RPi Compute Breakout Board

This board was designed and built by Geppetto

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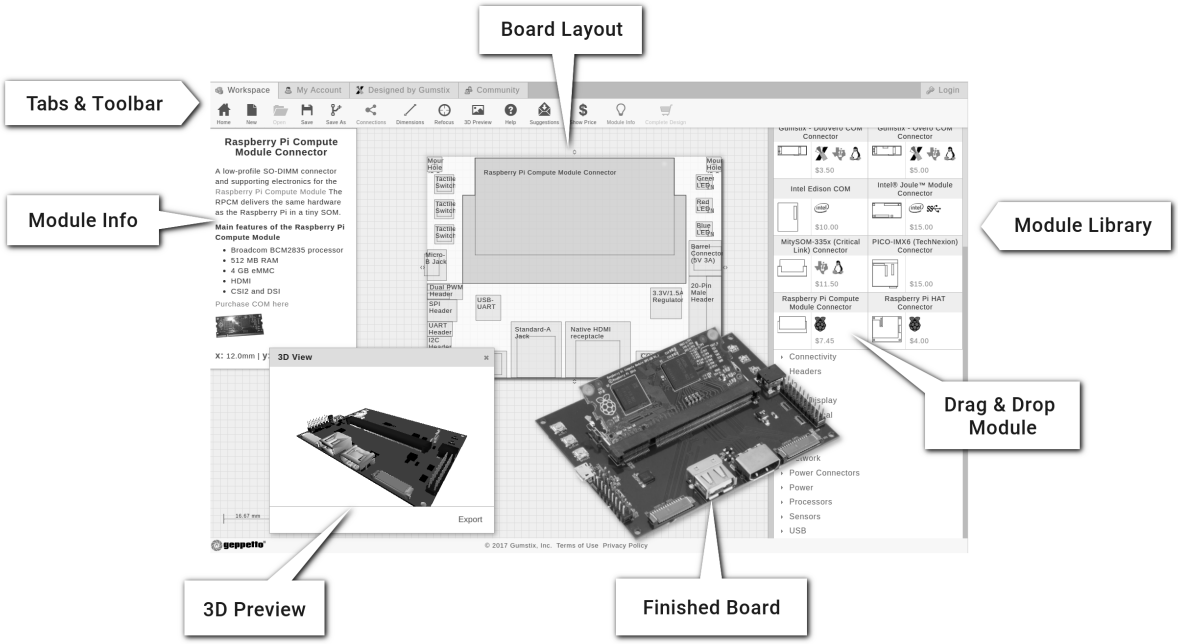
No Minimum Order **Automated Supply Chain** **Reduce Cost and Errors**

geppetto™ by gumstix

Thanks for using Geppetto to design this board!

One Stop Design-to-Order

Simply place displays, sensors, processors, and Geppetto connects it all.
No routing needed.



Board Description

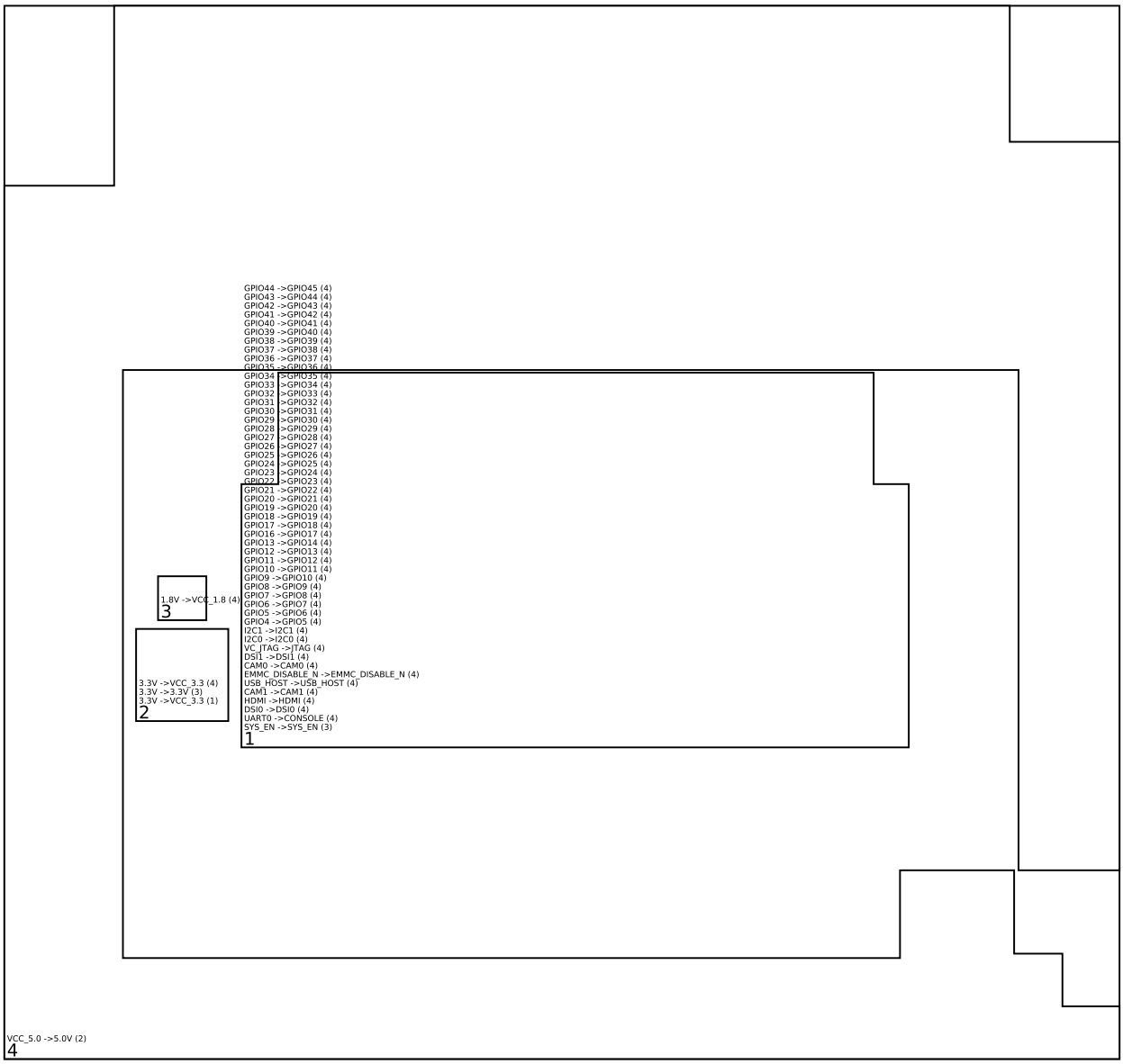
RPi Compute Breakout Board

Board Dimensions

12.7cm x 12cm

Contents

1 Modules on Board



1.1 COM Connectors

1.1.1 Raspberry Pi Compute Module Connector (v15) (1)

The **R**aspberry **P**i **C**ompute **M**odule (**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 (2)

The Geppetto Pi Compute connector provides the following outputs:

- SYS_EN to 1.8V/0.6A Regulator (3)
- UART0 to RPi Builder (4)
- VLOGIC to RPi Builder (4)
- DSI0 to RPi Builder (4)
- HDMI to RPi Builder (4)
- CAM1 to RPi Builder (4)
- USB_HOST to RPi Builder (4)
- EMMC_DISABLE_N to RPi Builder (4)
- CAM0 to RPi Builder (4)
- DSI1 to RPi Builder (4)
- VC_JTAG to RPi Builder (4)
- I2C0 to RPi Builder (4)
- I2C1 to RPi Builder (4)
- GPIO4 to RPi Builder (4)
- GPIO5 to RPi Builder (4)
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- GPIO42 to RPi Builder (4)
- GPIO43 to RPi Builder (4)
- GPIO44 to RPi Builder (4)

1.2 Power

1.2.1 3.3V/1.5A Regulator (v11) (2)

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 recieves 5.0V from RPi Builder (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)
- 1.8V/0.6A Regulator (3)
- RPi Builder (4)

1.2.2 1.8V/0.6A Regulator (v7) (3)

This DC-DC regulator has an integrated inductor and tiny footprint. The Enpirion EP5368QI provides power to modules that require a 1.8V input.

It recieves 3.3V from 3.3V/1.5A Regulator (2). A SYS_EN signal is provided by Raspberry Pi Compute Module Connector (1).

The following modules receive 1.8V DC from this regulator:

- RPi Builder (4)

1.3 Headers

1.3.1 RPi Builder (v2) (4)

120-pin male header module for breaking out signals from a processor.

The Breakout Builder receives:

- CONSOLE from Raspberry Pi Compute Module Connector (1)
- VLOGIC from Raspberry Pi Compute Module Connector (1)
- DSI0 from Raspberry Pi Compute Module Connector (1)
- HDMI from Raspberry Pi Compute Module Connector (1)
- CAM1 from Raspberry Pi Compute Module Connector (1)
- USB_HOST from Raspberry Pi Compute Module Connector (1)
- EMMC_DISABLE_N from Raspberry Pi Compute Module Connector (1)

- CAM0 from Raspberry Pi Compute Module Connector (1)
- DSI1 from Raspberry Pi Compute Module Connector (1)
- JTAG from Raspberry Pi Compute Module Connector (1)
- I2C0 from Raspberry Pi Compute Module Connector (1)
- I2C1 from Raspberry Pi Compute Module Connector (1)
- GPIO5 from Raspberry Pi Compute Module Connector (1)
- GPIO6 from Raspberry Pi Compute Module Connector (1)
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- GPIO42 from Raspberry Pi Compute Module Connector (1)
- GPIO43 from Raspberry Pi Compute Module Connector (1)
- GPIO44 from Raspberry Pi Compute Module Connector (1)
- GPIO45 from Raspberry Pi Compute Module Connector (1)
- VCC_3.3 from 3.3V/1.5A Regulator (2)
- VCC_1.8 from 1.8V/0.6A Regulator (3)

The Breakout Builder provides the following outputs:

- VCC_5.0 to 3.3V/1.5A Regulator (2)

2 Module Connections Graph

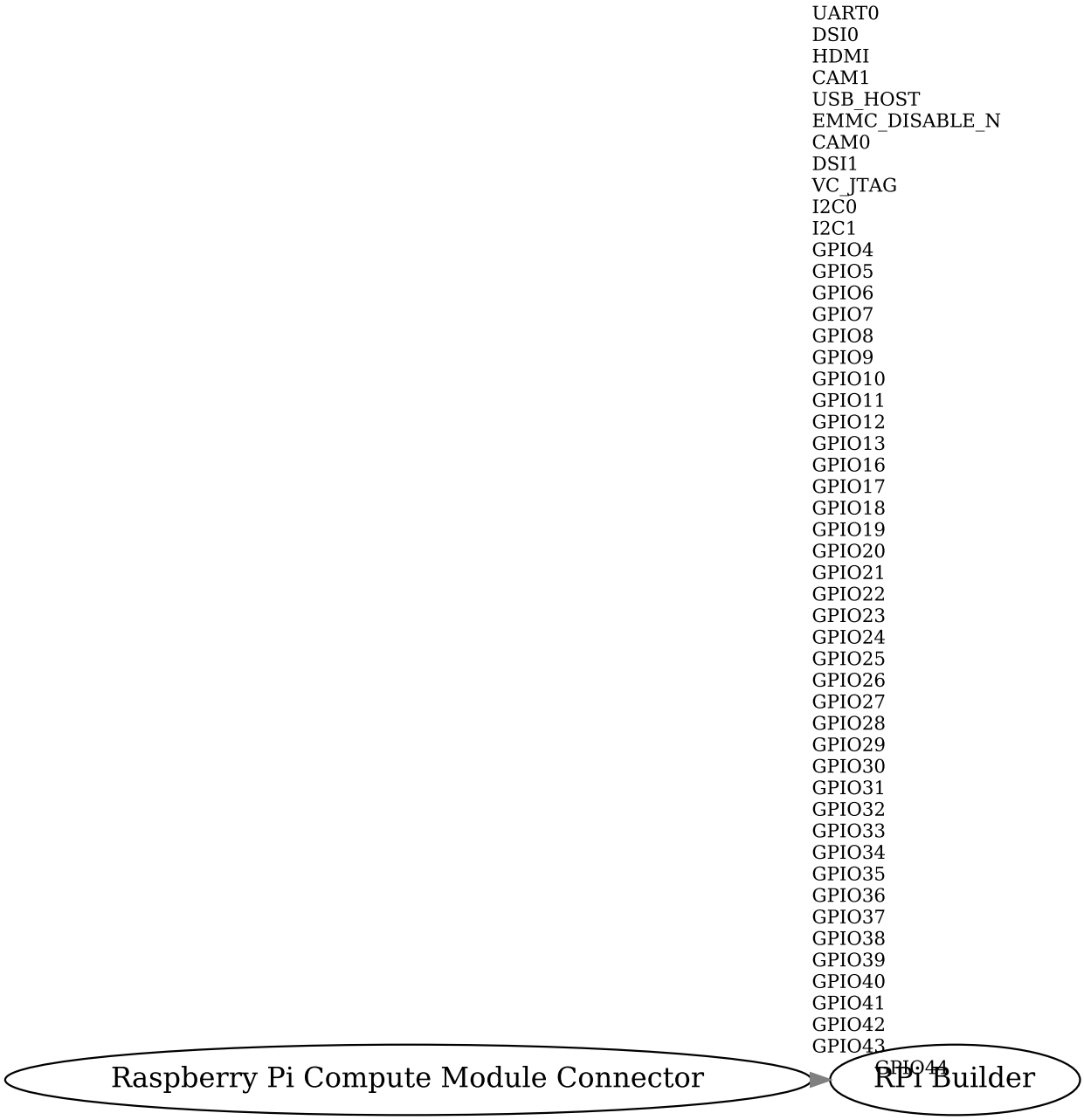
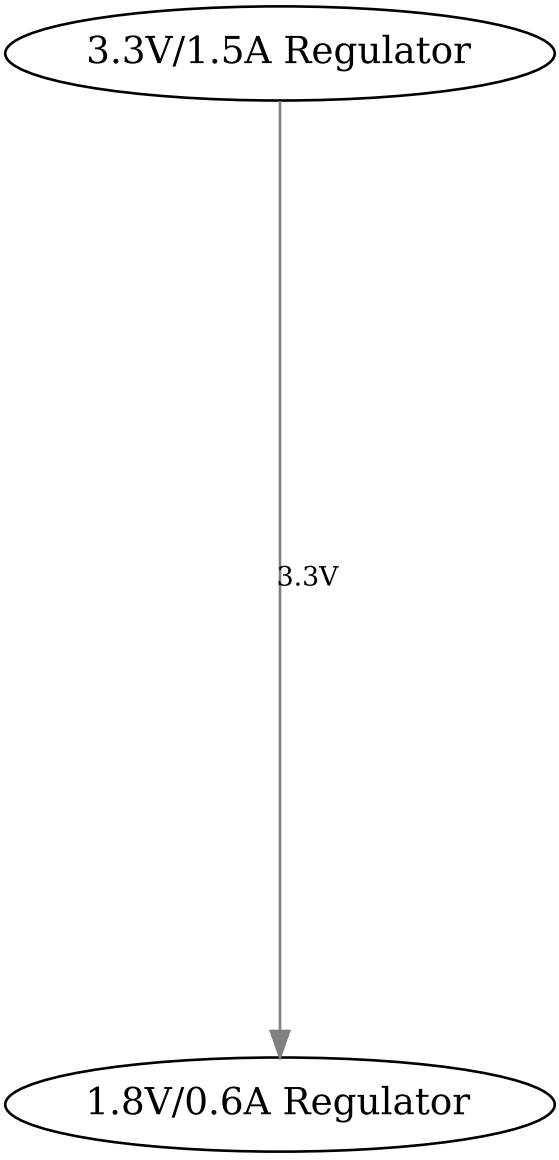


Figure 1: excludes power modules

3 Module Power Graph



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