

The diagram illustrates the internal components of the Raspberry Pi 2B board, divided into two main sections: the RPi / Core and the RPi2.

**RPi / Core:** This section shows the RPi1 chip connected to the RPi GPIO Connector. The connector pins are labeled with their functions and connected to various external components:

- Pin 1:** +3V3
- Pin 3:** GPIO2 (I2C SDA)
- Pin 5:** GPIO3 (I2C SCL)
- Pin 7:** GPIO4
- Pin 9:** GND
- Pin 11:** GPIO17
- Pin 13:** GPIO27
- Pin 15:** GPIO22
- Pin 17:** +3V3
- Pin 19:** GPIO10 (SPI0 MOSI)
- Pin 21:** GPIO9 (SPI0 MISO)
- Pin 23:** GPIO11 (SPI0 SCLK)
- Pin 25:** GND
- Pin 27:** RSVD
- Pin 29:** GPIO5
- Pin 31:** GPIO6
- Pin 33:** GPIO13
- Pin 35:** GPIO19 (SPI1 MISO)
- Pin 37:** GPIO26
- Pin 39:** GND

External components connected to the RPi / Core include:

- Srv\_IO Vcc:** Connected to Pin 1.
- KMA\_Rst:** Connected to Pin 3.
- Video\_Vcc\_1:** Connected to Pin 5.
- Srv\_B\_Rst:** Connected to Pin 7.
- Srv\_L\_HDD:** Connected to Pin 9.
- Rpi\_Led\_GND:** Connected to Pin 11.
- MSD\_Rst:** Connected to Pin 13.
- Rpi\_HDD:** Connected to Pin 15.
- GND:** Connected to Pins 17, 25, 29, 31, 33, 35, 37, and 39.

**RPi2:** This section shows the RPi2 chip connected to the RPi2B Board. The board has several pins labeled with their functions and connected to various external components:

- Pin 2:** +5V
- Pin 4:** +5V
- Pin 6:** GND
- Pin 8:** UART0 TX
- Pin 10:** UART0 RX
- Pin 12:** GPIO18
- Pin 14:** GND
- Pin 16:** GPIO23
- Pin 18:** GPIO24
- Pin 20:** GND
- Pin 22:** GPIO25
- Pin 24:** GPIO8 (SPI0 CS0)
- Pin 26:** GPIO7 (SPI0 CS1)
- Pin 28:** GND
- Pin 30:** RSVD
- Pin 32:** GND
- Pin 34:** GPIO12
- Pin 36:** GND
- Pin 38:** GPIO16 (SPI1 CS0)
- Pin 40:** GPIO20 (SPI1 MOSI)
- Pin 42:** GPIO21 (SPI1 SCLK)

External components connected to the RPi2 include:

- Rpi\_Vcc:** Connected to Pin 2.
- Rpi\_TX:** Connected to Pin 8.
- Rpi\_RX:** Connected to Pin 10.
- Video\_Vcc\_2:** Connected to Pin 12.
- Srv\_B\_Pwr:** Connected to Pin 14.
- Srv\_L\_Power:** Connected to Pin 16.
- MSD\_Target:** Connected to Pin 18.
- GND:** Connected to Pins 22, 26, 28, 30, 32, 34, 36, 38, 40, and 42.

**Raspberry Pi 2B Board:** This section shows the RPi2B Board connected to the RPi2 chip. The board has several pins labeled with their functions and connected to various external components:

- Pin 1:** RPi\_Vcc
- Pin 2:** RPi\_HDD
- Pin 3:** Rpi\_Led\_GND
- Pin 4:** RPi\_Vcc
- Pin 5:** RPi\_HDD
- Pin 6:** Rpi\_Led\_GND
- Pin 7:** RPi\_Vcc
- Pin 8:** RPi\_HDD
- Pin 9:** Rpi\_Led\_GND
- Pin 10:** RPi\_Vcc
- Pin 11:** RPi\_HDD
- Pin 12:** Rpi\_Led\_GND
- Pin 13:** RPi\_Vcc
- Pin 14:** RPi\_HDD
- Pin 15:** Rpi\_Led\_GND
- Pin 16:** RPi\_Vcc
- Pin 17:** RPi\_HDD
- Pin 18:** Rpi\_Led\_GND
- Pin 19:** RPi\_Vcc
- Pin 20:** RPi\_HDD
- Pin 21:** Rpi\_Led\_GND
- Pin 22:** RPi\_Vcc
- Pin 23:** RPi\_HDD
- Pin 24:** Rpi\_Led\_GND
- Pin 25:** RPi\_Vcc
- Pin 26:** RPi\_HDD
- Pin 27:** Rpi\_Led\_GND
- Pin 28:** RPi\_Vcc
- Pin 29:** RPi\_HDD
- Pin 30:** Rpi\_Led\_GND
- Pin 31:** RPi\_Vcc
- Pin 32:** RPi\_HDD
- Pin 33:** Rpi\_Led\_GND
- Pin 34:** RPi\_Vcc
- Pin 35:** RPi\_HDD
- Pin 36:** Rpi\_Led\_GND
- Pin 37:** RPi\_Vcc
- Pin 38:** RPi\_HDD
- Pin 39:** Rpi\_Led\_GND
- Pin 40:** RPi\_Vcc
- Pin 41:** RPi\_HDD
- Pin 42:** Rpi\_Led\_GND
- Pin 43:** RPi\_Vcc
- Pin 44:** RPi\_HDD
- Pin 45:** Rpi\_Led\_GND
- Pin 46:** RPi\_Vcc
- Pin 47:** RPi\_HDD
- Pin 48:** Rpi\_Led\_GND
- Pin 49:** RPi\_Vcc
- Pin 50:** RPi\_HDD
- Pin 51:** Rpi\_Led\_GND
- Pin 52:** RPi\_Vcc
- Pin 53:** RPi\_HDD
- Pin 54:** Rpi\_Led\_GND
- Pin 55:** RPi\_Vcc
- Pin 56:** RPi\_HDD
- Pin 57:** Rpi\_Led\_GND
- Pin 58:** RPi\_Vcc
- Pin 59:** RPi\_HDD
- Pin 60:** Rpi\_Led\_GND
- Pin 61:** RPi\_Vcc
- Pin 62:** RPi\_HDD
- Pin 63:** Rpi\_Led\_GND
- Pin 64:** RPi\_Vcc
- Pin 65:** RPi\_HDD
- Pin 66:** Rpi\_Led\_GND
- Pin 67:** RPi\_Vcc
- Pin 68:** RPi\_HDD
- Pin 69:** Rpi\_Led\_GND
- Pin 70:** RPi\_Vcc
- Pin 71:** RPi\_HDD
- Pin 72:** Rpi\_Led\_GND
- Pin 73:** RPi\_Vcc
- Pin 74:** RPi\_HDD
- Pin 75:** Rpi\_Led\_GND
- Pin 76:** RPi\_Vcc
- Pin 77:** RPi\_HDD
- Pin 78:** Rpi\_Led\_GND
- Pin 79:** RPi\_Vcc
- Pin 80:** RPi\_HDD
- Pin 81:** Rpi\_Led\_GND
- Pin 82:** RPi\_Vcc
- Pin 83:** RPi\_HDD
- Pin 84:** Rpi\_Led\_GND
- Pin 85:** RPi\_Vcc
- Pin 86:** RPi\_HDD
- Pin 87:** Rpi\_Led\_GND
- Pin 88:** RPi\_Vcc
- Pin 89:** RPi\_HDD
- Pin 90:** Rpi\_Led\_GND
- Pin 91:** RPi\_Vcc
- Pin 92:** RPi\_HDD
- Pin 93:** Rpi\_Led\_GND
- Pin 94:** RPi\_Vcc
- Pin 95:** RPi\_HDD
- Pin 96:** Rpi\_Led\_GND
- Pin 97:** RPi\_Vcc
- Pin 98:** RPi\_HDD
- Pin 99:** Rpi\_Led\_GND
- Pin 100:** RPi\_Vcc
- Pin 101:** RPi\_HDD
- Pin 102:** Rpi\_Led\_GND
- Pin 103:** RPi\_Vcc
- Pin 104:** RPi\_HDD
- Pin 105:** Rpi\_Led\_GND
- Pin 106:** RPi\_Vcc
- Pin 107:** RPi\_HDD
- Pin 108:** Rpi\_Led\_GND
- Pin 109:** RPi\_Vcc
- Pin 110:** RPi\_HDD
- Pin 111:** Rpi\_Led\_GND
- Pin 112:** RPi\_Vcc
- Pin 113:** RPi\_HDD
- Pin 114:** Rpi\_Led\_GND
- Pin 115:** RPi\_Vcc
- Pin 116:** RPi\_HDD
- Pin 117:** Rpi\_Led\_GND
- Pin 118:** RPi\_Vcc
- Pin 119:** RPi\_HDD
- Pin 120:** Rpi\_Led\_GND
- Pin 121:** RPi\_Vcc
- Pin 122:** RPi\_HDD
- Pin 123:** Rpi\_Led\_GND
- Pin 124:** RPi\_Vcc
- Pin 125:** RPi\_HDD
- Pin 126:** Rpi\_Led\_GND
- Pin 127:** RPi\_Vcc
- Pin 128:** RPi\_HDD
- Pin 129:** Rpi\_Led\_GND
- Pin 130:** RPi\_Vcc
- Pin 131:** RPi\_HDD
- Pin 132:** Rpi\_Led\_GND
- Pin 133:** RPi\_Vcc
- Pin 134:** RPi\_HDD

### Mass Storage Device (MSD)

## Server Power Control (SPC)

**Leds**

Srv\_IQ\_Vcc  
R1 4.7k  
Srv\_L\_Power  
GND  
CPC1008N  
LP1\_1  
LP1\_2

Srv\_IQ\_Vcc  
R7 4.7k  
Srv\_L\_HDD  
GND  
CPC1008N  
LP2\_1  
LP2\_2

**Buttons**

Srv\_B\_Pwr  
R11 390R  
GND  
CPC1008N  
LP3\_2  
LP3\_1

Srv\_B\_Rst  
R14 390R  
GND  
CPC1008N  
LP4\_2  
LP4\_1

**Cable 568B - 568B**

J1 8P8C  
J2 8P8C

**Leds**

RP1\_1  
RP1\_2  
Power  
RP2\_1  
RP2\_2  
HDD

**Buttons**

RP3\_1  
RP3\_2  
Pwr  
RP4\_1  
RP4\_2  
Rst

**Straight Through Wiring EIA/TIA 568B**

TIA 568B  
TIA 568B

CtrlWiringDiagram.com

## Power sys

The diagram illustrates the internal circuitry of the Arduino Pro Micro Keyboard and Mouse adapter (KMA). It is divided into several functional blocks:

- Power Regulation:** A voltage divider (R24, R26) and a MOSFET (Q6) are used to regulate the KMA\_Rst signal. A 220R resistor and a 100MHz inductor (L4) are used for power filtering. Capacitors C16 (1uF), C17 (100nF), C18 (100nF), and C19 (1uF) are used for decoupling.
- USB Connection:** The USB interface is connected to the Arduino Pro Micro's USB pins (TX0, RX1, GND, RST, VCC, GND). The USB signal is routed through a jumper (J10) to the KMA\_TX and KMA\_RX pins.
- Signal Interfacing:** The KMA\_TX and KMA\_RX pins are connected to the RPi\_TX and RPi\_RX pins through a 10k resistor (R20). The KMA\_TX pin is also connected to the RPi\_TX pin through a 10k resistor (R21). The KMA\_RX pin is connected to the RPi\_RX pin through a 10k resistor (R27).
- Reset Circuit:** The KMA\_RST pin is connected to the RPi\_RST pin through a 10k resistor (R26). The RPi\_RST pin is connected to the RPi\_TX pin through a 10k resistor (R27).
- Other Components:** A 10k resistor (R17) is connected to the VCC\_KMA pin. A 100nF capacitor (C20) is connected to the GND pin.

# Video Capture System

The diagram illustrates a video capture system architecture. It consists of three main components connected in a chain:

- USB Video Capture (VC1):** A yellow rectangular block labeled "USB Video Capture". It has a "USB A" connector on its left side and a "Composite video" output on its right side.
- VGA to Composite (VC2):** A yellow rectangular block labeled "VGA to Composite". It has a "DB-9 (VGA) to Host" input on its left side and a "Composite video" output on its right side.
- Host:** Represented by a blue rectangular block on the far right, labeled "Host".

The connections are as follows:

- The "USB A" connector of the USB Video Capture (VC1) is connected to a USB A connector labeled "J16".
- The "DB-9 (VGA) to Host" connector of the VGA to Composite (VC2) is connected to the "Host" block.
- The "Composite video" output of the USB Video Capture (VC1) is connected to the "Composite video" input of the VGA to Composite (VC2).

Power and ground connections are also shown:

- The USB Video Capture (VC1) is connected to "VCC\_1" and "GND" at the J16 connector.
- The VGA to Composite (VC2) is connected to "VCC\_2" and "GND" at its own connector.

**Misc Devices**

VCC\_2

J15

C34 100nF

GND

**Interconnect PCB**

B1

B2

B3

B4

B5

B6

B7

C35

C36

C37

C38

C39

C40

C41

C42

GND

**Connector**

J13

J14

1 2

3 4

5 6

7 8

9 10

11 12

13 14

15 16

17 18

19 20

21 22

23 24

25 26

27 28

29 30

31 32

33 34

35 36

37 38

39 40

ic\_2

ic\_4

ic\_6

ic\_8

ic\_10

ic\_12

ic\_14

ic\_16

ic\_18

ic\_25

ic\_32

ic\_37

Connector 2.54 2x20-pin

Designator	Quantity	Description	Comment	Footprint	Manufacturer	Manufacturer Part Number
B1, B2, B3, B4, B5, B6, B7, B8	8	PLATED_HOLE3.0_PAD6.0	Family	MTG300_600_vias	GENERIC	PLATED_HOLE3.0_PAD6.0
C1, C2, C4, C5, C7, C8, C9, C10, C13, C14, C17, C18, C20, C23, C24, C28, C31, C32, C34	19	C_0805_100nF_50V_10%_X7R	100nF	CAPC2012X135N	Yageo(YAG)	CC0805KPX7R9BB104
C3, C6, C12, C15, C16, C19, C22, C25, C30, C33	10	C_0805_1uF_16V_10%_X7R	1uF	CAPC2012X135N	Murata Electronics Inc. (MUR)	GRM21BR71C105KA01L
C11, C27, C29	3	Cap 1500uF x 6.3V	1500uF	CAPPR500-1050X1300	United Chemi-Con	EKZH6R3ELL152MH20D
C21, C26	2	C_0805_10uF_10V_10%_X7R	10uF	CAPC2012X135N	Murata Electronics Inc. (MUR)	GRM21BR71A106KE51L
C35, C36, C37, C38, C39, C40, C41, C42	8	C_0805_1nF_50V_10%_X7R	1nF	CAPC2012X135N	Yageo(YAG)	CC0805KRX7R9BB102
D1, D2, D3, D6	4	1N4148W	1N4148W	SOD3816X118N	On Semiconductor(ONS)	1N4148W
D4	1	MBR0520L	MBR0520L	SOD3816X118N	On Semiconductor(ONS)	MBR0520L
D5	1	1.5 W Zener Voltage Regulator, 2-Pin SMA, Pb-Free, Tape and Reel	5.6	DIOM5027X244N	On Semiconductor	1SMA5919BT3G
IC1, IC2, IC3, IC4	4	PhotoMOS Relay	CPC1008N	SOIC254P610X218-4N	Ixys Corporation (IXYS)	CPC1008N
J1, J2	2	1 Port, 8 Positions, CAT3 RJ45 Horizontal Modular Jack	8P8C	FCL_54602-908LF	Fci Electronics(FCI)	54602-908LF
J3	1	Connector 2.54 3x2-pin	Power	SAMTEC_MTLW-103-07-L-D-250	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PLD-6
J4	1	Connector 2.54 2x2-pin	HDD	SAMTEC_MTLW-102-07-L-D-250	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PLD-8
J5	1	Connector 2.54 2x2-pin	Pwr	SAMTEC_MTLW-102-07-L-D-250	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PLD-8
J6, J16	2	4 Pin + 1 Shield USB Receptacle	USB A	FCL_87520-0010BLF	Te Connectivity(TE)	292303-1
J7	1	4 Pin + 1 Shield USB Receptacle	Family	TYCO_292304-1	Te Connectivity(TE)	292304-1
J8	1	Connector 2.54 2x2-pin	Rst	SAMTEC_MTLW-102-07-L-D-250	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PLD-8
J9	1	Connector 5.08 3-pin	Connector 5.08 3-pin	PHOENIX_1755749		
J10	1	Connector 2.54 2x2-pin	Jumper	SAMTEC_MTLW-102-07-L-D-250	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PLD-8
J11	1	Connector 2.54 2-pin	Jumper	COMATEL_385.0358.1.02.400	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PLS-2
J12	1	Connector 2.54 3x2-pin	ISP	SAMTEC_MTLW-103-07-L-D-250	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PLD-6
J13, J14	2	Connector 2.54 2x20-pin	Connector 2.54 2x20-pin	FCL_87606-320LF	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	PBD-40
J15	1	CWF-2	CWF-2	CWF-2	CONNFLY ELECTRONIC CO.,LTD.(CONNFLY)	DS1069-2 M (CWF-2)
L1, L3, L4, L5, L6	5	BLM21PG221SN1D	220R@100MHz	INDC2012X105N	Murata Electronics Inc. (MUR)	BLM21PG221SN1D
L2	1	BLM41PG600SN1L	60R@100MHz	INDC4516X180N	Murata Electronics Inc. (MUR)	BLM41PG600SN1L
LD1, LD3	2	LED x2 Green 1C2A-BOT_3C4A-TOP	Color	LED_DIALIGHT_553-0122-200F	Dialight Corp.(DIALIGHT)	553-0122-200F
LD2	1	2x LED Botom Green, Top Red	Color	LED_DIALIGHT_553-0112-200F	Dialight Corp.(DIALIGHT)	553-0112-200F
Q1, Q2, Q3, Q4, Q5, Q6, Q7	7	N-ch 20V 4.2A 45mOhm	IRLML2502	SOT23	Infineon Technologies Ag (Siemens Semiconductors) (INFIN)	IRLML2502GTRPBF
R1, R7	2	R_0805_4.7k_150V_125mW_1%	4.7k	RESC2012X60N	Yageo(YAG)	RC0805FR-074K7L
R2, R3, R4, R8, R9, R10, R11, R12, R13, R14, R15, R16, R22, R23, R24	15	R_0805_390R_150V_125mW_1%	390R	RESC2012X60N	Yageo(YAG)	RC0805FR-07390RL
R5, R6, R17, R18, R19, R20, R21, R25, R26, R27, R28	11	R_0805_10k_150V_125mW_1%	10k	RESC2012X60N	Yageo(YAG)	RC0805FR-0710KL
RL1, RL2, RL3, RL4	4	Miniature Relay for Signal Circuits	Value	REL_HK19F_DC5V	HUI KE	HK19F-DC5V-SHG
RPI1	1	GPIO Header for Raspberry Pi A+/B+/Pi 2/Pi 3 - 2x20	RPI GPIO Connector	3M_N2540-6002RB	SparkFun Electronics	PRT-14017
RPI2	1	RPI 2B Board	RPI 2B Board	RPI 2B Board	GENERIC	
T1	1	-30V -13A P-Channel PowerTrench MOSFET	FDS6679AZ	SOIC127P600X175-8N	On Semiconductor(ONS-FAIR)	FDS6679AZ
U1	1	Arduino_Pro_Micro	Arduino_Pro_Micro			
VC1	1	USB Video Capture	USB Video Capture	USB_Video_Capture	GENERIC	
VC2	1	VGA_to_Composite	VGA_to_Composite	VGA_to_Composite	GENERIC	