HackberryPi CM5

An ultra portable handheld Linux device using Raspberry CM5 unit as Core with 4" 720×720 TFT Touch display and the original blackberry keyboard.

Specifications

Compute Device	Raspberry Pi CM5 (lite)
Display	4" 720×720 TFT with multi-touch
Battery	internal 5000mAh LiPo
Connectivity	2x USB 2.0 HDMI on-board Stemma I2C port for external sensors
Storage	micro SD card internal M.2 NVMe (optional)
Communication	onboard Wifi (optional external antenna) onboard Bluetooth

NVMe

The Hackberry Pi CM5 can be equipped with a 2242 M.2 NVMe.
Not all NVMes work with it! This is a common issue with all Raspberry Pis.

To choose a working NVMe, it is best to do some research online to see which NVMe has already been confirmed to work with a Raspberry Pi. Generally, **the NVMe needs to use PCIe. SATA NVMes will not work!**

The following NVMes have been confirmed to work:

- KingSpec NXM-2242 (also available on elecrow)

2230 NVMes will also work with an appropriate adapter.

Enabling PCIe Gen 3

By default, the Raspberry Pi will use PCIe Gen 2. You can configure Gen 3 by adding the following line to the ''config.txt'':

```
dtparam=pciex1_gen=3
```

Cooling

The HackberryPi CM5 ships with a passive heatsink. It should be adequate for most usage. Temperatures will go up to 70°C, which shouldn't be a problem.

However, you can install an active cooler with a fan (like this one). The only requirement is how it mounts to the CM5. The underside of the heatsink should be flush. No stand-offs should be included (they can be removed, with a Dremel if needed).

The following parameters can be added to the ''config.txt'' to set a fan speed curve:

```
# Fan is cutting on at 40 degrees Celsius,
# it is going to drop it by 10 degrees at a fan speed of 200
# temp=millicelsius

dtparam=fan_temp0=40000
dtparam=fan_temp0_hyst=10000
dtparam=fan_temp0_speed=200

dtparam=fan_temp1=50000
dtparam=fan_temp1_hyst=20000
dtparam=fan_temp1_speed=225
```

Thanks to Discord user Tripp for the parameters!

Common issues

CM5 with eMMC

The Raspberry Pi CM5 comes in many variations, with the options of having integrated eMMC storage, onboard bluetooth and wifi, and different amounts of RAM.
The CM5 versions with integrated eMMC storage need to be flashed with an adapter to enable boot from another medium (USB, NVMe, micro SD card,…). It is therefore recommended to get a CM5 lite (without eMMC).

Lacking hardware support

Some operating systems (like Ubuntu and DragonOS lack the hardware support for the CM5 (lite) and/or are running very unstably. For more details, refer to the respective operating system's page.

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