

eForth for MSP430s

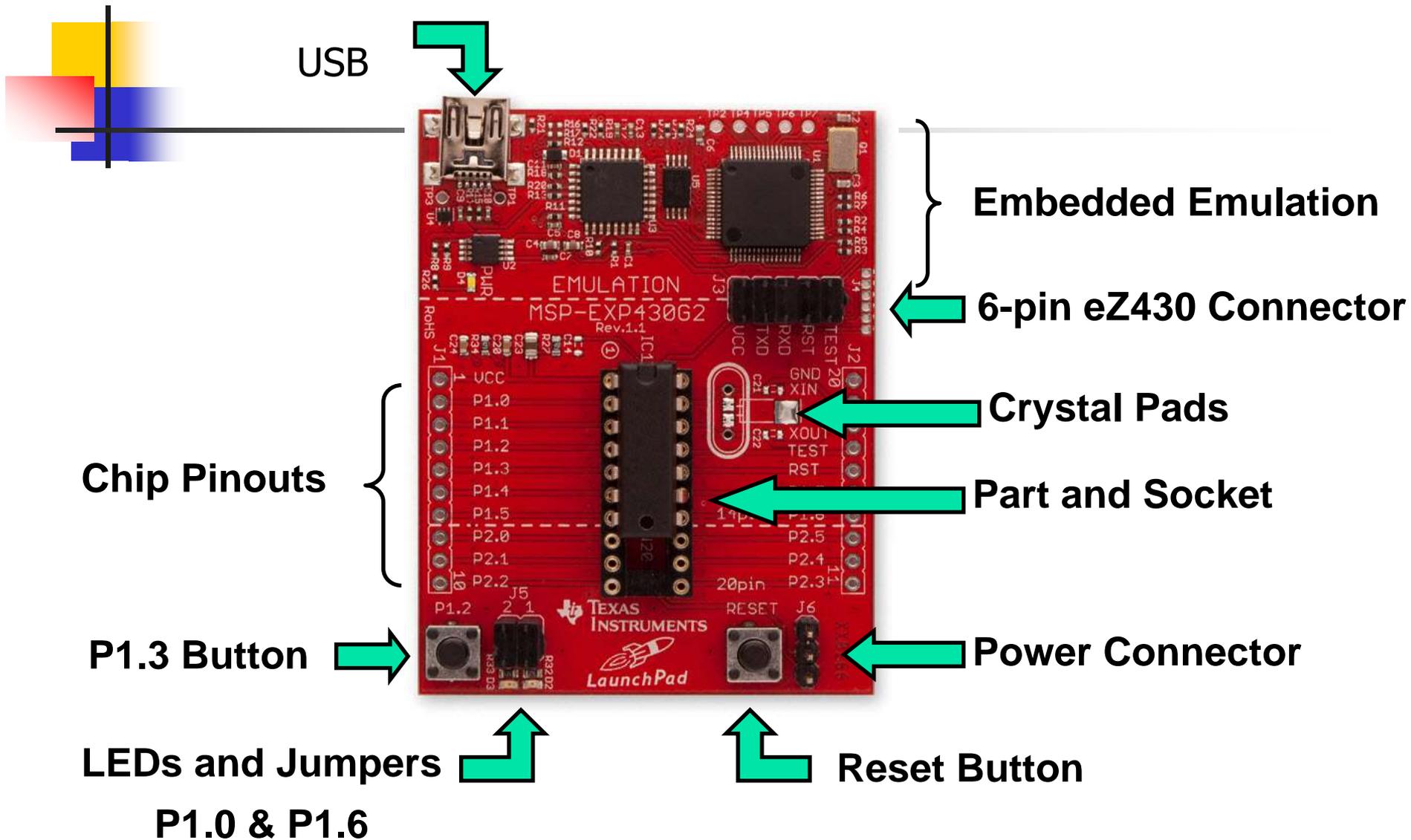
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SVFIG



Summary

- MSP-EXP430G2 LaunchPad
- tinyForth for MSP430G2231
- 430uForth for G2231
- Demo
- eZ430-Chronos Watch
- 430eForth for CC430F6137
- No demo yet

MSP-EXP430G2 LaunchPad





MSP-EXP430G2 LaunchPad

- MSP430G2231 Microcontroller
 - 2KB Flash memory
 - 256 Bytes RAM
 - 2 8-bit GPIO ports
 - ADC
 - UART/SPI/I2C
 - Counter/Timers



tinyForth for MSP430G2231

- Implemented by Luke Chang in Taiwan FIG Chapter
- Based on TCOM
- Win32Forth extensions
- Tethered Forth kernel
- Demo



430uForth for G2231

- 2 KB Flash is too small to be interesting
- A launch pad to larger MSP chips
- Interpreter only
- eForth model is greatly reduced to fit into flash
- Very small Forth word set
- Software UART



430uForth for G2231

- Only the following Forth words:
 - DUP DROP SWAP OVER
 - + - AND OR XOR
 - CR TYPE EXECUTE EXIT
 - @ ! C@ C!
 - RED GREEN OFF



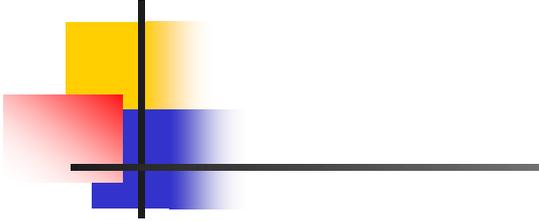
430uForth for G2231

- Demo
 - IAR Embedded Workbench
 - 430uForth source code
 - 430 Assembler
 - Debugger
 - Turn LEDs on and off



eZ430-Chronos Watch

- A functional sports watch
- CC430F6137 microcontroller
- RF communication
- Software development system
- Open software with source code in C, unfortunately.





CC430F6137 Microcontroller

- 32 KB flash memory, 4 KB RAM
- 3-axis accelerometer
- Temperature sensor
- Pressure sensor
- Data logger
- Sub 1GHz RF channel
- LCD Drivers



430eForth for CC430F6137

- The Goal: A Forth computer I can talk to through an RF channel
- eZ430-Chronos watch has everything I need to implement it
- CC430F6137 is very complicated. Its User Guide is 641 pages long.



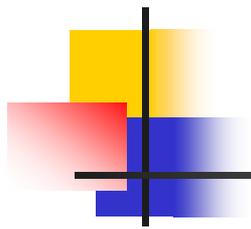
430eForth for CC430F6137

- IDE's are also complicated
- IAR Embedded Workbench and TI Code Composer Studio are basically C/C++ development systems
- All sample and demo code are in C

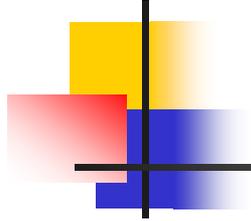


430eForth for CC430F6137

- Great potential for robotics applications.
- It is more than a one-man job.
- I can use lots of help.
- Anybody interested?



Questions?



Thank you.