

RN00265

Release Notes for i.MX FRDM Yocto Software

Rev. 2.0 — 25 February 2025

Release notes

Document information

Information	Content
Keywords	RN00265, FRDM-IMX93, FRDM-IMX91
Abstract	This document contains important information about the package contents, supported features, known issues and limitations in this release.



1 Overview

This document contains important information about the package contents, supported features, known issues, and limitations in this release.

This release is based on i.MX Linux Release LF6.6.36_2.1.0. For more information on the i.MX software release, see [i.MX LINUX](#).

This release also supports Matter based on i.MX Matter 2024 Q3 (LF6.6.36_2.1.0). For more information on the i.MX Matter release, see [i.MX Matter](#).

This document refers to *i.MX Linux LF6.6.36_2.1.0 Release Notes* (document [RN00210 v.LF6.6.36_2.1.0](#)) and includes special information for FRDM platforms.

i.MX reference boards

- i.MX 9 Series
 - i.MX 91 FRDM board (11 × 11 A1 silicon)
 - i.MX 93 FRDM board (11 × 11 A1 silicon)

1.1 References

This release includes the following references and additional information.

- *i.MX FRDM Software User Guide* (document [UG10195](#)): The document provides the information on how to build, install, and run images for i.MX FRDM platforms.
- *i.MX Linux Release Notes* (document [RN00210 v.LF6.6.36_2.1.0](#)): The document provides i.MX Linux release information.

The quick start guides contain basic information on the board and setting it up. They are on the NXP website.

- *FRDM i.MX93 development board Quick Start Guide* (document [FRDM-IMX93-QSG](#))
- *FRDM i.MX91 development board Quick Start Guide* (document [FRDM-IMX91-QSG](#))

FRDM board information is available below:

- i.MX91 FRDM board information is at [FRDM-IMX91](#) (available at launch).
- i.MX93 FRDM board information is at [FRDM-IMX93](#).

1.2 Release contents

This release consists of the following:

- Prebuilt images
- Documentation
- Git repo open source distributions on the GitHub

The i.MX FRDM Software Releases are named `imx-frdm-<x.y>`.

`<x.y>`: Semantic versioning specification, where X is the major version, Y is the minor version.

[Table 1](#) lists the contents included in each package.

Table 1. Release contents

Component	Description
Linux operating system Kernel and device trees	6.6.36
U-Boot	v2024.04

Table 1. Release contents...continued

Component	Description
SD card images	Prebuilt images used for testing to use on target i.MX FRDM boards
i.MX FRDM layer repos	To build images for target i.MX FRDM boards

The release packages contain the following.

- Documentation.
- Prebuilt binaries:
 - SD card prebuilt image for the release target SoC
 - Kernel and device trees
 - Boot images
 - Applicable Arm Cortex-M Demos if applicable to target SoC

See the *i.MX FRDM Software User Guide* (document [UG10195](#)) for information on how to use these release contents.

i.MX FRDM software also releases Yocto recipes for building images through repos on [Github](#).

1.3 License

The Board Support Package (BSP) is composed of a set of packages and metadata (for Yocto Project Recipes) and each one has its own licensing. Verify the license of the target package before developing. The license can be found at the top of a recipe or a source file (such as *.c or *.h). For details, contact your NXP representative.

During the Yocto Project setup, to set up an i.MX build, accept the NXP license. This acceptance is recorded in the build configuration files so that the following proprietary binaries can be extracted during the build process. The NXP proprietary packages contain a Software Content Register (SCR) file that lists information about the package: `imx-gpu-viv`, `imx-codec`, and `imx-parser`.

1.4 Limited access to proprietary packages

For the limited access packages, see **Section 1.4 Limited access proprietary packages** in the *i.MX Linux Release Notes* (document [RN00210](#)).

1.5 Instructions to get the AP1302 firmware

To get the AP1302 firmware from OnSemi GitHub, perform the following steps:

1. Download [ap1302_60fps_ar0144_27M_2Lane_awb_tuning.bin](#) from OnSemi GitHub [NXP_i.MX93_ap1302_firmware](#) by following [README.md](#).
2. Rename it as `ap1302.fw`.
3. Create a folder `imx/camera/` under `/lib/firmware` and copy `ap1302.fw` to the target board under `/lib/firmware/imx/camera`.

1.6 UART output

Using the default CDC-ACM driver of the Linux computer, the UART of FRDM-IMX93/FRDM-IMX91 can experience abnormal input/output when the UART cable is replugged.

To resolve this issue, follow the instructions as below:

1. Git Clone https://github.com/WCHSoftGroup/ch343ser_linux.git.

2. Compile the CH343 Linux driver, remove the CDC-ACM driver, and then install the CH343 Linux driver.
3. To use Minicom, ensure that you have upgraded it to version 2.9:
http://ftp.hk.debian.org/debian/pool/main/m/minicom/minicom_2.9-5_amd64.deb.
4. Connect to Minicom/PuTTY by using `/dev/CH343USB0`.

The Windows driver can be downloaded from: https://www.wch.cn/downloads/CH343SER_EXE.html.

2 What's new?

This section describes the changes in this release, including new features and defect fixes.

2.1 New features

A summary of the main new features is as follows. New features are based on i.MX Linux Release LF6.6.36_2.1.0:

- FRDM Board support:
 - Supports FRDM-IMX91 board.
 - Supports FRDM-IMX93 board.
- Wi-Fi/Bluetooth support:
 - Integrates NXP SDIO IW610 support.
- Matter support:
 - Supports FRDM-IMX93/FRDM-IMX91 based on i.MX Matter 2024 Q3.
 - Integrates NXP SDIO IW610 support.

3 U-Boot and device trees

This section describes the different U-Boots and device trees.

3.1 U-Boot configurations

As shown in [Table 2](#), the U-Boot configurations are listed for each machine configuration. The machine configurations are provided through the Yocto Project layers in the `meta-imx-frdm` layer in the `meta-imx-bsp/conf/machine` subdirectory.

Table 2. U-Boot configurations

U-Boot configuration for Boot device	Description	Supported machine configuration
sd	sd supports boot from an SD card. This is the default U-Boot configuration. For boards supporting eMMC, SD boot can be flashed in eMMC for boot from eMMC instead of an SD card.	imx91_11x11_frdm imx93_11x11_frdm
emmc	Supports boot from eMMC.	imx91_11x11_frdm imx93_11x11_frdm
ecc	Supports DDR ECC.	imx91_11x11_frdm_inline_ecc imx93_11x11_frdm_inline_ecc

3.2 Kernel device trees

[Table 3](#) describes the kernel and device trees included in this release. A list of several device tree files is provided for each board to offer examples on how to handle different pin conflicts due to pin muxing.

Table 3. Kernel and device tree configurations

Kernel and device tree configuration	Description
Kernel Binary Image	i.MX 8 and i.MX 9 Image kernel is built with <code>imx_v8_defconfig</code> in <code>arch/arm64/configs</code> .
DTB Descriptions	Each reference board has a standard device tree as follows: <ul style="list-style-type: none"> <code>imx91-11x11-frdm.dtb</code> <code>imx93-11x11-frdm.dtb</code>
Audio	Enables various audio device trees. <ul style="list-style-type: none"> <code>imx91-11x11-frdm-aud-hat.dtb</code> <code>imx91-11x11-frdm-8mic.dtb</code> <code>imx93-11x11-frdm-aud-hat.dtb</code> <code>imx93-11x11-frdm-8mic.dtb</code>
Bluetooth wireless technology Wi-Fi	Enables the Bluetooth wireless technology and Wi-Fi hardware. The standard device tree supports Wi-Fi and Bluetooth: <ul style="list-style-type: none"> <code>imx91-11x11-frdm.dtb</code> <code>imx93-11x11-frdm.dtb</code>
Video Capture	<ul style="list-style-type: none"> <code>imx93-11x11-frdm.dtb</code>: Supports AP1302. <code>imx91-11x11-frdm-mt9m114.dtb</code>, <code>imx93-11x11-frdm-mt9m114.dtb</code>: Supports parallel MT9M114 camera.
Video Display	<ul style="list-style-type: none"> <code>imx91-11x11-frdm-tianma-wvga-panel.dtb</code>, <code>imx93-11x11-frdm-tianma-wvga-panel.dtb</code>: Supports Tianma TM050RDH03 5.0" WVGA TFT LCD panel. <code>imx93-11x11-frdm.dtb</code>: Supports LVDS-HDMI display with on-board converter. <code>imx93-11x11-frdm-dsi.dtb</code>: MIPI DSI 7-inch Waveshare LCD panel.
LP UART	Enables LPUART. <ul style="list-style-type: none"> <code>imx91-11x11-frdm-lpuart.dtb</code> <code>imx93-11x11-frdm-lpuart.dtb</code>
LD	Supports the system to be switched to Low Drive (LD) mode. <ul style="list-style-type: none"> <code>imx91-11x11-frdm-ld.dtb</code> <code>imx93-11x11-frdm-ld.dtb</code>

4 Known issues/Limitations

Read through all hardware-related reference material and ensure that the necessary hardware modifications are made before using the software.

5 Revision history

[Table 4](#) summarizes the revisions to this document.

Table 4. Revision history

Document ID	Release date	Description
RN00265 v2.0	25 February 2025	Added description for FRDM-IMX91
RN00265 v1.0	17 February 2025	Initial public release

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Contents

1	Overview	2
1.1	References	2
1.2	Release contents	2
1.3	License	3
1.4	Limited access to proprietary packages	3
1.5	Instructions to get the AP1302 firmware	3
1.6	UART output	3
2	What's new?	4
2.1	New features	4
3	U-Boot and device trees	4
3.1	U-Boot configurations	4
3.2	Kernel device trees	5
4	Known issues/Limitations	5
5	Revision history	5
	Legal information	6

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