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i.MX Applications Processors

# FreescalE Evaluation Kit (EVK) for the i.MX233 Applications Processor

Price. Performance. Personality



## Overview

FreescalE delivers the cost-effective i.MX23 evaluation kit, allowing customers to develop, debug and demonstrate their next great product without compromising performance. The first in our new price, performance and personality series, the evaluation kit supports all the features of the device in a small, single-board design and an optional LCD add-on module to enable developers a complete development platform at a low price point of less than \$600. Based on a powerful and well-proven ARM926EJ-S™ core, the i.MX23 EVK delivers exceptional performance without sacrificing battery life, and for wall-powered devices, will help developers design products that meet today's demands for energy efficiency. A range of connectivity options makes the i.MX23 EVK suitable for developing many different types of user applications. The provided Board Support Package (BSP) for Linux® enables rapid prototyping to help speed up the processor selection process and quickly deliver a demo into the hands of the project stakeholders. The i.MX23 EVK is preconfigured with Linux to support a wide range of consumer, general embedded and industrial applications.

## Key Benefits

- Explore multiple connectivity options with the i.MX233 applications processor: display, touchscreen, USB, SDIO and others
- Investigate usage of the analog audio through the mic input, headphone output jack, line-in jack and speaker connector

- Develop around a reference power management system that maximizes the use of the integrated power management unit
- Use proven design examples and software drivers to reduce hassles associated with design-in of key connectivity and power management options
- Simplify product design
- Enable rapid prototyping to speed up processor selection process

## Performance

With the i.MX23 EVK, designers have access to key features needed for an end design. The FreescalE i.MX23 EVK provides designers with the hardware functionality and connectivity required for developing many applications, such as portable media players, home devices with user interface panels (home appliances, remote controls and security panels), streaming internet media devices, eBooks and VoIP handsets. With production-ready software components, an optimized OS and a system-validated BSP, designers have the tools to test and maximize the performance of the applications they have developed.

Software and hardware engineers are provided with the key resources to test their developed code. They can also download this code to the target EVK to test and validate their software and run and evaluate performance metrics. The ability to have all communication ports working (serial, USB) and to debug over JTAG and Ethernet is essential for product development. The EVK also provides boot select switches, which gives the user the option to override the default boot setting of the CPU.

## Personality

FreescalE's EVK for the i.MX233 applications processor allows designers to quickly prototype and demonstrate the results of their development efforts in a small, portable design the size of a 5 x 7 portrait, giving confidence to project decision makers that the product is that much closer to production. Develop user-interactive software and display your product-specific graphical data on a high-quality, touch screen-enabled 4.3" TFT LCD, provided as an add-on module to the EVK. With the FreescalE i.MX23 EVK, prototyping and development are simplified to improve time to market.

## i.MX23 EVK Key Features

### CPU

- i.MX233 applications processor (169 BGA)
- 2 x 64 MB DDR1
- 2 GB NAND flash
- SPI flash/EEPROM footprints (default: not populated)
- ETM support (default: not populated)
- DC/DC converter components
- Li-Ion battery connector

### Peripherals

- 4.3" WQVGA touch screen LCD display (add-on module)
- SD/MMC card slot
- USB host/device
- Two application serial ports (default: one populated, one not populated)
- Ethernet
- Navigation keys
- Mic input, headphone output jack
- Line-in jack
- Speaker connector
- 3-axis accelerometer footprint (default: not populated)
- Composite TV-out connector footprint (default: not populated)
- Expansion port for optional peripheral card (default: not populated)

### Debug

- Debug serial port
- JTAG
- Reset, interrupt, boot switches
- Debug display/LEDs
- Power source
- Current/power monitoring

### Software Development Kit

- Optimized and validated for Linux operating system
- Integrated and validated BSP for the i.MX23 EVK feature set
- Functional software packages with production-ready, Freescale-developed components
- Highly optimized software coded by Freescale processor experts
- Consistent application programming interface (API) and frameworks across software packages
- Evaluation and production software packages available through a streamlined, Web-based licensing and delivery system
- Freescale development tools, test streams and documentation

### Freescale Alliance Program

Tap into a powerful ecosystem of Freescale technology alliances for building smarter, better connected solutions. Intended to help you shorten your design cycle and get your products to market faster, these technology alliances provide you with access to rich design tools and peripherals as well as world-class support and training. For more information, visit [www.freescale.com/alliances](http://www.freescale.com/alliances).

### The i.MX233

#### Applications Processor

- CPU complex with Freescale's fast, power-efficient, proven ARM926EJ-S core
- Integrated power management supports power sequencing of the device and output rails to supply power to external components such as memories and battery charging functionality for Li-Ion batteries
- On-die analog audio (stereo audio ADC/DAC, mic input, headphone output and speaker amplifier) and A/D channels reduce system complexity and speed time to market
- Image processing unit supporting 24-bit VGA with touch screen displays for a rich user interface
- Wide range of connectivity options, such as UART, SDIO, USB and I<sup>2</sup>C
- Boot from SD, SPI or NAND flash

### Ordering information

Part Number	Operating System	MSRP (USD)
MCIMX23LEVKJ	Linux	\$399.00
MCIMX23WEVKJ	Windows® Embedded CE 6.0	\$399.00
MCIMX23LCD	LCD module (4.3" WQVGA touch screen)	\$199.00



### Learn More:

For current information about Freescale products and documentation, please visit [www.freescale.com/imx23evk](http://www.freescale.com/imx23evk)