

Internet de las Cosas

Raspberry Pi 3 Arquitectura



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Tarjeta

Raspberry Pi 3 Model B

element14

Dimensions
85.6mm x 56mm x 21mm

4 x USB 2
Ports

40 Pin
Extended GPIO

10/100
LAN Port

Broadcom
BCM2837 64bit
Quad Core CPU
at 1.2GHz,
1GB RAM

3.5mm 4-pole
Composite Video
and Audio
Output Jack

On Board
Bluetooth 4.1
Wi-Fi

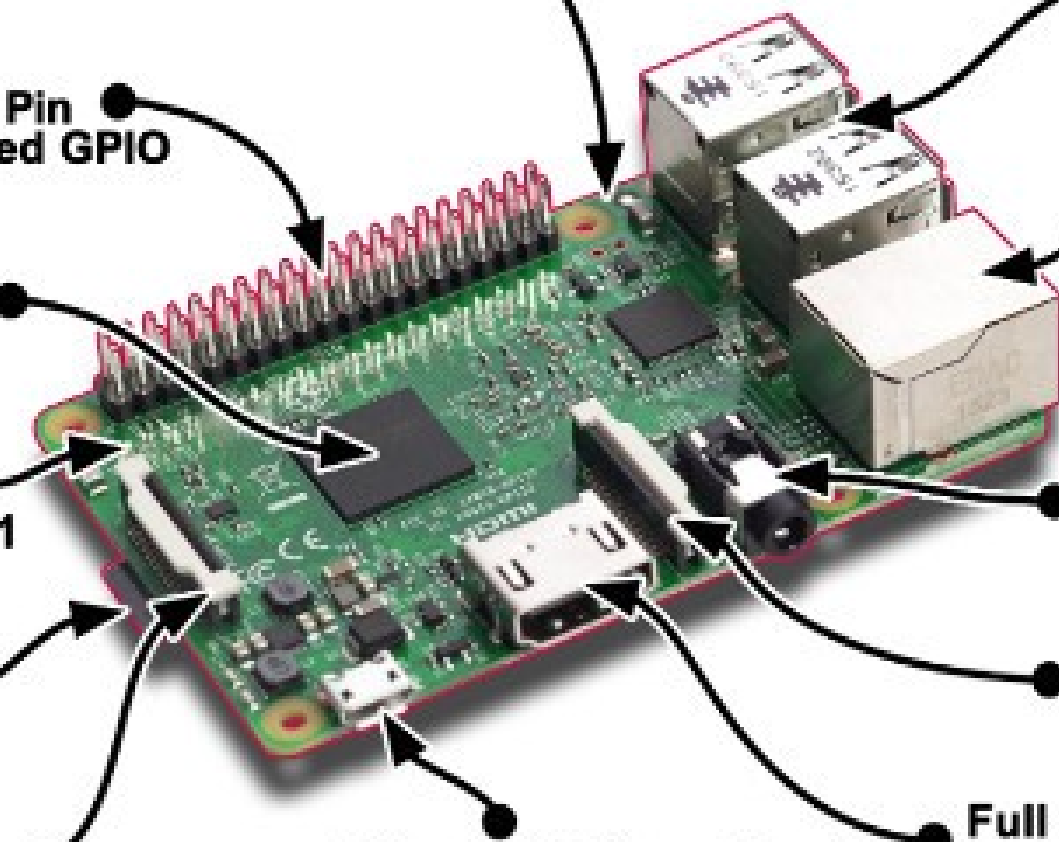
CSI Camera Port

MicroSD
Card Slot

Full Size HDMI
Video Output

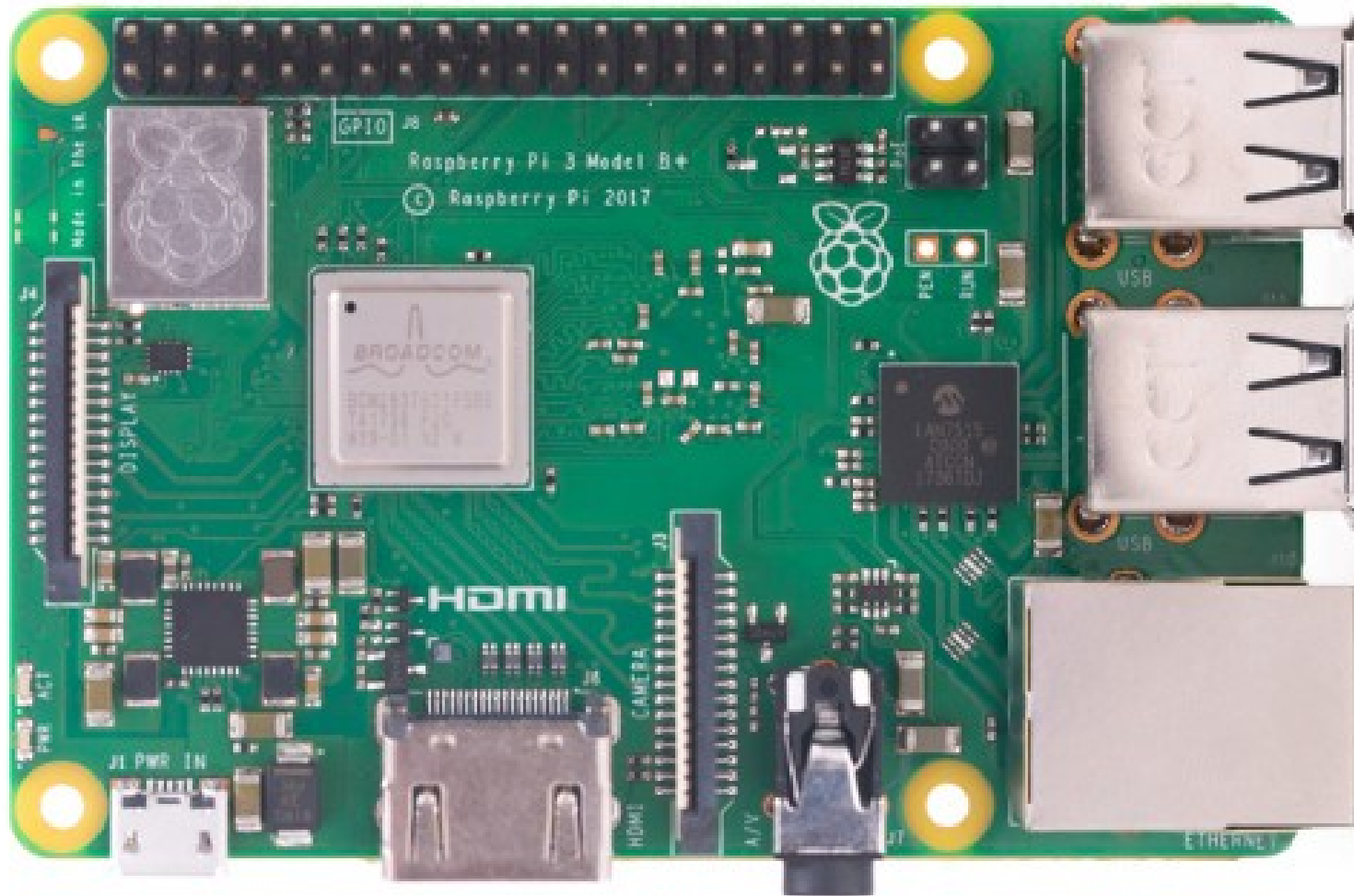
DSI Display Port

Micro USB Power Input.
Upgraded switched
power source that can
handle up to 2.5 Amps



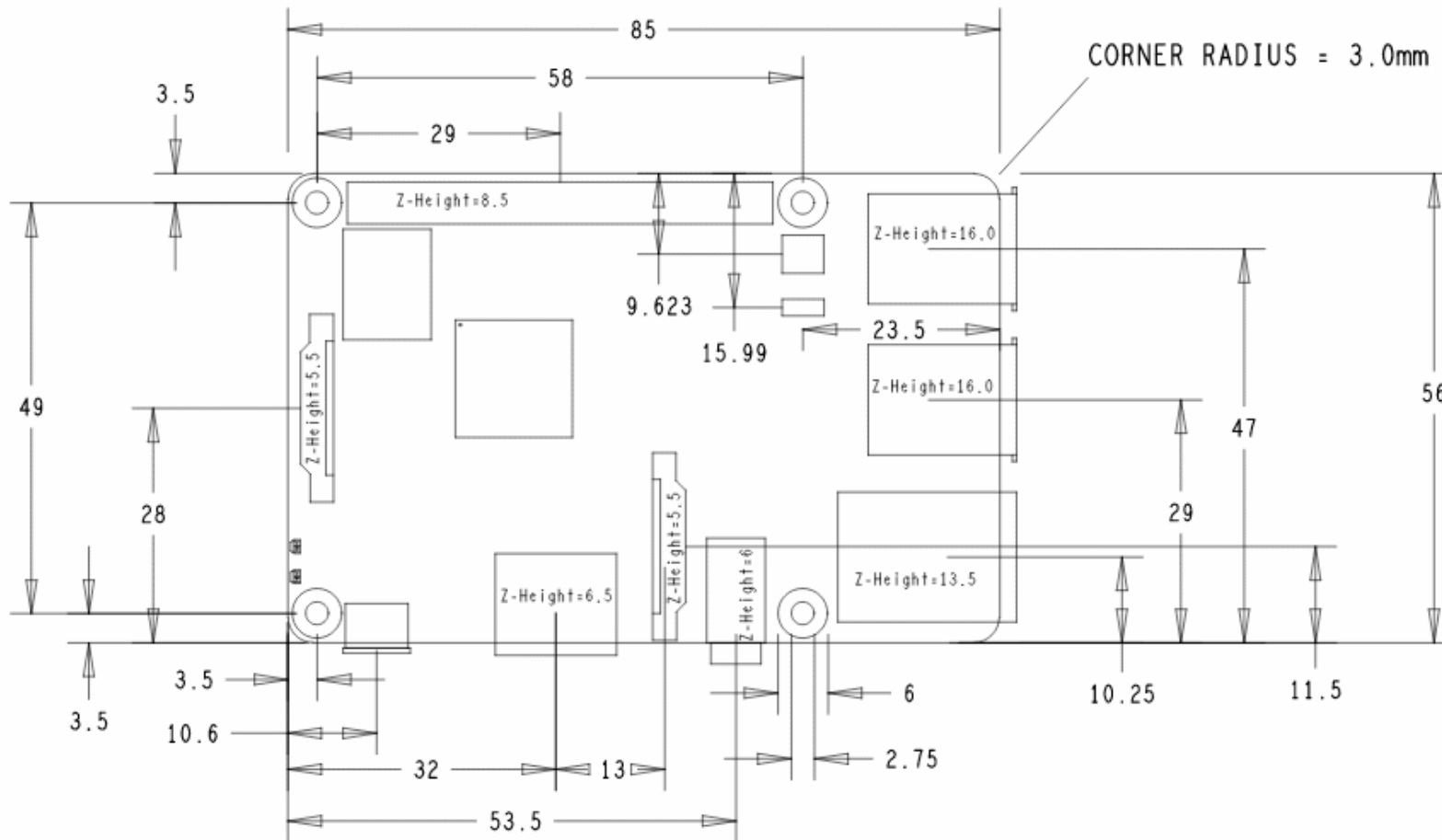
Raspberry Pi 3B+

- **Placa:**



Raspberry Pi 3B+

■ Dimensiones:



Procesador y Memoria

Raspberry Pi 3B+

- **Procesador:**

SoC (System on Chip): Broadcom BCM2837B0, Cortex-A53 64-bit SoC @ 1.4 GHz



Raspberry Pi 3B+

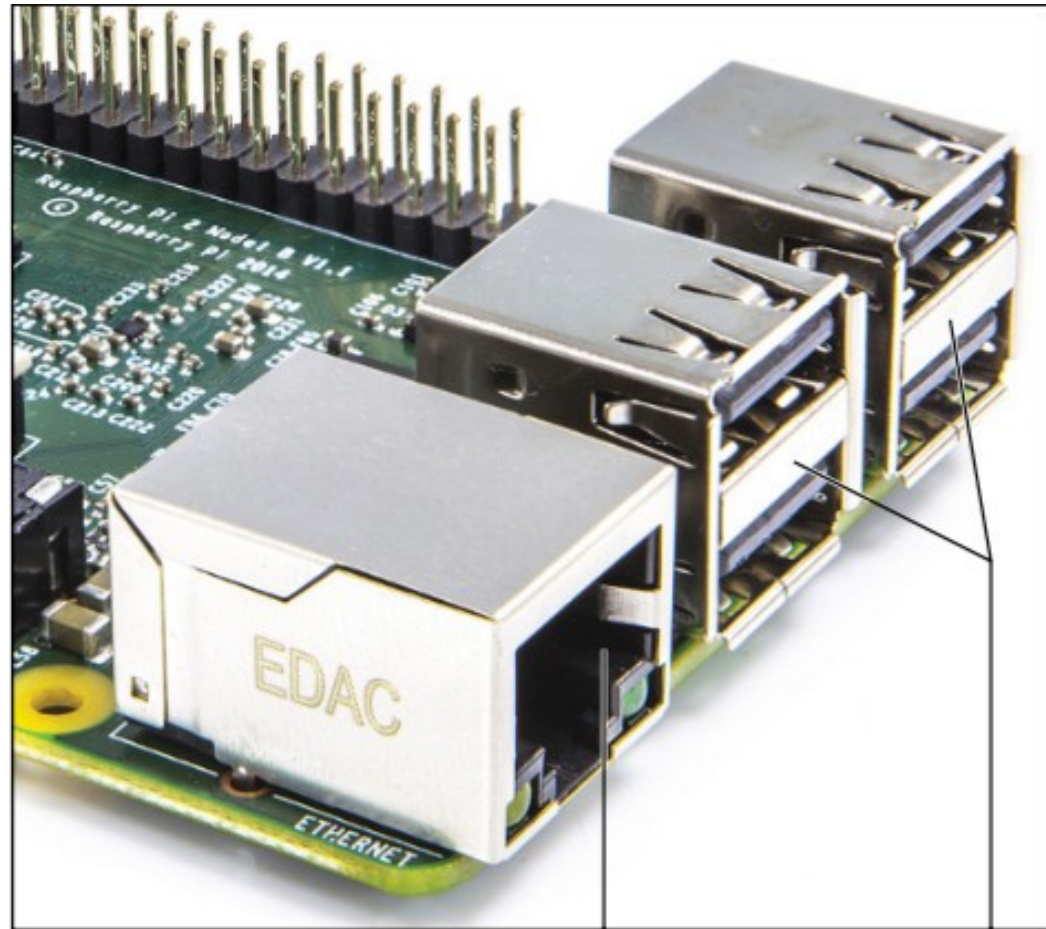
- **Memoria RAM:
1GB LPDDR2 SDRAM**



Conectividad

Raspberry Pi 3B+

- **Ethernet y USB:**



Ethernet socket

USB receptacles

Raspberry Pi 3B+

- **Ethernet:**

- **Gigabit Ethernet over USB 2.0 (maximum throughput 300 Mbps) .**

- **USB:**

- **4 × USB 2.0 ports.**

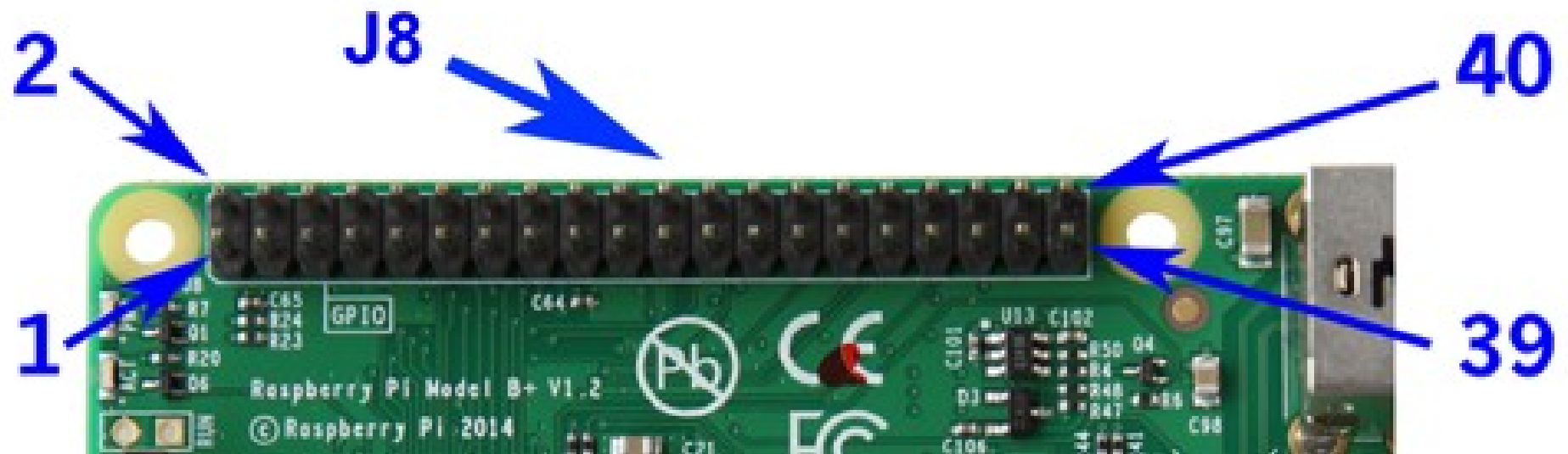
- **WiFi:**

2.4 GHz y 5 GHz IEEE 802.11b/g/n/ac

Acceso I/O








































Raspberry Pi 3B+

- **GPIO:**



Raspberry Pi 3B

■ GPIO:

Raspberry Pi 3 Model B (J8 Header)						
GPIO#	NAME			NAME	GPIO#	
	3.3 VDC Power	1			2	5.0 VDC Power
8	GPIO 8 SDA1 (I2C)	3			4	5.0 VDC Power
9	GPIO 9 SCL1 (I2C)	5			6	Ground
7	GPIO 7 GPCLK0	7			8	GPIO 15 TxD (UART) 15
	Ground	9			10	GPIO 16 RxD (UART) 16
0	GPIO 0	11			12	GPIO 1 PCM_CLK/PWM0 1
2	GPIO 2	13			14	Ground
3	GPIO 3	15			16	GPIO 4 4
	3.3 VDC Power	17			18	GPIO 5 5
12	GPIO 12 MOSI (SPI)	19			20	Ground
13	GPIO 13 MISO (SPI)	21			22	GPIO 6 6
14	GPIO 14 SCLK (SPI)	23			24	GPIO 10 CE0 (SPI) 10
	Ground	25			26	GPIO 11 CE1 (SPI) 11
30	SDA0 (I2C ID EEPROM)	27			28	SCL0 (I2C ID EEPROM) 31
21	GPIO 21 GPCLK1	29			30	Ground
22	GPIO 22 GPCLK2	31			32	GPIO 26 PWM0 26
23	GPIO 23 PWM1	33			34	Ground
24	GPIO 24 PCM_FS/PWM1	35			36	GPIO 27 27
25	GPIO 25	37			38	GPIO 28 PCM_DIN 28
	Ground	39			40	GPIO 29 PCM_DOUT 29

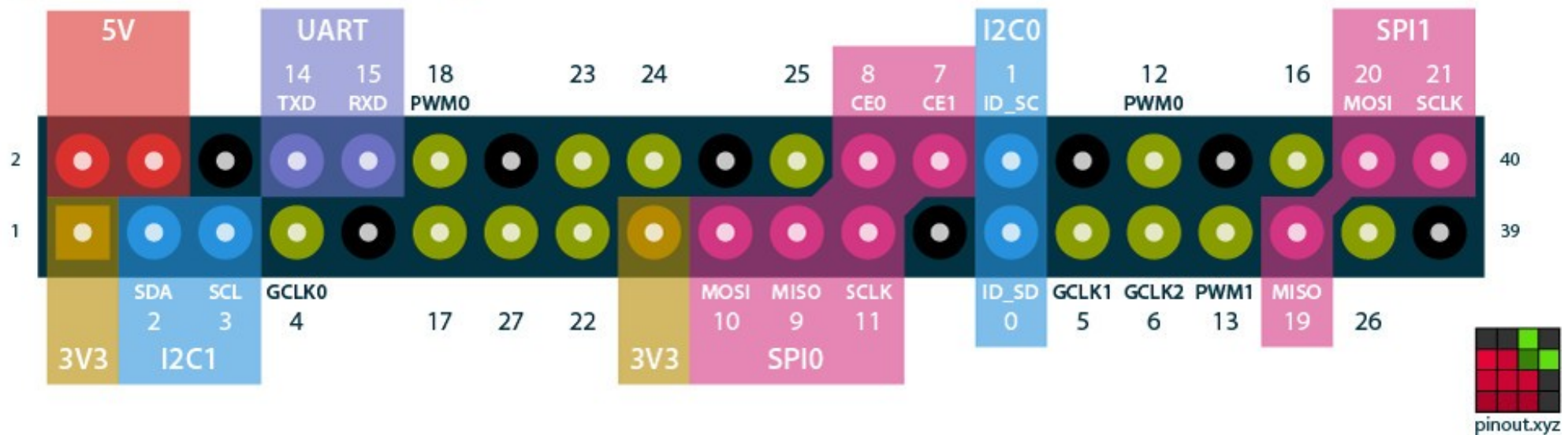
Attention! The GPIO pin numbering used in this diagram is intended for use with WiringPi / Pi4J. This pin numbering is not the raw Broadcom GPIO pin numbers.

<http://www.pi4j.com>

Raspberry Pi 3B

- **GPIO:**

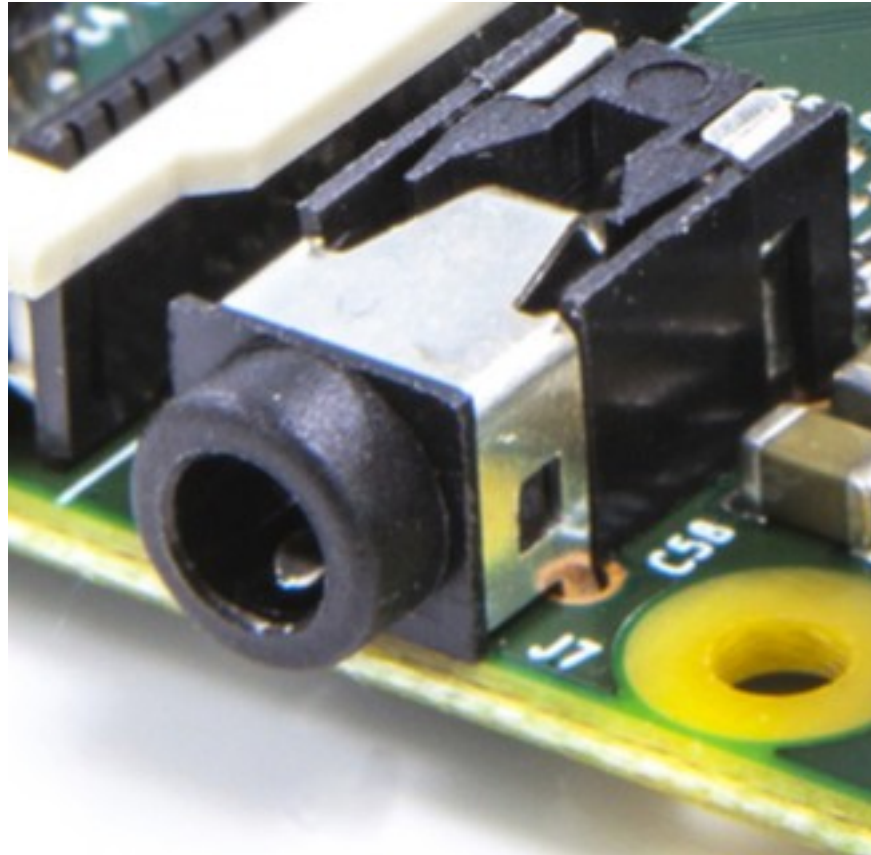
Raspberry Pi GPIO BCM numbering



Video y Sonido

Raspberry Pi 3B+

- **Conector de Audio y Video:**
 - **Salida estéreo y video compuesto.**



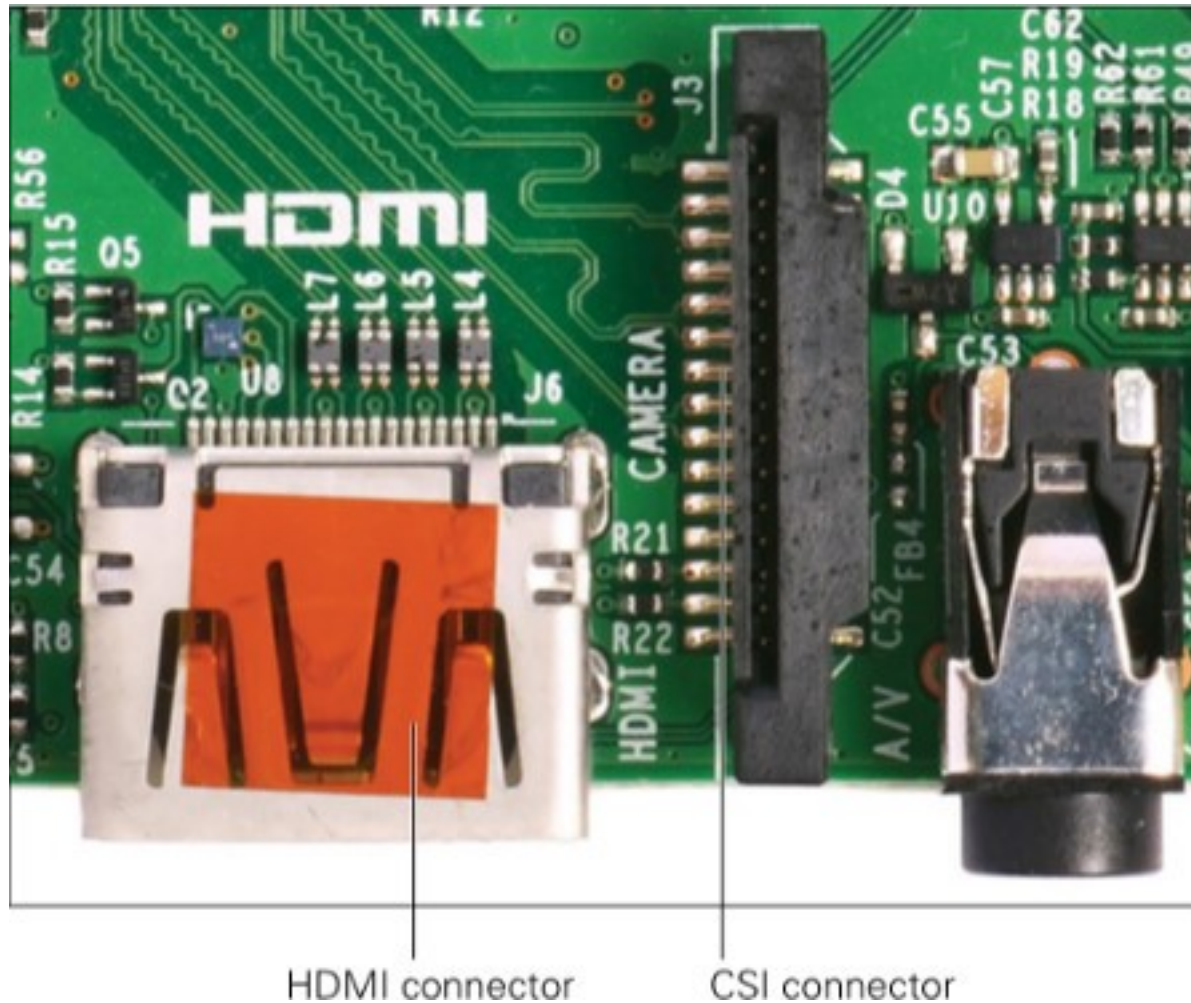
Raspberry Pi 3B+

- **Conector de Audio y video:**



Raspberry Pi 3B+

- **Conexión para HDMI y cámara:**



Raspberry Pi 3B+

- **DSI (Display Serial Interface) para conectar pantallas:**



Multimedia

Raspberry Pi 3B+

- **Soporte para Multimedia:**
 - **H.264.**
 - **MPEG-4 decode (1080p30).**
 - **H.264 encode (1080p30).**
 - **OpenGL ES 1.1, 2.0 graphics**



Almacenamiento

Raspberry Pi 3B+

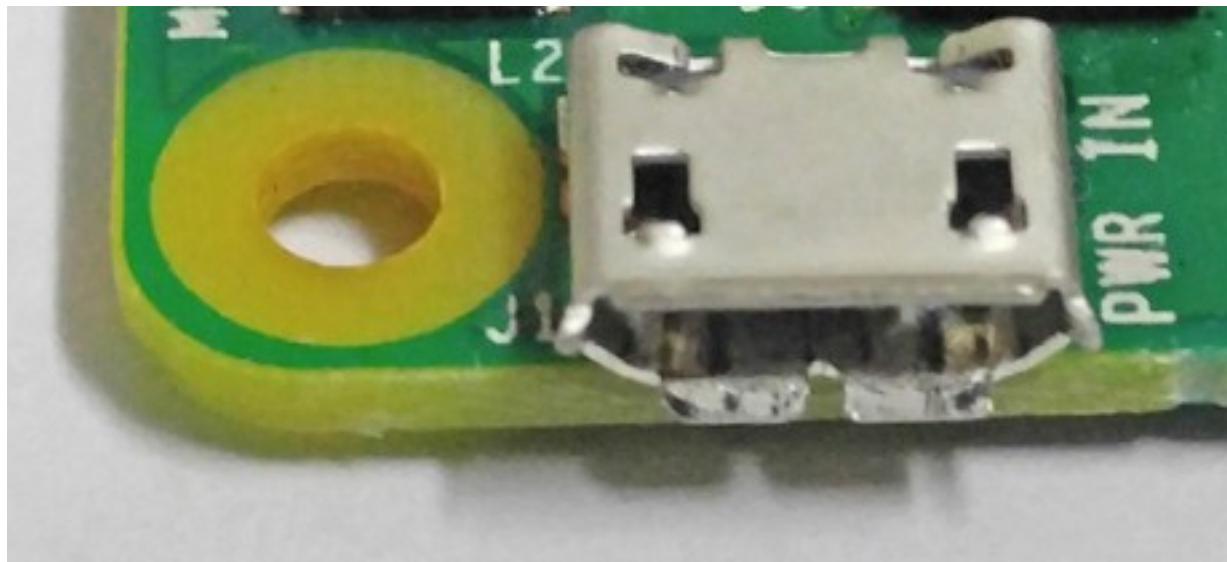
- **Slot Micro SD para almacenamiento:**



Energía

Raspberry Pi 3B+

- **Conector Micro USB para energía:**
 - **5 V/2.5 A DC** via micro **USB** connector.
 - **5 V DC** via **GPIO** header.
 - **Power over Ethernet (PoE)**–enabled (requires separate **PoE HAT**).



Temperatura de Operación

Raspberry Pi 3B+

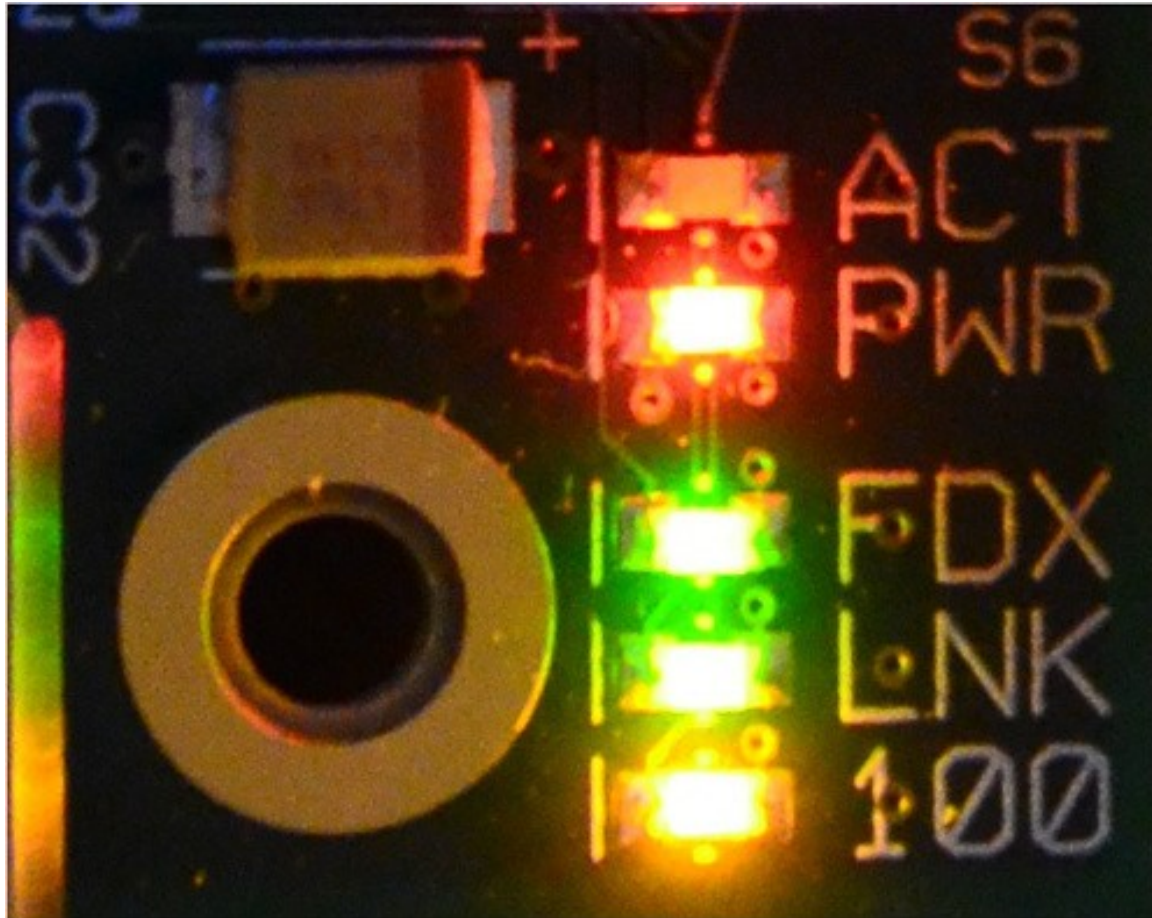
- **Temperatura de operación:
0 – 50 grados centígrados.**



Monitoreo del funcionamiento

Raspberry Pi 3B+

- **Status Leds:**



Raspberry Pi 3B+

- **Status Led:**
 - **ACT (actividad - verde):** Indica que se está accedendo a la tarjeta SD.
 - **PWR (power - rojo):** Indica que el sistema está energizado.
 - **FDX (full duplex - verde):** Indica conexión a una red LAN en modo full duplex
 - **LNK (link - verde parpadeando):** Indica actividad en la red LAN.
 - **100 (amarillo):** Indica conexión a una red LAN a 100-Mbit/s:



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