

# ESP 8266 boards

the printed Dx numbers are not identical with the GPIOs, here a listing of the GPIOs with their special functions:

Label	GPIO	Function	Serial	SPI	I2C	Notes
D0	16	GPIO				connect to RST to wake up from deep sleep
D1	5	GPIO			SCL	
D2	4	GPIO			SDA	
D3	0	GPIO				internal pullup, pulling down during boot enters flash mode
D4	2	GPIO	TxD1			LED, DO NOT pull down during boot!
D5	14	GPIO		CLK		
D6	12	GPIO		MISO		
D7	13	GPIO	RxD2	MOSI		
D8	15	GPIO	TxD2			DO NOT pull up during boot! DO NOT use as SPI CS or other pulled up line
TX	1	GPIO	TxD0			NO input, DO NOT pull down during boot!
RX	3	GPIO	TxD1			NO output
A0		ADC0				NO output, 0..1V

**I2C:** the ESP8266 has no hardware I2C, so a software emulation is used, which is usually on GPIO 4, 5, but could be somewhere else.

**ext. IRQ:** any GPIO can be used for this, except GPIO 16.

on larger boards there are additionally these pins:

Label	GPIO	Function
SD0	7	GPIO
SD1	8	GPIO
SD2	9	GPIO
SD3	10	GPIO
CMD	11	GPIO
CLK	6	GPIO

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GPIO	Funktion	Serial	SPI	I2C	ADC	DAC	RTC_GPIO	Hinweise
0	GPIO						11	pulled-up, sends PWM signal during boot
1	GPIO	TxD						output only
2	GPIO						12	onboard LED
3	GPIO	RxD						input only
4	GPIO						10	
5	GPIO							sends PWM signal during boot
6-11	GPIO							DO NOT use (internal SPI flash)

12	GPIO					15	DO NOT pupp-up during boot
13	GPIO					14	
14	GPIO					16	sends PWM signal during boot
15	GPIO					13	sends PWM signal during boot
16	GPIO						
17	GPIO						
18	GPIO		CLK				
19	GPIO		MISO				
21	GPIO			SDA			
22	GPIO			SCL			
23	GPIO		MOSI				
25	GPIO				DAC1	6	
26	GPIO				DAC2	7	
27	GPIO					17	
32	GPIO			ADC1 CH4		9	
33	GPIO			ADC1 CH5		8	
34	GPIO			ADC1 CH6		4	input only
35	GPIO			ADC1 CH7		5	input only
36	GPIO			ADC1 CH0		0	input only
37				ADC1 CH1			
38				ADC1 CH2			
39	GPIO			ADC1 CH3		3	input only

There is also ADC2, but since it does not work with WiFi at the same time it is useless.

The ADC does not work below 0.1V or above 3.2V

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