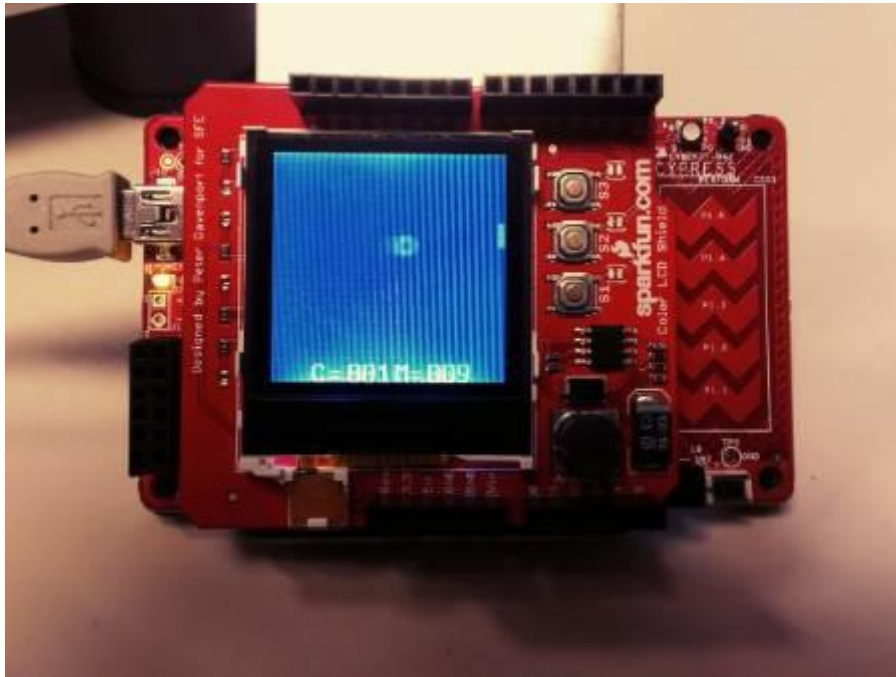


## PSoC 4 Pioneer Kit Community Project#18 - 'Catch the Shells' Game with ColorLCD Shield

Today's project posting implements another simple and fun game using the PSoC 4 Pioneer Kit + the ColorLCD Shield.

The goal of the game is to catch as many shells as possible. The shells are dispatched from one edge of the Color LCD and the user has to catch these shells by moving a yellow bar using the CapSense slider. The no. of caught shells and missed shells are displayed at the bottom of the Color LCD.



The interesting thing about this project is the use of the a ColorLCD as output (over SPI), and the CapSense Slider as the inputs. The project also implements a Counter to help with designing the game algorithm. With all of the Input and Output handled in hardware (Serial Comm. Block for SPI, TCPWM Block for Counter), the CPU is free to implement the smarts of the game.

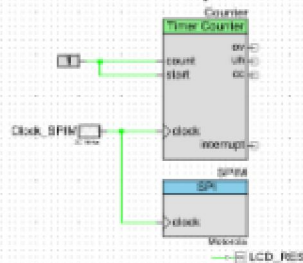
## Catch the Shells

Description: This is a small game built for the PSoC 4 Pioneer Kit using the Color LCD shield. The goal is to catch as many shells as possible. The shells are dispatched from the one edge of the Color LCD and the user has to catch these shells by moving a yellow bar using the CapSense slider. The no. of caught shells and missed shells are displayed at the bottom of the Color LCD.

### Input



### Output

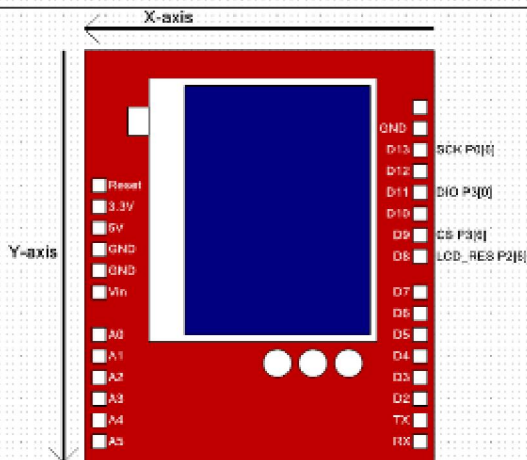


Counter is used for random number generation. The value of counter is read to start the shells from a random position on the Color LCD.

SPIM is used to communicate with the LCD driver.

The connections of SPIM with the Color LCD shield are given below:  
DIO(D11) of the Color LCD shield connects to P[0] of the PSoC 4,  
SCK(D13) of the Color LCD shield connects to P[0] of the PSoC 4,  
CS(D9) of the Color LCD shield connects to P[3] of the PSoC 4 and  
LCD\_RES(D8) of the Color LCD shield connects to P[2] of the PSoC 4

## Connections with the Color LCD shield



### Hardware connections:

No extra connections required besides plugging in the ColorLCD shield.

See screenshot below for the pin mapping done in the PSoC Creator project.

Alias	Name	Port	Pin	Log
Cmod	\CapSense\Cmod\	P4[2] SCB0:SPI:SCLK	22	
LinearSlider0_e0_LS	\CapSense:Sns[0]\	P1[11] TCPWM2:N	38	
LinearSlider0_e1_LS	\CapSense:Sns[1]\	P1[2] TCPWM3:P	38	
LinearSlider0_e2_LS	\CapSense:Sns[2]\	P1[3] TCPWM3:N	40	
LinearSlider0_e3_LS	\CapSense:Sns[3]\	P1[4]	41	
LinearSlider0_e4_LS	\CapSense:Sns[4]\	P1[5]	42	
	\SPIN:miso_m\	P8[11] SCB1:I2C:SDA, SCB1:SPI:MISO, TCPWM0:N, SCB1:UART:TX	12	
	\SPIN:mosi_m\	P8[9] SCB1:I2C:SCL, SCB1:SPI:MOSI, TCPWM0:P, SCB1:UART:RX	11	
	\SPIN:sclk_m\	P0[6] SCB1:SPI:SCLK, EXTCLK	80	
	\SPIN:ss0_m\	P0[7] SCB1:SPI:SS0	31	
	\SPIN:ss1_m\	P8[4] SCB1:SPI:SS1, TCPWM2:P	15	
	\SPIN:ss2_m\	P3[5] SCB1:SPI:SS2, TCPWM2:N	16	
	\SPIN:ss3_m\	P8[6] SCB1:SPI:SS3, TCPWM3:P	17	
LCD_RKS		P2[6] TCPWM1:P	8	

So, what's your highest score? My fat fingers only managed a high score of 33, i'm pretty sure you can beat me!

Your assignment - try to adjust the CapSense slider sensitivity to make the game "easier" or "harder" to play! This could be a fun experiment to run on your board.

<http://www.element14.com/community/message/77648>