

Prototyping Functions

- Step-by-step Functionality (Demos)
 - GP Output (GPIO – General Purpose I/O)->Square Wave->Clock


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Prototyping Functions

- Step-by-step Functionality (Demos)
 - GP Output (GPIO – General Purpose I/O)->Square Wave->Clock
 - Read A/D
 - I2C/SMBus (Wire)
- Optional WiFi
 - STA (station)
 - AP (access point)
- Optional Energia
- UI
 - Button (GP Input - GPIO, add debounce)
 - LCD Display (“Hello”)
 - Music
- UI - Serial Interface (i.e. Putty for echo “Hello World”)

Example Pin Map – Digital I/O

- How can you not love an MCU in a DIP package for rapid prototyping?



Energia

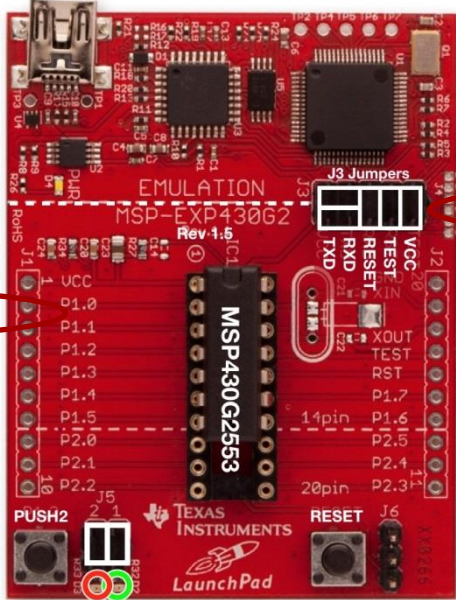
LaunchPad with MSP430G2553

Revision 1.5

Flash	16	KB
RAM	512	B

Serial	Hardware
ADC	10 bits
Use pins numbers only!	
Default I ² C = (1)	
Software I ² C (1) master only	
PWM 4 or 14 or 19	
PWM 9 or 10	
PWM 12 or 13	

+3.3V					1
RED_LED	A0	P1_0			2
	A1	P1_1			3
	TXD	A2	P1_2		4
		A3	P1_3		5
		A4	P1_4		6
	SCK (B0)	A5	P1_5		7
	CS (B0)		P2_0		8
	SCL (1)		P2_1		9
	SDA (1)		P2_2		10
temperature	A10				



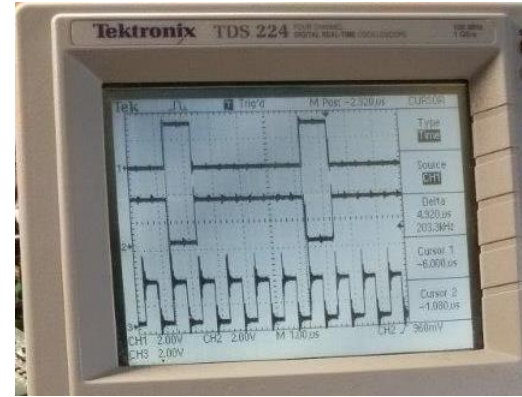
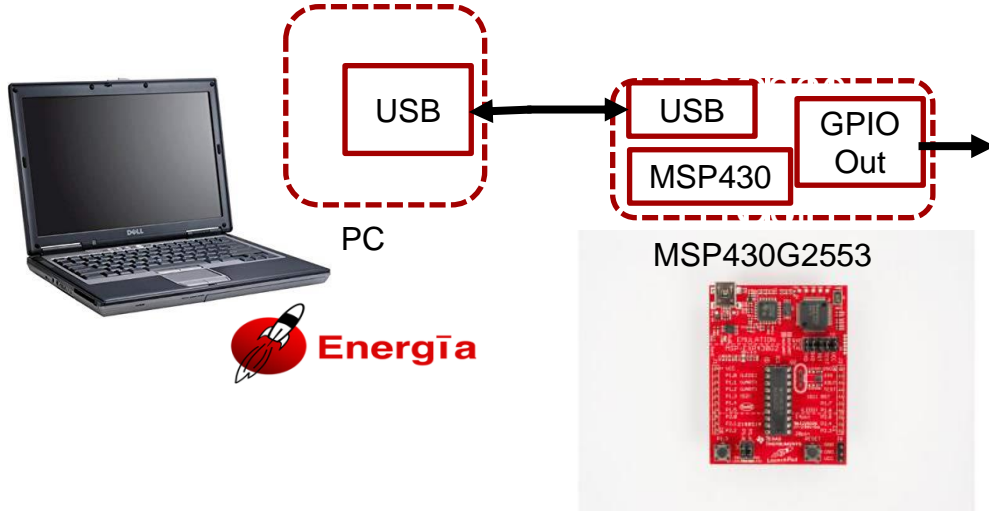
20					GROUND
19	P2_6				XIN
18	P2_7				XOUT
17					TEST
16					RESET
15	P1_7	A7	SDA (0)	MOSI (B0)	
14	P1_6	A6	SCL (0)	MISO (B0)	GREEN_LED
13	P2_5				
12	P2_4				
11	P2_3				
	GND				
	GND				
	+3.3V				

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embeddedcomputing.weebly.com
 version 2.1 2015-09-13

- <http://www.energia.nu/pinmaps/msp-exp430g2/>

Demo - GPIO

- Step-by-step Functionality (Demo) - PFC (Power Factor Correction) Controller
 - GP Output (“Blinky” is just General Purpose Input) – Energia Blink (square wave)
 - P1.0 ->RED_LED
 - »static const uint8_t P1_0 = 2;
 - »static const uint8_t RED_LED = 2;
 - const int ledPin = RED_LED; // the number of the LED pin



Square Waves with Reference Clock