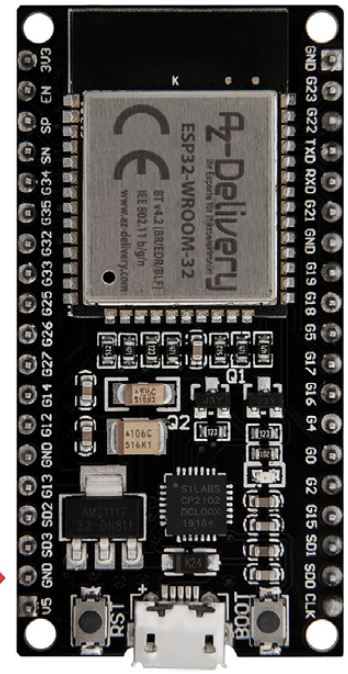
ESP-32 NodeMCU Developmentboard Pinout Diagram



3V3

EN Used by program logic. SW2 grounds via resistor.

GPIO34 ADC1_CH6 RTC_GPIO4

GPIO35 ADC1_CH7 RTC_GPIO5

GPIO32 32K_XP (32.768 kHz osc i/p) ADC1_CH4 TOUCH9 RTC_GPIO9

GPIO33 32K_XN (32.768 kHz osc o/p) ADC1_CH5 TOUCH8 RTC_GPIO8

GPIO25 DAC_1 ADC2_CH8 RTC_GPIO6 EMAC_RXD0

GPIO26 DAC_2 ADC2_CH9 RTC_GPIO7 EMAC_RXD1

GPIO27 ADC2_CH7 TOUCH7 RTC_GPIO17 EMAC_RX_DV

GPIO14 ADC2_CH6 TOUCH6 RTC_GPIO16 MTMS HSPI-CLK HS2_CLK SD_CLK EMAC_TXD2

GPIO12 ADC2_CH5 TOUCH5 RTC_GPIO15 MTDI HSPIQ HS2_DATA2 SD_DATA2 EMAC_TXD3

Gnd

GPIO13 ADC2_CH4 TOUCH4 RTC_GPIO14 MTCK HSPID HS2_DATA3 SD_DATA3 EMAC_RX_ER

GPIO9 SD_DATA2 SPIHD HS1_DATA2 U1RXD

GPIO10 SD_DATA3 SPIWP HS1_DATA3 U1TXD

! CMD

5V

Gnd

GPIO23 VSPID HS1_STROBE

GPIO22 VSPIWP U0RTS EMAC_TXD1

GPIO1 U0TXD CLK_OUT3 EMAC_RXD2

GPIO3 U0RXD CLK_OUT2

GPIO21 VSPIHD EMAC_TX_EN

Gnd

GPIO19 VSPIQ U0CTS EMAC_TXD0

GPIO18 VSPICLK HS1_DATA7

GPIO5 VSPICS0 HS1_DATA6 EMAC_RX_CLK

GPIO17 HS1_DATA5 U2TXD EMAC_CLK_OUT_180

GPIO16 HS1_DATA4 U2RXD EMAC_CLK_OUT

GPIO4 ADC2_CH0 TOUCH0 RTC_GPIO10 HSPIHD HS2_DATA1 SD_DATA1 EMAC_TX_ER

GPIO0 ADC2_CH1 TOUCH1 RTC_GPIO11 CLK_OUT1 EMAC_TX_CLK

GPIO2 ADC2_CH2 TOUCH2 RTC_GPIO12 HSPIWP HS2_DATA0 SD_DATA0 External pulldown

GPIO15 ADC2_CH3 TOUCH3 RTC_GPIO13 MTDO HSPICS0 HS2_CMD SD_CMD EMAC_RXD3

GPIO8 SD_DATA1 SPID HS1_DATA1 U2CTS

GPIO7 SD_DATA0 SPIQ HS1_DATA0 U2RTS

GPIO6 SD_CLK SPICLK HS1_CLK U1CTS

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 470Ω

Used on ESP32-WROVER-KIT etc to access external SPI RAM

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

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

Remapping peripherals:
uart = machine.UART(1,baudrate=115200,tx=25,rx=26)

ESP32-D2WD is the chip with embedded 2MB flash and the internal flash is connected to different pins (GPIO16, GPIO17, SD_CMD, SD_CLK, SD_DATA_0 and SD_DATA_1)