Migrating a Project from CY8CKIT-001 to CY8CKIT-030 or CY8CKIT-050 - KBA203633

Version 2

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Question:

How do I make an example project designed on CY8CKIT-001 to work with CY8CKIT-030 or CY8CKIT-050?

Answer:

The CY8CKIT-030 and CY8CKIT-050 boards have a different architecture compared to the CY8CKIT-001, so you need to reassign some pins on an example project before it can be migrated from CY8CKIT-001 to CY8CKIT-030 or CY8CKIT-050.

Differences between CY8CKIT-030/050 and CY8CKIT-001 (Note all bypass capacitor on the kit)

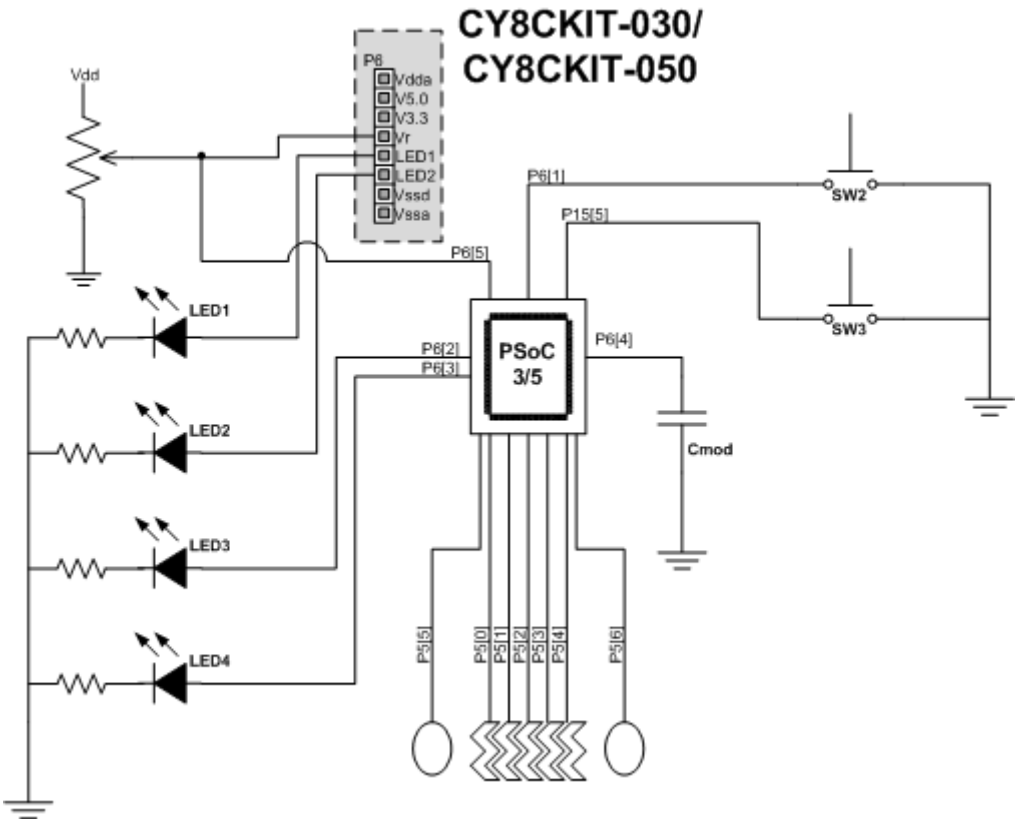
The CY8CKIT-030/050 and CY8CKIT-001 kits have similar functionality but have some differences in their pin assignments. The CY8CKIT-001 has all the prototyping resources like the switches, LEDs, and potentiometer connected to a header from where they can be connected to the pins of the user's choice. In the CY8CKIT-030 and CY8CKIT-050, switches, LEDs, and potentiometer are directly hard-wired to specific pins on the device.

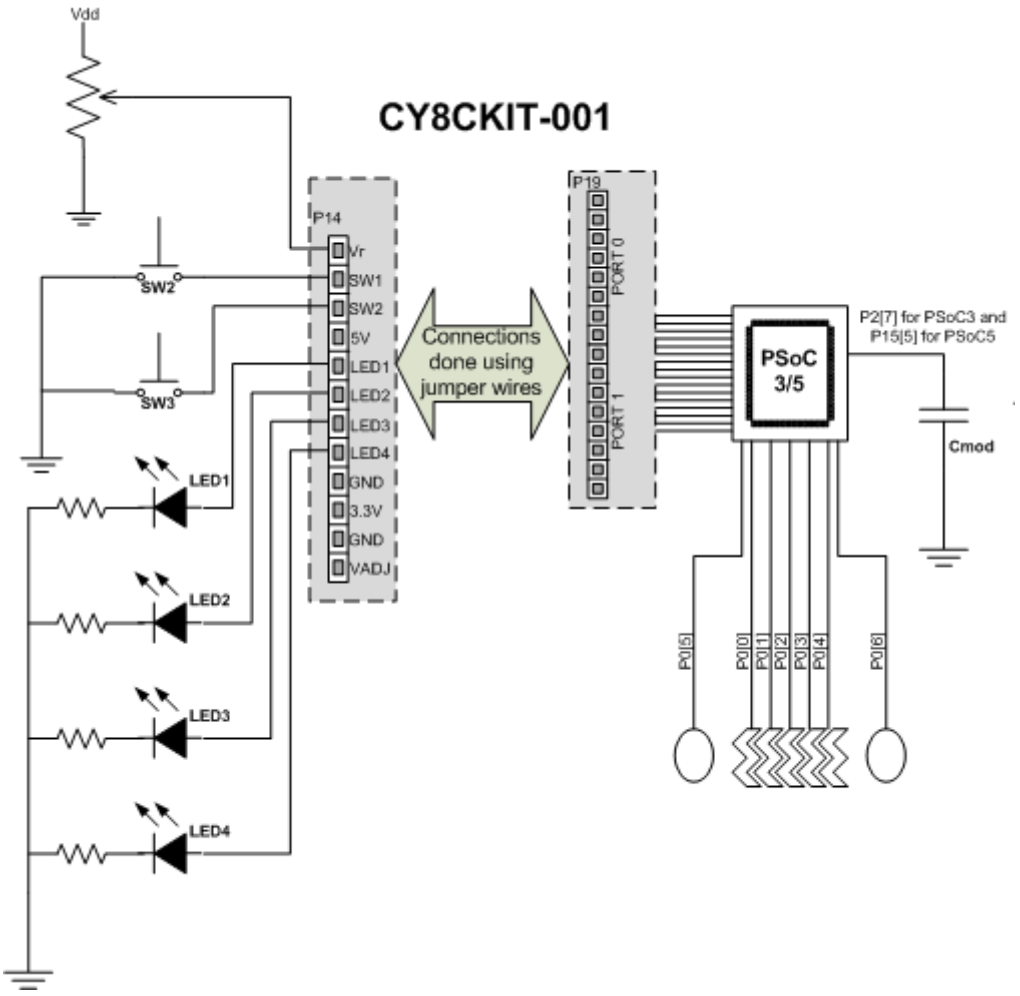
The table below shows how each prototyping resource is connected in the board.

	CY8CKIT-001	CY8CKIT-030	CY8CKIT-050
Switches	Two switches connected to two pins on header P14.	Two switches are hardwired on to pins P15[5] and P6[1] respectively	Two switches are hardwired on to pins P15[5] and P6[1] respectively
LEDs	All four LEDS are brought out on to a header P14 and is expected to be connected to the output pins using jumper wires	Two of the LEDs are hardwired to P6[2] and P6[3] respectively. The other two LEDs are brought out on the header P6	Two of the LEDs are hardwired to P6[2] and P6[3] respectively. The other two LEDs are brought out on the header P6
Potentiometer	Brought out onto a pin named Vr on the header P14	Hardwired to P6[5] and also brought out on the Vr pin on header P6	Hardwired to P6[5] and also brought out on the Vr pin on header P6

CapSense Buttons	Two buttons on P0[5] and P0[6]	Two buttons on P5[5] and P5[6]	Two buttons on P5[5] and P5[6]
CapSense Slider	5-element linear slider on P0[0:4]	5-element linear slider on P5[0:4]	5-element linear slider on P5[0:4]
Modulation capacitor for CapSense	For the PSoC3 processor module (CY8CKIT-009), the Cmod is on P2[7] and for the PSoC5 processor module (CY8CKIT-010) the Cmod is on P15[5]	CMod on P6[4]	CMod on P6[4]

The schematic snippet below gives a glimpse of pin assignments for the resources on these kits.





Changes required in a project to make it work with CY8CKIT-030 or CY8CKIT-050

Due to the differences in the architecture of the two boards, projects based on CY8CKIT-001 require reassignment of pins to work on CY8CKIT-030 or CY8CKIT-050 kits. You just need to change the pin assignments in the project's cydwr file. Do the following:

1. Reassign digital inputs in the project that use switches as input sources in the cydwr file to pins P15[5] and/or P6[1].
2. Connect LED connection outputs to P6[2] or P6[3].
3. Reassign analog inputs that use potentiometer outputs to P6[5]. Alternatively,you can use jumpers to connect the Vr pin on header P6 to the desired pin on the PSoC device.
4. Reassign connections of CapSense Sensors to P5[5] and P5[6]. Assign 5-element slider sensors to P5[0:4]. Change the Cmod assignment to P6[4].
5. Reassign pin assignments on Port 6 and Port 15 to other ports such as Port0 or Port3. This is because Port 6 and Port 15 on the CY8CKIT-030 and CY8CKIT-050 are used to hard-wire some of the components on the board. In addition, using Port 0 or Port 3 improves the accessibility on the board for these signals.

6. Access the pins brought out as inputs or outputs through expansion connectors Port E and Port D on CY8CKIT-030. Port E carries all the pins on Port0, Port3, and Port4; Port D carries Port1, Port2, and Port5.

The following figure shows the best fit pin assignment on the CY8CKIT-030 and CY8CKIT-050.