



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 FlexTimer.

### TARGET APPLICATIONS

- ▶ Home appliances
- ▶ Industry
- ▶ Motor control
- ▶ Smart lighting
- ▶ Circuit breaker

The 5 V Kinetis KE1xZ MCU family features a 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.

### FEATURES

#### Performance

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

#### Human-machine interface

- ▶ 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

- ▶ One 8-channel FlexTimer, two 4-channel FlexTimer
- ▶ Low-power timer with flexible wake-up control
- ▶ Programmable delay block with flexible trigger system
- ▶ Low-power periodic interrupt timer with four channels

#### Memory

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



## Clock interfaces

- ▶ System oscillator (OSC) input ranges from 32 KHz to 32 MHz
- ▶ 32 KHz oscillator (OSC32) input
- ▶ High-accuracy fast internal reference clock (FIRC)
- ▶ High-accuracy slow internal reference clock (SIRC)

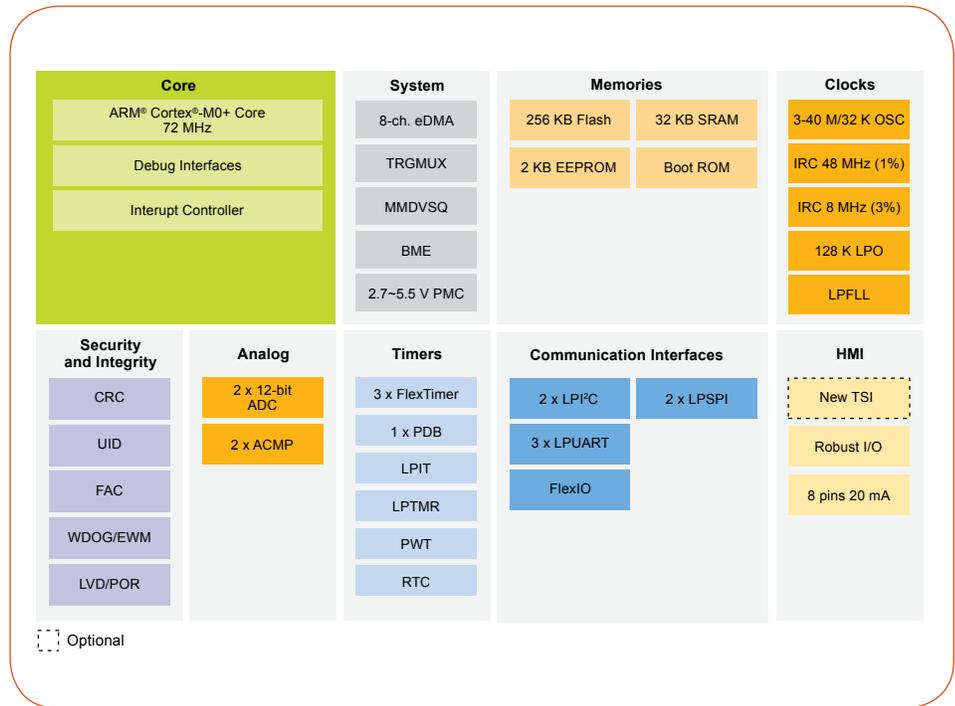
## Analog modules

- ▶ 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 only)
- ▶ 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 (MHz)	Memory			Features										Package	
			Flash	SRAM	EEPROM	LPUART	LPSPI	LPI²C	TSI	FlexIO	16-bit PWM	12-bit ADC	ACMP	FlexTimer	Total GPIOs	LH	LL
																64 LQFP (10 x 10)	100 LQFP (14 x 14)
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	√	√
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	√	√

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