

The BeagleBone Black

The BeagleBone and the later BeagleBone Black are open hardware designs for a small, credit card sized development board produced by CircuitCo LLC. The main repository of information is at <https://beagleboard.org/>. The main points of the specifications are:

TI AM335x 1 GHz ARM® Cortex-A8 Sitara SoC

512 MiB DDR3 RAM

2 or 4 GiB 8-bit eMMC on-board flash storage

Serial port for debug and development

MicroSD connector, which can be used as the boot device

Mini USB OTG client/host port that can also be used to power the board

Full size USB 2.0 host port

10/100 Ethernet port

HDMI for video and audio output

In addition to the board itself, you will need:

- A mini USB to full-size USB cable (supplied with the board) to provide power, unless you have the last item on this list.
- An RS-232 cable that can interface with the 6-pin 3.3V TTL level signals provided by the board. The Beagleboard website has links to compatible cables.
- A microSD card and a means of writing to it from your development PC or laptop, which will be needed to load software onto the board.
- An Ethernet cable, as some of the examples require network connectivity.
- Optional, but recommended, a 5V power supply capable of delivering 1 A or more.

QEMU

QEMU is a machine emulator. It comes in a number of different flavors, each of which can emulate a processor architecture and a number of boards built using that architecture. For example, we have the following:

qemu-system-arm: ARM

qemu-system-mips: MIPS

qemu-system-ppc: PowerPC

qemu-system-x86: x86 and x86_64