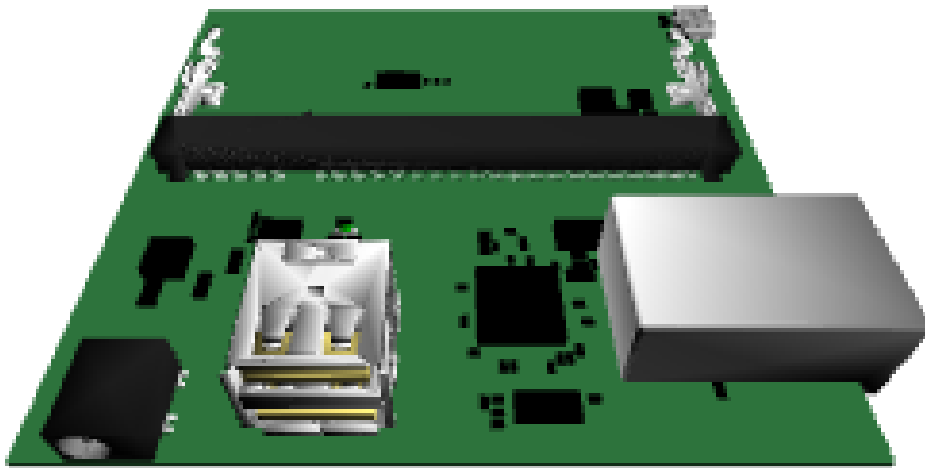


Gumstix Pi Compute USB-Ethernet



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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

8cm x 7.5cm

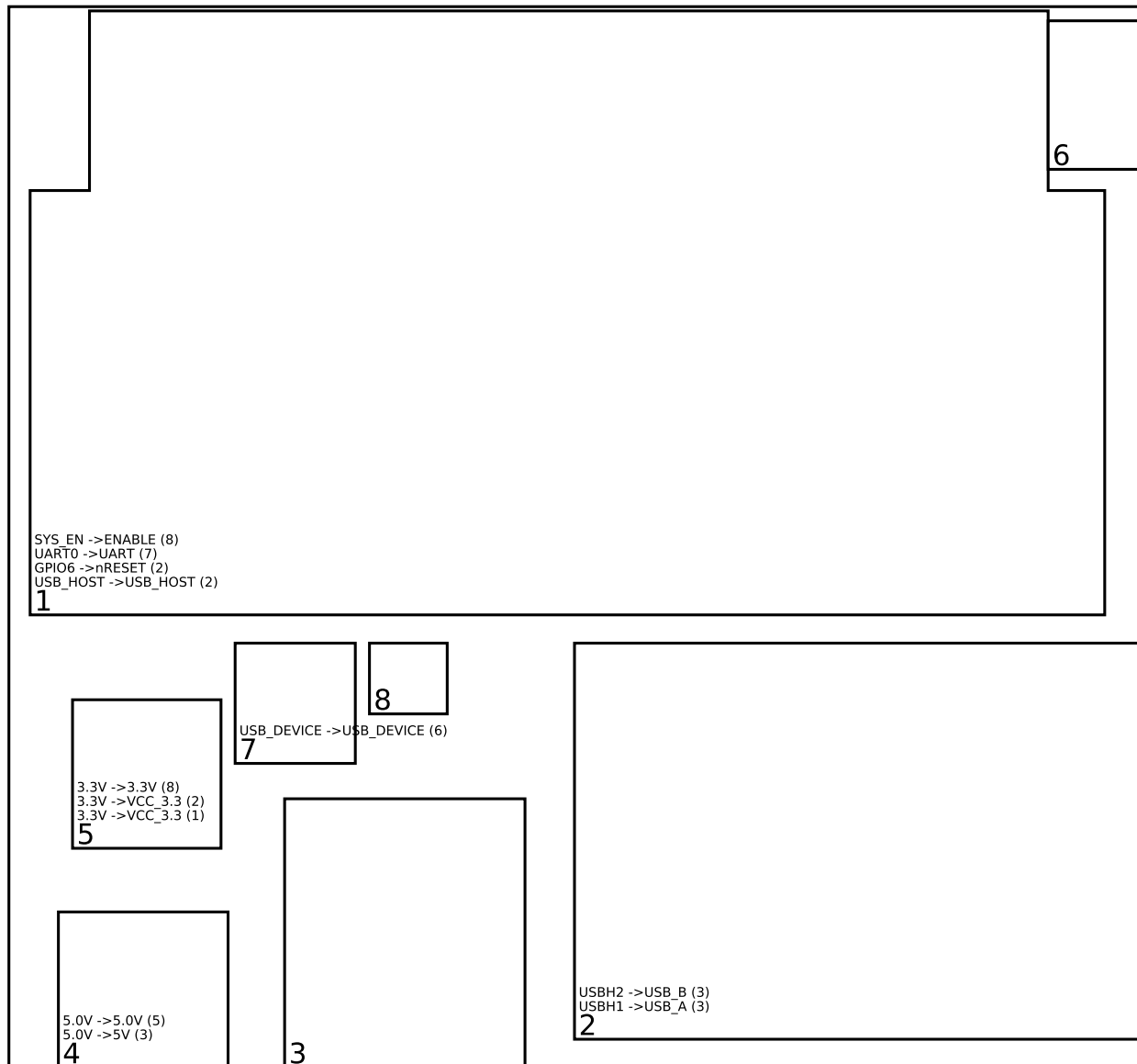


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1 Modules on Board



1.1 COM Connectors

1.1.1 Raspberry Pi Compute Module Connector (v10) (1)

The **Raspberry Pi Compute Module (RPCM)** connector is a SODIMM socket powering the RPCM and providing the module's function to Geppetto designs. The RPCM COM connector is pin-compatible with 3 variants of the module: RPCM1, RPCM3 and RPCM3L.

Module features:



	RPCM1	RPCM3	RPCM3L
SoC	BCM2835	BCM2837	BCM2837
CPU Clock	700MHz	1.0GHz	1.0GHz
Cores	1x32-bit	4x64-bit	4x64-bit
DDR2 RAM	512 MB	1.0 GB	1.0 GB
eMMC	4 GB	4 GB	N/A

More technical details for the RPCM modules can be found at:

<https://www.raspberrypi.org/documentation/hardware/computemodule/datasheet.md>

It requires:

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

The Geppetto Pi Compute connector provides the following outputs:

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

1.2 Network

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

This module offers a 10/100 Base-T Ethernet connection, as well as a 2-port USB hub via USB connection to USB_HOST on Raspberry Pi Compute Module Connector (1). The Microchip LAN9512 integrated USB hub and 10/100 ethernet controller provides up- and down-stream hi-speed USB 2.0 PHYs and 10/100BASE-T MAC and PHY.

For technical data for the LAN9512 download the datasheet at:

<http://ww1.microchip.com/downloads/en/DeviceDoc/9512.pdf>

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)

The dual stacked USB type-A module has two USB ports stacked vertically that allows you to connect USB devices to the board. Included with this module is the TI TPS2052BDGN power distribution switch, providing 5.0V at 500 mA to connected devices.



The Datasheet for the TPS2052BDGN is available at:

<http://www.ti.com/lit/ds/symlink/tps2052b.pdf>

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)

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

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

This module does not supply power.

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 and output is controlled by the TI TPS6211 buck regulator.

It receives 5.0V from Barrel Connector (5V 3A) (4).

The dataheet for the TPS6211 regulator is available at:

<http://www.ti.com/lit/ds/symlink/tps62110.pdf>

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 by way of the FTDI FT232RQ USB – UART IC.

Technical documentation for the FT232RQ is available at:

http://www.ftdichip.com/Support/Documents/DataSheets/ICs/DS_FT232R.pdf

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

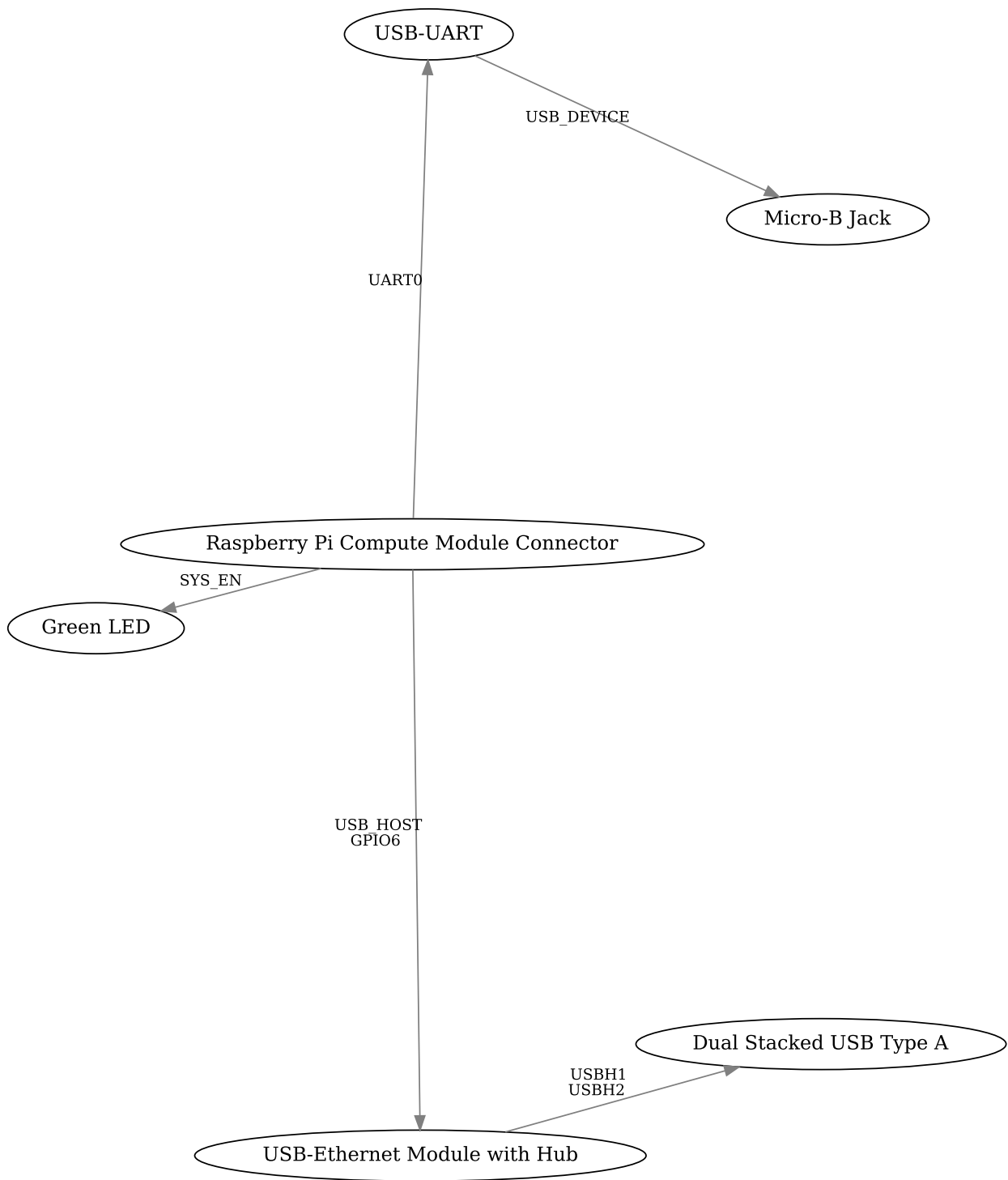


Figure 1: excludes power modules



3 Module Power Graph

