

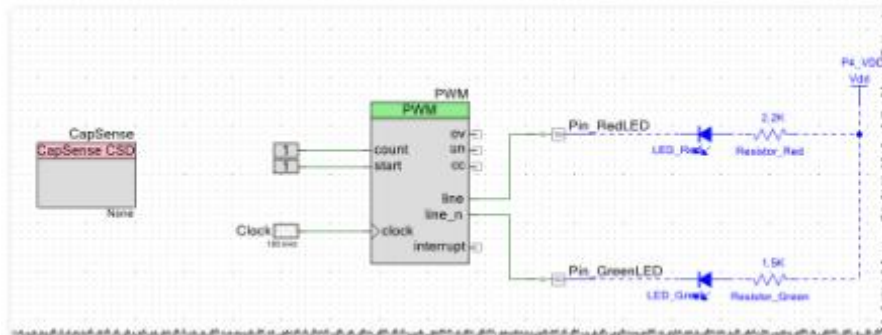
PSoC 4 Pioneer Kit Community Project#02 - CapSense Slider

On the 2nd day of our **100 Projects in 100 Days** community effort, I am posting one of the PSoC 4 Pioneer Kit's bundled example projects.

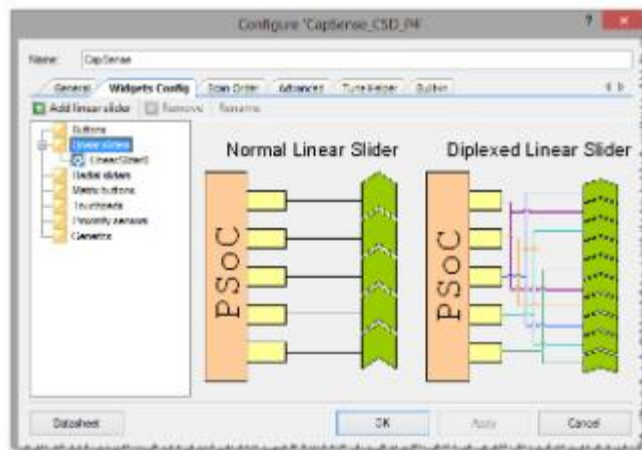
This is a very simple yet effective CapSense® demo that implements a 5-segment slider, like the one available on the Pioneer kit.

Moving your finger across the capacitive touch slider on the board, you will observe the multicolor LEDs gradually changing color from red to green. These LEDs are driven by the PWM Component.

Project Schematic:



(Actual PSoC Creator project schematic "TopDesign.cysch")



(CapSense Component Customizer - Implementing a Capacitive Touch Slider)

Hardware Connections (all internal to the board, no external connections required):

- 5-segment Slider - P1[1] - P1[5]
- Green LED - P0[2]
- Red LED - P1[6]

Software Setup:

- See steps #1 - #6 from the main post [here](#)
- Main.C - This example project implement simple firmware in the project's main.c as shown below (already completed in the example project). The code implemented scans the CapSense slider, then updates the PWM's PulseWidth with the slider value.

```
54 /* Define constant for capsense slider */
55 #define NO_FINGER 0xFFFFu
56
57 void main()
58 {
59     uint16 sliderPosition = NO_FINGER;
60     uint16 lastPosition = NO_FINGER;
61
62     /* Enable Global Interrupts */
63     CyGlobalIntEnable;
64
65     /* Start all the components */
66     Clock_Start();
67     PWM_Start();
68     CapSense_Start();
69
70     /* Initialize CapSense baselines by scanning enabled sensors */
71     CapSense_initializeAllBaselines();
72
73     for(;;)
74     {
75         /* Update all baselines */
76         CapSense_UpdateEnabledBaselines();
77
78         /* Start scanning all enabled sensors */
79         CapSense_ScanEnabledWidgets();
80
81         /* Wait for scanning to complete */
82         while(CapSense_IsBusy());
83
84         /* Find Slider Position */
85         sliderPosition = CapSense_GetCentroidPos(CapSense_LINEARSLIDER0_LS);
86
87         /* If finger is detected on the slider */
88         if(sliderPosition != NO_FINGER)
89         {
90             /* If finger position on the slider is changed then update the LED color */
91             if(sliderPosition != lastPosition)
92             {
93                 /* Update the PWM pulse width with the new slider position */
94                 PWM_WriteCompare(sliderPosition);
95                 lastPosition = sliderPosition;
96             }
97         }
98     }
99 }
```

(Project firmware - main.c)

<http://www.element14.com/community/message/75477>