

# DEVELOPMENT

## OPEN SYSTEMS:

- <https://pine64.org/>
- <https://starlabs.systems/>

## RASPBERRY PI / OTHER CC (CR-80) BOARDS:

- <https://www.raspberrypi.com/>
- <http://www.orangepi.org/>
- <https://libre.computer/>
- <https://www.hardkernel.com/>
- <https://www.canakit.com/>
- <https://mygeeekpi.com/>
- <https://www.loverpi.com/>
- <https://github.com/oleg4apk/Tanix-TX6> [Tanix-TX6/Pendoo X6 PRO]

## SOFTWARE:

- <https://www.raspberrypi.com/software/>
- <https://www.armbian.com/>
- <https://www.openmediavault.org/>
- <https://www.home-assistant.io/>
- <https://www.openhab.org/>

## ARDUINO:

- <https://www.arduino.cc/en/hardware>

## ESP32:

- <https://www.amazon.com/s?k=esp32>
- <https://www.amazon.com/s?k=heltec+esp32>
- <https://www.amazon.com/stores/page/7228D50C-C54F-441C-B3BD-B585372FE2B1>
- <https://www.amazon.com/stores/Meshnology/page/2FCC0FE0-D762-44B7-8ABA-520D55EF306F>
- <https://heltec.org/product-category/lora/meshtastic/>
- <https://meshnology.com/>
- [https://github.com/HelTecAutomation/Heltec\\_ESP32](https://github.com/HelTecAutomation/Heltec_ESP32)
- <https://huhn.me/>
- <https://meshtastic.org/>
- <https://flasher.meshtastic.org/>
- <https://map.meshtastic.org/>
- <https://meshtastic.liamcottle.net>

## BEETLE USB / ARDUINO MICRO [ATMEGA32U4]:

- <https://www.amazon.com/HiLetgo-Microcontroller-ATMEGA32U4-Development-Keyboard/dp/B07W5K9YHP>
- <https://www.amazon.com/s?k=hiletgo+beetle+usb+atmega32u4> [FALLBACK LINK]

## SOFTWARE / IDE FOR ESP32 + ATMEGA32U4 [BEETLE USB / ARDUINO MICRO]:

- <https://github.com/arduino/arduino-ide>
- <https://www.arduino.cc/en/software>

## SIM800C:

- <https://www.simcom.com/product/SIM800C.html>
- <https://www.amazon.com/s?k=sim800c>
- <https://github.com/smdthiranjaya/SIM800C-module>
- [https://files.waveshare.com/upload/2/26/SIM800\\_Series\\_AT\\_Command\\_Manual\\_V1.11.pdf](https://files.waveshare.com/upload/2/26/SIM800_Series_AT_Command_Manual_V1.11.pdf)

## **DEBUG:**

### INFO:

- <https://www.espboards.dev/blog/esp32-usb-to-uart/>
- <https://www.iotrouter.com/what-is-the-difference-between-ft232-ch340-cp2102-and-ch341/>
- <https://www.rei-labs.net/usb-to-serial-ttlrs232-converter-comparison/>
- <https://www.xinshop.com/components-parts/ch340-vs-cp2102-vs-ch341-vs-ft232-differences>
- <https://wiki.freebsd.org/USB/Peripherals/Serial>
- <https://swisskyrepo.github.io/HardwareAllTheThings/debug-interfaces/uart/>
- <https://github.com/swisskyrepo/HardwareAllTheThings/blob/main/docs/debug-interfaces/uart.md>
- <https://zeptobars.com/en/read/FTDI-FT232RL-real-vs-fake-supereal> [!]
- [https://wiki.dd-wrt.com/wiki/index.php/Serial\\_Recovery](https://wiki.dd-wrt.com/wiki/index.php/Serial_Recovery)

### PINOUTS:

- <https://pinoutguide.com/>
- <https://www.hardwarebook.info/>
- <https://allpinouts.org/>
- <https://pinout.ai/>
- [https://wiki.dd-wrt.com/wiki/index.php/Serial\\_port\\_pinouts](https://wiki.dd-wrt.com/wiki/index.php/Serial_port_pinouts)
- [https://wiki.postmarketos.org/wiki/Serial\\_debugging/Cable\\_schematics](https://wiki.postmarketos.org/wiki/Serial_debugging/Cable_schematics)
- <https://pinout.xyz/pinout/uart>
- <https://wiki.t-firefly.com/ROC-RK3328-CC/debug.html>
- <https://www.deshide.com/>
- <https://www.waveshare.com/>

### UART:

#### FT232:

- <https://www.amazon.com/s?k=FT232>
- <https://www.amazon.com/DSD-TECH-Adapter-FT232RL-Compatible/dp/B07BBPX8B8>
- <https://www.amazon.com/Waveshare-Industrial-USB-TTL-Protection/dp/B087RJ7X32>

#### FT2232/FT4232:

- FT2232 is a dual UART channel FT232
- FT4232 is a quad UART channel FT232
- <https://www.amazon.com/s?k=ft2232>
- <https://www.amazon.com/s?k=ft4232>

**CH340[3(G)]:**

- <https://www.amazon.com/s?k=CH340>
- <https://www.amazon.com/s?k=CH343>
- <https://www.amazon.com/LoveRPI-UART-Serial-Cable-Debugging/dp/B07DP7SPNH>
- <https://www.loverpi.com/products/loverpi-usb-uart-serial-debug-cable-for-libre-computer-raspberry-pi-and-3-3v-systems>

**CP210[2/4/9]:**

- <https://www.amazon.com/s?k=cp210>
- <https://www.amazon.com/s?k=cp2102>
- <https://www.amazon.com/s?k=cp2104>
- <https://www.amazon.com/s?k=cp2109>

**PL2303:**

- <https://www.amazon.com/s?k=pl2303>

**SOFTWARE:**

- <https://salsa.debian.org/minicom-team/minicom>
- <https://www.gnu.org/software/screen/>
- <https://github.com/tio/tio>
- <https://www.putty.org/>
- <https://www.chiark.greenend.org.uk/~sgtatham/putty/>
- <https://github.com/wvdakker/gtkterm>
- <https://linux.die.net/man/1/gtkterm>
- <https://gitlab.com/cutecom/cutecom>
- <https://cutecom.sourceforge.net/>
- <https://www.9bis.net/kitty/>
- <https://github.com/geo-tp/ESP32-Bus-Pirate>

**SPI / BIOS:****CH341[A]:**

- <https://www.amazon.com/s?k=CH341>
- <https://www.amazon.com/s?k=CH341A>

**SOFTWARE:**

- <https://github.com/bigbigmdm/IMSProg>
- <https://github.com/flashrom/flashrom>
- <https://antenna-dvb-t2.ru/IMSProg.php> [RUSSIAN]
- <https://www.flashrom.org/>
- <https://github.com/LongSoft/UEFITool>

**CAD SOFTWARE:**

- <https://www.freecad.org/>
- <https://www.kicad.org/>
- <https://chili3d.com/>

**MISC:**

- <https://heltec.org/>
- <https://www.deshide.com/>
- <https://www.waveshare.com/>
- <https://itead.cc/>
- <https://sonoff.tech/>
- <https://jlcpcb.com/>
- <https://www.thingiverse.com/>
- [https://energyusecalculator.com/watts\\_volts\\_amps\\_ohms.htm](https://energyusecalculator.com/watts_volts_amps_ohms.htm)
- <https://github.com/issamsam/Aethershell>
- <https://github.com/sigoden/aichat>
- <https://hub.libre.computer/t/gpio-pinout-header-maps-and-wiring-tool-for-libre-computer-boards/>
- <https://hub.libre.computer/t/control-servo-motor-with-gpio-pins-and-pwm/>
- > <https://hub.libre.computer/t/how-to-enable-and-control-pwm-on-aml-s905x-cc/>
- > <https://hub.libre.computer/t/how-to-enable-and-control-pwm-on-libre-computer-roc-rk3328-cc/>

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