

snapmaker

3D Printing Module:

PIN1: VCC, Heater Socket Pin 1, Fan+
PIN2: Stepper Coil A+
PIN3: Heater Socket Pin 2
PIN4: Stepper Coil A-
PIN5: Thermistor Socket Pin 1
PIN6: Stepper Coil B-
PIN7: GND, Fan-, Thermistor Socket Pin 2
PIN8: Stepper Coil B+

Heated Build Plate:

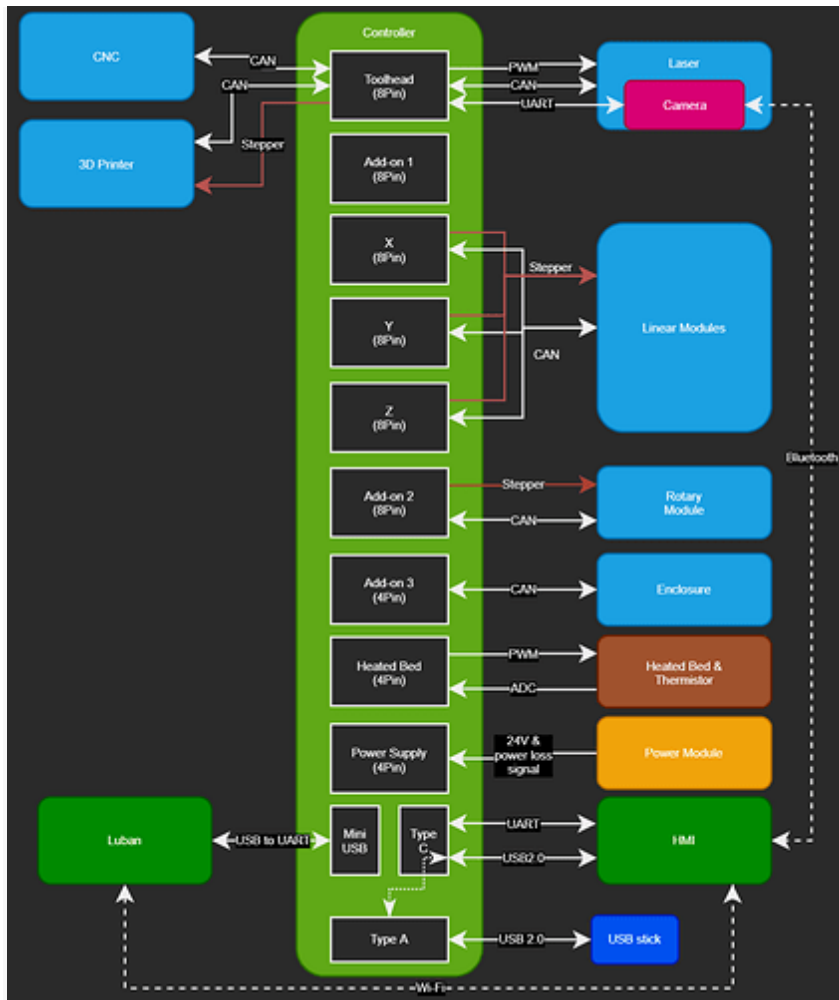
PIN1: Heating Element +
PIN2: UNUSED
PIN3: Heating Element -
PIN4: UNUSED
PIN5: Thermistor +
PIN6: Thermistor -

The heating element registered as 12Ohms so 48W at 24V. The Thermistor gave a reading of 80kOhm in my 90 degree F garage.

Linear Module:

PIN1: Coil A +
PIN2: Coil A -
PIN3: Coil B +
PIN4: Limit Switch +
PIN5: Coil B -
PIN6: Limit Switch -

This is the hardware connection of the Snapmaker2-Controller, it indicates how different modules communicate with each other via CAN-bus.



Hardware-Link1041×1233 52.9 KB

Controller <-> Luban

- USB to UART: Communication between Controller and Luban is original Marlin supported Gcode.

Controller <-> HMI

- UART: Communication with HMI using SSTP (Snapmaker simple transformation protocol)
- USB 2.0: Provides the link to read/write USB stick plugged in

Controller <-> 3D printing module

- Wired link: stepper signals (enable, direction, step signals)
- CAN bus:

- identify and configure the module
- upgrade module
- read probe sensor
- read filament sensor
- read/write nozzle temperature
- set FAN1/FAN2 speed
- set PID parameters

Controller <-> Laser module

- Wired link: laser power (remapped from step signal)
- CAN bus:
 - identify and configure the module
 - upgrade module
 - read/write laser focus data
 - Set FAN speed
- UART bus (remapped from enable and direction signals):
 - upgrade camera module
 - get Bluetooth MAC address
 - get/set Bluetooth name

Controller <-> CNC module

- CAN bus:
 - identify and configure the module
 - upgrade module
 - set spindle speed

Controller <-> Linear modules

- Wired link: stepper signals (enable, direction, step signals)
- CAN bus:
 - identify and configure the module
 - e.g. distinguish X, Y, Z linear modules
 - upgrade module
 - get the lead
 - get the length
 - get end_stop status

Controller <-> Rotary module

- Wired link: stepper signals (enable, direction, step signals)
- CAN bus:
 - identify and configure the module
 - upgrade module

Controller <-> Enclosure add-on

- CAN bus:
 - indentify and configure module
 - upgrade module
 - get door status (open / closed)
 - set light bar brightness
 - set FAN speed

Controller <-> Power Module

- 24V provider
- Wired link: Power-Loss signal

HMI <-> Snapmaker Luban

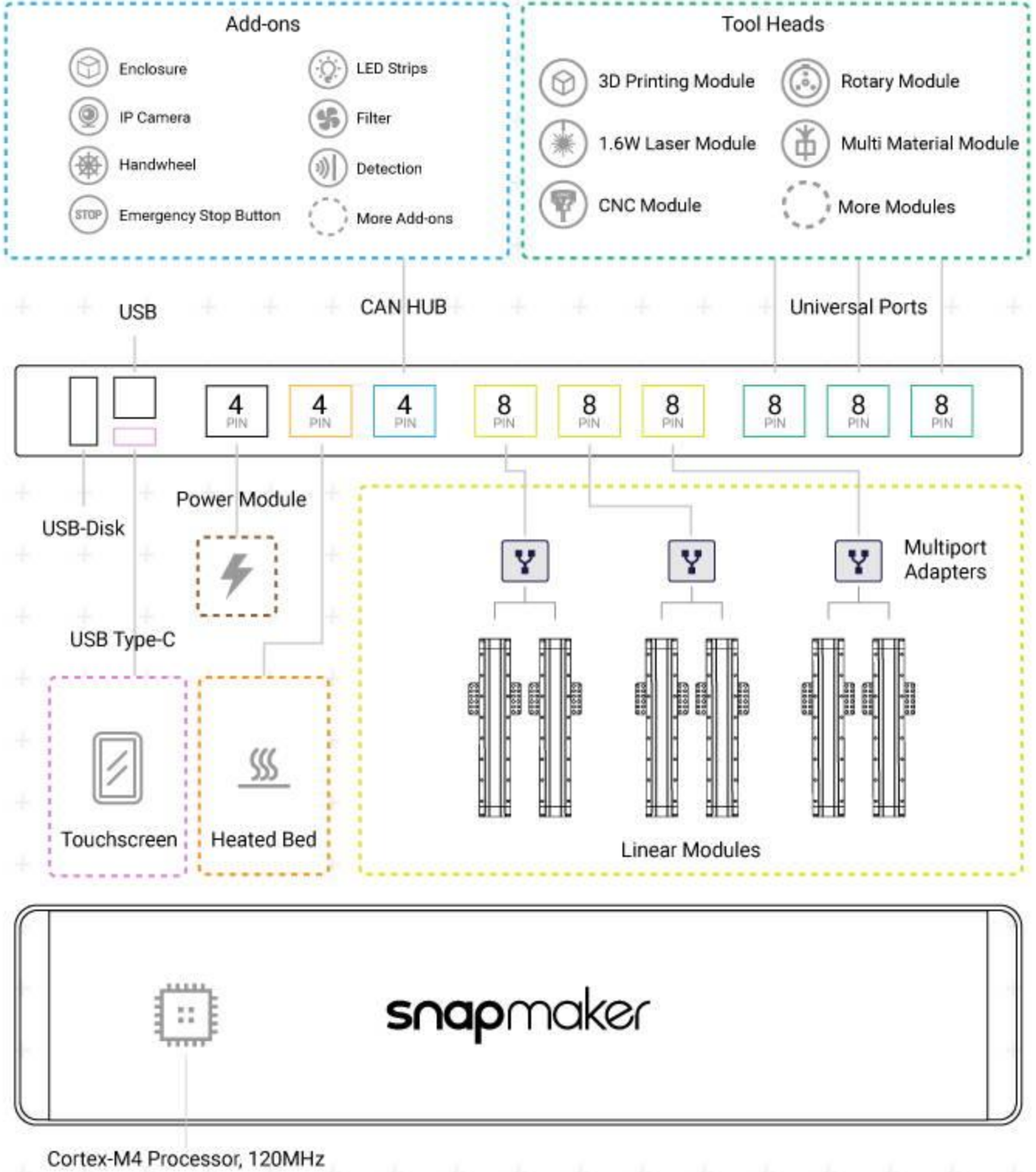
- Wi-Fi API
 - file transfer
 - get machine status
 - G-code commands
 - remote printing control
 - ...

HMI <-> Laser camera

- Bluetooth
 - control LED
 - take pictures
 - file transferring

————— **POWERFUL CONTROLLER** —————

EXPAND YOUR CREATIVITY



Snapmaker 2.0 can support various tool heads, add-ons, multiple linear modules, and more features using simply one controller. A big reason we are able to do this is that we innovatively

adopt the **CAN (Controlled Area Network) bus expansion solution** which was widely used in car automation. Rather than adding more ports and make a bigger control board with tangled cables, we've upgraded our controller to expand your creativity by providing universal ports, multiport adapters, and a CAN Hub for adding additional CAN-bus ports.

Using the CAN bus protocol, the controller is able to connect all modules and add-ons in Snapmaker 2.0 system. Each module and add-on contains a chip for receiving all transmitted messages and act accordingly. This allows easy modification and inclusion of additional ports and controls in the future.