The Kinetis KE1xF MCU family is based on the ARM® Cortex®-M4 core, expanding memory integration for the Kinetis E series with up to 512 KB flash and 64 KB SRAM.

**TARGET APPLICATIONS**
- Circuit breaker
- High-end home appliances
- Motor control
- Smart lighting

This 5 V solution with the high-performance Cortex-M4 core running up to 168 MHz, integrates CAN 2.0B compliant FlexCAN and provides a highly reliable serial communication interface for industry applications. The Kinetis KE1xF MCU family also offers a rich suite of communication interfaces including LPUARTs, LPICs, LPSPIs, and FlexIO.

**FEATURES**

**High performance**
- Up to 168 MHz Cortex-M4 core supporting a broad range of processing bandwidth requirements with ambient temperature range (–40 to 105 °C)
- Single-precision floating point unit (FPU)
- MPU for memory protect and code safety
- 8 KB cache helps improve code and data access efficiency
- Integrated digital signal processor (DSP)
- Configurable nested vectored interrupt controller
- 16-channel DMA controller extended up to 64-channel with DMAMUX

**Memory**
- Up to 512 KB program flash with ECC
- Up to 64 KB SRAM with ECC
- Up to 64 KB FlexNVM with ECC
- Boot ROM with built-in bootloader

**Human-machine interface**
- Supports up to 92 interrupt request (IRQ) sources
- Up to 89 GPIO pins with interrupt functionality

**Clock interfaces**
- 3–40 MHz fast external oscillator (OSC)
- 32 kHz slow external oscillator (OSC32)
- 48–60 MHz high-accuracy (up to 1%) FIRC
- 8 MHz/2 MHz high-accuracy (up to 3%) SIRC
- 128 kHz low-power oscillator (LPO)
- Up to 168 MHz phased-lock loop (PLL)
Timers
- 4 x FlexTimers (FTM) for PWM generation, offering up to 32 standard channels
- 1 x low-power timer (LPTMR)
- 3 x programmable delay block (PDB)
- 1 x low-power periodic interrupt timer (LPIT) with four (4) independent channels, for general purpose

Analog modules
- 1-Msps 12-bit ADC with up to a 16-channel input per module, up to 1Msps
- 3 x high-speed analog comparators (CMP) with internal 8-bit digital-to-analog converter (DAC)
- 1 x 12-bit digital-to-analog converter (DAC)

Connectivity and communications
- CAN 2.0B compliant FlexCAN modules
- FlexIO provides flexibility for serial communication interface implementation
- 3 x LPUART modules with DMA support
- TriggerMUX: for module interconnectivity

KINETIS KE1xF MCU FAMILY OPTIONS

<table>
<thead>
<tr>
<th>Sub-Family</th>
<th>Part Number</th>
<th>CPU (MHz)</th>
<th>Memory</th>
<th>Features</th>
<th>Package</th>
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<td>LH</td>
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<td>64 LQFP (10 x 10)</td>
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<td>KE14F</td>
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<td>256</td>
<td>32</td>
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KINETIS KE1xF MCU FAMILY BLOCK DIAGRAM

COMPREHENSIVE ENABLEMENT SOLUTIONS
- Tower® System modular development platform
  - Rapid prototyping and evaluation
  - Low-cost, interchangeable boards
- Kinetics software development kit (KSDK)
- Integrated development environment (IDE)
  - Kinetics Design Studio IDE
  - IAR Embedded Workbench®
  - ARM Keil® MDK

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

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