freescale™
i.MX

Consumer and Industrial Markets

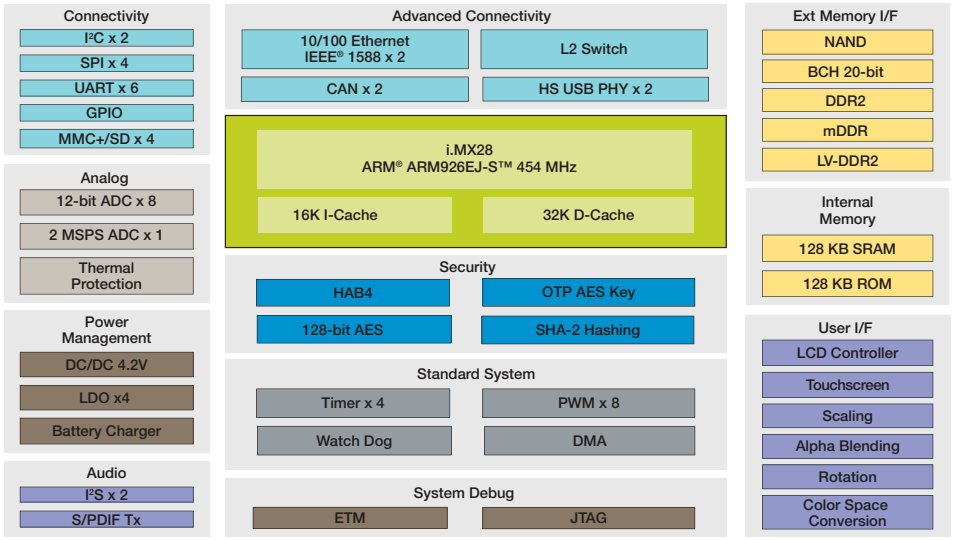
i.MX28 Family of Applications Processors

Intelligent integration, unmatched

Overview

The i.MX28 family of multimedia applications processors is part of Freescale's ARM® ARM9™-based product portfolio. The i.MX28 family integrates display, power management and connectivity features unmatched in ARM9-based devices, reducing system cost and complexity for cost-sensitive applications. With optimized performance and power consumption, the i.MX28 is an ideal fit for battery-operated or fanless portable equipment. Additionally, the LCD controller with touchscreen capability makes it possible to design creative and intuitive user interfaces required by many applications. The i.MX28 family reaches new levels of integration in ARM9 devices and provides the enablement needed to help design differentiated industrial, automotive and consumer products in less time.

i.MX28 Family



Target Applications

- Digital picture frames
- Human-machine interface for appliances, building contol, factory automation, printers and security panels
- Industrial control
- Media gateways/accessories
- Portable medical
- Smart energy gateways/meters

Energy Efficient Solutions™
optimized for low power

Industrial Needs

Like the rest of the i.MX portfolio, the i.MX28 family provides key environmental differentiators for the industrial market. These include 3.3 V I/O support, a 0.8 mm pitch package to reduce PCB and manufacturing costs, extended temperature coverage for harsh environments, industrial qualification for extended reliability, a formal long product supply guarantee to support product life spans and a strong ecosystem, including module manufacturers, software integrators and development tools.

Development Tools

The i.MX28 evaluation kit (EVK) is another product in our "Price, Performance and Personality" series offering developers a cost-effective platform to develop, debug and demonstrate the personality of their next great product without compromising performance. An optional display module using a 4.3" WVGA TFT LCD is also offered.

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. This complete software package reduces development complexity and reduces time to market.

i.MX28 Applications Processors

Features	Benefits

• 454 MHz 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 5 V 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	Temp Ranges	Packages
MCIMX287DVM4B	–40 °C to +85 °C (Industrial)	289 BGA, 14 x 14 mm, .8 mm
MCIMX286DVM4B MCIMX286CVM4B	–20 °C to +70 °C (Consumer) –40 °C to +85 °C (Industrial)	289 BGA, 14 x 14 mm, .8 mm
MCIMX283DVM4B MCIMX283CVM4B	–20 °C to +70 °C (Consumer) –40 °C to +85 °C (Industrial)	289 BGA, 14 x 14 mm, .8 mm
MCIMX280DVM4B MCIMX280CVM4B	–20 °C to +70 °C (Consumer) –40 °C to +85 °C (Industrial)	289 BGA, 14 x 14 mm, .8 mm

Family Comparison

Feature	i.MX280	i.MX283	i.MX286	i.MX287
LCD	-	Y	Y	Y
Ethernet	x1	x1	x1	x2
L2 Switch	-	-	-	Y
CAN	-	-	x2	x2
SDIO*	x4	x4	x4	x4
SPI*	x4	x4	x4	x4
S/PDIF Tx	-	-	Y	Y

* Represents maximum available. Some pins are shared with other interfaces

For more information, visit freescale.com/iMX28 or freescale.com/iMX28EVK

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