SERVICE BULLETIN DD-001

Product: LineAmp, LineAmp+Ethernet, QuadPort2 & Repeater2

Subject: Applying a firmware update to the Main Board via JTAG   **Date:** 16th Mar 2022

Description

This Service Bulletin describes how to apply a firmware update to the Main Board of a LineAmp, LineAmp+Ethernet, QuadPort2 or Repeater2 via a Texas Instruments JTAG programmer.

Background

LineAmp and LineAmp+Ethernet devices manufactured prior to 2022 were factory programmed with firmware version 1.x.x. The 1.x.x series of firmware does not implement two-way diagnostics with the headend and requires its bootloader and main application to be updated to achieve two-way diagnostics functionality.

QuadPort2 and Repeater2 devices manufactured prior to February 2022 were factory programmed with firmware version 2.0.0. This version of firmware contains the correct bootloader for two-way diagnostics. However, it does not have a menu option in the user facing CLI commands to apply firmware upgrades.

The procedure described in this document can be used to update the Main Board firmware (comprising of the bootloader plus the application software) to version 2.1.5 via a JTAG programmer. After this firmware is applied with the JTAG programmer, future application firmware upgrades can be applied through the SERVICE port's serial console.

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.
- The firmware version is displayed in the banner, as shown below.
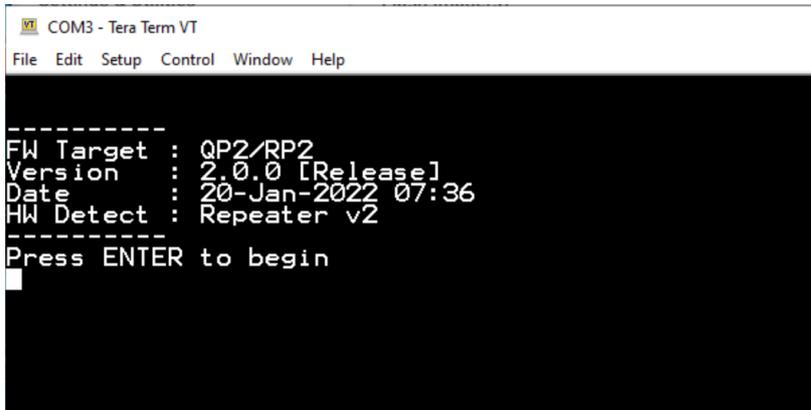
Procedure

Install TI Uniflash on the PC

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

Configure UniFlash

- Connect the TI JTAG programmer's USB port to the PC
- Connect the TI JTAG programmer's 14-way connector to the black rectangular boxed connector in the top right area of the Main Board.
- Power on the Main Board.
- Start TI Uniflash, which will display the following screen:
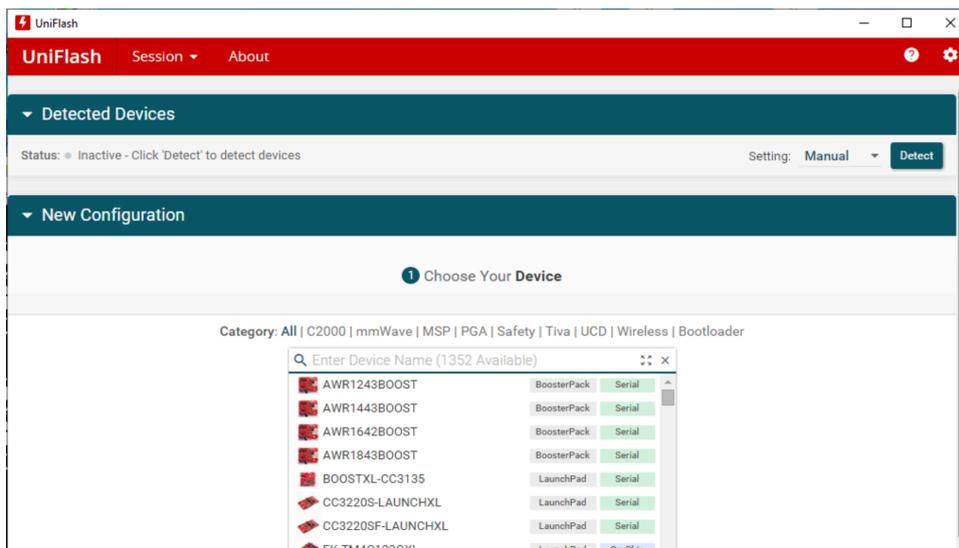
- From the **Detected Devices** section, click **Detect**.
- This will detect the CPU and allow the production firmware image to be applied.

Program the application

- TI Uniflash will display the following screen after configuring the JTAG programmer:
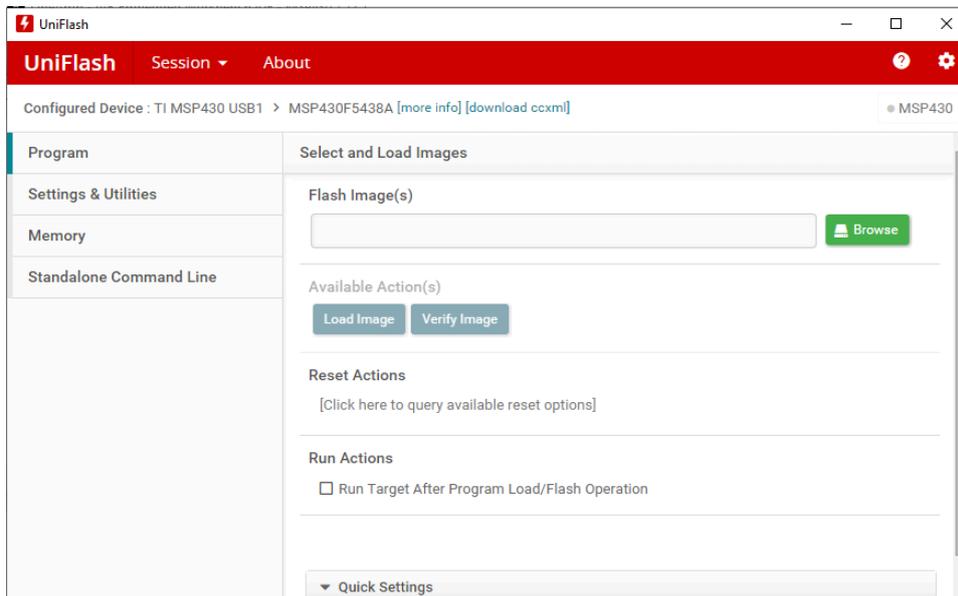
- Click the **Settings and Utilities** menu option on the left-side of the application window, which will bring up the following screen:
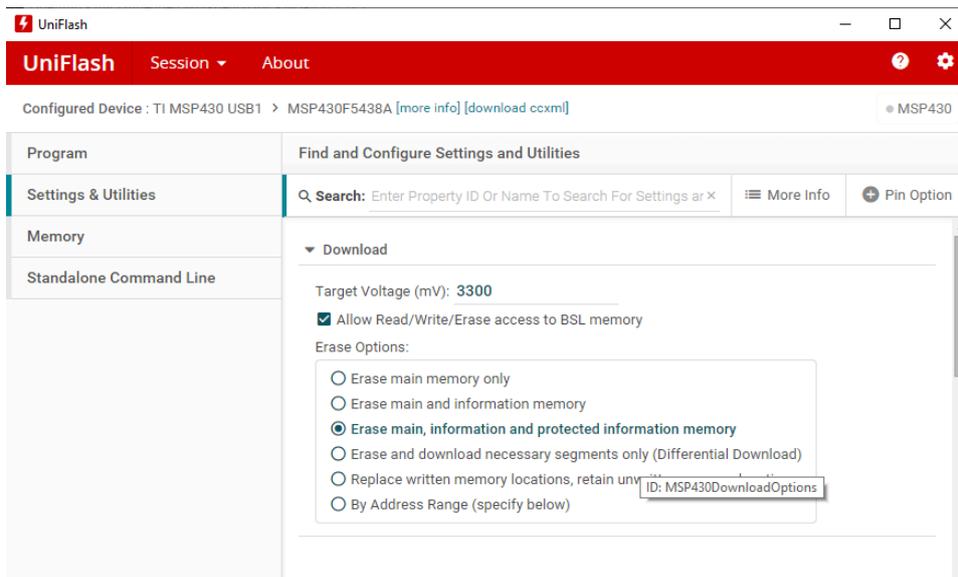
- Make the following changes to the default settings:
  - Allow Read/Write access to BSL memory = **Enabled**
- Return to the main programming screen by clicking the **Program** menu.
- Click the **Browse** button next to the **Flash Image(s)** control, then select the production JTAG firmware file according to the table below:

Product	Production JTAG firmware file
LineAmp	BDA_2.1.5_prod_jtag.txt
LineAmp+Ethernet	BDA_2.1.5_prod_jtag.txt
QuadPort2	QP2_2.1.5_prod_jtag.txt
Repeater2	QP2_2.1.5_prod_jtag.txt

- Click the **Load Image** button.
- If a dialog box pops up with a warning about the version of firmware in the JTAG programmer, select the option to upgrade the firmware in the JTAG programmer to avoid this dialog box from popping up each time a JTAG file is programmed.

Verify that the update was successfully programmed

- Remove the JTAG programmer from the device's 14-way black rectangular boxed connector.
- Press the **RESET** button on the Main Board to boot into the application.
- In the Teraterm session the upgraded device will display version **2.1.5** in the banner.