Develop with SEGGER Embedded Studio for ATM2/ATM3 Quick Start Guide

Revision History

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1 Overview

This document will help you start using the Atmosic SDK and develop your application with SEGGER Embedded Studio (SES). SES is a cross platform Integrated Development Environment (IDE), so you can run it on different operating systems.

2 Minimum Requirements

Ensure that you have all the required hardware and software.

Required hardware:

- Atmosic EVK and Atmosic Interface board
- Atmosic J-Link adapter board
- SEGGER J-Link debug probe

Required software:

- Atmosic Software Development Kit (SDK) 4.2 or higher
- SEGGER Embedded Studio v5.42
- One of the following operating systems:
  - Windows 10
  - macOS
  - Linux

3 Set Up Tool Chain

3.1 Set up the Atmosic SDK

Follow the Atmosic SDK Quick Start Guide (available on the Atmosic support website) to set up the SDK. Enter the “make run_all” command in the command line to ensure that GNU/GCC can build an Atmosic SDK example, then download the example image into the Atmosic Evaluation Board.

3.2 Install SEGGER Tools

Plug-in SEGGER J-Link debug probe into your laptop or PC and install the most recent release of the SES. Please make note of the SES installation destination path in the setup wizard. This path is required to put the J-Link flashloader file. Please also make sure the J-Link driver is installed correctly.

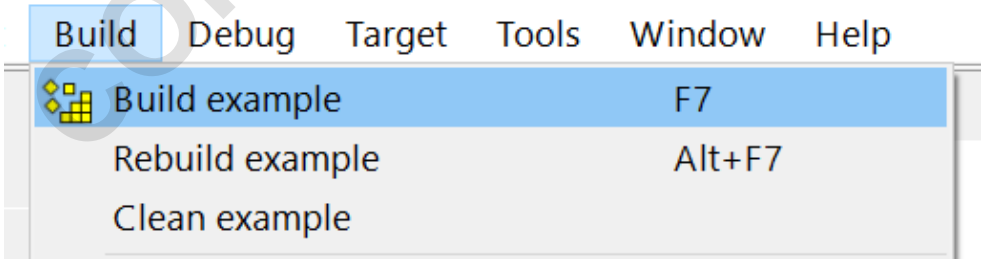
4 Create SES Application Project

- Linux and macOS
  1. Navigate to the examples folder (like: **SDK_root\platform\atm2\ATM22xx-x1x\examples\BLE_adv**)
  2. Enter the command in a command line to clean objects: *make clean*
  3. Enter the command in a command line to generate example code's SES project: *make ses_gen*
  4. You will see a new folder named "sesauto". This is the SES project file for this example.
- Windows 10
  Each example will have a SES project (folder named "sesauto") after running the Atmosic Windows SDK installer.

5 Compile Application

You can compile the application from a SES project

1. Open your project in SES
   SES projects are located in the sesauto subfolder of the example, such as **SDK_root\platform\atm2\ATM22xx-x1x\examples\BLE_adv\sesauto\example.emProject**
2. Select Build>*Build example*



Make sure that there are no build errors.
The output should look similar to Figure 1:

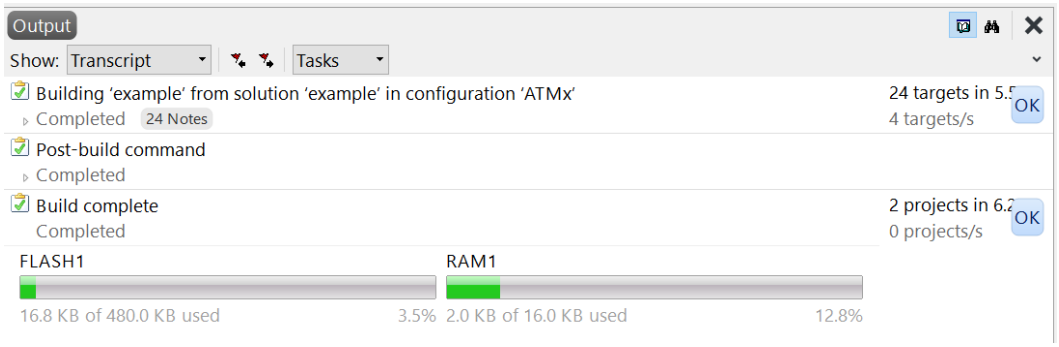


Figure 1 - Build Output with No Errors

The GNU/GCC toolchain will use Atmosic SDK's path for SES by default. If users want to modify the toolchain path, users need to modify it in SES ID, see Figure 2.

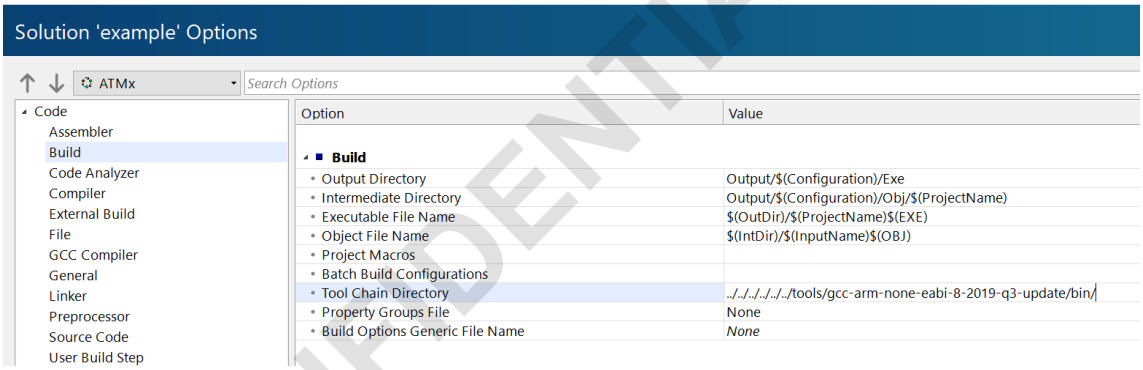


Figure 2 - Tool Chain Directory

Users also need to modify the post build script named postbuild.js in the sesauto folder.

6 Program Firmware

6.1 Hardware Setup

Refer to the Keil MDK Configuration Guide for Atmosic SDK (available on the Atmosic support website) for details of the J-Link connection. Figure 3 shows the Atmosic interface board with J-Link adapter board.

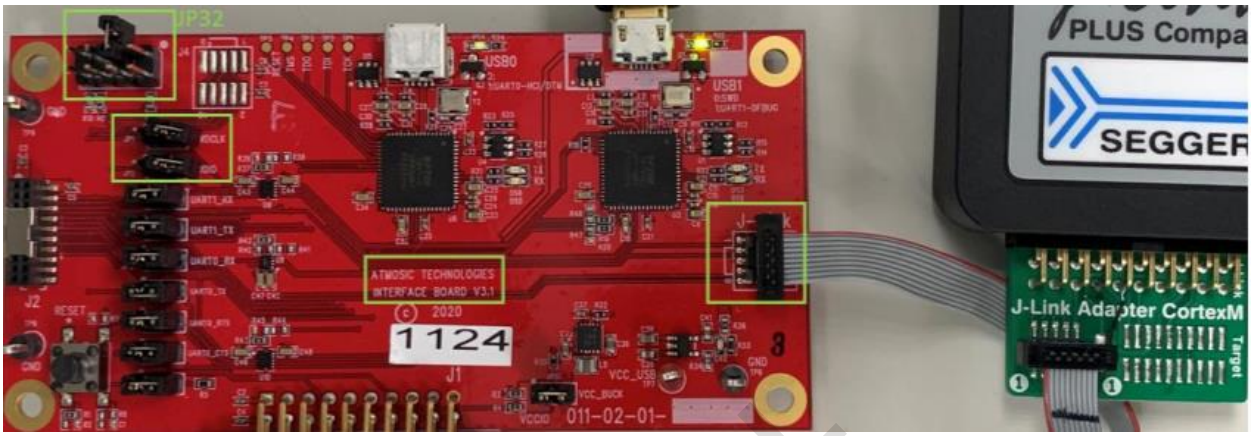


Figure 3 - Atmosic Interface Board with J-Link Adapter Board

6.2 J-Link Flash Loader Setup

There are three files (atmx_flash.FLM, atmx_nvds.FLM and JLinkDevices.xml) under SDK_root\tools\keil as flashloader. Please refer to the following to copy these files.

- Windows 10
  - Copy JLinkDevices.xml to C:\Program Files (x86)\SEGGER\SEGGER Embedded Studio for ARM xxxx\bin\
  - Copy atmx_flash.FLM and atmx_nvds.FLM to C:\Program Files (x86)\SEGGER\SEGGER Embedded Studio for ARM xxxx\bin\Devices\Atmosic\atmx
- Linux
  - Copy JLinkDevices.xml to /usr/share/segger_emb…./bin
  - Copy atmx_flash.FLM and atmx_nvds.FLM to /usr/share/segger_emb…./bin/devices/Atmosic/atmx
- macOS
  - Copy JLinkDevices.xml to /Applications/SEGGER…./bin
  - Copy atmx_flash.FLM and atmx_nvds.FLM to /Applications/SEGGER…./bin/Devices/Atmosic/atmx

6.3 Download Firmware and Flash NVDS

After building successfully, select *target>Download* example, as shown in Figure 4. It will program *example.bin* and *flash_nvds.bin* to EVK. Press the PWD button to reboot.

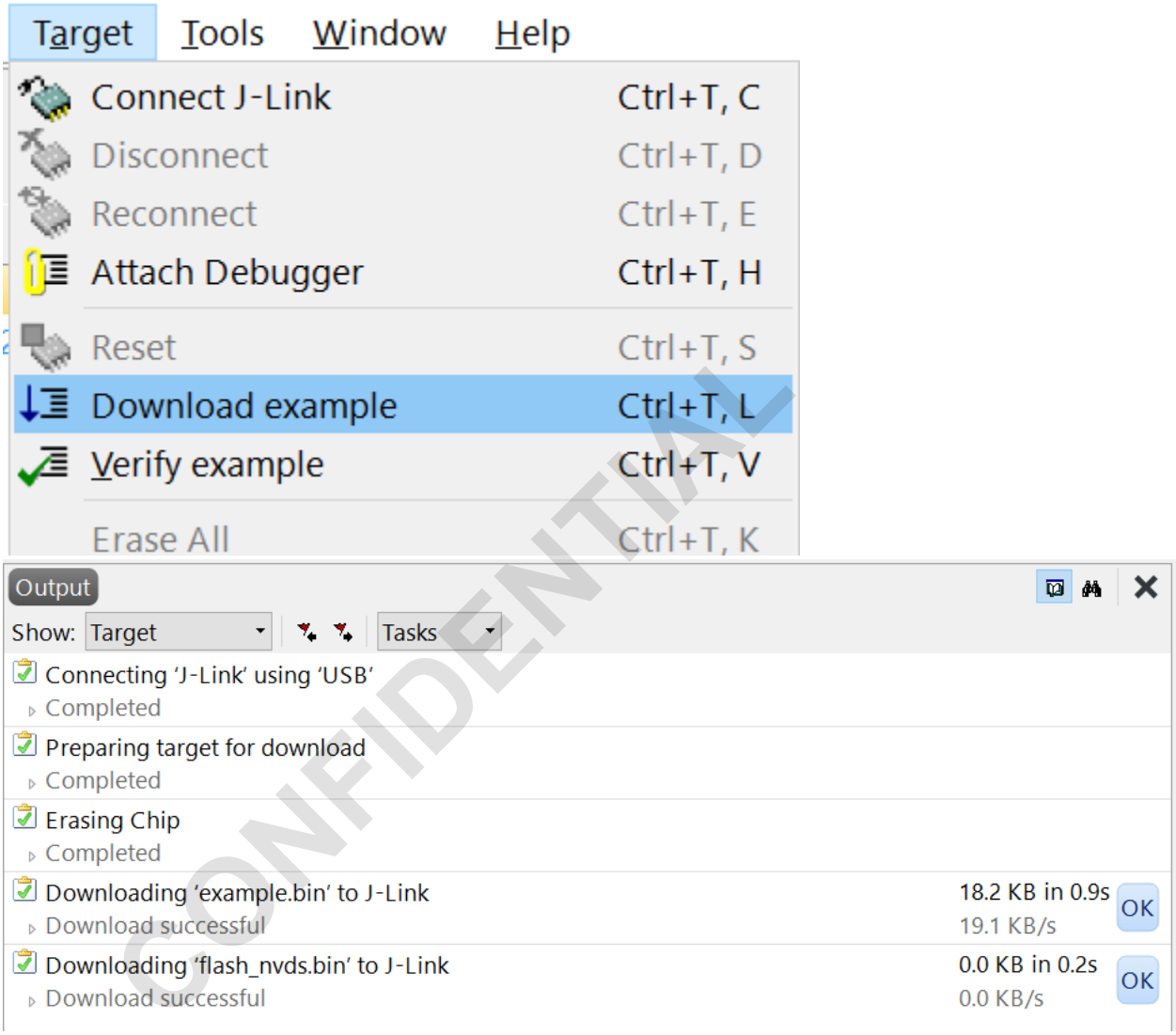


Figure 4 - Programming Flash Output

7 Debug

Before debugging, disable sleep via Flash NVDS (*flash_nvds.bin*). Please modify tagID (11-SLEEP_ENABLE) and set it's value to 0x00 (Sleep disabled) and then generate the *flash_nvds.bin*. The SES project is using the flash_nvds.bin of the sesauto folder. Please copy sleep disabled *flash_nvds.bin* into the sesauto folder. You must set up a J-Link debugging session. SES has an integrated debugger that can be to step through your application. Select *Debug>Go*

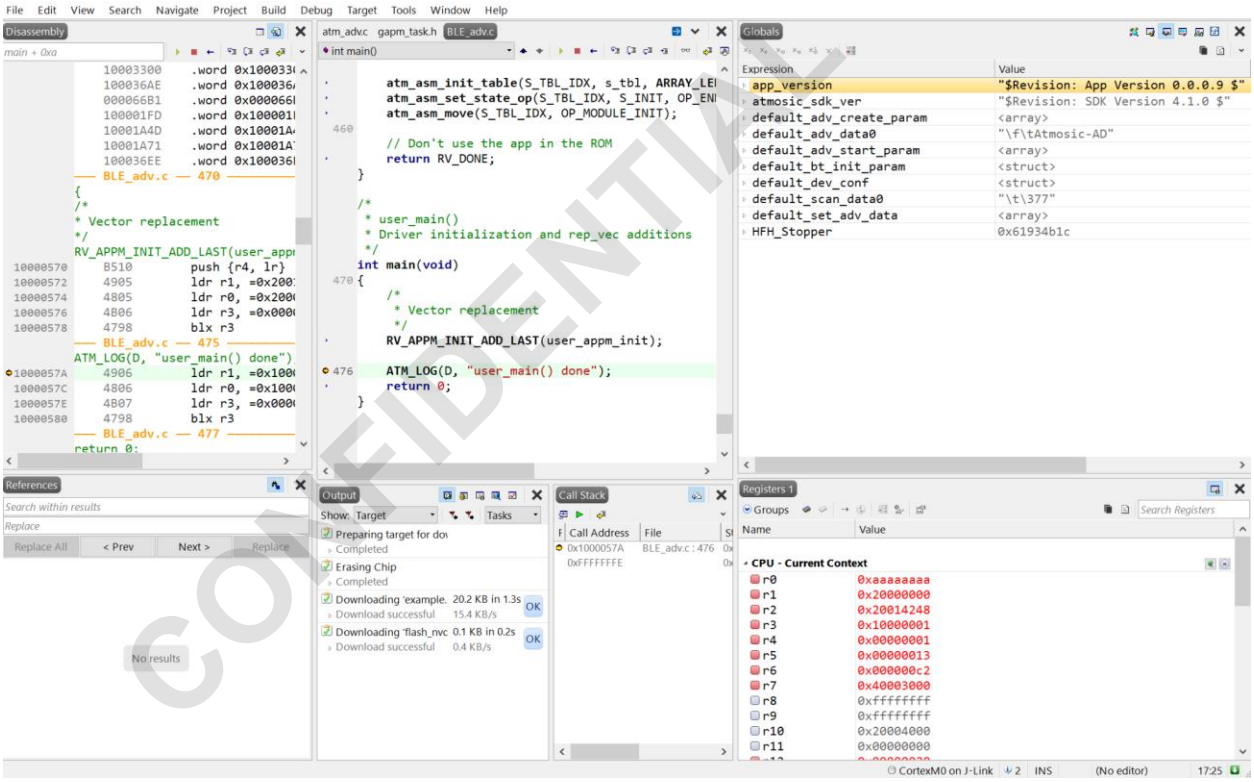


Figure 5 - SES Debug Session Windows

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