Wireless Subwoofer Quick Start Guide

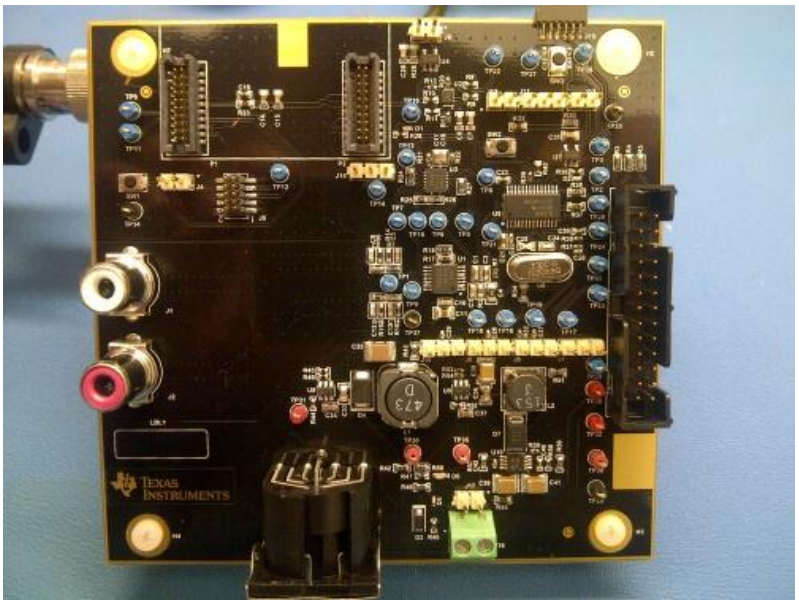
The wireless subwoofer TI design is a total system solution that involves taking an analog signal into the PurePath™ Wireless Development Kit (CC85xx DK), transmitting it wirelessly to the wireless subwoofer board, which then outputs the signal via the TAS5624ADDEVM power amp. For more information about this board please refer to the wiki page: http://processors.wiki.ti.com/index.php/SAT_-_Wireless_Subwoofer

Required Software

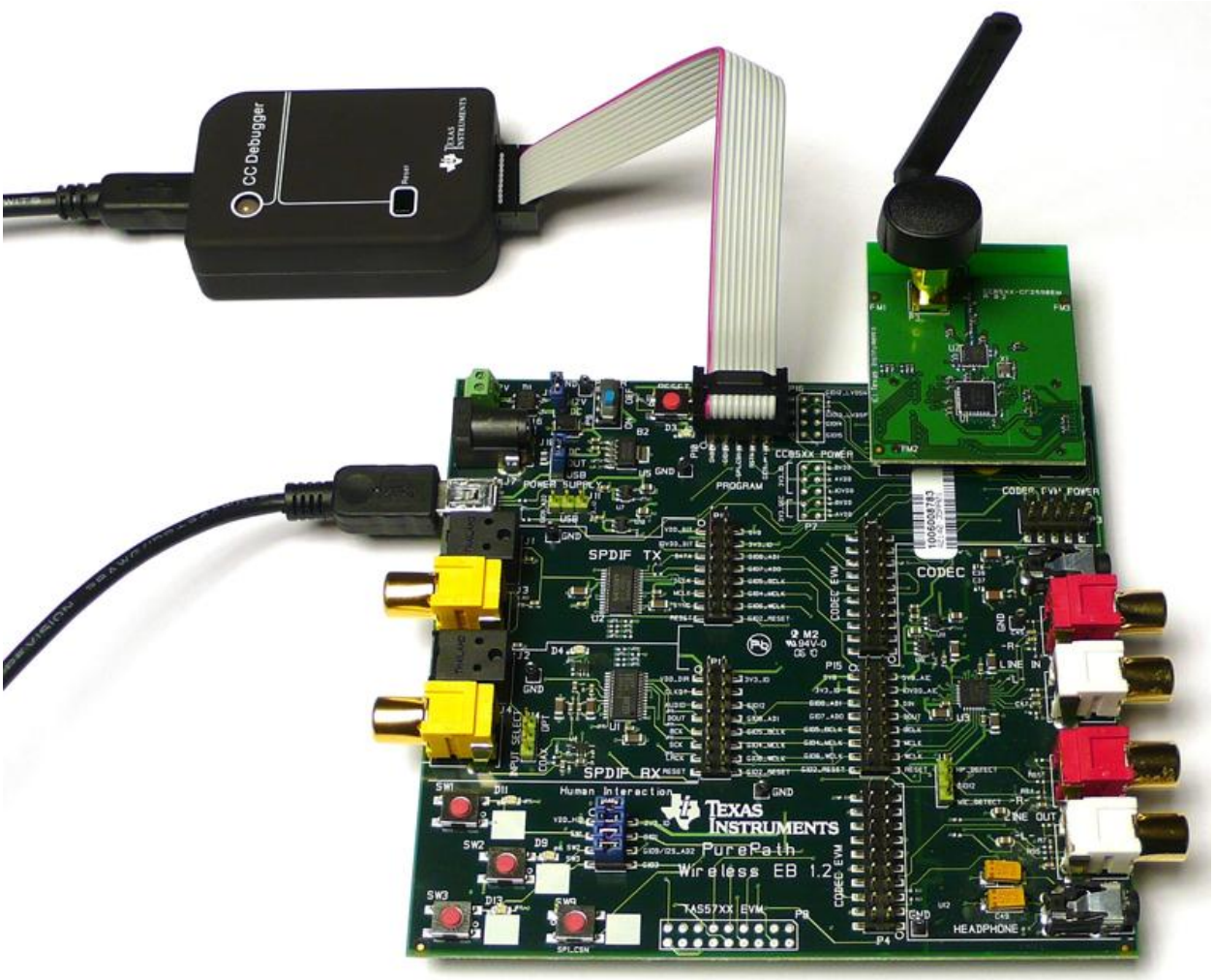
1. PurePath Wireless Configurator http://www.ti.com/tool/purepath-wl-cfg
2. Configuration files (Titled: Configurator Project Files.zip) http://processors.wiki.ti.com/index.php/SAT_-_Wireless_Subwoofer#Configuring_the_EVM
3. Code Composer Studio (MSP430 Install) http://www.ti.com/tool/ccstudio
4. CCS project files (Titled: SAT0018 Firmware.zip) http://processors.wiki.ti.com/index.php/SAT_-_Wireless_Subwoofer#Software_Overview

Required Equipment

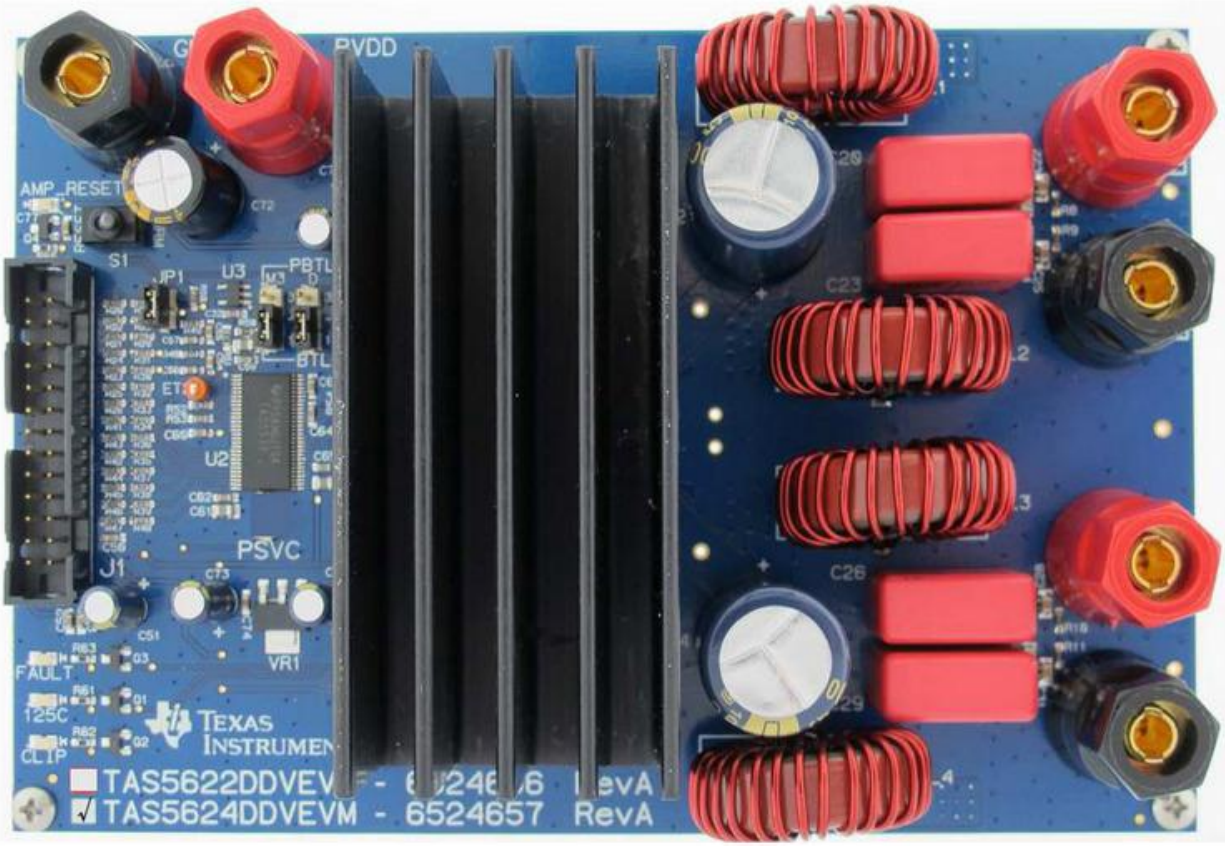
1. DC Power Supply for TAS5624ADDVEVM: 24VDC, 5A peak/1A continuous
2. Two Power supply wires, banana cables may be used for the TAS5624ADDVEVM, rated for 5A peak/1A continuous.
3. MSP430 JTAG programmer: http://www.ti.com/tool/ez430-rf2500#1
4. Wireless Subwoofer board:



5. Power Supply for wireless subwoofer board. 24V/1.2A. The current wireless subwoofer board uses an 8 pin DIN off-line power supply.
6. RCA (male) to 3.5 mm (male) wire.
7. Ribbon cable (IDC 26POS).
8. PurePath Wireless Development Kit http://www.ti.com/tool/cc85xxdk (includes all necessary wires and devices for programming modules).



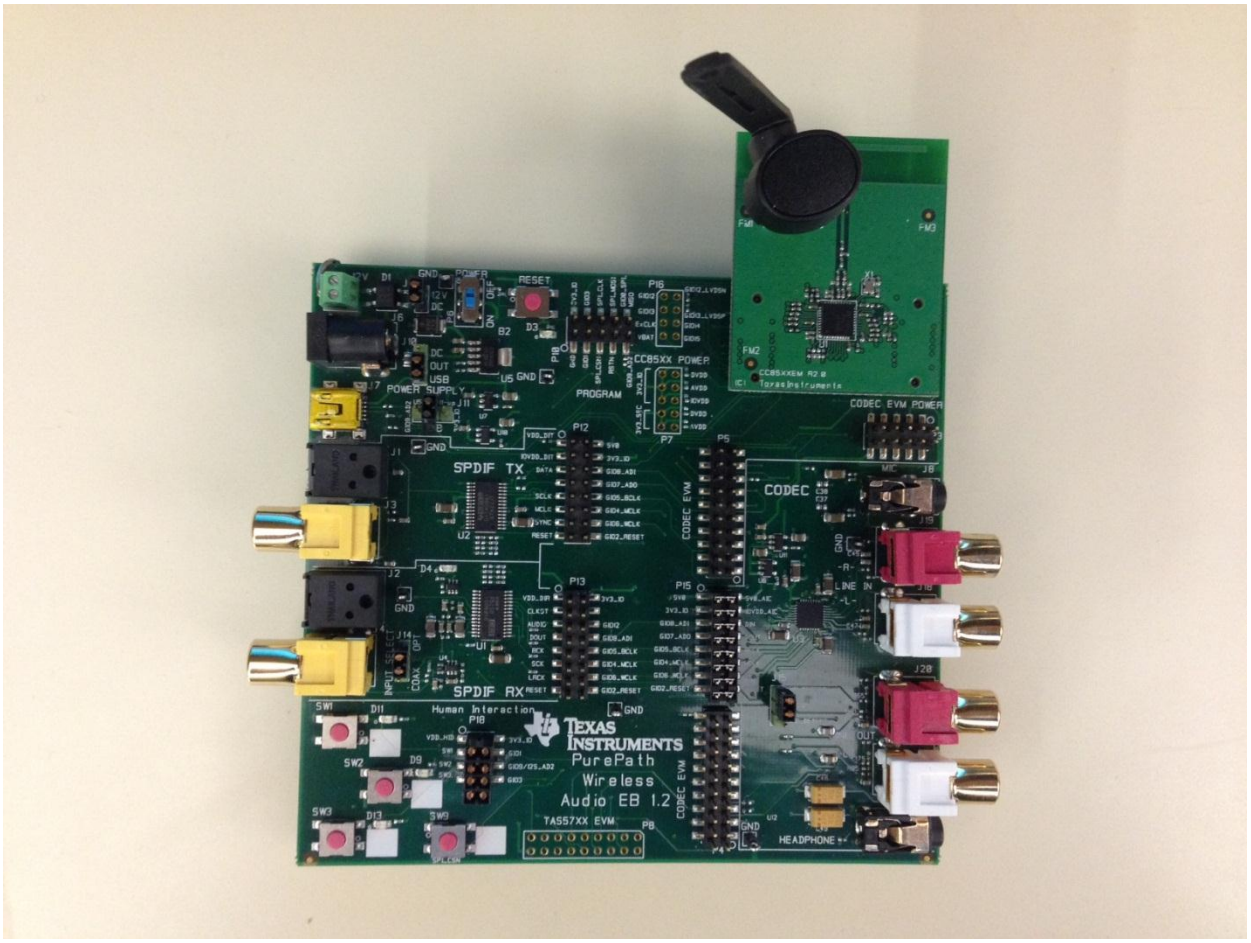
9. TAS5624ADDVEVM http://www.ti.com/tool/tas5624addvevm



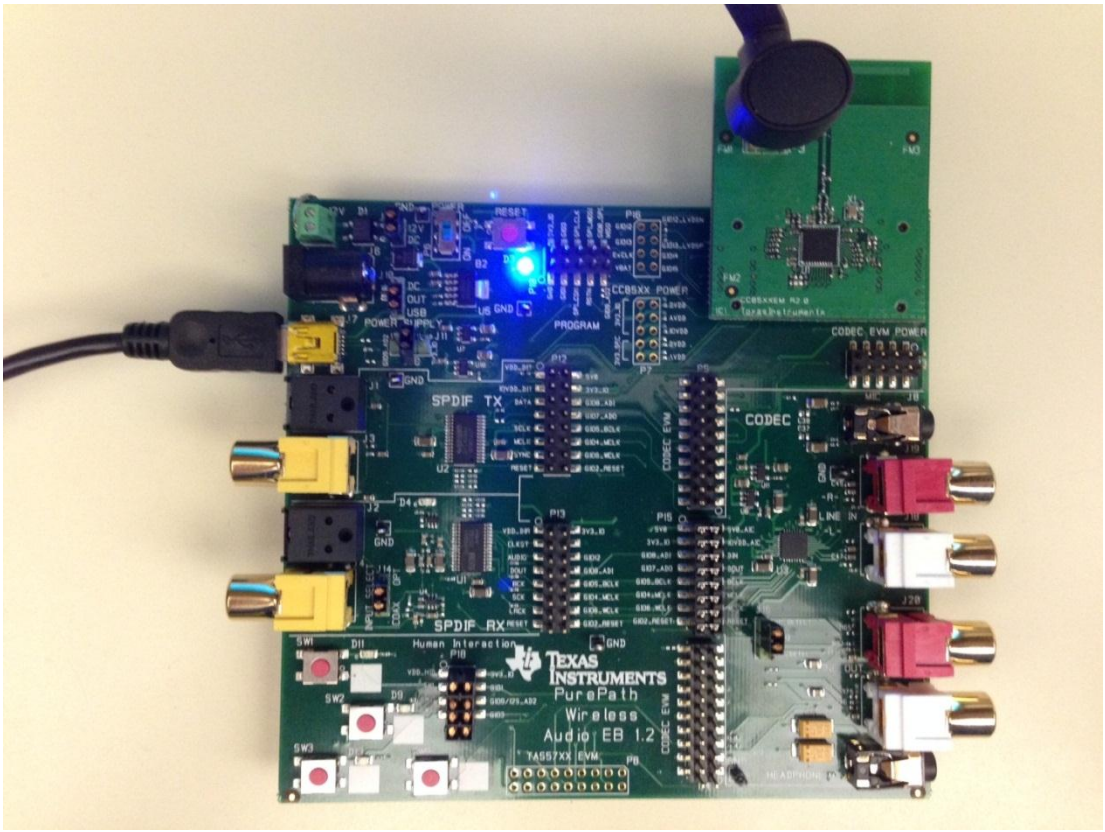
10. Wire to connect TAS5624ADDVEVM to subwoofer (banana cables may be used for the TAS5624ADDVEVM).
11. Music playing device compatible with 3.5mm connector.

Setup

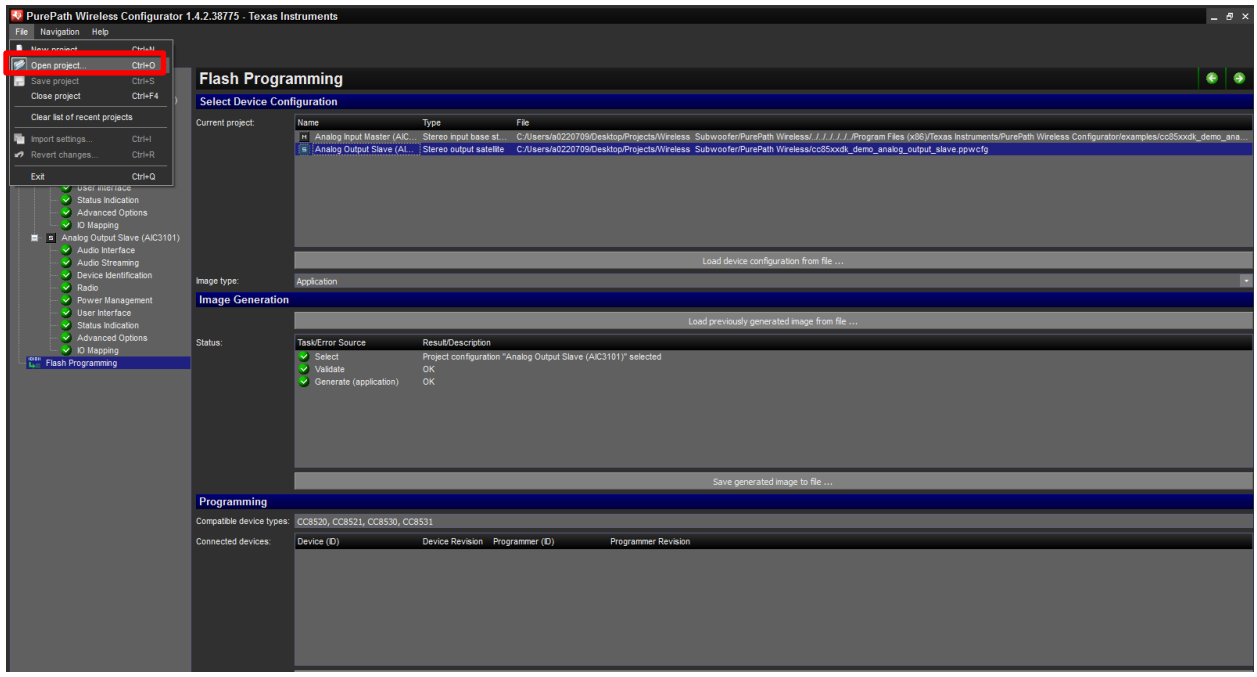
1. Ensure all necessary software is installed on PC. (see “Required Software” pg.1 of Quick Start Guide)
2. Connect a slave CC85xx EM to the PurePath Wireless Audio EB board (see back of EM board for master or slave description).



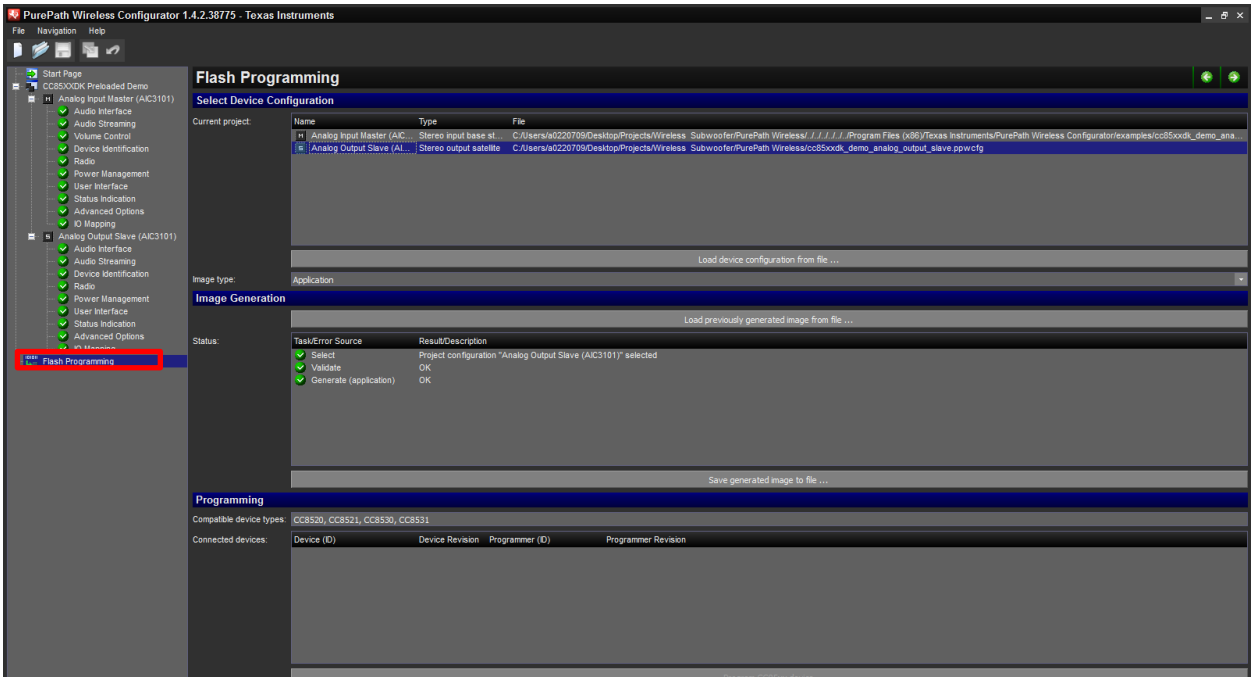
3. Connect the mini USB cable from your computer to the mini USB port on the PurePath Wireless Audio EB board.



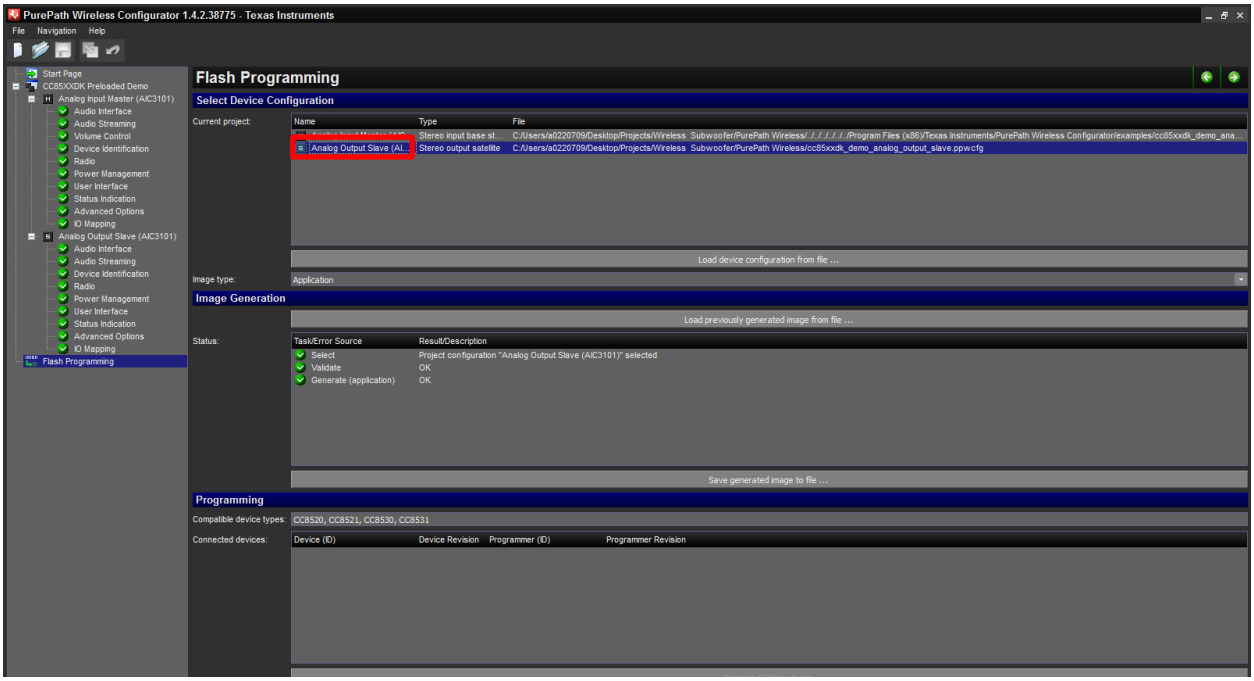
4. Open PurePath Wireless Configurator software
5. Select Open File and navigate to project file titled “cc85xxdk_demo_app.ppwprj”.



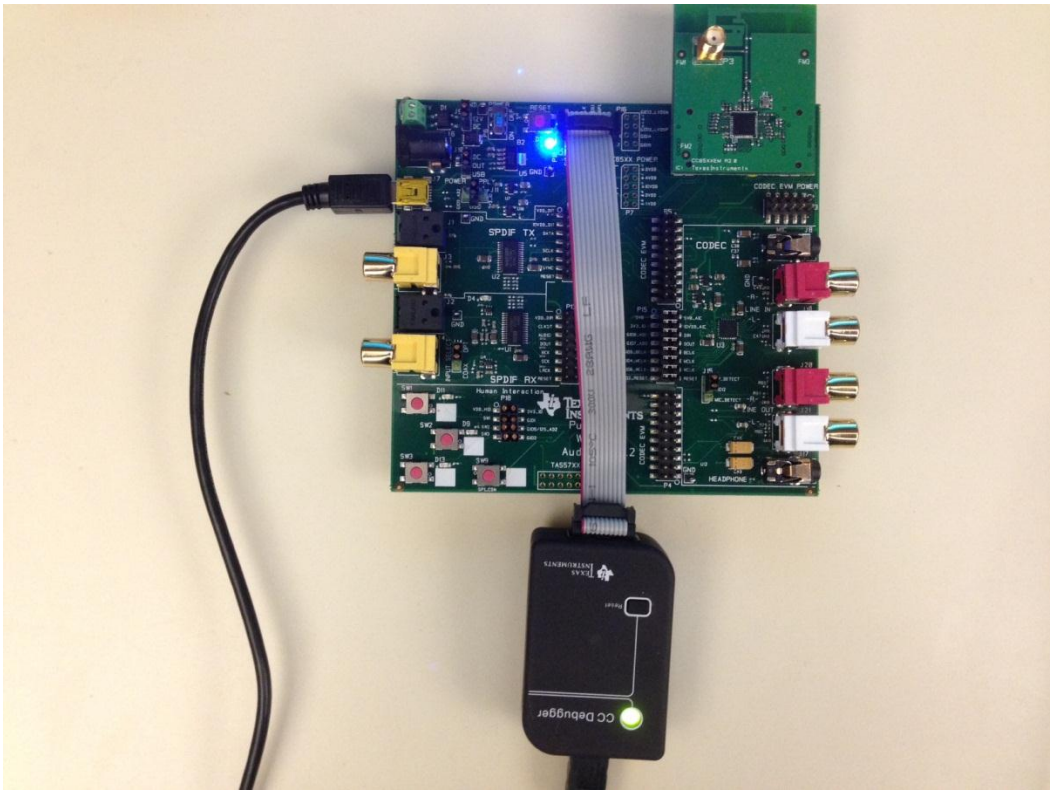
6. Select “Flash Programming”



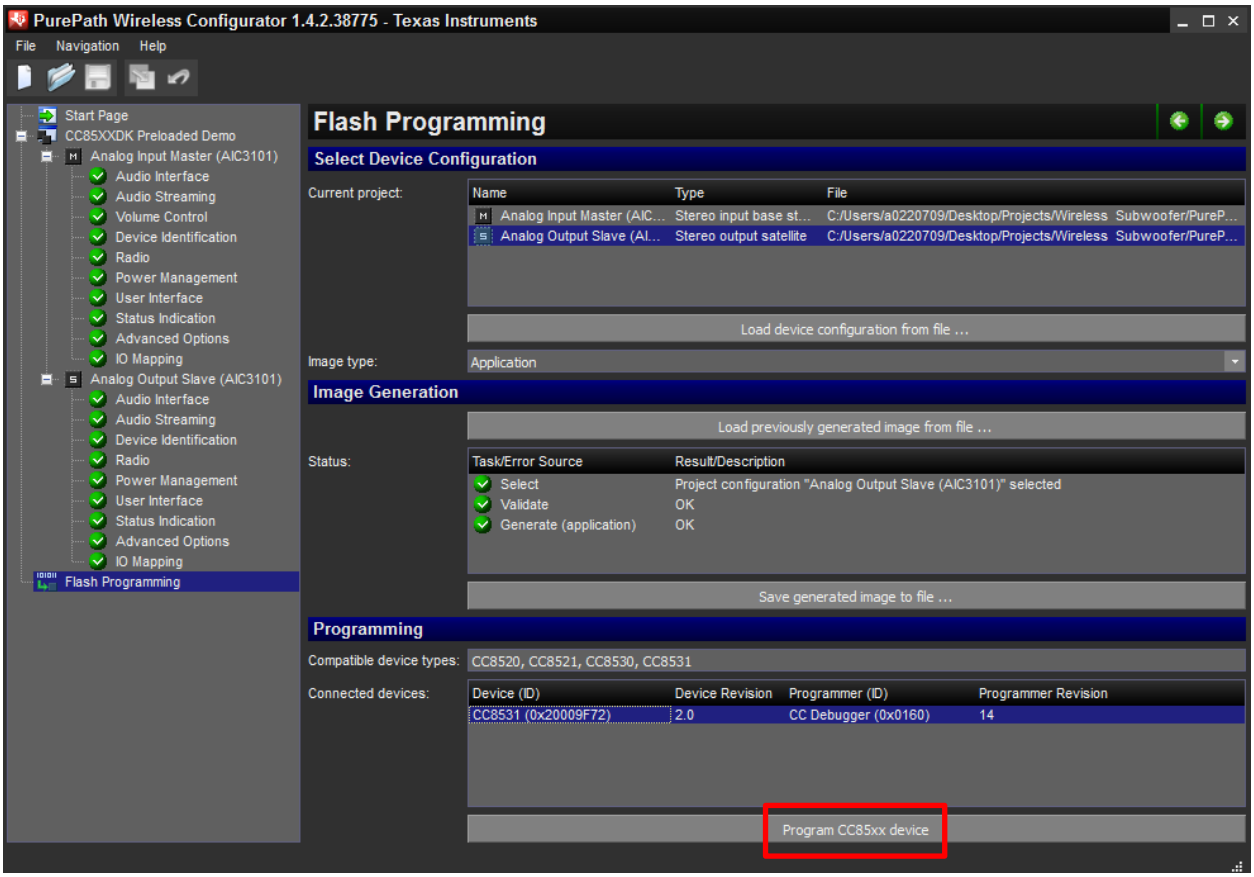
7. Then select Analog Input Slave under “current project” (be sure the **slave** CC85xx EM is mounted on the PurePath Wireless Audio EB Board).



8. Connect the CC Debugger to the PurePath Wireless Audio EB board (be sure the original usb cable is still connected to power the PurePath Wireless Audio EB board).

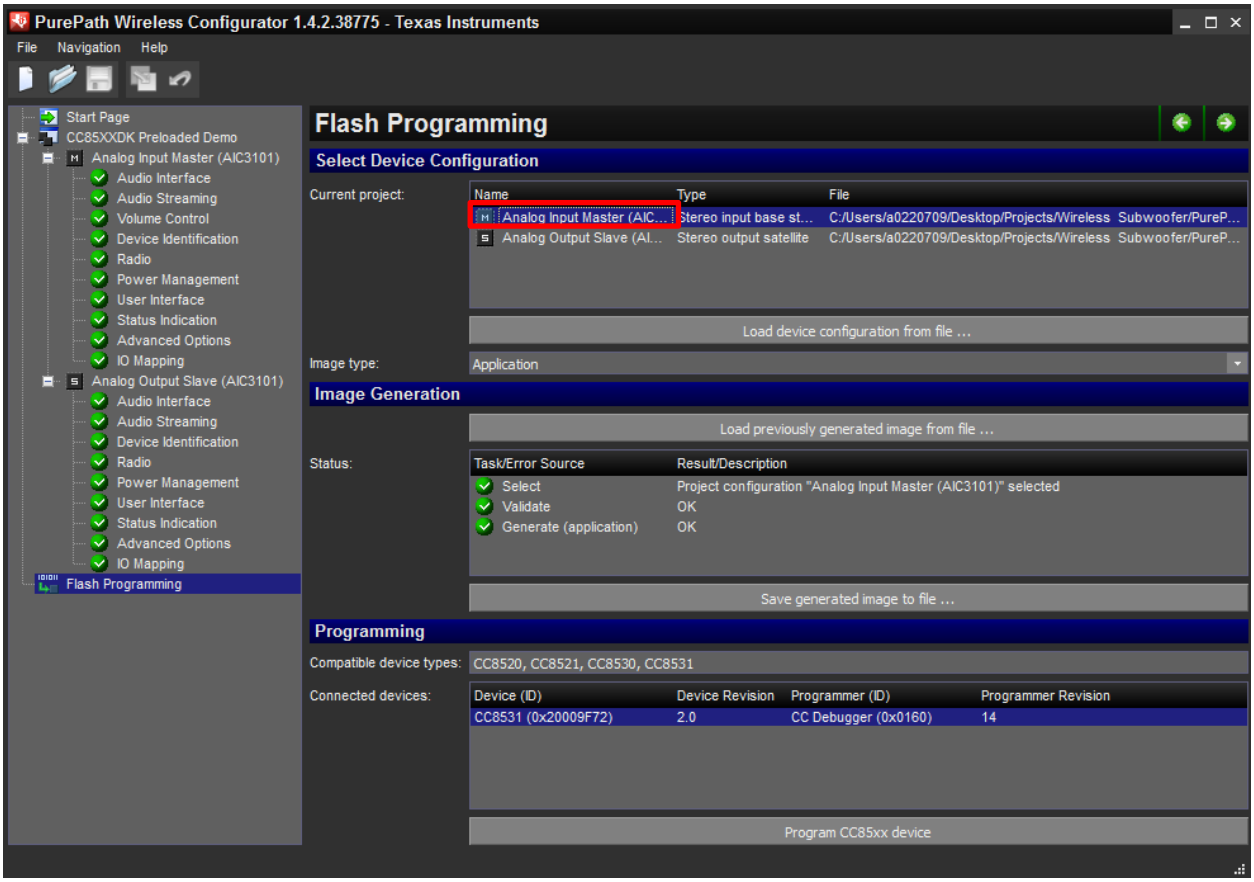


9. Select “Program CC85xx device”

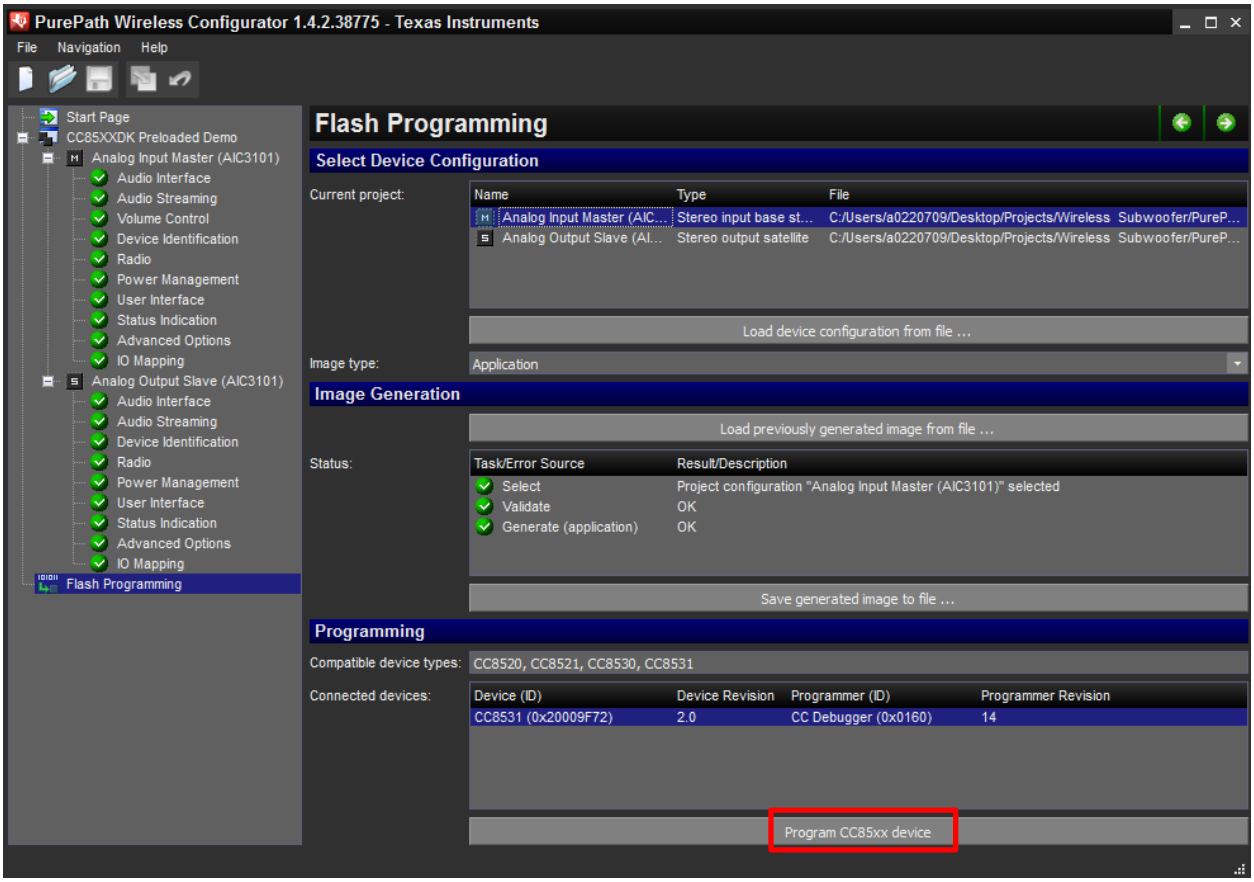


10. Replace the cc85xx EM board on the PurePath Wireless Audio Board with a **master** cc85xx EM.

11. Return to the PurePath Wireless Configurator and Select “Analog Input Master” under current project

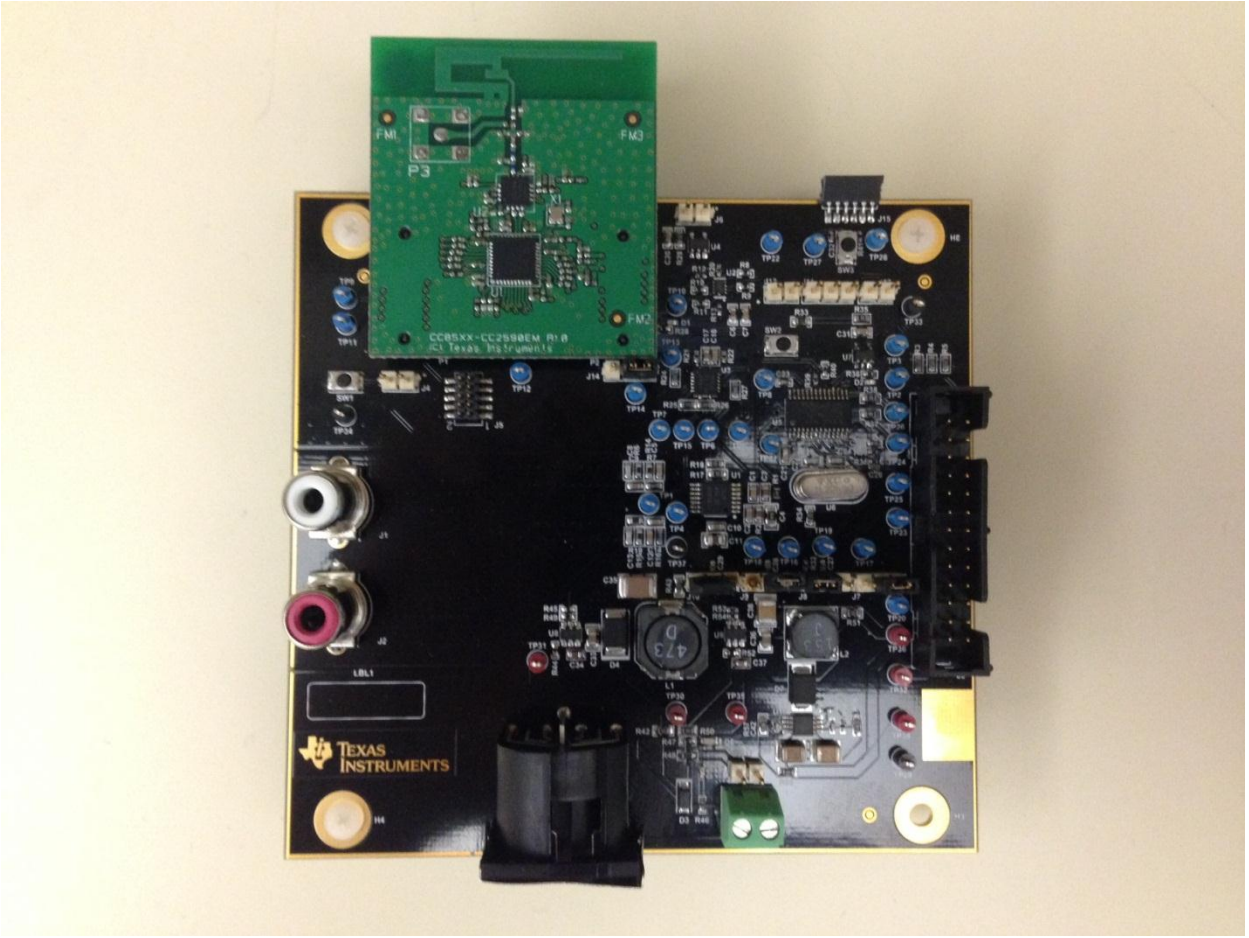


12. Select “Program cc85xx device”



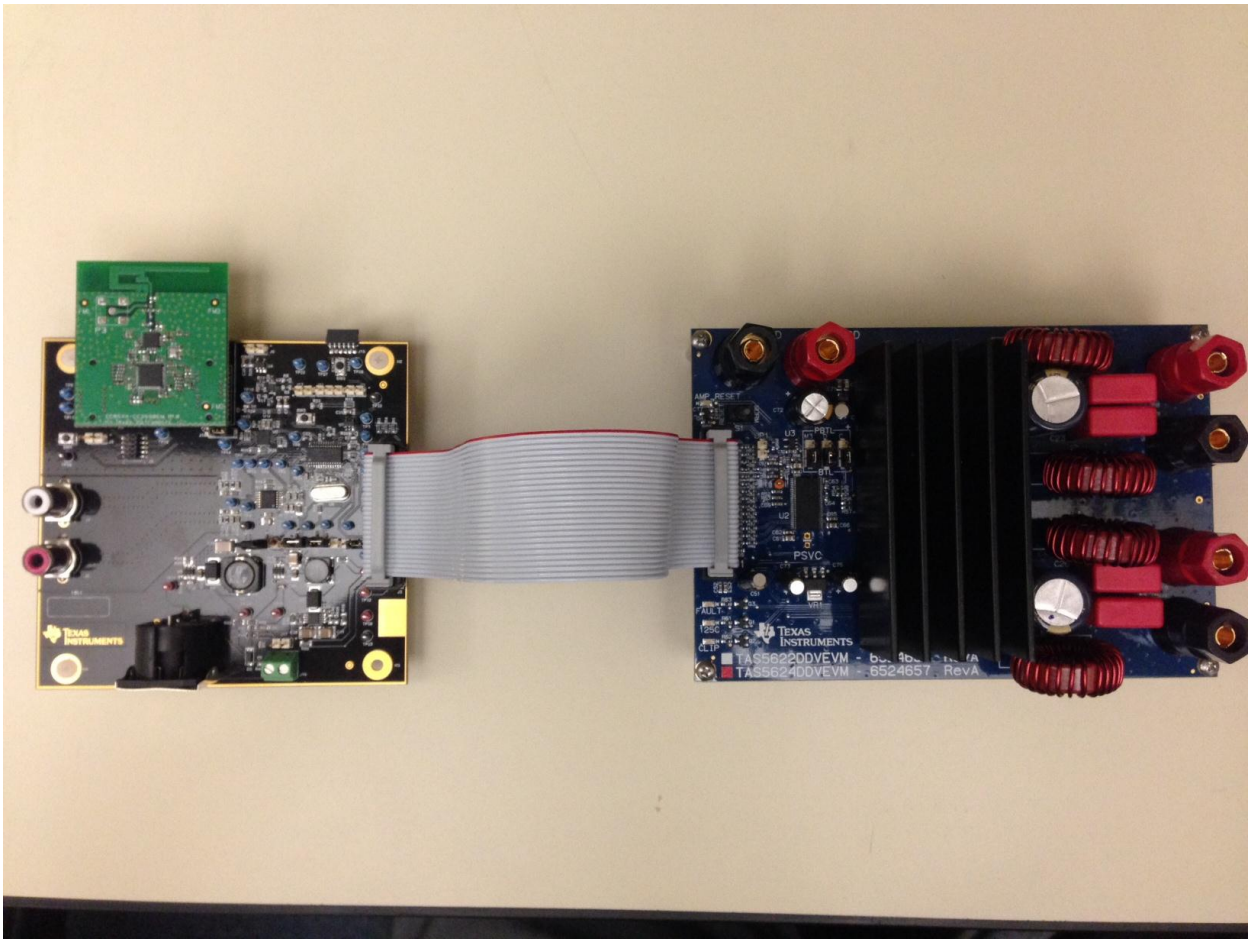
13. If at any time you run into issues setting up the PurePath Wireless Development Kit refer to the CC85xxDK quick start guide: http://www.ti.com/lit/ml/swru252a/swru252a.pdf

14. Connect the Slave CC85xx to the wireless subwoofer board

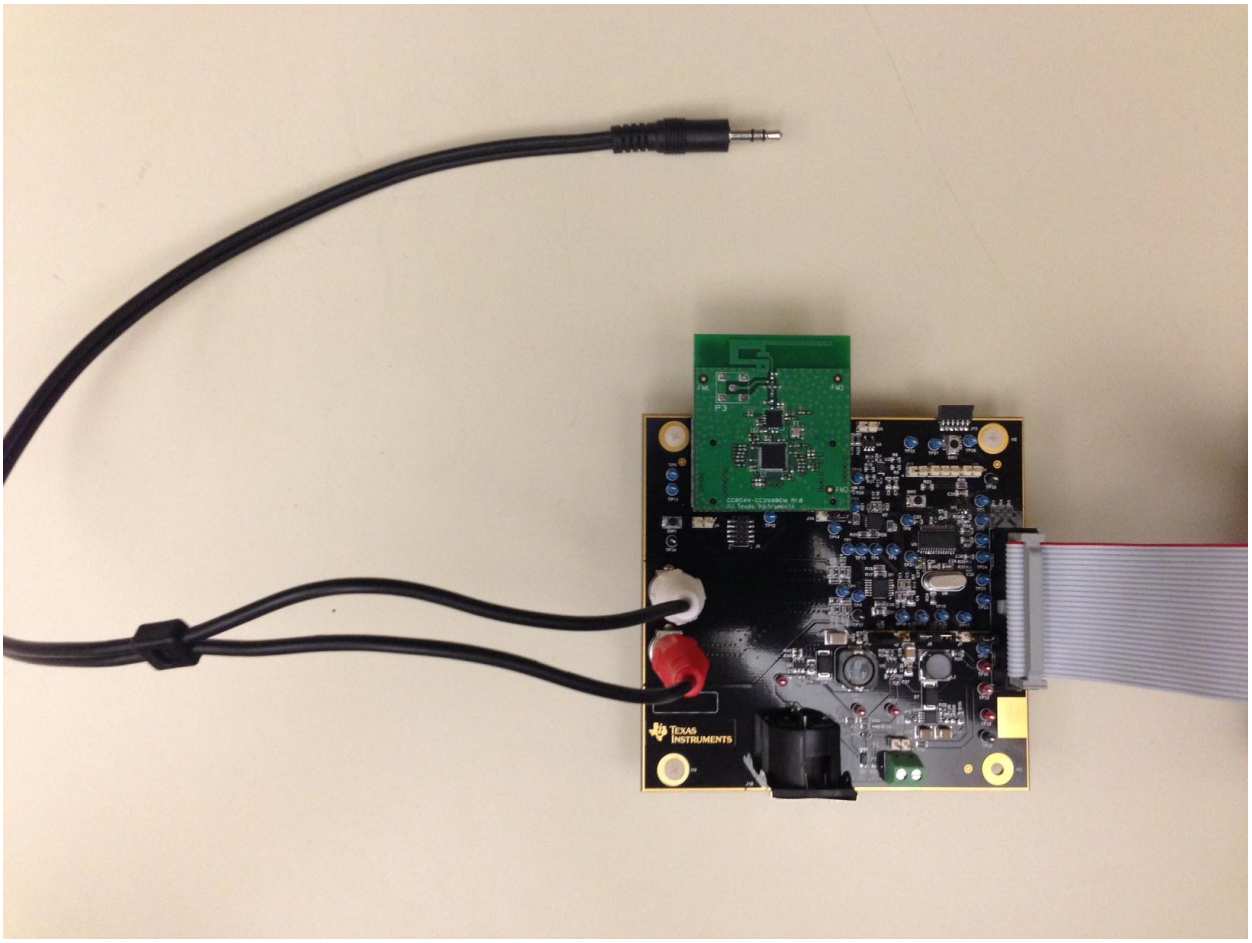


15. Ensure the jumpers are in the proper setting
    a. J14: Pin 1-2 shorted (**pin 1 is denoted by a square on the reverse side of the board**)
    b. J10: Pin1 -2 shorted
    c. J9: Pin 2-3 shorted
    d. J8: Pin 1-2 shorted
    e. J7: Pin 2-3 shorted
    f. All other jumpers left open

16. Use the ribbon cable to attach the TAS5624ADDVEVM board to the wireless subwoofer board.

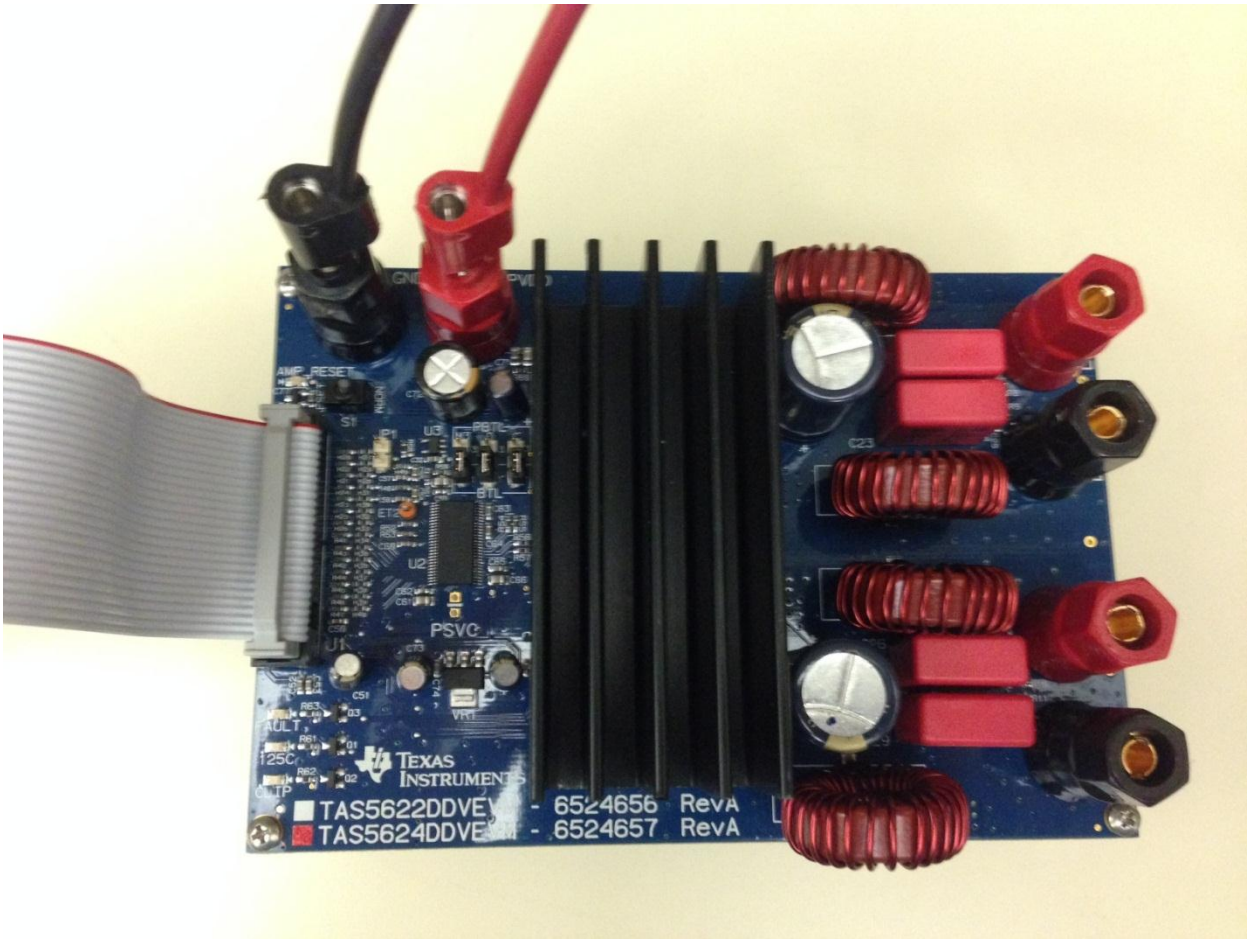


17. Attach the RCA (red and white) to 3.5mm cables to the wireless subwoofer board.

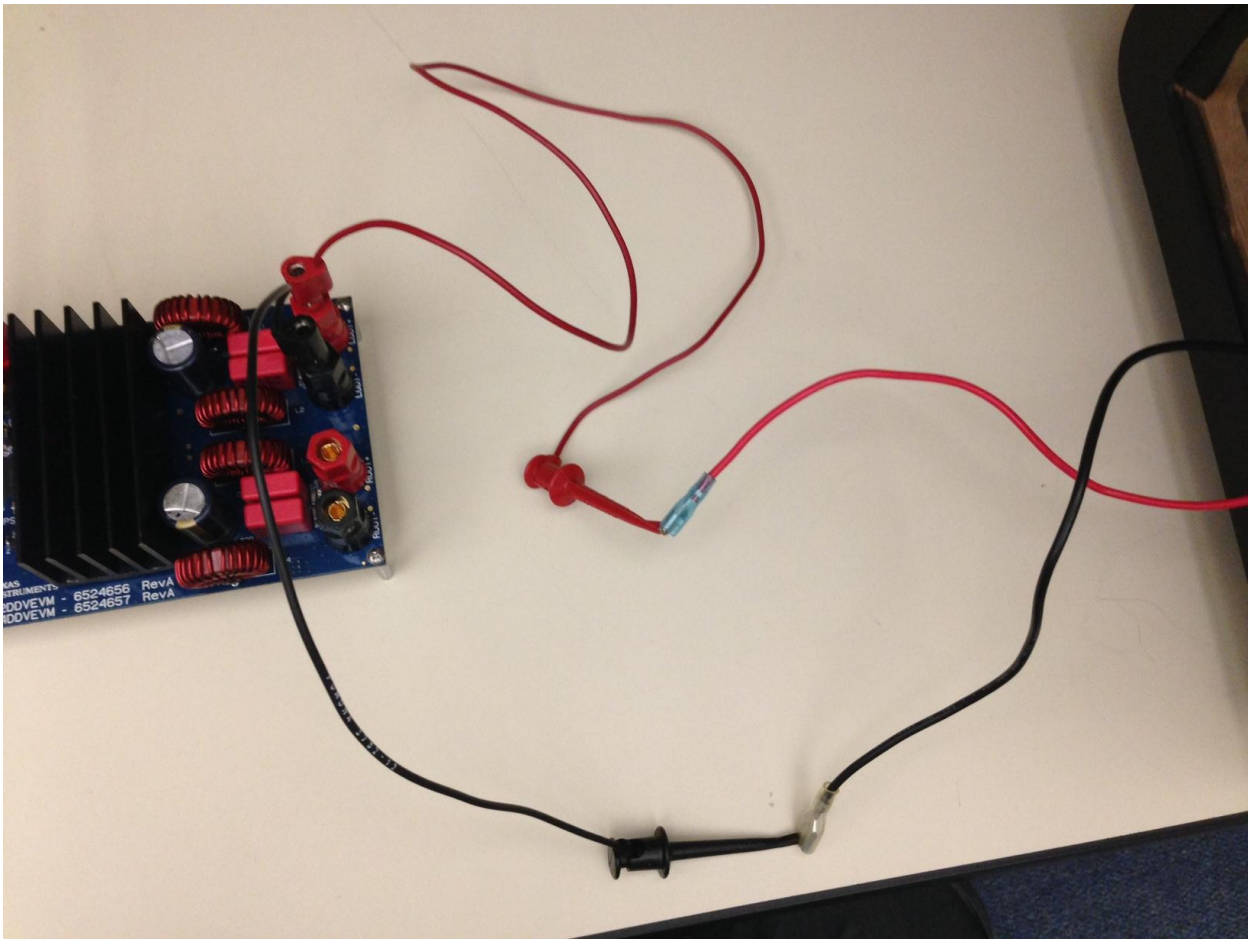


18. Set the power supply to 24VDC.

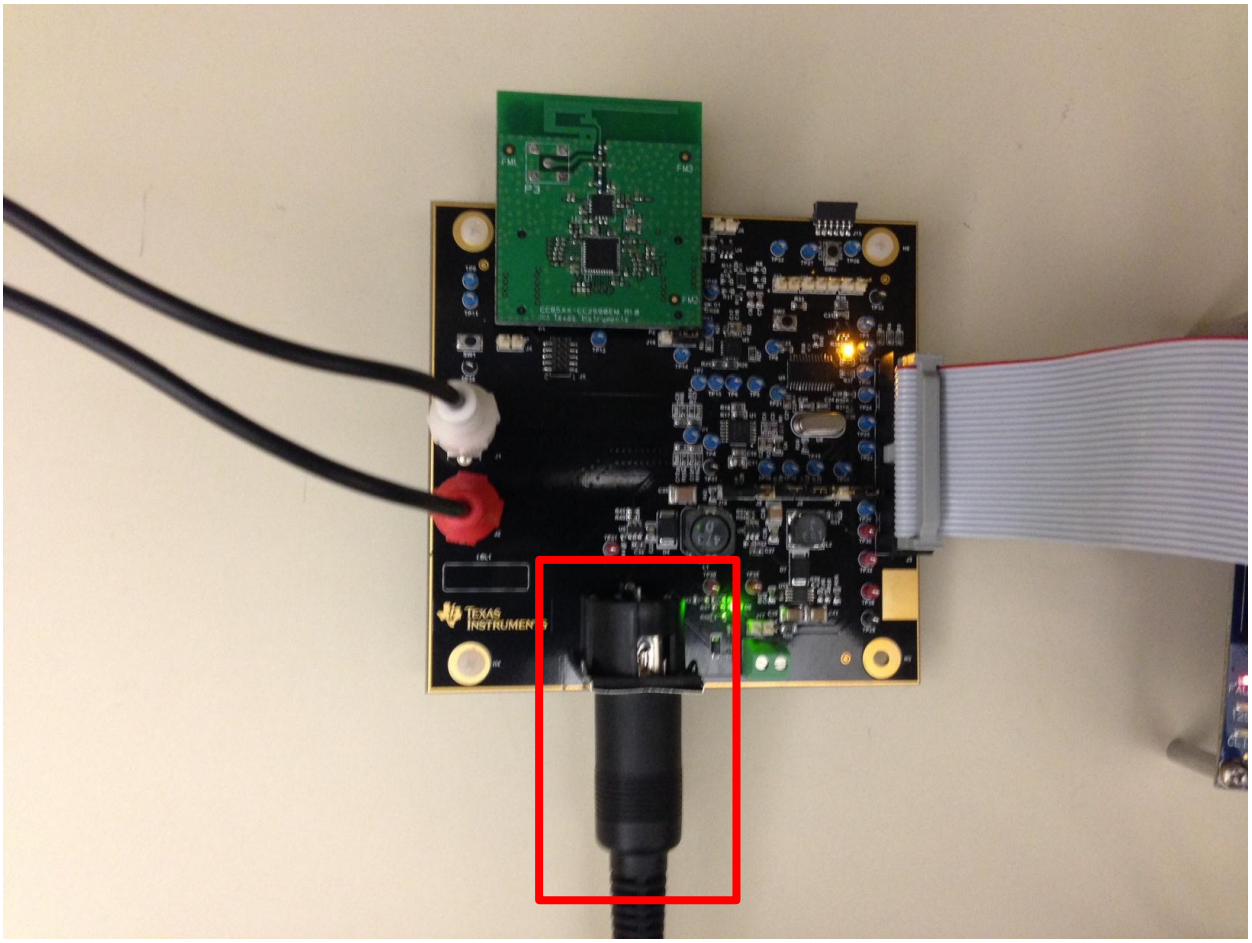
19. Connect the power supply outputs to PVDD and GND on the TAS5624ADDVEVM (**Note: power supply leads should have a current rating of 5A peak/ 1A continuous)**



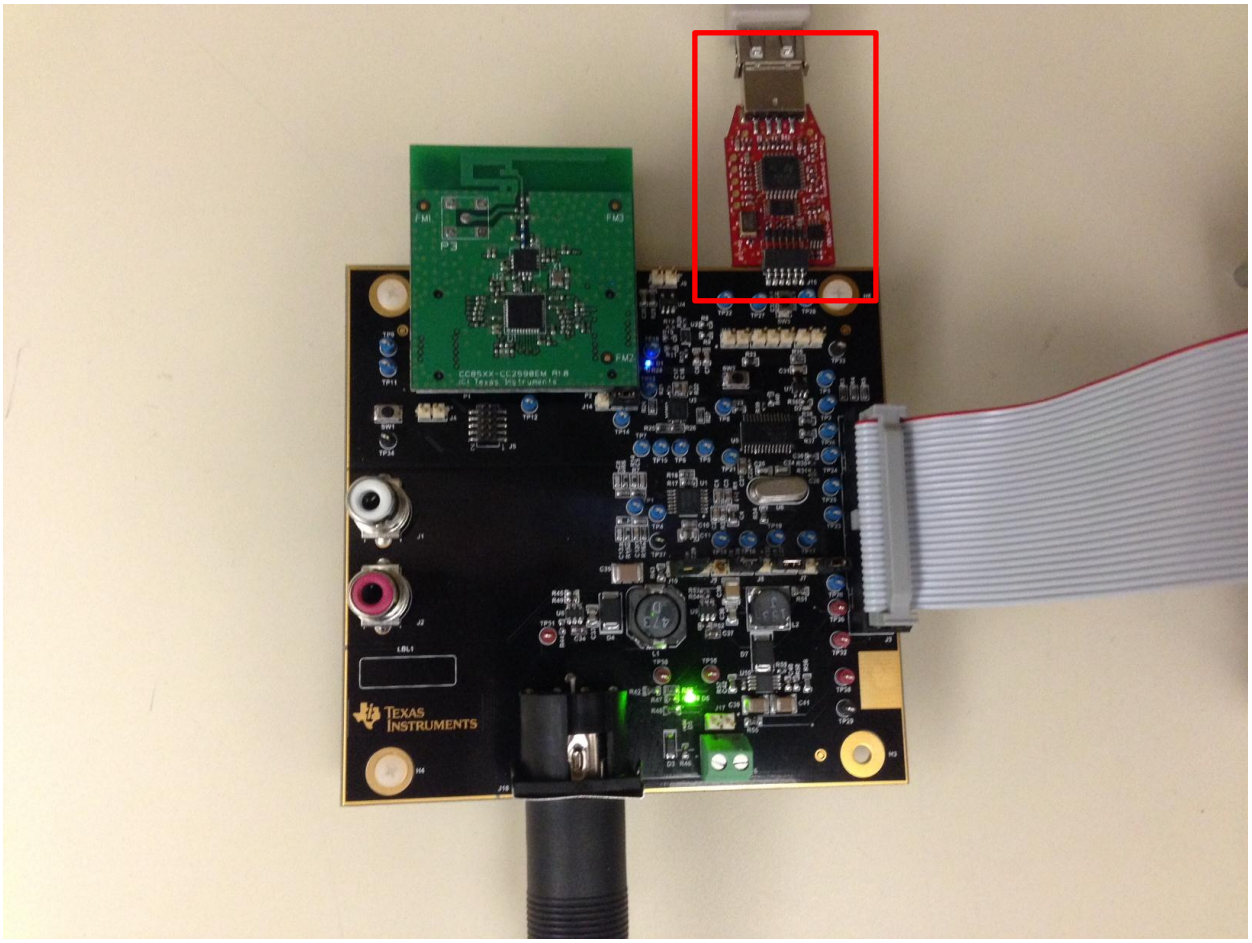
20. Connect the LOUT+ and LOUT- to the subwoofer inputs



21. Plug in the power supply to the wireless subwoofer board

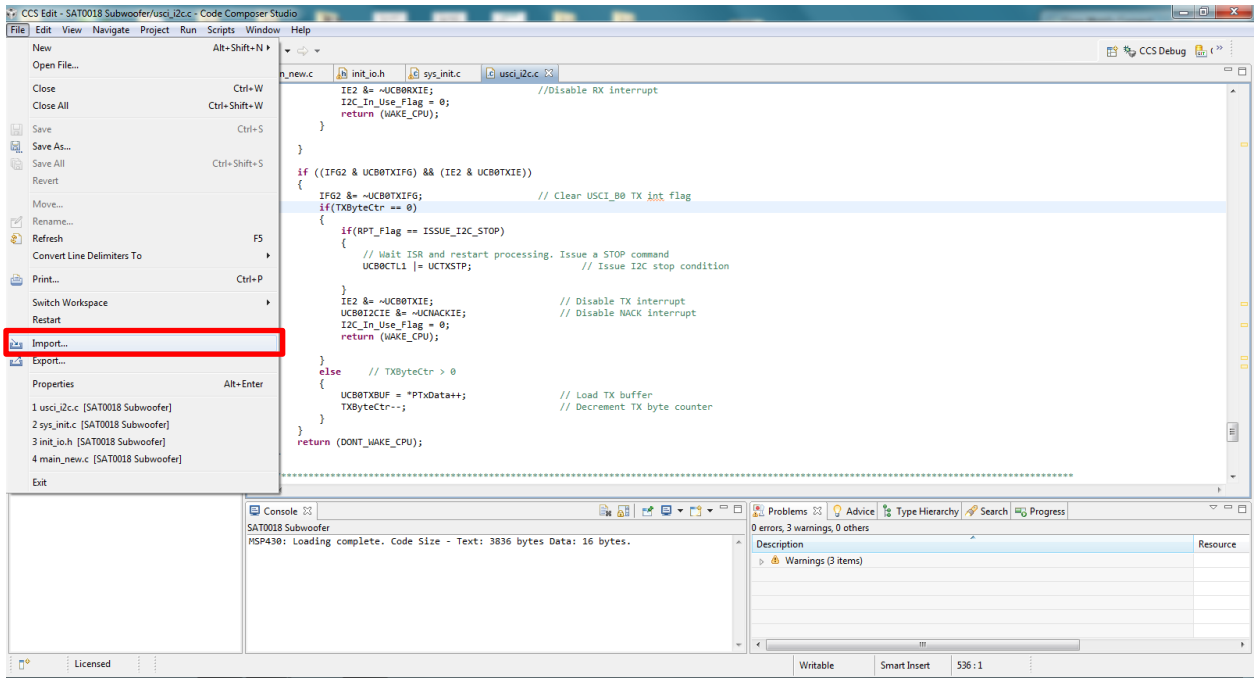


22. Attach the JTAG from the computer to the wireless subwoofer board

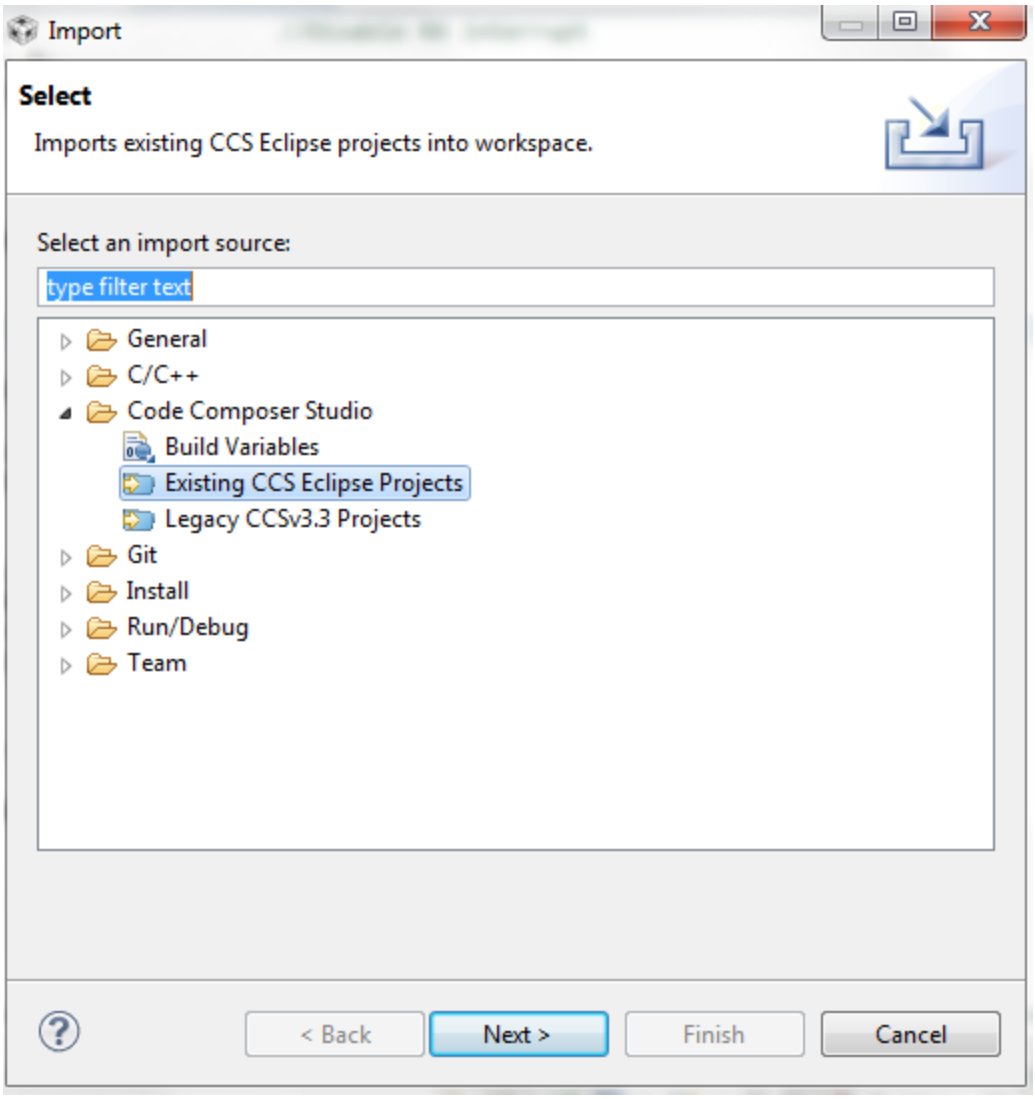


23. Download and extract the CCS project files from http://processors.wiki.ti.com/index.php/SAT_-_Wireless_Subwoofer#Software_Overview

24. Open code composer studio (CCS) and Import the project into the workspace



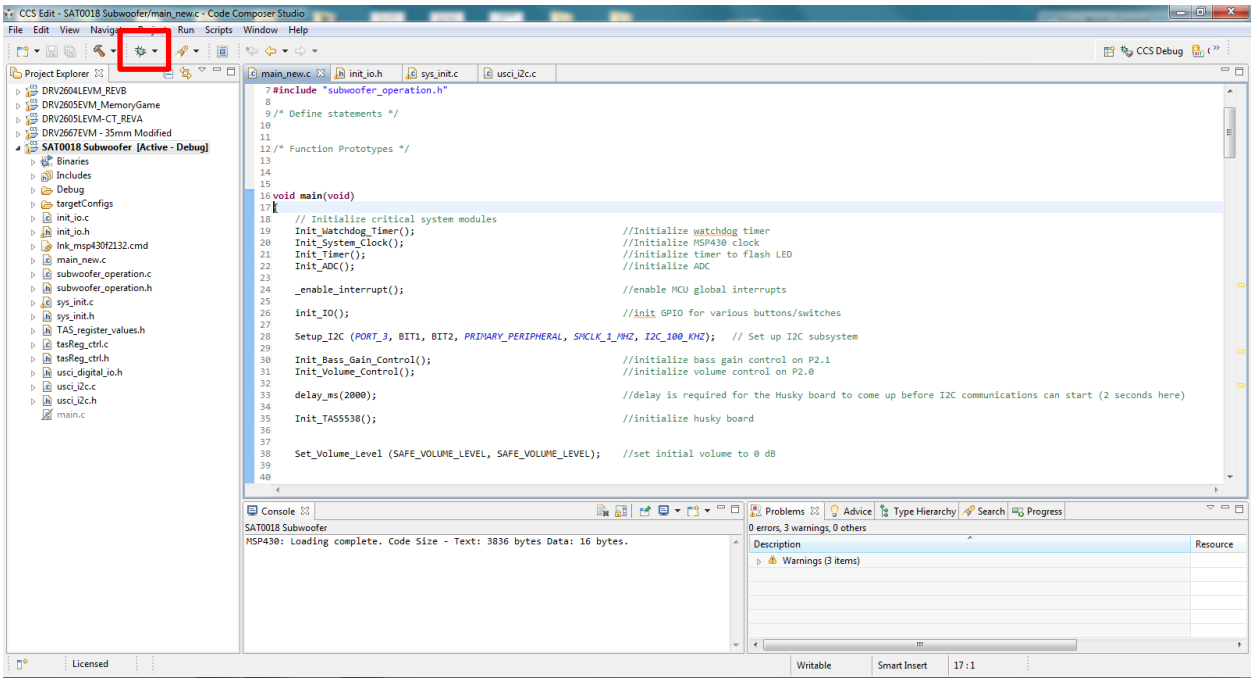
25. Select “Existing CCS Eclipse Projects” (If not an option select “CCS Projects” instead).



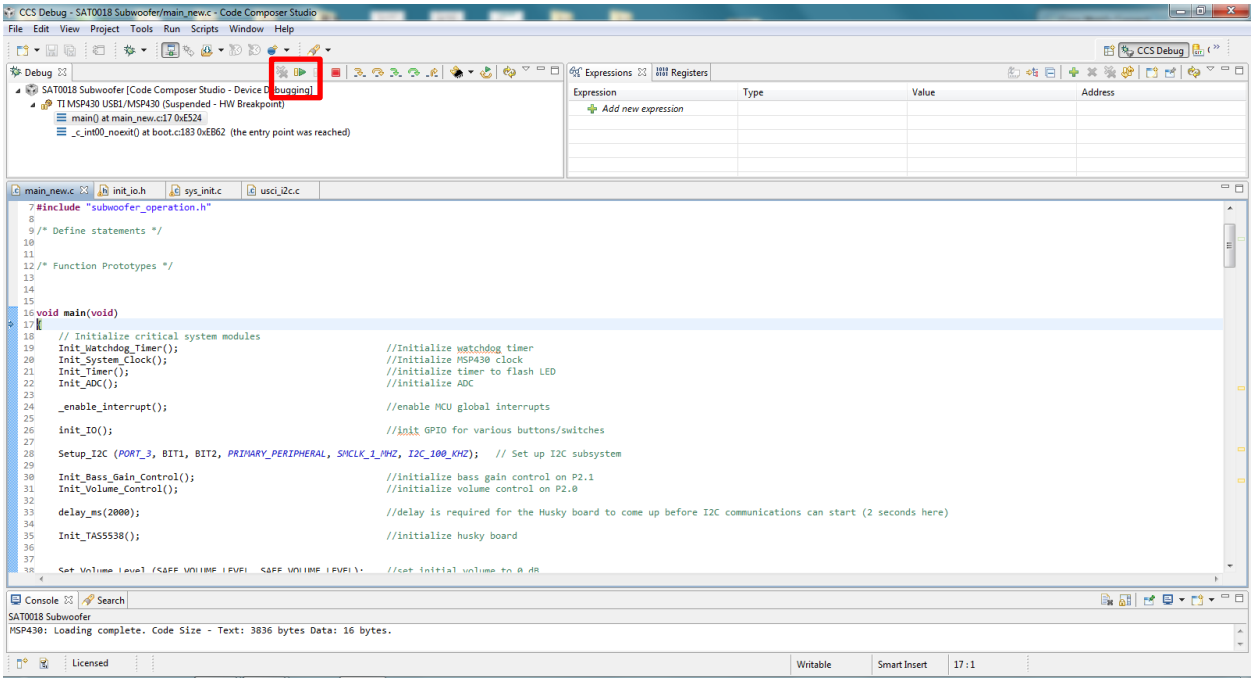
26. Click “Browse” and navigate to the SAT0018 Subwoofer project folder (be sure it is extracted from the zip file)

27. Make sure the project is selected and click “Finished”

28. Now click the debug button

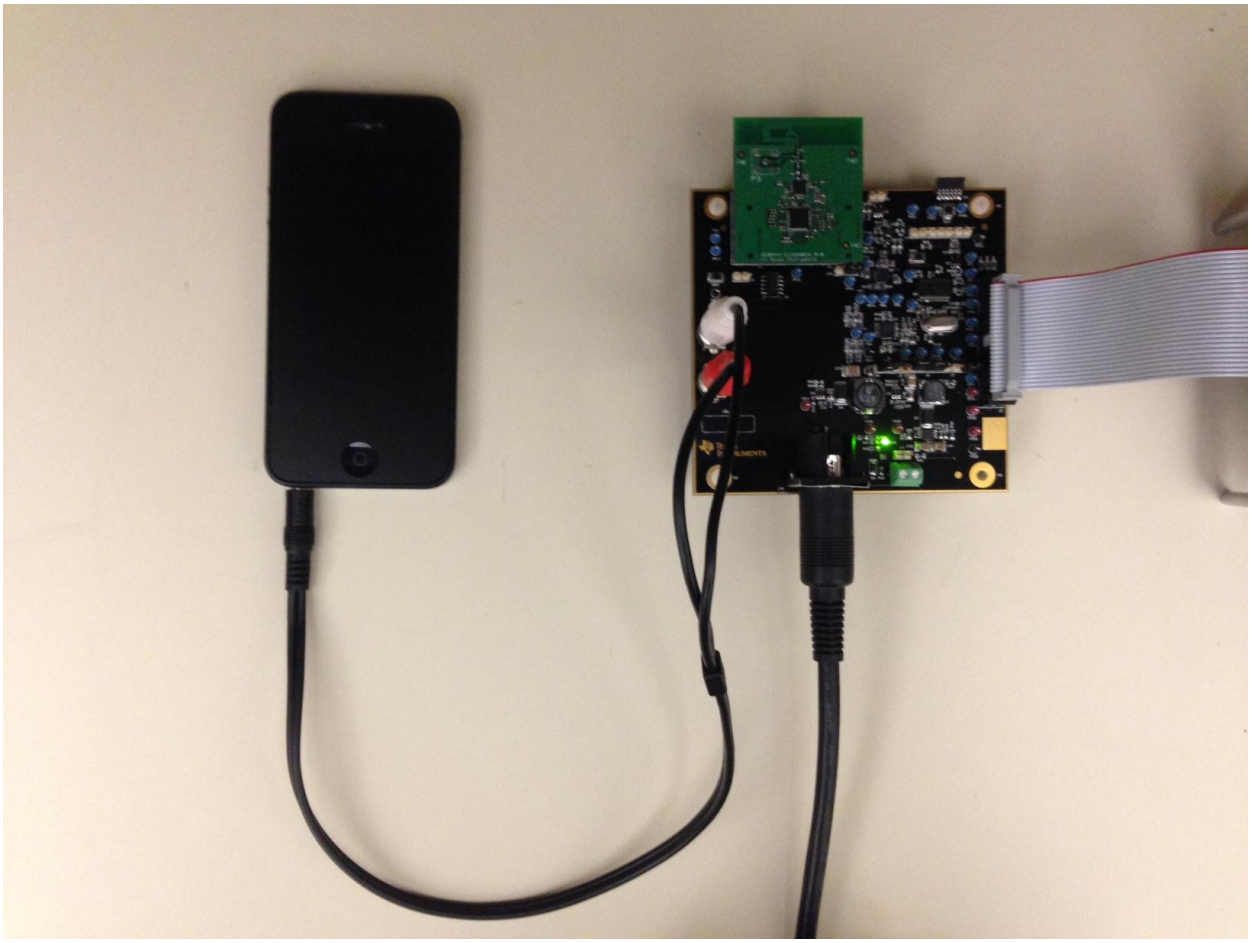


29. Then press the play button



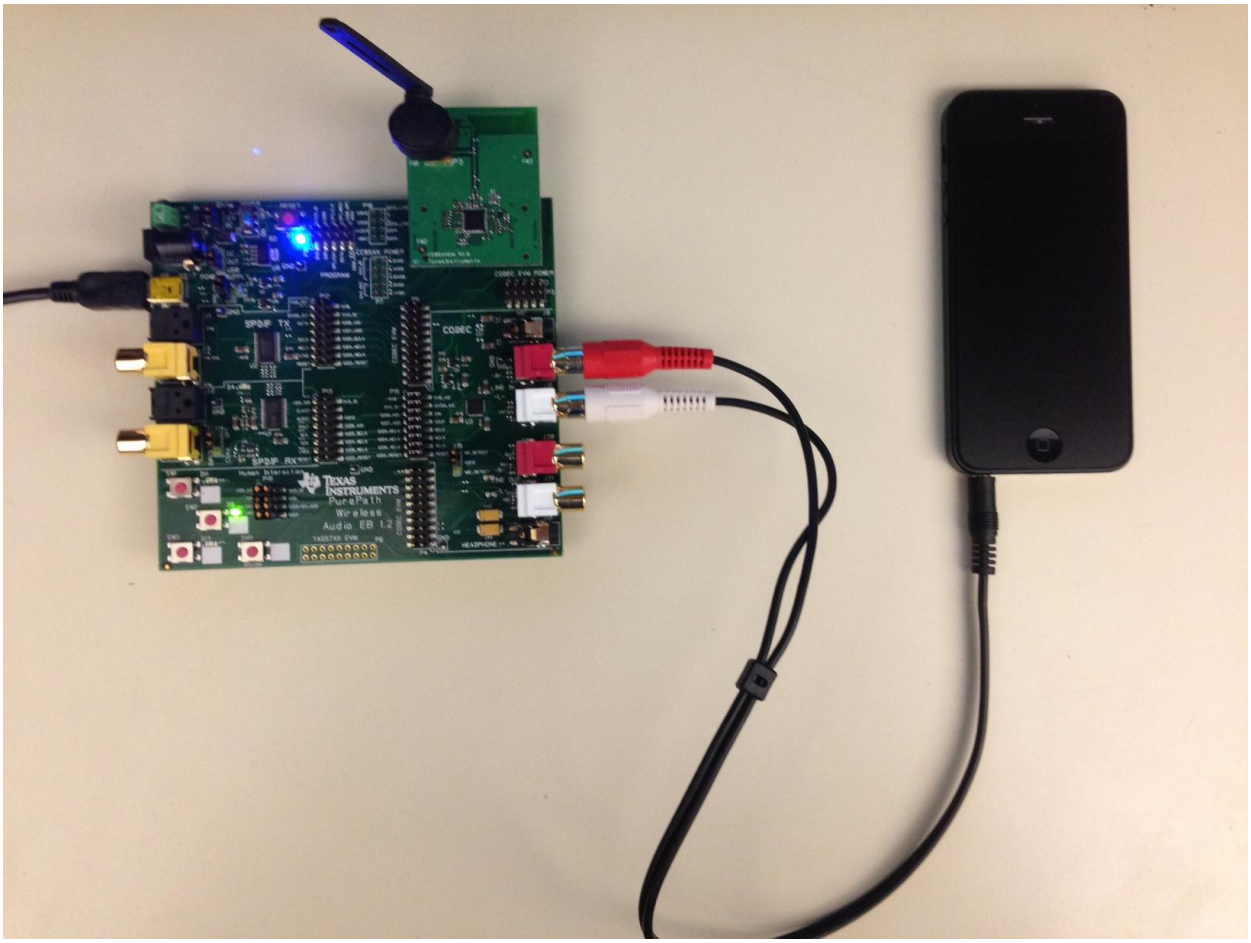
30. The AMP_RESET LED on the TAS5624ADDVEVM should turn off.

31. Connect the 3.5mm jack to a compatible device (i.e. a phone)



32. Turn on the power supply to TAS5624ADDVEVM so that it is powered.
33. Play music, you should hear it come from the subwoofer. (**Note: with this setting the low pass filter is set to have a high cutoff frequency so much of the music should pass through**).

34. To test the wireless, remove the RCA to 3.5mm jack cable and connect it (and the media device) to the Line in on the PurePath Wireless Audio EB board.



35. **Change jumper J8 on the wireless subwoofer board to short Pin 2-3. This will change the source select from direct line in to wireless in.**
36. Press sw9 on the PurePath Wireless Audio EB, and then press sw1 on the wireless subwoofer board. This will pair the two devices. (Note: this only must be done after programming once, after this the devices will be paired and connect automatically once powered up).
37. Play music, you should again hear the music come from the subwoofer.

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