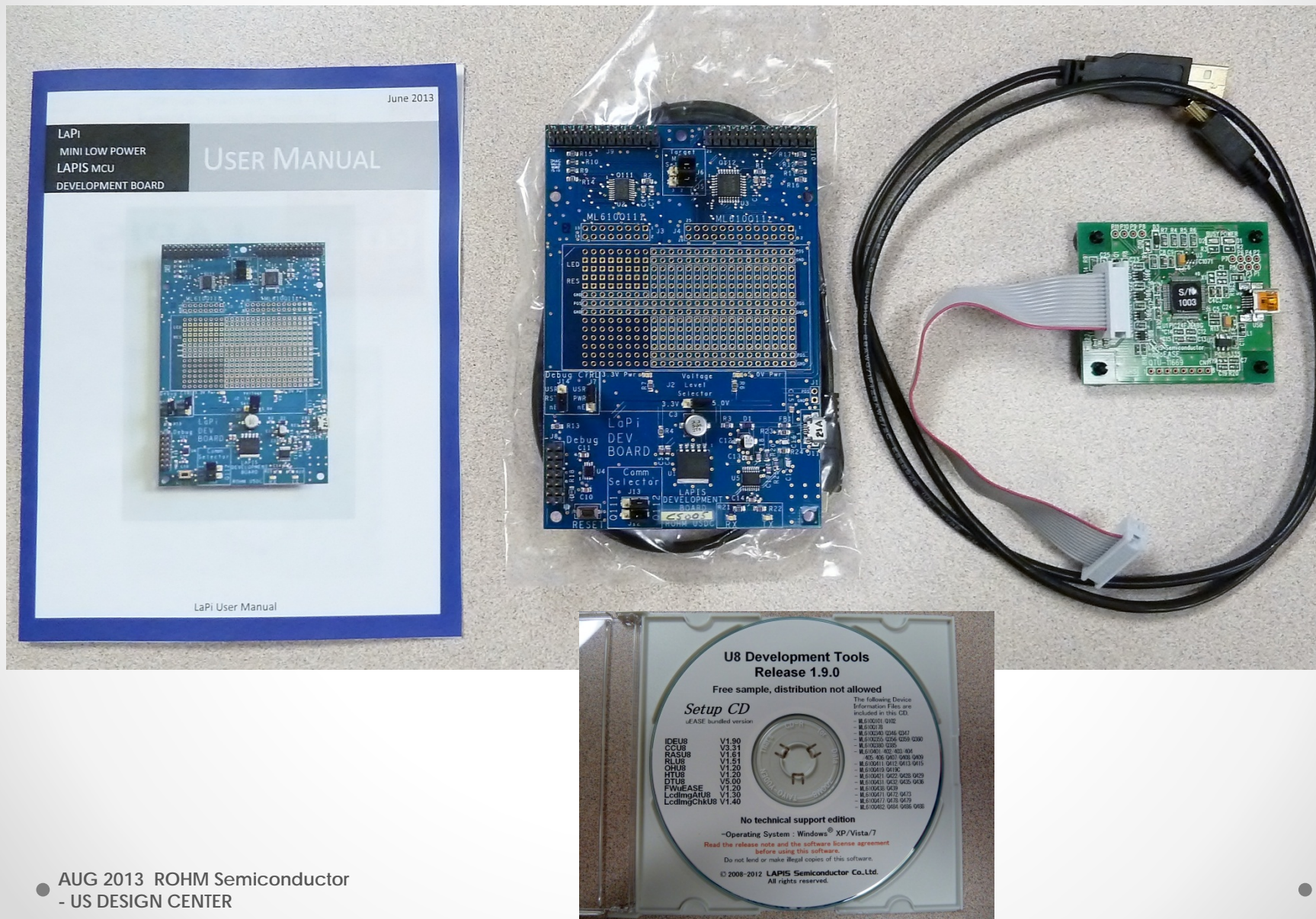


# Brief Introduction to the LaPi Development Board

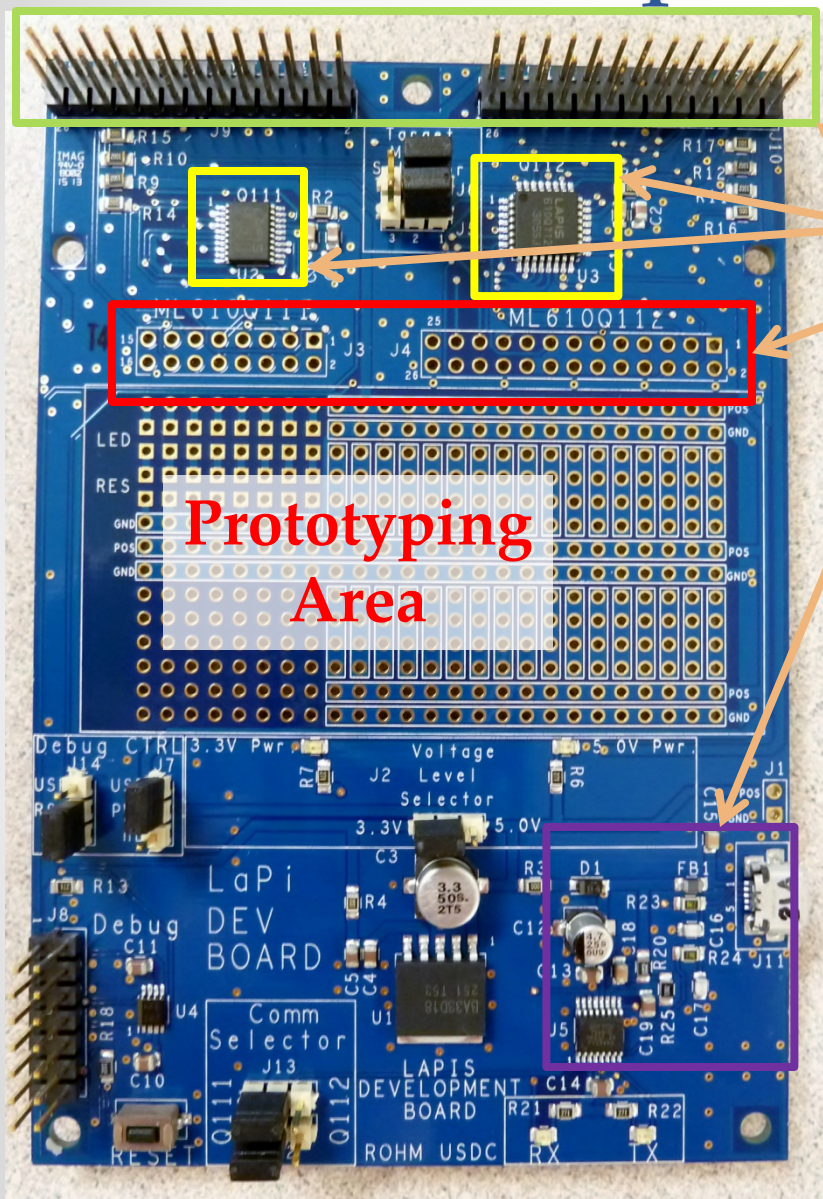
for LAPIS Semiconductor MCU's

# LaPi Kit Contents





# Development Board Details

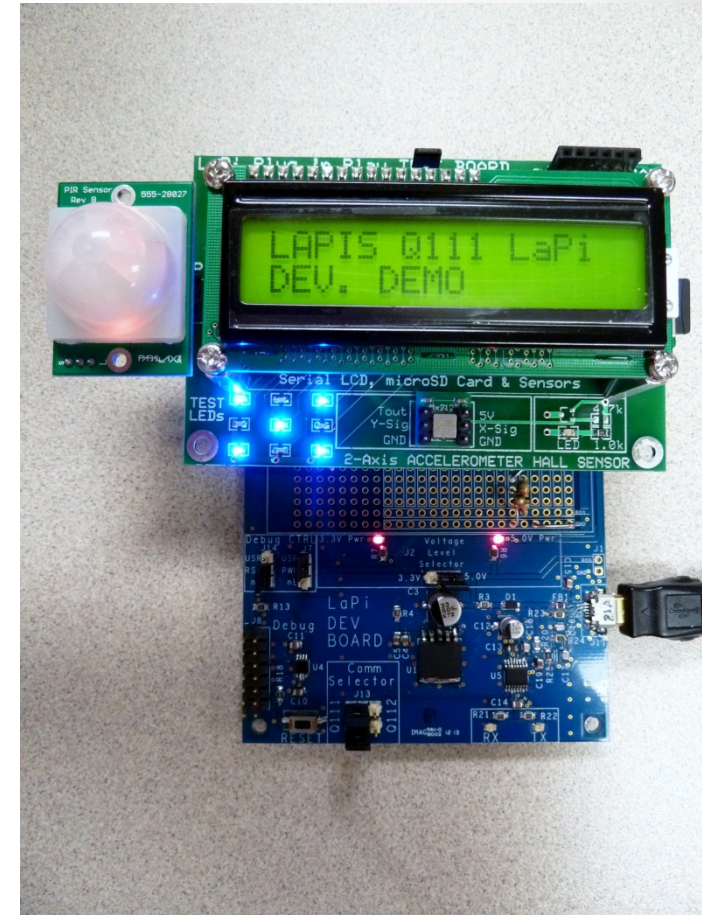


- Two Raspberry Pi Compatible connectors
- Two LAPIS Micros on board
- All 40 combined I/O pins routed near prototyping area
- USB to UART Communications to either micro
- 5V or 3.3V Power Options
- 3.3V Regulator on board
- Software GUI included
- Included Full Functioning C Compiler & IDE
- Debugger / Programmer included



# Some of our Planned Add On Boards

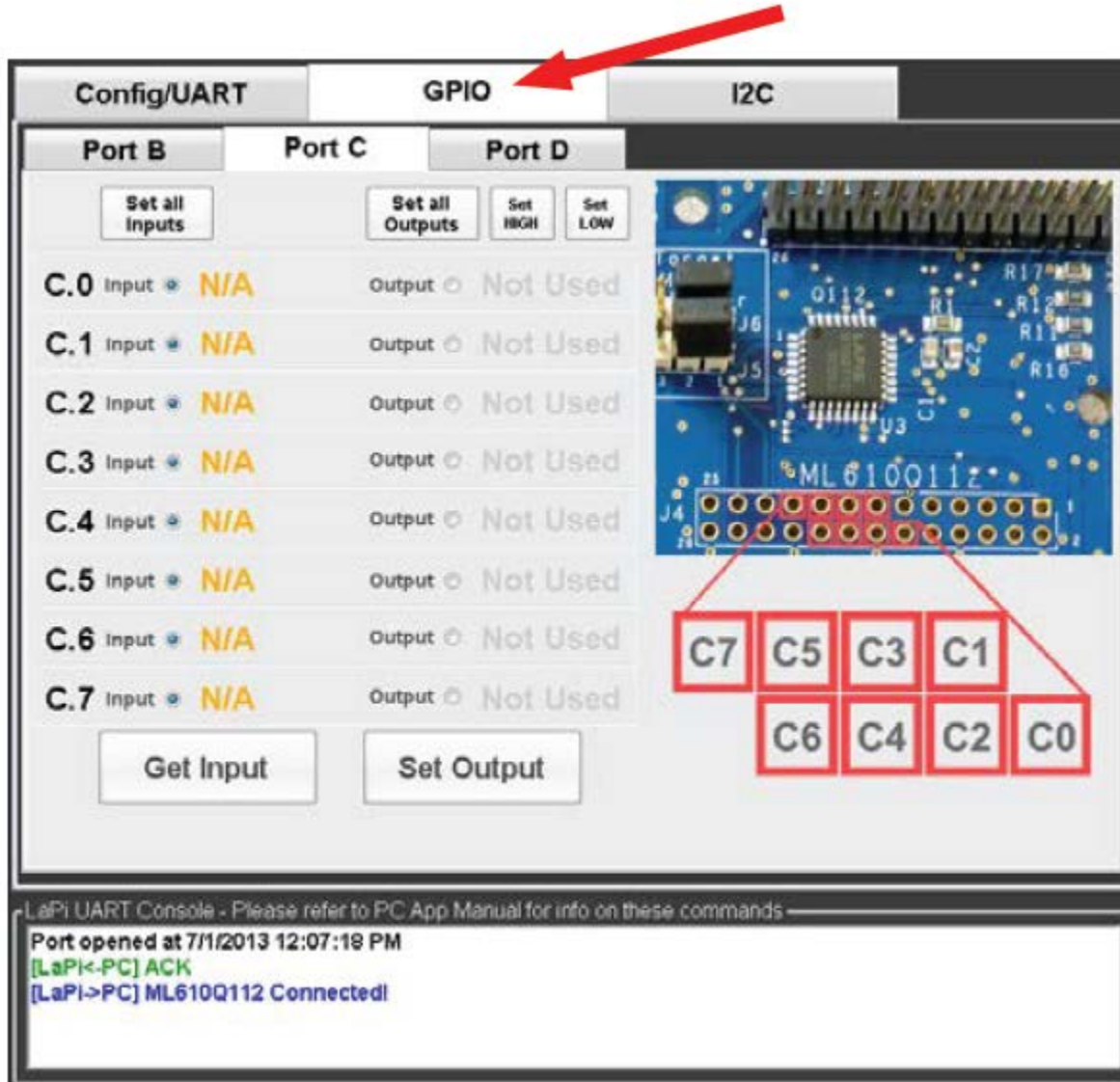
- Sensor Board
  - LAPIS UV Sensor
  - ROHM Ambient Light Sensor
  - KIONIX Tri-Axis Accelerometer
  - ROHM Temperature Sensor
  - ROHM EEPROM / FeRAM
  - LAPIS Blue Tooth Low Energy Transceiver Module
- NV Memory Module Board
  - FeRAM
- Motor Driver Board
  - BLDC
  - Stepper Motor
  - Servo Motor
  - Brushed Motor
- Communication Board
  - BLE Module
- And more...



*Note: All boards will also be compatible with the popular Raspberry Pi platform*



# Custom Graphical User Interface

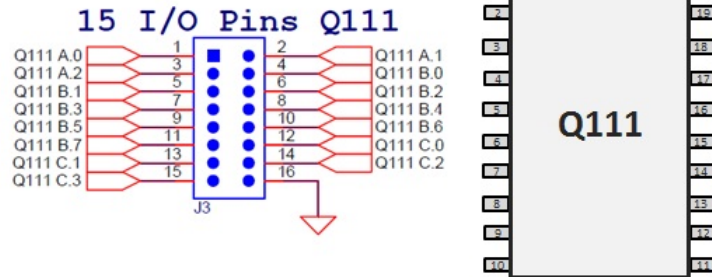


- The very intuitive & well designed GUI and accompanying pre-programmed firmware allows for control of the I/O pins from either of the two micro's right out of the box.
- Allows for reading INPUTS
- Allows for Setting individual OUTPUTS from any of the ports High or Low
- Allows for easy set up for I2C communications
- Future revisions will allow setting of Comparator, PWM and other functions as well as outputting code

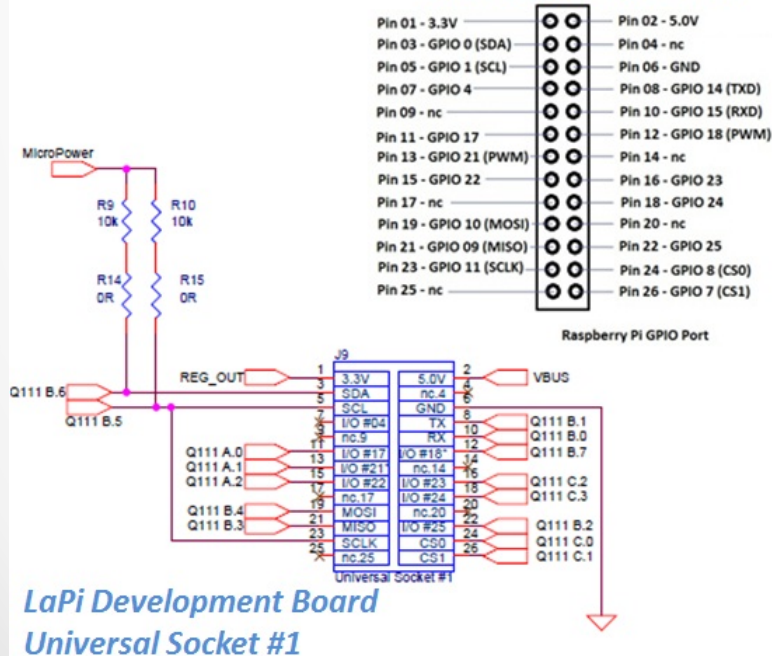
# Q111 Micro's Pinout

## ML610Q111 Quick Start Guide

### LaPi Development Board - J4



### Raspberry Pi GPIO Port



### LaPi Development Board Universal Socket #1

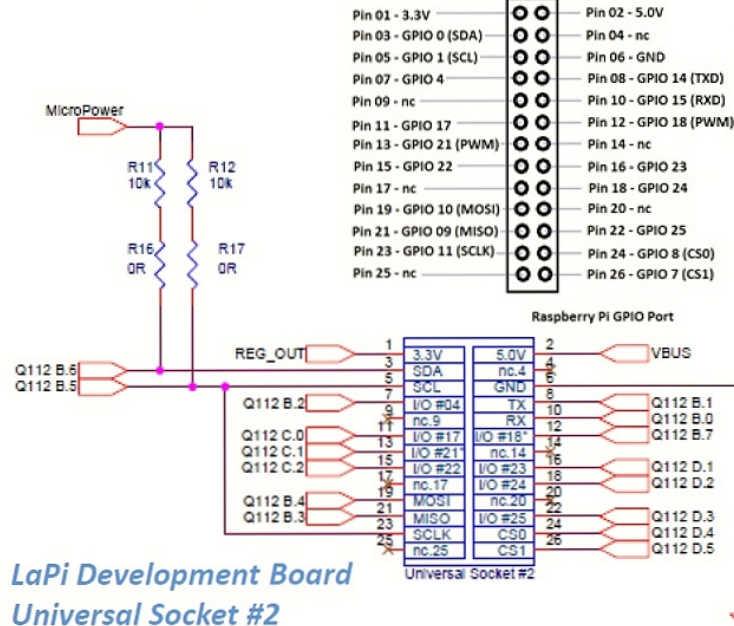
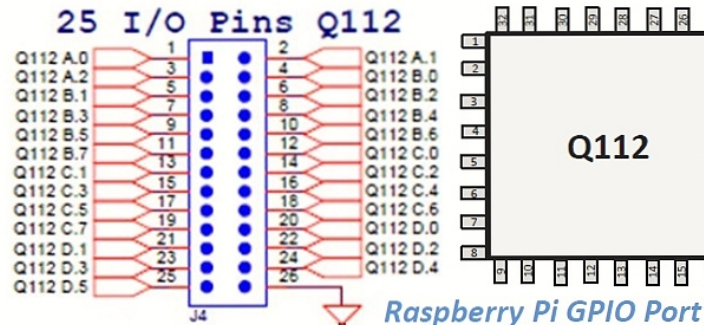
### LAPIS - ML610Q111

Pin 01	-	PC0	PWMF0	;TMR9OUT
Pin 02	-	RESET		
Pin 03	-	Test		
Pin 04	-	PB0	RXD0 ;EXI4; AIN2 ;PWMC ;OUTCLK ;CMP1OUT	
Pin 05	-	PB1	TXD0 ;EXI5; AIN3 ;PWMD ;TXD1	
Pin 06	-	PB2	EXI6 ;PWME ;RXD1	
Pin 07	-	PB3	EXI7 ;SIN ;TXD1	
Pin 08	-	PA2	EXI2 ;PWME ;CLKIN ;COMP0OUT	
Pin 09	-	TESTF		
Pin 10	-	PC3	TMFOUT	
Pin 11	-	PC2	PWMF2	
Pin 12	-	PA1	EXI1 ;AIN1 ;CMP1P ;PWMD ;LSCLK ;TMFOUT	
Pin 13	-	PB4	CMP0P ;SOUT ;TXD0 ;TXD1	
Pin 14	-	PB5	CMP0M ;RXD0 ;SCK ;SCL ;PWME	
Pin 15	-	PB6	AIN4 ;CLKIN ;SDA ;PWME	
Pin 16	-	VSS	(GROUND)	
Pin 17	-	VDD	(2.7-5.5V)	
Pin 18	-	PB7	AIN5 ;RXD1 ;LSCLK ;PWME ;PWMC	
Pin 19	-	PA0	EXI0 ;AIN0 ;PWMC ;OUTCLK ;TMR9OUT	
Pin 20	-	PC1	PWMF1	

# Q112 Micro's Pinout

## ML610Q11x Quick Start Guide

### LaPi Development Board - J4



### LAPIS - ML610Q112

Pin 01 -	Test
Pin 02 -	PD1
Pin 03 -	PB0 RXD0 ; EXI4 ; AIN2 ; PWM0 ; OUTCLK ; CMP1OUT
Pin 04 -	n.c.
Pin 05 -	PB1 TXD0 ; EXI5 ; AIN3 ; PWM0 ; TXD1
Pin 06 -	PB2 EXI6 ; PWM0 ; RXD1
Pin 07 -	PB3 EXI7 ; SIN ; TXD1
Pin 08 -	PA2 EXI2 ; PWM0 ; CLKIN ; COMP0OUT
Pin 09 -	TESTF
Pin 10 -	PD2
Pin 11 -	PC3 TMR9OUT
Pin 12 -	PD3
Pin 13 -	PD4
Pin 14 -	PC2 PWMF2
Pin 15 -	PD5
Pin 16 -	PA1 EXI1 ; AIN1 ; CMP1P ; PWM0 ; LSCLK ; TMR9OUT
Pin 17 -	PB4 CMP0P ; SOUT ; TXD0 ; TXD1
Pin 18 -	PB5 CMP0M ; RXD0 ; SCK ; SCL ; PWMF2
Pin 19 -	PB6 AIN4 ; CLKIN ; SDA ; PWMF1
Pin 20 -	n.c.
Pin 21 -	VSS (GROUND)
Pin 22 -	VDD (2.7-5.5V)
Pin 23 -	PC7 AIN7
Pin 24 -	PB7 AIN5 ; RXD1 ; LSCLK ; PWMF0 ; PWM0
Pin 25 -	PA0 EXI0 ; AIN0 ; PWM0 ; OUTCLK ; TMR9OUT
Pin 26 -	PC6 AIN6
Pin 27 -	PC1 PWMF1
Pin 28 -	PC5 SDA
Pin 29 -	PC4 SCL
Pin 30 -	PC0 PWMF0 ; TMR9OUT
Pin 31 -	PD0
Pin 32 -	RESET

# Coming soon...

- Development Boards have been built up...
- Sample code has been written...
- GUI is ready...
- Packaging is being finalized...
- Target Price for Kit ~\$99
- Shipments should be ready in OCTOBER 2013.