

This document Provides a step by step example of how to get 251 byte packet size for the Apollo2 and Apollo2Blue BLE solutions.

There is a README file in the AmbiqMicro/AmbiqSuite/tools/emp2include directory. The contents, shown below, provide an explanation of what is needed. The remainder of this document simply serves as an example to follow.

This directory holds the *.emp files generated by the EM Micro tools (e.g. EM9304 Configuration Editor) or EM Micro developers (code patches).

All *.emp files contained in this directory will result in the generation of a patch or patches to be applied to the EM9304.

The script emp2include.py has the following usage:

```
$ ./emp2include.py --help
usage: emp2include.py [-h] [-o MEMORY]
```

Convert multiple EM9304 *.emp files to the em9304_patches.* files.

optional arguments:

- h, --help show this help message and exit
- o MEMORY Destination memory (IRAM or OTP)

Patches can be applied temporarily to IRAM and then permanently applied to OTP (one-time programable) memory as needed. The default is IRAM.

The files em9304_patches.h and em9304_patches.c will be generated in the following directory:

```
/third_party/exactle/sw/hci/ambiq/em9304
```

Patches are uniquely identified by the following meta-data embedded in *.emp files:

- * Format Version - Container format version (increments as container is updated)
- * Patch ID - Unique identifier for the container/patch (assigned by patch creator)
- * Build number - EM9304 ROM minor revision supported by patch
- * User Build - User defined number (assigned by patch creator)
 - => 0, 1: Reserved by EM
 - => 2, 3: Reserved by Ambiq Micro
 - => 4+ : Available for customer

Example:

First.. navigate to the EM microelectronics website and download the Configuration Editor. It's located on the forum, under Resources. You'll need to create an account and log in.

Secure | https://forums.emdeveloper.com/index.php?resources/em9304-configuration-editor.2/

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 **EM9304 Configuration Editor 0.3.7**
Utility to change configuration options and program the EM9304

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53.6 MB .zip

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Overview **Updates (4)** Version History

The **EM9304 Configuration Editor** is an application that allows the many configuration options of the EM9304 to be viewed and modified. It also provides functionality to program the DVK's EM9304 when attached to a PC. The EM9304 Configuration Editor is installed as part of the SOC SDK, but can be installed separately. To install the Configuration Editor, follow these steps:

1. Download the attached zip file.
2. Unzip the contents of the zip file to a folder (the destination folder) such as C:\Program Files (x86)\. A subfolder will be created called, EM9304-ConfigEditor.
3. The Configuration Editor requires a Microsoft Windows resource, which is installed by running or double-clicking on the file, vcredist_x86.exe. If you have already installed this, you do not need to installed it again. Complete the installation as instructed.
4. Run the Configuration Editor by double-clicking on the file, configedit.exe.
5. In the Select Firmware dialog click Browse and select the ROM ELF file that corresponds to the EM9304 silicon revision* on the DVK. For Revision B, select rom_revB.elf and click Open.
6. The Configuration Editor will be populated with the default ROM configuration options.

Information

Author:
Total Downloads:
First Release:
Last Update:
Category:
All-Time Rating:

Version 0.3.7

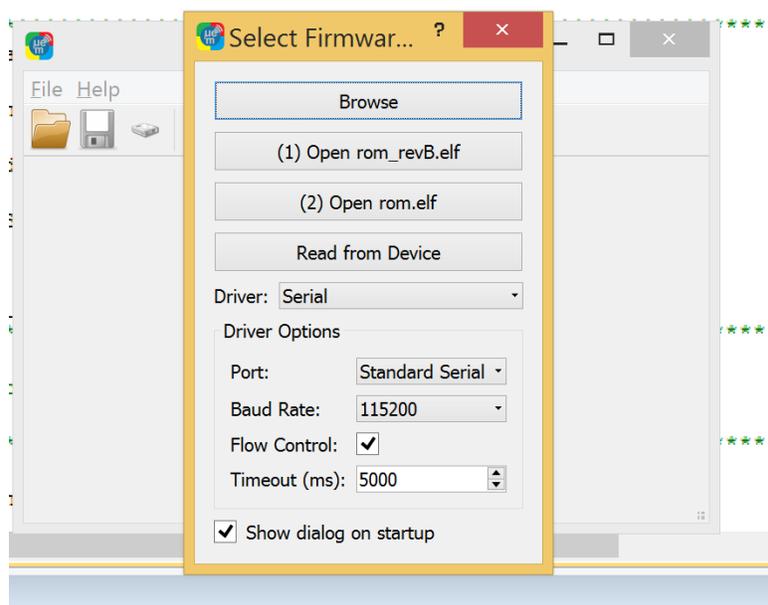
Released:
Downloads:
Version Rating:

More Resources
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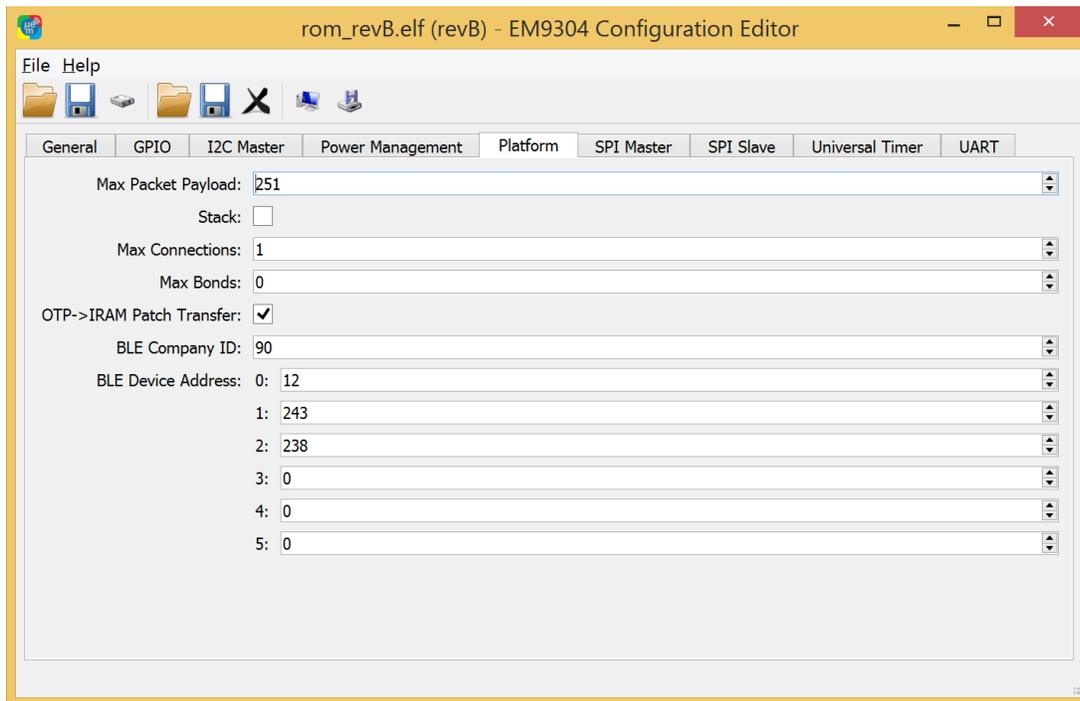
External MCU ISP E
Patch upload exam
(external MCU)
EM9304 FOTA
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DVK over SPI

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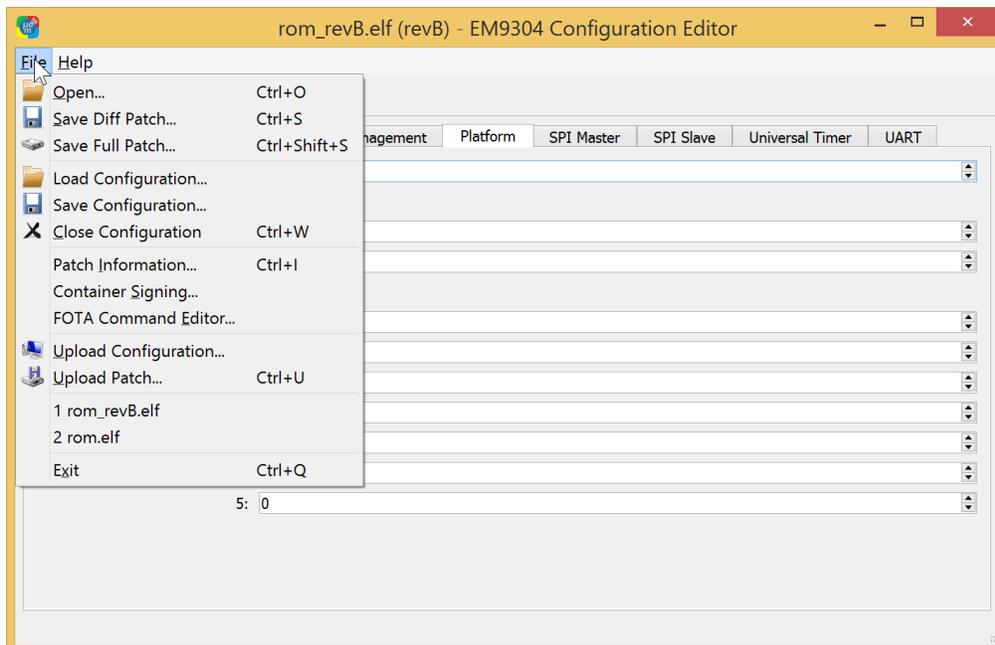
Once download is complete, open the EM9304 Configuration Editor and select the second button from the top "Open rom_revB.elf"

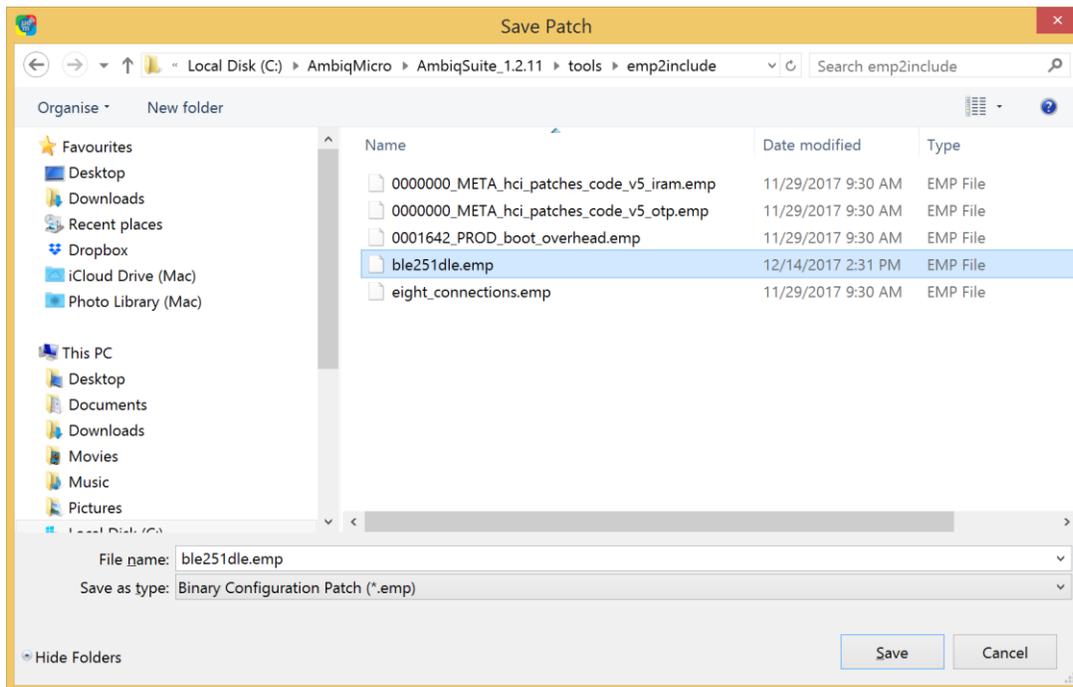


Then go to the “Platform” tab and change the “Max Packet Payload” to 251

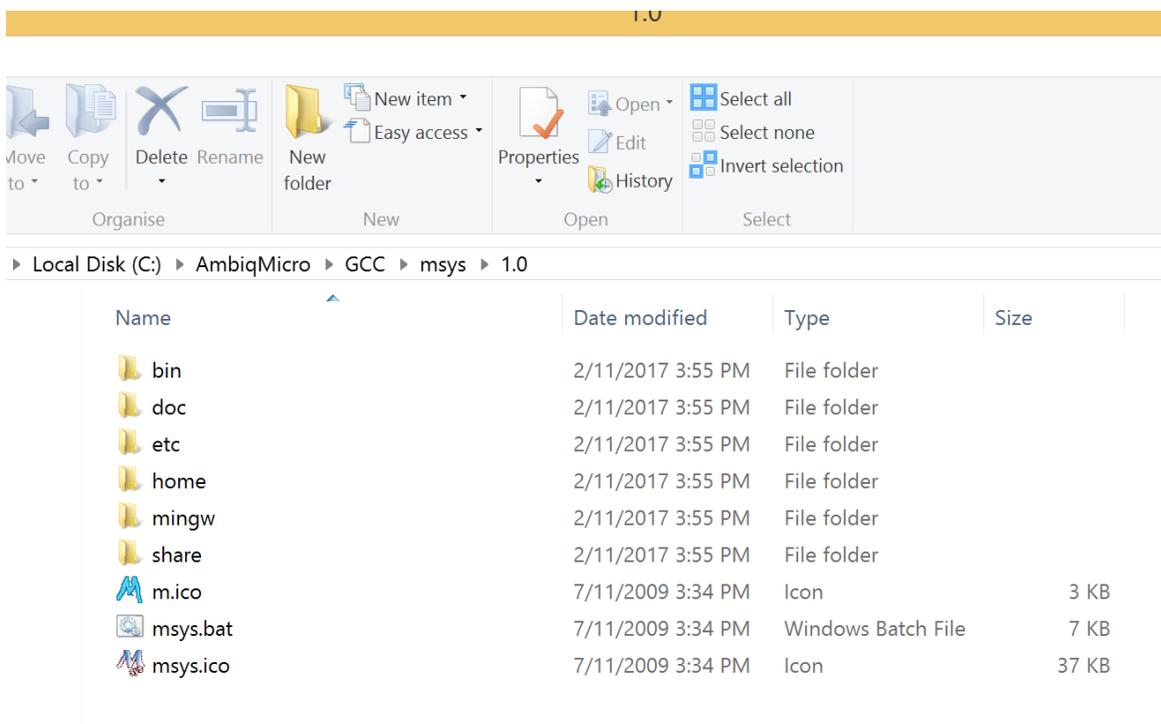


Then got to “File”, “Save Diff Patch” give the .emp file a name and save it in the tools/emp2include folder.

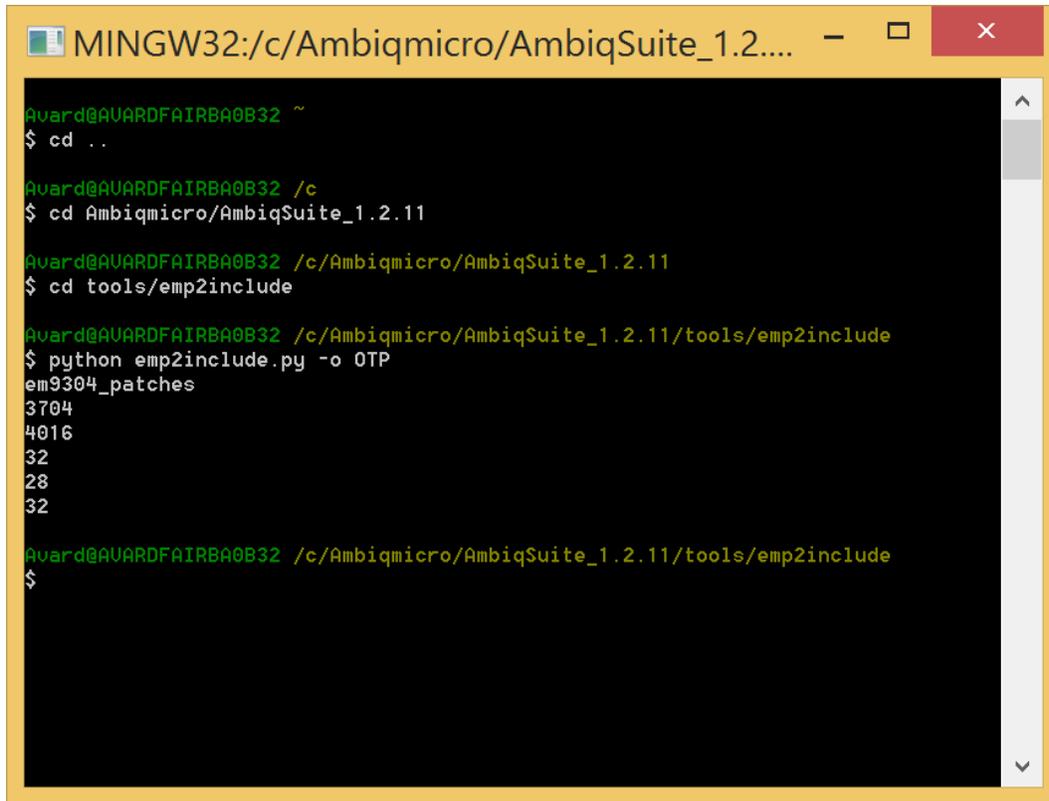




Now open a Unix command prompt using Cygwin, or navigate to the directory below and open msys.bat



In the Unix command window, navigate to ...AmbiqMicro/AmbiqSuite/tools/emp2include and then run the python script by typing: python emp2include.py -o OTP



```
MINGW32:/c/Ambiqmicro/AmbiqSuite_1.2.... - [ ] [X]
Avard@AUARDFAIRBA0B32 ~
$ cd ..
Avard@AUARDFAIRBA0B32 /c
$ cd Ambiqmicro/AmbiqSuite_1.2.11
Avard@AUARDFAIRBA0B32 /c/Ambiqmicro/AmbiqSuite_1.2.11
$ cd tools/emp2include
Avard@AUARDFAIRBA0B32 /c/Ambiqmicro/AmbiqSuite_1.2.11/tools/emp2include
$ python emp2include.py -o OTP
em9304_patches
3704
4016
32
28
32
Avard@AUARDFAIRBA0B32 /c/Ambiqmicro/AmbiqSuite_1.2.11/tools/emp2include
$
```

Per the README, You now have new em9304_patches.h and em9304_patches.c files in the /third_party/exactle/sw/hci/ambiq/em9304 directory.

Then in the code.. Change the ATT_DEFAULT_MTU size (in att_defs.h) to something larger than the default.. something like 247 (for the full 251 bytes, set this value to 247 since there is 4 bytes l2cap header)

Now you should be working with the larger packet size.