Multimedia Applications Processors – Arm11™ Core, Vector Graphics Hardware Accelerator
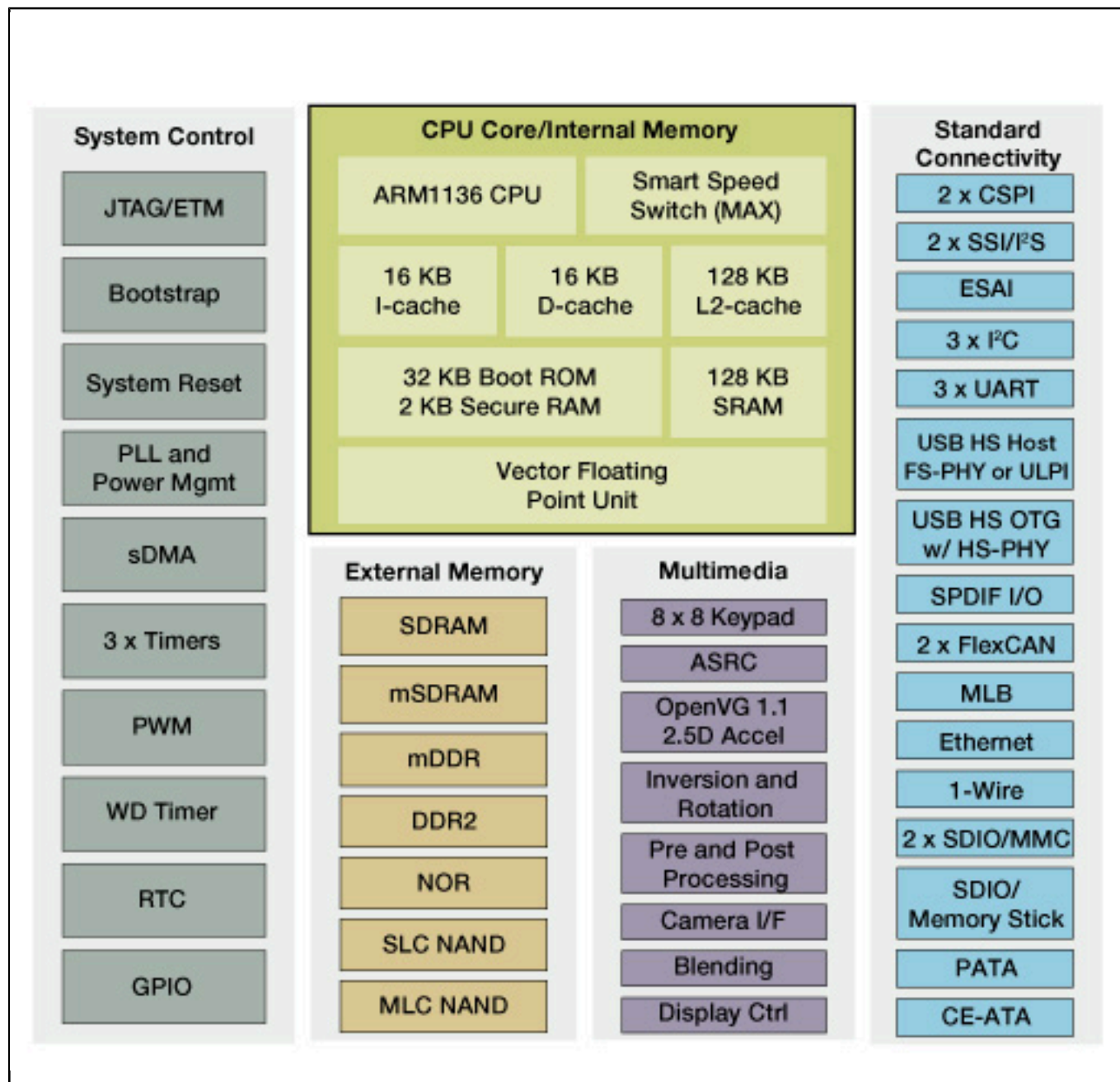
i.MX356

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The i.MX356 provides all of the functionality required in today's automotive market. With an Arm11™ core running at 532 MHz the i.MX356 integrates an OpenVG™ 1.1 vector graphics hardware accelerator. The OpenVG was integrated to deliver smooth textural visuals required in today's automotive infotainment systems. The processor features an advanced Image Processing Unit (IPU) with updated resizing capabilities to handle wide-VGA and increased the interface to 24-bit for higher color display capabilities. To reduce BOM cost flexible connectivity options were integrated, such as 2-CAN modules, Media Local Bus (MLB), Enhanced Serial Audio Interface (ESAI), Ethernet, and two USB ports with integrated PHYs. The i.MX356 can connect too many different peripherals like Wi-Fi via SDIO or USB, Bluetooth via UART or SSI/I2S and external storage via CE-ATA or PATA. Support for lower cost memories like 3.3V SDRAM, DDR2, and multi-level cell NAND were integrated.

The i.MX356 is supported by companion NXP® power management ICs (PMIC), MC13892 and MMPF0100.

Freescale i.MX356 Applications Processor Block Diagram Block Diagram

System Control

- JTAG/ETM
- Bootstrap
- System Reset
- PLL and Power Mgmt
- sDMA
- 3 x Timers
- PWM
- WD Timer
- RTC
- GPIO

CPU Core/Internal Memory

- ARM1136 CPU
- Smart Speed Switch (MAX)
- 16 KB I-cache
- 16 KB D-cache
- 128 KB L2-cache
- 32 KB Boot ROM 2 KB Secure RAM
- 128 KB SRAM
- Vector Floating Point Unit

External Memory

- SDRAM
- mSDRAM
- mDDR
- DDR2
- NOR
- SLC NAND
- MLC NAND

Multimedia

- 8 x 8 Keypad
- ASRC
- OpenVG 1.1 2.5D Accel
- Inversion and Rotation
- Pre and Post Processing
- Camera I/F
- Blending
- Display Ctrl

Standard Connectivity

- 2 x CSPI
- 2 x SSI/I²S
- ESAI
- 3 x I²C
- 3 x UART
- USB HS Host FS-PHY or ULPI
- USB HS OTG w/ HS-PHY
- SPDIF I/O
- 2 x FlexCAN
- MLB
- Ethernet
- 1-Wire
- 2 x SDIO/MMC
- SDIO/ Memory Stick
- PATA
- CE-ATA

View additional information for Multimedia Applications Processors - Arm11™ Core, Vector Graphics Hardware Accelerator.

Note: The information on this document is subject to change without notice.