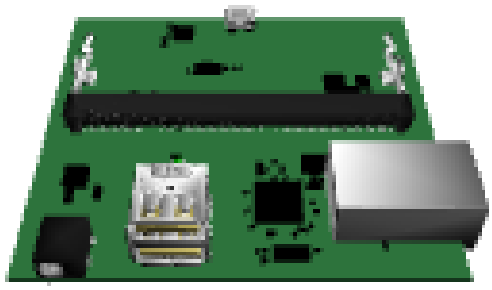
Raspberry Pi Compute Ethernet and USB



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Board Description

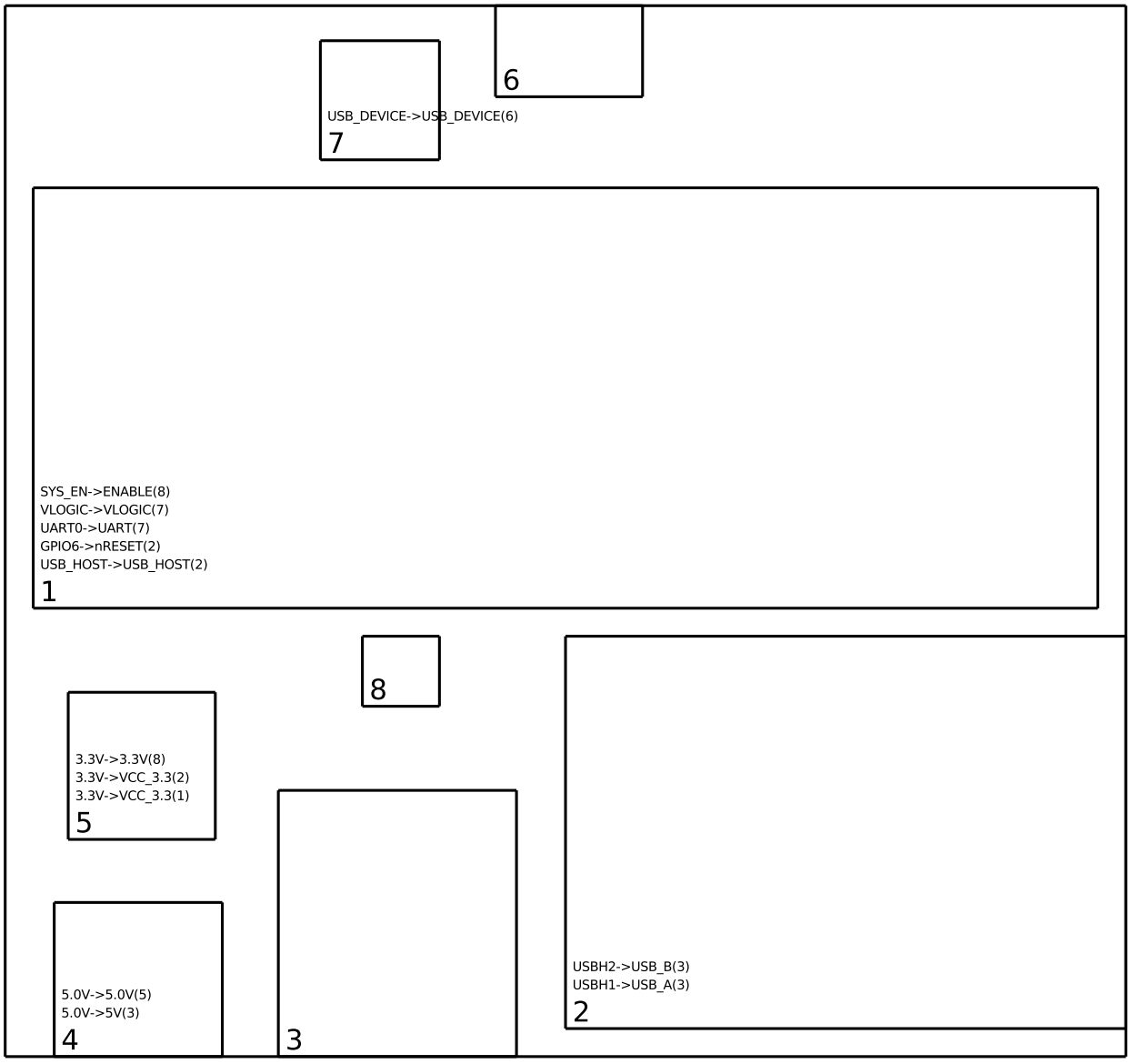
A Raspberry Pi Compute module connected to a USB-Ethernet module. The board has one RJ45 jack and a dual-USB header.

Board Dimensions

8.0cm x 7.5cm

Contents

1 Modules on Board



1.1 COM Connectors

1.1.1 Raspberry Pi Compute Module Connector (v9) (1)

The Raspberry Pi Compute Module provides great variety of GPIO and special purpose pins. It uses a Broadcom CPU on-board and also has an eMMC for booting up. It requires 6 separate voltages; the module built into geppeto requires only 2: one at 5.0V and one at 3.3V; sequecing on powerup is managed within the Geppetto modular design.

It requires:

- VCC_3.3 from 3.3V/1.5A Regulator (5)

The Geppetto Pi Compute connector provides the following outputs:

- UART0 to USB-UART (7)
- USB_HOST to USB-Ethernet Module with Hub (2)
- GPIO6 to USB-Ethernet Module with Hub (2)
- SYS_EN to Green LED (8)
- VLOGIC to USB-UART (7)

1.2 Network

1.2.1 USB-Ethernet Module with Hub (v2) (2)

This module offers a 10/100 Base-T Ethernet connection via USB connection to USB_HOST on Raspberry Pi Compute Module Connector (1).

Raspberry Pi Compute Module Connector (1) is also connected to an internal USB Hub.

The module's USB hub also provides a USB_HOST connection to:

- USB_A on Dual Stacked USB Type A (3)
- USB_B on Dual Stacked USB Type A (3)

1.3 USB

1.3.1 Dual Stacked USB Type A (v6) (3)

A dual type-A USB host stacked vertically that allows you to connect USB devices to the board.

It is connected to:

- USBH1 on USB-Ethernet Module with Hub (2)
- USBH2 on USB-Ethernet Module with Hub (2)

1.3.2 Micro-B Jack (v8) (6)

A USB micro-B port allows your design to connect as a USB device to a USB host.

This module is connected to USB_DEVICE on USB-UART (7).

1.4 Power Connectors

1.4.1 Barrel Connector (5V 3A) (v6) (4)

This power jack is compatible with Gumstix 5V/3.5A DC power adapter using a 4.0mm x 1.7mm barrel connector. It provides more current than a standard 5V DC power supply, suitable for use with multi-processor designs.

This power jack provides 5V to the following modules:

- Dual Stacked USB Type A (3)
- 3.3V/1.5A Regulator (5)

1.5 Power

1.5.1 3.3V/1.5A Regulator (v9) (5)

This DC to DC step down regulator provides a 3.3V DC output at 1.5A needed by certain components on this board. It is capable of accepting an input voltage between 3.1 to 16V DC. Currently, its input is 5V from Barrel Connector (5V 3A) (4).

This regulator provides 3.3V to:

- Raspberry Pi Compute Module Connector (1)
- USB-Ethernet Module with Hub (2)
- Green LED (8)

1.6 Connectivity

1.6.1 USB-UART (v14) (7)

Also known as an FTDI, this USB to UART converter allows a USB connection to the board to behave as a virtual RS232 serial connection. It offers direct and complete access to the system from a development machine.

This USB to UART converter connects a host machine from Micro-B Jack (6) to UART0 on Raspberry Pi Compute Module Connector (1).

1.7 IO

1.7.1 Green LED (v13) (8)

This 1608 standard size green LED provides an indicator for the signal SYS_EN on Raspberry Pi Compute Module Connector (1).

2 Module Connections Graph

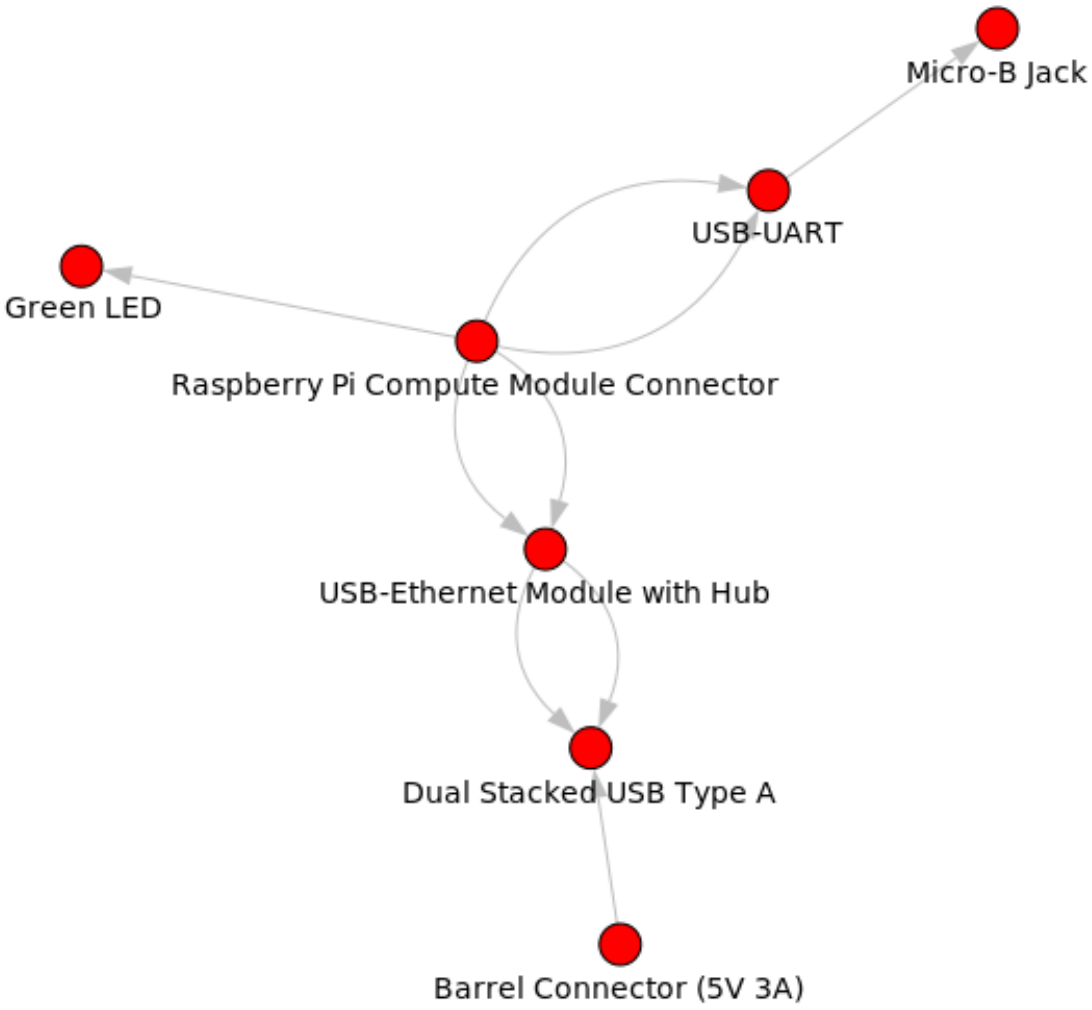


Figure 1: excludes power modules

3 Module Power Graph