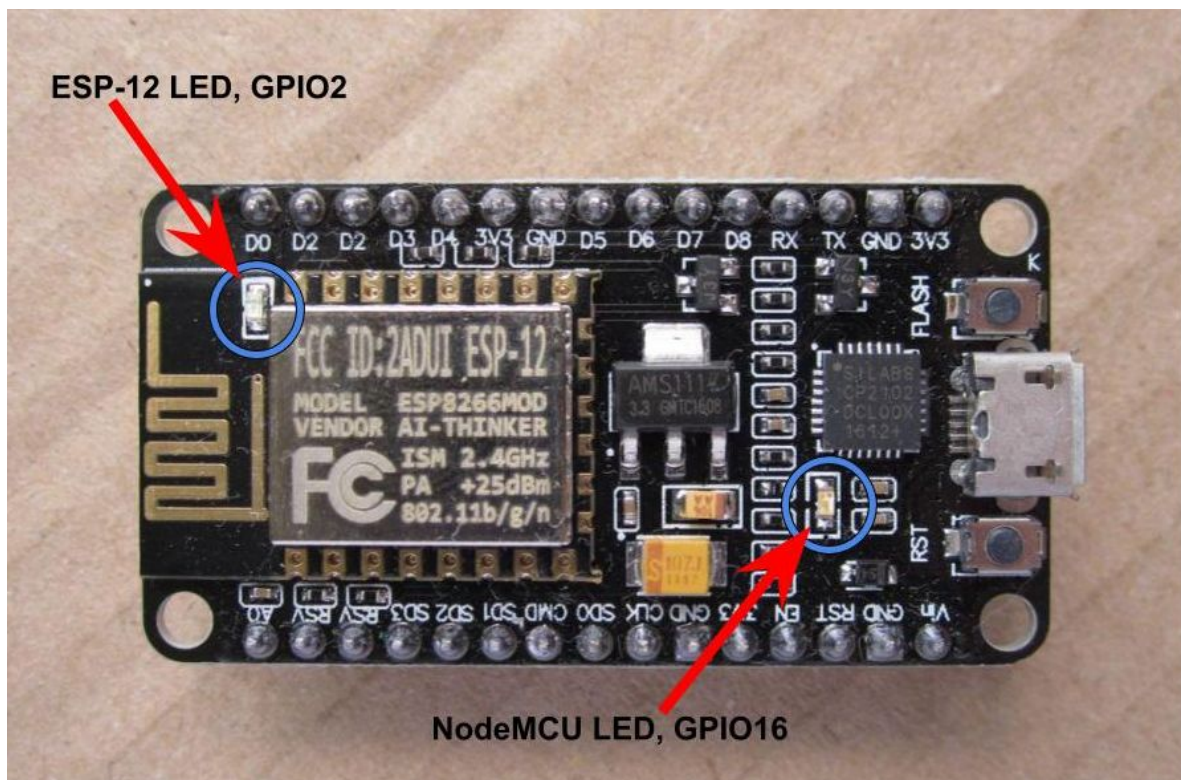


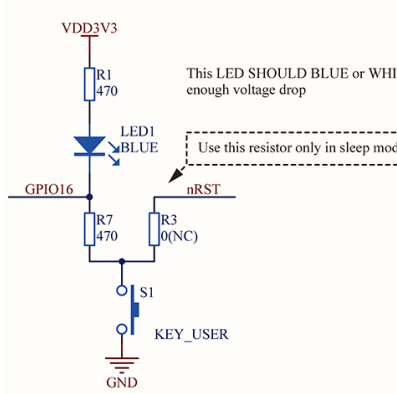
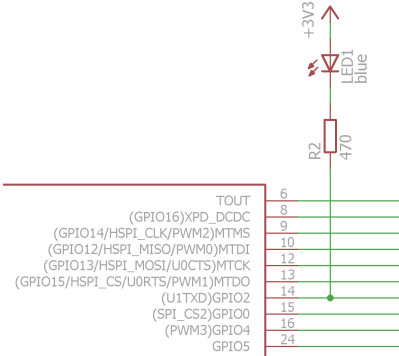
# Onboard LEDs? NodeMCU's got two!

Blinking a LED is the “Hello, world” of embedded programming and most development board have an integrated LED. This makes it easier to run a basic piece of code, without having to hookup any external components.

The NodeMCU ESP8266 board has two of those LEDs! One on the NodeMCU PCB and another on the ESP-12 module's PCB:



# Comparison Table

	NodeMCU LED	ESP-12 LED
Color	Blue	Blue
SMD Footprint	0603	0603
Pin	GPIO16	GPIO2
Pin Functions	USER, WAKE	U1TXD
Pin Silkscreen	“Do”	“D4”
Current-limiting Resistor	470 ohm	470 ohm
Sketch Pin Numbers	16, Do, LED_BUILTIN, BUILTIN_LED	2, D4
Schematic		

## Notes

Both LEDs operate in “inverted” mode, with regard to the pin levels - when the pin is HIGH, the LED is off; when the pin is LOW, the LED is on. The LED on GPIO2 flashes during ESP programming, as it is connected to the U1TXD pin.

## NodeMCU LED Blink

```
void setup() {  
  pinMode(LED_BUILTIN, OUTPUT);    // Initialize the LED_BUILTIN pin as a  
}  
  
void loop() {  
  digitalWrite(LED_BUILTIN, LOW);  // Turn the LED on by making the volta  
  delay(1000);                     // Wait for a second  
  digitalWrite(LED_BUILTIN, HIGH); // Turn the LED off by making the volt  
  delay(2000);                     // Wait for two seconds  
}
```

## ESP-12 LED Blink

```
void setup() {  
  pinMode(2, OUTPUT);    // Initialize GPIO2 pin as an output  
}  
  
void loop() {  
  digitalWrite(2, LOW);  // Turn the LED on by making the voltage LOW  
  delay(1000);           // Wait for a second  
  digitalWrite(2, HIGH); // Turn the LED off by making the voltage HIGH  
  delay(2000);           // Wait for two seconds  
}
```