

Advanced Topics

- USB (Native) UART (MSP430F5529 Launchpad)
Energia USBSerialExample
- Multiblink(Use of TI-RTOS) Energia Multitasking
(Red+Green+Blue = White LED)

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Advanced Topics

- Energia Libraries
 - Educational BoosterPack MKII (Built-In Energia18)
 - Neopixel/WS2811 Driver (Copy library into Energia18)
 - Seeed Grove Starter Kit (Add from GitHub)
 - TI BLE for CC2650 Boosterpack (Add from GitHub)
- Layered Energia Code
- Porting AdaFruit Neopixel to MSP432
- Single-step Debug of Energia using CCS (even assembly language)
- Allows Energia<->CCS fluid transitions
- USB (Native) UART (MSP430F5529 Launchpad) Energia USBSerialExample
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NativeUSB UART, Energia Multitasking

- With MSP430F5529 LaunchPad ([MSP-EXP430F5529LP](#)) and [USB Devpack](#)
 - serialevent (UART Echo) – default 9600 baud
 - USBSerialExample (USB UART Echo) – Need USB_config files
 - USBSerialExample2 (UART Echo <-> USB UART i.e. CDC Client Echo)

- Energia Multitasking (just TI RTOS) – MultiBlink with EnergiaMT (TI-RTOS):
<https://www.youtube.com/watch?v=0f8brpzvdD0>

Need Putty or other Terminal program



MSP430F5529 LP

```
MultiBlink - GreenLed.ino | Energia 1.6.10E18
File Edit Sketch Tools Help
MultiBlink BlueLed GreenLed
#define LED GREEN_LED

void setupGreenLed() {
  // initialize the digital pin as an output.
  pinMode(LED, OUTPUT);
}

// the loop routine runs over and over again forever as a task.
void loopGreenLed() {
  digitalWrite(LED, HIGH); // turn the LED on (HIGH is the voltage 1
  delay(500); // wait for half a second
  digitalWrite(LED, LOW); // turn the LED off by making the voltage
  delay(500); // wait for half a second
}
```

One tab for each LED (Red+Green+Blue = White LED)



MSP432P401r LP

Agenda

- Fundamentals (mostly for AFA)
 - Implementing necessary prototyping functions such clocks/GPIO, Read A/D, I2C, etc.
 - Seamless interface of various Analog EVM's for customer “proof of concept”
 - Standalone UI - Button (GP Input - GPIO), LCD Display (“Hello”), Music, Serial Interface (Putty)
- More UI (i.e. GUI Advanced Comm Tab basically Putty/Serial I/F) - Lessons learned from home networking (if you can setup the WiFi in your house, you can prototype with a few steps)
- EP - Embedded prototyping (mostly for DFA)
 - Wired and Wireless Control
 - Use of TI Cloud Computing Tools for prototype
- Advanced Topics
- Conclusion Demos (Simple and Complex)