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Arduino & Makers

ESP8266 101: baby steps

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Agenda

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- Introdução
- Arquitetura e Firmwares
- Exemplo
- Integração com Arduino
- Pontos de Partida
- Conclusão

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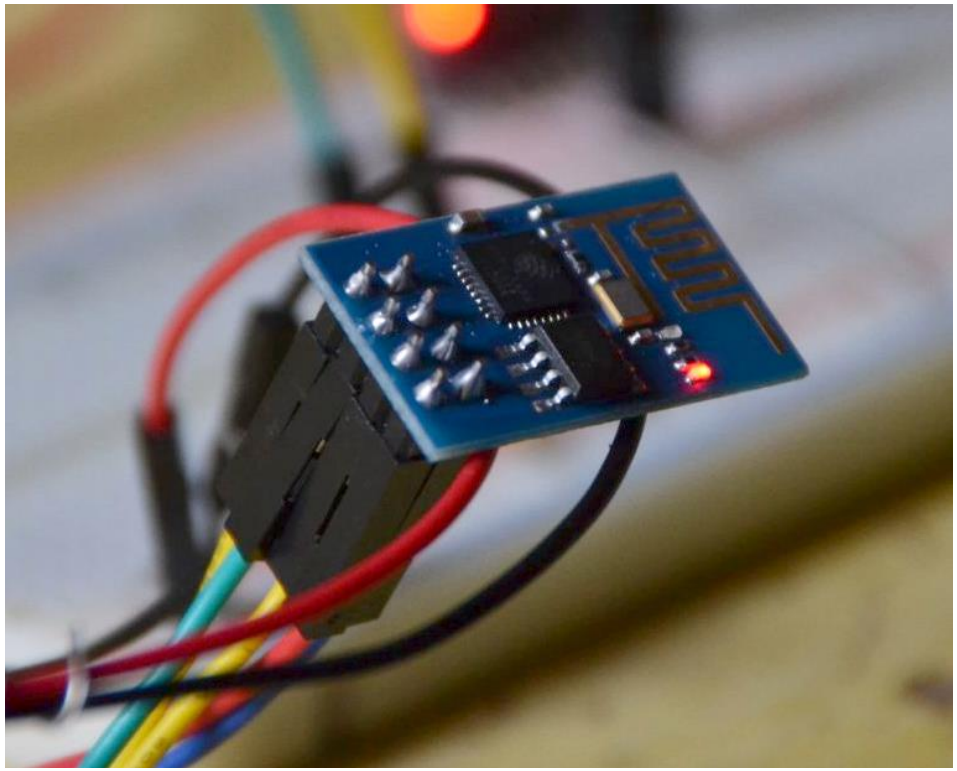
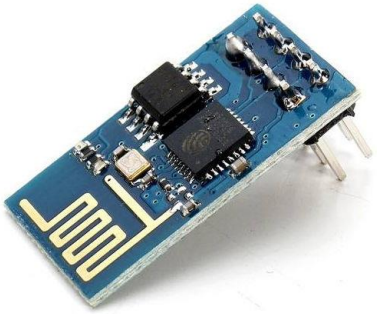
Introdução

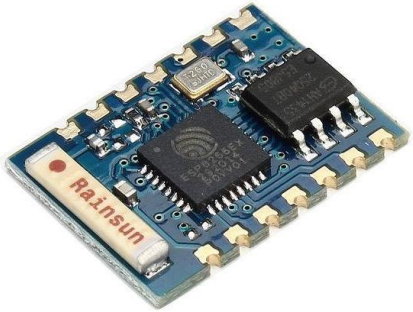


Introdução

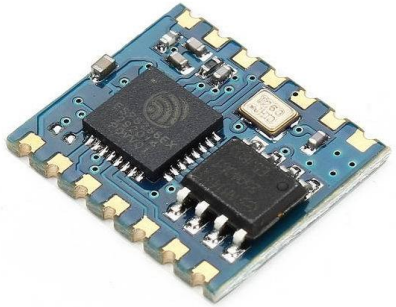


ESP-01

ESP-02



ESP-03



ESP-04

ESP-05

ESP-06

ESP-07

ESP-08

Fonte: www.esp8266.com

Arquitetura e Firmwares

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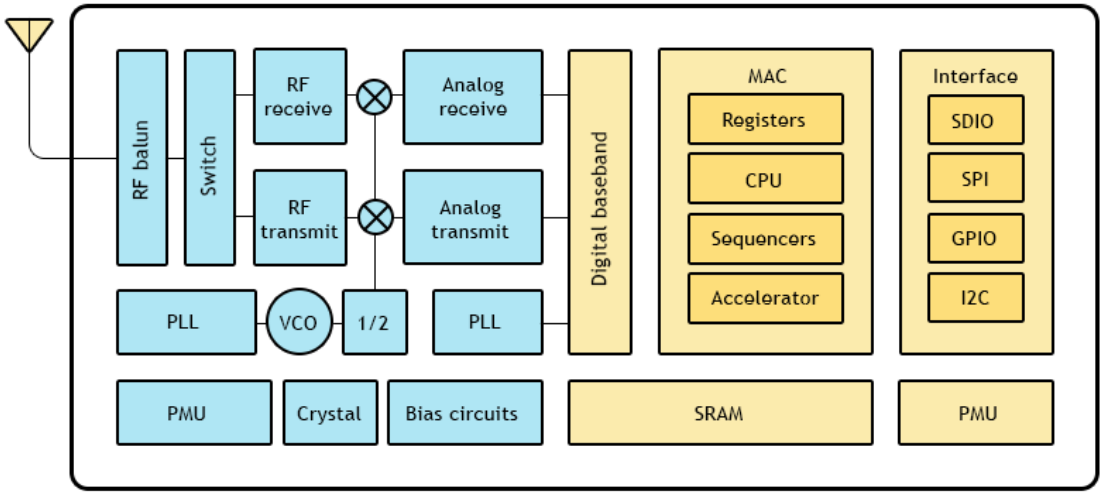
- Arquitetura
  - RF 802.11 b/g/n
  - CPU RISC 80MHz
  - 64+96kB RAM



Fonte: ESP8266 datasheet

- Firmwares
  - SDK
  - Arduino IDE
  - NodeMCU
  - MicroPython

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Exemplo

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```
-- Seta o modo estação.
> wifi.setmode(wifi.STATION)

-- Conecta na rede wifi.
> wifi.sta.config("Wow so much wireless", "dogethedoge")

-- Qual nosso IP?
> print(wifi.sta.getip())
172.16.1.155        255.255.0.0        172.16.1.1
```

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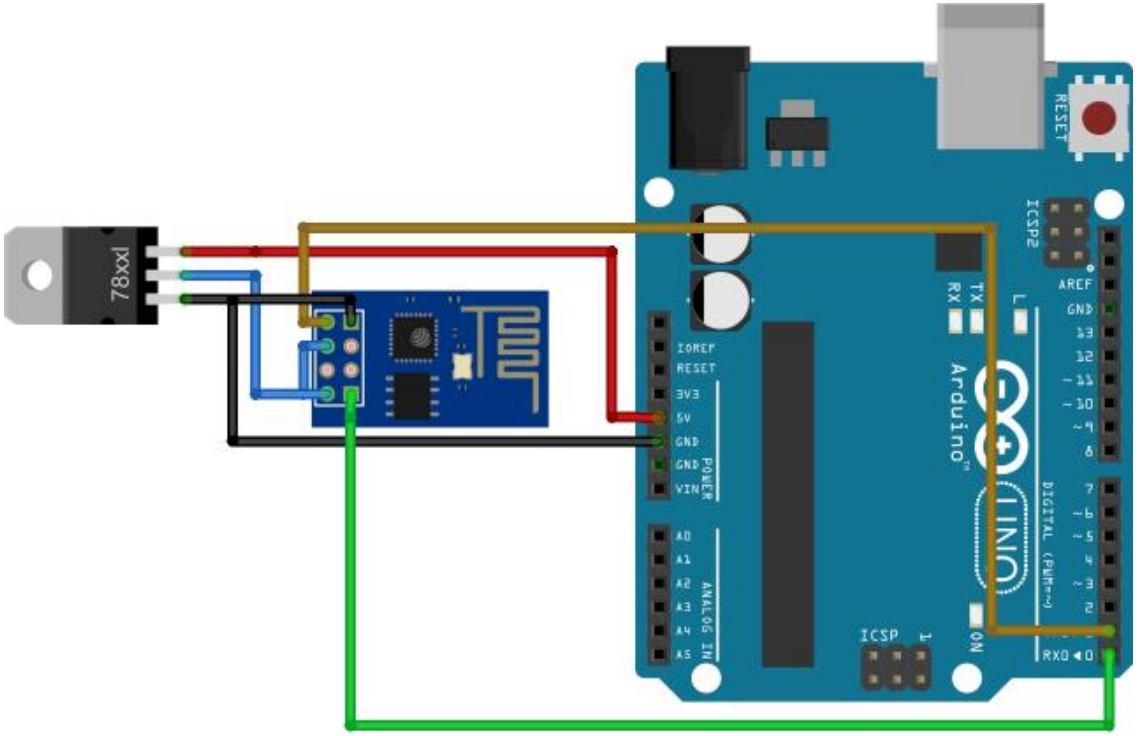
Integração com Arduino

- 3.3v vs 5v
  - Arduino
  - Regulador
- UART
  - Também 3.3v
  - Level shifter



Fonte: www.whatimade.today

- Controle e comunicação via porta serial

Pontos de Partida

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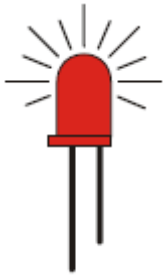

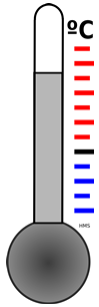

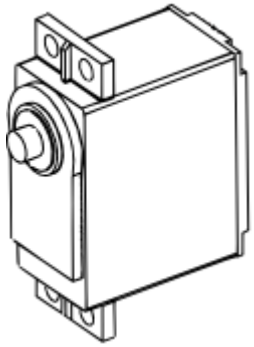

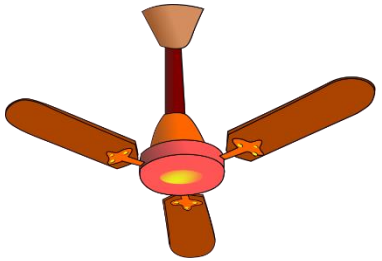

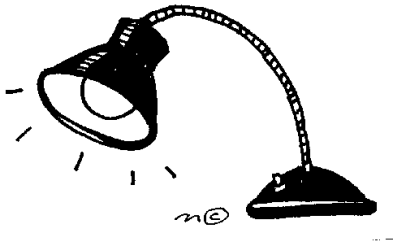

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Conclusão

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- ESP8266
  - Baixa complexidade
  - Baixo custo
  - Baixo consumo elétrico
  - Longas distâncias

- Projetos
  - Tudo sem fio?
  - Integração
  - Experiência

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