

Python Meetup #7

Bratislava

Andrej Mošat'

12.11.2016



ArduRover v2.42



ArduPlane V2.74b



ArduCopter V3.0.1



ArduCopter V3.0.1



ArduCopter V3.0.1



ArduCopter V3.0.1



ArduCopter V3.0.1



ArduCopter V3.0.1



ArduCopter V3.0.1

Please click the images above for "Flight versions"



HIL SIMULATOR PLANE QUAD HELI

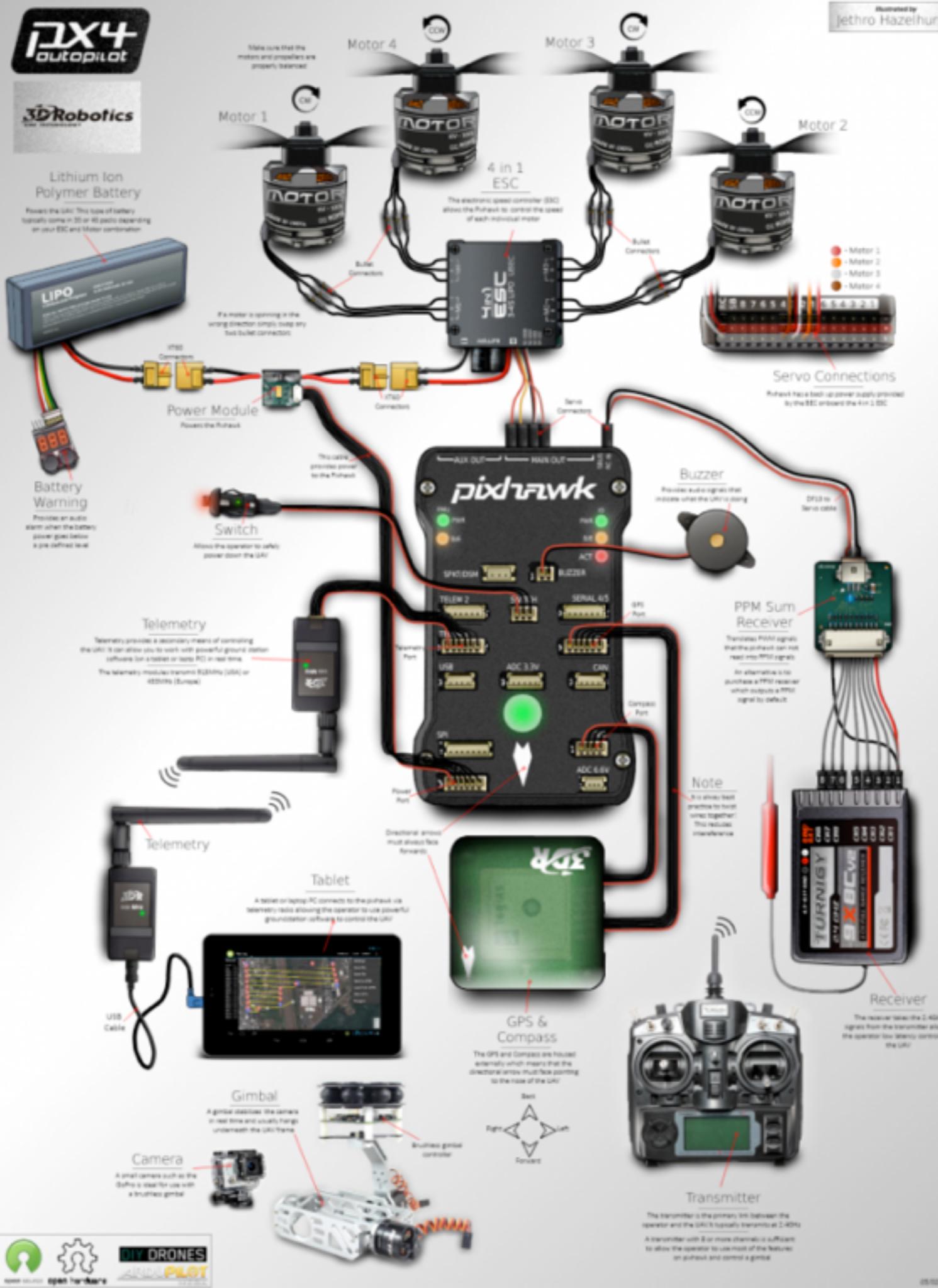
[Download firmwares](#)

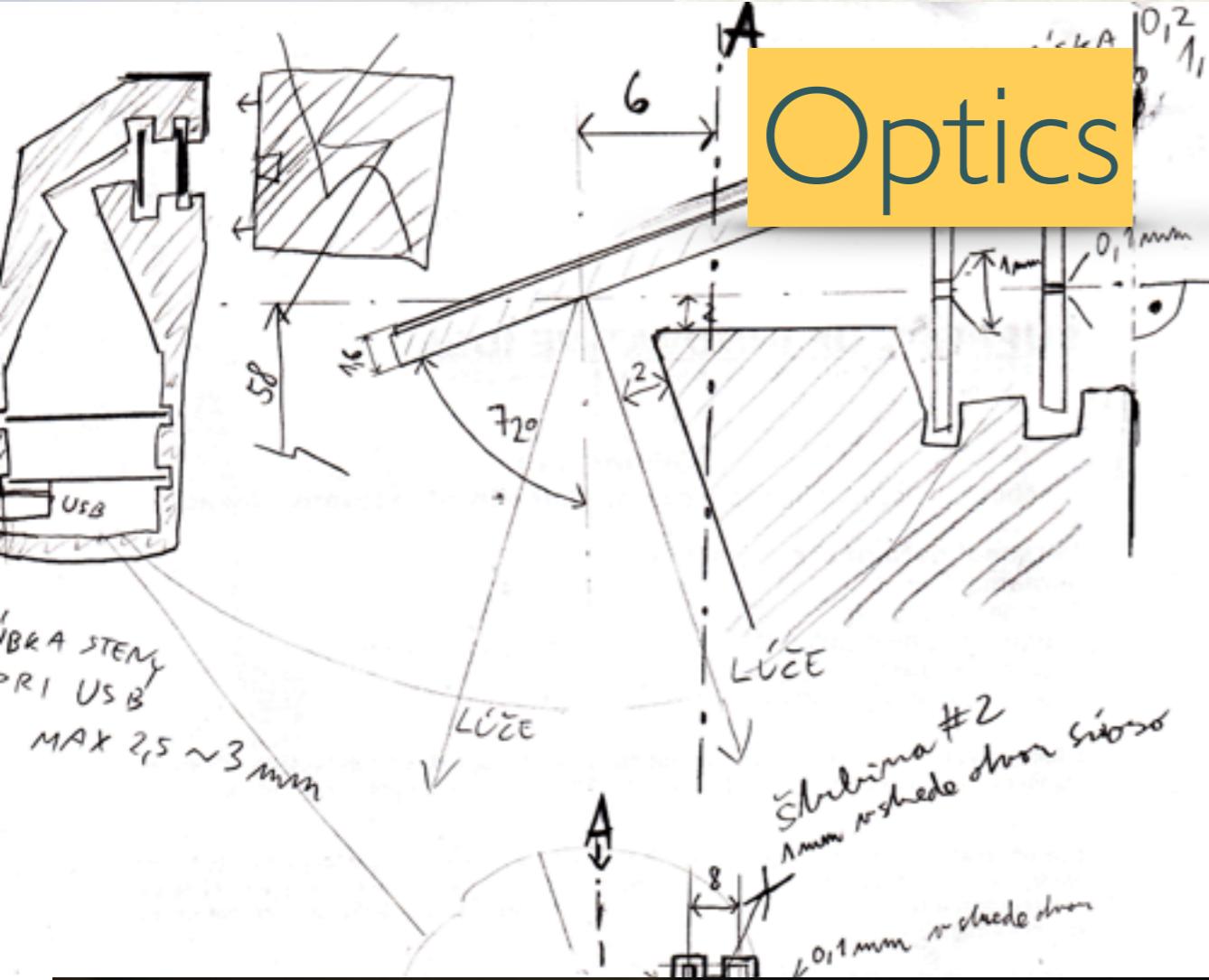
[PX4IO Firmware](#)

[Load custom firmware](#)

[Beta firmwares](#)

[Pick previous firmware](#)

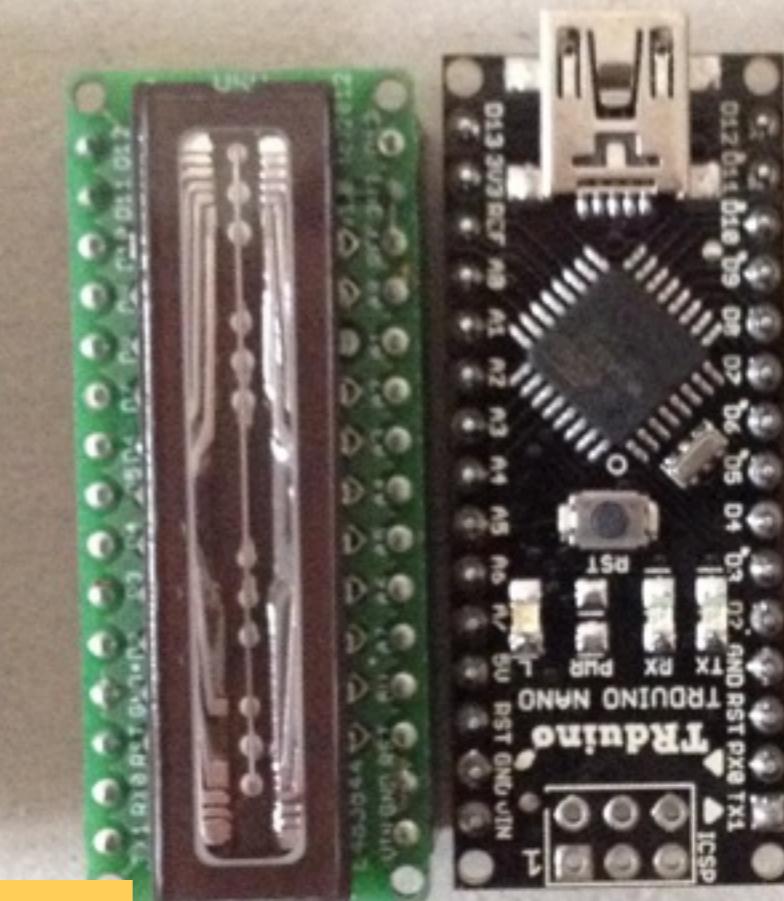




Optics

+

Electronics



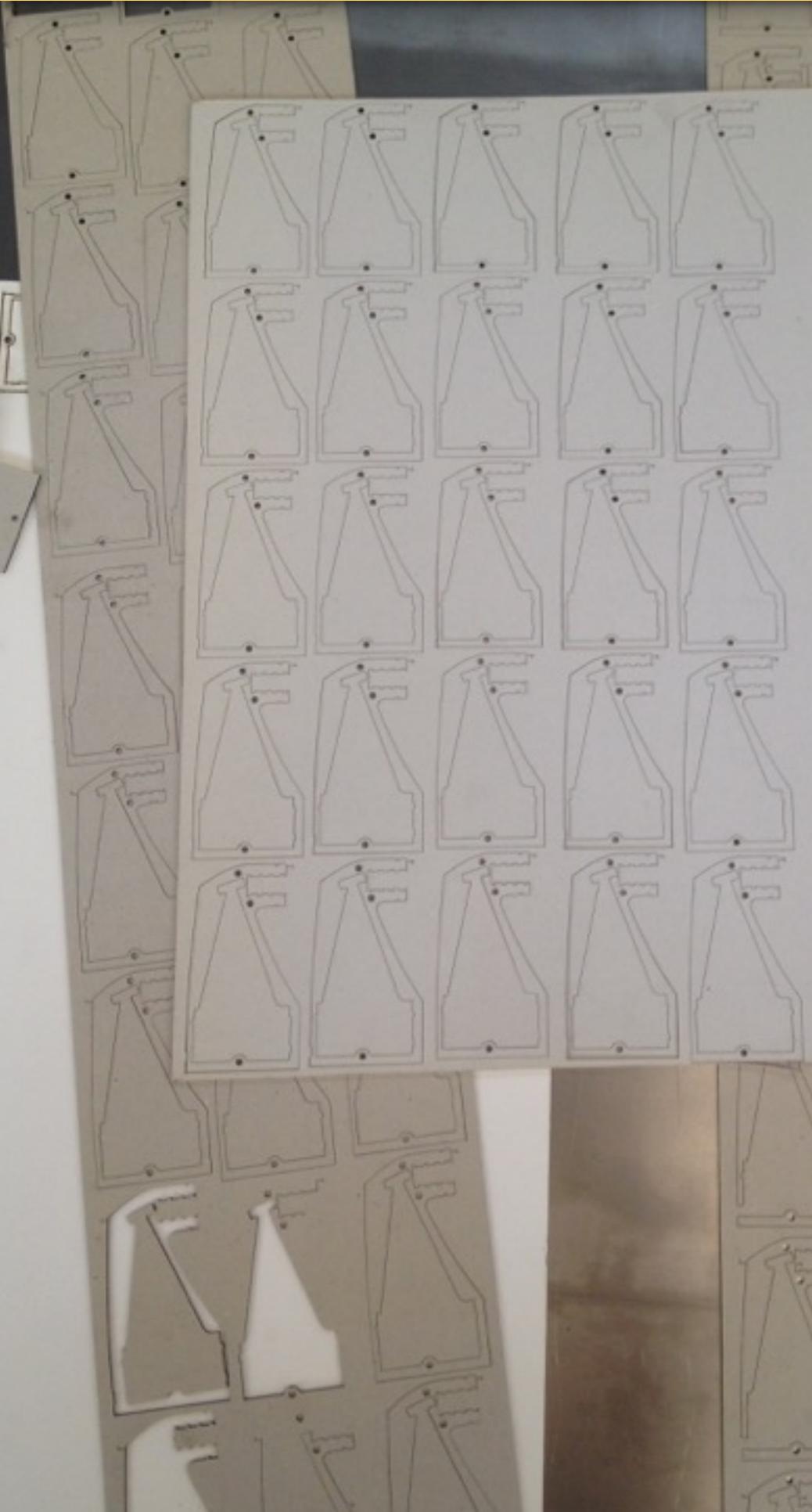
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Dreams happen

myspectral.com



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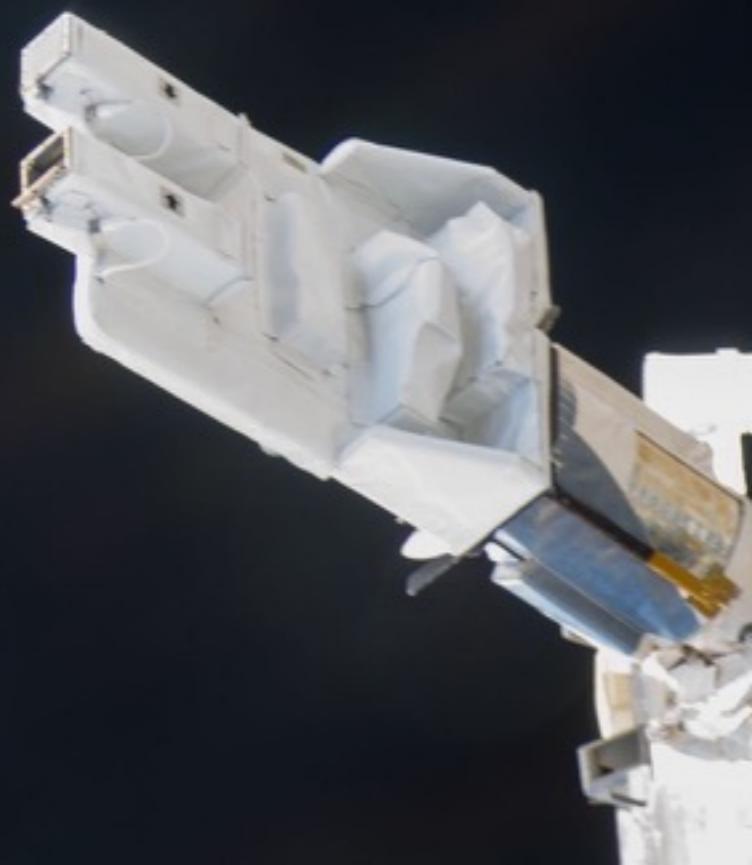


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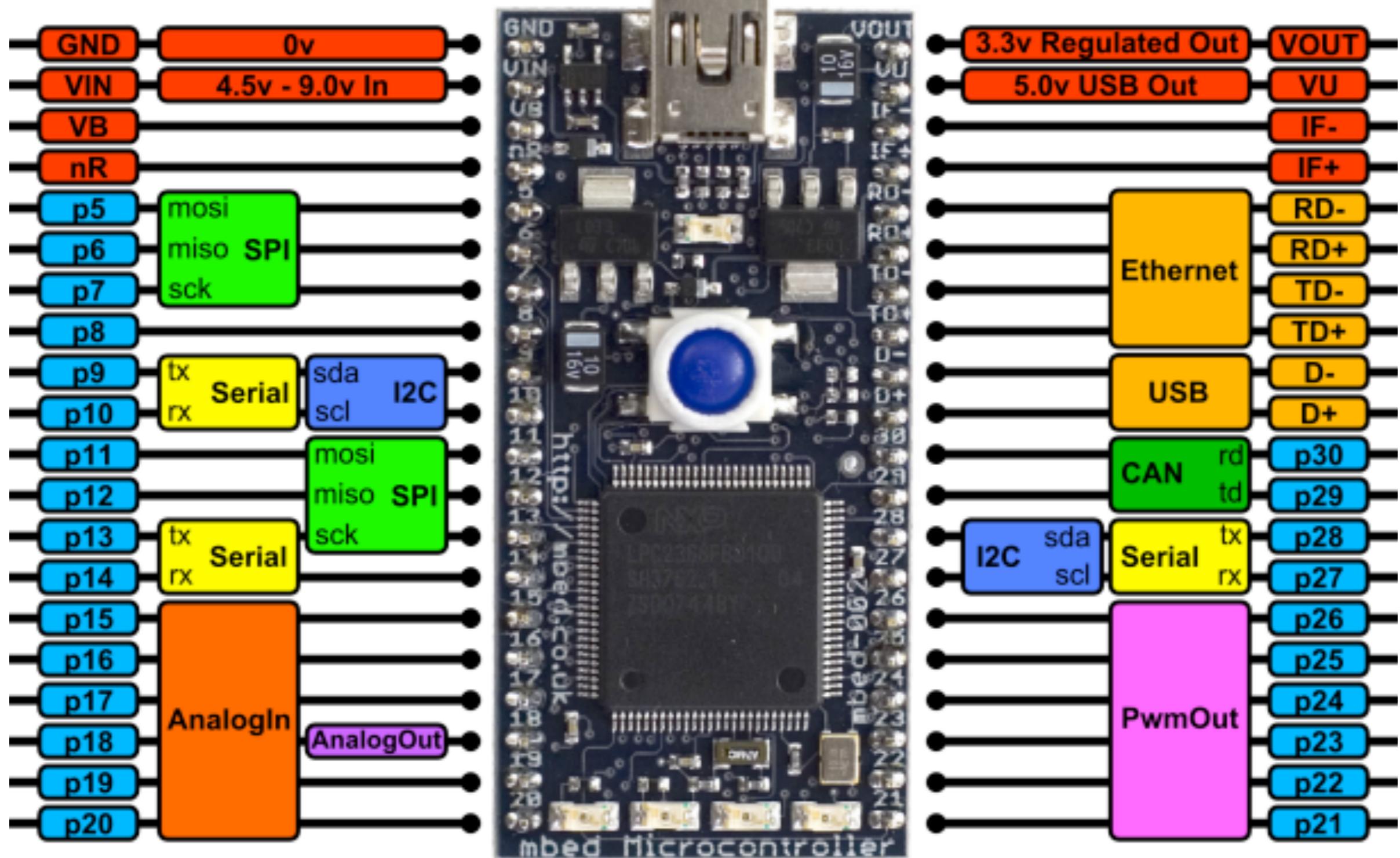
Arduino Nano — Atmel ATmega 238P - 16MHz

Mbed - NXP ARM Cortex M4 — 168 MHz

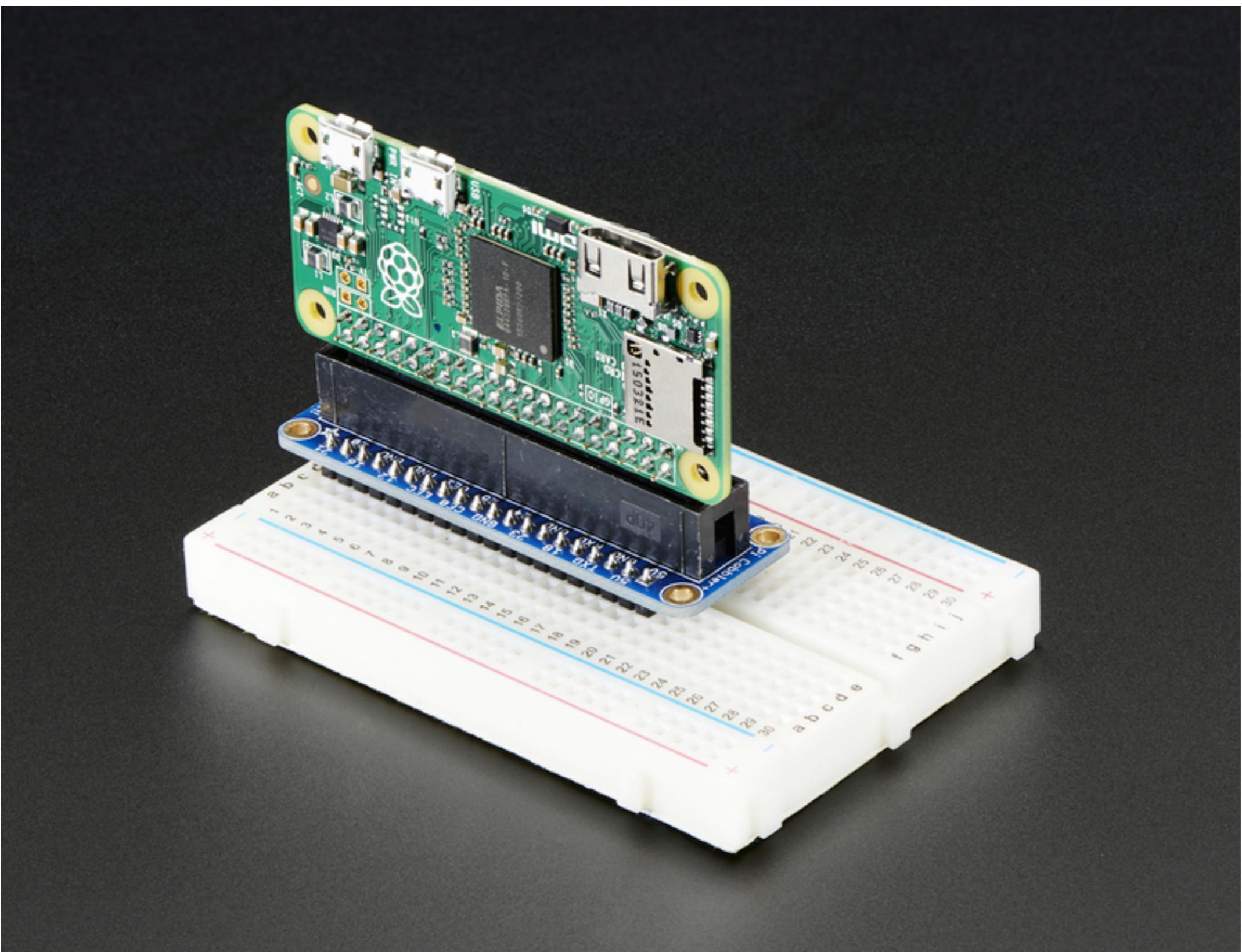
pyBoard - STM32F405 ARM Cortex M4 — 168 MHz

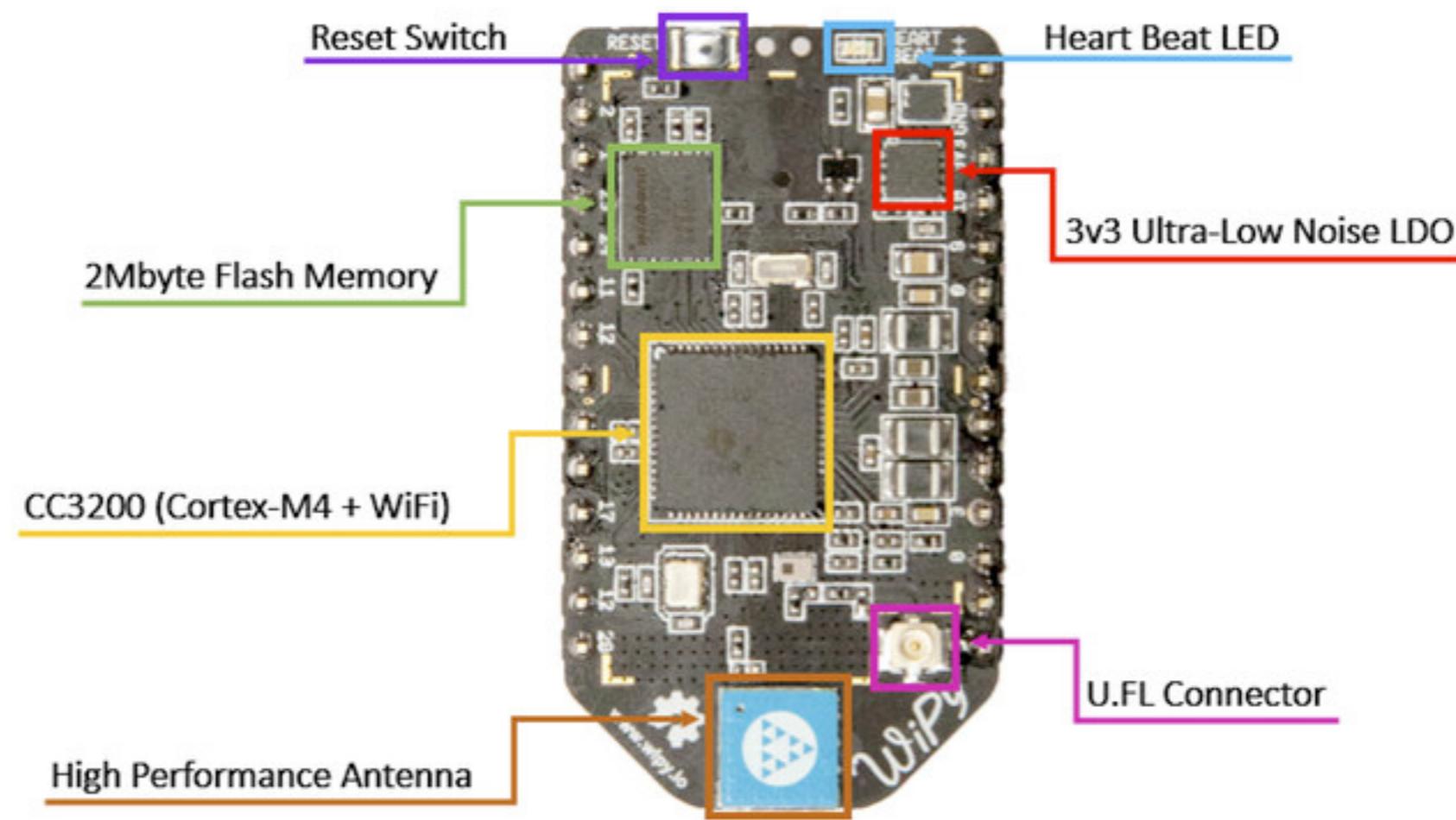
Raspberry Pi - Broadcom BCM2835 1GHz ARM11

mbed



Raspberry pi Zero





WiPy pinout and alternate functions table

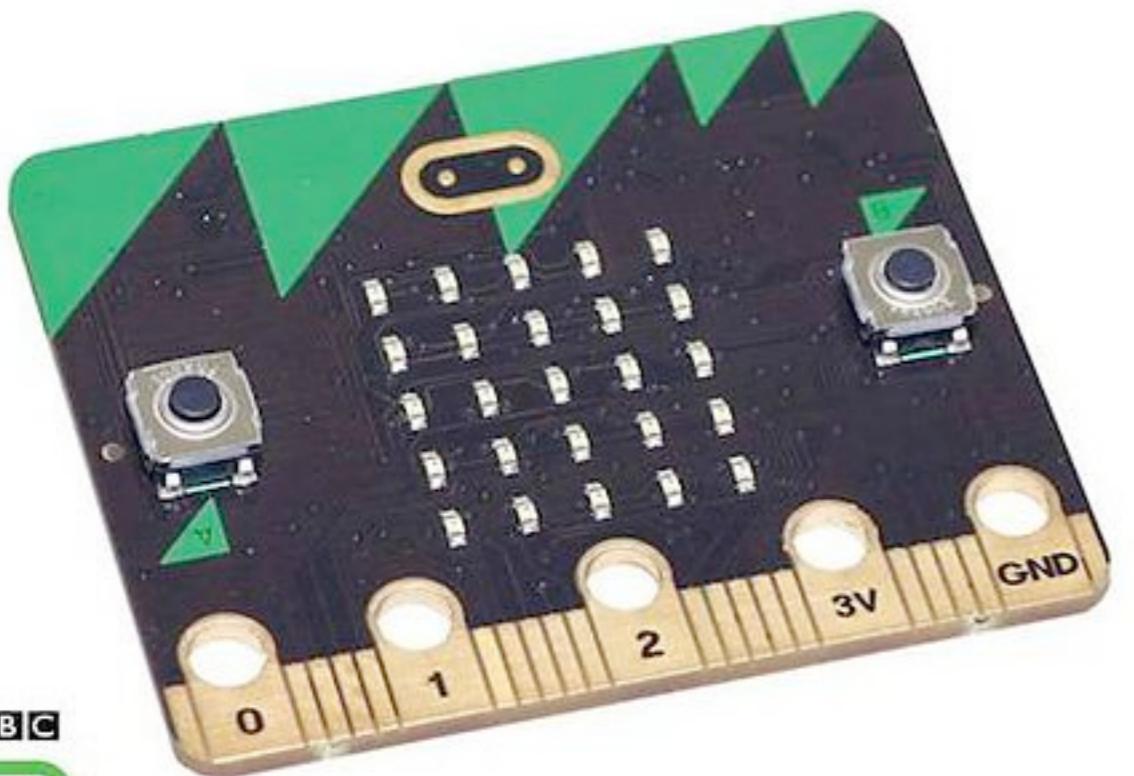
F	E	D	C	B	A	PIN	WiPy	PIN	A	B	C	D	E	F
						RESET		VIN (3.6-5.5V)						
			ADC0_CH0	TIM_CC3[7]	UART1_RX[6]	UART0_RX[3]	GP2	GND						
				TIM_CC2[7]	UART1_TX[6]	UART0_TX[3]	GP1	3V3 OUT						
					I2CO_SCL[9]	UART1_RX[2]	GP23	GP10	UART1_TX[7]	TIM_CC2[12]	PWM_7[3]	SDO_CLK[6]	I2CO_SCL[1]	
					I2CO_SDA[9]	UART1_RX[2]	GP24	GP9		TIM_CC1[12]	PWM_6[3]	SDO_DATA0[6]	I2SO_DATA0[7]	
I2SO_FS[13]		SDO_CMD[6]	PWM_8[3]	TIM_CC3[12]	I2CO_SDA[1]	UART1_RX[7]	GP11	GP8		TIM_CC7[12]				I2SO_FS[7]
I2SO_CLK[3]				TIM_CC4[12]	I2CO_SCL[5]	UART0_TX[7]	GP12	GP7	UART0_RTS[10]	UART1_RTS[3]	UART1_TX[11]			I2SO_CLK[13]
				TIM_CC5[12]	I2CO_SDA[5]	UART0_RX[7]	GP13	GP6	UART0_CTS[6]	UART1_CTS[3]	TIM_CC7[7]			
SPI0_CLK[7]				TIM_CC6[12]	I2CO_SCL[5]		GP14	GP30	UART0_TX[9]		TIM_CC6[4]	SPI0_MISO[7]	I2SO_FS[3]	I2SO_CLK[2]
SPI0_MISO[7]		SDO_DATA0[8]		TIM_CC7[13]	I2CO_SDA[5]		GP15	GP31	UART0_RX[9]	UART1_RX[2]		SPI0_CLK[7]	I2SO_FS[12]	I2SO_DATA0[6]
SPI0_MOSI[7]		SDO_CLK[8]		TIM_CC8[13]		UART1_TX[5]	GP16	GP3		UART1_TX[6]				ADCO_CH1
SPI0_CS[7]		SDO_CMD[8]				UART1_RX[5]	GP17	GP0	UART0_RTS[3]	UART1_RTS[10]	TIM_CC1[7]	SPI0_CS[9]	I2SO_DATA0[4]	I2SO_DATA1[6]
I2SO_FS[7]				TIM_CC5[5]			GP22	GP4		UART1_RX[6]				ADCO_CH2
						SAFE_BOOT	GP28	GP5			TIM_CC6[7]		I2SO_DATA1[6]	ADCO_CH3



Timer	Channel	CC pin	PWM pin
1	A	TIM_CC1	PWM_1
	B	TIM_CC2	
2	A	TIM_CC3	PWM_3
	B	TIM_CC4	
3	A	TIM_CC5	
	B	TIM_CC6	PWM_6
4	A	TIM_CC7	PWM_7
	B	TIM_CC8	PWM_8

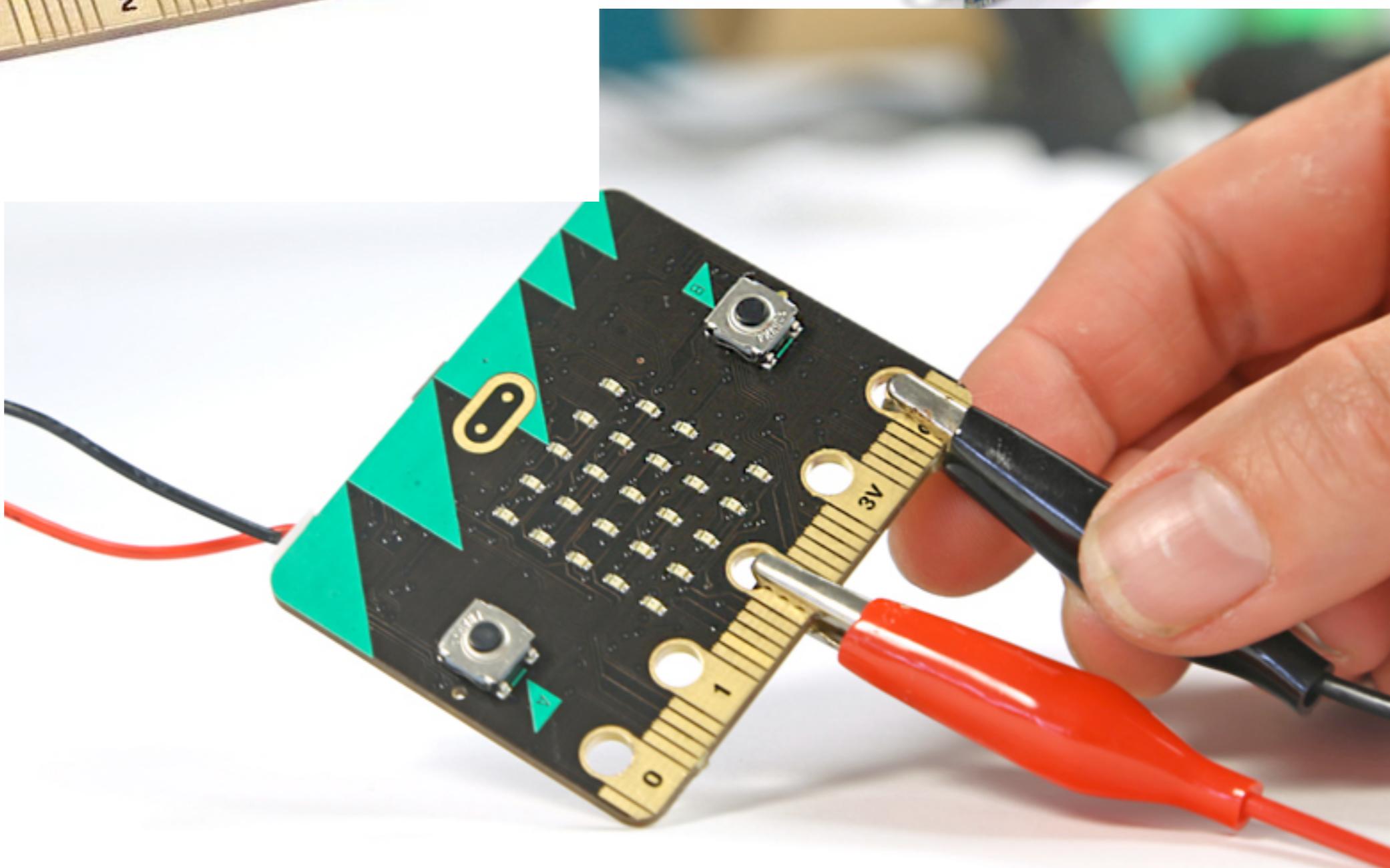
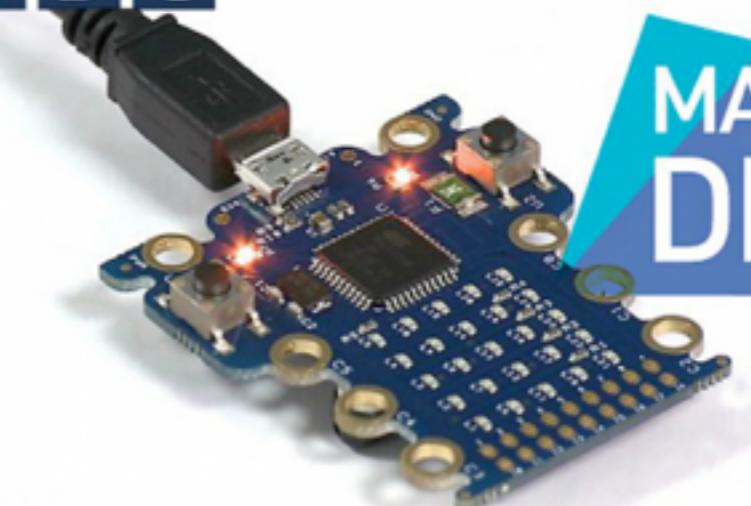
Remarks:

- The number in brackets next to each function is the one to be used when remapping the pin. In order to use the pin in GPIO mode, alternate function 0 must be selected
- ADC pin input range is 0-1.4V (being 1.8V the absolute maximum that it can withstand). When GP2, GP3, GP4 or GP5 are remapped to the ADC block, 1.8 V is the maximum. If these pins are used in digital mode, then the maximum allowed input is 3.6V.
- The heart beat LED is connected to GP25 and also has PWM_3 functionality with the alternate function 9.

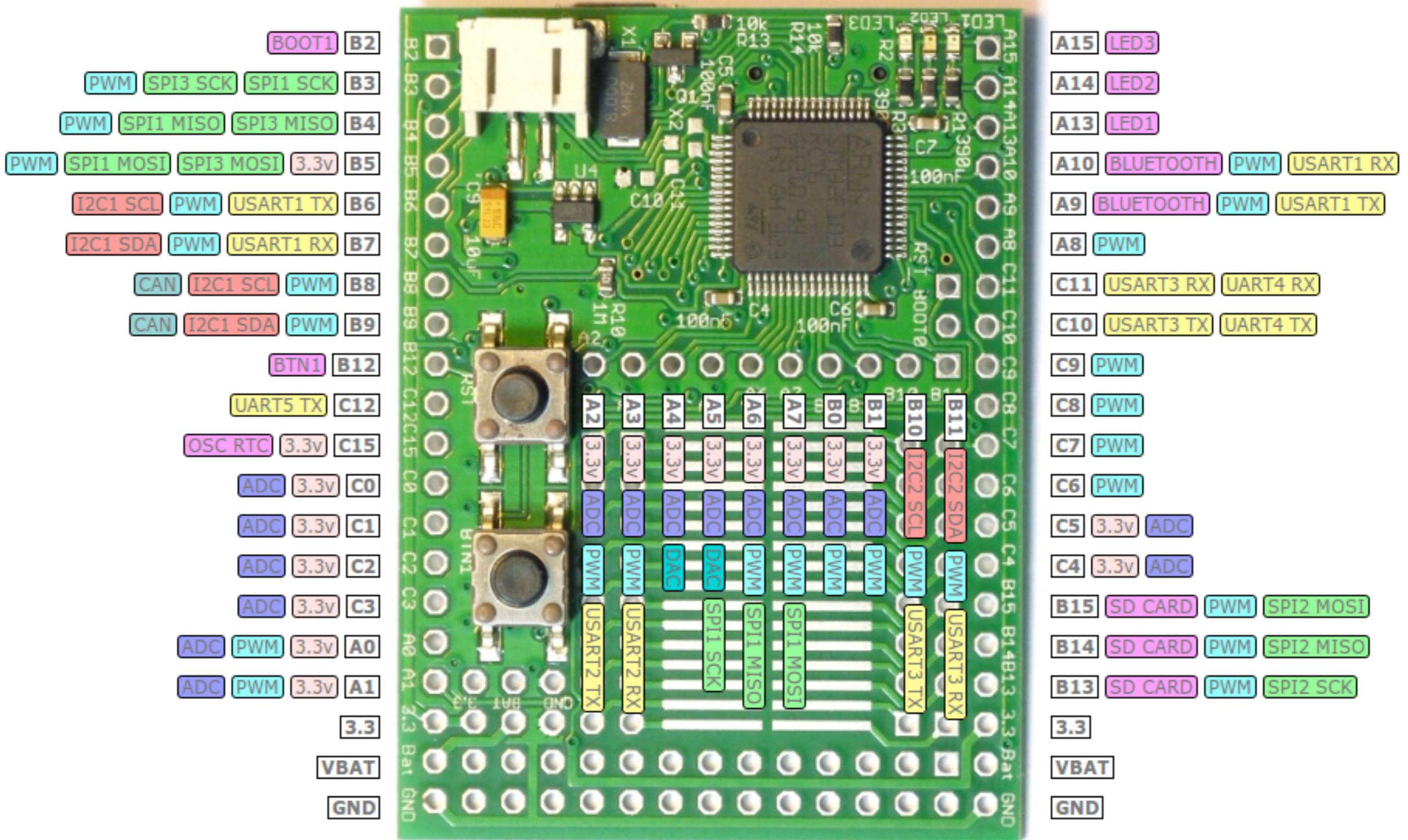


BBC
 micro:bit

BBC



Espruino



ESPRUINO WEB IDE

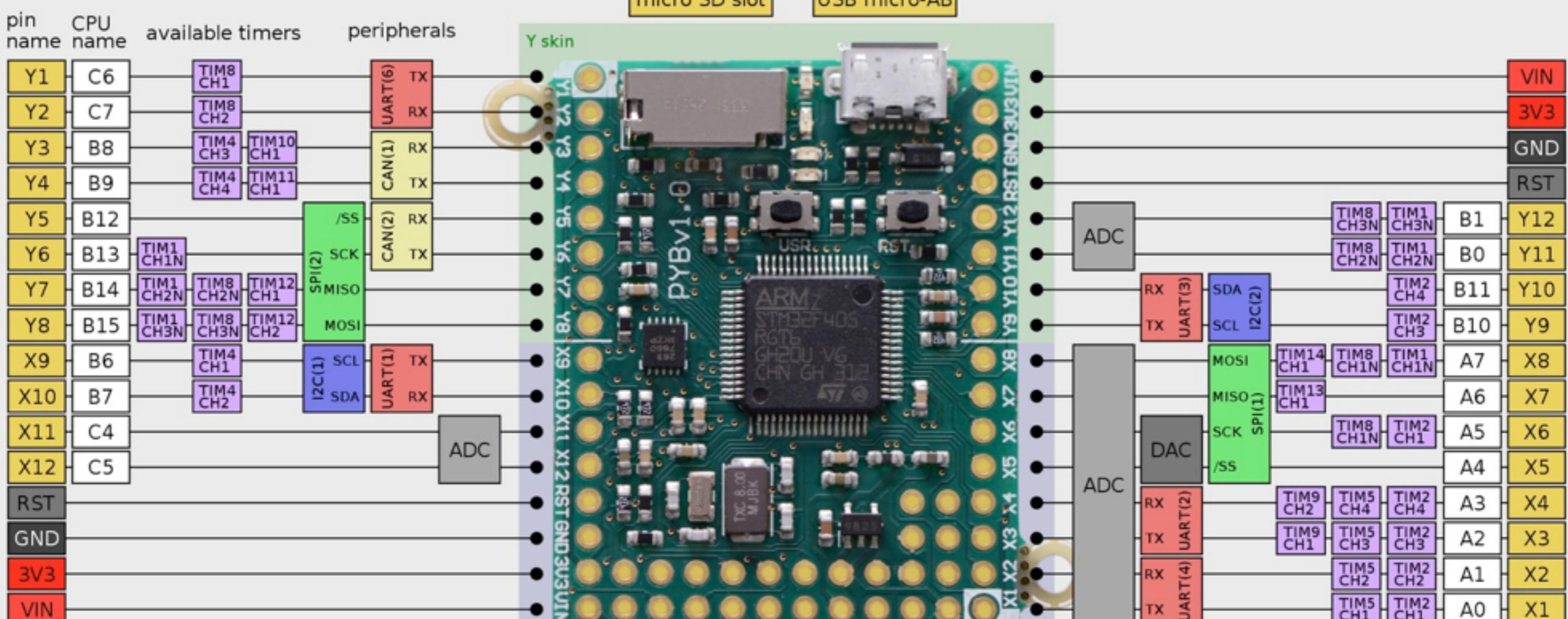


```
>  
=undefined  
>reset();  
=undefined
```

```
1v63 Copyright 2014 G.Williams  
>echo(0);  
=undefined  
>
```

```
1 * function toggle() {
2     on = !on;
3     digitalWrite(LED1, on);
4     digitalWrite(LED2, !on);
5 }
6
7 var interval = setInterval(toggle,
8     500);
```

CONNECTED TO PORT /DEV/TTYACM0



peripherals available timers CPU pin
name name

VIN: 3.6v - 10v power input
(supplied by USB when USB connected)
3V3: regulated 3.3v output only, max 300mA
VBAT: battery backup input
A3V3: analog reference connected to 3V3 via inductor

X17 is pulled to GND via 4.7k resistor when USR pressed
P2-P5 are connected to the 4 LEDs
SD = A8 is used for SD card switch
MMA_INT = B2 is used for accelerometer interrupts

connect BOOT0 to 3V3 and press RST to enter DFU mode

Micro Python pyboard



PYBv1.0

micropython.org

<https://github.com/micropython/micropython>

minicom - serial console
sublime text 3

arm-none-eabi-gcc (GCC) 5.1.0
installed through macports