



Next-generation
5 V 32-bit MCUs with
enhanced robustness
and touch interface

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.

TARGET APPLICATIONS

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

The 5 V Kinetis KE1xZ MCU family features a 48/72 MHz Arm Cortex-M0+ core with up to 256 KB flash, 32 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.

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 36 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, 32 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)

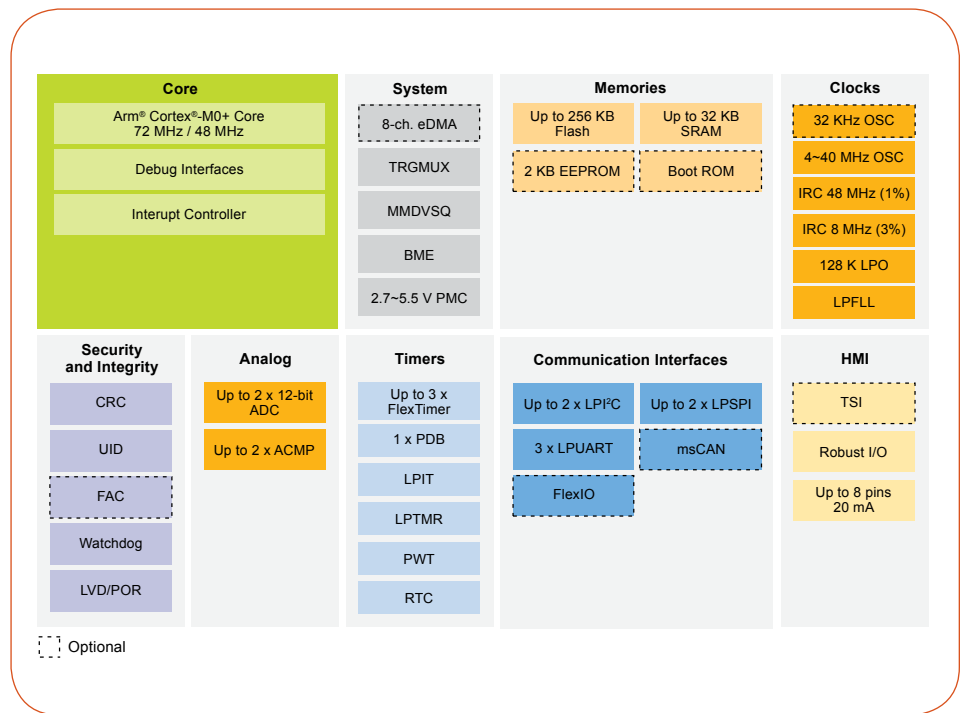
Analog modules

- ▶ 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
- ▶ FlexIO module for flexible and high-performance serial interfaces

KINETIS KE1xZ MCU FAMILY BLOCK DIAGRAM



COMPREHENSIVE ENABLEMENT SOLUTIONS

- ▶ NXP Touch Software (KE15Z and KE16Z)
- ▶ 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 OPTIONS

Sub-Family	Part Number	CPU	Memory			Features										Package				
			Flash	SRAM	EEPROM	LPUART	LPSPi	LPI2C	TSI	CAN	FlexIO	16-bit PWM	12-bit ADC	ACMP	FlexTimer	Total GPIOs	LD	LF	LH	LL
KE14Z	MKE14Z256V**7	72	256 KB	32 KB	2 KB	3	2	2			√	16-ch.	2	2	3	58/89			√	√
KE14Z	MKE14Z128V**7	72	128 KB	16 KB	2 KB	3	2	2			√	16-ch.	2	2	3	58/89			√	√
KE14Z	MKE14Z64V**4	48	64 KB	8 KB		3	1	1				8-ch.	1	1	2	38/42	√	√		
KE14Z	MKE14Z32V**4	48	32 KB	4 KB		3	1	1				8-ch.	1	1	2	38/42	√	√		
KE15Z	MKE15Z256V**7	72	256 KB	32 KB	2 KB	3	2	2	√		√	16-ch.	2	2	3	58/89			√	√
KE15Z	MKE15Z128V**7	72	128 KB	16 KB	2 KB	3	2	2	√		√	16-ch.	2	2	3	58/89			√	√
KE15Z	MKE15Z64V**4	48	64 KB	8 KB		3	1	1	√			8-ch.	1	1	2	38/42	√	√		
KE15Z	MKE15Z32V**4	48	32 KB	4 KB		3	1	1	√			8-ch.	1	1	2	38/42	√	√		
KE16Z	MKE16Z64V**4	48	64 KB	8 KB		3	1	1	√	√		8-ch.	1	1	2	38/42	√	√		
KE16Z	MKE16Z32V**4	48	32KB	4KB		3	1	1	√	√		8-ch.	1	1	2	38/42	√	√		

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