i.MX

i.MX Applications Processors

Freescale Evaluation Kit (EVK) for the i.MX28 Applications Processor

Price. Performance. Personality.

Overview

The i.MX28 evaluation kit (EVK) offers developers a price effective platform to ultimately develop, debug and demonstrate the personality of their next great product without compromising performance. The EVK supports all the features of the i.MX28 family in a small, single-board design and an optional LCD add-on module to enable developers with a complete development platform at a low price point of less than $600. A range of peripheral and connectivity options makes the i.MX28 EVK suitable for developing a wide range of consumer, industrial and automotive applications.

Keeping with Freescale's comprehensive software suites, the i.MX28 EVK comes with Linux® and Windows® Embedded CE 6.0 BSPs, as well as audio and video codecs at no extra cost to the customer. This complete software package reduces development complexity and improves time to market.

Key Benefits

- Explore multiple connectivity options with the i.MX28 applications processor, including display, touchscreen, dual 10/100 Ethernet, dual CAN, dual USB and SDIO
- 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 the processor selection process

Performance

With the i.MX28 EVK, designers have access to key features needed for an end design. The Freescale i.MX28 EVK provides designers with the hardware functionality and connectivity required for developing many applications, such as smart energy gateways/meters, human-machine interfaces (HMIs), industrial control, portable medical, media gateways/accessories and automotive infotainment.

With production-ready software components and optimized and system-validated BSPs, designers have the tools to test and maximize the performance of the applications they have developed.

Software and hardware engineers can develop and download the code to the target EVK for testing, validation and performance evaluation. The ability to have all communications ports working (serial, USB) and to debug over JTAG and Ethernet is essential for product development. The EVK also provides boot select switches, which provides the option to override the default boot setting of the CPU.

Personality

Freescale's EVK for the i.MX28 applications processor allows designers to quickly prototype and demonstrate the results of their development efforts in a small, portable design. This provides 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, touchscreen-enabled 4.3" WVGA TFT LCD, provided as an add-on module to the EVK. With Freescale's i.MX28 EVK, prototyping and development are simplified to reduce time to market.

i.MX28 EVK Key Features CPU

- i.MX287 applications processor
- DDR2 memory
- SPI flash/EEPROM footprints
- ETM support
- DC/DC converter components
- Li-Ion battery connector

Peripherals

- 4.3" WVGA touchscreen LCD display (add-on module)
- Two SD/MMC card slots
- Two USB host/device connectors
- Two 10/100 Ethernet connectors
- Two CAN connectors
- Two application UARTs
- One console UART
- Navigation keys
- Line input, headphone output (jack)
- NAND socket—48 pin TSOP package

Debug

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

Energy Efficient Solutions
optimized for low power

Software Development Kit

Included with the EVK are two SD cards to support Linux and Windows Embedded CE. Each card has a full software development kit which includes a BSP, multimedia codecs and a user interface demonstration. The EVK is configured via the boot switches to boot from the SD card, making it simple to use the SDK.

- Optimized and validated for Linux and Windows Embedded CE operating systems
- Integrated and validated BSP for the i.MX28 EVK feature set
- Freescale-developed functional software packages with production-ready components
- Highly optimized software coded by Freescale 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 Connect Partner Program

The Freescale Connect partner program is your essential source for embedded designs based on Freescale solutions. The program comprises a global network of independent engineering companies that offer the vital tools, software, technology, engineering services and training to speed your design. From reference boards to optimized software, Freescale Connect provides a powerful and comprehensive ecosystem that partners with you in making the world a smarter, more connected place. Learn more at **freescale.com/partners**.

i.MX28 Applications Processor

Features	Benefits

• 454 MHz ARM® ARM926EJ-S™ core with 16 KB/32 KB I and D Cache
• PMU to power the device and drive external components, supports Li-Ion batteries and direct connection to 5V supplies
• Dual IEEE® 1588 10/100 Ethernet with RMII support and L2 switch
• Dual CAN interfaces
• NAND support—SLC/MLC and eMMC 4.4 (managed NAND)
• Hardware BCH (up to 20-bit correction)
• 200 MHz 16-bit DDR2, LV-DDR2, mDDR external memory support
• Dual High-Speed USB with PHY
• Up to eight general purpose 12-bit ADC channels and single 2 Msps ADC channel
• Temperature sensor for thermal protection
• Multiple connectivity ports (UARTs, SSP, SDIO, SPI, I²C, I²S)
• Family of products supporting various feature sets
	• Industrial-strength integration
	  ○ Reduces system cost and complexity, and provides greater flexibility in system design
	  ○ Industry-leading power management eliminates external components
	  ○ High level of peripheral integration, including display, connectivity, real-time control, security and networking
	• Industrial qualification and product longevity
	  ○ Supports the full life of the product in the field
	  ○ Part of the Freescale Product Longevity Program—15 years
	• Comprehensive Enablement
	  ○ Linux and Windows Embedded CE BSPs—Reuse software across i.MX platforms
	  ○ Multimedia Codecs—Proven codecs enable faster time to market
	  ○ Complete software solution at no cost
	• Optimized performance and power consumption
	  ○ Increased battery life for portable equipment
	  ○ Improved energy efficiency for wall powered or fanless systems

Ordering Information

Part Number	Operating System	MSRP (USD)
MCIMX28EVK	Linux, Windows Embedded CE	$399.00
MCIMX28LCD	LCD module (4.3" WQVGA touchscreen)	$199.00
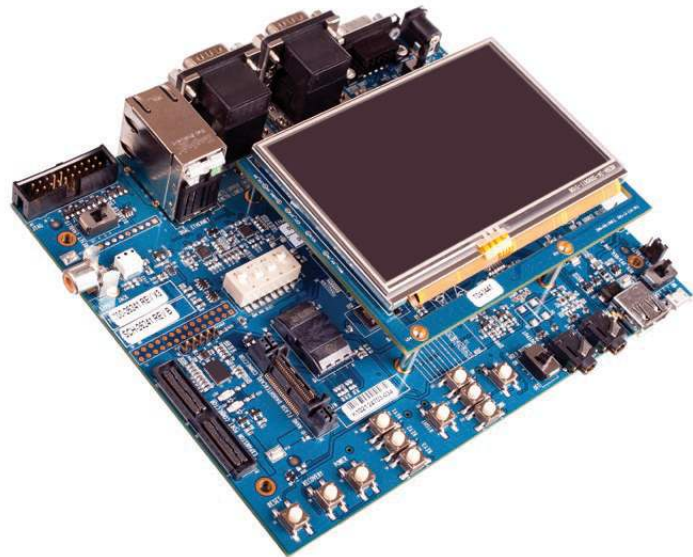
For more information, visit freescale.com/iMX28EVK

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