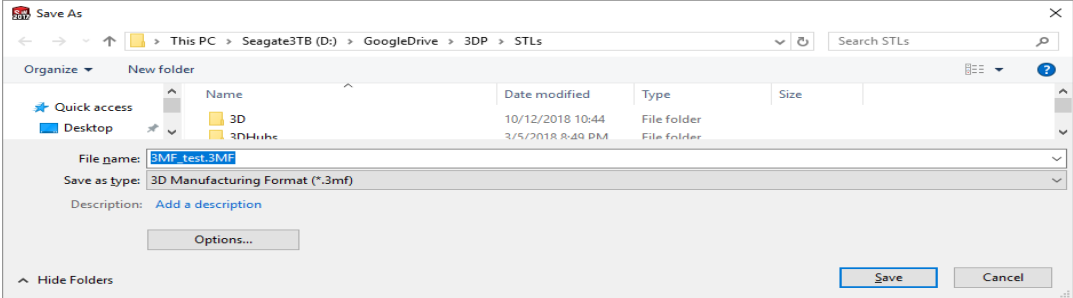- Once the model is designed, then you can export the model as ***.3MF format**.

Fig. 3. Save the model as 3MF format

2. Model import into MonoWare

● If this is the first time to start MonoWare for 4CH printer, add a printer profile (Menu > Tools > Printer profiles)
● Pixel size is different by system. Consult us for your printer's pixel size if you're not sure.
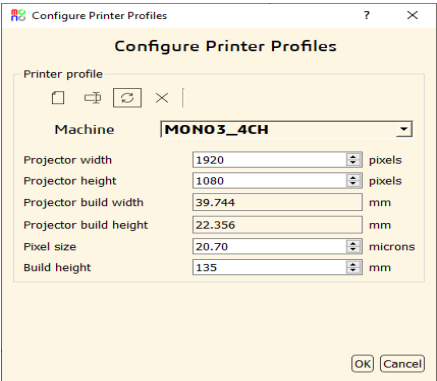

Fig. 4. 4CH printer profile

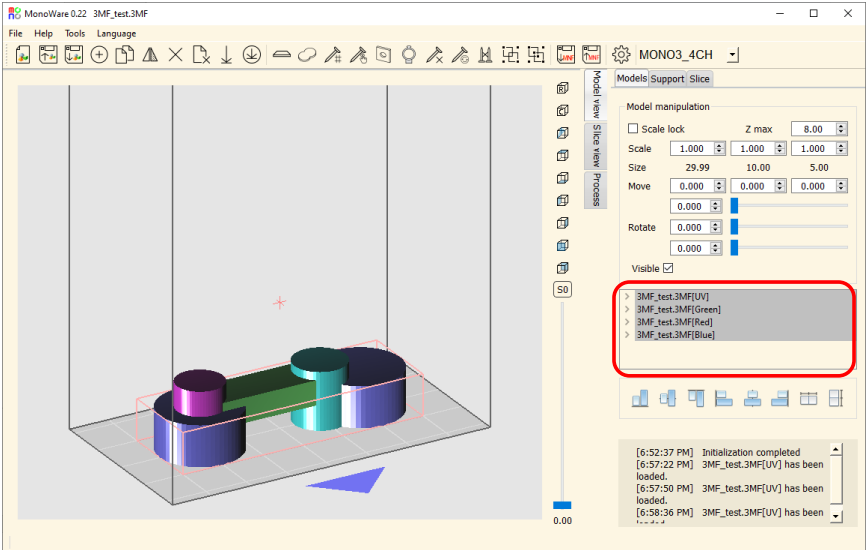● Import the 3MF file. Then you will see the color coded 3D models below.

Fig. 5. 4CH 3D model

- On a model list section, the color is specified after the file name
- You can create support structures and an adhesion base layer under the imported model.
- Note that all other structures inside MonoWare will be labeled as UV color, so prepare all other colored parts before 3MF export inside SW2017.
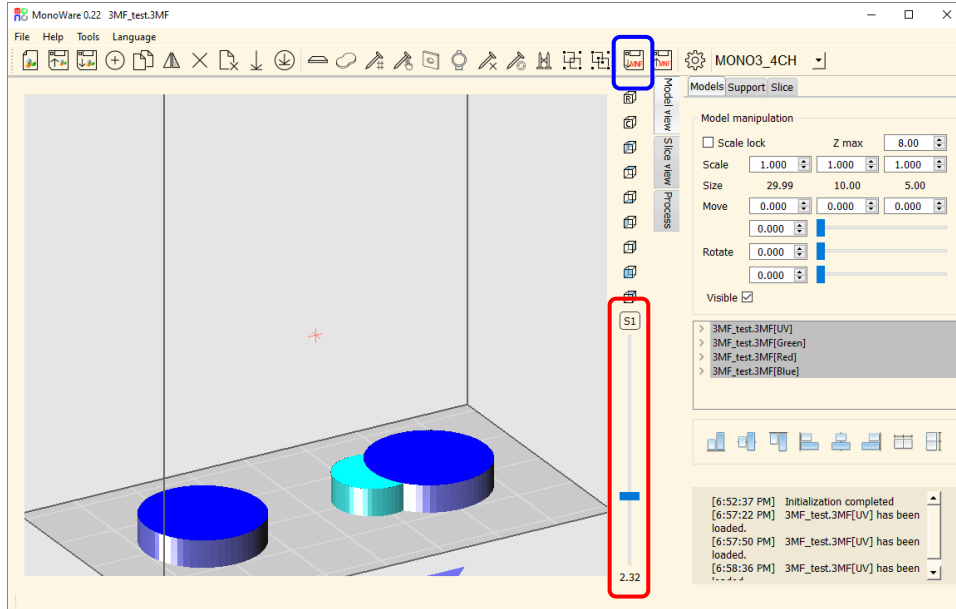

Fig. 6. Slice preview of multi-color model

- You can preview slices using a button above.
- As shown above, the UV and Blue parts are sliced separately, but overlapping areas won't be shown in this stage. Since the slice preview displays UV first and then Blue next, the overlapping Blue area is hidden for now. Actual printing slices will be shown after the slicing process.

3. Slicing

- Press the "Export MNF" button to start slicing (blue box in Fig. 6)
- With a printer name of "MONO3_4CH", the MNF configuration window will be different from 1CH printing.
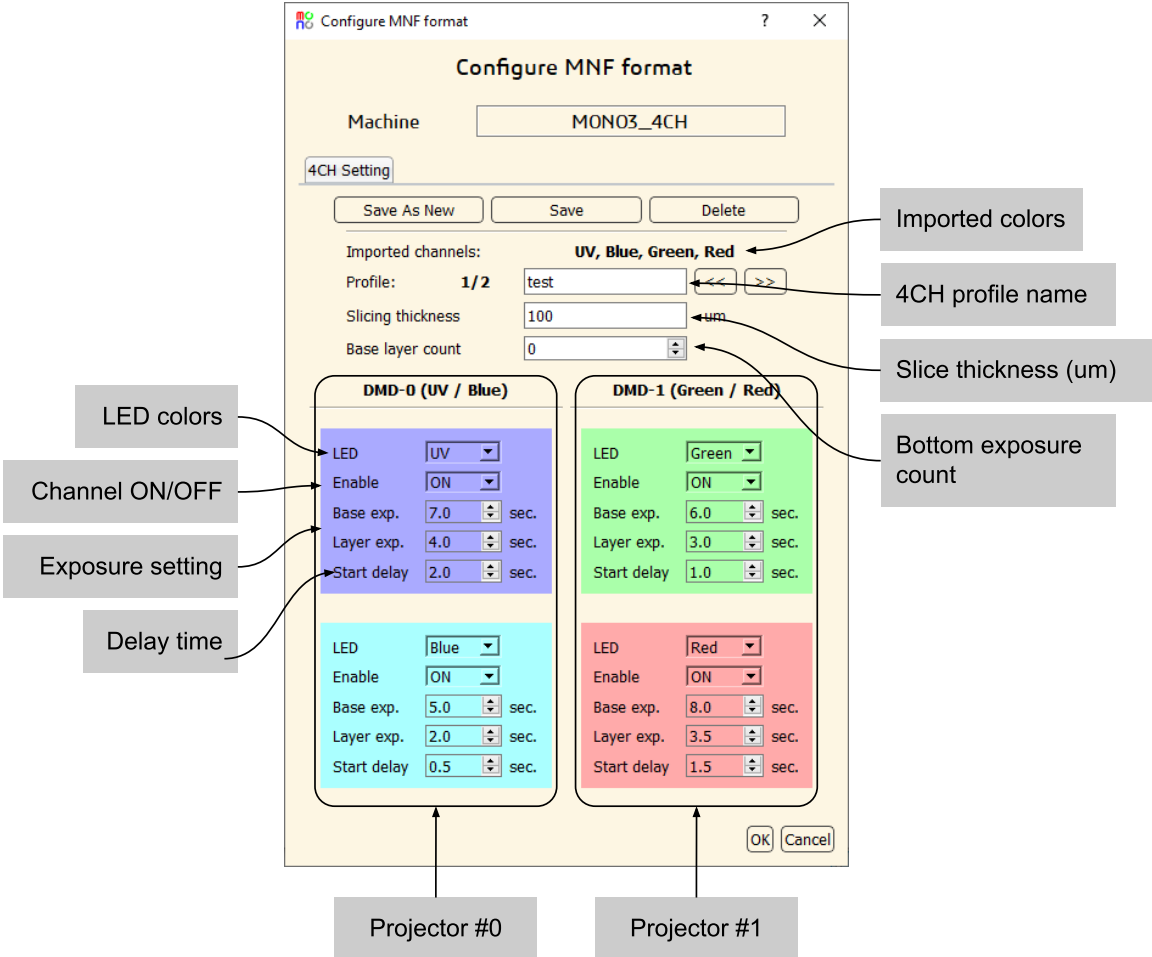
Fig. 7. MNF configuration window for 4CH printer

- The left column is for the projector 0 and the right is for the projector 1.
- The first row (UV and Green in Fig. 7) will be turned on at the same time, and the seond row (Blue and Red) will be followed.
- The profile shown in Fig. 7 will turn on LEDs with a following sequence (1 step = 1 sec).
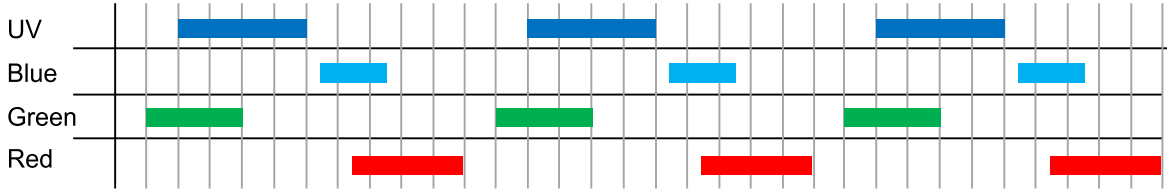

Fig. 8. LED timing diagram generated by the setting shown in Fig. 7

- When you finish editing the profile, press "OK" to export an MNF file (printing file).
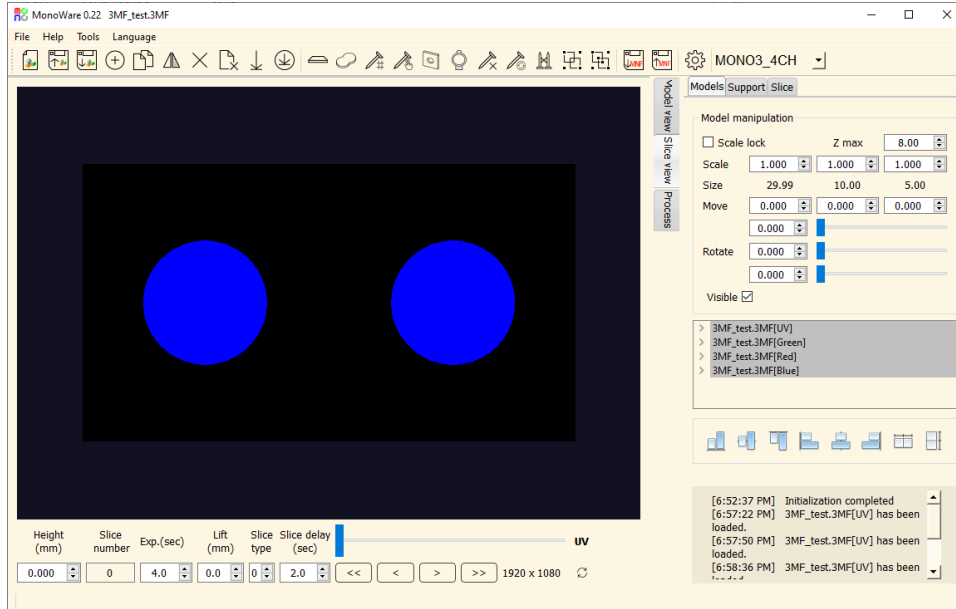
Fig. 9. Slice view after slicing completed.

- After the slicing is finished, each slice will be shown on the "Slice view" tab.
- You can navigate through all slices and check slice information including exposure time, lift distance, slice type, and slice delay time.
- Note that the slice type parameter is for 1CH printing files, so leave them as they are.
- After you confirm everything is correct, you can send the MNF file to the printer via network or USB drive.