



QP2-001

SERVICE BULLETIN QP2-001

Product: QuadPort2

Subject: Applying a firmware update via the bootloader

Date: 28th Feb 2022

Description

This Service Bulletin describes how to apply a firmware update to the QuadPort2's Main Board via the bootloader. This operation is required to be performed on devices that are from the first production batch of QuadPort2 devices.

Background

The first production batch of QuadPort2 devices were shipped with firmware version 2.0.0 on the Main Board. The 2.0.0 firmware provides basic functionality but does not have the ability to apply firmware updates from the Command Line Interface (CLI), or down the coaxial cable using the remote diagnostics system.

The procedure described in this document can be used to update the Main Board firmware to version 2.1.3 via the serial port bootloader.

How to identify the affected devices?

- Connect a PC to the device's SERVICE port using a TTL-232R-RPI cable.
- Open a Teraterm session to the virtual COM port that was auto created by the USB to serial cable, using the following serial settings:
 - Speed = 115,200
 - Data = 8 bits
 - Parity = None
 - Stop bits = 1 bit
 - Flow control = None
- Press the **RESET** button on the Main Board to display the bootup banner.
- Affected devices will display version **2.0.0** in the banner, as shown below.





COM3-TeraTerm VT File Edit Setup Control Window Help FW Target : QP2/RP2 Version : 2.0.0 [Release] Date : 20-Jan-2022 07:36 HW Detect : Repeater v2 Press ENTER to begin

Procedure

Install TI Uniflash on the PC

- Download UniFlash for most TI microcontrollers (MCUs) and mmWave sensors from <u>https://www.ti.com/tool/UNIFLASH</u>.
- Install UniFlash on the PC.

Configure UniFlash

- Connect a PC to the device's SERVICE port using a TTL-232R-RPI cable.
- Take note of the virtual COM port that was created by the USB to serial cable (e.g. COM3).
- If a Teraterm session to the SERVICE port is still open, disconnect that Teraterm session since the serial port must be made available for Uniflash.
- Start TI Uniflash, which will display the following screen:

🗲 UniFlash							-		×
UniFlash Session -	About							2	۵
									-i
 Detected Devices 									
Status: Inactive - Click 'Detect' to detect devices					Setting:	Manual	*	Detect	
								_	
 New Configuration 									
	 Choose Yo 	our Device							
C	Category: All C2000 mmWave MSP PGA	Safety Tiva UC	D Wireles	s Bootload	ler				
	Q Enter Device Name (1352 Ava	ailable)	20	×					
	AWR1243BOOST	BoosterPack	Serial	<u>^</u>					
	awr1443Boost	BoosterPack	Serial						- 1
	AWR1642BOOST	BoosterPack	Serial						
	AWR1843BOOST	BoosterPack	Serial						- 1
	BOOSTXL-CC3135	LaunchPad	Serial						- 1
	CC3220S-LAUNCHXL	LaunchPad	Serial						
	CC3220SF-LAUNCHXL	LaunchPad	Serial						
	EK-TM4C123GXL	LaunchPad	On-Chip						

 From the menu bar select Session -> Load Session and navigate to the configuration file: MSP430F5438A_BL.uniflash. After this is done, the following screen will be displayed:





	(?)						
	MSP43						
E Bro	wse						
💻 Bro	wse						
💻 Bro	wse						
💻 Bro	wse						
▼ Quick Settings Remove All							
u (Linux), /dev/tty.uspmodem1411 (US X)							
🔹 Verbose 🖉 Clear	× Clo						
	♦ Verbose						

- Click the **Browse** button next to the **Application Image 1** text box and navigate to the file: **QP2_2.1.3_app_jtag.txt**.
- Change the COM Port field value to match the virtual serial port that was created by the USB to serial cable.
- Once these steps are completed, the screen will look similar to the following:

5 UniFlash		- 0	I X
UniFlash Session - Ab	out	•	•
Configured Device : Serial Connection	MSP430F5438A(BOOTLOADER) [download ccxml]	•	MSP430
Program	Select and Load Images		
Settings & Utilities	Flash Image(s)		
Standalone Command Line	Password	🚊 Browse	
	Application Image 1 QP2_2.1.3_app_jtag.txt Size: 354.63 KB	E Browse	×
	Application Image 2	🔔 Browse	
	Application Image 3	🔔 Browse	
	Available Action(s) - 1 Image Selected Load Image Note: Please power cycle your device before loading images		
	Quick Settings Remove All Note: Example - COM1 (Windows), /dev/ttyACM0 (Linux), /dev/tty.usbmodem1411 (OS X) COM Port: COM3		

Program the application

- Enter the bootloader on the Main Board by following these steps:
 - Press and hold the DEFAULT button
 - While holding the DEFAULT button, press and release the RESET button.
 - Release the DEFAULT button.



- If the bootloader was entered, the yellow DEBUG LED on the Main Board will be flashing twice a second.
- Click the Load Image button in UniFlash, which will fail with the following message in the Console window of UniFlash.

Console	

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[28/2/2022 10:10:34 pm] [INFO] MSP430: MSP430F5438A(Bootloader) [28/2/2022 10:10:36 pm] [ERROR] MSP430: [ERROR]BSL password is incorrect! [28/2/2022 10:10:37 pm] [ERROR] MSP430: [ERROR_MESSAGE]Process is failed!

- This failure results in the application being erased from main memory, which then allows the next attempt to succeed.
- Click the **Load Image** button again in UniFlash. It will take several minutes to complete the flash programming.

Verify that the update was successfully programmed

- Press the **RESET** button on the Main Board to boot into the application.
- Verify that the yellow DEBUG LED stops flashing.
- Close TI UniFlash.
- Open a Teraterm session to the virtual COM port, using the following serial settings:
 - Speed = 115,200
 - Data = 8 bits
 - Parity = None
 - Stop bits = 1 bit
 - Flow control = None
- Press the **RESET** button on the Main Board to display the bootup banner.
- The upgraded device will display version **2.1.3** in the banner, as shown below.
 - 💆 COM3 Tera Term VT

