

SCM-i.MX 6Dual

Introducing the world's smallest single chip system module



Overview

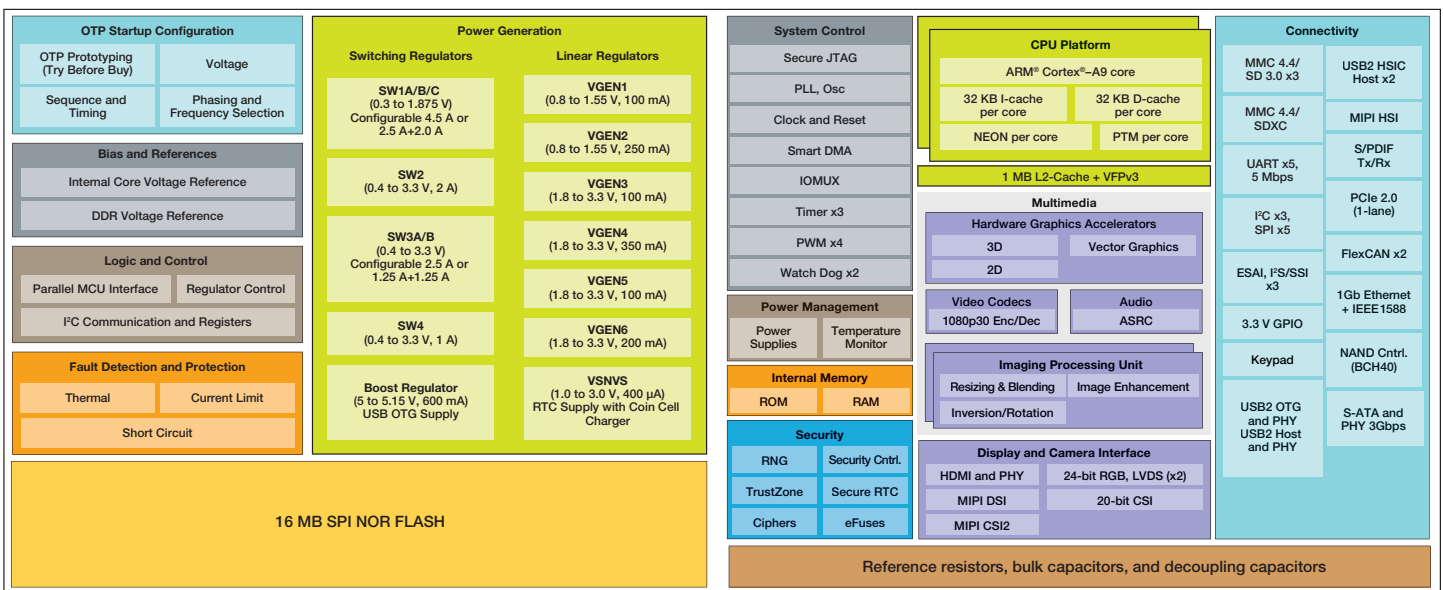
Freescale single chip system modules are a suite of highly integrated products in an ultra-small form factor. The first member of this portfolio, the Freescale SCM-i.MX 6D, drastically reduces time to market by providing a solution that minimizes design time. We've integrated and validated dual-core processor, the power management system, flash memory and over a hundred passive system components all in a chip the size of a dime. The SCM-i.MX 6Dual is enabled with the standard i.MX 6D security features (high assurance boot, cryptographic cipher engines, random number generator and tamper detection) as well as enhanced system-level tamper prevention.

The SCM-i.MX 6D speeds and eases development time by addressing technology challenges such as design of DDR, power management and board support package (BSP). Our single chip module i.MX 6D consists of the i.MX 6Dual applications processor, PF0100 (PMIC) for power management, 16 MB SPI NOR, over one hundred discrete components, and is enabled for 1 or 2 GB LPDDR2. In addition, a fully tested board support package (BSP) enabled in Android™ and Linux® is available.

Target Applications

- Digital signage
- Human-machine interface
- Home energy management systems
- In-flight entertainment
- Intelligent industrial control systems
- IP phones
- IPTV
- Portable medical
- Smartbooks
- Point-of-sale devices
- Smart watches
- Home audio systems
- Secure smart connected devices

SCM-i.MX 6Dual Block Diagram



The i.MX 6Dual family encompasses a dual-core ARM® Cortex®-A9 platform running up to 800 MHz per core with 1 MB of L2 cache and 64-bit LPDDR2 support. Integrated FlexCAN, Ethernet Controller, SDIO, USB, PCI Express® and SATA-2 provide board options for device level connectivity while integration of dual LVDS ports, MIPI display port, MIPI camera port and HDMI v1.4 provides versatility to address the user interface requirements across a wide range of consumer and industrial multimedia applications.

The PF0100 SMARTMOS Power Management Integrated Circuit (PMIC) provides a highly programmable/ configurable architecture, with fully integrated power devices and minimal external components. With up to six buck converters, six linear regulators, RTC supply and coin-cell charger, the PF0100 can provide power for a complete system, including applications processors, memory and system peripherals, in a wide range of applications while requiring only a single external supply.

Other components in the system include 16 MB SPI NOR flash and over one hundred discrete components, which are key system capacitors and unique current reference resistors for the i.MX 6Dual. Additionally, the SCM-i.MX 6Dual is enabled for 1 or 2 GB LPDDR2 as a PoP configuration for assembly.

SCM-i.MX 6Dual Ecosystem

Freescale has collaborated with over 10 different companies to bring this platform to market. These companies include engineering designers, component suppliers and manufacturing partners.

Software customization services, hardware design services, and PoP assembly services will be available through the partners in the ecosystem.

SCM-i.MX 6Dual Features and Benefits

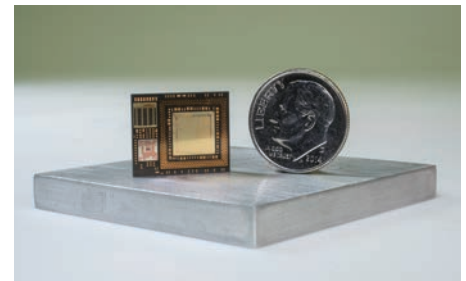
Features	Benefits
Majority of the components integrated inside the module	Speeds time to market—50% faster than the average development time Reduces hardware design time
Unprecedented, ultra-small form factor (17 x 14 x 1.7 mm)	>50% reduction over discrete solutions
Software and firmware available and fully optimized for the SCM	Reduces software design time and validation effort
Enabled LPDDR2 PoP memory and embedded power management	Reduces design complexity of integrating and certifying DDR memory and power management
Freescale, with its partners, and ecosystem, provide SW/HW customization and support	Reduces supply chain complexity and improves time to market

SCM-i.MX 6Dual Software Support

The software solution is Linux and Android based leveraging the i.MX 6 series general available (GA) BSP. The GA provides software components: tool suite, boot loader, Linux kernel and root file system. The 16MB SPI NOR flash is sized to support the storage of uboot, Linux kernel image, and an optimized Linux OS.

SCM-i.MX 6Dual Technology Inside

- Freescale i.MX 6Dual processor based on ARM Cortex-A9, operating up to 800 MHz
- Freescale MMPF0100 for power management
- 109 discrete components
- 16 MB SPI NOR
- 1 or 2 GB LPDDR2 enabled for assembly



The SCM-i.MX 6Dual in comparison to a standard US dime.

For more information, please visit freescale.com/scm

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