

KINETIS KE1xZ MCU FAMILY

The Kinetis KE1xZ MCU family provides a highly scalable portfolio of robust 5 V MCUs based on the Arm® Cortex®-M0+, extending the Kinetis E series by offering higher performance and broader scalability with robust NXP Touch software, 1Msps ADC and FlexTimers.

The 5 V Kinetis KE1xZ MCU family features a 48/72 MHz Arm Cortex-M0+ core with up to 256 KB flash, 48 KB SRAM, and a complete set of analog/digital features. The new TSI provides a high level of stability and accuracy for your HMI system, while the 1-Msps ADC and FlexTimer modules offer a perfect solution for BLDC motor-control systems. CAN IP is ideal for the industrial control node.

TARGET APPLICATIONS

- Home appliances
- Industry
- CAN bus control node
- Motor control
- Smart lighting
- Circuit breaker

FEATURES

Performance

- Configurable nested vectored interrupt controller
- Memory-mapped divide and square root module
- Up to 8-channel DMA controller extended to 63 channels with DMAMUX

Human-machine interface

- Up to 8 high-drive pins providing maximum 20mA current
- Robust new TSI supports both the mutual-cap mode and the self-cap mode, providing flexibility for up to 50 touch sensing channels

Timers

- Up to 3x FlexTimers (2/4/6/8 channels)
- Low-power timer with flexible wake-up control



- Programmable delay block with flexible trigger system
- Low-power periodic interrupt timer with 4 channels

Memory

- Up to 256 KB program flash, 48 KB SRAM
- Up to 32 KB FlexNVM with ECC for data flash and with EEPROM emulation
- Up to 2 KB FlexRAM for EEPROM emulation
- Up to 128-byte flash cache
- Up to 8 KB boot ROM with built-in bootloader

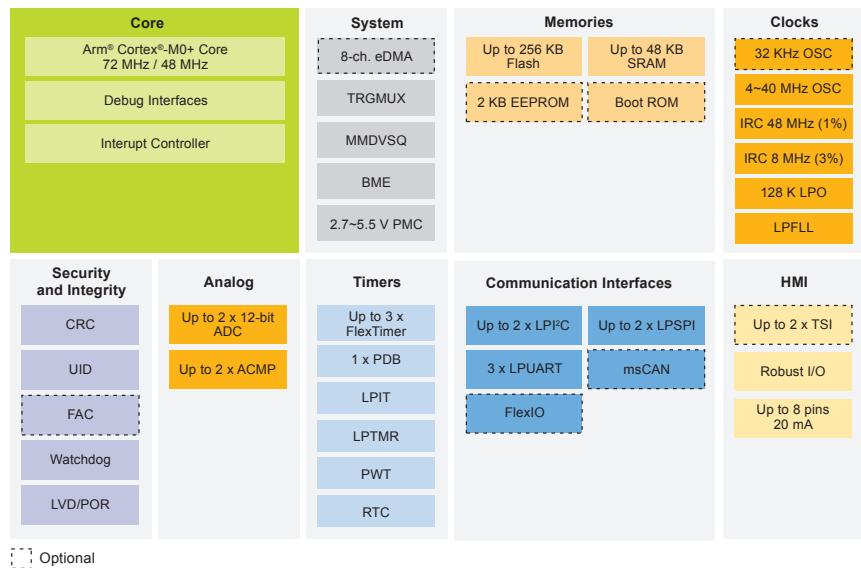
Clock interfaces

- System oscillator (OSC) input ranges from 32 KHz, 4~40 MHz
- 32 KHz oscillator (OSC32) input
- High-accuracy fast internal reference clock (FIRC)
- High-accuracy slow internal reference clock (SIRC)
- Analog modules
- 12-bit ADC with up to 16-channel analog inputs per module, up to 1Msps
- High-speed analog comparators (CMP) with internal 8-bit digital-to-analog converter (DAC)
- Connectivity and communications
- LPUART, LPSPI, LPI2C with DMA support and low power availability
- 32-ch. programmable module (FlexIO) to emulate various serial, parallel or custom interfaces

COMPREHENSIVE ENABLEMENT SOLUTIONS

- NXP Touch Software
- NXP Freedom development platforms
 - Low-cost, compatible boards with a rich set of third-party expansion options
- [MCUXpresso software development kit \(SDK\)](#)
- [Integrated development environments \(IDE\)](#)
 - MCUXpresso IDE
 - IAR Embedded Workbench®
 - Arm Keil® MDK

KINETIS KE1xZ MCU FAMILY BLOCK DIAGRAM



KINETIS KE1xZ MCU FAMILY OPTIONS

Sub-Family	Part Number	CPU	Memory			Features										Package					
			Flash	SRAM	EPROM	LPUART	LPSPI	LPI2C	TSI	CAN	FlexIO	16-bit PWM	12-bit ADC	ACMP	FlexTimer	Total GPIOs	LQFP44	LQFP48	LQFP64	L QFP100	
KE12Z	MKE12Z128V**7	72	128 KB	32 KB		3	1	1				✓	16-ch.	1	1	3	58/89		✓	✓	✓
KE12Z	MKE12Z256V**7	72	256 KB	48 KB		3	1	1				✓	16-ch.	1	1	3	58/89		✓	✓	✓
KE13Z	MKE13Z128V**7	72	128 KB	32 KB		3	1	1	1x 25-ch.			✓	16-ch.	1	1	3	58/89		✓	✓	✓
KE13Z	MKE13Z256V**7	72	256 KB	48 KB		3	1	1	1x 25-ch.			✓	16-ch.	1	1	3	58/89		✓	✓	✓
KE14Z	MKE14Z32V**4	48	32 KB	4 KB		3	1	1					8-ch.	1	1	2	38/42	✓	✓		
KE14Z	MKE14Z64V**4	48	64 KB	8 KB		3	1	1					8-ch.	1	1	2	38/42	✓	✓		
KE14Z	MKE14Z128V**7	72	128 KB	16 KB	2 KB ¹	3	2	2				✓	16-ch.	2	2	3	58/89			✓	✓
KE14Z	MKE14Z256V**7	72	256 KB	32 KB	2 KB ¹	3	2	2				✓	16-ch.	2	2	3	58/89			✓	✓
KE15Z	MKE15Z32V**4	48	32 KB	4 KB		3	1	1	1x 25-ch.				8-ch.	1	1	2	38/42	✓	✓		
KE15Z	MKE15Z64V**4	48	64 KB	8 KB		3	1	1	1x 25-ch.				8-ch.	1	1	2	38/42	✓	✓		
KE15Z	MKE15Z128V**7	72	128 KB	16 KB	2 KB ¹	3	2	2	1x 25-ch.			✓	16-ch.	2	2	3	58/89			✓	✓
KE15Z	MKE15Z256V**7	72	256 KB	32 KB	2 KB ¹	3	2	2	1x 25-ch.			✓	16-ch.	2	2	3	58/89			✓	✓
KE16Z	MKE16Z32V**4	48	32 KB	4 KB		3	1	1	1x 25-ch.	✓			8-ch.	1	1	2	38/42	✓	✓		
KE16Z	MKE16Z64V**4	48	64 KB	8 KB		3	1	1	1x 25-ch.	✓			8-ch.	1	1	2	38/42	✓	✓		
KE17Z	MKE17Z128V**7	72	128 KB	32 KB		3	1	1	2x 25-ch.			✓	16-ch.	1	1	3	58/89		✓	✓	✓
KE17Z	MKE17Z256V**7	72	256 KB	48 KB		3	1	1	2x 25-ch.			✓	16-ch.	1	1	3	58/89		✓	✓	✓

¹ 32 KB FlexNVM for data flash that can emulate as 2 KB EEPROM

www.nxp.com and www.nxp.com/kinetis/Eseries

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