

FREESCALE CONTINUUM

▶▶ i.MX ◀◀

QorIQ™

Power Architecture®

ColdFire®

MC56F8XX / 8XXX

9S12

9S08

9RS08



i.MX233 Integrates Industry-Leading Power Management Technology ▶▶▶



The i.MX233 applications processor simplifies development by integrating mixed signal IP and provides a cost efficient, system-on-chip solution to maximize performance and extend battery life.

Key Features:

Simplified Development: The i.MX233 processor simplifies the development and design process by integrating industry-leading mixed signal IP.

Cost Efficient: The unique architecture design of the i.MX233 processor enables the development of cost efficient solutions for a wide range of applications.

Optimized System-on-Chip: With an ARM9 core operating up to 454MHz, the i.MX233 processor is designed to maximize performance and extend battery life.

i.MX233 Applications Processor

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Standard Connectivity I ² C SPI x 2 UART x 3 12-bit ADC x 6 HS USB Phy GPIO	Power Management Unit DC/DC – 4.2V LDO x 4 Battery Charger	Ext Memory I/F NAND BCH 20-bit ECC8 DDR1 mDDR
i.MX233 ARM926EJ-S 454MHz		
Audio I ² S x 2 S/PDIF Tx 1.5W Mono Speaker Amp Stereo ADC/DAC with Amp	Internal Memory 32KB SRAM 64KB ROM	Ext Storage MMC/SD x 2
Multimedia 10-bit Video DAC PAL/NTSC Analog TV Encoder	Security DRM Unique ID OTP AES Key 128-bit AES SHA-1 Hashing	User I/F LCD Controller Touchscreen Scaling Alpha Blending Rotation Color Space Conversion
System Debug ETM SJTAG	Standard System Timer x 4 Watch Dog PWM x 5 DMA	Cache 16K I Cache 16K D Cache

■ Not Available in QFP Package

Key Advantages

- 454MHz ARM926EJ-S core
- Power Management Unit with DC-DC switching converter and linear regulators to power the device and drive external components
- Mobile DDR Support with integrated 1.8V regulator
- DDR1 Support with integrated 2.5V regulator
- LCD Controller with Touchscreen
- 1.5W Mono speaker amplifier
- High speed USB with embedded PHY
- Stereo headphone DAC w/ 99dB SNR & Stereo ADC w/ 85 dB SNR with integrated amplifiers
- NAND support – SLC/MLC and managed
- Hardware BCH (up to 20-bit correction) and RS ECC8 for current and future MLC NAND support

Package and Temperature

- 169-pin MAPBGA 11 x 11mm 0.8mm pitch
- 128-pin LQFP 14 x 14mm
- -10°C to +70°C (Consumer)
- -40°C to +85°C (Industrial)



i.MX233 Evaluation Kit (EVK) ▶▶▶

Price. Performance. Personality.

Freescale offers a feature rich evaluation kit demonstrating the capabilities of the MCIMX233 running embedded Linux® and Windows® Embedded CE 6.0. The evaluation kit includes support for DDR1, NAND, SDIO, USB, Ethernet (via a SPI header) and 4.3" WQVGA TFT LCD.

Single Board Development Platform

CPU

- i.MX233 Applications Processor (169 BGA)
- 2 x 64MB DDR1
- 2GB NAND FLASH
- SPI Flash/EEPROM footprints
- DC/DC Converter components
- Li-Ion battery connector

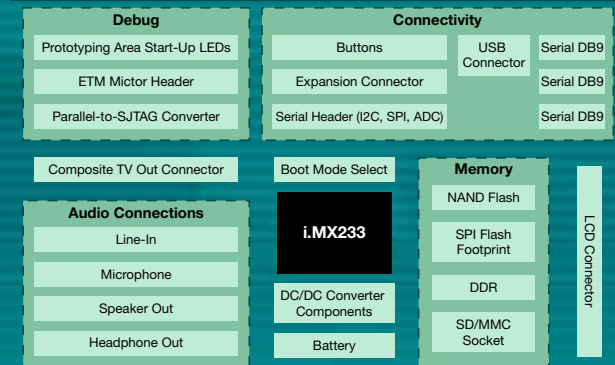
Debug

- Debug Serial Port
- JTAG
- Reset, Interrupt, boot switches
- Debug display/LEDs
- Power Source
- ETM Support

Peripherals

- 4.3" WQVGA Touchscreen LCD Display (add-on module)
- SD/MMC Card Slot
- USB Host/Device
- Ethernet supported via SPI header
- Navigation keys
- Mic input, headphone output (jack)
- Line-in jack
- Speaker Connector
- Composite TV Out connector
- Expansion header
- Application UART ports
- Freescale accelerometer (MMA7455LT)

i.MX233 EVK Functional Block Diagram



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Orderable Parts	Package	Temperature
MCIMX233CJM4B	169-pin MAPBGA	-40°C to +85°C
MCIMX233DJM4B	169-pin MAPBGA	-10°C to +70°C

Tools	Description	MSRP
MCIMX23LCD	4.3" WQVGA LCD MODULE	\$199
MCIMX23LEVKJ	LINUX OS ENABLED	\$399
MCIMX23WEVKJ	WinCE OS ENABLED	\$399

Shown: MCIMX23LEVKJ and MCIMX23LCD (sold separately)



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i.MX25 Expanding into Industrial Applications ▶▶▶



The i.MX25 family of devices extends Freescale's proven ARM9 platform and provides the essential performance, low power, integration and connectivity to create feature rich, cost competitive industrial and general embedded products.

Key Features:

Performance: Based on Freescale's proven ARM926EJ-S technology, with embedded 128KB SRAM to boost system performance.

Connectivity: Wide range of connectivity options designed to address the needs of industrial and general embedded devices.

Cost Sensitivity: Integration of key cost-saving features like ethernet and touchscreen controllers, USB PHYs, and support for external DDR2 memory reduces overall system cost.

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i.MX25 Family		
Ext Storage MMC+/SD x 2 P-ATA CE-ATA	Advanced Connectivity 10/100 Ethernet CAN x 2 SDIO x 2 HS OTG + Phy HS Host + Phy Smartcard x 2	Ext Memory I/F NAND NOR DDR2 mDDR SDRAM
Int Memory 128KB SRAM 32KB ROM	i.MX258 ARM926EJ-S™ 400MHz 16 KB I-cache MMU 16KB D-cache 5 x 5 Crossbar	
Standard Connectivity I ² C x 3 CSPI x 3 UART x 5 GPIO x 4 12-bit ADC x 3 1-Wire	Security SCC RNGB HAB SRTC RTICv3 Dry-Ice	User I/F LCD Controller Touch Screen CMOS Sensor I/F 8x8 Keypad SLCD Controller
System Debug ETM SJTAG	Standard System Timer x 4 PWM x 4 Watch Dog SDMA	Audio SSI ² S x 2 ESAI Audio Mux

* Not all features are available on all devices. Please refer to the product selector guide.

Key Advantages

- 400MHz ARM926EJ-S core
- 10/100 Ethernet MAC with RMII support
- Support for DDR2 & LPDDR SDRAM
- Two high speed USB controllers with integrated PHYs
- 128KB SRAM for low power LCD refresh & performance optimization
- Up to 8 general purpose 12-bit resolution ADC
- VGA LCD controller with integrated resistive touchscreen controller
- Two independent Flex CAN 2.0 controllers supporting CAN 2.0B
- Parallel interface for external NOR flash or FPGA
- Support for external SLC/MLC NAND flash
- 3.3V I/O reduces external component count
- Enhanced security features, including device tamper detection monitors (voltage, frequency, temperature), along with Freescale's High-Assurance Boot (HAB) for secure system boot

Package and Temperature

- 400-pin MAPBGA 17 x 17mm 0.8mm pitch
- -40°C to +85°C, -20°C to +70°C
- AEC-Q100 Grade 3 Qualification (i.MX251 and i.MX255)



i.MX25 Product Development Kit (PDK) ▶▶▶

Key Features

Processor Module

- i.MX25 with ARM926EJ-S core
- Freescale MC34704B Power Management IC
- Freescale SGTL5000 ultra low power audio codec
- 512MB DDR2 SDRAM, 2GB NAND flash

Personality Module

- 5.7" VGA TFT LCD with touchscreen
- CMOS image sensor
- Connector bank supporting alternate LCD, Audio, CAN, 10/100 Ethernet, USB and more
- SD card for Wi-Fi or external data storage

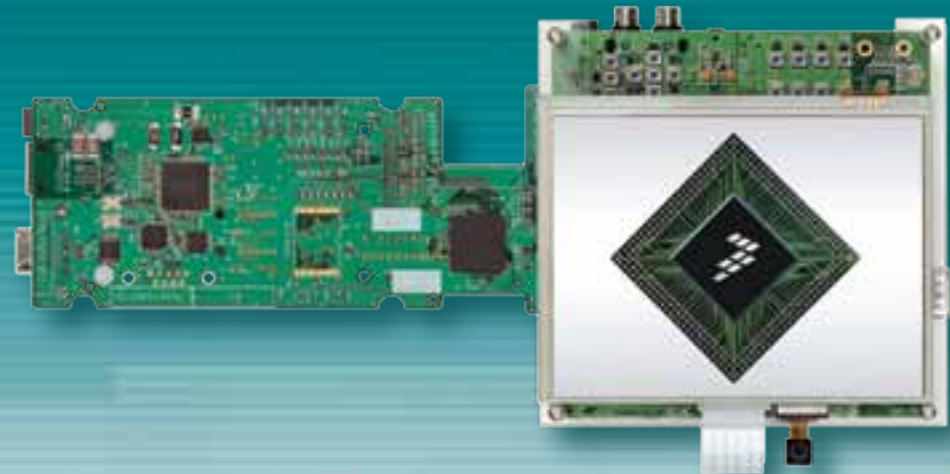
Debug Module

- Debug Ports: Ethernet and Serial
- JTAG
- Power Source & Monitoring

Key Benefits

- Packed with connectivity options to demonstrate the wide range of possibilities with the i.MX25 applications processor
- Proven design examples for power management, audio and connectivity options gets you started quickly on your own design
- Software BSPs for Linux and Windows Embedded CE 6.0 shortens the development cycle and accelerates time to market

Orderable Parts	Package	Temperature
MCIMX253CJM4	400-pin MAPBGA	-40°C to +85°C
MCIMX253DJM4	400-pin MAPBGA	-20°C to +70°C
MCIMX257CJM4	400-pin MAPBGA	-40°C to +85°C
MCIMX257DJM4	400-pin MAPBGA	-20°C to +70°C
MCIMX258CJM4	400-pin MAPBGA	-40°C to +85°C
Tools	Description	MSRP
MCIMX25LPDKJ	LINUX OS ENABLED	\$995
MCIMX25WPKJ	WinCE OS ENABLED	\$995



i.MX35 Multimedia Applications Processor ▶▶▶

The i.MX35 products combine the right performance, integration, and connectivity peripherals needed for a variety of consumer & industrial applications. Complete with product development kits for both Linux and Windows Embedded CE, the i.MX35 platform will reduce customer time to market by simplifying design and maximizing software re-use.

Key Features:

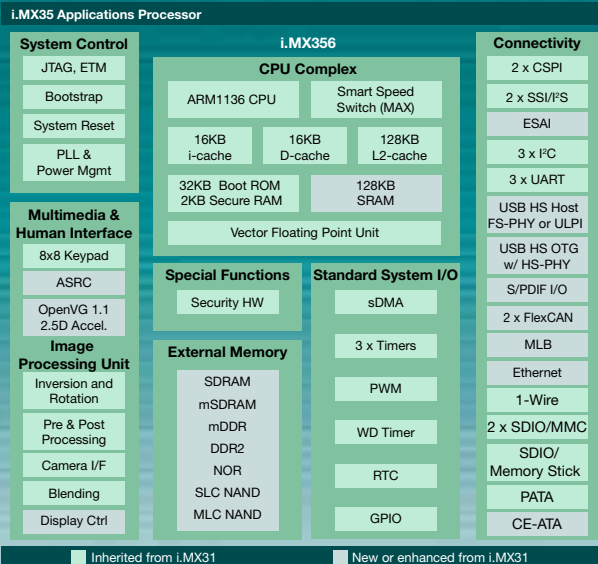
Performance: The i.MX35 devices with an ARM1136JF-S core, L2 cache, embedded SRAM, and vector floating point co-processor provide maximum performance at minimal power consumption.

Integration & Connectivity: High level of system integration, including LCD controller and camera interface, with connectivity supported through features like Ethernet controller, CAN, USB Host and On-The-Go, SPI, UARTs, I²C, and MMC/SDIO.

Graphics: Open VG™ hardware graphics core designed for User Interfaces, Navigation, Animations and Flash content. Fully capable of compelling 3D UI effects.

i.MX35 Advantages for Industrial Applications

Customer Requirement	i.MX35 Answer
High Performance	532MHz ARM1136JF-S CPU with 128 KB L2 cache
Low Power Consumption	System Power consumption 500mW run-time, 50 uA standby
Clear Display and Smooth Graphics	Connects directly to high-resolution display; image processing handled in hardware. Vector Floating Point Unit and 2D Graphics accelerator
Complete Software Solution	Production-ready software development kit, complete with device drivers, middleware, and codecs
Open O/S Support	WinCE, Linux, QNX supported
Differentiation from Competition	Power & flexibility on PDK to support additional features, e.g.: • WiFi/Bluetooth • GPS
Competitive Pricing/BOM	• High integration + DDR2 support for reduced system cost • On-chip SRAM
Flexible Connectivity	2 SDIO, 2 USB ports (with PHY), HDD interface, MLB, CAN, serial ports, 3.3V



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Package and Temperature

- 400-pin MAPBGA 17 x 17mm 0.8mm pitch
- -40°C to +85°C
- -20°C to +70°C



Comprehensive i.MX35 “Form Factor” Product Development Kit ▶▶▶

Design. Debug. Demo.

Freescale’s comprehensive i.MX35 PDK is a “form factor” 3-stack solution that builds on the earlier success of the i.MX31 and i.MX27 product development kits. Based on a powerful ARM 1136™ core, the i.MX35 PDK delivers a high performance, low power, cost effective solution for a variety of solutions, including devices that require an open operating system and a robust user interface.

Key Features

Personality Module

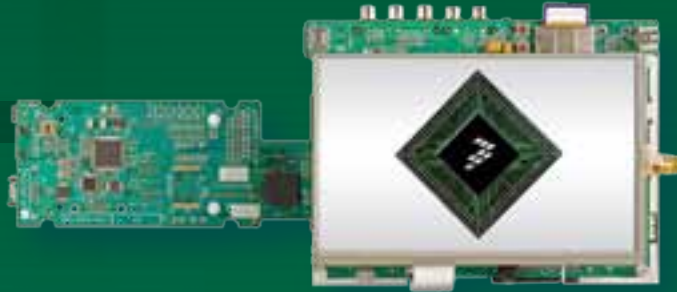
- User I/O
- 7” TFT WVGA screen display with touchscreen
- CMOS image sensor
- U/I connector for display/keypad
- Auxiliary video input for display from external video source
- CAN connector
- Two USB ports
- 10/100 Ethernet port
- MLB interface
- SD card, ATA, HDD interfaces

Debug Module

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

Processor Module

- i.MX35 with ARM1136JF-S core
- Power management (Freescale PMIC MC13892) + power circuitry
- Memory
 - 256MB DDR2
 - 64MB NOR FLASH
 - 2GB NAND FLASH



Key Benefits

- Rich multimedia experience with exceptional quality; supporting up to VGA 30fps video
- Power management offers an abundance of different power saving modes, giving the system developer the ability to make trade offs between power consumption in standby and recovery times
- Reduced hassle associated with design-in of key connectivity options
- Simplified product design

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Orderable Parts	Package	Temperature
MCIMX353CJQ5C	400-pin MAPBGA	-40°C to +85°C
MCIMX353DJQ5C	400-pin MAPBGA	-20°C to +70°C
MCIMX357CJQ5C	400-pin MAPBGA	-40°C to +85°C
MCIMX357DJQ5C	400-pin MAPBGA	-20°C to +70°C
Tools	Description	MSRP
MCIMX35LPDKJ	LINUX OS ENABLED	\$995
MCIMX35WPKJ	WinCE OS ENABLED	\$995



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i.MX51 Industrial and General Embedded ▶▶▶



The i.MX51 brings a new level of performance and integration to the i.MX family from Freescale, while maintaining the family's commitment to low power consumption, product accessibility, and device longevity.

Key Features:

Performance: The i.MX51 family of processors runs on the powerful ARM Cortex™-A8 core at speeds up to 800 MHz, which allows for roughly 2 MIPS per MHz. In addition, the i.MX51 processor offers a Neon co-processor and Vector FPU, as well as flexible memory support for mDDR, popular lower cost DDR2, SDRAM and SLC/MLC NAND.

Multimedia & Graphics: The high performance of the i.MX51 family of processors enables life-like video and 3-D graphics reproduction and quick response times needed for advanced user interfaces and sophisticated video processing - the building blocks to power the next great applications.

Connectivity: Connectivity supported through features like Ethernet controller, High Speed USB OTG with embedded PHY, SPI, UARTs, I²C, and MMC/SDIO.

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i.MX51 Applications Processor

i.MX51	
System Control	CPU Platform
Secure JTAG	ARM Cortex™-A8
Power Mgmt	32KB i-cache 32KB d-cache 256KB L2-cache
PLL x 3	Neon ETM
Clock Reset	Vector Floating Point Unit
Timers	Multimedia
Timer x3	OpenGL ES 2.0
PWM x2	OpenVG1.1
Watch Dog	HW Video Codecs
Memory	HD720 TV-Out
ROM 32KB	Imaging Processing Unit
RAM 128KB	Display Controller
Security	Resizing & Blending
Sahara v4	Inversion / Rotation
TrustZone®	Image Enhancement
RTIC	Camera
SCC v2	
SRTC	
	Connectivity
	Fast IrDA
	HS MMC/SDIO x4
	CSPI HS x2 / LS x1
	UART x3
	I ² C x3
	SSI/I ² S x3
	1-Wire
	ATA-6
	USB OTG HS+PHY
	USB HS x3
	SPDIF Tx
	GPIO
	Keypad
	Ethernet
	Ext. Memory I/F mDDR 200 MHz DDR2 200 MHz
eFUSES	Smart DMA

Key Advantages

- High performance CPU: Cortex A8
- Low power multimedia
- Delivers rich graphics and UI in HW (i.MX515)
 - OpenGL ES 2.0 3D accelerator (AMD Z430)
 - OpenVG 1.1 2D accelerator (AMD Z160)
 - Neon Vector floating point co-processor
 - Display up to WXGA
- Drives high resolution video in HW (i.MX513 & i.MX515)
 - Multi-format D1 video encode
 - Multi-format HD720 video decode
- Mixed signal integration - HD720 TV out and high speed USB OTG with embedded PHY

Package and Temperature

- 529-pin MAPBGA 19 x 19mm 0.8mm pitch
- -20°C to +70°C
- -40°C to +85°C



i.MX51 Evaluation Kit ▶▶▶

Single Board Development Platform — Price, Performance, Personality

Key Features

- i.MX515 Applications Processor
- 4 x 128MB DDR2
- 4MB SPI NOR
- PMIC – Atlas APL (MC13892JV or MC13892JVL)
- NAND and EMI Header
- Debug Serial Port
- JTAG
- Reset, boot switches
- Debug LED
- Power Source
- Power on/off button
- Power Measurement Header
- 7" WVGA Touchscreen LCD Display (add-on module)
- 2 LVDS connectors
- DVI-I connector
- 2 SD/MMC Card Slots
- USB Host x2 / USB OTG x1
- Ethernet Port
- Mini PCIe
- SATA HDD connector
- SIM Card connector
- Keyboard connector
- Mic input, stereo headphone output (jack), V2IP Headphone
- Speaker connector
- USB Camera connector
- PS-2 TP connector
- RGB output through DVI-I connector
- Expansion Header
- Ambient light sensor footprint
- FM receiver footprint
- Expansion board (add-on module)

Orderable Parts	Package	Temperature
MCIMX512CJM6C	529-pin MAPBGA	-40°C to +85°C
MCIMX512DJM8C	529-pin MAPBGA	-20°C to +70°C
MCIMX513CJM6C	529-pin MAPBGA	-40°C to +85°C
MCIMX513DJM8C	529-pin MAPBGA	-20°C to +70°C
MCIMX515CJM6C	529-pin MAPBGA	-40°C to +85°C
MCIMX515DJM8C	529-pin MAPBGA	-20°C to +70°C
Tools	Description	MSRP
MCIMX51EVKJ	LINUX OS & WinCE OS ENABLED	\$699
MCIMX51EXP	INTERFACE EXPANSION CARD	\$200
MCIMX51LCD	7" WVGA LCD MODULE	\$250



Shown: i.MX51 EVK with LCD and EXP modules

iMX Family Selector Guide ▶▶▶

CATEGORIES/FEATURES	APPLICATIONS PROCESSORS								
	i.MX21	i.MX27L	i.MX27	i.MX251	i.MX255	i.MX253	i.MX257	i.MX258	i.MX233
PROCESSOR/ POWER									
Core	926EJ-S	926EJ-S	926EJ-S	926EJ-S	926EJ-S	926EJ-S	926EJ-S	926EJ-S	926EJ-S
ARM9	Y	Y	Y	Y	Y	Y	Y	Y	Y
ARM11	-	-	-	-	-	-	-	-	-
ARM Cortex-A8	-	-	-	-	-	-	-	-	-
L1 Cache / L2 Cache	16/0 KB	16/0 KB	16/0 KB	16/0 KB	16/0 KB	16/0 KB	16/0 KB	16/0 KB	16/0 KB
Maximum Clock Speed	266 MHz	400 MHz	400 MHz	400 MHz	400 MHz	400 MHz	400 MHz	400 MHz	454 MHz
Embedded SRAM	6KB	-	-	128KB	128KB	128KB	128KB	128KB	32KB
Power Management Solution	External IC	External IC	External IC	MC34704	MC34704	MC34704	MC34704	MC34704	Integrated
CONNECTIVITY									
ATA-6	-	Y	Y	-	Y	Y	Y	Y	-
1-Wire	Y	Y	Y	Y	Y	Y	Y	Y	-
CE-ATA	-	-	-	-	Y	Y	Y	Y	-
CAN (Controller Area Network)	-	-	-	2	2	-	2	2	-
Ethernet 10/100	-	Y	Y	Y	Y	Y	Y	Y	-
Fast-IrDA (FIRI)	Y	-	-	-	-	-	-	-	-
PC	1	2	2	3	3	3	3	3	1
Memory Stick Pro	-	Y	Y	-	-	-	-	-	-
Media Local Bus	-	-	-	-	-	-	-	-	-
PCMCIA	Y	Y	Y	-	-	-	-	-	-
SD/SDIO/MMC	2	3	3	2	2	2	2	2	2
SIM (Subscriber Interface Module)	-	-	-	Y	Y	-	Y	Y	-
SPI	3	3	3	3	3	3	3	3	2
UART	4	6	6	5	5	5	5	5	3
USB Controller	FS OTG FS Host	HS OTG HS Host FS Host	HS OTG HS Host FS Host	HS OTG HS Host	HS OTG HS Host	HS OTG HS Host	HS OTG HS Host	HS OTG HS Host	HS Host HS Device
USB PHY	-	-	-	2	2	2	2	2	1
General Purpose A/D	-	-	-	Y	Y	Y	Y	Y	Y
PWM	4	4	4	4	4	4	4	4	5
MULTIMEDIA									
Audio									
SSI/I ² S	2	2	2	2	2	2	2	2	2
S/PDIF Transceiver	-	-	-	-	-	-	-	-	-
S/PDIF Transmitter	-	-	-	-	-	-	-	-	Y
Analog Audio	-	-	-	-	-	-	-	-	Y
Graphics									
Video Acceleration	-	-	D1 encode, D1 decode	-	-	-	-	-	-
TV Encoder	-	-	-	-	-	-	-	-	-
Camera Sensor Interface									
HW Color Space Conversion	Y	Y	Y	-	-	-	-	-	-
Number of CMOS Sensor Ports	1	1	1	1	1	0	1	1	0
Sensor Resolution	Mpixel	Mpixel	Mpixel	Mpixel	Mpixel	-	Mpixel	Mpixel	-
Display Support	1	1	1	-	1	1	1	1	1
LCD Resolution	VGA	SVGA	SVGA	-	VGA	VGA	VGA	VGA	QVGA, VGA
Up to QVGA (320x240)	-	-	-	-	Y	Y	Y	Y	Y
Up to VGA (640x480)	Y	-	-	-	Y	Y	Y	Y	Y
Up to SVGA (800x600)	-	Y	Y	-	-	-	-	-	-
Up to XGA (1024x768)	-	-	-	-	-	-	-	-	-
Display Port Width	18-bit	18-bit	18-bit	-	18-bit	18-bit	18-bit	18-bit	24-bit

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APPLICATIONS PROCESSORS									
i.MX31L	i.MX31	i.MX351	i.MX353	i.MX355	i.MX356	i.MX357	i.MX512	i.MX513	i.MX515
1136JF-S	1136JF-S	1136JF-S	1136JF-S	1136JF-S	1136JF-S	1136JF-S	Cortex-A8	Cortex-A8	Cortex-A8
-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	-	-	-
-	-	-	-	-	-	-	Y	Y	Y
16/132 KB	16/132 KB	16/132 KB	16/132 KB	16/132 KB	16/132 KB	16/132 KB	32/256 KB	32/256 KB	32/256 KB
532 MHz	532 MHz	532 MHz	532 MHz	532 MHz	532 MHz	532 MHz	800 MHz	800 MHz	800 MHz
16KB	16KB	128KB	128KB	128KB	128KB	128KB	128KB	128KB	128KB
External IC	External IC	MC13892	MC13892	MC13892	MC13892	MC13892	MC13892	MC13892	MC13892
Y	Y	-	Y	Y	Y	Y	Y	Y	Y
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	-	Y	Y	Y	Y	Y	Y	Y	Y
-	-	2	2	2	2	2	-	-	-
-	-	Y	Y	Y	Y	Y	Y	Y	Y
Y	Y	-	-	-	-	-	Y	Y	Y
3	3	3	3	3	3	3	Y	Y	Y
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	-	Y	-	Y	Y	-	-	-	-
Y	Y	-	-	-	-	-	-	-	-
2	2	2	2	2	2	2	4	4	4
Y	Y	-	-	-	-	-	Y	Y	Y
2	2	2	2	2	2	2	3	3	3
5	5	3	3	3	3	3	3	3	3
HS OTG	HS OTG	HS OTG	HS OTG	HS OTG	HS OTG	HS OTG	HS OTG	HS OTG	HS OTG
HS Host	HS Host	HS Host	HS Host	HS Host	HS Host	HS Host	3 x HS Host	3 x HS Host	3 x HS Host
FS Host	FS Host	FS Host	FS Host	FS Host	FS Host	FS Host	FS Host	FS Host	FS Host
-	-	2	2	2	2	2	1	1	1
-	-	-	-	-	-	-	-	-	-
4	4	4	4	4	4	4	2	2	2
2	2	2	2	2	2	2	3	3	3
-	-	Y	Y	Y	Y	Y	-	-	-
-	-	Y	Y	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	2D and 3D
-	-	-	-	-	-	-	-	D1 encode, HD720p decode	D1 encode, HD720 decode
-	-	-	-	-	-	-	Y	Y	Y
Y	Y	-	Y	Y	Y	Y	Y	Y	Y
1	1	-	1	1	1	1	2	2	2
Mpixel	Mpixel	-	Mpixel	Mpixel	Mpixel	Mpixel	Mpixel	Mpixel	Mpixel
1	1	-	1	1	1	1	2	2	2
SVGA	SVGA	-	SVGA	SVGA	SVGA	SVGA	WXGA	WXGA	WXGA
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	-	-	-
-	-	-	-	-	-	-	Y	Y	Y
18-bit	18-bit	24-bit	24-bit	24-bit	24-bit	24-bit	24-bit	24-bit	24-bit



MC34704 Multi-channel Power Management IC for Multimedia Microprocessors for i.MX25 and i.MX27 ▼

Key Features

- Eight DC/DC (MC34704A) or five DC/DC (MC34704B) switching regulators with up to ± 2 percent output voltage accuracy
- Dynamic voltage scaling on all regulators
- Selectable voltage mode control or current mode control on REG8
- I²C programmability
- Output under-voltage and over-voltage detection for each regulator
- Over-current limit detection and short circuit protection for each regulator
- Thermal limit detection for each regulator, except REG7
- Integrated compensation for REG1, REG3, REG6 and REG8
- 5 μ A maximum shutdown current (all regulators are off, 5.5V VIN)
- True cutoff on all of the boost and buckboost regulators

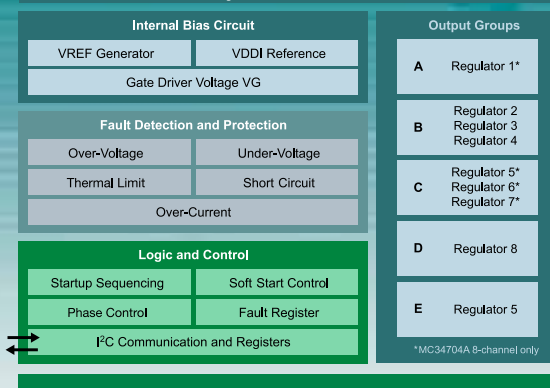
Orderable Parts

MC34704AEP
MC34704BEP

Tools

KIT34704AEPEVBE
KIT34704BEPEVBE

MC34704 Functional Block Diagram



MC13892 Highly Integrated Power Management & User Interface IC for i.MX51 and i.MX35 ▼

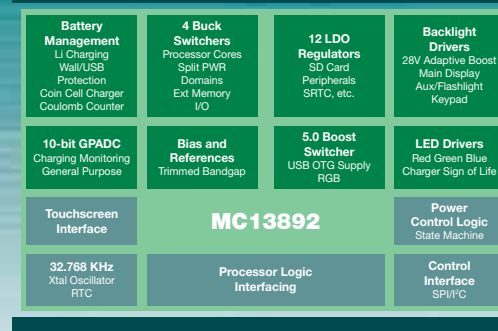
Key Features

- Battery charger system for wall charging and USB charging
- 10-bit ADC for monitoring battery and other inputs, plus a coulomb counter support module
- 4 adjustable output buck converters for direct supply of the processor core and memory
- 12 adjustable output LDOs with internal and external pass devices
- 2 boost converters for supplying LCD backlight and RGB LEDs
- Serial backlight drivers for displays and keypad, plus RGB LED drivers
- Power control logic with processor interface and event detection
- Real time clock and crystal oscillator circuitry, with coin cell backup and support for external secure real time clock on a companion system processor IC
- Touchscreen interface
- SPI/I²C bus interface for control and register access

Orderable Parts

MC13892JVK
MC13892JVL

MC13892 Block Diagram



The i.MX Story ▶▶▶



Freescale is a recognized leader in the design of high-performance, energy-efficient semiconductor products. Underscoring this, Freescale has introduced the Energy-Efficient Solutions mark to highlight selected products that excel in effective implementation of energy efficiency technologies that deliver market-leading performance in the application spaces they are designed to address. Freescale ARM-based i.MX multimedia applications processors deliver an optimal balance of performance and long battery life for rich multimedia experiences on the go. The i.MX applications processor family includes processors based on ARM9, ARM11 and ARM™ Cortex-A8 core technologies, which are powering new applications in consumer, automotive and industrial markets that demand exceptional performance and efficiency.

Design with i.MX and get peace of mind absolutely free

Freescale Semiconductor provides a product longevity program for the market segments they serve. For the automotive and medical segments, Freescale will make a broad range of devices available for a minimum period of 15 years. For all other market segments in which Freescale participates, Freescale will make a broad range of devices available for a minimum period of 10 years. Design with confidence knowing that the i.MX family is supported in Freescale's product longevity program. For device specific details, see www.freescale.com/productlongevity

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Software: Freescale software engineers develop, test, and maintain software code for all i.MX platforms for both Linux and Windows Embedded CE. At no cost, customers can download binary and source device drivers, as well as a full suite of multimedia codecs.

Support: In addition to the online documentation, trainings, and technical support, design files and schematics are provided to customers to jump start their own designs.

Selection: With Freescale's common software platform approach, common peripheral blocks, and pin-to-pin compatible derivative device options, customers can select the i.MX family for multiple platforms with easier development and faster time to market. With so many products to choose from, customers don't have to just select one.

	Customer Need	Example Applications
i.MX233	<ul style="list-style-type: none">• Power management unit• Stereo ADC / DAC	<ul style="list-style-type: none">• Remote controls• Audio peripherals & accessories
i.MX25	<ul style="list-style-type: none">• Integration• Security	<ul style="list-style-type: none">• Smart energy meters• POS terminals
i.MX35	<ul style="list-style-type: none">• Graphics acceleration• Vector Floating Point	<ul style="list-style-type: none">• HMI• Portable navigation devices
i.MX51	<ul style="list-style-type: none">• Performance• Video & Graphics acceleration	<ul style="list-style-type: none">• Media phones & IP cameras• Smartbooks & Medical devices



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