

Kinetis K8x MCU Family Hardware Tools

Overview

The Kinetis K8x MCU family extends the Kinetis MCU portfolio with advanced security capabilities while maintaining a high level of compatibility with previous Kinetis MCU devices. Additional security capabilities found within the Kinetis K8x MCU family include:

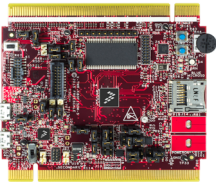
- Boot ROM to support encrypted firmware updates
- Automatic decryption and execution from external serial NOR flash memory
- Hardware AES acceleration with sideband attack protection
- Support for public key cryptography

As part of the Kinetis K series, Kinetis K8x MCUs are performance efficient and offer industry-leading low power while providing significant BOM savings through smart on-chip integration. The Kinetis K series is supported by a comprehensive set of development tools, software and enablement. To learn more about this breakthrough MCU please visit freescale.com/Kinetis/K8x.

Development Hardware Tools

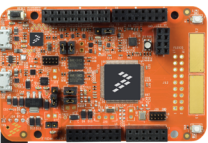
The Kinetis K8x MCU family is supported by the following development platforms to allow users to choose a solution based on their application needs.

TWR-K80F150M Tower System Development Platform



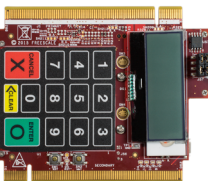
The TWR-K80F150M development board is designed to work in standalone mode or as part of the Freescale Tower System, a modular development board platform that enables rapid prototyping and tool re-use through reconfigurable hardware. Order your Tower System evaluation board today at freescale.com/TWR-K80F150M.

FRDM-K82F Freescale Freedom Development Platform

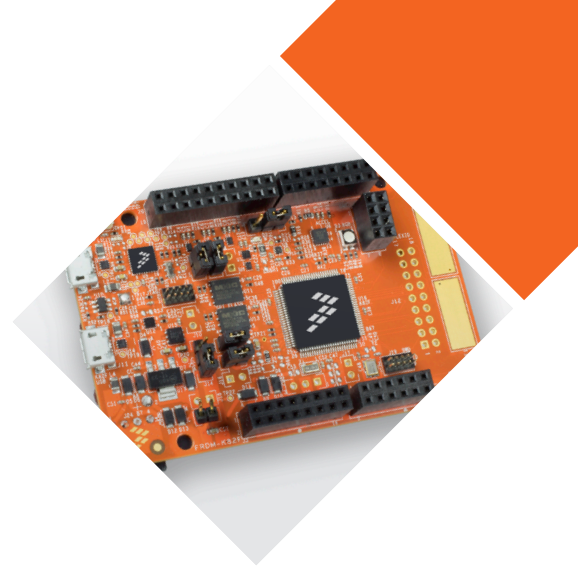


The Freescale Freedom development boards are small, low-power, cost-effective evaluation and development platforms perfect for quick application prototyping and demonstration of Kinetis MCU families and Freescale sensors. These evaluation boards offer an easy-to-use mass-storage device mode flash programmer, a virtual serial port and classic programming and run-control capabilities. Get started at freescale.com/FRDM-K82F.

TWR-POS-K81 Tower System Development Platform



The TWR-POS-K81 development platform is a reference platform for a payment PIN entry device. This board includes Cirque SecureSense AFE for secure pin entry. The design files and associated software show an example PIN pad application that has been submitted for Payment Card Industry certification. The board is designed to work standalone or as part of the Freescale Tower System. Get your Tower System platform at freescale.com/TWR-POS-K81.



Hardware Tool Features

Feature Description		TWR-K80F150M	FRDM-K82F	TWR-POS-K81
Memory Expansion	2x 32 Mb (4 MB) Dual QuadIO Serial Flash	X	X	
	512 Mb (64 MB) Dual QuadIO Serial Flash			X
	64 Mb (8 MB) SDRAM	X		
	MicroSD Card Slot	X		
Security	Anti-Tamper			X
	Symmetric Cryptography Acceleration	X	X	X
	Public Key Cryptography Acceleration		X	X
	On-The-Fly AES Decrypt		X	X
Power Options	Independent Voltage Domains: VDD and VDDIO_E	X	X	
	Board Power Select with 3.3 V or 1.8 V MCU Operation	X	X	
	Independent, Battery-operated Power Supply for Real-Time Clock (RTC) Module	X	X	X
Sensors	3-Axis Gyroscope	X		
	Digital Pressure Sensor	X		
	Accelerometer + 3D Magnetometer	X	X	
	Cirque SecureSense AFE			X
Interfaces	Socket for Touch Keypad Plug-in (TWRPI-TOUCH-STR)	X		
	EMVSIM Card Interface	X		
	Standalone Full-speed USB Host and Device Function	X	X	X
	Onboard Debug Circuit: K20DX128VFM5 OpenSDA with Virtual Serial Port	X	X	

Board Support Packages

Board support packages (BSPs) for the FRDM-K82F and TWR-K80F150M hardware options are available in the Kinetis software development kit (SDK). The TWR-K80F150M development board is available in the Kinetis SDK general release version 1.3. The FRDM-K82F BSP is part of a stand alone release for the Kinetis K82–150MHz devices.

Kinetis Software Development Kit (SDK)

The Kinetis SDK provides comprehensive software support for Kinetis MCUs. Features include:

- Extensive suite of robust peripheral drivers, stacks and middleware, with new support for symmetric and asymmetric cryptographic acceleration
- Includes software examples demonstrating the usage of the HAL, peripheral drivers, middleware and RTOSes
- Operating system abstraction (OSA) for Freescale MQX™ RTOS, FreeRTOS, and Micrium uC/OS kernels and baremetal(no RTOS) applications
- Download the Kinetis SDK at freescale.com/KSDK

For more information about Kinetis MCUs, software, tools and documentation, please visit freescale.com/Kinetis



Freescale, the Freescale logo, Kinetis and Tower are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat. & Tm. Off. All other product or service names are the property of their respective owners. ARM, Cortex and Keil are registered trademarks of ARM Limited (or its subsidiaries) in the EU and/or elsewhere. mbed is a trademark of ARM Limited (or its subsidiaries) in the EU and/or elsewhere. All rights reserved. ©2015 Freescale Semiconductor, Inc.

Document Number: KNTSK8XFAMHWFS REV 0