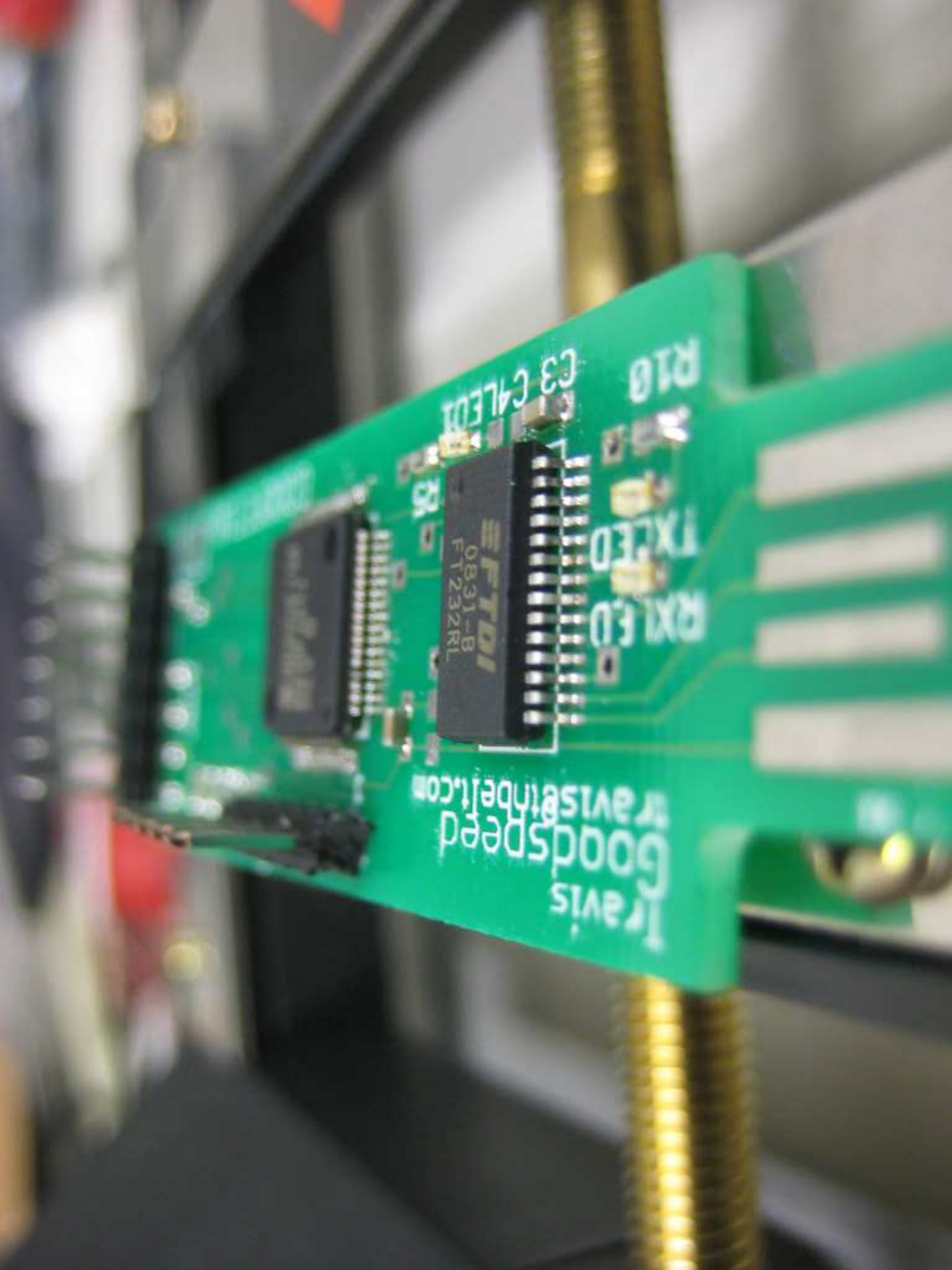
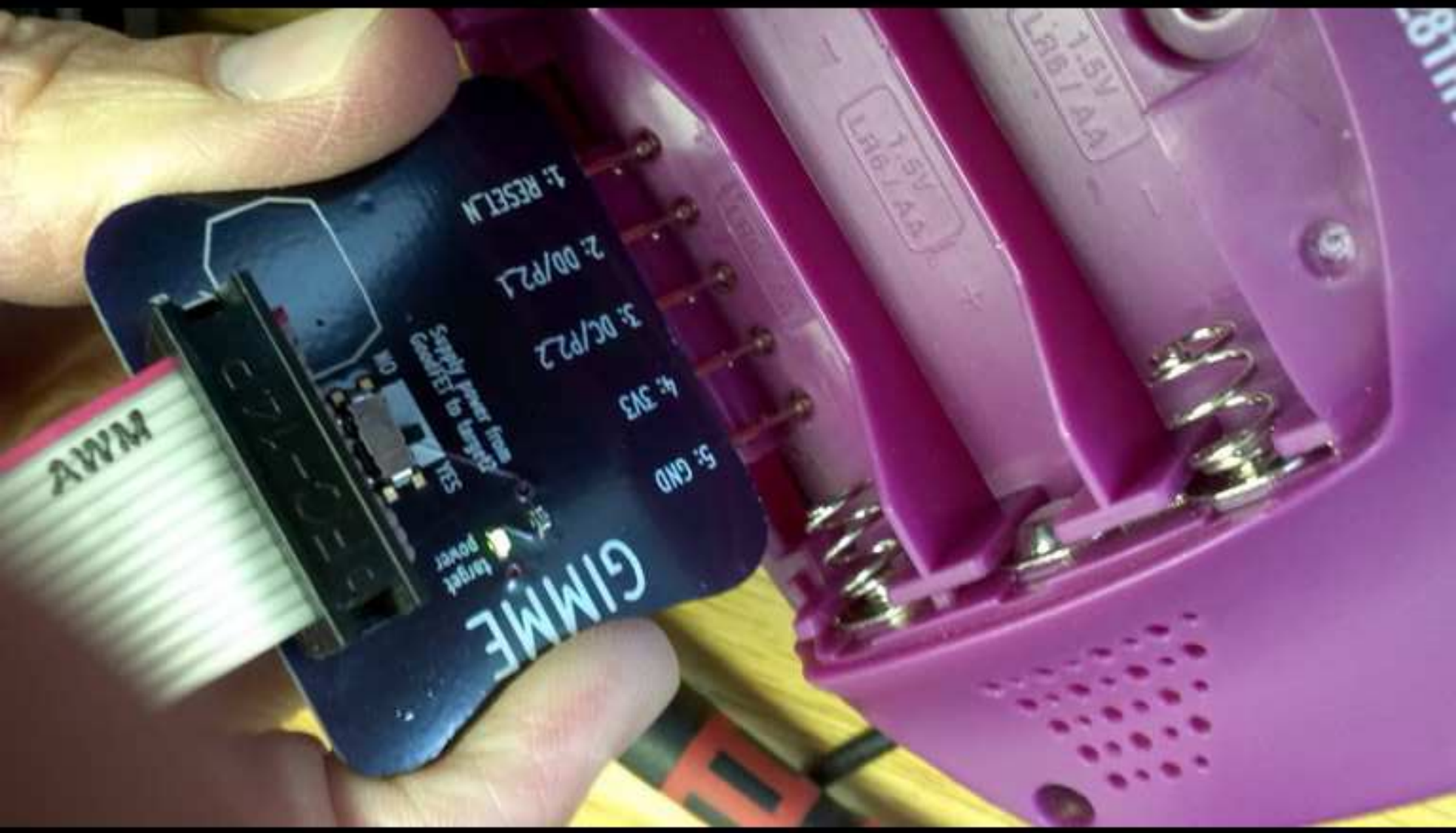
GreatFET: Making GoodFET Great Again

Michael Ossmann
Great Scott Gadgets


R10
C3 C4LED1
R5
FTDI
0831-B
FT232RL
TXLED
RXLED
Travis
GoodSpeed
travis@tinbelt.com

MAKE GOODFET
GREAT AGAIN


1: RESET_N
2: DD/P2.1
3: DC/P2.2
4: 3V3
5: GND
GIMME
AWM
1.5V LR6/AA

IM-me™
Girl
Bye!
830
850
870
890
Caps
Space
ALT
BACK
Enter
reset

THE NEXT
HOPE
JTAG
1
BSL
1
SU4
SU2
SU1
J14
ICE
Q1
SU3
8
1
GPIO
16MHz
NHB12
TMG
JULY 2010

TravisGoodspeed<travis@tnbelt.com>
+1.865.471.8519
+49.152.23.90.76.92
Facedancer10
https://goodfet.sf.net/
VICTIM
HOST
RXD
1.0uF
C4
0.1uF
C5
12MHz

MSP430F2618TPM

TEXAS INSTRUMENTS

Microcontrollers

+ Add To My Lists

View Datasheet

Description:

16-Bit Ultra-Low-Power MCU, 116kB Flash, 8KB RAM, 12-Bit ADC, Dual DAC, 2 USCI, HW Mult, DMA 64-LQFP -40 to 105

RoHS Code

RoHS Compliant

PbFree Code

PbFree

COMPOSITE PRICE

$9.2247

(**28.82%** less than high price)

Est. Price At 1000 Units: $8.1672

Est. Price At 1 Unit: $12.9589

View All Prices (13 Distributors)

TOTAL STOCK

3396

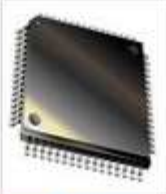
Risk Rank

0.6
LOW

DESIGN	0
PRODUCTION	0
LONG TERM	1

Read more about Risk Rank

Related Parts



MSP430F26...
Microcontroller

TPS62243D...
Switching Regulator or Controller

TPS79930D...
Linear Regulator IC

LMC6482IM...
Operational Amplifier

0527450896
Headers and Edge Type Connector

Part Details

Export to CSV

Price and Stock

FT232RL

FUTURE TECHNOLOGY DEVICES INTERNATIONAL (FTDI CHIP)

Bus Controllers

+ Add To My Lists

View Datasheet

Description:
PDSO28, 5.30 X 10.20 MM, 0.65 MM PITCH, GREEN, SSOP-28

RoHS Code
RoHS Compliant

PbFree Code
PbFree

COMPOSITE PRICE
$3.1638
(**30.66%** less than high price)
Est. Price At 1000 Units: $2.7676
Est. Price At 1 Unit: $4.5629
View All Prices (2 Distributors)

TOTAL STOCK
14971

Risk Rank

1.5
LOW

DESIGN	1
PRODUCTION	1
LONG TERM	1

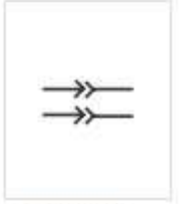
Read more about Risk Rank

Related Parts

FT232RL-R...
Bus Controller

ATMEGA32...
Microcontroller

LM2596S-A...
Switching Regulator or Controller



492250821
Headers and Edge Type Connector

TPS73618DBVT
Linear Regulator IC

Part Details

Export to CSV

Price and Stock

AVR
PIC

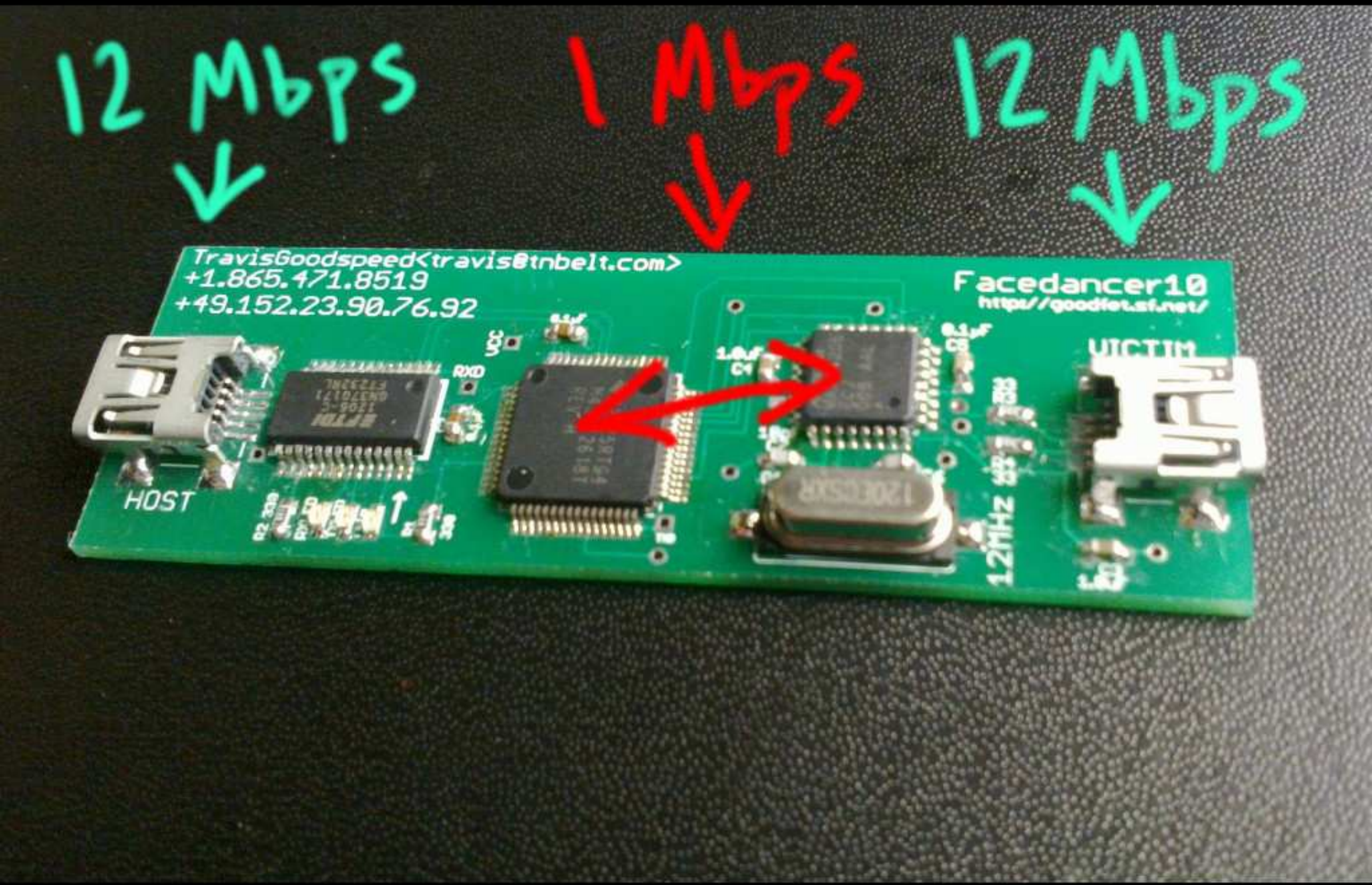
HARDWARE

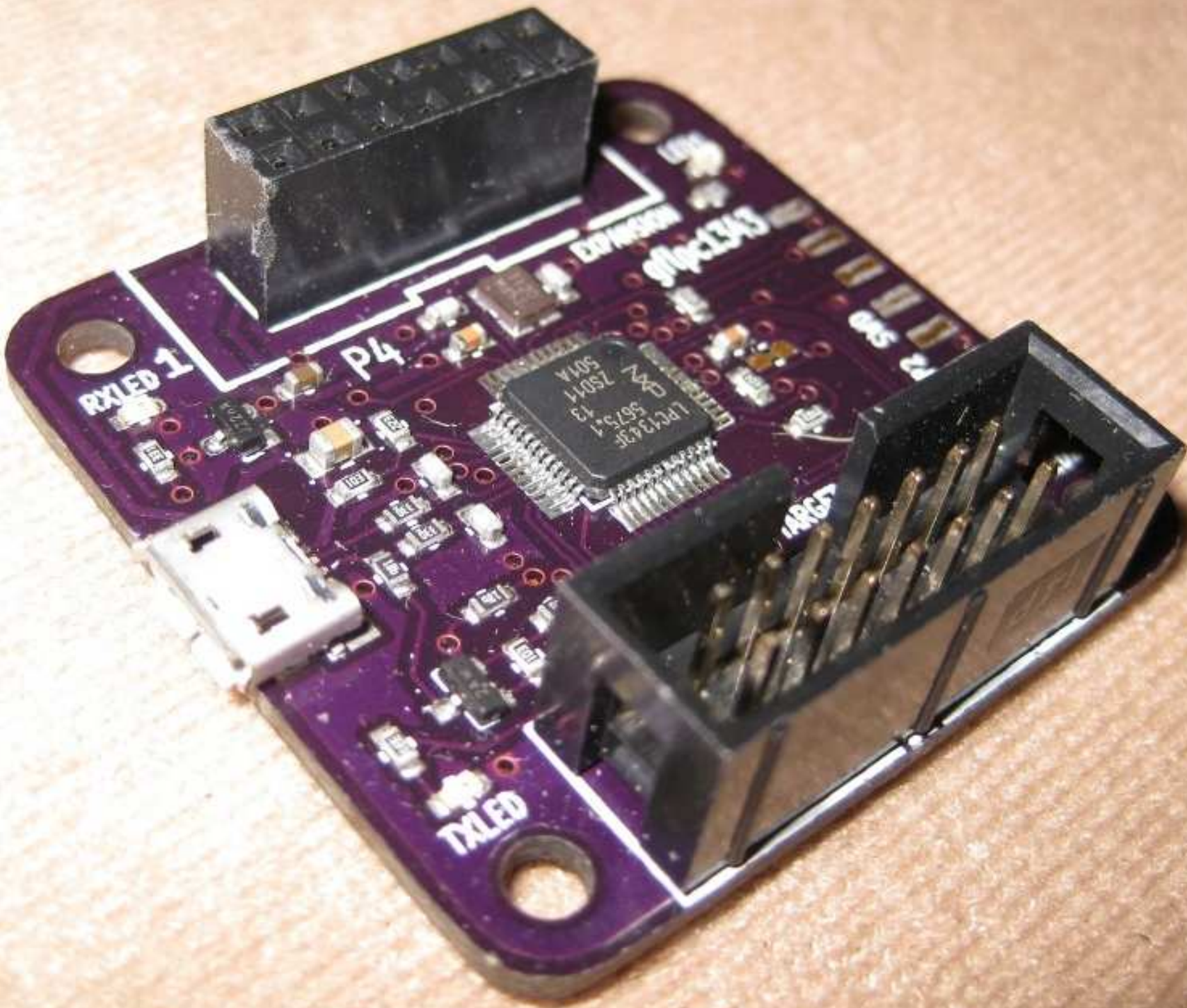
GoodFET
GoodFET42
GoodFET32
Radio
Api-Mote
Zolertia Z1
TelosB/TMote
Next Hope Badge
Zigduino
USB
Facedancer21
Facedancer11
CAN Bus
GoodThopter12
Conference Badges
No Such Con 2013
The Next Hope
Retired
Facedancer20
GoodThopter11
GoodThopter10
Facedancer10
GoodFET41
GoodFET40
GoodFET31
GoodFET31L
GoodFET22
GoodFET21
GoodFET30
BadFET20
GoodFET20
GoodFET11
GoodFET10

git clone https://github.com/travisgoodspeed/goodfet goodfet

For development, use your Github account. We no longer use Sourceforge for our repository.
git clone git@github.com:travisgoodspeed/goodfet.git goodfet

```
#define SETSDA SPIOUT|=SDA
#define CLRSCL SPIOUT&=~SCL
#define SETSCL SPIOUT|=SCL

#define READSDA (SPIIN&SDA?1:0)
#define SETBOTH SPIOUT|=(SDA|SCL)

#define I2C_DATA_HI() SETSDA
#define I2C_DATA_LO() CLRSDA

#define I2C_CLOCK_HI() SETSCL
#define I2C_CLOCK_LO() CLRSCL

//#warning "Using internal resistors.  Won't work on 161x devices."

// Take control of the bus
void I2C_Take()
{
  I2C_CLOCK_HI();
  I2C_DATA_HI();
  SCLOUTPUT;
  SDAOUTPUT;
}

void I2C_Release()
{
  SDAINPUT;
  SCLINPUT;
}

//! Inits bitbanging port, must be called before using the functions below
void I2C_Init()
{
  I2C_Take();
  //PULLON;
  I2CDELAY(1);
}
```


12 Mbps
1 Mbps
12 Mbps
TravisGoodspeed<travis@tnbelt.com>
+1.865.471.8519
+49.152.23.90.76.92
Facedancer10
https://goodfet.sf.net/
VICTIM
HOST
RXD
12MHz


RXLED
P4
TXLED

http://greatscottgadgets.com/h2hc2013badge/
H2HC
2013
P4
EXPANSION
gftpt1343
P1
TARGET
ISP
RESET

J2
J7
BONUS ROW!
LED1
RESET
LED2
J3
USB0
HOST
LED3
DFU
LED4
J5
USB1
TARGET
J4
http://greatscottgadgets.com/
GreatFET
Azalea
29 October 2015
J1
SSEL

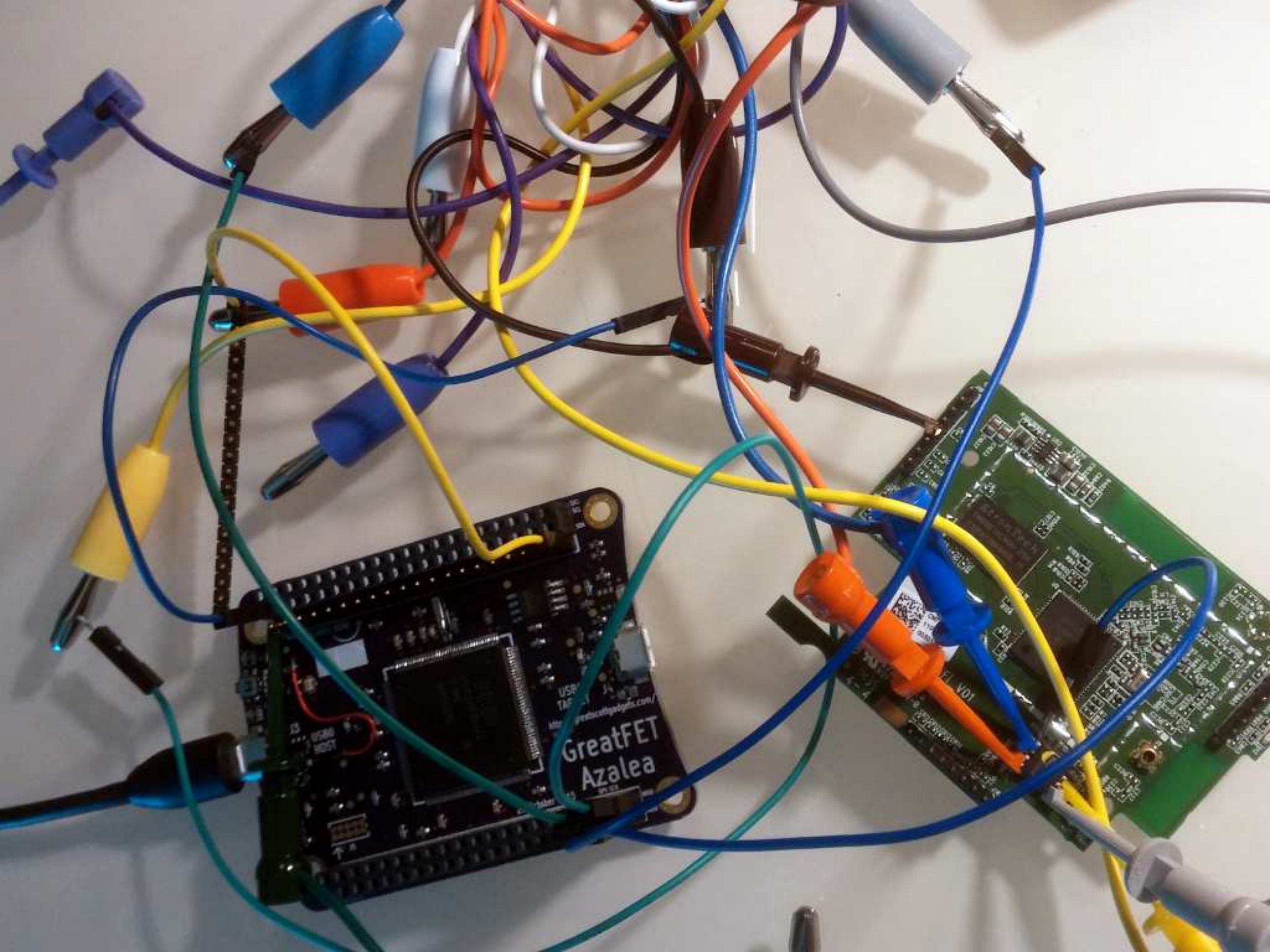
Kingston

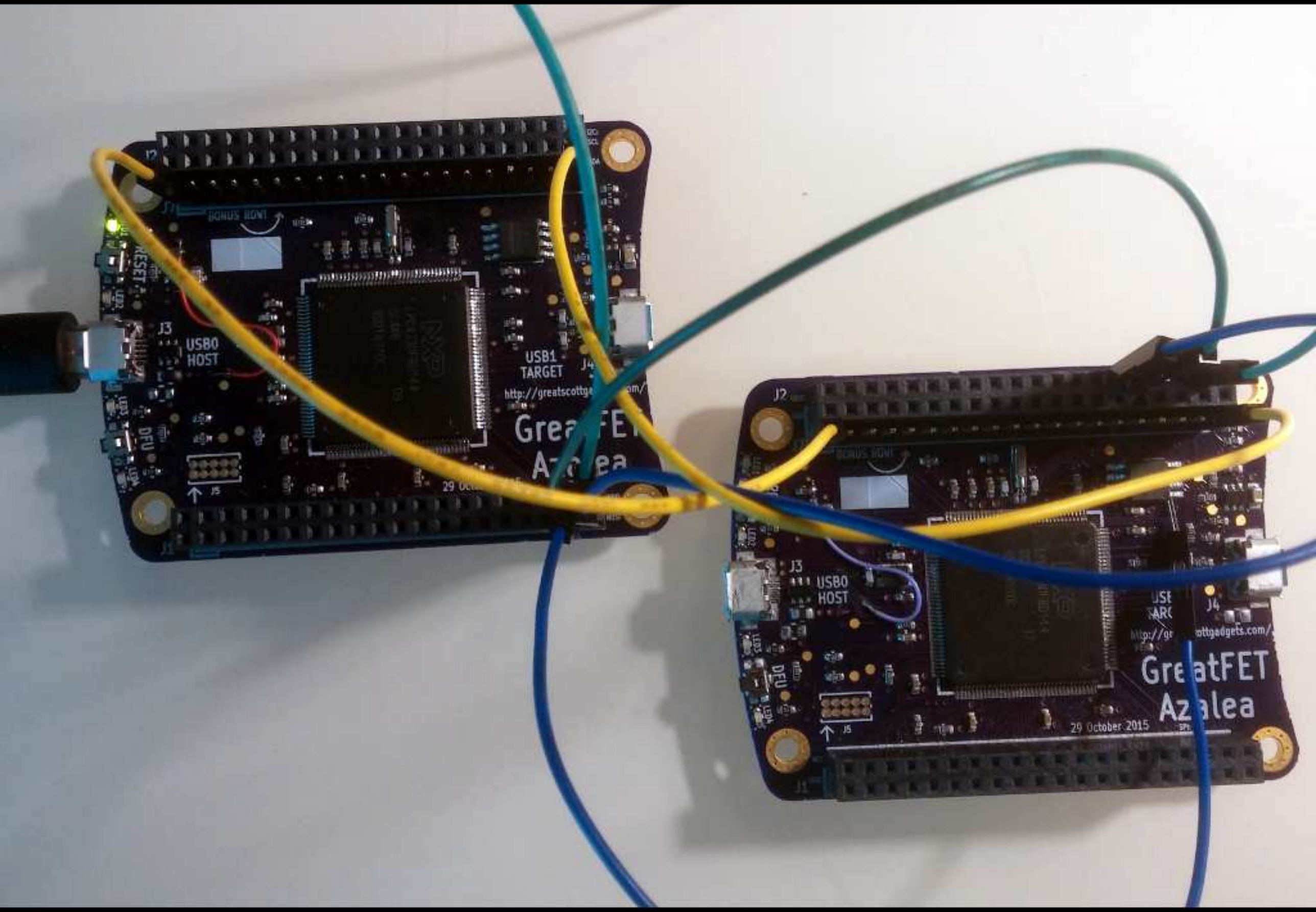
MobileLite WIRELESS G2

Wireless Media Reader

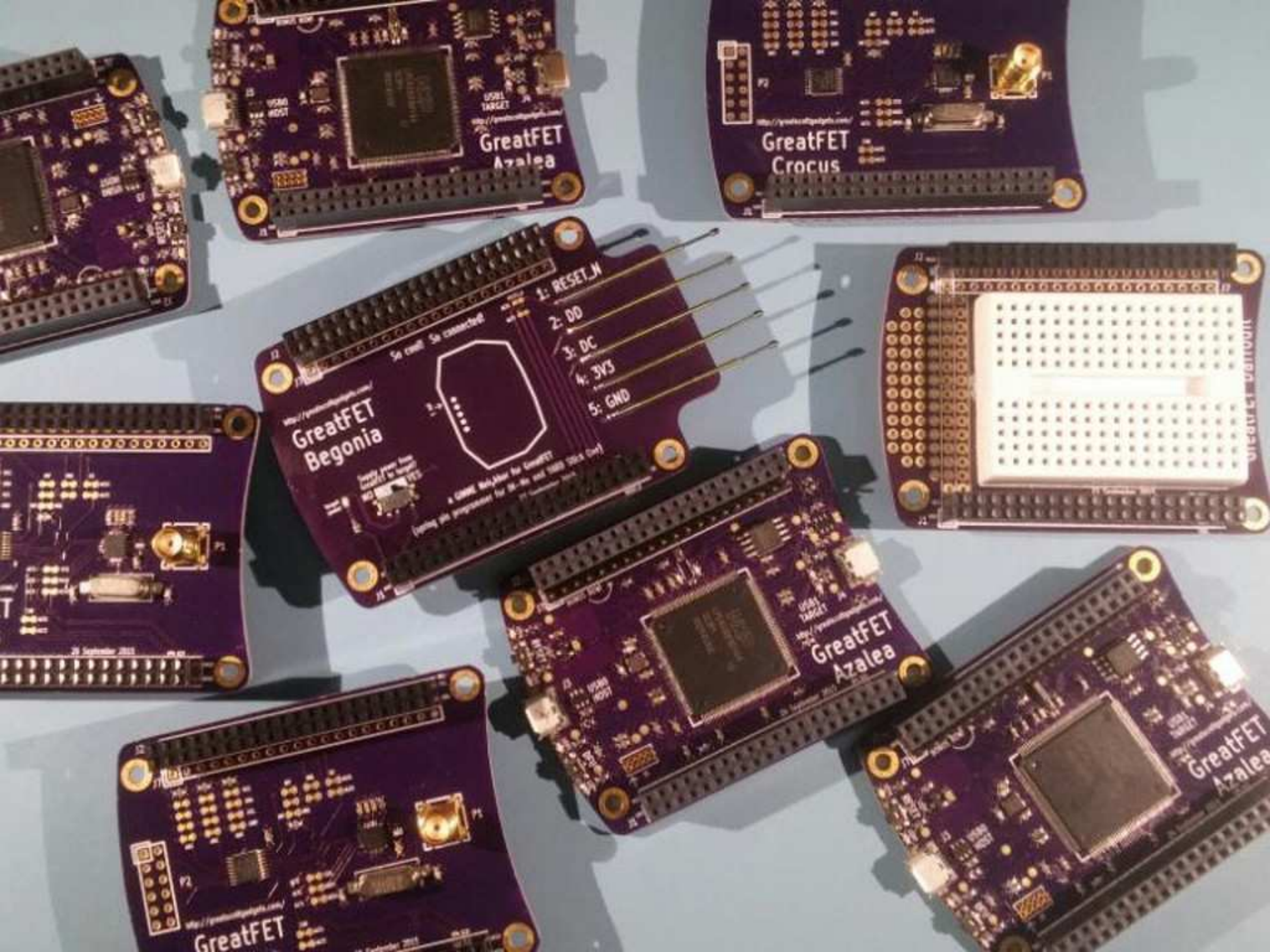
Extend, Stream, Charge, Read, Connect

Apple App Store • Google Play • Amazon App Store


GreatFET
Azalea


J2
J1
BONUS BONE
RESET
J3
USB0
HOST
USB1
TARGET
J4
DFU
J5
J2
J3
USB0
HOST
J4
DFU
J5
29 October 2015
GreatFET
Azalea

Flash Emulation Tool


GreatFET
Azalea
GreatFET
Crocus
GreatFET
Begonia
1: RESET_N
2: DD
3: DC
4: 3V3
5: GND
GreatFET
Azalea
GreatFET
Azalea
GreatFET

So cool! So connected!

RESET_N

ALT1

ALT2

1: RESET_N

2: DD

3: DC

4: 3V3

5: GND

a GIMME Neighbor for GreatFET

g pin programmer for IM-Me and YARD Stick One)

27 September 2015

How to Design a Neighbor

Edit New Page

Michael Ossmann edited this page on Oct 18, 2015 · 7 revisions

This guide will help you design a neighbor, an add-on board for GreatFET.

Use the Template

The easiest way to get started is to copy neighbor-template from the repository and use KiCad to edit the design. The template is a four layer PCB, so you may want to delete the inner two layers under Layer Setup to make a two layer neighbor.

Required Elements

Every neighbor should connect to both of the two 2x20 pin headers (J1 and J2) on GreatFET. You can use female stackable headers mounted on the top of your neighbor, or you can use male headers mounted on the bottom if you do not want your neighbor to be stackable. For mechanical stability, use 2x20 headers (not headers with fewer pins) even if you don't need to use very many pins. (TODO: stackable header component recommendations)

You may power your neighbor from the 3.3 V supply (VCC) provided by the GreatFET, but you may only draw 150 mA from this supply. If you need more current or a different voltage, use VBUS (the 5 V power supply from the USB host) and implement your own voltage regulation.

Bonus Row

The bonus row of pins (J7) is not required. Design your neighbor without the bonus row if you can

Pages 9

Home

Azalea

Begonia

Crocus

Daffodil

Getting Started with Firmware Development

How to Design a Neighbor

I2C Registry

Neighbors

+ Add a custom sidebar

Clone this wiki locally

https://github.com/greatsco

GPIO

RMII

RTC

SPI

CAN

ADC

I2C

I2S

DAC

UART

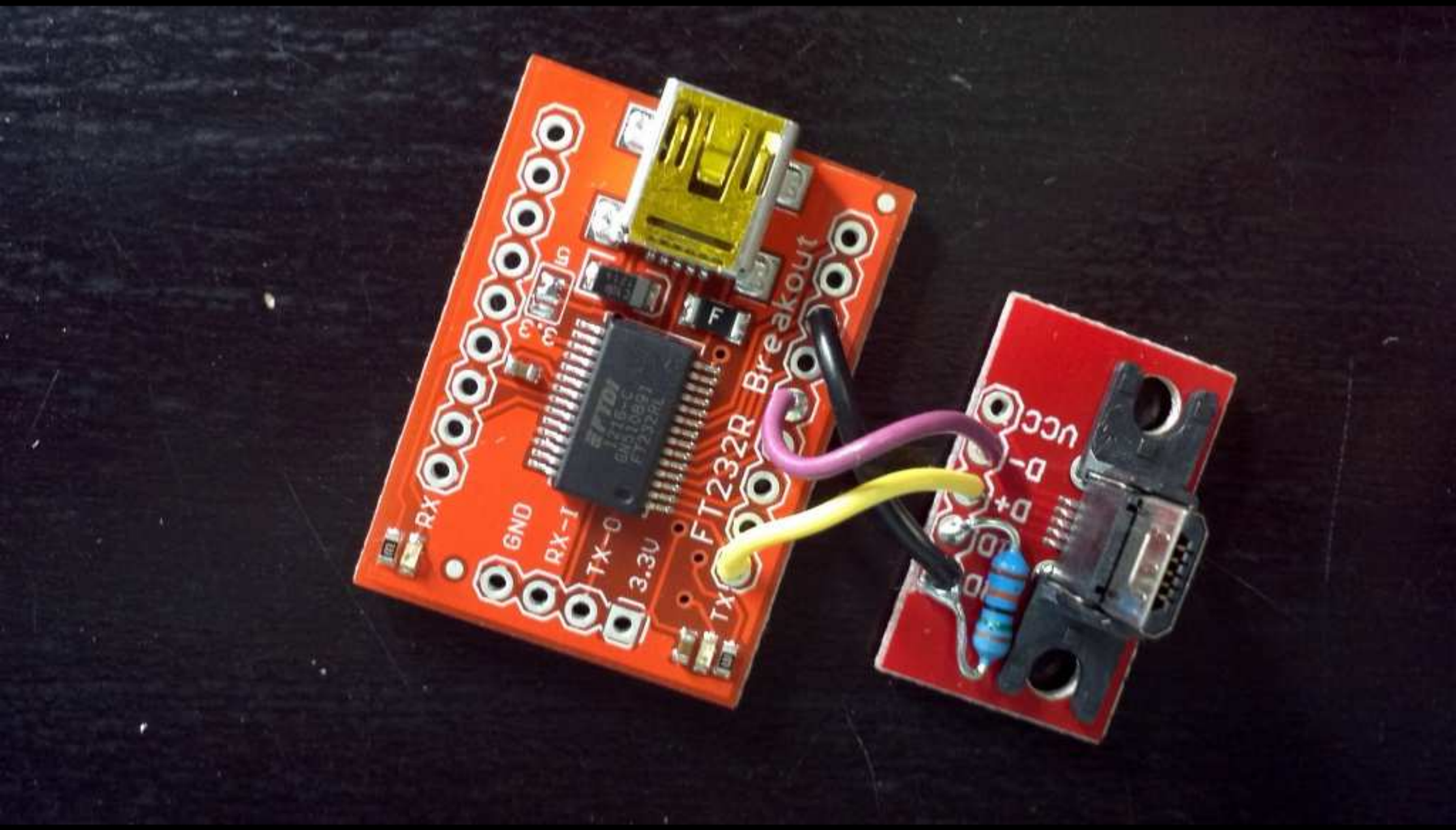
SD

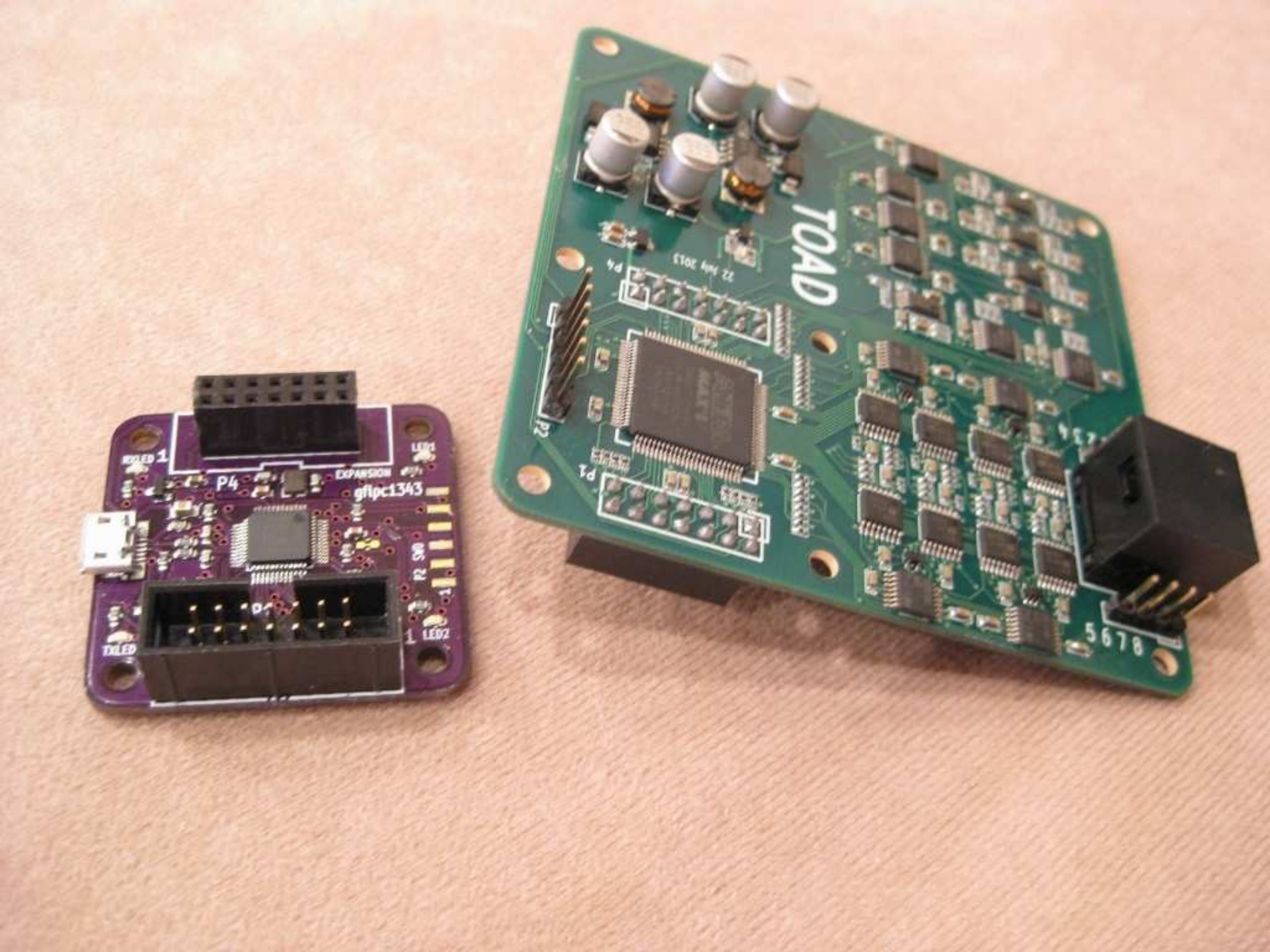
EMC

PWM

SCT

SGPIO


Breakout
FT232R
GND
RX-I
TX-O
3.3U
RX
TX
FTDI
FT232RL


TOAD
P4
EXPANSION
gflpc1343
LED1
LED2
TXLED
5678

TOAD

Totally Overengineered

Adapter/Detector

J2
J7
GreatFET
Foxglove
21 July 2016
http://greatscottgadgets.com/
J1

PulseView

File View Decoders Help

rtc_ds1307_2 Run

600µs +17800µs +18000µs +18200µs +18400µs +18600µs +18800µs

I²C I²C: Bits 11010000 00000000 11010001 00110000 00110101 00100011 00000001 00010000 00000011 00010011

I²C: Address/Data S AW: 68 A A DW: 00 A Sr AR: 68 R A DR: 30 A DR: 35 A DR: 23 A DR: 01 A DR: 10 A DR: 03 A DR: 13 N P

DS1307 Read date/time: Sunday, 10.03.2013 23:35:30

SCL

SDA

skytee - 小兔子
@skytee

Following

Delivered my lightning talk. It was fun. Also, @travisgoodspeed sold the rights to GoodFET to @michaelossmann on stage :D #GreatFET #sellout

RETWEETS	LIKES
4	5

10:21 PM - 6 Aug 2015

4 5

skytee - 小兔子
@skytee

Following

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RETWEETS	LIKES
4	5

10:21 PM - 6 Aug 2015

4 5 •••

Thank You!

Travis Goodspeed

Dominic Spill

Jared Boone

Alvaro Prieto

Schneider

Mike Walters

Mike Ryan

Taylor Streetman

Ange Albertini

Kyle Temkin

Gareth

Nick Farr

Kenny McElroy

http://greatscottgadgets.com/