

# MQX™ RTOS Release Notes for Kinetis SDK 1.2.0 KV11 Freescale Platforms

## 1 Overview

These are the Release Notes for the Freescale MQX™ RTOS for Kinetis SDK 1.2.0 TWR-KV11Z75M Tower System module using the MKV11Z128VLH7 microcontroller. Freescale CPU MKV11Z128VLH7 belongs to the Kinetis K series processor family of 32-bit microcontrollers. The software is based on Kinetis SDK (KSDK) version 1.2.0. It includes the full set of RTOS services and a standard set of peripheral drivers.

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## 1.1 Development tools

The TWR-KV11Z75M Tower System module release was tested with these development tools:

- IAR Embedded Workbench for ARM<sup>®</sup> version 7.40.2
  - Support available for Kinetis ARM<sup>®</sup> Cortex<sup>®</sup>-M0 devices
  - See build projects in the `iar` subdirectories
- ARM<sup>®</sup> Keil<sup>®</sup> development tool v5.14
  - Support available for Kinetis ARM Cortex-M0 devices
  - See build projects in `mdk` subdirectories
- Kinetis Design Studio IDE v3.0
  - Support available for Kinetis ARM Cortex CPUs
  - See build projects in `kds` subdirectories
- Atollic<sup>®</sup> TrueSTUDIO<sup>®</sup> for ARM v5.3.0
  - Support available for Kinetis ARM Cortex CPUs
  - See build projects in `atl` subdirectories
- ARM GCC 4.8 (GCC ARM Embedded 4.8-2014-q3-update)
  - Support available for Kinetis ARM Cortex CPUs
  - 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 Freescale MQX RTOS package for Kinetis SDK 1.2.0 was tested with this hardware configuration:

- TWR-KV11Z75M Rev. B Tower System module with an MKV11Z128VLH7 processor

## 2 Features

### 2.1 Key features

This package provides support for the TWR-KV11Z75M Tower System module with an MKV11Z128VLH7 processor. Moreover, the package has a standard set of features and example applications.

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

- MQX RTOS Timer: SysTick
- Default console: UART1 (CDC virtual COM) for TWR-KV11Z75M Tower System platform

The package supports these features:

- MQX RTOS support for the TWR-KV11Z75M Tower System platform with MKV11Z128VLH7 microcontroller
- MQX RTOS STDLIB
- nShell
- MFS file system (Library only)
- KSDK support for the MKV11Z128VLH7 microcontroller

### 2.2 Example applications

This package contains applications demonstrating the MQX RTOS kernel and peripherals on the TWR-KV11Z75M Tower System platform. The applications can be found in these locations:

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

## 2.3 Release contents

This section provides an overview of the release content.

**Table 2-1 Release contents**

Deliverable	Location
Specific content for the evaluation boards	<install_dir>/rtos/mqx/...
MQX RTOS source code for Kinetis	.../mqx/source/
MQX RTOS build projects	.../mqx/build/<compiler>/mqx_twrkv11z75m/...
MQX RTOS example applications	.../mqx/examples/...
MQX RTOS STDLIB Source Code	<install_dir>/rtos/mqx_stdlib/...
MQX RTOS STDLIB build projects	.../mqx_stdlib/build/<compiler>/mqx_stdlib_twrkv11z75m
MQX RTOS STDLIB Source Code	.../mqx_stdlib/source
KSDK MQX RTOS Source Code	<install_dir>/lib/ksdk_mqx_lib
KSDK build projects	.../ksdk_mqx_lib/<compiler>/KV11Z7
KSDK source	<install_dir>/platform
Shell Library Source Code	<install_dir>/rtos/mqx/nshell/...
Shell source code	.../nshell/source
Shell build projects	.../nshell/build/<compiler>/nshell_twrkv11z75m
MFS Library Source Code	<install_dir>/middleware/filesystem/mfs/...
MFS source code	.../mfs/source
MFS build projects	.../mfs/build/<compiler>/mfs_twrkv11z75m

## 3 Installation Instructions

### 3.1 Installation guide

Run the installer for the Kinetis SDK 1.2.0 TWR-KV11Z75M Freescale platforms package to install MQX RTOS.

#### 3.1.1 Build procedure

For build procedures, see the *Getting Started with Kinetis SDK (KSDK) for KV11 Derivatives* (KSDK12KV11GSUG).

#### 3.1.2 Jumper settings

These are the jumper settings for TWR-KV11Z75M standalone operation:

- J6, J7, J8, J9 default short pin 1-2, pin 3-4
- J2, J4, J11, J13, J21 default short pin 1-2
- J3, J10, J12, J14, J25, J26, J27, J32 default ON
- J16, J17, J28, J29, J30 default short pin 2-3
- J19, J20 default short pin 2-3
- J1 default OFF

#### 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 Applying Patches

Install the MKV11Z128xxx7 to apply a patch for Keil  $\mu$ Vision 5.14. This patch can be obtained from the download Freescale Kinetis KVxx Series Device Support available at [www.keil.com/dd2/pack/](http://www.keil.com/dd2/pack/).

**Table 4-1. Patches**

Patch Name	Description
Keil.Kinetis_KVxx_DFP.1.4.0-RC1.pack	Patch MKV11Z128xxx7 for Keil $\mu$ Vision 5.14

## 5 Known issues

- The “demo” example:  
Cannot create task as a result of the lack of RAM memory.
- The “lwmsgq”, “lwsem”, “msg” examples:  
The output console is not correct because of the current implementation for 'printf' function, which does not have a mechanism to lock the device when the input parameter is a string. The current workaround is implementing a mutex lock before printf processing.
- The “demo\_lite” example: Because of limited RAM memory, the build fails causing an overflow.

## 6 Revision history

This table summarizes revisions to this document.

Revision history		
Revision number	Date	Substantive changes
0	07/2015	Initial release

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