Layout Notes:

* Label all the Nets & Connections on the Silkscreen

* Place all input and output capacitors as close to the device as possible on the top and bottom side of the board

Layer Stackup:
Top: PWR & Device Signals
L2: GND
L3: +5V_USB & BATT+
L4: Kelvin & measurement signals
L5: GND
L6: Kelvin & measurement signals
L7: GND
Bottom: PWR & Device Signals

* Place all the Power resistors, TPS22929D and current limiting resistor for LED’s on the bottom side of the board

* Place LEDs and Test Points on the top side of the board around the board

* Place Banana connectors on the Top center of the board and USB2ANY connector on the left bottom center of the board

* Compact the design on the top side with active and passive components (excluding LEDs, headers, Test Points & Connectors) such that it will fit in 3inx2in size

* Make the total board size, including connectors, headers, test points etc as 4inx3in

* Make the Power & Force lines as thick copper pour with multiple via’s and sense lines as thin traces

* Check each device footprint matches with it’s Datasheet to ensure that pinout is correct

* Math trace resistance on VIN & VOUT of TPS22993 for better RON

* Place Rectangle box (Ex: 3inx2in) on the silk screen

* Place box on silk screen around each DC-DC and TPS22993 including input and output caps

* Place Banana Connectors at standard 0.75in spacing at Top center of the board

* Place USB2ANY connector at the Left bottom center of the board
Place these GND TPs on the top corners of the board

Place these GND TPs on the bottom corners of the board

De-coupling Caps:

Layout Note: Place these caps at the border of 3inx2in rectangle

Layout Note: Place these combination of caps at 4 corners of the board

Layout Note: Place these caps at 4 corners of the board
USB2ANY EXTERNAL CONNECTIONS

Important Layout Note: The USB2ANY is a right angle connector, need to make sure the connections are oriented correctly so the board will mate correctly with the USB2ANY

Important Layout Note: Vertical and Horizontal spacing is exactly the same as the USB2ANY board. We can refer to the USB2ANY board layout to insure this is correct.

Important Layout Note: Place USB2ANY connector at the bottom of the board such that it connects in only one direction
1W is not sufficient, we need 2W. So, replace it with 2.2 Kohm resistor. Alternate P/N: CRM2512-JW-2R2ELF for R56 & R57.

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TPS22993 U7 with TPS62130 U11 CONNECTIONS
TPS22993 VOUTx pins LED INDICATORS

Layout Note: Place all TPS22929D parts & series current limiting resistors on the bottom side of the board.
TPS22993 VOUTx pins and DC-DC Vout LED INDICATORS

Layout Note: Place all TPS22929D parts & series current limiting resistors on the bottom side of the board.
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