

MQX™ RTOS Release Notes for Kinetis SDK 1.1.0 FRDM-KL26Z and MRB-KW01Z Freescale Freedom Platforms

1 Overview

These are the release notes for the Freescale MQX™ RTOS for Kinetis SDK 1.1.0 FRDM-KL26Z and MRB-KW01 Freescale Freedom Platform using the MKL26Z128VLH4 and MKW01Z128CHN4 microcontrollers. Freescale CPU_MKL26Z128VLH4 and CPU_MKW01Z128CHN4 belong to the Kinetis L series and W series processor family of the 32-bit microcontrollers. The software is based on Freescale Kinetis SDK (KSDK) version 1.1.0. It includes the full set of RTOS services and a standard set of peripheral drivers.

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1.1 Development tools

The FRDM-KL26Z and MRB-KW01 Freescale Freedom platform release was tested with these development tools:

- IAR Embedded Workbench for ARM[®] Version 7.30
 - Support available for Kinetis ARM[®] Cortex[®]-M0+ devices
 - See build projects in the iar subdirectories
- ARM-MDK for Keil μ Vision[®] Version 5.12
 - Support available for Kinetis ARM Cortex-M0+ devices
 - See build projects in uv4 subdirectories
- Kinetis Design Studio IDE 2.0
 - Support available for Kinetis ARM Cortex
 - See build projects in kds subdirectories
- Atollic[®] TrueSTUDIO[®] for ARM Pro 5.2
 - Support available for Kinetis ARM Cortex
 - See build projects in atl subdirectories
- GNU Tools for ARM Embedded Processors 4.8 2014q1
 - Support available for Kinetis ARM Cortex
 - See build projects in armgcc subdirectories

1.2 System requirements

The system requirements are defined by the development tool requirements. There are no special host system requirements for the Freescale Kinetis SDK distribution itself.

The minimum PC configuration is determined by the development tools.

The recommended PC configuration is 2 GHz processor, 2 GB RAM, and 2 GB free disk space.

1.3 Target requirements

The FRDM-KL26Z and MRB-KW01 MQX RTOS package was tested with this hardware configuration:

- FRDM-KL26Z Rev. B with a MKL26Z128VLH4 processor
- MRB-KW01Z48M Rev. C with a MKW01Z128CHN4 processor

2 Features

2.1 Key features

This package provides support for the FRDM-KL26Z and MRB-KW01 Freescale Freedom platform with a MKL26Z128VLH4 and MKW01Z128CHN4 processor and a standard set of features and example applications.

This section describes the major changes and new features implemented in this release.

- BSP Timer: SysTick
- Default console: LPUART0 (CDC virtual COM) for FRDM-KL26Z and LPSCI0 (CDC virtual COM) for MRB-KW01

The package supports these features:

- MQX RTOS support for the MKL26Z128VLH4 and MKW01Z128CHN4 Microcontrollers
- MQX RTOS STDLIB
- nShell
- KSDK support for the MKL26Z128VLH4 and MKW01Z128CHN4 Microcontrollers

2.2 Limitations

This release does not support these features:

- CodeWarrior v10

2.3 Example applications

This package contains applications demonstrating the MQX RTOS kernel and peripherals on the FRDM-KL26Z and MRB-KW01 Freescale Freedom platform. The applications can be found at these locations:

- `<install_dir>rtos/mqx/mqx/examples`: standard set of examples for kernel features and basic peripheral drivers

2.4 Release contents

This section provides an overview of the release content.

Deliverable	Location
Specific content for the evaluation boards	<install_dir>rtos/mqx/...
MQX PSP source code for Kinetis	.../mqx/source/psp/cortex_m
MQX example applications	.../mqx/examples/...
MQX RTOS source code for FRDM-KL26Z platform	<install_dir>/board/ {board_name}
MQX RTOS build projects	.../mqx/build/<compiler>/mqx_{board_name}
MQX RTOS STDLIB Source Code	<install_dir>rtos/mqx_stdlib/...
MQX RTOS STDLIB build projects	.../ mqx_stdlib /build/<compiler>/ mqx_stdlib _{board_name}
MQX RTOS STDLIB Source Code	.../ mqx_stdlib /source
KSDK MQX Source Code	<install_dir>/lib/ ksdk_mqx_lib
KSDK build projects	.../ ksdk_mqx_lib /build/<compiler>/ ksdk_mqx_lib _{board_name}
KSDK source	<install_dir>platform
Shell Library Source Code	<install_dir>rtos/nshell/...
Shell source code	.../shell/source
Shell build projects	.../shell/build/<compiler>/shell_{board_name}
PC Host Tools	<install_dir>/tools
Documentation	<install_dir>/rtos

3 Installation Instructions

3.1 Installation guide

Run the installer for the Freescale MQX RTOS package for the FRDM-KL26Z and MRB-KW01 packages and install to the folder <SDK_install_dir>rtos/mqx/.

3.1.1 Build procedure

For build procedures, see the *Getting Started with Freescale MQX™ RTOS for Kinetis SDK (KSDK) v.1.1* (MQXKSDK11GSUG).

3.1.2 Jumper settings

These are the jumper settings for FRDM-KL26Z standalone operation:

- All of jumpers open.

These are the jumper settings for MRB-KW01Z standalone operation:

- J8 on position 2-3.
- J13 on position 1-2; 3-4; 5-6 and 7-8.
- J10, J11 and J31 on.
- J12 on position: 1-2; 3-4.
- J17 on position: 2-3; 5-6 and 8-9.

3.1.3 Board-specific build targets

Internal Flash (Debug and Release): These targets enable building applications suitable for booting the system from the internal Flash memory. After reset, the code is executed from the internal Flash.

4 Patch Description

Download the Keil package from this web page: www.keil.com/dd2

Patch Name	Description
Keil.Kinetis_KLxx_DFP.1.4.0.pack	Patch KL26Z128xxx4 for Keil uVision 5.12
Keil.Kinetis_KWxx_DFP.1.0.0.pack	Patch KW01Z128CHN4 for Keil uVision 5.12

5 Applying Patches

Install the KL26Z128xxx4 and KW01Z128CHN4 to apply a patch for Keil μ Vision 5.12.

6 Known issues

Because of the small RAM size demo, klog, msg, test, watchdog, osa_event, osa_semaphore, and i2c_rtos_mqx examples cannot run.

Because the Segger J-Link (version 4.94 or lower) detects the MKW01 as the ARM cortex M4 core, the project cannot be loaded by using MDK, KDS, ATL and ARMGCC toolchains. This may be the Segger J-Link issue because the KW01 is ARM cortex M0+. To resolve this issue, use the KL26Z128xxx4 instead of the KW01Z128CHN4 when using MDK, KDS, ATL and ARMGCC toolchains. This issue should be fixed in upcoming versions of Segger J-Link.

7 Revision history

This table summarizes revisions to this document.

Revision History		
Revision number	Date	Substantial changes
0	02/2015	Initial release

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