

Arduino, do Open Source e Open Hardware

Palestrante: Alex Aquino

27 de Abril

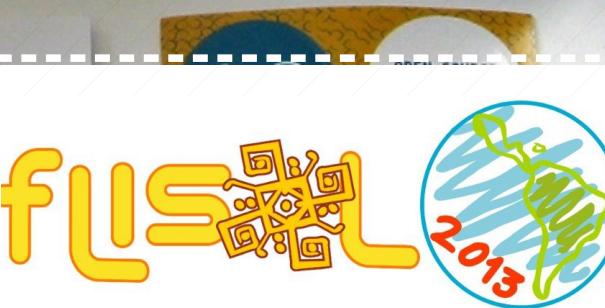
9h na UNP

Nascimento de Castro



Inscrições e maiores informações, acesse:

<http://flisol.ubuntu-rn.org>



FESTIVAL LATINOAMERICANO DE INSTALACIÓN
DE SOFTWARE LIBRE



AlexAquino.it



alexaquino.it@gmail.com



Alex Aquino *Computação UERN*



 @AlexAquino_it

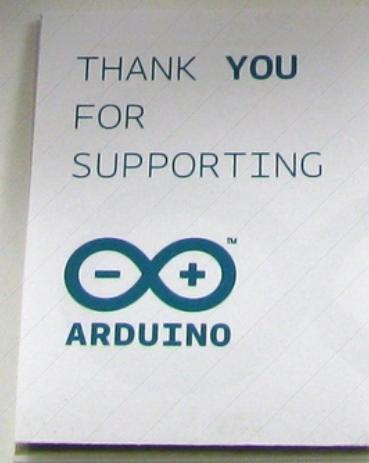
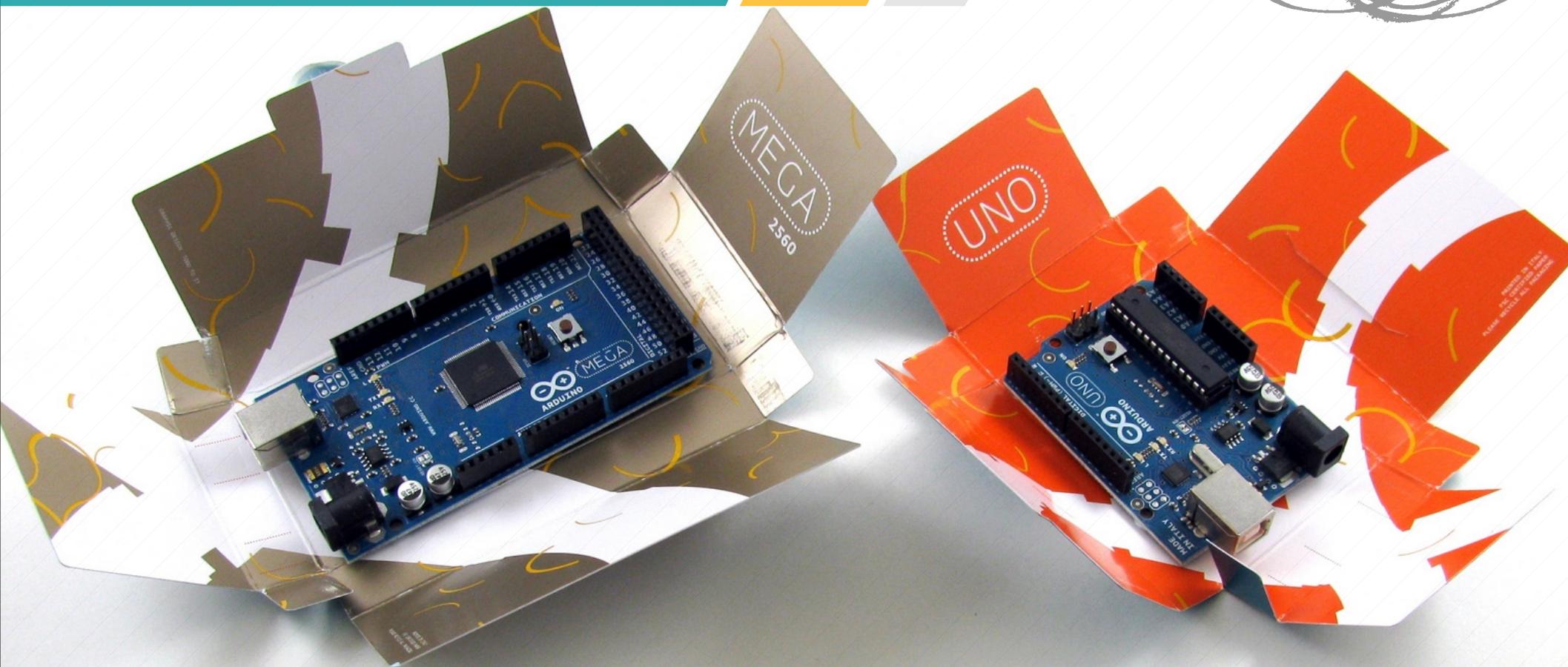
 alexaquino.it@gmail.com

 <http://www.facebook.com/AlexAquino.it>

ARDUINO

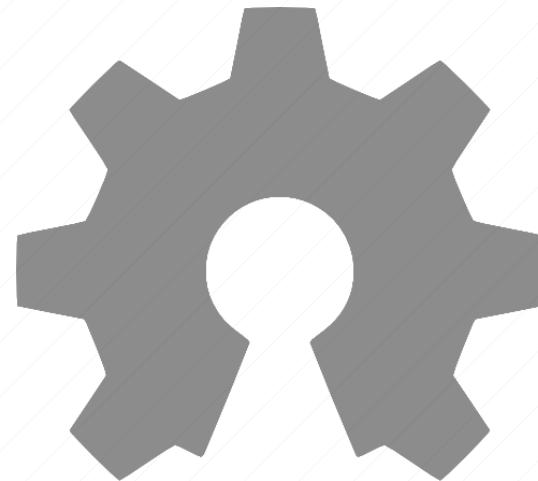
Arduino { ? } Mais o que é?

Alex Aquino





open source



open hardware

Arduino { ? } A origem..

Alex Aquino 



Arduino { ? } A equipe..



Dave Mellis
Aluno - Programador

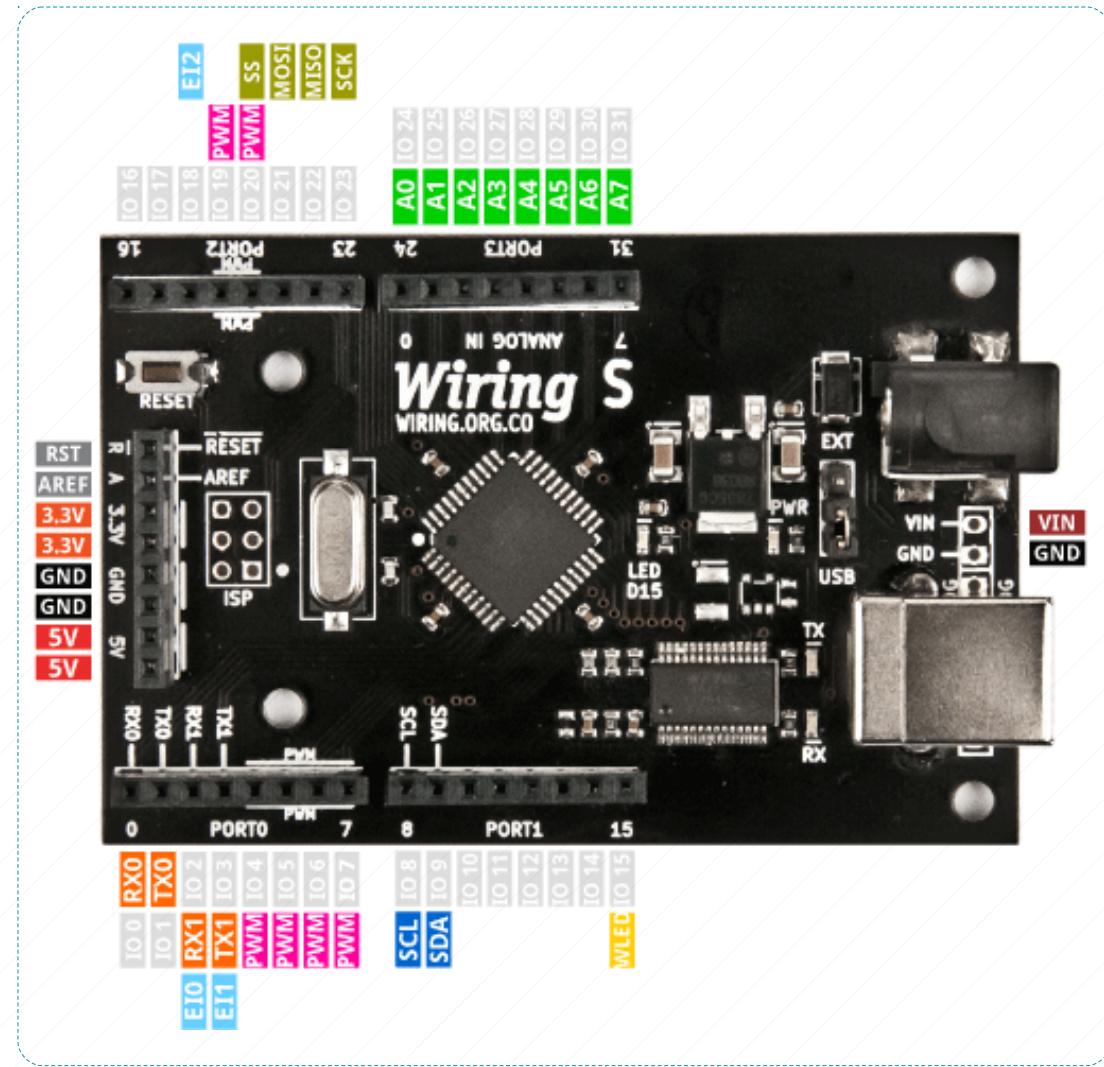
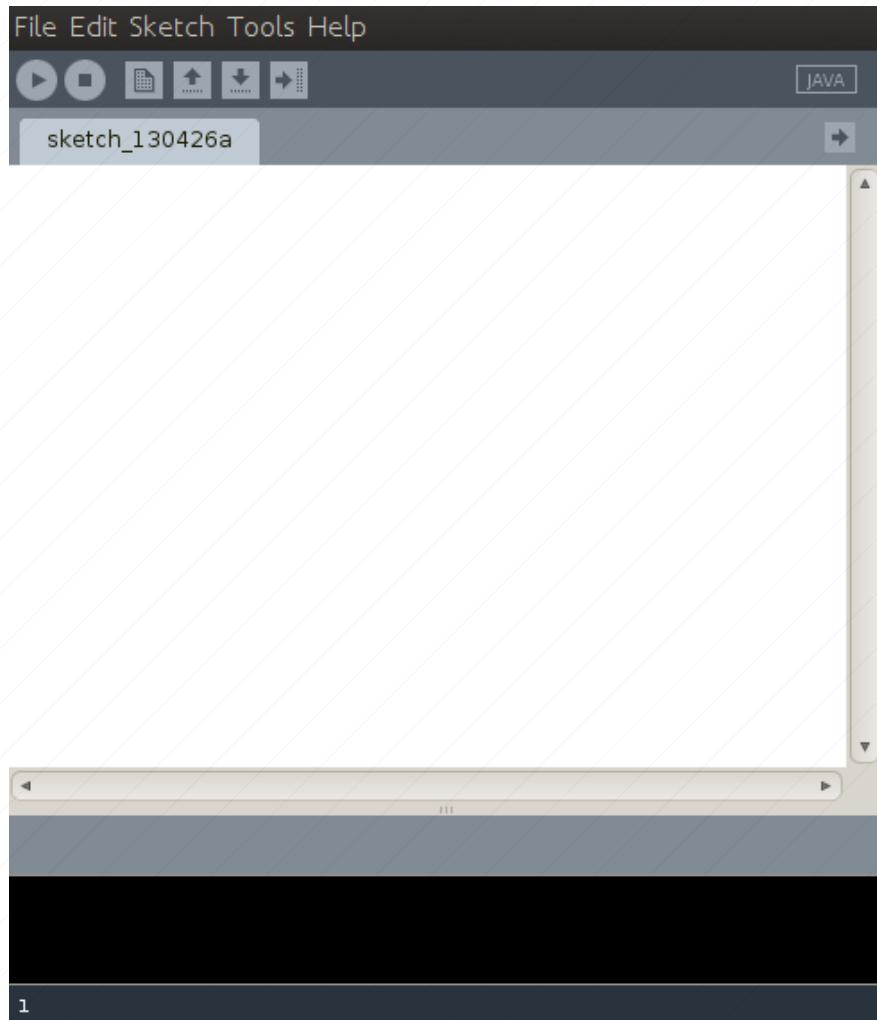
Tom Igoe
Professor - ITP

Gianluca Martino
Fabricante de CI's

David Cuartielles
Engenheiro Eletrônico

Massimo Banzi
Professor - Designer

Referências Processing | Wiring



Arduino { ? } Por que?

Programação em Alto Nível

Open Source e Open Hardware

Baixo Custo

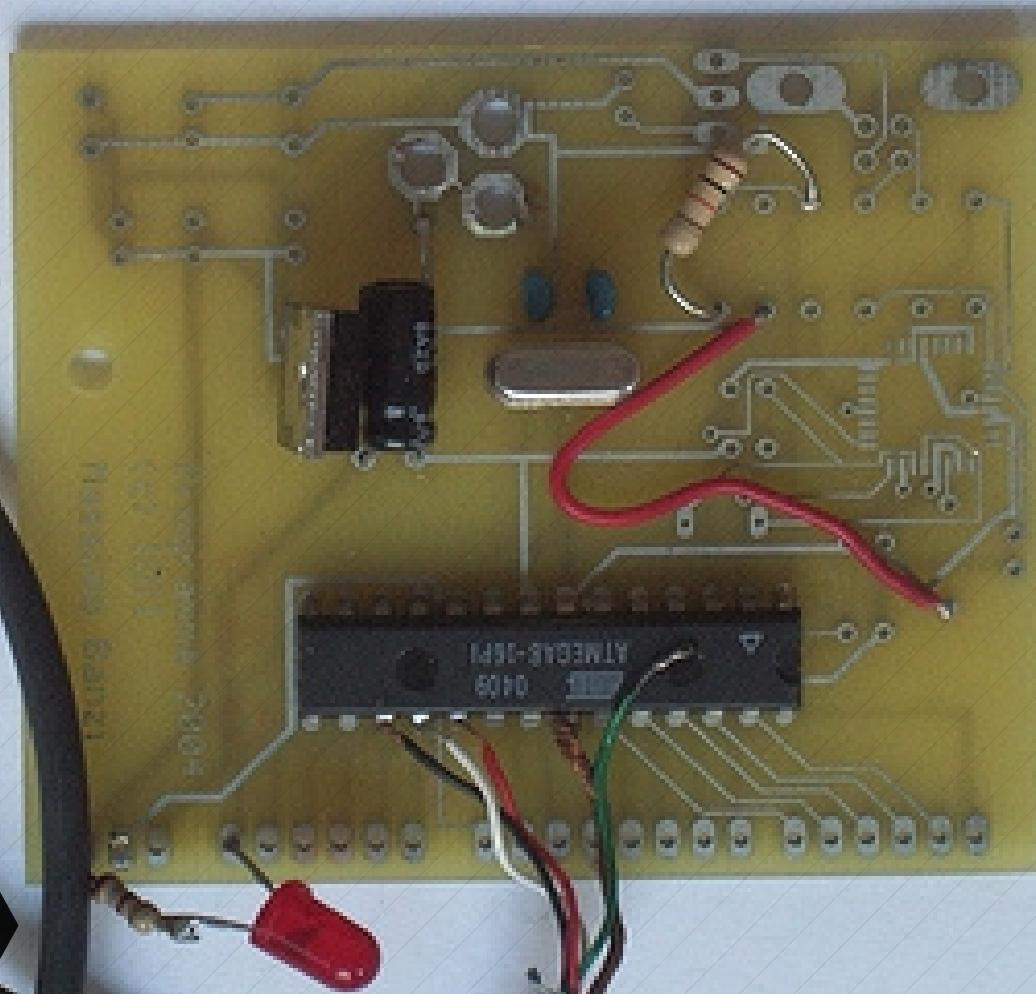
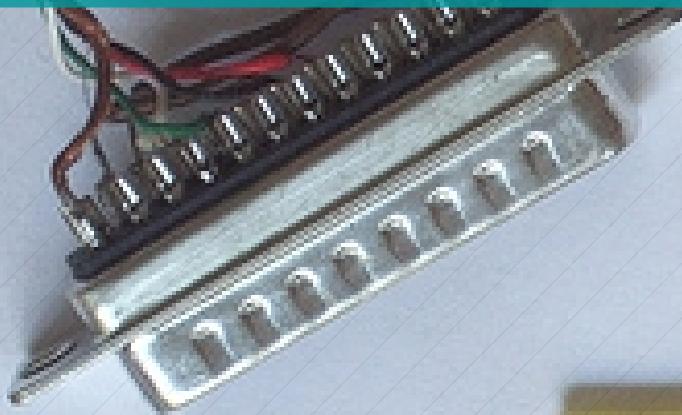
Multiplataforma

Ampla Comunidade

Creative Commons License

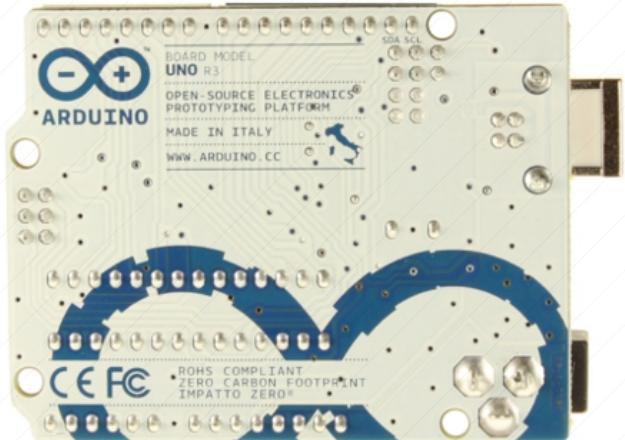
\$20
Windows, Mac, Linux

Arduino { ! } Hardware



Primeira Versão

Arduino UNO Características



RESUMO:

Microcontrolador: **ATmega328**

Tensão de funcionamento: **5V**

Tensão de entrada: **7-12V**

Tensão de entrada (limites): **6-20V**

Pinos Digitais I/O: **14** (**6** fornece uma saída PWM)

Pinos de entrada analógica: **6**

Corrente DC por Pino I/O: **40 mA**

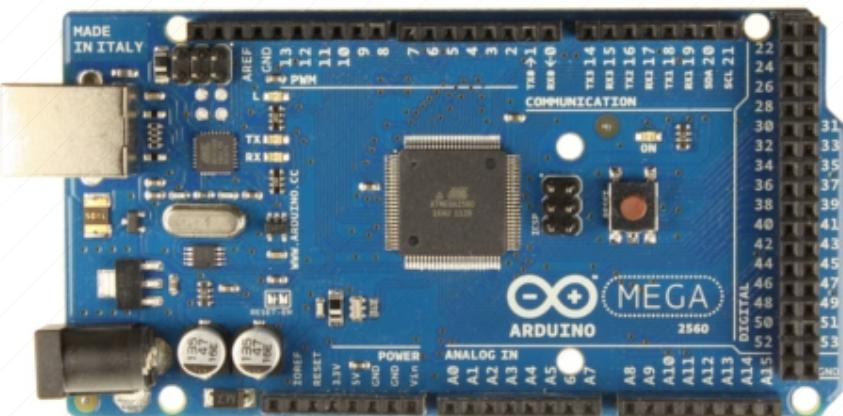
Corrente DC 3.3V por Pino: **50 mA**

Memória Flash: **32 KB** (ATmega328)

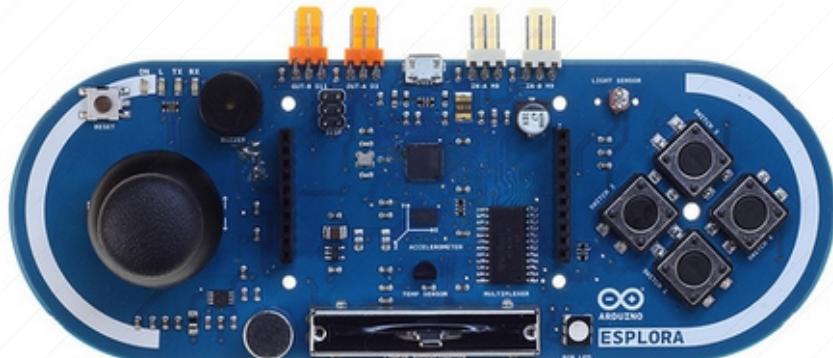
SRAM: **2 KB** (ATmega328)

Velocidade do Relógio: **16 MHz**

Arduino Outras versões



Arduino MEGA



Arduino SPLORA

Microcontrolador: ATmega2560

Pinos Digitais I/O: 54 (15 PWM)

Pinos de entrada analógica: 16

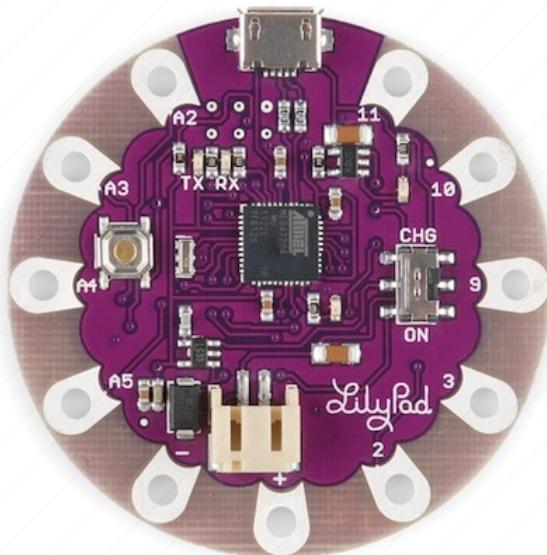
Memória Flash: 256 KB

SRAM: 8 KB

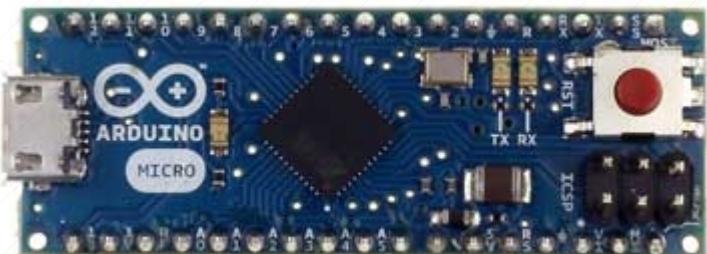
Microcontrolador: ATmega32U4

SRAM: 2,5 KB

Arduino Outras versões



Arduino LILYPAD USB



Arduino MICRO

Microcontrolador: ATmega32U4

Tensão de funcionamento: 3.3V

Tensão de entrada: 3.8V-5V

Canais Digitais I/O: 9

Canais PWM: 4

Canais de entrada analógica: 4

SRAM: 2,5 KB

Velocidade do Relógio: 8 MHz

Microcontrolador: ATmega32U4

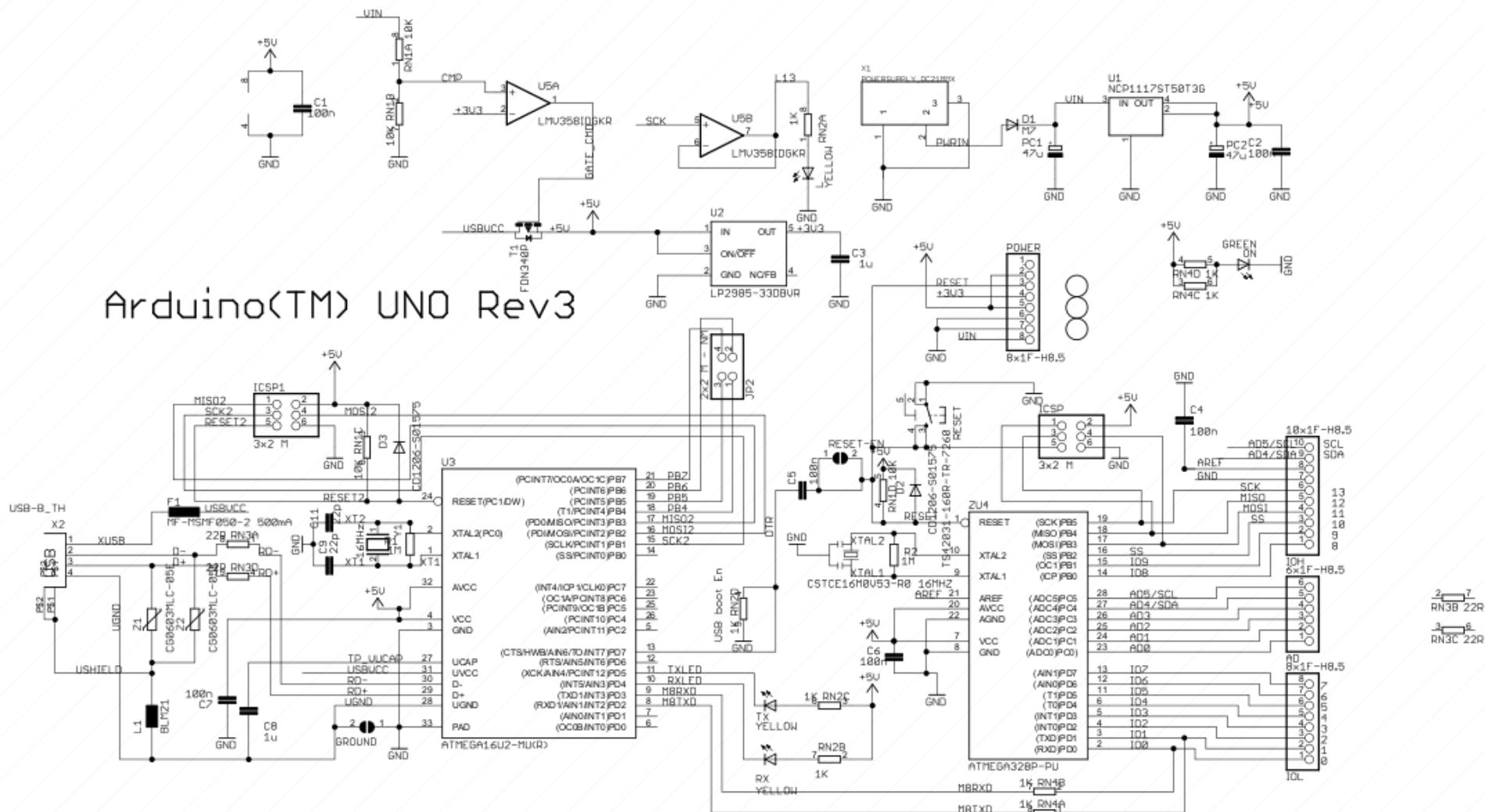
Canais Digitais I/O: 20

Canais PWM: 7

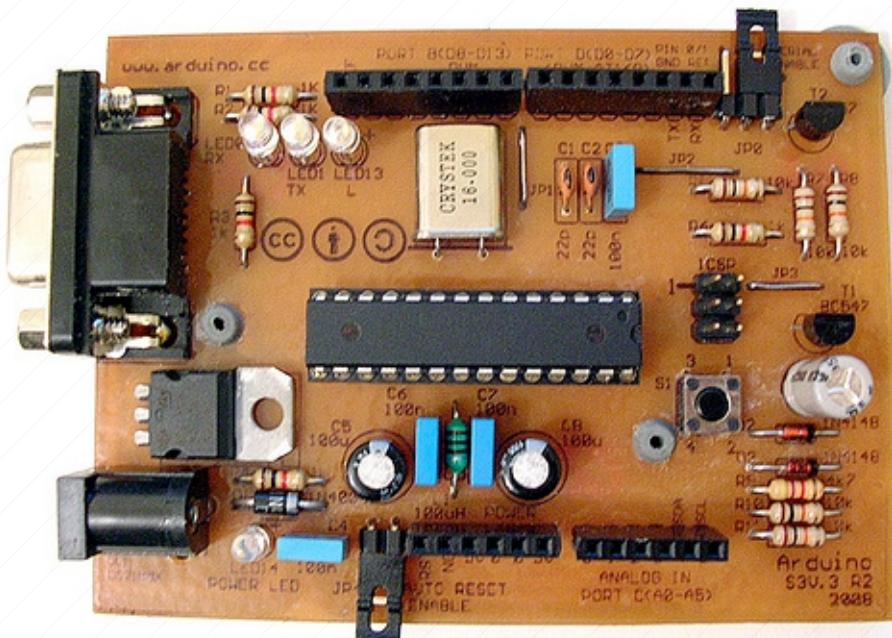
Canais de entrada analógica: 12

SRAM: 2,5 KB

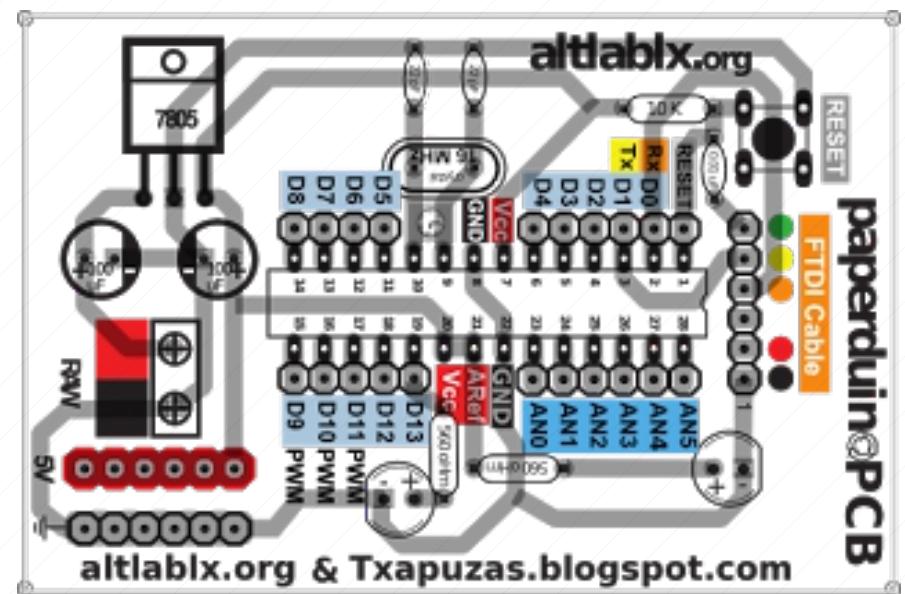
Arduino Esquema elétrico



Arduino Versões compatíveis

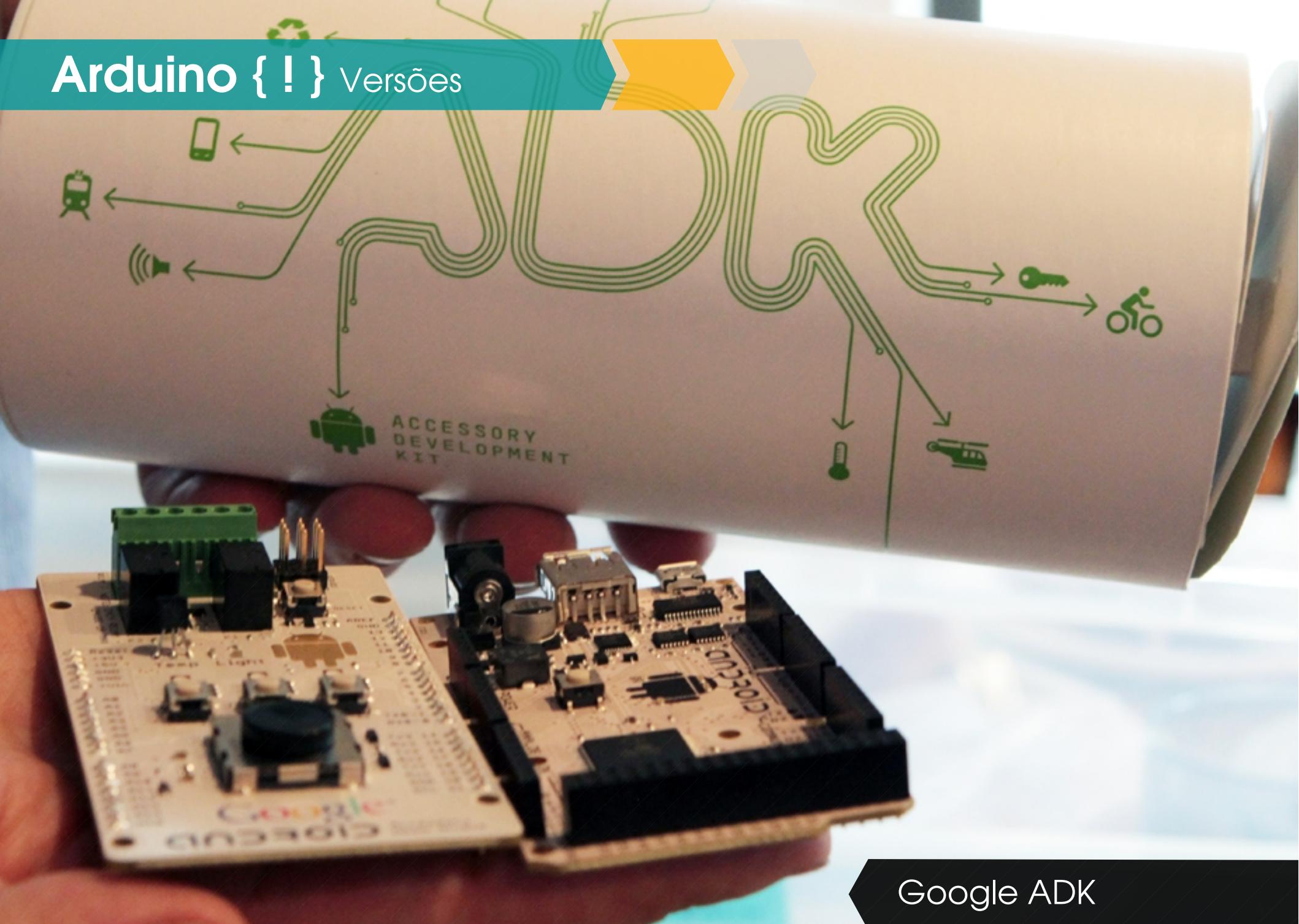


Arduino Severino



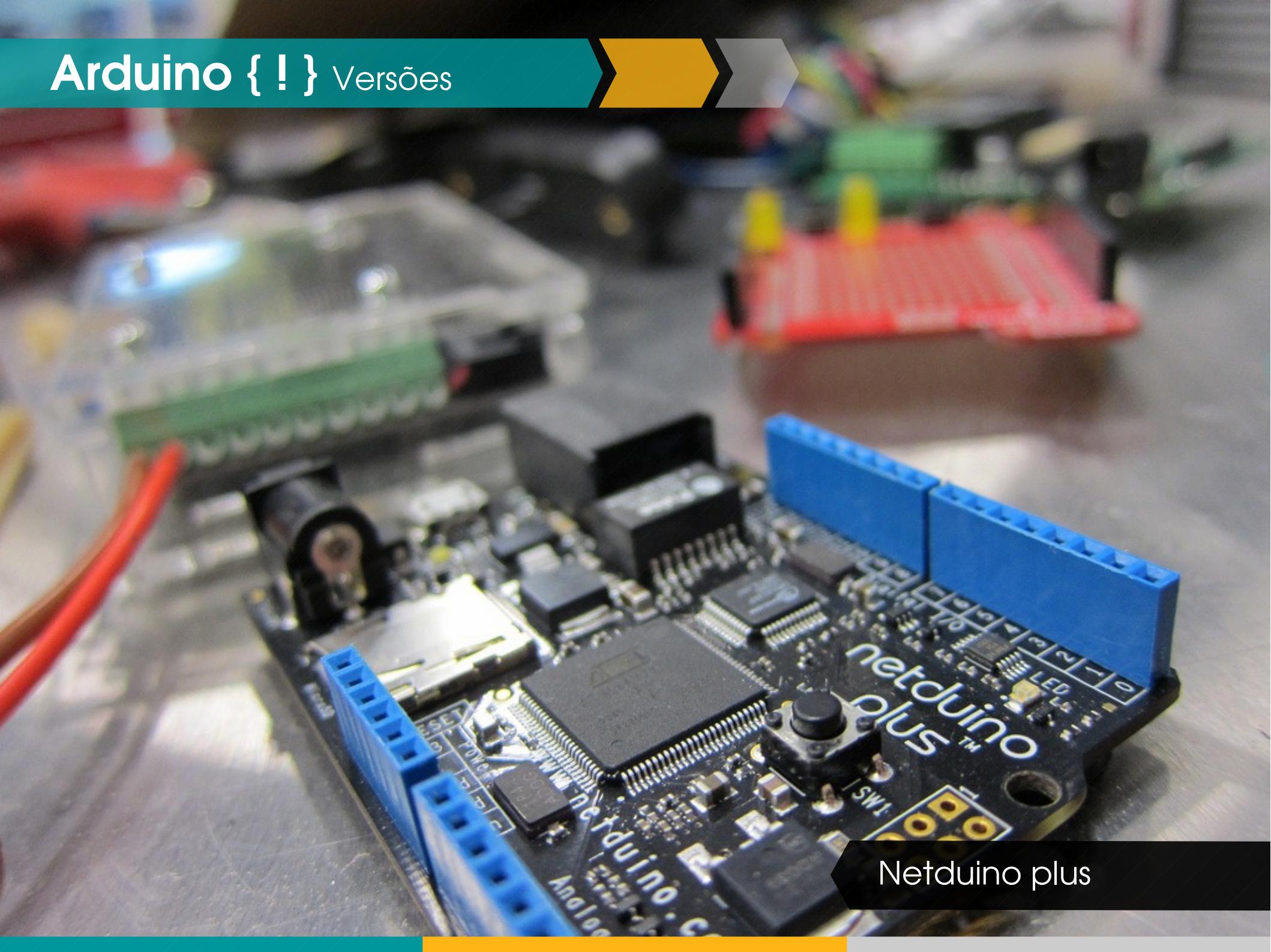
Arduino Paperduino

Arduino { ! } Versões



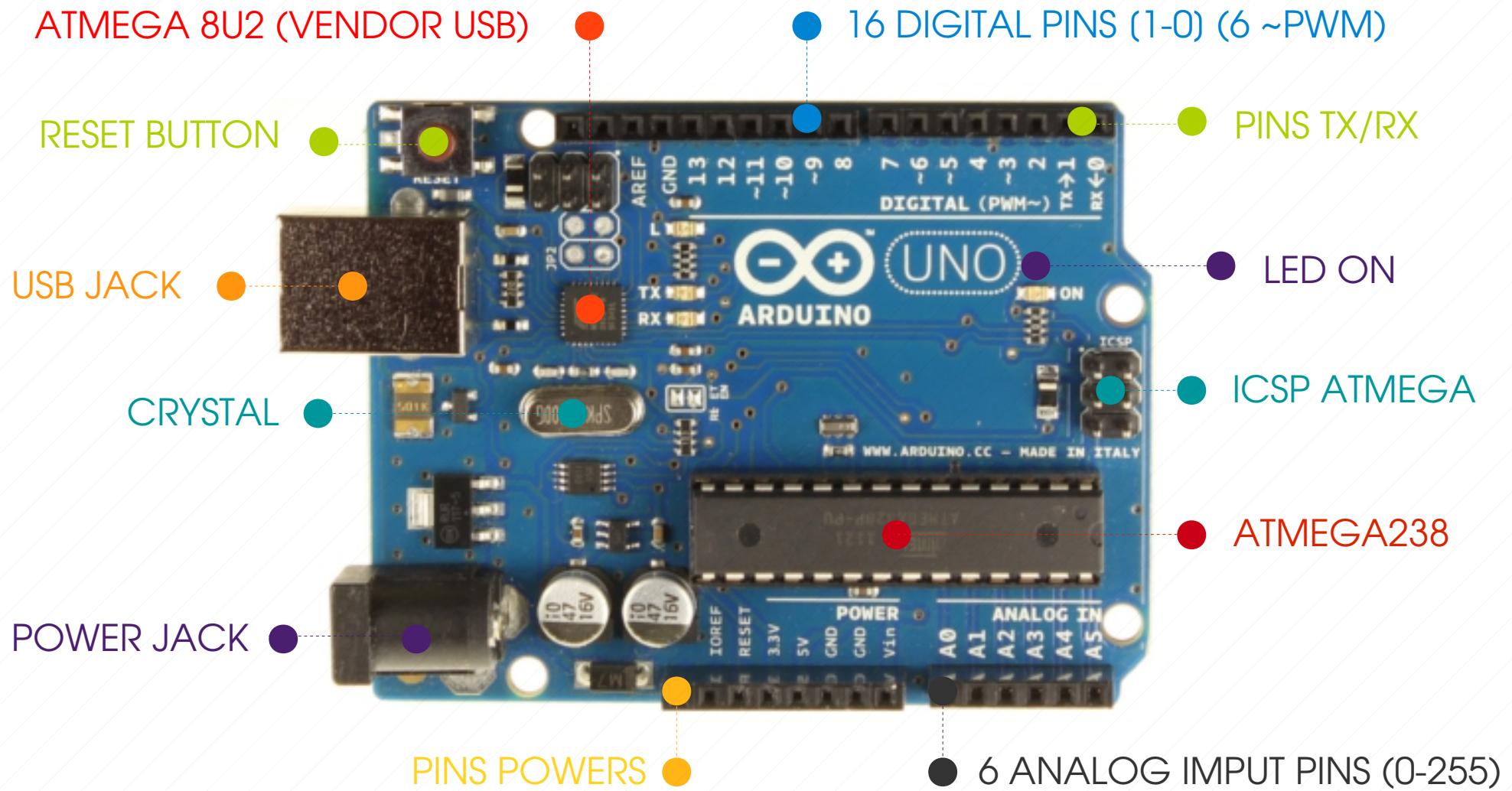
Google ADK

Arduino { ! } Versões

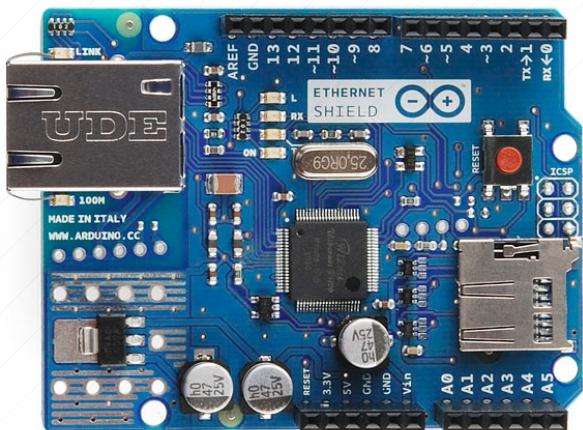


Netduino plus

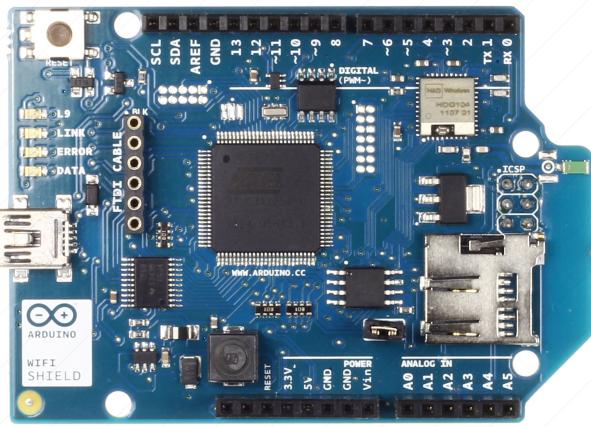
Arduino Configuração



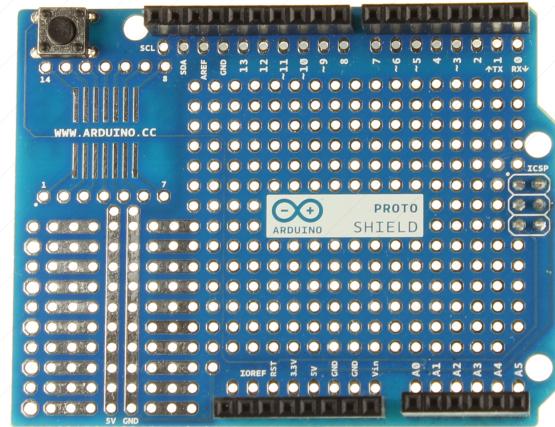
Arduino Shilds



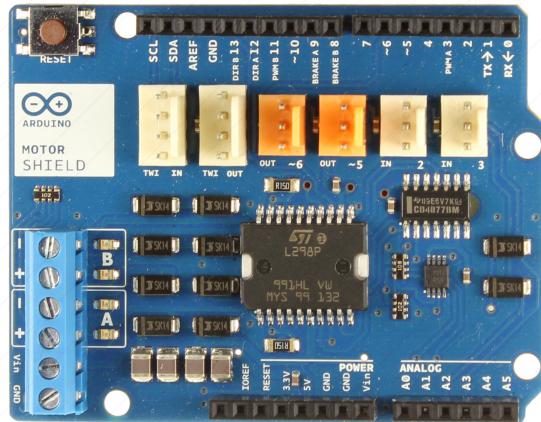
Ethernet Shild



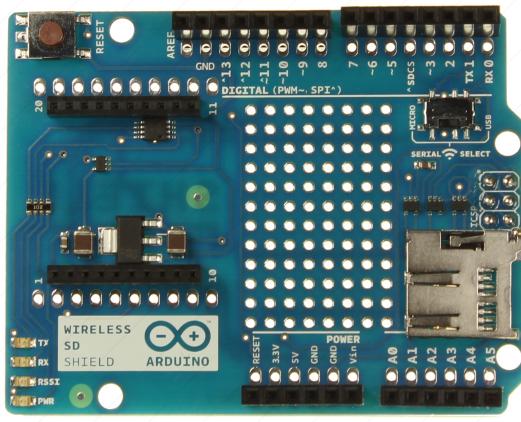
WiFi Shild



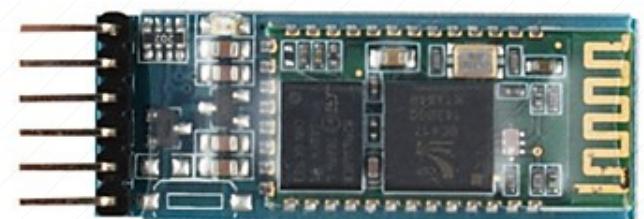
Proto Shild



Motor Shild



Wireless Shild



Módulo Bleutooth



Arduino Sensores

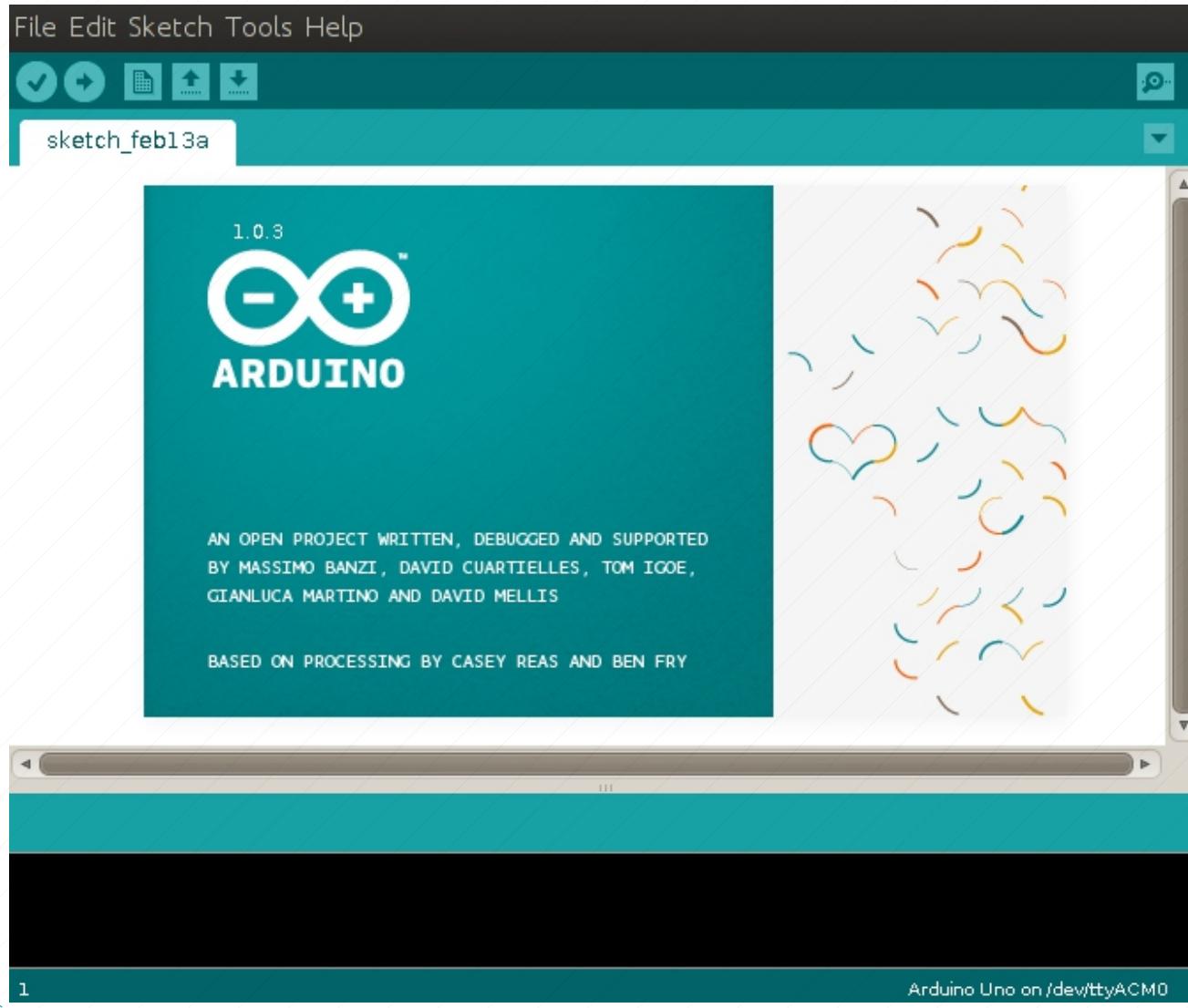


Mais Comuns



Possibilidades

Arduino Ambiente de Desenvolvimento



● Barra de Tarefas

● Verify

● Upload

● New

● Open

● Save

● Serial Monitor

● Área de Status

Arduino Primeiro Sketch (Hello World)



The screenshot shows the Arduino IDE interface. The menu bar includes File, Edit, Sketch, Tools, and Help. The toolbar has icons for file operations like Open, Save, and Upload. The sketch name is "sketch_feb13a". The code area contains the following sketch:

```
int led = 13;

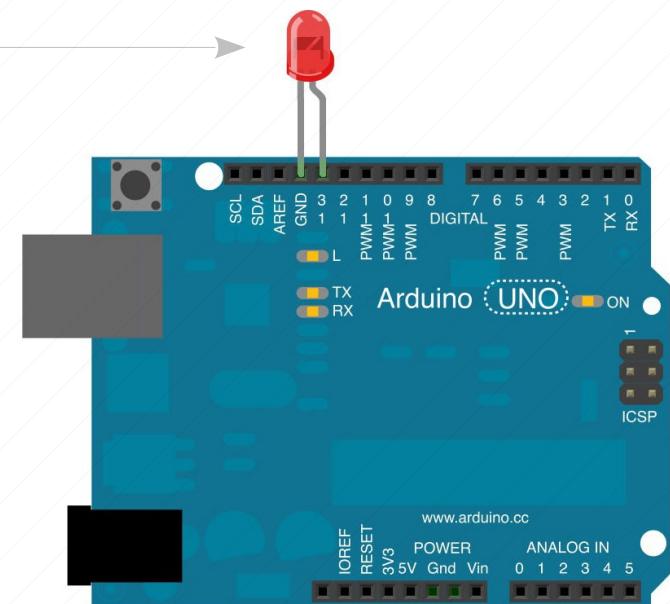
void setup() {
  pinMode(led, OUTPUT);
}

void loop() {
  digitalWrite(led, HIGH);
  delay(1000);

  digitalWrite(led, LOW);
  delay(1000);
}
```

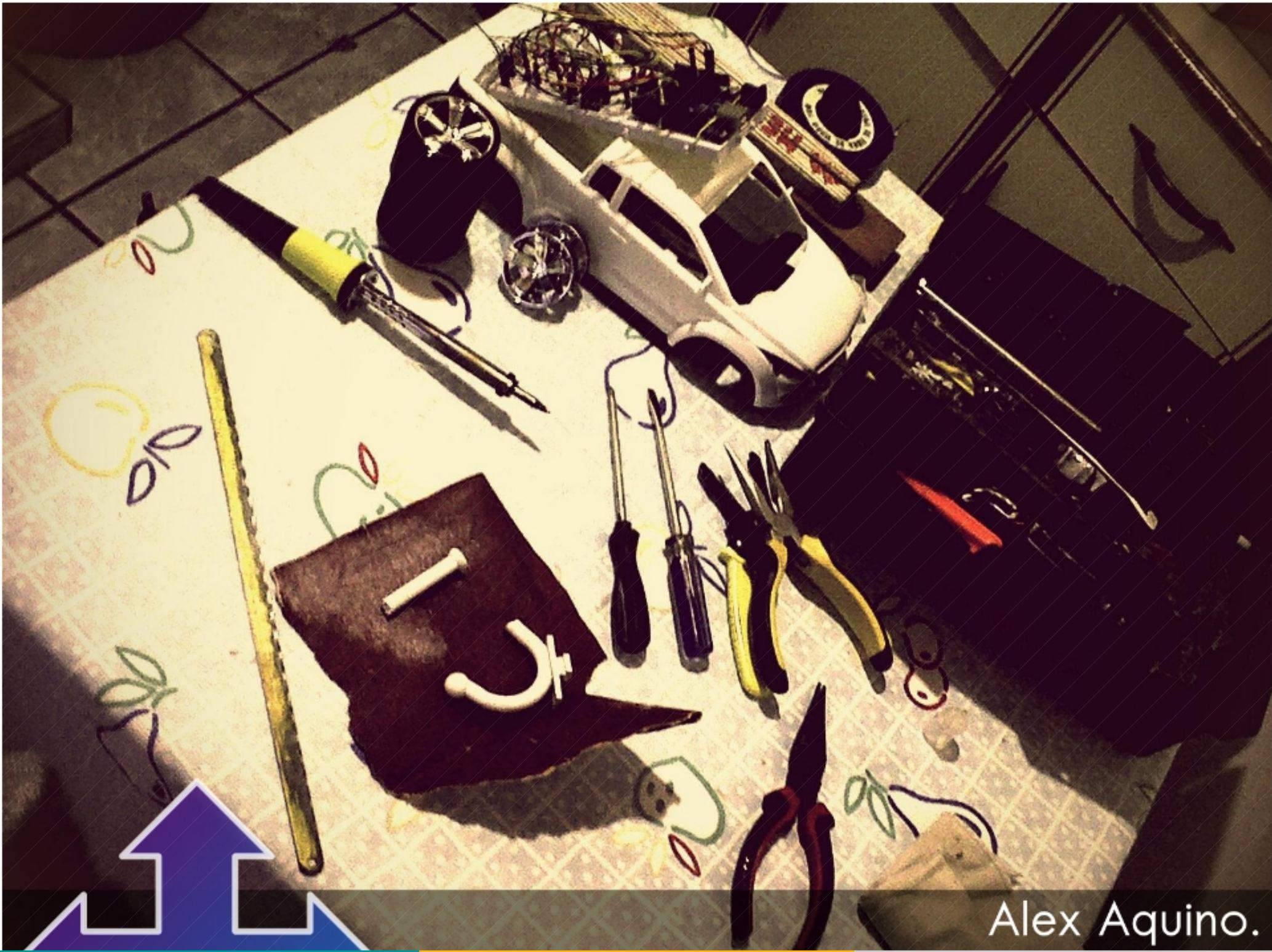
The status bar at the bottom indicates "Arduino Uno on /dev/ttyACM0".

Saída?

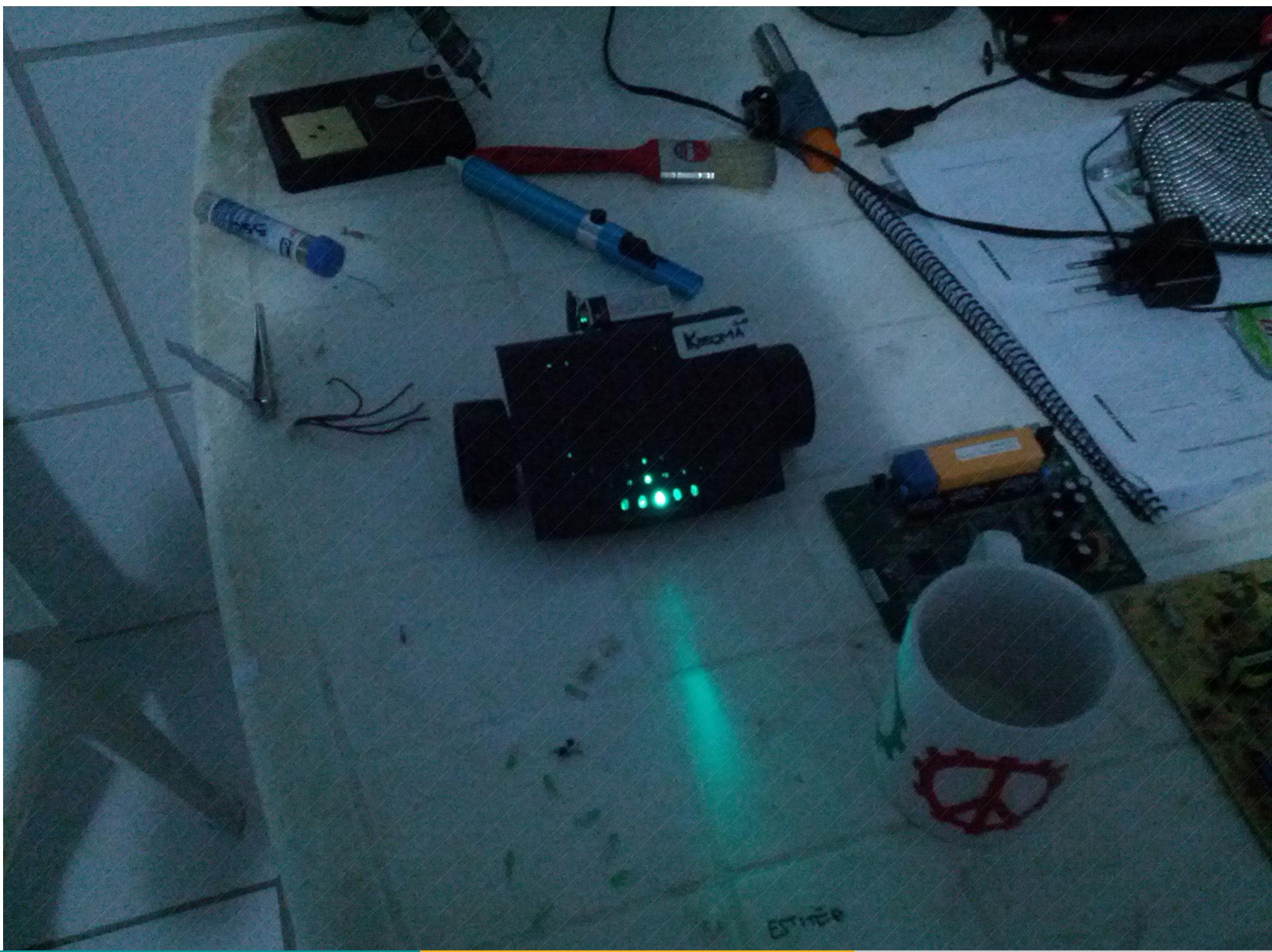


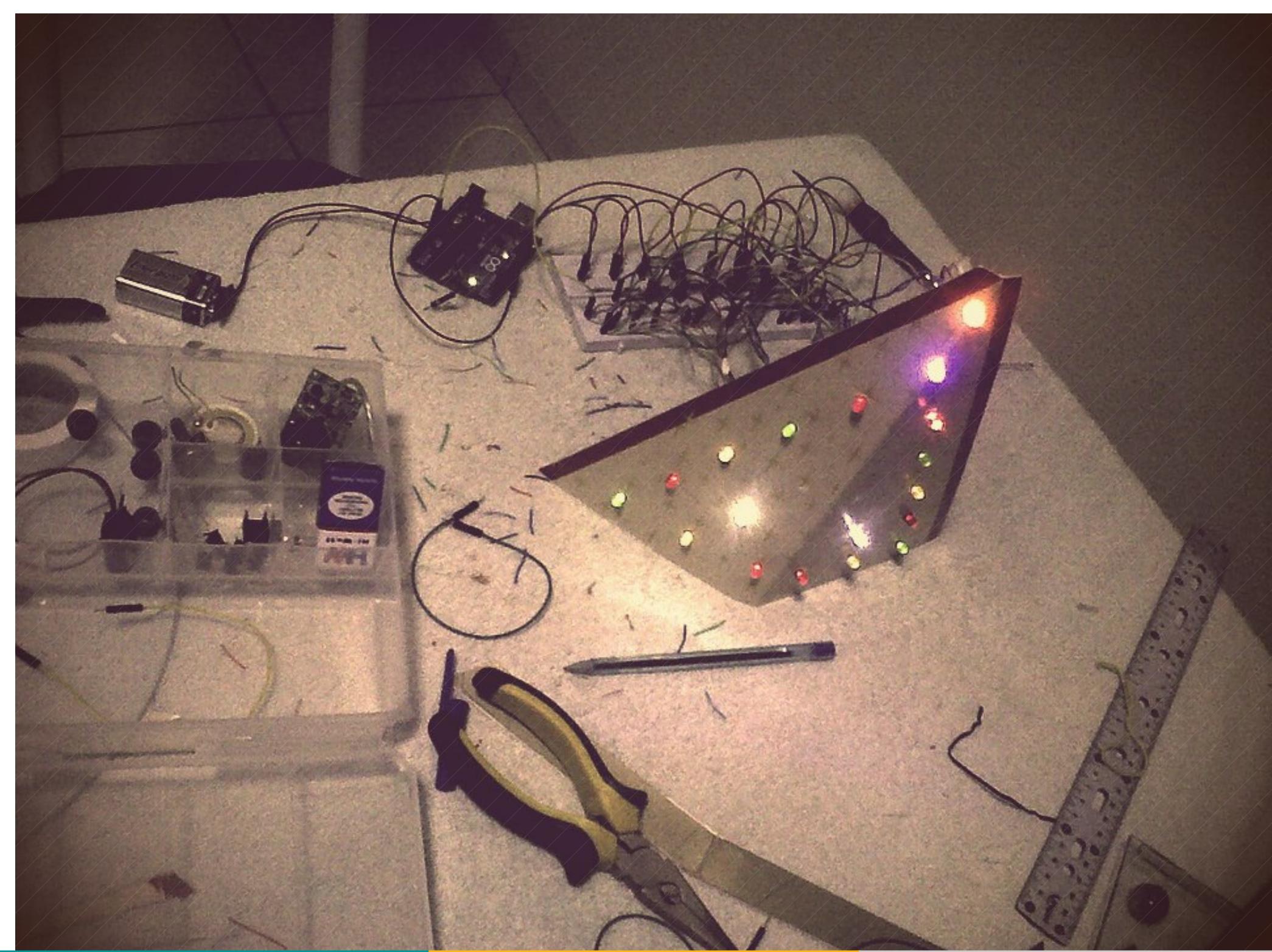
Esquema (Fritzing)

PROJETOS



Alex Aquino.







“Dinheiro não compra FELICIDADE.. Mas compra uns BRINQUEDINHOS que é praticamente a mesma coisa” :D

OBRIGADO!

www.alexaquino.com | alexaquino@alexinquino.com

LINKS IMPORTANTES

Arduino Onde Comprar

→ NO BRASIL

[ROBOCORE]

<http://www.robocore.net>

[MULTilogica]

<http://multilogica-shop.com>

→ NO EXTERIOR

[DFROBOT]

<http://www.dfrobot.com>

[SPARKFUN]

<http://www.sparkfun.com>

Arduino Links Importantes

[ALEX AQUINO BLOG/WEBSITE]

<http://alexaquino.com>

[ARDUINO - PÁGINA OFICIAL]

<http://arduino.cc>

<http://arduino.cc/en/Tutorial>

http://arduino.cc/en/uploads/Main/Arduino_Uno_Rev3-schematic.pdf

[SHIELDLIST]

<http://shieldlist.org>

[WIRING]

<http://www.wiring.org.co>

[PROCESSING]

<http://processing.org>

Arduino Links Importantes

[ALEX AQUINO BLOG/WEBSITE]

<http://alexaquino.com>

[ARDUINO - PÁGINA OFICIAL]

<http://arduino.cc>

<http://arduino.cc/en/Tutorial>

http://arduino.cc/en/uploads/Main/Arduino_Uno_Rev3-schematic.pdf

[SHIELDLIST]

<http://shieldlist.org>

[WIRING]

<http://www.wiring.org.co>

[PROCESSING]

<http://processing.org>