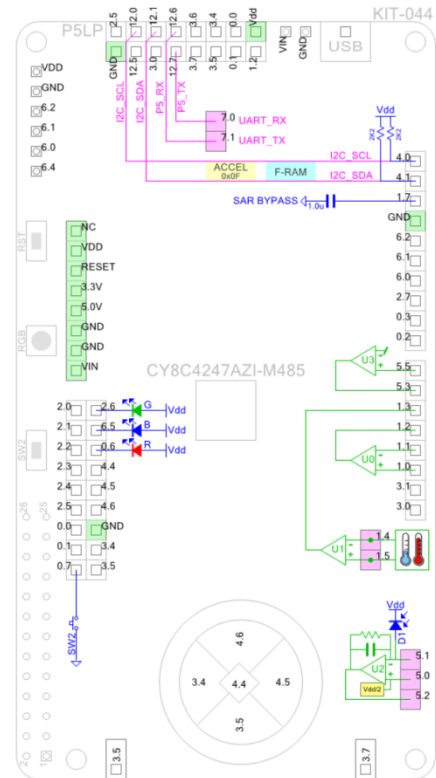


KIT-044: annotation for CY8CKIT-044 Pioneer Kit

0.2

Features

- Shows pins with direct access to PSoC hardware.
- Shows on-board bypass capacitors, LEDs, switch.
- Creates schematics using CY8CKIT-044 Pioneer kit.
- Doesn't consume system resources.
- Doesn't affect run-time performance.



General description

The KIT-044 is an external annotation stub for the Cypress CY8CKIT-044 PSoC4 M-Series Pioneer Kit. It identifies terminals with direct access to PSoC4 internal hardware (OpAmps, ADC) and shows connections to the on-board parts (bypass capacitor, LEDs, switch button, USB, SWD, etc.). Component neither consumes system resources, nor affects the run-time performance of the project.

When to use KIT-044

The component was developed to assist quick identification of the on-board parts and pins on the CY8CKIT-044 PSoC4 M-Series Pioneer Kit. It is also useful for documenting basic projects built using CY8CKIT-044 Pioneer Kit and creating schematics using Creator stock of-chip components and complimentary PSoC Annotation Library^(*) [1].

* Annotation Library is a collection of the off-chip annotation components

Rev. *A

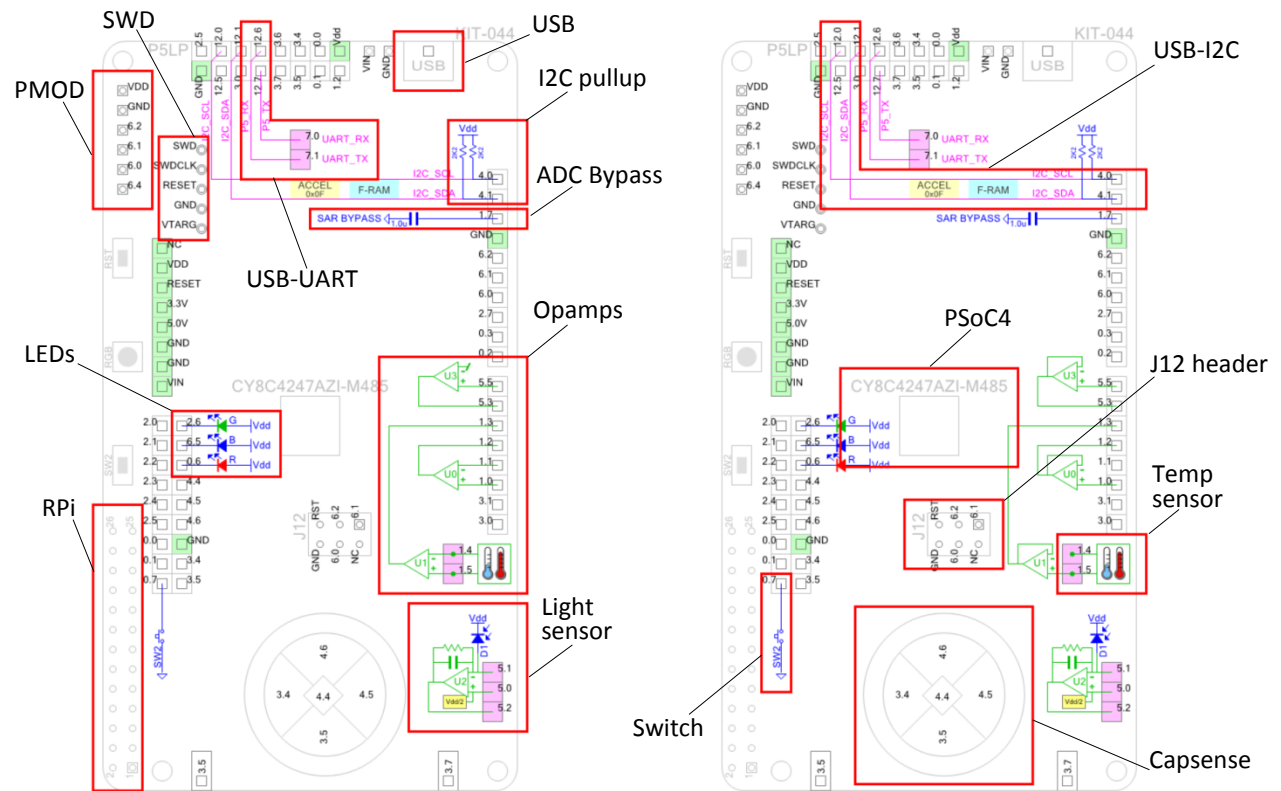
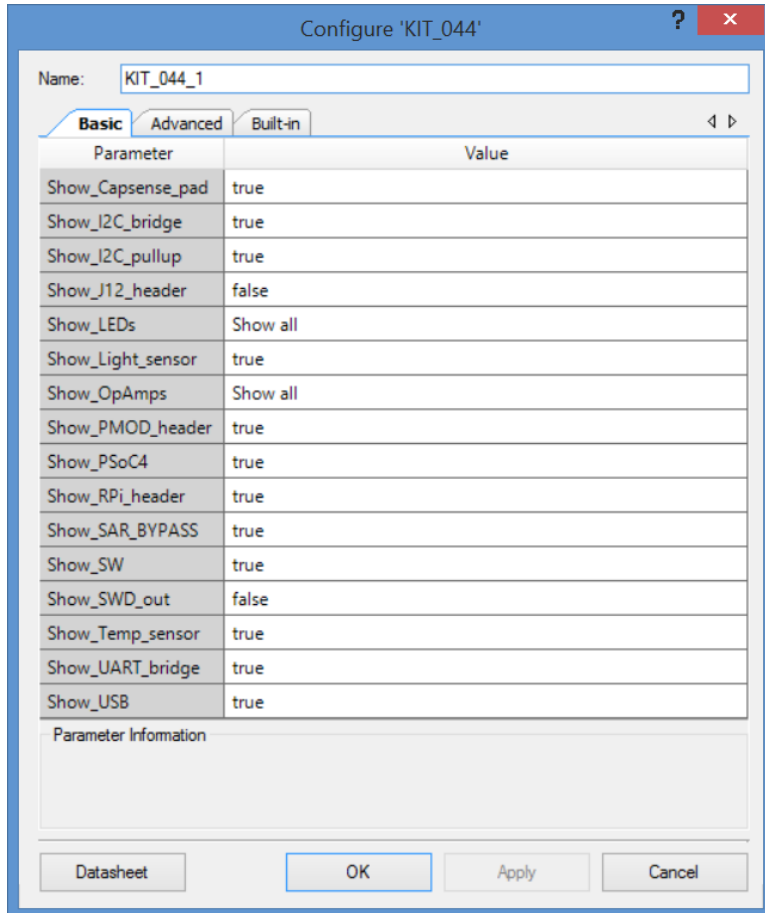


Figure 2. Component appearance with all options enabled (top-to-bottom): PMOD header, SWD header, USB-UART bridge, mini-USB connector, I2C pullup resistors, SAR_ADC bypass capacitor, RGB LEDs, Opamps, Raspberry Pi header, Light sensor, USB-I2C bridge (including 3D Accelerator and F-RAM), PSoC4 chip, J12 Arduino SPI header, Temperature sensor, on-board switch button, Capsense gesture pad.

Parameters and Settings

The Basic dialog provides following parameters:



Show_Capsense_pad (bool)

Sets visibility of the Capsense gesture pad. Default value is True.

Show_I2C_bridge (bool)

Sets visibility of the USB-I2C bridge. Default value is True. When enabled, it automatically displays 3-Axis digital accelerometer by Kionix® (KXTJ2-1009) and F-RAM.

Show_I2C_pullup (bool)

Sets visibility of the I2C pullup resistors (2.2 k) on pins 4.0 and 4.1. Default value is True.

Show_J12_header (bool)

Sets visibility of the J12 Arduino SPI header (2x3). Default value is True.

Show_LEDs (bool)

Sets visibility of the onboard RGB LEDs. Default value is True.

Show_Light_sensor (bool)

Sets visibility of the onboard light sensor. Default value is True.

Show_OpAmps [Show all / Hide all / Show selected]

Sets visibility of the on-chip OpAmps. Default setting is Show_all. When Hide_all option is selected, all OpAmps are hidden. When Show_selected option used, visibility of each OpAmp is controlled by the individual setting in the **Advanced** section.

Show_PMOD_header (bool)

Sets visibility of the Digilent PMOD header (1x6). Default value is True.

Show_PSoC4 (bool)

Sets visibility of the PSoC4 chip and part number (CY8C4247AZI-M485). Default value is True.

Show_RPi_header (bool)

Sets visibility of the Raspberry Pi header (2x13). Default value is True.

Show_SAR_BYPASS (bool)

Sets visibility of the SAR_ADC bypass connector and capacitor. Default value is True.

Show_SW (bool)

Sets visibility of the kit onboard switch button. Default value is False.

Show_SWD_out (bool)

Sets visibility of the external device SWD programming pins. Default value is False.

Show_Temp_sensor (bool)

Sets visibility of the on-board temperature sensor. Default value is True.

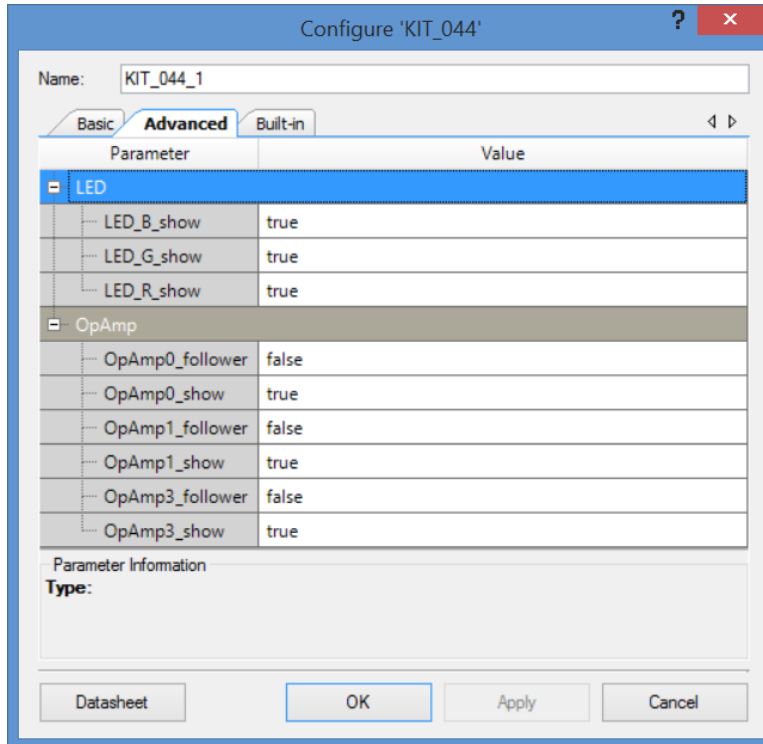
Show_UART_bridge (bool)

Sets visibility of the USB-UART bridge. Default value is True.

Show_USB (bool)

Sets visibility of the Mini-USB programming and debugging connector. Default value is True.

Advanced dialog provides following parameters:



LEDs:

- **LED_X_show (bool)**

Set visibility of the Red, Green or Blue LEDs (X=R, G, B). Default value is true. This option is active in Show_selected mode only. LEDs settings Show_all and Hide_all override this setting.

OpAmps:

- **OpAmpX_follower (bool)**

Set OpAmp as a follower. Default is false.

- **OpAmpX_show (bool)**

Set visibility of the on-chip OpAmp. Default value is true. This option is active in Show_selected mode only. OpAmps settings Show_all and Hide_all override this setting.

Application Programming Interface

The component does not have associated API.

Resources

The component doesn't consume any hardware resources.

Performance

The component doesn't affect project run-time performance.

Application examples

Typical application example of the KIT-044 component is provided in the **Appendix 1**.

Component Changes

Version	Description of changes	Reason for changes/impact
0.0	First beta release.	
0.1	Added FRAM and Accelerator I2C address.	
0.2	All pins are re-aligned to match the Arduino standard layout. I2C pullup resistors added. Input pins for Opamp1 are moved. Minor cosmetic enhancements. Component datasheet is provided.	

References

1. PSoC Annotation Library v1.0, <https://community.cypress.com/thread/48049>

Appendix 1

Example of the KIT-044 used in conjunction with complimentary Annotation Library v1.0 [1].

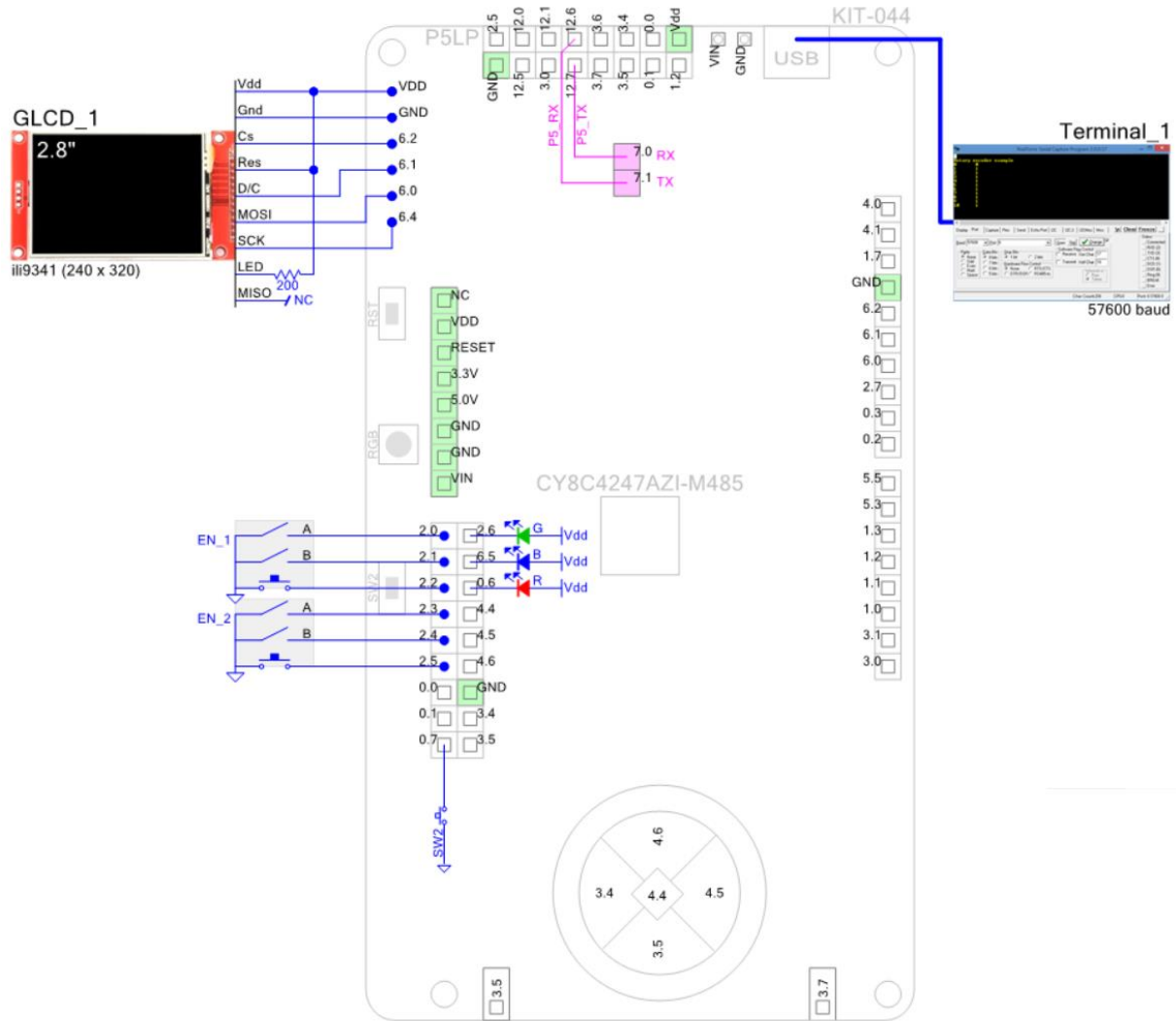


Figure 3. Annotation example of the project using GLCD ili9341 connected to the PMOD terminal of CY8CKIT-044 and PC-based text terminal connected through USB-UART bridge. Pair of the rotary shaft encoders with push button is used for system control. The annotation diagram utilizes Annotation Library components (GLCD_9341, Terminal, Rotary Encoder) and KIT-044 annotation stub.