One Technology Way • P.O. Box 9106 • Norwood, MA 02062-9106, U.S.A. • Tel: 781.329.4700 • Fax: 781.461.3113 • www.analog.com

DEMO-ADIN1100D2Z Firmware Source Code – Getting Started Guide

TABLE OF CONTENTS

REVISION HISTORY

01/30—Revision 1.0.0: Initial Version

Rev. PrA

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700 www.analog.com
Fax: 781.461.3113

SOFTWARE REQUIREMENTS

Prior to running the DEMO-ADIN1100D2Z-Firmware-Source installer, the following software packages needs to be installed on the PC:

- Maxim SDK
  - Download Maxim SDK (MAXIM SDK Software Download).
  - Install MaximMicroSDK.exe for Windows.
  - The firmware has been developed and tested with Maxim Micros SDK (Windows), Software Version 1.0.1
- Eclipse IDE
  - The Eclipse IDE is provided along with MAXIM SDK installation, which has the configurations required for MAX32670 microcontroller.

After running the installer, the following structure is created in the installation directory DEMO-ADIN1100D2Z-Firmware-Source:

- .settings: includes the HAL API definition and ports to supported target platforms
- bsp: board support software.
- docs: documentation, Getting Started doc and Release Notes.
- drivers\adinPhy: ADIN1100 and ADIN1200 driver header files
- drivers\ltc4296_1: LTC4296-1 driver sources
- include: application header files
- platform: platform specific source files
- src: application source files

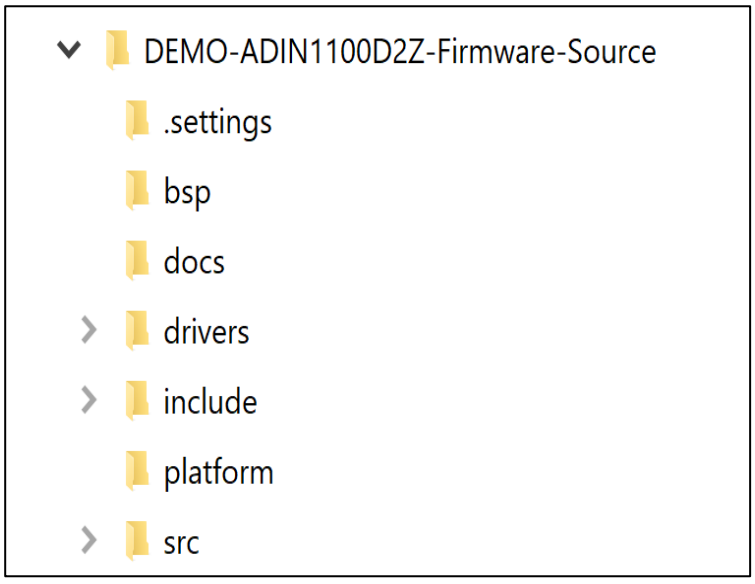

Figure 1. Directory Structure

HARWARE REQUIREMENTS

- The DEMO-ADIN1100D2Z is based on the MAX32670 MCU.
- A JTAG TAG connect Cable is required to connect the board to the PC.
- Please refer the demo board user's guide for more details.

HOW TO RUN THE PROJECT

This section provides steps about using Eclipse to import, build, and debug projects. The project is located under "DEMO-ADIN1100D2Z-Firmware-Source/" in the installation directory. It has been developed and tested using Eclipse version 4.26 which comes along Maxim SDK installer.

This example project can be used to compile and build the code to generate the binary (.hex) file that runs on the DEMO-ADIN1100D2Z board. Refer to the "Readme.txt" file in the project directory which provides project specific information, such as expected LED behavior, UART output etc. More information about the board's behaviour can be found in the User Guide for the DEMO-ADIN1100D2Z board.

RUN THE INSTALLER

1. Double click on the Demo-ADIN1100D2Z-Firmware-Source.exe installer.
2. Once the installation is complete, the installer package is located at C:\ADI\DEMO-ADIN1100D2Z-Firmware-Source.

CHANGING THE DEFAULT WORKSPACE LOCATION

1. Navigate to the Eclipse installation location C:\MaximSDK\Tools\Eclipse\cdt.
2. Double-click on eclipse.bat.
3. The Eclipse Launcher Dialog box appears.
4. Create a workspace directory in C:\ADI\<workspace directory name> and specify the directory path in the **Workspace** field in Eclipse. Click **Launch**.

Note: Workspace directory locations with spaces do not function properly in Eclipse.

IMPORTING PROJECTS INTO WORKSPACE

1. Select **File-> Import** from the Menu bar. The Import dialog box appears as shown in Figure2.

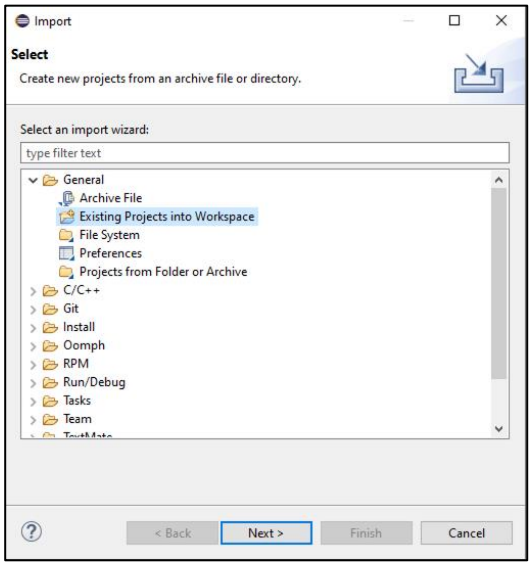

Figure 2: Import dialog box

2. Expand the **General** folder and select **Existing Projects into Workspace**.

3. Click **Next**. The **Import Projects** dialog box appears.
4. Click **Browse**. Browse to the DEMO-ADIN1100D2Z-Firmware-Source project folder installed earlier. Select the root directory containing the example project.
5. The **Import Projects** dialog box reappears showing the root directory you selected in the **Select root directory** field.

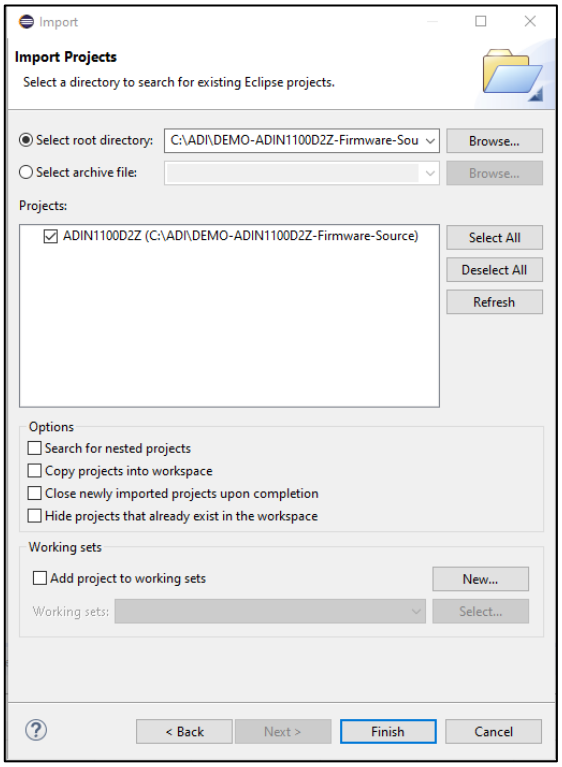

Figure 3: Import Projects dialog box

6. Select the check box to the left of the project you want to import, in the **Projects** window.
7. Select the **Copy projects into workspace** check box, only if you want to copy the files to the workspace folder.
8. Click **Finish** to import the project into your workspace folder.

BUILDING THE PROJECT

1. Select **Project->BuildProject** on the Menu. The project builds.
2. Select **Window-> Show View -> Console.** The results of the build appear on the **Console** tab as shown in Figure 4. After successful build, the "DEMO-ADIN1100D2Z-Firmware-Source/build" folder will have all the binaries and build related files.

```
Console
CDT Build Console [ADIN1100D2Z]
17:57:02 **** Build of configuration Default for project ADIN1100D2Z ****
make -r -j 8
Loaded project.mk
  CC    main.c
  CC    src/aux_functions.c
  CC    src\cmdsrv/cmd.c
  CC    src\cmdsrv/cmd_aux.c
  CC    src\cmdsrv/cmd_list.c
  CC    src\cmdsrv/cmd_srv.c
  CC    bsp/boardsupport.c
  CC    platform/adi_eth_error.c
  CC    platform/adi_platform.c
  CC    drivers\ltc4296_1/sccp_pse.c
  CC    drivers\ltc4296_1/spoeLTC4296_1.c
  CC    C:/MaximSDK/Libraries/Boards/MAX32670/EvKit_V1/Source/board.c
  CC    C:/MaximSDK/Libraries/Boards/MAX32670/EvKit_V1/../Source/stdio.c
  CC    C:/MaximSDK/Libraries/Boards/MAX32670/EvKit_V1/../Source/led.c
  CC    C:/MaximSDK/Libraries/Boards/MAX32670/EvKit_V1/../Source/pb.c
  CC    C:/MaximSDK/Libraries/Boards/MAX32670/EvKit_V1/Source/rom_stub.c
  AS    C:/MaximSDK/Libraries/CMSIS/Device/Maxim/MAX32670/Source/GCC/startup_max32670.S
  CC    C:/MaximSDK/Libraries/CMSIS/Device/Maxim/MAX32670/Source/heap.c
  CC    C:/MaximSDK/Libraries/CMSIS/Device/Maxim/MAX32670/Source/system_max32670.c
  LD    /c/Users/RSreehar/DEMO-ADIN1100D2Z/prerelease/examples/adin1100/Demo-adin1100d2z/build/ADIN1100D2Z.elf
arm-none-eabi-size --format=berkeley /c/Users/RSreehar/DEMO-ADIN1100D2Z/prerelease/examples/adin1100/Demo-adin1100d2z/build/ADIN1100D2Z.elf
   text    data     bss     dec     hex filename
  98688    5880    2752  107320   1a338 C:/Users/RSreehar/DEMO-ADIN1100D2Z/prerelease/examples/adin1100/Demo-adin1100d2z/build/ADIN1100D2Z.elf

17:57:04 Build Finished. 0 errors, 0 warnings. (took 2s.190ms)
```

Figure 4: Project build console window

DOWNLOADING FIRMWARE THROUGH JTAG

1. Connect the JTAG to the DEMO-ADIN1100D2Z board. To power up, connect the USB TYPE-C cable to the board on one side and to the host PC on the other side, shown in Figure 5.

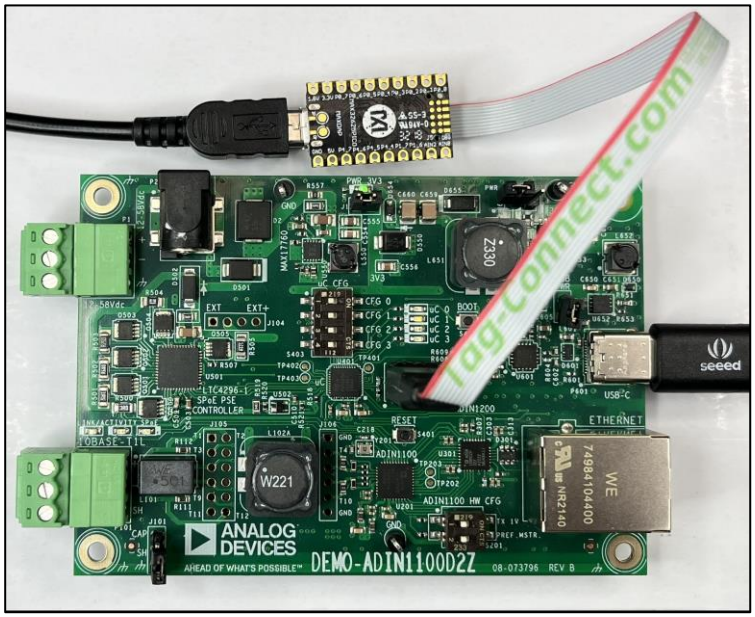

Figure 5: DEMO-ADIN1100D2Z Board with JTAG connected

2. Under **Project Explorer** tab, right-click on **ADIN1100D2Z** and select **Debug As -> Debug Configurations**. The **Debug Configurations** window appears as shown in Figure 6.

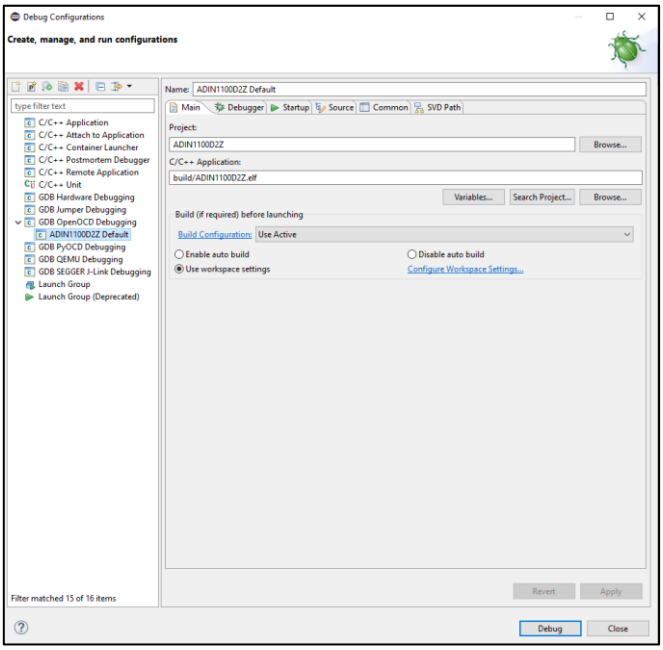

Figure 6: Debug Configuration

3. Select **GDB OpenOCD Debugging ->ADIN1100D2Z Default** in the left navigation panel. Click **Debug**.
4. Eclipse opens the Debug perspective and attempts to build the program, load the program to flash and run the program.
5. Click **Switch,** on the **Confirm Perspective Switch** window to open Debug perspective.
6. By Default, a breakpoint is set at the first line of main function in the main.c file.
7. Open serial command console on the Host PC and set it to 8-N-1 and 115200 Baud.
8. Select **Run -> Resume** on the menu tab to execute the project.
9. Observe successful completion of the project code with UART prints as shown in Figure 7.

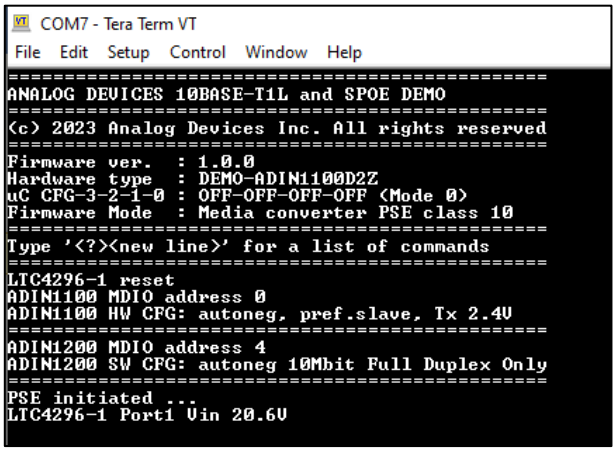

Figure 7: Serial console output on Host PC

NOTES