

Multi Codec Hardware IP - 'GENESIS II'TM,
H.264 and VC-1 (WMV9) Decoder for MobileTV



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GENESIS II™ is high-performance multi-codec hardware IP - H.264 and VC-1 (WMV9) decoder - which is optimized for use in mobileTV devices. GENESIS II™ delivers unprecedented H.264 and VC-1 (WMV9) decoding performance, and integrates advanced multimedia feature such as a digital multimedia broadcasting interface. GENESIS II™ also supports rich media applications such as DVB-H terminal and UMTS terminal.

Standard Compliance

- H.264 baseline profile
- VC-1 (WMV9) main profile

Performance

- Internal memory size: under 13Kbyte
- Memory bandwidth:
 - ✓ H.264 Decoder: D1 @ under 65MHz
 - ✓ VC-1 Decoder: D1 @ under 60MHz

Key Features

- Real-time encoding or decoding up to D1 resolution
 - ✓ 720x576 @ 30fps
 - ✓ 720x480 @ 30fps
- Superior error detection and recovery
- Optimized low power consumption architecture

Applications

- MobileTV applications
 - ✓ DVB-H IPDC, Modeo
 - ✓ T-DMB / S-DMB
 - ✓ ISDB-T(1-Seg)
 - ✓ DVB-H OMA BCAST

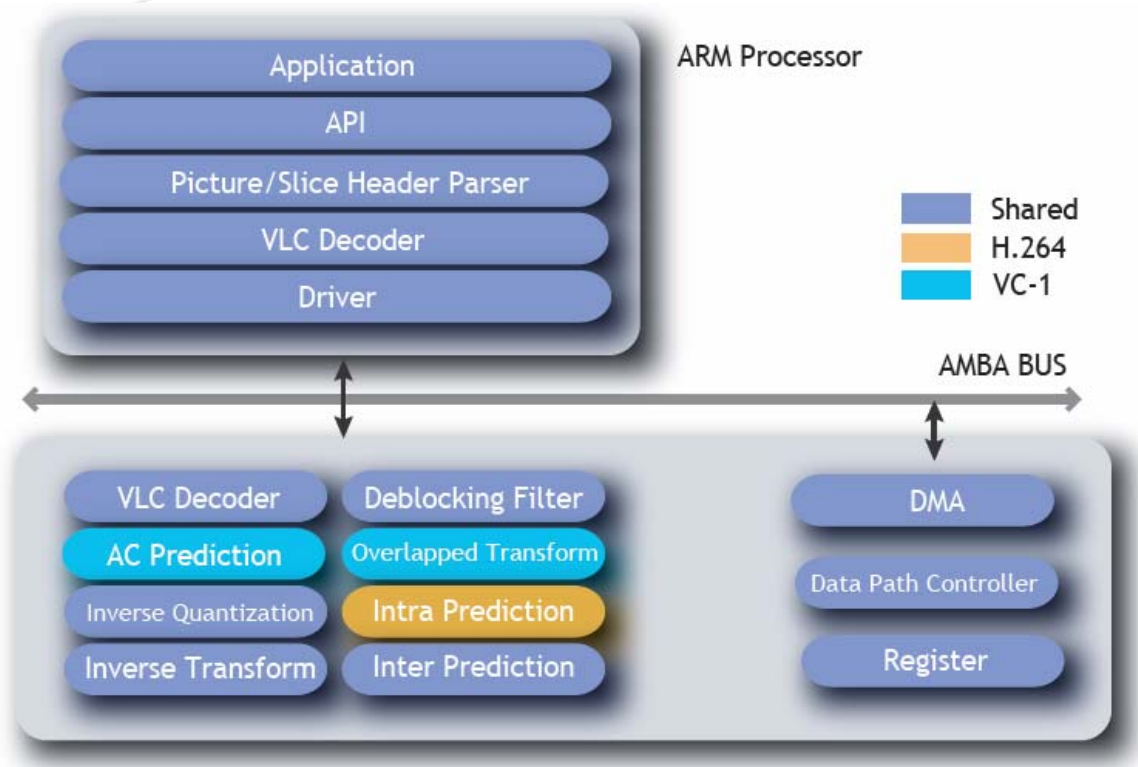
Technical Details

- Supports full H.264 and VC-1(WMV9) feature sets
 - ✓ Multiple block size motion compensation (16x16~4x4)
 - ✓ Half-pel (1/2 precision), Sub-pel (1/4 precision) motion compensation
 - ✓ Transform domain intra prediction
 - ✓ Spatial domain Intra prediction
 - ✓ In-loop de-blocking filter
 - ✓ 4x4 block transform
 - ✓ Multiple block size transform
 - ✓ B-frame
 - ✓ Bi-linear and bi-cubic interpolation
 - ✓ Overlapped transform
- Dedicated DMA
 - ✓ Supports 1D/2D Access
 - ✓ Various burst mode
 - ✓ Event driven transfer
- Full sharing of resources
 - ✓ Dedicated DMA
 - ✓ Pipeline buffer and line buffer
 - ✓ Pipeline control
 - ✓ Register file of multi codec
 - ✓ Shared decoder blocks

Specifications

GENESIS II (Decoder)	Codec	Profile and Level	Resolution	Frame rate	Availability
	H.264 Decoder	Baseline profile @Level 3	Up to D1 (720x480)	Up to 30 fps	Available
	VC-1 Decoder	VC-1 Main profile @Medium level			

Functional Block Diagram



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