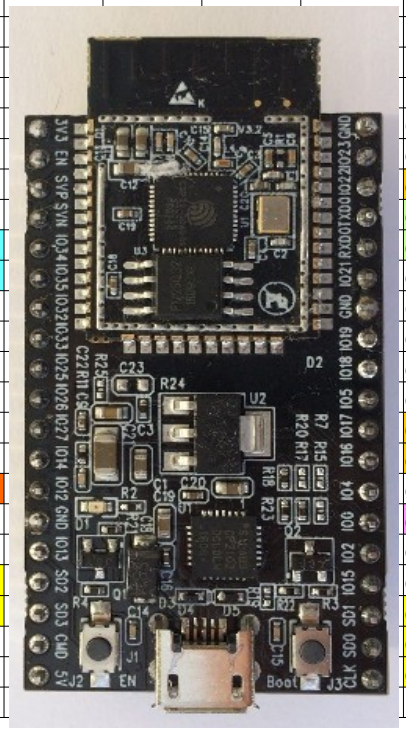
ESP32-Devkit-C



3V3	Gnd
EN Used by program logic. SW2 grounds via resistor.	GPIO23, VSPID, HS1_STROBE
	GPIO22, VSPIWP, U0RTS, EMAC_TXD1
	GPIO1, U0TXD, CLK_OUT3, EMAC_RXD2
GPIO34, ADC1_CH6, RTC_GPIO4	GPIO3, U0RXD, CLK_OUT2
GPIO35, ADC1_CH7, RTC_GPIO5	GPIO21, VSPIHD, EMAC_TX_EN
GPIO32, 32K_XP (32.768 kHz osc i/p),ADC1_CH4, TOUCH9, RTC_GPIO9	Gnd
GPIO33, 32K_XN (32.768 kHz osc o/p),ADC1_CH5, TOUCH8, RTC_GPIO8	GPIO19, VSPIQ, U0CTS, EMAC_TXD0
GPIO25, DAC_1, ADC2_CH8, RTC_GPIO6, EMAC_RXD0	GPIO18, VSPICLK, HS1_DATA7
GPIO26, DAC_2, ADC2_CH9, RTC_GPIO7, EMAC_RXD1	GPIO5, VSPICS0, HS1_DATA6, EMAC_RX_CLK
GPIO27, ADC2_CH7, TOUCH7, RTC_GPIO17, EMAC_RX_DV	GPIO17, HS1_DATA5, U2TXD, EMAC_CLK_OUT_180
GPIO14, ADC2_CH6, TOUCH6, RTC_GPIO16, MTMS, HSPI-CLK, HS2_CLK, SD_CLK, EMAC_TXD2	GPIO16, HS1_DATA4, U2RXD, EMAC_CLK_OUT
GPIO12, ADC2_CH5, TOUCH5, RTC_GPIO15, MTDI, HSPIQ,HS2_DATA2, SD_DATA2, EMAC_TXD3	GPIO4, ADC2_CH0, TOUCH0, RTC_GPIO10, HSPIHD,HS2_DATA1, SD_DATA1, EMAC_TX_ER
Gnd	GPIO0, ADC2_CH1, TOUCH1, RTC_GPIO11, CLK_OUT1,EMAC_TX_CLK
GPIO13, ADC2_CH4, TOUCH4, RTC_GPIO14, MTCK, HSPID,HS2_DATA3, SD_DATA3, EMAC_RX_ER	GPIO2, ADC2_CH2, TOUCH2, RTC_GPIO12, HSPIWP,HS2_DATA0, SD_DATA0 External pulldown
GPIO9, SD_DATA2, SPIHD, HS1_DATA2, U1RXD	GPIO15, ADC2_CH3, TOUCH3, RTC_GPIO13, MTDO,HSPICS0, HS2_CMD, SD_CMD, EMAC_RXD3
GPIO10, SD_DATA3, SPIWP, HS1_DATA3, U1TXD	GPIO8, SD_DATA1, SPID, HS1_DATA1, U2CTS
Marked CMD. No idea what this is for.	GPIO7, SD_DATA0, SPIQ, HS1_DATA0, U2RTS
5V	GPIO6, SD_CLK, SPICLK, HS1_CLK, U1CTS

ADC: FSD = 4095 = 1.109V (Because 693mV gave 2559. Is the limit 1.0V?)

Used for internal flash, not recommended for other use

Input only. No internal pullup or pulldown.

Used by USB/REPL

GPIO0 has a 5KΩ external pullup. SW0 grounds via 470ΩΩ external pullup. SW0 grounds via 470Ω

Used on ESP32-WROVER-KΩ external pullup. SW0 grounds via 470ΩIT etc to access external SPI RAM

DAC: FSD = 255 = 3.19V (Vs = 3.3V). 127 gave 1.63V implying 3.3V FS.

Value	Expected	Actual	Error %
10	0.13	0.21	2.4
20	0.26	0.33	2.1
127	1.64	1.63	-0.3
200	2.58	2.53	-1.5
240	3.11	3.01	-3
255	3.3	3.19	-3.3

SPI: Hardware SPI ID1 is HSPI, ID2 is VSPI. Any pins may be used - native pins are faster.
ID1 MISO 12 MOSI 13 CLKΩ external pullup. SW0 grounds via 470Ω 14
ID2 MISO 19 MOSI 23 CLKΩ external pullup. SW0 grounds via 470Ω 18
machine.SPI(1, baudrate=100000, sck=2, mosi=15, miso=4) to alter pins.

Must not be pulled low or high on boot. Affects supply voltage to flash.
https://github.com/micropython/micropython/issues/6149

ESP32-D2WD is the chip with embedded 2MB flash and the internal flash is connected to different pins (GPIO16, GPIO17, SD_CMD, SD_CLKΩ external pullup. SW0 grounds via 470Ω, SD_DATA_0 and SD_DATA_1)