

OpenBuilds® Interface Specifications

Standalone Human-Machine Interface for controlling your OpenBuilds BlackBox / Grbl based CNC machine

No computer required: Plug in a flashdrive with your G-Code files and run directly from the Interface

240Mhz 32-bit Xtensa Dual-Core Microprocessor

Supports FAT32 Flash Drives

Color TFT LCD display

Capacitive Touch buttons, with tactile and audible feedback

Supports Homing, Jogging, Probing, Zeroing and Running your CNC machine

Plug-and-play with OpenBuilds BlackBox motion controller

Can be used with any Grbl 1.1 based controller, which has RX/TX/GND/5V pins (may require you to make your own cabling)

Product Information					
Product Name		Interface CNC Touch		Brand	Copper Pour
Model		CP-3100		Series Model	CP-3100
input voltage	5V	Input frequency		DC	Input current / power 5V 500mA
Output voltage		0V		output current	0mA

Modulation Type	BPSK/QPSK/16QAM/64QAM/DBPSK/DQPSK/CCK/GFSK Π/4-DQPSK 8-DPSK As per https://espressif-docs.readthedocs-hosted.com/projects/espressif-esp-faq/en/latest/hardware-related/RF-related.html	Antenna Type	Onboard the ESP32 Module
Antenna gain	2dBi	Work temperature	−40°C to +125°C
Voltage Rang	5V		

OpenBuilds Interface: Usage Instructions: Run a Job

OpenBuilds Interface allows you to use your CNC Machine without a computer attached

Prerequisites:

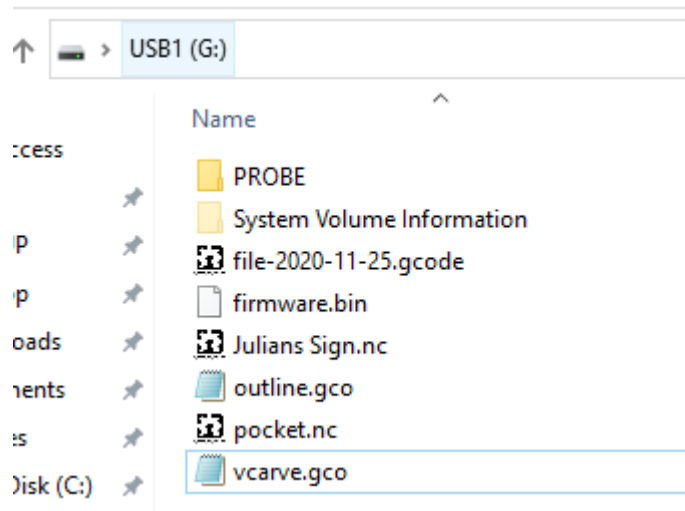
Before you can use it to run a job for the first time, make sure you have

- Prepared and Connected your BlackBox (or other Grbl based controller)
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- Connected your Interface to Wifi (Easiest way to update firmware)
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- Updated your Firmware (Keep up to date regularly)
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- Prepared your USB Flashdrive (needed for some functions on Interface to work)
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1. Generate your GCODE files and copy it to the Flashdrive

Take the flashdrive out of the Interface and connect it to your computer. Then copy your GCODE files to the flashdrive. Once you have the files you need, eject the USB drive and reinsert it into the Interface

Note: Interface only shows filenames in 8.3 format - ie 8 character filename, with a 3 character extension. Longer filenames will be truncated in the menu display to 8.3 format.



2. Setup / Prepare stock for the Job

You have to set up the origin of the job, just as when you are using OpenBuilds CONTROL, or any other Grbl host:

- Use either Jogging, or the [Probing functions](#) under Tools and Util to find the origin of the stock, as you had it configured in CAM
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- Zero out the machine using the SET XYZ ZERO button, or by running the Probing routines in the Probe Menu
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TIP: Adjusting the Jog Speed allows you perform finer grained jog moves for final positioning, the lower the speed, the smaller the distance you can move.

3. Load your GCODE file

Press the LOAD FILE button to select the Gcode file you want to run from the File Menu.



4. Run the GCODE file

Once you have selected a file, do your final pre-run sanity check:

- Correct endmill
-
- Origin set correctly / Zeroed out in correct location
-
- Correct file loaded
-
- Router/Spindle/Dust Extraction turned on manually if its not under G-Code control
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Press the Run File button to start the Job

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum 20cm distance between the radiator and your body: Use only the supplied antenna.