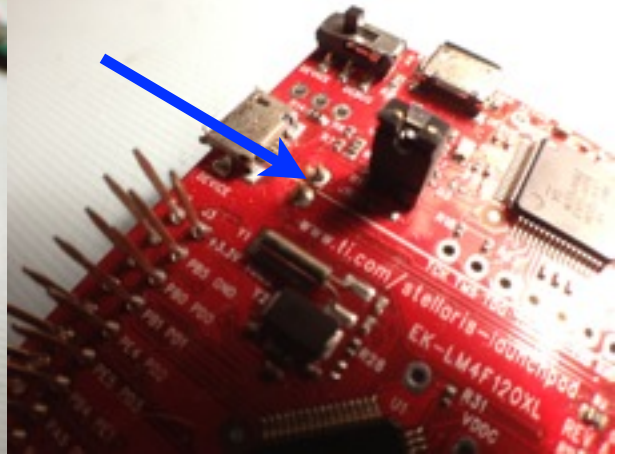
The following section only needs to be performed once

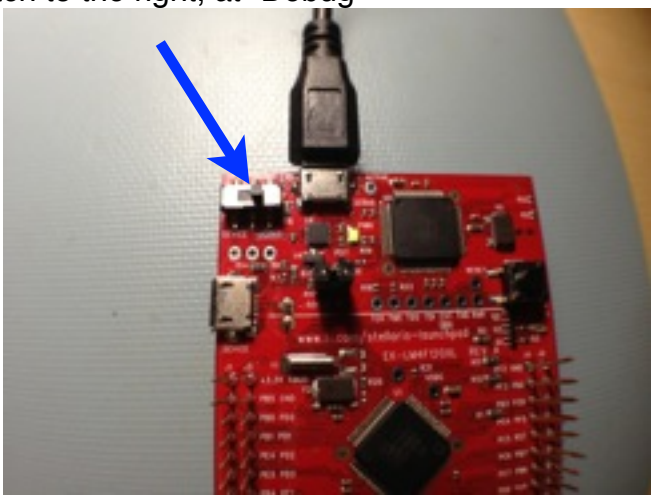
1. Launchpad Preparation

1.1. Install two pin socket header as shown in the photo.



1.2. With launchpad NOT plugged in to servo board, plug in USB cable from Launchpad Debug connector to host computer.

1.3. Set the power switch to the right, at “Debug”



1.4. The power LED should turn on

1.5. Use LMFlash utility to install the program “servoboard_test.bin” on to the LaunchPad

Optional Steps

1.6. Open a serial terminal on the host computer (TeraTerm, hyperterm, etc) and configure to use the Stellaris ICDI virtual COM port. Use 115200.

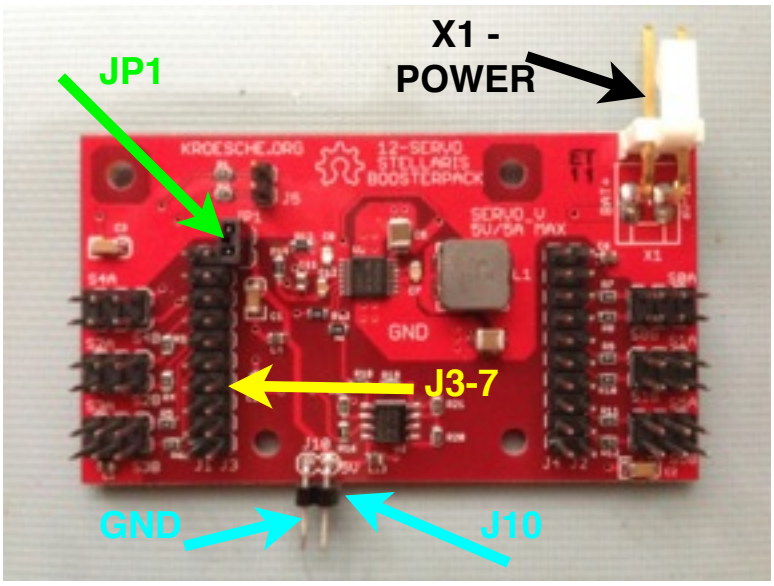
1.7. Press the reset button on the LaunchPad.

1.8. Verify a message that says “ServoBoard-Test” appears on the serial terminal.

1.9. If you did use the serial terminal, you need to close the terminal window before unpowering the LaunchPad or unplugging the USB cable (or windows will misbehave).

The following sections should be performed for each board.

Refer to the following figure for locations of various connectors on the servo board.



2. Power Supply Test

2.1. Install jumper at JP1
2.2. Set power supply to 6.0 V
2.3. Turn power supply off
2.4. Connect power supply to connector marked X1. Note polarity.
2.5. Turn power supply on
2.6. Measure voltage at J10. Verify 5V DC.
2.7. Use scope or meter AC measurement to verify clean DC signal (no waves or glitches)
2.8. Adjust power supply to 12V
2.9. Measure voltage at J10, Verify 5V DC.

Power Supply Quick Test
- Set external power supply to 8.0V
- Verify 5V DC at J10

3. Battery monitor test

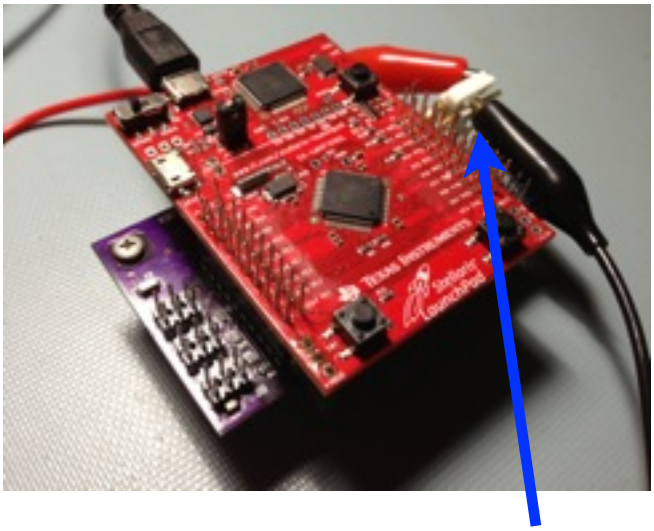
3.1. Set power supply to 6V
3.2. Measure voltage between ground and J3-7. You can pick up ground on J10-2 (leftmost pin).
3.3. Verify voltage is 0.0 V +/- 0.1V
3.4. Set power supply to 7V
3.5. Verify voltage is 1.0V +/- 0.1V
3.6. Set power supply to 8V
3.7. Verify voltage is 2.0V +/- 0.1V
3.8. Set power supply to 9V
3.9. Verify voltage is 3.0V +/- 0.1V
3.10. Turn off power supply

Supply V at X1	Battery Monitor at J3-7
6.0 V	0.0 V
7.0 V	1.0 V
8.0 V	2.0 V
9.0 V	3.0 V

Battery Monitor Quick Test
- Set external power supply to 8.0V
- Verify 2V DC at J3-7

4. Installation to Servo board

4.1. Slide the LaunchPad power switch to the left, to “Device”
4.2. Unplug the Debug USB cable
4.3. Carefully plug the LaunchPad onto the top of the BoosterPack.
4.4. Make sure that the power switch is to the left in “Device” position.
4.5. Set power supply to 8V. Use a meter to verify it is set at 8V.
4.6. Turn off power supply.
4.7. Connect the power supply.
4.8. Turn on power supply
4.9. Verify power LED turns on.



NOTE CABLE POLARITY

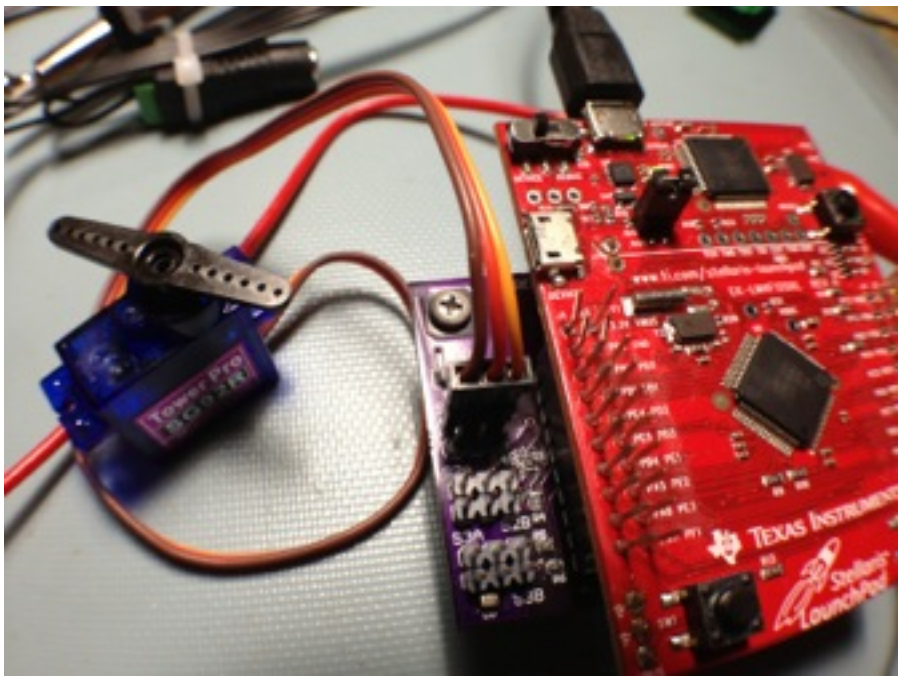
5. Battery Sensor Test

5.1. When the power supply is at exactly 8.0V, the LaunchPad RGB LED should be GREEN.
5.2. The RGB LED will change color to indicate the power supply voltage according to the following table:
5.3. It is acceptable for the LED to flicker between GREEN and one of the other colors as long as it is GREEN at least 50% of the time.

Supply V at X1	RGB LED Color
< 8.0 V	BLUE
8.0 V	GREEN
> 8.0 V	RED

6. Servo Test

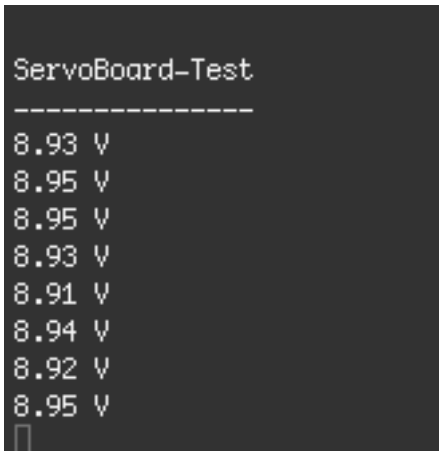
6.1. Plug a hobby servo on to the first servo connector on the left. It is labelled “S4A”. Pay attention to the servo wiring polarity. The leftmost pin is ground and should be a dark color in the servo cable like brown or black. See photo below.



6.2. Verify the servo moves back and forth, about once per second. The movement angle should be about 45 degrees.
6.3. Repeat for all 12 servo connectors. For right side connectors, the ground pin is to the right (outermost).

7. Optional Battery Sensor Test

7.1. Plug in the USB debug cable to the host computer. Make sure the power switch is to the left (Device position).
7.2. Open a serial terminal on the host computer (TeraTerm, hyperterm, etc) and configure to use the Stellaris ICDI virtual COM port. Use 115200.
7.3. Press the reset button on the LaunchPad.
7.4. Verify a message that says “ServoBoard-Test” appears in the terminal window.
7.5. Verify that a voltage is printed about once per second.



7.6. Verify that the displayed voltage is about the same as the power supply setting, +/- 0.2V
7.7. Note that if you change the power supply voltage, the displayed voltage should change to match. However, it takes about 10 seconds for the displayed voltage to “catch-up” to the power supply change. The normal power supply range for display is 6-9V. If you exceed 9V the displayed value will not be valid.
7.8. You need to disconnect the serial terminal (some menu command) or close the terminal window before removing power from the LaunchPad or unplugging the USB cable.

END OF TEST

8. Short Version Test Procedure

This is a short summary of the test procedure given in the preceding sections. It should be used as a reference by someone who is already familiar with the test procedure.

8.1. Launchpad prepared - additional 2-pin header installed, servoboard_test.bin loaded

8.2. Servoboard - install jumper at JP1

8.3. External power supply to 8.0V

8.4. External power supply connected at X1, then turn on

8.5. Verify 5.0V at J10.

8.5.1. Optional - verify 5V at J10 when external power supply is 6-12V

8.6. External power supply at 8.0V

8.7. Verify 2.0V at J3-7 (GND at J10-2 [leftmost pin])

8.7.1. Optional - verify J3-7 at other external power supply voltages

8.7.1.1. 6V —> 0.0V

8.7.1.2. 7V —> 1.0V

8.7.1.3. 8V —> 2.0V

8.7.1.4. 9V —> 3.0V

8.8. External power supply off

8.9. Launchpad power switch to “Device” position

8.10. Install launchpad to servo board

8.11. External power supply to 8V (verify with meter)

8.12. Power supply off - connect to servo board

8.13. Power supply on

8.14. Verify Launchpad power LED

8.15. Verify RGB LED is GREEN. Some flickering to blue or red is okay.

8.16. Connect hobby servo to each of 12 servo connectors. Verify servo moves back and forth