

v-MP2040MOB

Enhanced Mobile HD Video Codec Integrated Solution

The videantis v-MP2040MOB is a complete video solution integrating both stream processing and video processing into a standalone subsystem with minimum load on the host CPU. The v-MP2040MOB is the high-end mobile 720p solution within the scalable v-MP20x0MOB product line with high-quality video encoding capabilities and extended value-add image and video processing feature support at very small silicon cost and a very low power budget.







For multi-standard 720p video encoding like H.264 BP, MPEG-4 SP/ASP, H.263, and VC-1, the v-MP2040MOB supports an enhanced set of compression tools to achieve a video quality that is unprecedented in mobile environments with reduced bitrates.

Multi-standard decoding up to 720p resolution is supported for a wide and extensible range of video standards like H.264 BP, MPEG-4 SP/ASP (DivX), WMV9/VC-1 SP/MP, and RealVideo at mobile bitrates.

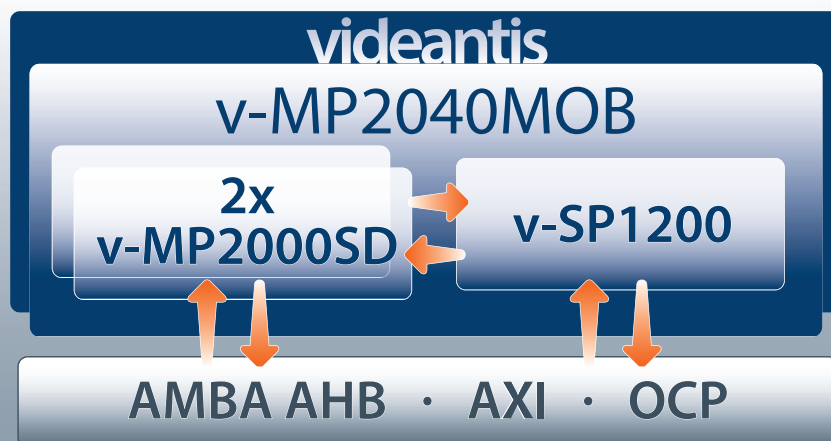
Still image JPEG encoding and decoding is supported at a pixel rate up to 45MPixel/s. Furthermore, a wide range of value-add image and video processing fea-

tures can be performed in parallel to decoding or encoding up to full 720p resolution.

The v-MP2040MOB is available as a drop-in solution proven in real system environments and optimized to tolerate long memory access latencies of real-world systems. Extensive conformance testing has been performed to assure high product quality and full customer satisfaction. Through its field upgradeability in silicon, the v-MP2040MOB provides a future-proof solution as product lifetime can be extended through addition of further standards and value-add features simply by firmware update.

-  High quality video up to 720p for mobile
-  Minimum load on host CPU
-  Best-quality encoding mode
-  Extended value-add image/video processing features
-  Very small silicon area and power consumption
-  Both en- & decoding on single footprint

KEY ADVANTAGES





Features and Benefits

Complete solution package

- > Dual v-MP2000SD video engine + v-SP1200 multi-standard stream unit
- > Minimum load on host CPU
- > High-end mobile HD solution of the scalable v-MP20x0MOB product line

Mobile video & imaging standards up to 720p

- > H.264/AVC BP decode & encode, up to 10Mbit/s
- > MPEG-4 SP, H.263 decode & encode
- > MPEG-4 ASP, DivX, XviD decode
- > WMV-9, VC-1 SP/MP decode
- > RealVideo 8/9/10 decode
- > Flash Video (Sorenson Spark) decode & encode
- > JPEG decode & encode up to 45MPixel/s
- > Extensible to further standards on same silicon: On2 VP6, AVS, MPEG-2/-1...

Value-add image/video processing features

- > Image enhancements, rotation, scaling
- > Graphic overlays, blending, picture in picture
- > Deinterlacing, denoising, deblocking
- > Color conversion (RGB/YUV, YUV/RGB, HSV)
- > Image stabilization
- > Performed in parallel to en-/decoding

Very small silicon area footprint

- > 540kgates core logic + 204kB memories
- > Target technologies: 180nm...28nm
- > 3.9mm² silicon area in 65nm technology
- > incl. sync. bus interfaces & all memories

Low frequency requirements, ultra low power consumption for extended battery life

- > Reduced switching activity for ultra low power consumption through optimized architecture
- > Only 78mW for H.264 BP 720p high-quality encoding in 65nm technology

- High-end feature phone
- Portable media player (PMP)
- Camcorder
- IPTV
- Home entertainment
- Streaming video

APPLICATIONS

Easy system integration

- > SoC bus interface options: 32/64 bit, synchronous/asynchronous
- > AMBA AHB, AXI, OCP, others

Short time to market & future proofness

- > Reliable core, pre-verified in silicon
- > Various FPGA prototyping platforms supported
- > Field-upgradeable features and codecs by firmware download

Ready to use

- > Extensive conformance testing
- > OpenMAX IL 1.1 support for seamless integration into mobile environments

Complete solution

- > Comprehensive applications suite, fully optimized for performance and resource usage
- > Fully documented API in C source code for codecs and features
- > Example integration in application framework
- > One-stop offer including full integration support options

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