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 (onetime 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/ambig/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 Ambig 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.

C Secure https://forums.emdeveloper.com/index.php?resources/em9304-configuration-editor.2/	
EM MICROELECTRONIC - Marin SA	
Home Forums Resources Members	Avard Fa
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Home Resources EM9304 Downloads	Information
Terms of Use, Privacy Policy (By using this website you are assenting to the site's Terms of Use and Privacy Policy.) Terms of Use, Privacy Policy (By using this website you are assenting to the site's Terms of Use and Privacy Policy.) Terms of Use Contact us Download Now S3.6 MB.szip	Author: Total Downloads: First Release: Last Update: Category: All-Time Rating:
Tags: (configuration) (editor) (em9304) (options) (programming)	Version 0.3.7
Overview Updates (4) Version History	Released: Downloads:
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	Version Rating:
be installed separately. To install the Configuration Editor, follow these steps:	More Resourc Martin
 Download the attached zip file. 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. 	External MCU ISP E Patch upload exam (external MCU)

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.

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- 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.

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

	📽 Select Firmwar ? 🛛 ×	× ****
Eile Help	Browse	
:	(1) Open rom_revB.elf	
3	(2) Open rom.elf	
	Read from Device	
	Driver: Serial •	
1	Driver Options	****
	Port: Standard Serial -	
	Baud Rate: 115200 -	
•	Flow Control:	****
	Timeout (ms): 5000	
·	Show dialog on startup	

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

	rom_revB.elf (revB) - EM9304 Configuration Editor 🛛 🚽 🗖 📉						
<u>E</u> ile <u>H</u> elp							
General GPIO I2C Master Power Management Platform SPI Master SPI Slave Universal Timer UART							
Max Packet Payload:	251						
Stack:							
Max Connections:	1						
Max Bonds:	0						
OTP->IRAM Patch Transfer:							
BLE Company ID:	90 \$						
BLE Device Address:	0: 12						
	1: 243						
	2: 238						
	3: 0						
	4: 0						
	5: 0						

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

🧐 rom_revB.elf (revB) - EM9304 Configuration Editor 🛛 🗖 🗡								
<u>H</u> elp								
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Now open a Unix command prompt using Cygwin, or navigate to the directory below and open msys.bat

1.0

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▶ Local Disk (C:) ▶ AmbiqN	licro ▶ GCC ▶ msys ▶	1.0			
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🐌 home		2/11/2017 3	8:55 PM	File folder	
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In the Unix command window, navigate to ...AmbiqMicro/AmbiqSuite/tools/emp2include and then run the python script by typing: python emp2include.py –o OTP



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.