

i.MX RT1020 Flashloader v2.7.0 Release Notes

1 Overview

These are the release notes for the i.MX RT1020 Flashloader v2.7.0. For additional information and getting started instructions, check [Getting Started](#) section of this document.

The device Flashloader is an application that is loaded into the internal RAM of the device. The Flashloader is designed to work as a second stage bootloader for this device. It detects communication on one of the supported peripherals (USB-HID or UART), downloads a user application, and writes the application to external serial NOR or serial NAND flash device. The Flashloader is initially loaded by MfgTool which then helps in programming the flash. Alternately, flashloader can also be loaded using sdphost command line application and blhost application can be used for flash programming.

This release includes the PC-hosted MfgTool application. This application is used for downloading user-application to flash device in both development and production phase. This release also includes elftosb command-line application. It is used to generate bootable image for the device ROM and generate programmable image supported by Flashloader.

2 Development tools

The device Flashloader was compiled and tested with following development tools.

Firmware projects:

- IAR Embedded Workbench for ARM® v8.30.1
- KEIL MDK5.26 with corresponding device pack
- MCUXpresso IDE v10.3

Host projects:

- Microsoft Visual Studio® Professional 2015 for Windows® OS Desktop
- Microsoft Visual Studio C++ Redistributable for Visual Studio 2015 (vcredist_x86.exe)
- Apple Xcode® v9.2 (for tools).
- Linux® OS GNU Compiler (GCC) v5.4.0, libstdc++6, libudev-dev, libc6, and libgcc1 for the Linux build.
- Linux OS tools have been tested on Ubuntu 16.04 LTS (GLIBC v2.23).

Contents

1 Overview.....	1
2 Development tools.....	1
3 System requirements.....	2
4 Target requirements	2
5 Release contents.....	2
6 Getting started.....	2
7 Features.....	2
8 Host tools.....	3
9 Revision history.....	3



- Apple Mac® OS host tools have been tested on MacOS High Sierra v10.13.3.

3 System requirements

System requirements are based on the requirements for the development tools and the MfgTool application. The recommended PC configuration is 2 GHz processor, 2 GB RAM, and 2 GB free disk space.

Windows OS applications like MfgTool requires installation of Visual C++ redistributable 2013 or greater.

To make the MfgTool work, the device needs to be connected to PC via a USB hub. Sometimes, an extra USB hub is required if all the USB ports on the PC are USB root hub ports.

4 Target requirements

This release of the Flashloader supports the following platforms:

- MIMXRT1020-EVK
-

There are no specific requirements for the hardware other than what the board requires to operate.

5 Release contents

Table 1 describes the release contents

Table 1. Release contents

Deliverable	Location
Host binaries and utilities	<p><sdk_package>/middleware/mcu-boot/bin/Tools</p> <p>example BD files are under <sdk_package>/middleware/mcu-boot/bin/Tools/bd_file folder</p> <p>blhost application is under <sdk_package>/middleware/mcu-boot/bin/Tools/blhost folder</p> <p>elftosb application is under <sdk_package>/middleware/mcu-boot/bin/Tools/elftosb folder</p> <p>MfgTool application is under <sdk_package>/middleware/mcu-boot/bin/Tools/mfgtools-rel folder</p>
Documentation	<sdk_package>/middleware/mcu-boot/doc
Flashloader release	<sdk_package>/boards/<board>/bootloader_examples/flashloader

6 Getting started

To understand the steps required to use the Flashloader and corresponding host tools to generate a user application boot image and load it to external flash device, see the *i.MX RT1020 Manufacturing User's Guide* (document) under <sdk_package>/middleware/mcu-boot/doc directory.

7 Features

For downloading an application, the Flashloader supports the following communication interfaces:

- USB-HID
- LPUART

It also supports configuring and programming the external flash device in a user-friendly manner. For further details, refer to *MCU Flashloader Reference Manual* under <sdk_package>/middleware/mcu-boot/doc folder.

8 Host tools

The bootloader release contains the binaries for the following PC-based host tools:

- MfgTool2.exe: GUI Windows application to download and program an application image into the external flash device. `cfg_MXRT102X.ini` needs to be renamed to `cfg.ini` to use.
- elftosb: command line tool to convert ELF/SREC formatted application image into bootable image format (or SB format). It is available on Windows and Linux platforms
- blhost: command line debug tool called by MfgTool to program the application. It is available for Windows, Linux, and Mac operating systems
- sdphost: command line tool to download and execute flashloader application on the device. It is available for Windows, Linux, and Mac operating systems

9 Revision history

This is the first revision of the document.

How To Reach Us

Home Page:

nxp.com

Web Support:

nxp.com/support

Information in this document is provided solely to enable system and software implementers to use NXP products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits based on the information in this document. NXP reserves the right to make changes without further notice to any products herein.

NXP makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does NXP assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in NXP data sheets and/or specifications can and do vary in different applications, and actual performance may vary over time. All operating parameters, including "typicals," must be validated for each customer application by customer's technical experts. NXP does not convey any license under its patent rights nor the rights of others. NXP sells products pursuant to standard terms and conditions of sale, which can be found at the following address: nxp.com/SalesTermsandConditions.

NXP, the NXP logo, NXP SECURE CONNECTIONS FOR A SMARTER WORLD, COOLFLUX, EMBRACE, GREENCHIP, HITAG, I2C BUS, ICODE, JCOP, LIFE VIBES, MIFARE, MIFARE CLASSIC, MIFARE DESFire, MIFARE PLUS, MIFARE FLEX, MANTIS, MIFARE ULTRALIGHT, MIFARE4MOBILE, MIGLO, NTAG, ROADLINK, SMARTLX, SMARTMX, STARPLUG, TOPFET, TRENCHMOS, UCODE, Freescale, the Freescale logo, Altivec, C-5, CodeTEST, CodeWarrior, ColdFire, ColdFire+, C-Ware, the Energy Efficient Solutions logo, Kinetis, Layerscape, MagniV, mobileGT, PEG, PowerQUICC, Processor Expert, QorIQ, QorIQ Qonverge, Ready Play, SafeAssure, the SafeAssure logo, StarCore, Symphony, VortiQa, Vybrid, Airfast, BeeKit, BeeStack, CoreNet, Flexis, MXC, Platform in a Package, QUICC Engine, SMARTMOS, Tower, TurboLink, and UMEMS are trademarks of NXP B.V. All other product or service names are the property of their respective owners. Arm, AMBA, Arm Powered, Artisan, Cortex, Jazelle, Keil, SecurCore, Thumb, TrustZone, and μ Vision are registered trademarks of Arm Limited (or its subsidiaries) in the EU and/or elsewhere. Arm7, Arm9, Arm11, big.LITTLE, CoreLink, CoreSight, DesignStart, Mali, Mbed, NEON, POP, Sensinode, Socrates, ULINK and Versatile are trademarks of Arm Limited (or its subsidiaries) in the EU and/or elsewhere. All rights reserved. Oracle and Java are registered trademarks of Oracle and/or its affiliates. The Power Architecture and Power.org word marks and the Power and Power.org logos and related marks are trademarks and service marks licensed by Power.org.

© 2018 NXP B.V.

© NXP B.V. 2018.

All rights reserved.

For more information, please visit: <http://www.nxp.com>

For sales office addresses, please send an email to: salesaddresses@nxp.com

Date of release: December 2018

Document identifier: IMXRT1020FLDRRN

The logo for Arm, consisting of the word "arm" in a lowercase, blue, sans-serif font.