RPi Compute Breakout Board

This board was designed and built by Geppetto
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Board Description

RPI Compute Breakout Board

Board Dimensions

12.7cm x 12cm
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1 Modules on Board

1.1 COM Connectors

1.1.1 Raspberry Pi Compute Module Connector (v15) (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:
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)
- GPIO6 to RPi Builder (4)
- GPIO7 to RPi Builder (4)
- GPIO8 to RPi Builder (4)
- GPIO9 to RPi Builder (4)
- GPIO10 to RPi Builder (4)
- GPIO11 to RPi Builder (4)
- GPIO12 to RPi Builder (4)
• GPIO13 to RPi Builder (4)
• GPIO16 to RPi Builder (4)
• GPIO17 to RPi Builder (4)
• GPIO18 to RPi Builder (4)
• GPIO19 to RPi Builder (4)
• GPIO20 to RPi Builder (4)
• GPIO21 to RPi Builder (4)
• GPIO22 to RPi Builder (4)
• GPIO23 to RPi Builder (4)
• GPIO24 to RPi Builder (4)
• GPIO25 to RPi Builder (4)
• GPIO26 to RPi Builder (4)
• GPIO27 to RPi Builder (4)
• GPIO28 to RPi Builder (4)
• GPIO29 to RPi Builder (4)
• GPIO30 to RPi Builder (4)
• GPIO31 to RPi Builder (4)
• GPIO32 to RPi Builder (4)
• GPIO33 to RPi Builder (4)
• GPIO34 to RPi Builder (4)
• GPIO35 to RPi Builder (4)
• GPIO36 to RPi Builder (4)
• GPIO37 to RPi Builder (4)
• GPIO38 to RPi Builder (4)
• GPIO39 to RPi Builder (4)
• GPIO40 to RPi Builder (4)
• GPIO41 to RPi Builder (4)
• 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:

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 receives 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)
- GPIO7 from Raspberry Pi Compute Module Connector (1)
- GPIO8 from Raspberry Pi Compute Module Connector (1)
- GPIO9 from Raspberry Pi Compute Module Connector (1)
- GPIO10 from Raspberry Pi Compute Module Connector (1)
- GPIO11 from Raspberry Pi Compute Module Connector (1)
- GPIO12 from Raspberry Pi Compute Module Connector (1)
- GPIO13 from Raspberry Pi Compute Module Connector (1)
- GPIO14 from Raspberry Pi Compute Module Connector (1)
- GPIO17 from Raspberry Pi Compute Module Connector (1)
- GPIO18 from Raspberry Pi Compute Module Connector (1)
- GPIO19 from Raspberry Pi Compute Module Connector (1)
- GPIO20 from Raspberry Pi Compute Module Connector (1)
- GPIO21 from Raspberry Pi Compute Module Connector (1)
- GPIO22 from Raspberry Pi Compute Module Connector (1)
- GPIO23 from Raspberry Pi Compute Module Connector (1)
- GPIO24 from Raspberry Pi Compute Module Connector (1)
- GPIO25 from Raspberry Pi Compute Module Connector (1)
- GPIO26 from Raspberry Pi Compute Module Connector (1)
- GPIO27 from Raspberry Pi Compute Module Connector (1)
- GPIO28 from Raspberry Pi Compute Module Connector (1)
- GPIO29 from Raspberry Pi Compute Module Connector (1)
- GPIO30 from Raspberry Pi Compute Module Connector (1)
- GPIO31 from Raspberry Pi Compute Module Connector (1)
- GPIO32 from Raspberry Pi Compute Module Connector (1)
- GPIO33 from Raspberry Pi Compute Module Connector (1)
- GPIO34 from Raspberry Pi Compute Module Connector (1)
• GPIO35 from Raspberry Pi Compute Module Connector (1)
• GPIO36 from Raspberry Pi Compute Module Connector (1)
• GPIO37 from Raspberry Pi Compute Module Connector (1)
• GPIO38 from Raspberry Pi Compute Module Connector (1)
• GPIO39 from Raspberry Pi Compute Module Connector (1)
• GPIO40 from Raspberry Pi Compute Module Connector (1)
• GPIO41 from Raspberry Pi Compute Module Connector (1)
• 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

UART0
DSI0
HDMI
CAM1
USB HOST
EMMC_DISABLE_N
CAM0
DSI1
VC_JTAG
I2C0
I2C1
GPIO4
GPIO5
GPIO6
GPIO7
GPIO8
GPIO9
GPIO10
GPIO11
GPIO12
GPIO13
GPIO16
GPIO17
GPIO18
GPIO19
GPIO20
GPIO21
GPIO22
GPIO23
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GPIO40
GPIO41
GPIO42
GPIO43

Raspberry Pi Compute Module Connector

RPI Builder

Figure 1: excludes power modules
3 Module Power Graph

3.3V/1.5A Regulator

3.3V

1.8V/0.6A Regulator