## CONTENTS

<table>
<thead>
<tr>
<th>PAGE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Title Table, Table of Contents, Drawing Numbers</td>
</tr>
<tr>
<td>02</td>
<td>Functional Block Diagram</td>
</tr>
<tr>
<td>03</td>
<td>Power Domain Block Diagram</td>
</tr>
<tr>
<td>04</td>
<td>Kit Power Supply and PSoC 6 MCU USB Detect</td>
</tr>
<tr>
<td>05</td>
<td>Onboard Regulators</td>
</tr>
<tr>
<td>06</td>
<td>PSoC 5LP Based KitProg3</td>
</tr>
<tr>
<td>07</td>
<td>PSoC 6 MCU</td>
</tr>
<tr>
<td>08</td>
<td>Multiplexed Pins &amp; Crystals</td>
</tr>
<tr>
<td>09</td>
<td>KitProg3 Interface</td>
</tr>
<tr>
<td>10</td>
<td>Peripherals</td>
</tr>
<tr>
<td>11</td>
<td>Arduino &amp; Extended Headers</td>
</tr>
<tr>
<td>12</td>
<td>Accessories</td>
</tr>
<tr>
<td>13</td>
<td>Revision History</td>
</tr>
</tbody>
</table>
FUNCTIONAL BLOCK DIAGRAM

KitProg3 (PSoC 5LP)

- Status LED
- Mode Switch
- KitProg3 USB Micro-B
- Voltage Monitoring
- KitProg3 H/W ID

PSoC 62S4 MCU

- Reset Button
- 10-pin SWD/JTAG Header
- SWD JTAG
- I2C
- 2 wire UART (TX, RX)
- P6_VBUS

PSoC 6 MCU USB Device Detect

USB_VBUS_DET

2x CapSense Buttons & 1x 5-Segment Slider

1x User Button

Thermistor

Ambient Light Sensor

Crystals 32.768 KHz & 24 MHz

CMOD

2x User LEDs

Extended Headers

Arduino Headers

QSPI Flash S25FL512S

PSoC 6 MCU USB Micro-B Device

Infineon Device

Other Device

No Load

DP, DM

Infineon Device

Other Device

No Load

03

CYPRESS SEMICONDUCTOR © 2020

CYPRESS SEMICONDUCTOR
198 CHAMPION COURT
SAN JOSE, CA 95134
(408) 943-2600

Page Title : Functional Block Diagram

SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit

Document Number
Drawn By
Approved By
Rev

630-60588-01
RISR
RKAD
03

Date: Tuesday, February 02, 2021
Sheet 2 of 13
NOTE: Cannot supply 5V to Arduino header when powering through VIN or PSoC 6 MCU USB Micro-B.
Note: This circuit is used to reduce the leakage on P6_VDD domain.
ONBOARD REGULATORS

1.8V Buck Regulator

Note: Populate R8 or short J14 to change the voltage to 2.5V for e-Fuse programming.

3.3V Buck Regulator

Note: Do not remove jumper when powered.

PSoC 6 MCU Power Selection Jumper

Connect to VCC_1V8 for e-Fuse programming. (Default jumper position is 3.3V). Populate R8 or short J14 to change the voltage to 2.5V for e-Fuse programming.

Power LED

Note: Do not remove jumper when powered.

PSoC 6 MCU Current Measurement

Note: Do not remove jumper when powered.
Additional Multiplexed Pins

- R108 0 OHM
- R129 0 OHM
- R1129 THERM_VDD
- ARD_P10_4
- R110 0 OHM
- R127 0 OHM
- R1127 THERM_OUT
- ARD_P10_5
- R114 0 OHM
- R130 0 OHM
- R1130 THERM_GND
- ARD_P10_6
- R111 0 OHM
- R131 0 OHM
- R1131 ILS_OUT
- ARD_P10_7
- R124 0 OHM
- R125 0 OHM
- R1124 USB_VBUS_DET
- EXT_P5_1
- R74 0 OHM
- R76 0 OHM
- R1174 ARD_I2C_SCL
- TDO_SWO
- R79 0 OHM
- R81 0 OHM
- R1179 ARD_I2C_SDA
- TDI

Note: Remove R74, R79 and mount R76, R81 for JTAG connection.

Note: Remove R108, R110, R111, R114 and populate R127, R128, R130, R131 for full functionality of the Arduino compatible shield.

Note: Port P6_5 defaults to logic high with internal pull-up on device reset. This can result in higher deep sleep and hibernate current when measured at header J13. If JTAG functionality is not being used, configure P6_5 drive mode to High-Z Analog in the project.

CapSense Multiplexed Pins

- P7_0 560 OHM
- R50 0 OHM
- CS_BTN_0
- EXT_P7_0
- P7_1 560 OHM
- R139 0 OHM
- CS_BTN_1
- EXT_P7_1
- P9_3 560 OHM
- R135 0 OHM
- CS_SLD_0
- ARD_P9_3
- P8_1 560 OHM
- R134 0 OHM
- CS_SLD_1
- EXT_P8_1
- P8_0 560 OHM
- R134 0 OHM
- CS_SLD_2
- EXT_P8_0
- P7_3 560 OHM
- R137 0 OHM
- CS_SLD_3
- EXT_P7_3
- P7_2 560 OHM
- R153 0 OHM
- CS_SLD_4
- EXT_P7_2

CMOD

- C70 2.2nF
- 50V
- GND
ARDUINO & EXTENDED HEADERS

Note: 5V on Arduino header will be present only when KitProg3 USB is connected.

Reverse Voltage Protection for Arduino Header
ACCESSORIES

Cylindrical Bump-ons

Acrylic Overlay
Overlay
- Color: Clear, Transparent
- Finish: Matt
- Dimensions:
  - 42.62mm - length
  - 40.28mm - height
  - 1mm - thickness

PCBA label
- PCA Label
- QR CODE Label

Jumper Shunts

SPC02SYAN
ACC8

SPC02SYAN
ACC9

SPC02SYAN
ACC16
## REVISION HISTORY

<table>
<thead>
<tr>
<th>REV</th>
<th>DESCRIPTION OF CHANGE</th>
<th>ORIG. OF CHANGE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Initial Release</td>
<td>RISR</td>
<td>11/06/2020</td>
</tr>
</tbody>
</table>
| 02  | 1) Test points ‘TP4’ and ‘TP12’ are mounted by default.  
    2) Single ended mode sensing changed to differential mode sensing for thermistor by default.  
    3) Reference designators changed for switches SW1, SW2, SW3  
    4) QSPI Chip select net name is ‘FLASH_SSEL’. | RISR       | 20/07/2020 |
| 03  | 1) Block Diagrams updated  
    2) U14, U15 updated with TPD3S044DBVR  
    3) U4 updated with TPS22917DBVR  
    4) CSB2, R140 added  
    5) Reverse Voltage Protection circuit added for Buck Regulators  
    6) R149 pulldown resistor added; Multiplexing resistors removed for P10_3  
    7) ALS supply changed to P6_VDD_BUF  
    8) VBUCK & VCCD shorted by reoving R46; C56 removed  
    9) Drawing nos made not DNI; JMP1 & JMP2 removed; P6_VDD_BUF renamed as P6_VDD_SW | RISR       | 14/11/2020 |