The Caninos Loucos Labrador board is a Brazilian Single Board Computer, with open Hardware and Software, that can be used to create Internet of Things applications.

It is composed by two boards: the Labrador Core Board, which has all features of a modern computer, and the Labrador Base Board, which expands its communication options by providing a large variety of connectors.

The modularity of the Caninos Loucos Labrador board allows for greater flexibility in hardware interface prototyping. Other Base Board models can be used, with specific functionalities required by custom applications.

This board set features ESD (electrostatic discharge) protection, is compact, resistant, and can be used in a range of applications, from personal projects to commercial applications.

### MAIN BENEFITS

**Modular**
- Suitable for any application segment

**Customizable**
- An open architecture, malleable to your needs

**Economic**
- Designed and manufactured in Brazil

**Simple**
- National Engineering right in your hands

### IDEAL FOR

- Internet of Things applications
- Cyber-physical systems
- Robotic applications
- Outside monitoring applications

http://www.caninosloucos.org
**CORE BOARD V.2**

- **CPU:** Quad-core ARM® Cortex™ 1.3GHz A9R4 CPU (ARM v7 instruction set)
- **GPU:** Imagination PowerVR SGX544. Supports: OpenGL-ES 1.1 and 2.0, OpenGL 1.2.1, OpenCL 1.1
- **Memory:** 2 GB DDR3 SDRAM
  16GB eMMC
- **Operational Systems:** Android 5.0 / Linux 3.10.100
- **PMU:** ATC2306C - Energy management and audio subsystem
- **Video:** 1080p@60fps supports video encoding (including H264, H263, MPEG-4)
- **Expansion:** 204 pins DDR3 SODIMM connector (male)
- **Dimensions:** 67.6 x 42.2 mm
- **Weight:** 10g

**BASE BOARD M V.1.0**

- **Storage:** MicroSD Card Slot SD/SDHC/SDXC - up to: 32GB
- **Ethernet:** 10/100Mbps (RJ45)
- **Wireless:** Wi-Fi 802.11 b/g/n 2.4GHz
  Bluetooth 4.0
  1 x infrared receptor (38kHz)
- **USB:** 2 x USB2.0 HOST (type A)
  1 x USB3.0 OTG (micro-B)
- **Display:** 1 x HDMI 1.4 (type A), up to 1920x1080@60Hz
  1 x LVDS-DSI para LCDs, up to 1920x1080@60Hz
  1 x CVBS PAL/NTSC (PJ342 3.5mm)
- **Audio:** HDMI output
  Analog stereo output (PJ342 3.5mm)
  I2S input/output
  Embedded microphone
- **Camera:** 1 x MIPI-CSI
  1 x 8 bits parallel interface
- **LED:** 1 x on/off (red)
  1 x programmable (green)
  1 x programmable (blue)
- **Buttons:** 1 x on/off
  1 x reboot
  1x ADFU
- **Power:** 5~12V@2A
  (internal diameter 2,1mm, external 5,5mm, positive center)
- **Expansion:** 204-pins SODIMM connector (female), 40-pin header: 28 GPIOs (compatible with Raspberry Pi / supports UART, I2C, SPI, PWM and I2S)
- **Debug:** UART
- **Dimensions:** 88mm x 81,3mm
- **Weight:** 52,6g

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