

MAXIM INTEGRATED INSTRUCTIONS FOR EXPORTING MBED PROGRAM TO OFFLINE COMPILERS

Feb 2019

Maxim Integrated Instructions for Exporting Mbed Program to an Offline Compiler

©2019 Maxim Integrated Products, Inc.
All rights reserved.

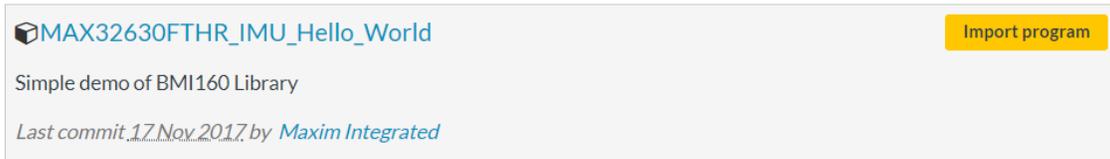
No part of this documentation may be reproduced nor distributed in any form or by any means, graphic, electronic, or mechanical, including but not limited to photocopying, scanning, recording, taping, e-mailing, or storing in information storage and retrieval systems without the written permission of Maxim Integrated Products, Inc. (hereafter, "Maxim"). Products that are referenced in this document such as Microsoft Windows® may be trademarks and/or registered trademarks of their respective owners. Maxim makes no claim to these trademarks. While every precaution has been taken in the preparation of this document, individually, as a series, in whole, or in part, Maxim, the publisher, and the author assume no responsibility for errors or omissions, including any damages resulting from the express or implied application of information contained in this document or from the use of products, services, or programs that may accompany it. In no event shall Maxim, publishers, authors, or editors of this guide be liable for any loss of profit or any other commercial damage caused or alleged to have been caused directly or indirectly by this document.

Rev. 0.1

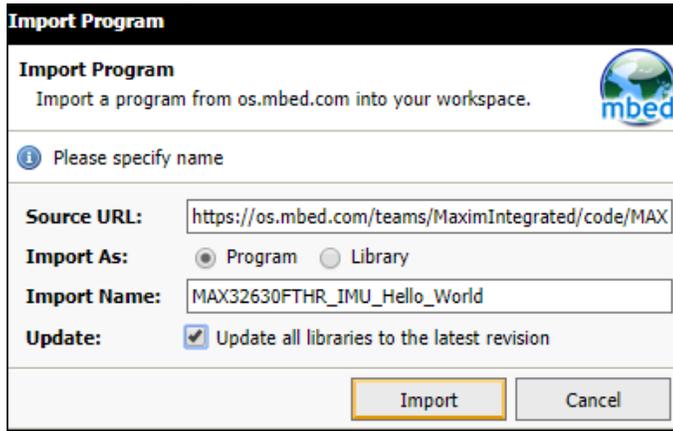
Maxim Integrated Instructions for Exporting Mbed Program to an Offline Compiler

Exporting the Mbed Program to an Offline Compiler

1. Create an mbed account and login
2. Go to <https://os.mbed.com/components/MAXREFDES220/>
3. click on Import Program



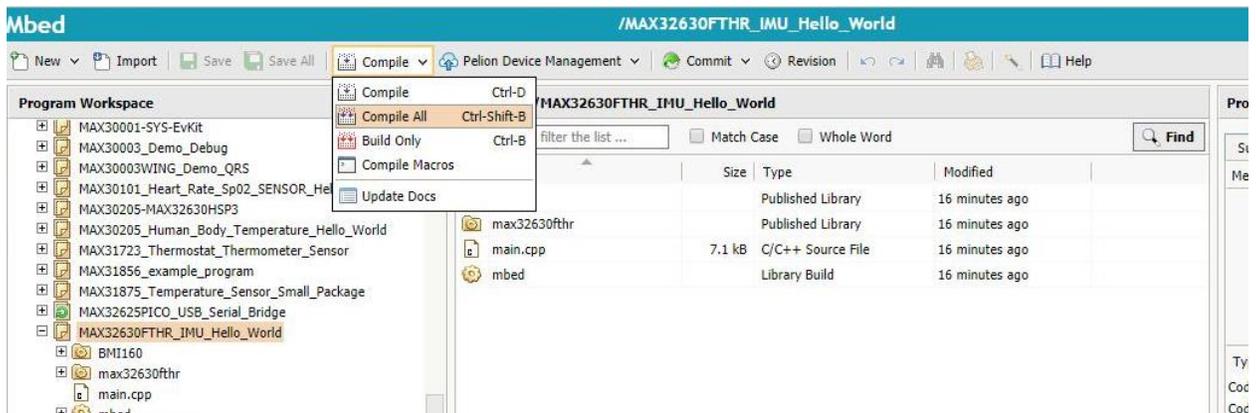
4. Check the "Program" check-circle and the "Update all libraries to the latest revision" checkbox.



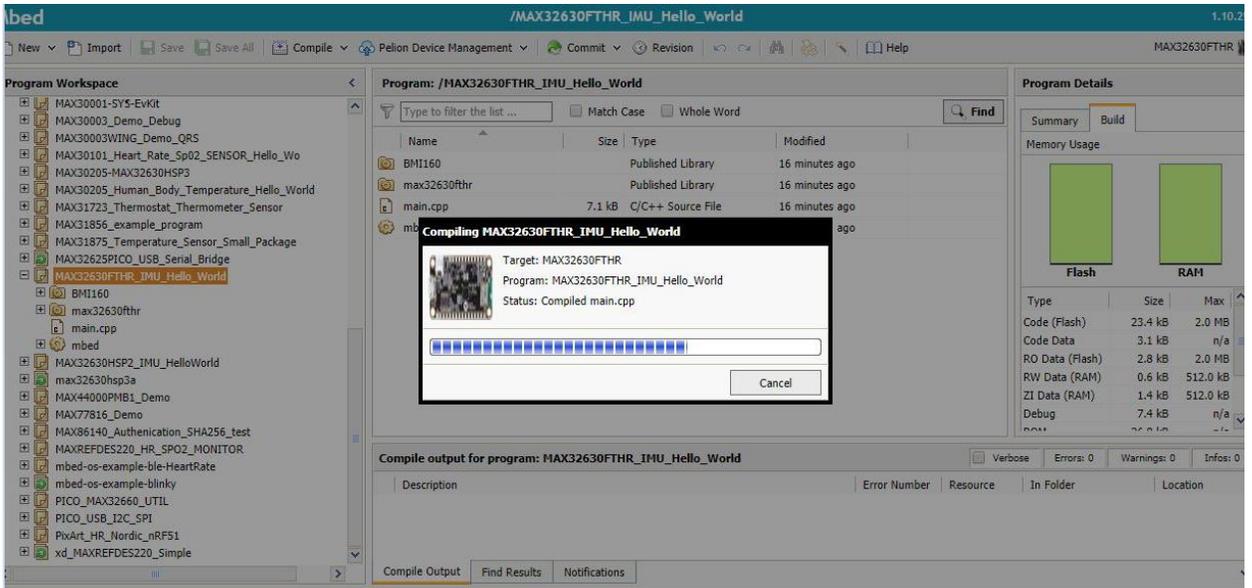
5. In the right corner, change the target platform to match your host microcontroller such as MAX32630FTHR.



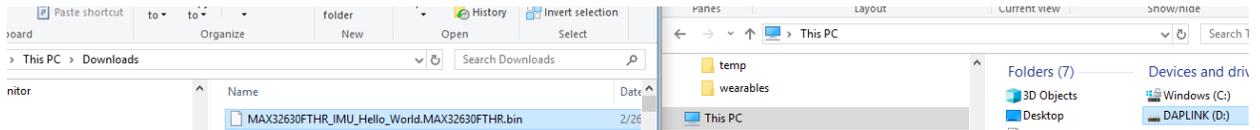
With the MAX32630FTHR_IMU_Hello_World selected, Click on Compile All from the Compile drop-down.



Maxim Integrated Instructions for Exporting Mbed Program to an Offline Compiler

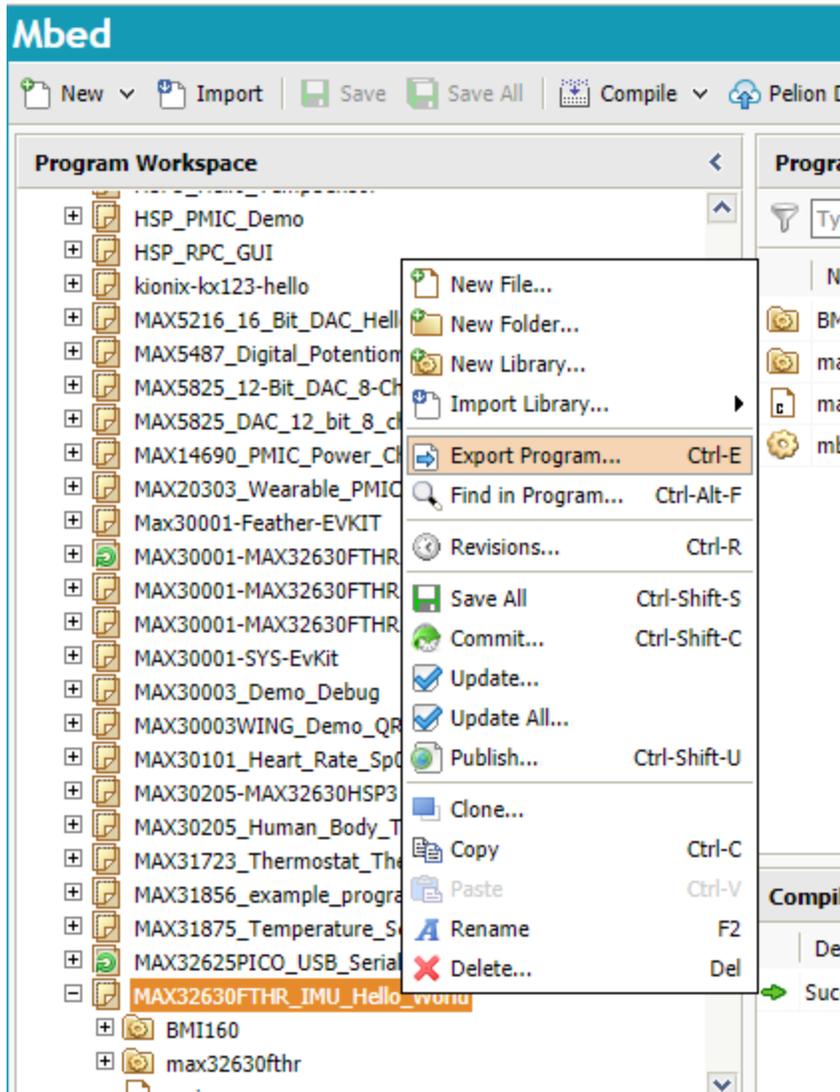


- The MAX32630FTHR_IMU_Hello_World.MAX32630FTHR.bin will be in your download folder. After you have connected the hardware to the PC, you may copy the MAX32630FTHR_IMU_Hello_World.MAX32630FTHR.bin file to the DAP_LINK folder in order to flash the MAX32630FTHR.

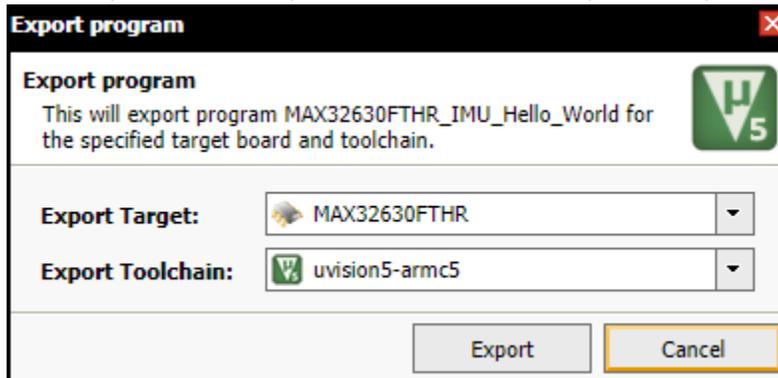


- To Export to a different Toolchain, Right click the MAX32630FTHR_IMU_Hello_World in the left panel and select "Export Program"

Maxim Integrated Instructions for Exporting Mbed Program to an Offline Compiler

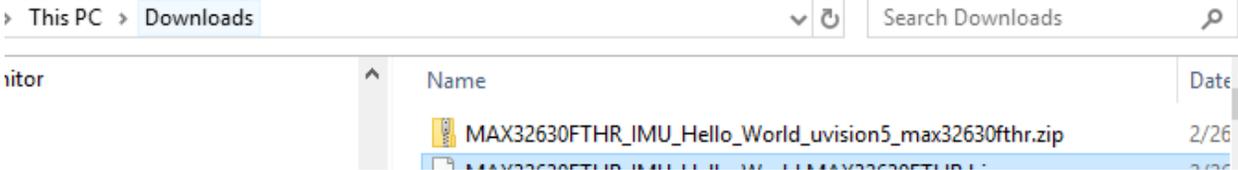


8. In the Export Toolchain pulldown, select the compiler that you want the program exported to:



Maxim Integrated Instructions for Exporting Mbed Program to an Offline Compiler

9. The zip file will be in your download folder.



Exporting the Mbed Program to the GCC Offline Compiler

1. Maxim ToolChain

Install the Maxim ToolChain to your Windows PC:

- 1) Go to this site and **create a login and password** (it's not the same as the single sign on, but you can use your maxim email), then go to this link again if necessary:

<https://www.maximintegrated.com/en/design/software-description.html/swpart=SFW0001500A>

Then select the link for: **ARMCortexToolchain.exe (20MB)**

- 2) After the ARMCortexToolchain.exe has finished downloading, double-click on it and use the default settings and select next until finished.

Select "Install the Driver/**Run it Anyway**" when Windows says that it doesn't recognize the driver.

- 3) In the folder C:\Maxim, double click on **updates.bat**

If updates.bat fails it may be necessary run the MaintenanceTool.exe in order to update the files.

2. Install the Mbed CLI:

<https://os.mbed.com/docs/mbed-os/v5.11/tools/installation-and-setup.html>

3. Open the msys terminal window and create a working directory:

In the **MINGW32** (looks like a dos window) **window** that's created after double clicking msys.bat in C:\Maxim\Toolchain\msys\1.0, navigate and create a working directory:

```
cd c:
```

```
mkdir maximintegrated
```

```
cd maximintegrated
```

```
mkdir imu
```

```
cd imu
```

4. Import the code by using the following command:

```
mbed import https://os.mbed.com/teams/MaximIntegrated/code/MAX32630FTHR\_IMU\_Hello\_World/
```

If you get an error, you will need to download the Babun shell and latest Cygwin and run the command from Babun:

```
http://babun.github.io/
```

```
https://cygwin.com/install.html
```

Maxim Integrated Instructions for Exporting Mbed Program to an Offline Compiler

```
{ imu } » mbed import https://os.mbed.com/teams/MaximIntegrated/code/MAX32630FTHR_IMU_Hello_world/
[mbed] working path "c:\users\david.jung\od\sensors\mbedComponents\sensorhub\imu" (directory)
[mbed] Program path "c:\users\david.jung\od\sensors\mbedComponents\sensorhub\imu"
[mbed] Importing program "MAX32630FTHR_IMU_Hello_world" from "https://os.mbed.com/teams/MaximIntegra
ed/code/MAX32630FTHR_IMU_Hello_world" at latest revision in the current branch
[mbed] Adding library "BMI160" from "https://developer.mbed.org/teams/MaximIntegrated/code/BMI160" a
t rev #4949e9b15b6e
[mbed] Adding library "max32630fthr" from "https://developer.mbed.org/teams/MaximIntegrated/code/max
32630fthr" at rev #9eb360063579
[mbed] Adding library "max32630fthr\MAX14690" from "https://os.mbed.com/teams/MaximIntegrated/code/M
AX14690" at rev #264f38840873
[mbed] Adding library "mbed" from "https://os.mbed.com/users/mbed_official/code/mbed/builds" at rev
#e7ca05fa8600
[mbed] Downloading library build "e7ca05fa8600" (might take a while)
[mbed] Unpacking library build "e7ca05fa8600" in "c:\users\david.jung\od\sensors\mbedComponents\sens
orhub\imu\MAX32630FTHR_IMU_Hello_world\mbed"
[mbed] Couldn't find build tools in your program. Downloading the mbed 2.0 SDK tools...
{ imu } »
```

5. Get the latest updates to the code by the following commands

Change the directory to the project folder:

```
{ imu } » cd MAX32630FTHR_IMU_Hello_world
{ MAX32630FTHR_IMU_Hello_world } »
```

Type:

mbed deploy

```
{ MAX32630FTHR_IMU_Hello_world } » mbed deploy
[mbed] working path "c:\users\david.jung\od\sensors\mbedComponents\sensorhub\imu\MAX32630FTHR_IMU_H
ello_world" (program)
[mbed] Updating library "BMI160" to rev #4949e9b15b6e
[mbed] Updating library "max32630fthr" to rev #9eb360063579
[mbed] Updating library "max32630fthr\MAX14690" to rev #264f38840873 (tag: tip)
[mbed] Updating library "mbed" to rev #e7ca05fa8600
[mbed] updating the mbed 2.0 SDK tools...
{ MAX32630FTHR_IMU_Hello_world } »
```

6. Connect your board to the PC. Compile the program with this command:

mbed compile -t GCC_ARM -m auto

If you don't have the board, you may compile by specifying the board name (MAX32630FTHR is used in this example) in the command:

mbed compile -t GCC_ARM -m MAX32630FTHR

Note: The MAX32630HSP2 micro board for the MAXREFDES101 is not released on Mbed yet, so you will have to specify the board as MAX32630FTHR if you are using the MAXREFDES101.

Maxim Integrated Instructions for Exporting Mbed Program to an Offline Compiler

```
{ MAX32630FTHR_IMU>Hello_world } » mbed compile -t GCC_ARM -m MAX32630FTHR
Using targets from C:\users\david.jung\od\sensors\mbedcomponents\sensorhub\MAX32630FTHR_IMU>Hello_w
ld\mbed\e7ca05fa8600\targets.json
Building project MAX32630FTHR_IMU>Hello_world (MAX32630FTHR, GCC_ARM)
Scan: MAX32630FTHR_IMU>Hello_world
Compile [ 16.7%]: bmi160_spi.cpp
Compile [ 33.3%]: bmi160_i2c.cpp
[warning] bmi160_i2c.cpp@91,29: variable length array 'packet' is used [-wvla]
Compile [ 50.0%]: bmi160.cpp
Compile [ 66.7%]: max32630fthr.cpp
Compile [ 83.3%]: MAX14690.cpp
Compile [100.0%]: main.cpp
[warning] main.cpp@196,26: variable length array 'buff' is used [-wvla]
Link: MAX32630FTHR_IMU>Hello_world
Elf2Bin: MAX32630FTHR_IMU>Hello_world
Module      .text      .data      .bss
-----
BUILD\MAX32630FTHR      2521(+2521)      0(+0)      0(+0)
[fill]                   54(+54)         4(+4)     491(+491)
[lib]\c.a                24999(+24999)   2472(+2472)  89(+89)
[lib]\gcc.a              3120(+3120)     0(+0)      0(+0)
[lib]\mbed.a             1761(+1761)     0(+0)      42(+42)
[lib]\misc                252(+252)       8(+8)      28(+28)
mbed\e7ca05fa8600       7726(+7726)     488(+488)   686(+686)
Subtotals                40433(+40433)   2972(+2972) 1336(+1336)
Total Static RAM memory (data + bss): 4308(+4308) bytes
Total Flash memory (text + data): 43405(+43405) bytes

Image: .\BUILD\MAX32630FTHR\GCC_ARM\MAX32630FTHR_IMU>Hello_world.bin
[mbed] working path "C:\users\david.jung\od\sensors\mbedcomponents\sensorhub\MAX32630FTHR_IMU>Hello_
world" (program)
{ MAX32630FTHR_IMU>Hello_world } » |
```