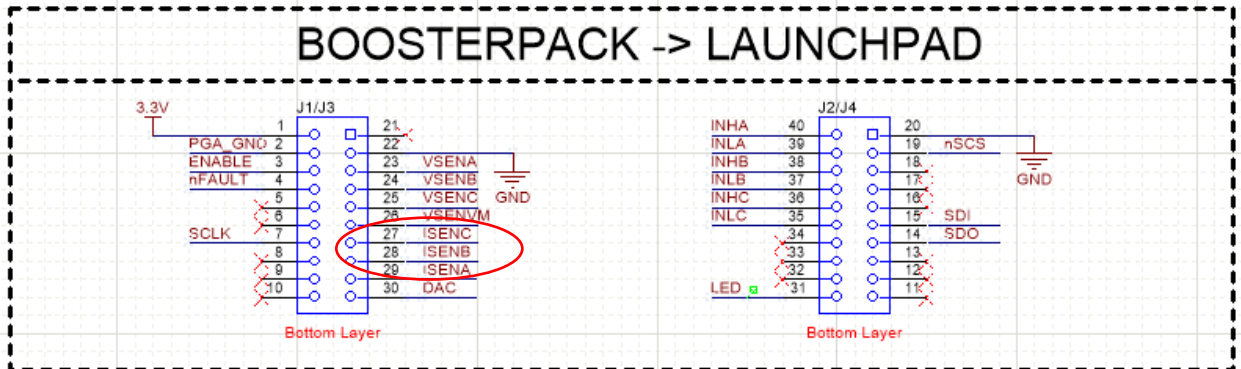In order to use the LAUNCHXL TMS320f280049C with the DRV8323RS you will need to first design your custom board by closely following the BOOSTXL DRV8323Rx schematic (you can find the schematic in this zipped folder here), but then make sure that the signals are connected to the launchpad headers in the same order that is found in the schematic for the BOOSTXL DRV8320RS. I have outlined those adjustments below:

1. ISENA, ISENB, and ISENC must be connected to the booster pack header in the same order as is shown in the BOOSTXL DRV8320Rs schematic (you can find this schematic in this zipped folder here, as well as the screenshot of the correct connections below)


It is important that you do not connect the ISENA/B/C signals to the launchpad headers in the same order as the BOOSTXL DRV8323Rx schematic, since the order would be incorrect to connect to the appropriate pins on the LAUNCHXL TMS320f280049C.

The ISENA/B/C signals are created by using the output of the SOA/B/C pins and passing them through a low pass filter as shown in the BOOSTXL DRV8323Rx schematic as shown below.
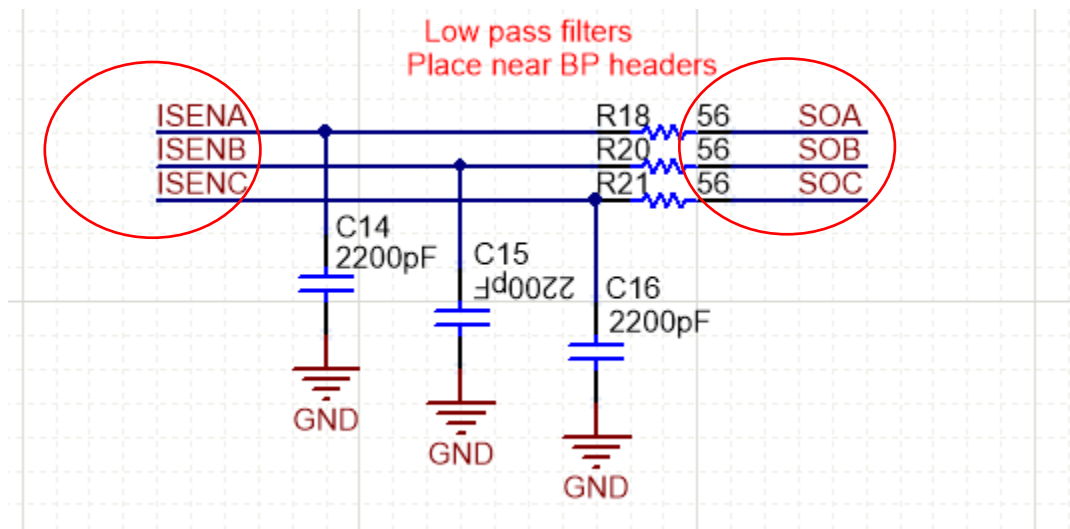
2. VSENVM needs to be routed to the header location as shown below (based on the DRV8320 schematic)

BOOSTERPACK -> LAUNCHPAD
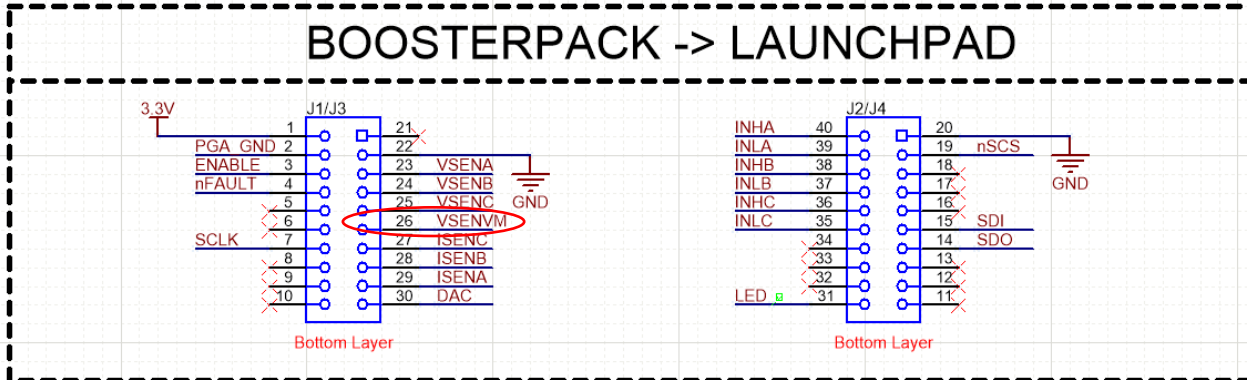
3. For sensorless FOC you won't have hall inputs, so you will want to **remove** this portion of the BOOSTXL DRV8323Rx schematic
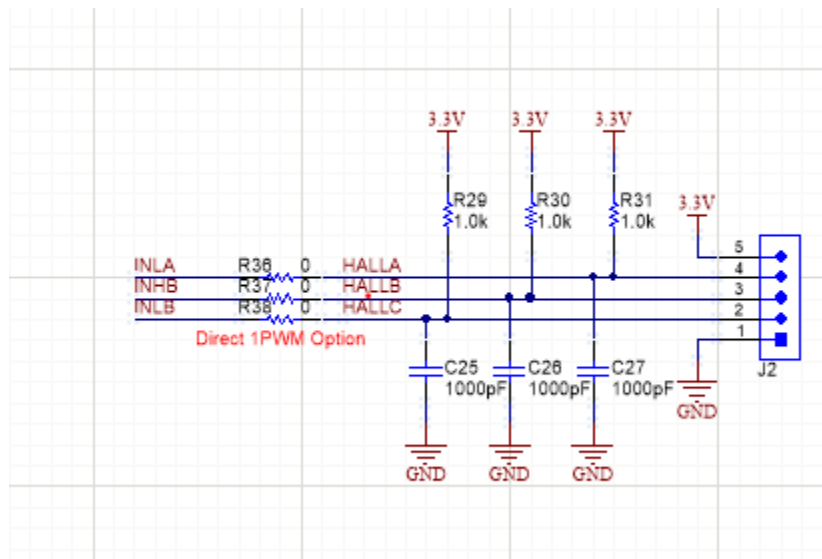

Also, you will not route any hall signals to the launchpad connectors (since there is no hall signals for sensorless FOC)

4. Route the nSCS/GAIN signal to the appropriate pin as circled in red below (based on the BOOSTXL DRV8320RS schematic)


BOOSTERPACK -> LAUNCHPAD
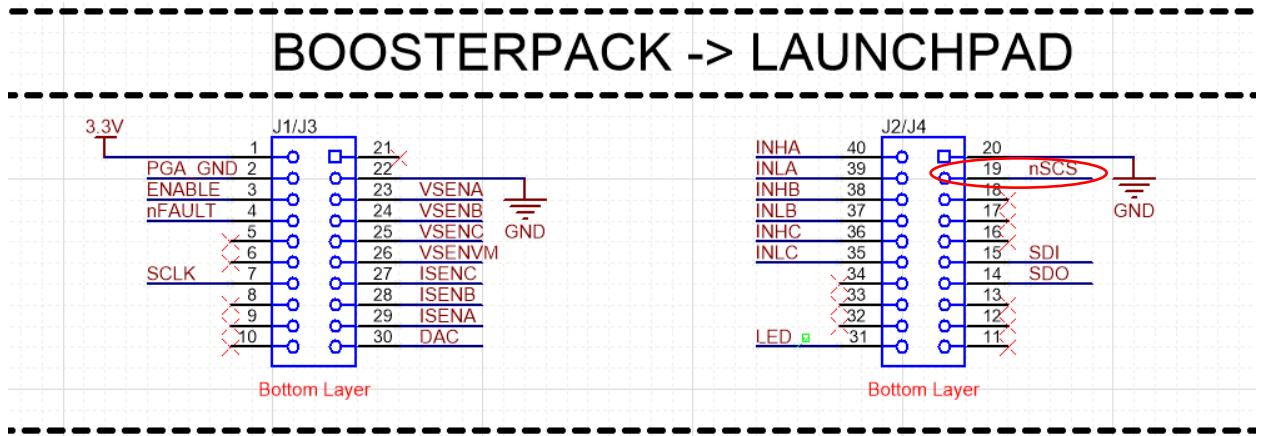
5. Connect the ENABLE, nFAULT, and LED signals to the launchpad connectors as shown below (based on the BOOSTXL DRV8320RS schematic)
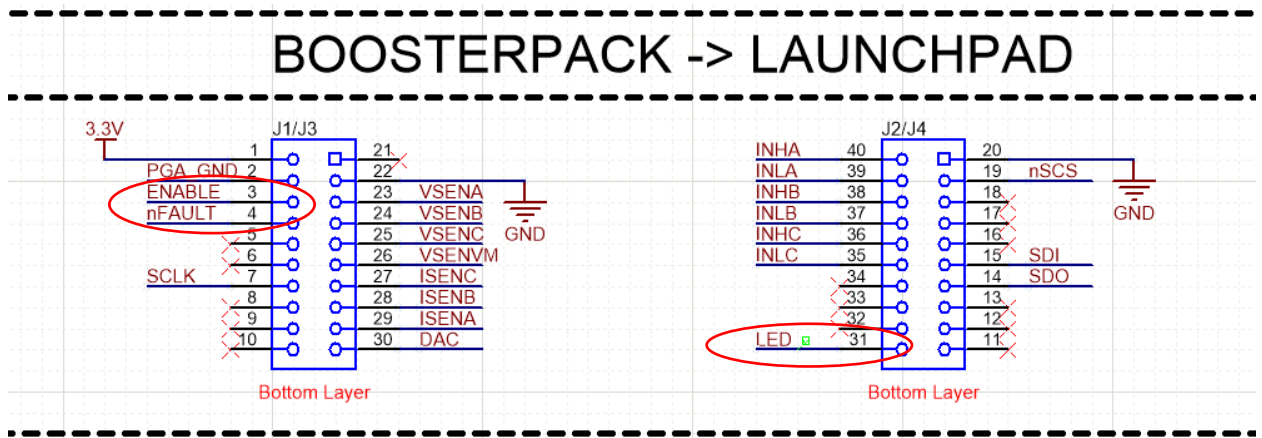

6. The BOOSTXL DRV8323Rx schematic was designed to support both the hardware and spi variant of the device, but since you are only using the SPI variant of the DRV8323R, you won't need to include the components that are specific to the hardware variant. The hardware variant signals that you do not need for the SPI variant are:

   a. IDRIVE

   b. VDS

   c. MODE

I have included a schematic below that you can follow that shows the unnecessary signals removed (compare this to the BOOSTXL DRV8323Rx schematic and you will see the difference)
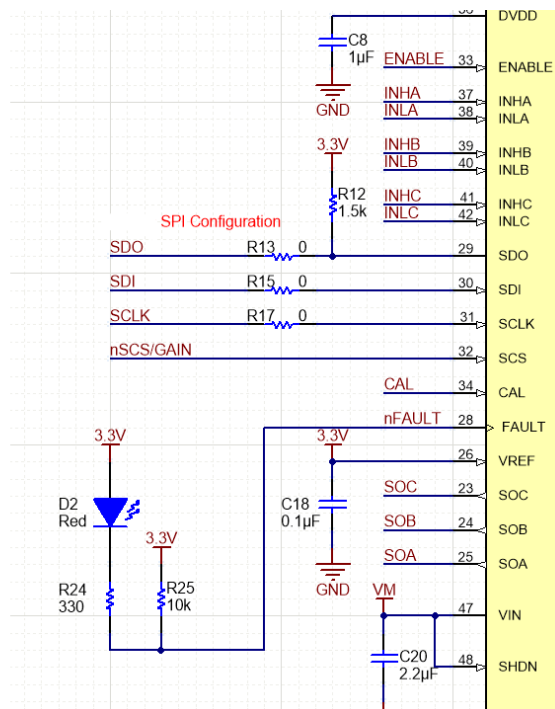
7. In addition to the adjustments outlined in the earlier steps, there are a few connections on the launchpad connectors for the DRV8323Rx that should be completely removed in your custom board as shown crossed out below:
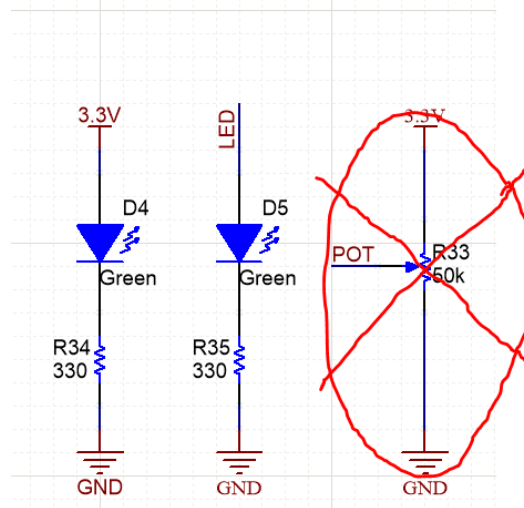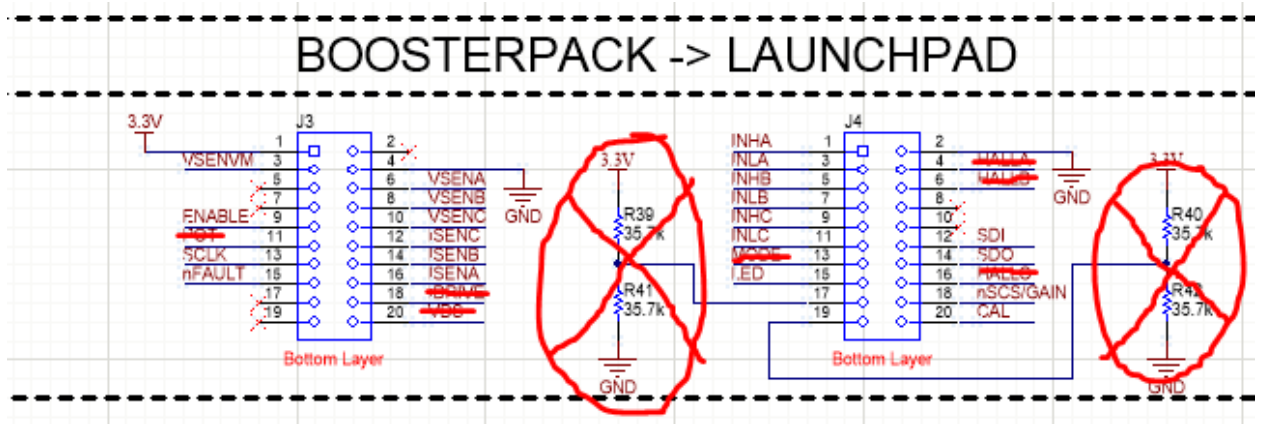
8. the DAC signal that is shown on the launchpad connector for the BOOSTXL DRV8320RS Can be **removed** as shown below. Additionally the PGA_GND pin can either be left unconnected or can be tied to ground (you can ask the C2000 team which way would be better), since the DRV8323RS design doesn't need to use the PGA_GND.
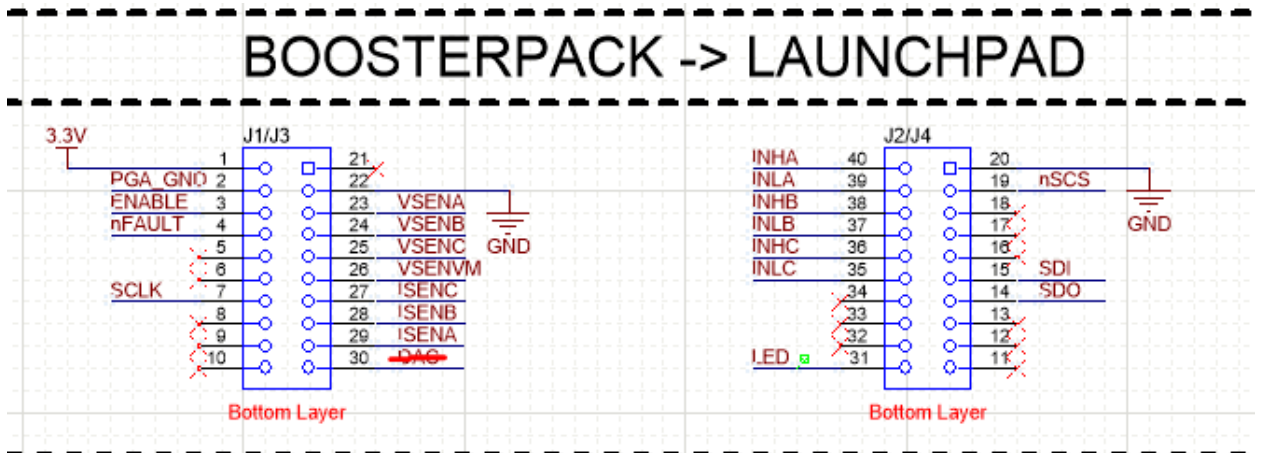
9. Finally, The CAL signal can be routed to the same Launchpad pin that is shown in the BOOSTXL DRV8323RS schematic (or any other available GPIO) and can be used with the LAUNCHXL TMS320f280049C, though some changes in the software would be necessary to use the CAL function. You can reach out to the C2000 team with any questions.