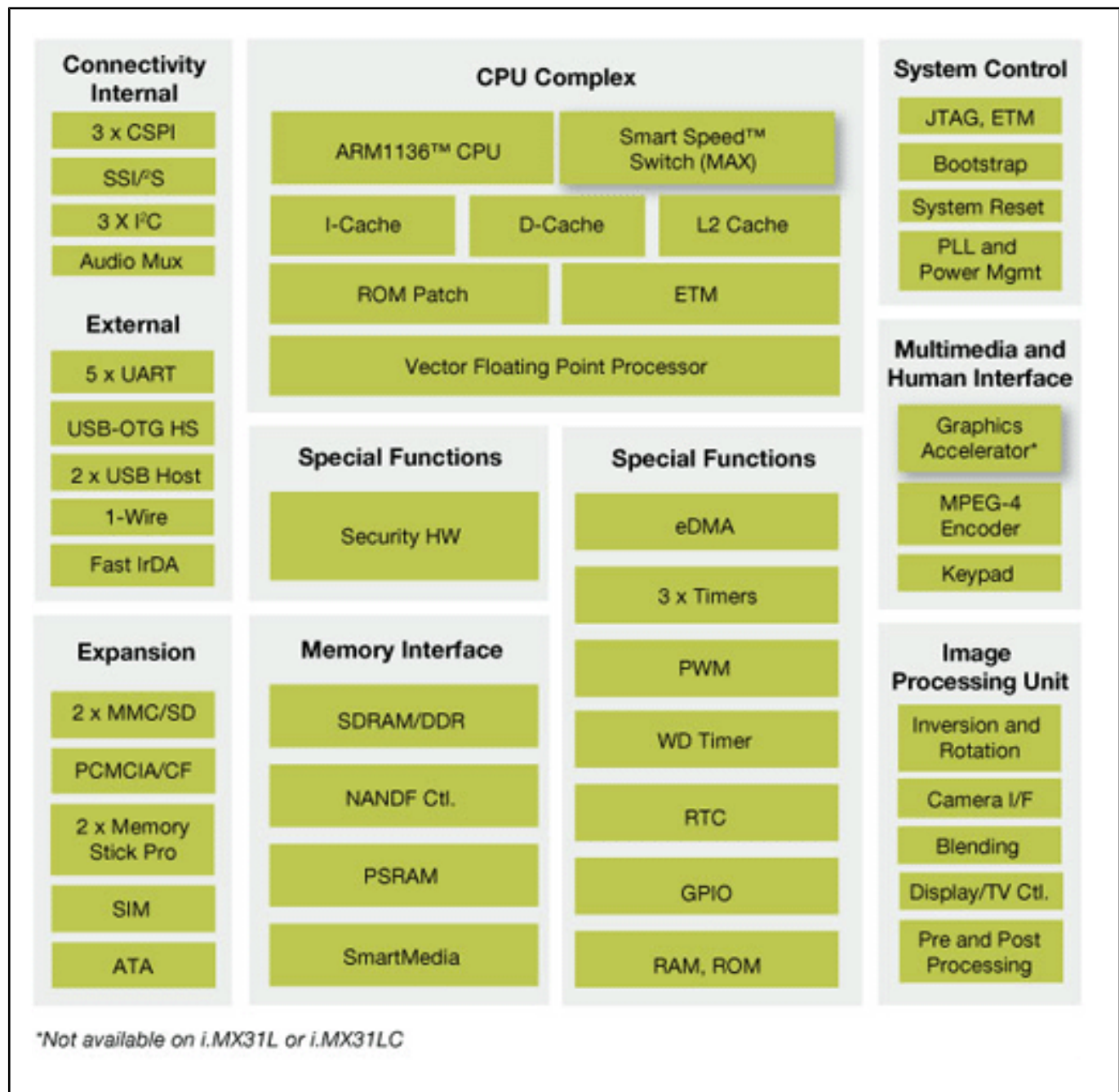# Applications Processors - Integrated Image Processing Unit (IPU), Connectivity , Arm11™ Core

i.MX31

Last Updated: Jan 16, 2023

Millions of i.MX31 processors are powering consumer, industrial, automotive, medical and general embedded devices. With on-chip media accelerators, multiple connectivity interfaces and package options, the i.MX31 and i.MX31L are suitable for a broad spectrum of multimedia oriented applications. As the first in the i.MX portfolio to achieve automotive AEC-Q100 grade 3 qualification, the i.MX31 processor is the engine in the acclaimed Ford SYNC. Design engineers need choices; NXP® delivers.

i.MX31 Multimedia Applications Processor Block Diagram Block Diagram

Connectivity
Internal
- 3 x CSPI
- SSI/I²S
- 3 X I²C
- Audio Mux

External
- 5 x UART
- USB-OTG HS
- 2 x USB Host
- 1-Wire
- Fast IrDA

Expansion
- 2 x MMC/SD
- PCMCIA/CF
- 2 x Memory Stick Pro
- SIM
- ATA

CPU Complex
- ARM1136™ CPU
- Smart Speed™ Switch (MAX)
- I-Cache
- D-Cache
- L2 Cache
- ROM Patch
- ETM
- Vector Floating Point Processor

Special Functions
- Security HW

Memory Interface
- SDRAM/DDR
- NANDF Ctl.
- PSRAM
- SmartMedia

Special Functions
- eDMA
- 3 x Timers
- PWM
- WD Timer
- RTC
- GPIO
- RAM, ROM

System Control
- JTAG, ETM
- Bootstrap
- System Reset
- PLL and Power Mgmt

Multimedia and Human Interface
- Graphics Accelerator*
- MPEG-4 Encoder
- Keypad

Image Processing Unit
- Inversion and Rotation
- Camera I/F
- Blending
- Display/TV Ctl.
- Pre and Post Processing

*Not available on i.MX31L or i.MX31LC

View additional information for Applications Processors - Integrated Image Processing Unit (IPU), Connectivity , Arm11™ Core.

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