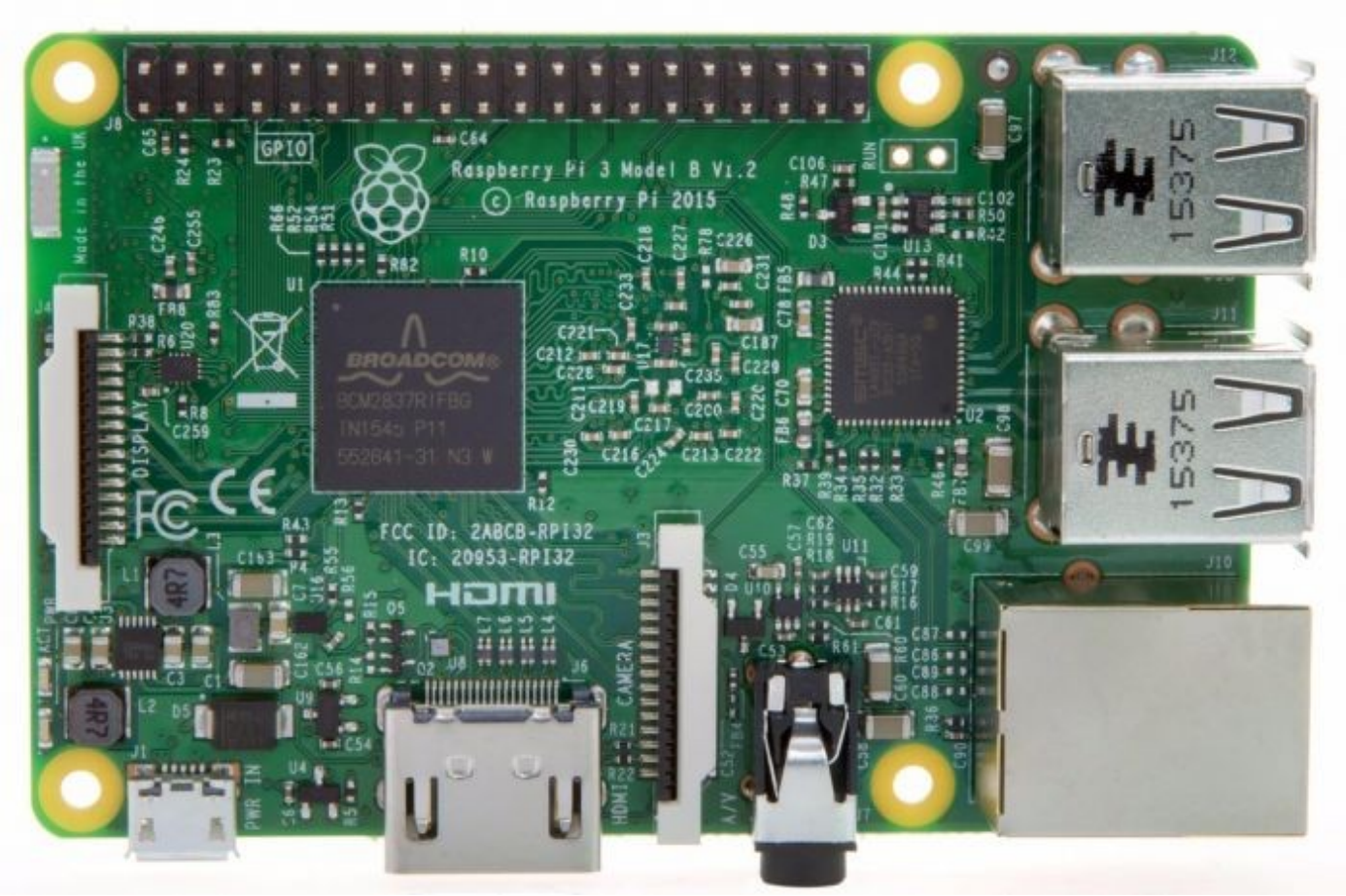
R-Pi

Team **E**mertxe

Peripherals

Peripherals



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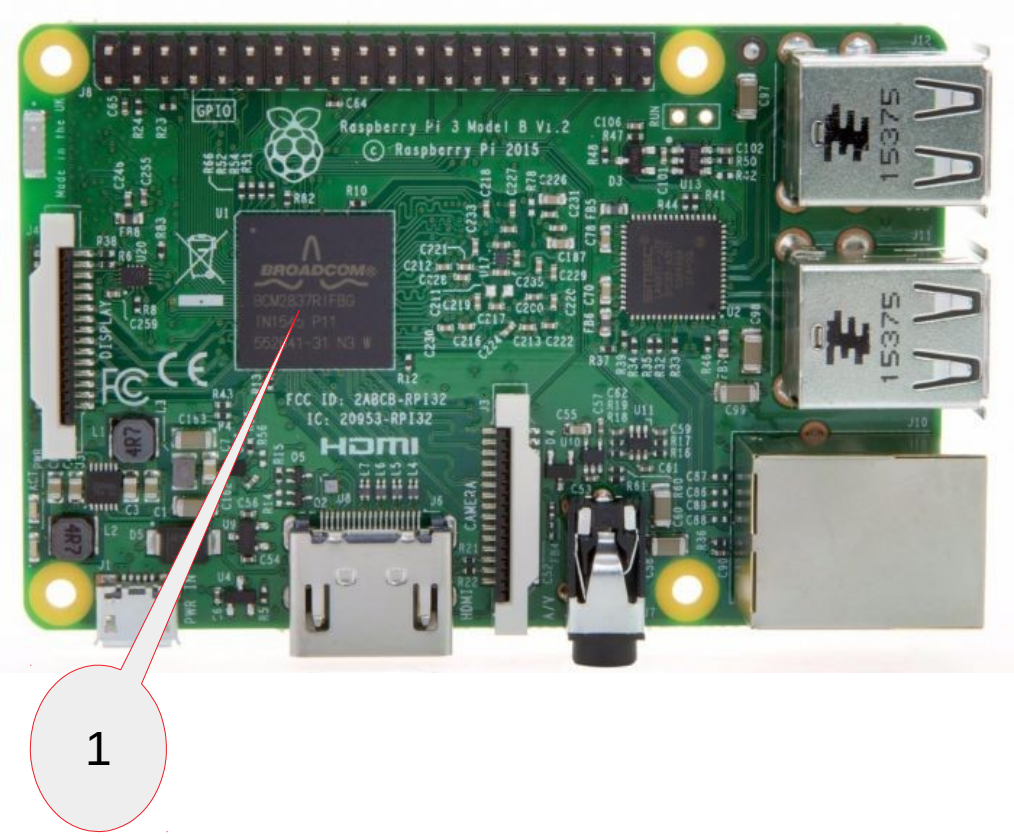
1. Processor



1. Board uses,
   - Broadcom BCM2835 / BCM2836 / BCM2837 processor.

2. All runs between 700 Mhz – 1.4 Ghz.

3. Based on ARMv6, ARMv7, ARMv8 and ARMv11 processor cores.

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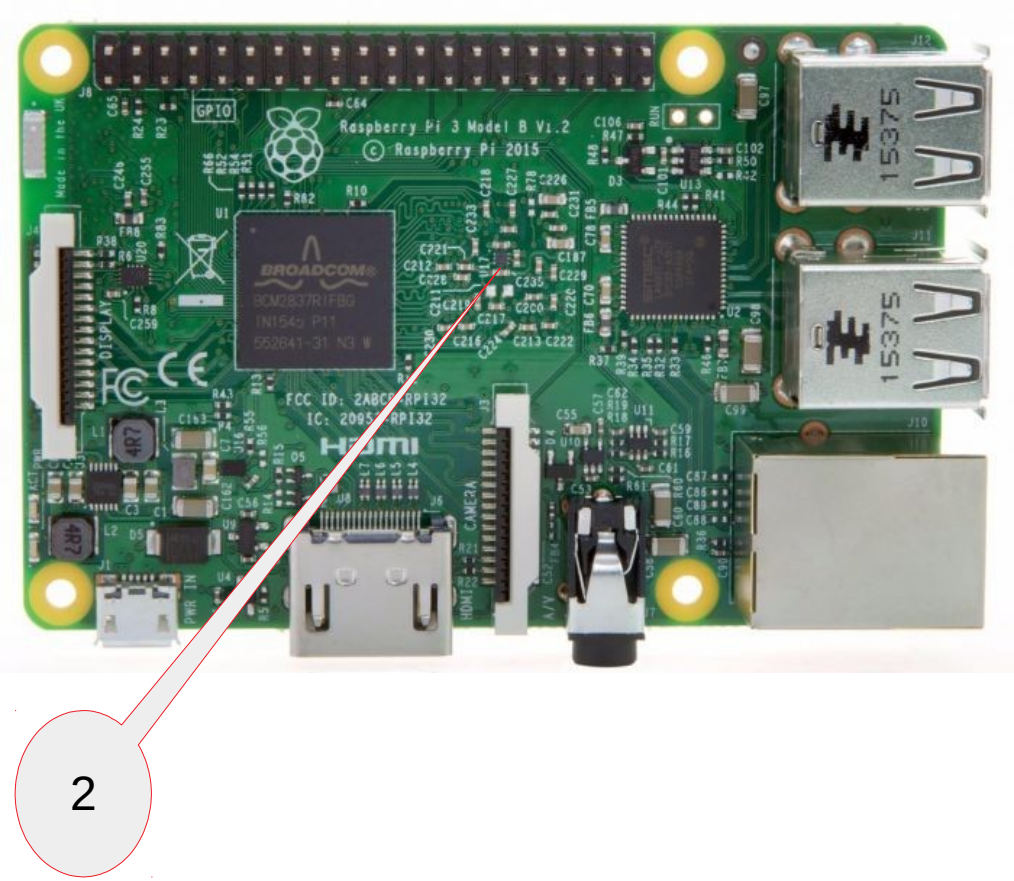
2. Memory



1. SDRAM
2. Varies from 256 MB – 1 GB
3. Memory is shared between CPU & GPU

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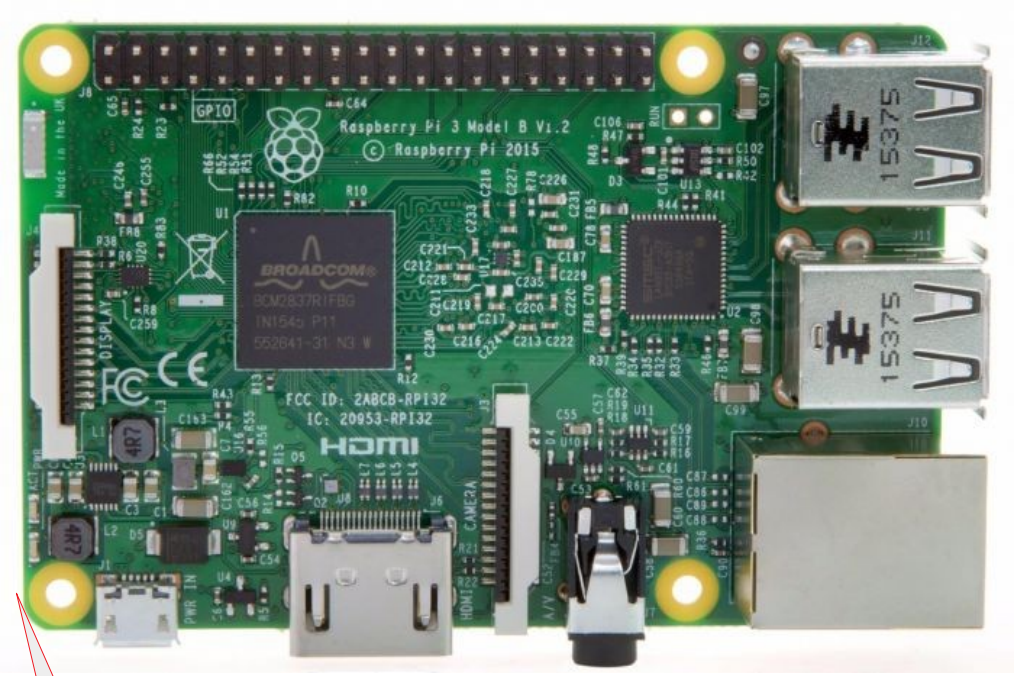
3. Storage



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1. Micro-SD card.
2. All R-Pi boards boots from micro-SD or SD card.
3. Has on-board eMMC, which is effectively an SD card on Chip.
4. Uses friction-fit slot rather than click-in and click-out slot

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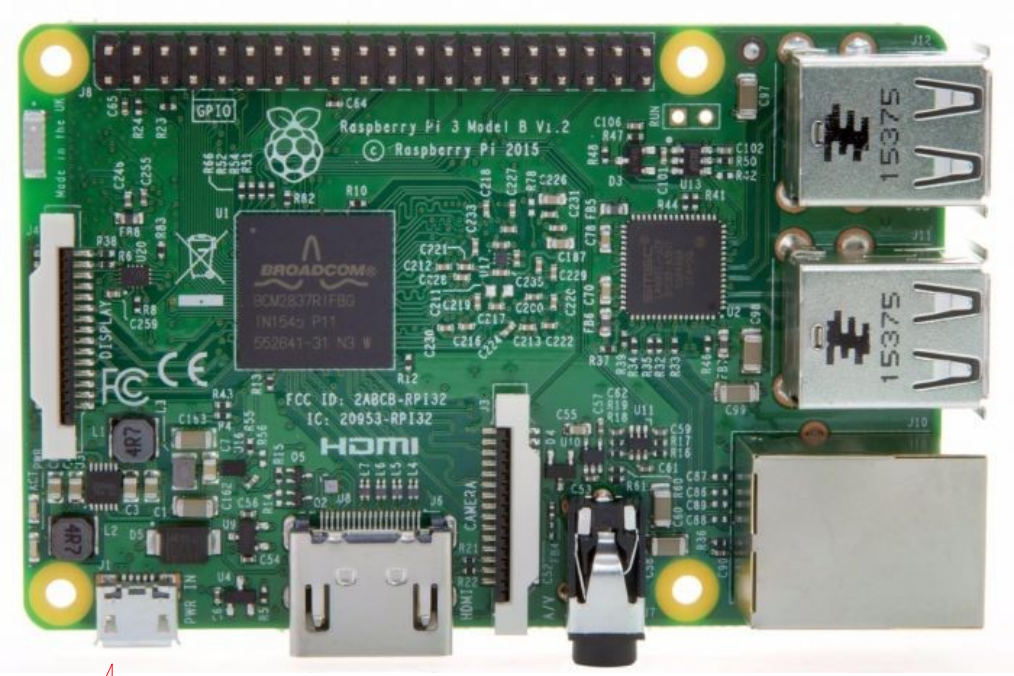
4. Power



1. Micro-USB connector.

2. A 5V supply is required that should ideally deliver a current of atleast 1.1A and ideally 2.5A for the R-pi 3 boards.

3. Overcurrent protection is present on this input.

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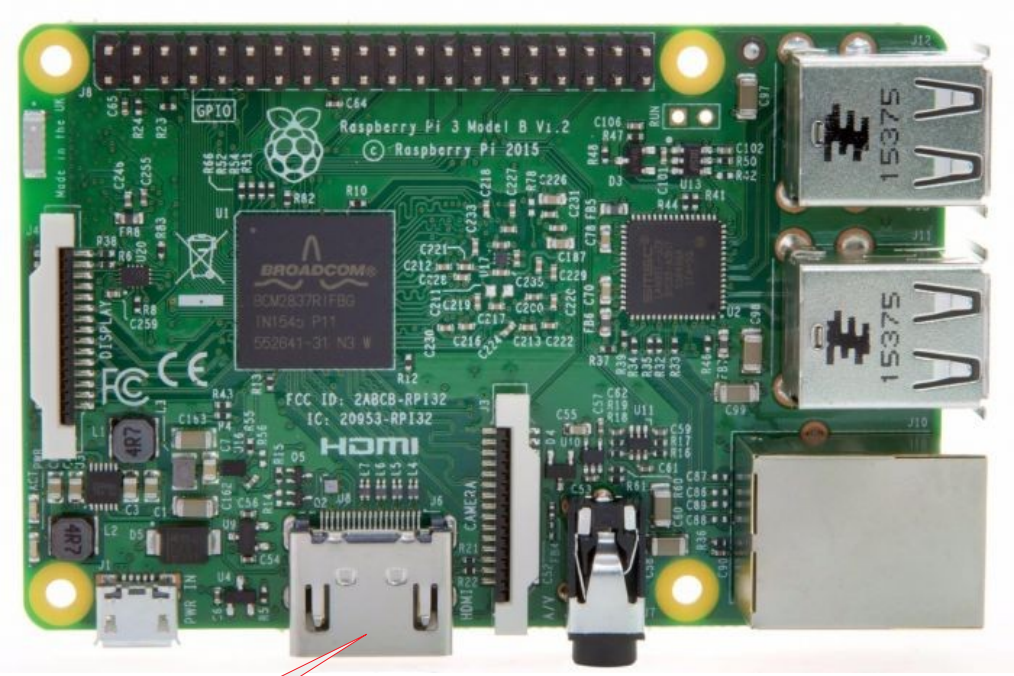
5. Video Out: HDMI



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1. HDMI / Mini HDMI onnector.

2. The Raspberry Pi has an HDMI port which you can connect directly to a monitor or TV with an HDMI cable.

3. some modern monitors and TVs have HDMI ports, some do not, but there are other options.

4. DVI

   - For monitors with a DVI port, you can use an HDMI-to-DVI cable, or an HDMI cable with a DVI adapter.

   - Note that the DVI standard does not support audio.

5. VGA

   - For monitors with VGA only, you can use an HDMI-to-VGA adapter.

   - Note that VGA does not support audio.

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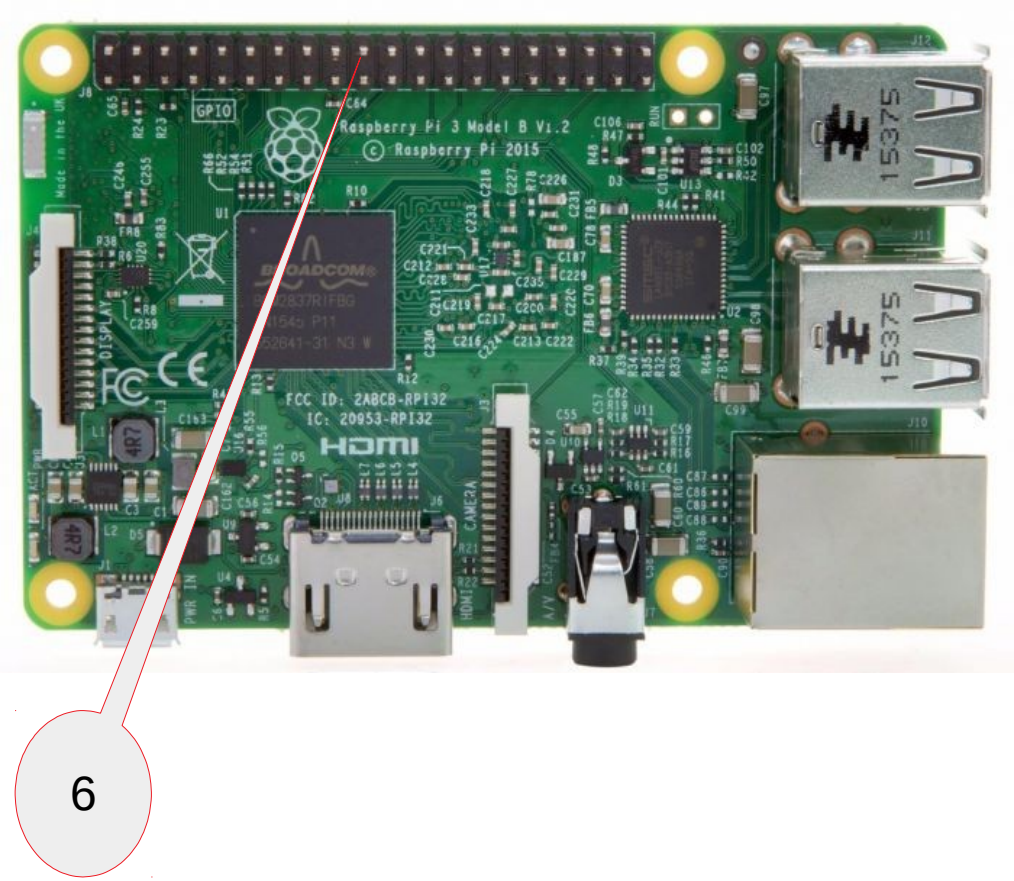
6. GPIO: 40 Pins



26x GPIO's	• General purpose input/output for reading & writing the binary data. • All GPIO's are 3.3V tolerant.
2x I2C buses	• Several devices can be connected via these 2 buses.
SPI bus	• Provides serial synchronous data link over short distance. • Master / Slave configurations. • Requires 4 wires for communications.
UART	• Used for serial communication between two devices.
PWM	• Atleast one hardware PWM on all devices. • More than one in recent devices.
GPCLK	• Allows to establish the accurate timings signals

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7. USB Hub

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1. USB connectors
2. R-Pi 3 has five USB ports, among which one is used for ethernet connect.
3. Remaining 4 are available for the external connection.

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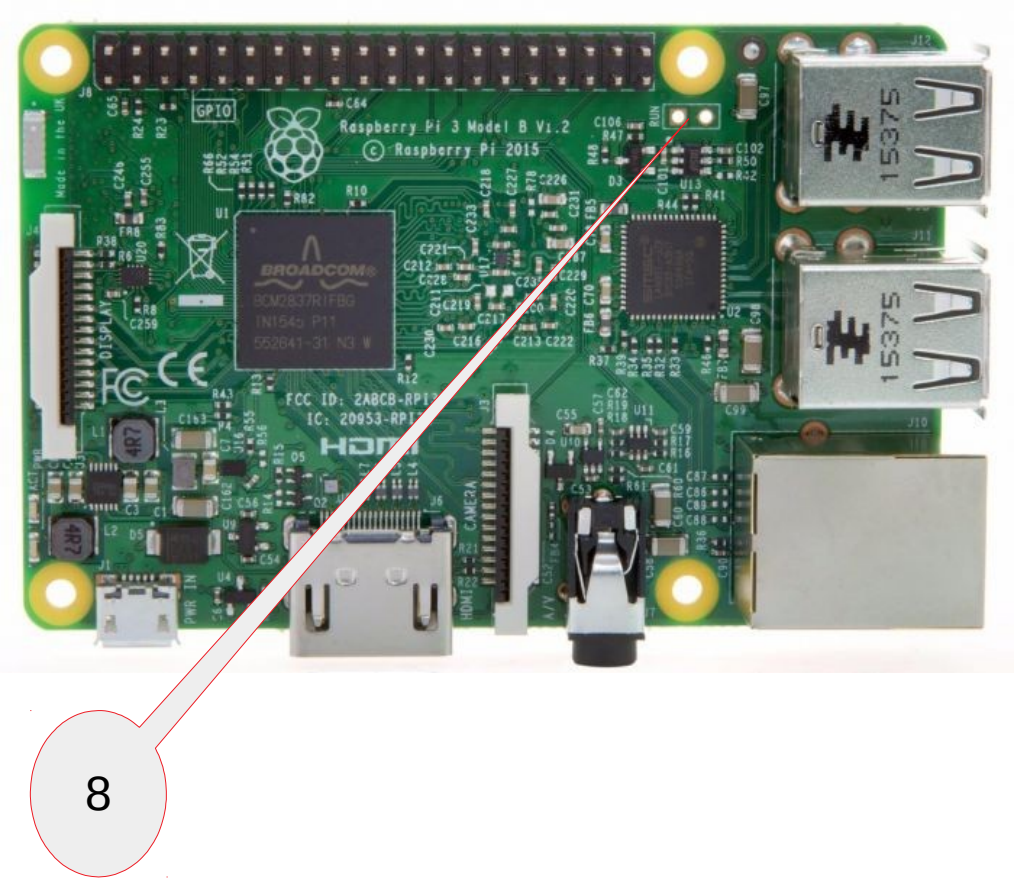
8. Reset Button



1. Use to reset the board

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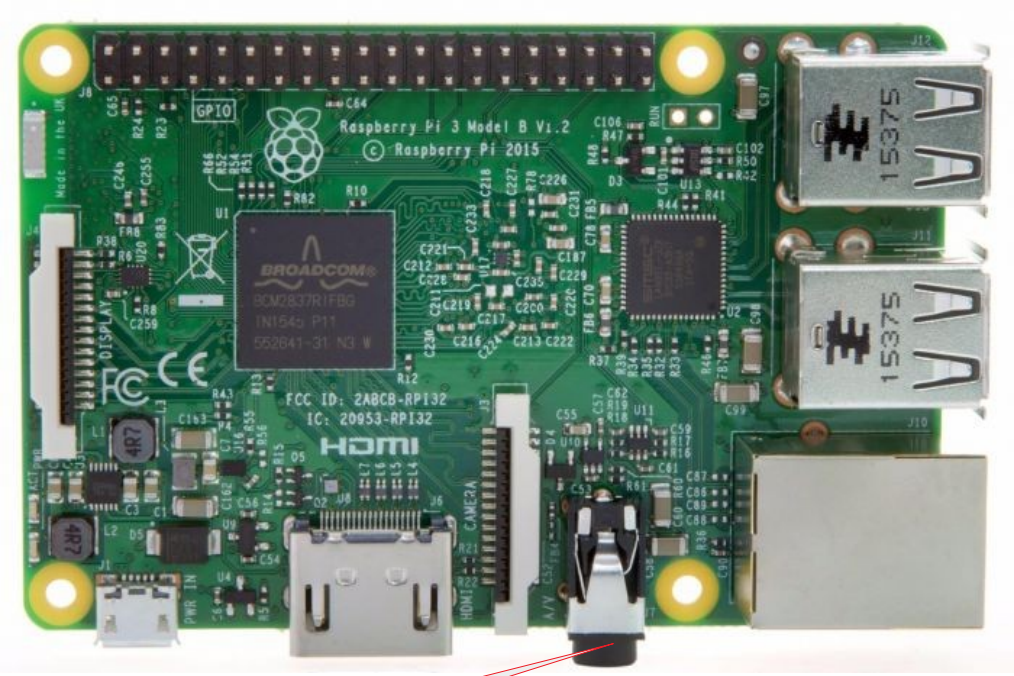
9. Audio + Video



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1. 4- pole 3.5mm jacket.
2. Provides composite video and stereo audio on more recent boards.

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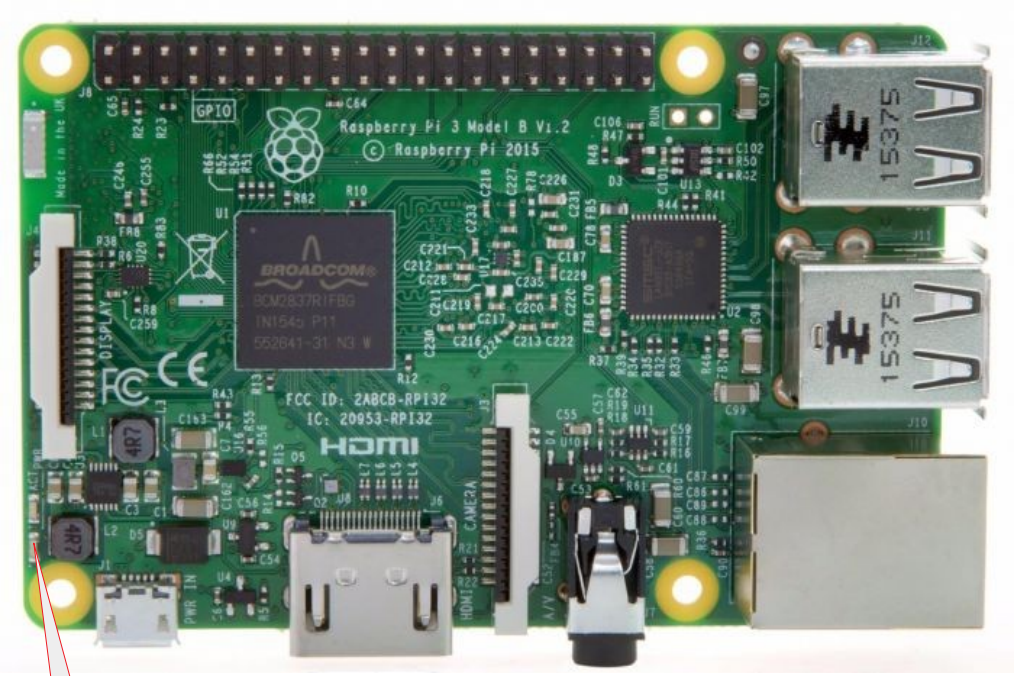
10. Power LED



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1. Indicates the board is in power on mode.

2. Not present in R-Pi zero.

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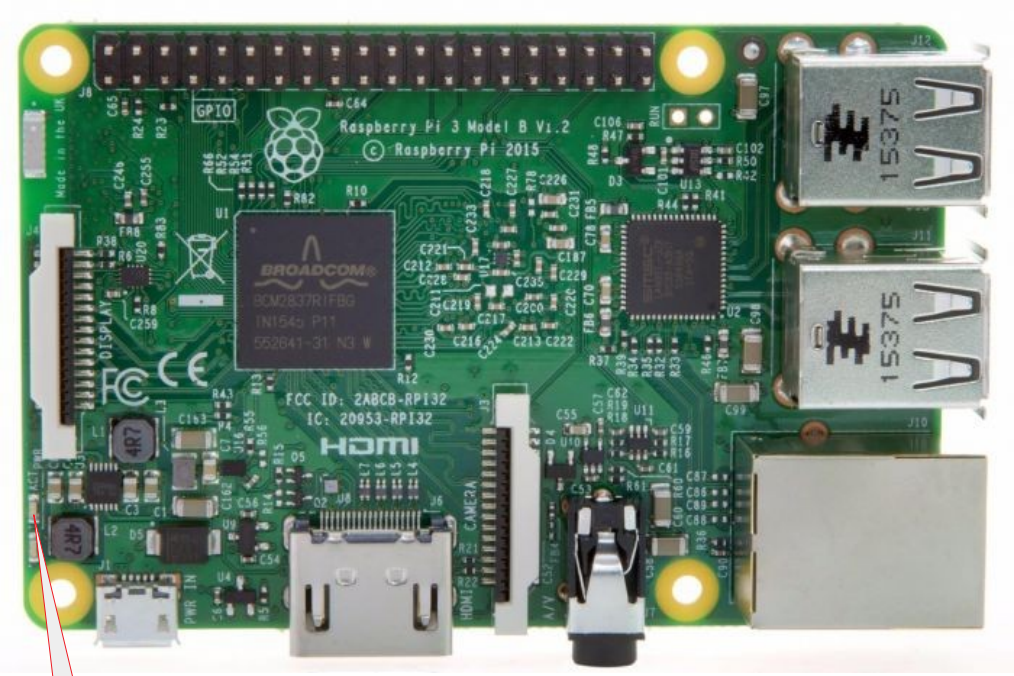
11. Activity LED



1. Indicates that there is some activity going on the board.

2. For instance, the led flashes upon inserting the SD card.

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12. USB - Ethernet

1. SMSC LAN9514
2. This iC provides a USB 2.0 hub.
3. 10 / 100 Ethernet controller.
4. The board connect to the internet via USB rather than on-board ethernet controller within SoC.

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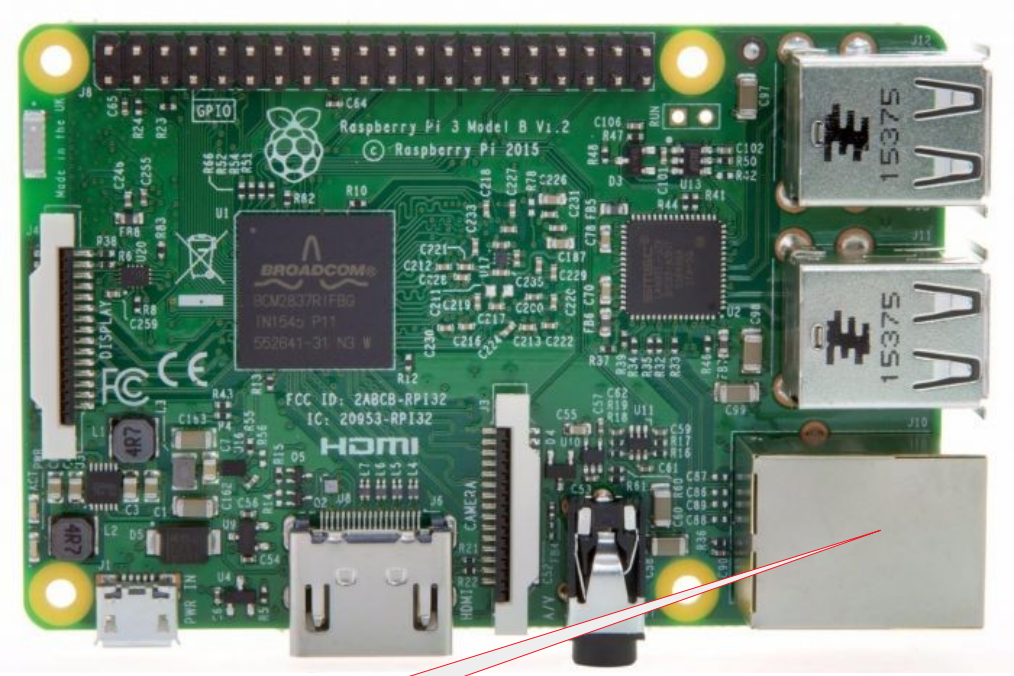
13. Network



1. RJ-45 Ethernet.
2. 10/100 Mbps via RJ-45.
3. Has onboard wi-fi and bluetooth.

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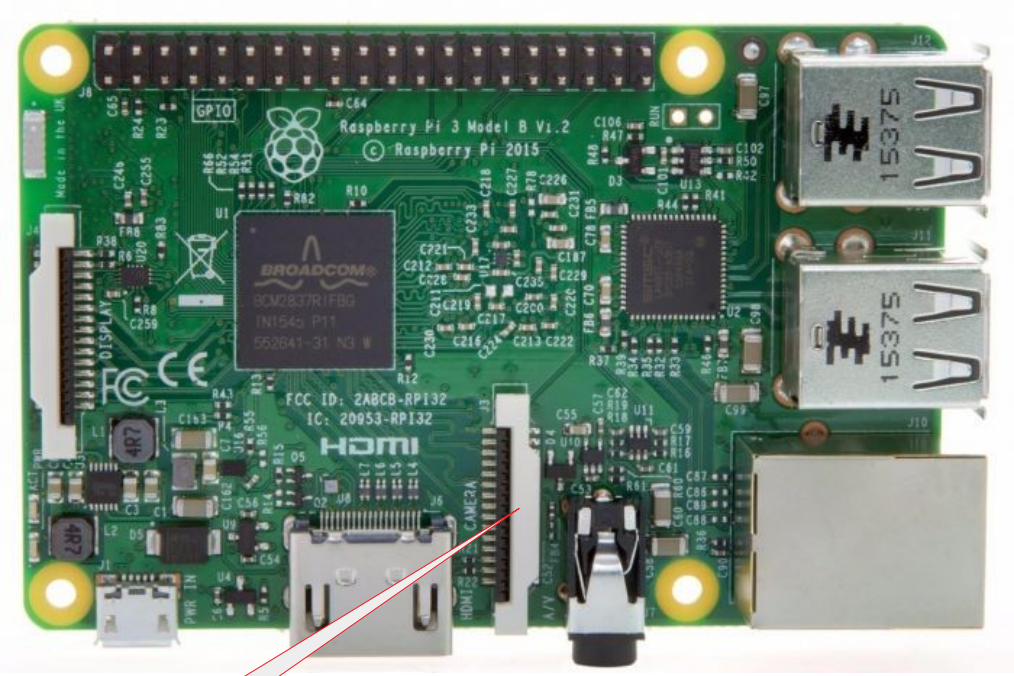
14. Camera



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1. Has MIPI-CSI(Mobile Industry Processor Interface with Camera Serial Interface), a 15 pin connector that can be connected to a special purpose camera.

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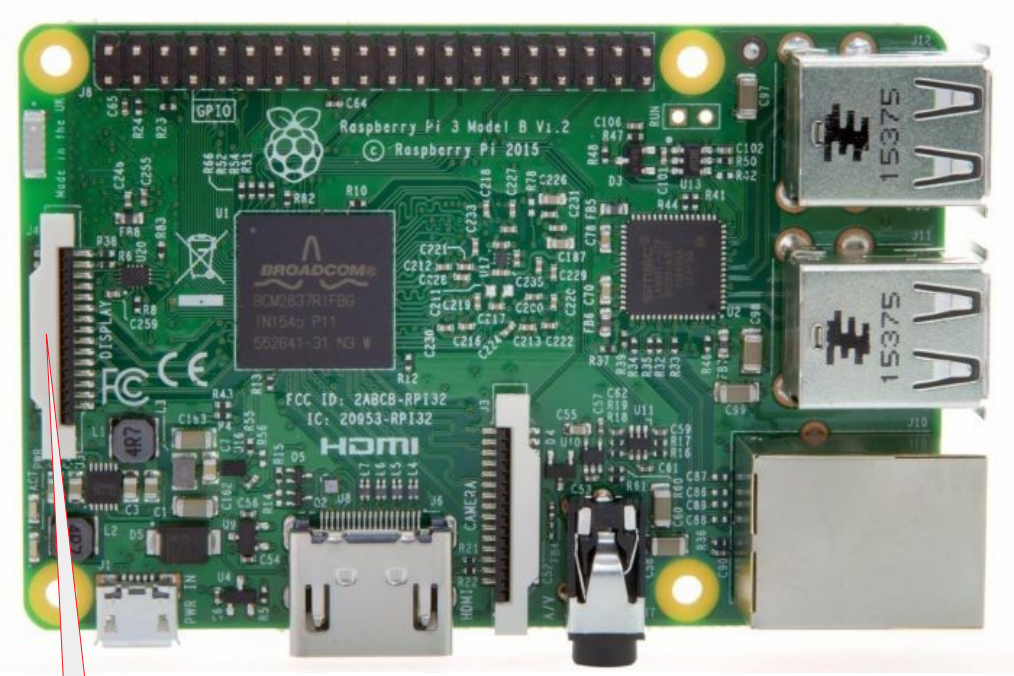
15. Display(DSI)



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1. Display serail interface is an interface used by mobile phone vendors to interface to a screen display.

2. For instance, 7th R-Pi touchscreen(800 x 480 pixels)

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THANK YOU