# Exporting schematic information to PCB Editor

1. Open schematic editor.
2. Before exporting information it will be necessary to import the necessary footprints (refer to KiCAD implementation ppt) and assign them to the corresponding components using the footprint assigning tool on the toolbar of the schematic editor.

A picture containing diagram

Description automatically generated

1. Assign the footprints by choosing the component and searching for the footprint from the list on the left of the window.

Graphical user interface, text, application

Description automatically generated

1. Create the PCB file by navigating to Tools > Update PCB from Schematic, this will create a PCB editor file and export all the component footprints to the PCB editor.
2. Pick and place the components to the desired location.

# Autorouting PCB

1. Open the PCB Editor and export the placing information of the components as a Spectra DSN file by navigating to File > Export > Specctra DSN.
2. Open the freerouting software and import the Specctra DSN file.
3. Press the “Autorouter” button on the toolbar until the PCB is routed as desired.

Graphical user interface, text, application

Description automatically generated

1. Export the routing information by navigating to File > Export Specctra Session File.
2. Import Specctra Session file into KiCAD by navigating to File > Import > Specctra Session.

# XML Generator (xml\_generator.py)

Contains a function that takes track and pad data and outputs an XML file that contains layer, track and pad information such as positioning, dimensions and shapes.

Inputs:

track\_data: List containing key coordinates for the track, width and layers.

pad\_data: List containing position of pad, dimensions, shape and layer.

Output:

XML\_DATA.xml: XML file with the following hierarchy:

# GCODE Generator (advanced\_generator.py)

This script takes the “raw” coordinates of the shape to print and convertes it to the corresponding instructions in GCODE format for the 3D printer to print. As of May 1st 2023, it only generates code for the printer while it is extruding ink, not free movement without printing.

Inputs:

XY coordinates of key points for the shape to print (as a string)

Outputs:

ADVANCED\_GENERATED\_GCODE: GCODE file with the 3D printing instructions.