



# MG1264

H.264 D1 30fps Video Codec  
AAC 2-channel Audio Codec

## Features and Benefits

### H.264/AVC Video

- Baseline Profile Codec (Level 3), encode and decode, I and P frames
- Standard supported resolutions
 

720x480/576 (NTSC/PAL)	640x480 (VGA)
720x240 (HVR)	640x240 (HVR)
352x480 (HHR)	320x480 (HHR)
352x240/288 (SIF/CIF)	320x240 (QVGA)

  - User defined resolutions also supported
- Full 30/25 fps natural motion frame rates  
User selectable frame rates:  
24 | 15 | 10 | 7.5 | Variable
- Bitrates: 64kbps – 10Mbps  
CBR and VBR
- Frame mode coding (progressive) and Field mode coding (interlaced)
- Quarter-Pel Motion Estimation (including 4x4 mode)  
*Mobilygen patent pending*
- Rate-distortion mode decision
- Adjustable deblocking filter
- User defined Input/Output video scaling  
High-quality multi-tap poly-phase  
Horizontal and vertical filter
- Advanced video pre-processor including impulse and noise reduction  
*Mobilygen patent pending*
- Full-duplex operation
  - Simultaneous encode and decode
- Dual-stream decode PIP including scaling
- Advanced trick-play decode options
  - 4X smooth Fast Forward
  - 4X smooth Fast Reverse
  - Slow play
  - High-quality digital zoom

### AAC Audio

- High-fidelity 2-channel AAC-LC, encode and decode
- 22.05 | 24 | 32 | 44.1 | 48 kHz sample rate
- 8 – 384kbps bitrates

### System

- Low-power: 185mW
  - Encoding - 30fps video & 2-channel AAC audio
  - Complete chip including SDRAM I/O
- Stand-by mode: 4mW
- Flexible 16-bit Host Interface
- DMA
- Optimized firmware
  - High-quality video and audio codec
  - Easy to use APIs
- Supports standard 3.3V and mobile 2.5V SDRAM I/O
  - Single 64Mbit or 128Mbit (x16bit)
  - Max speed 110MHz

### Physical

- Package info
  - MG1264-156VFBGA (Lead-free) 9x9mm | 0.5mm ball-pitch
  - MG1264-169TFBGA (Lead-free) 13x13mm | 0.8mm ball-pitch
- Max 110MHz internal operation
- High-volume 0.13μ

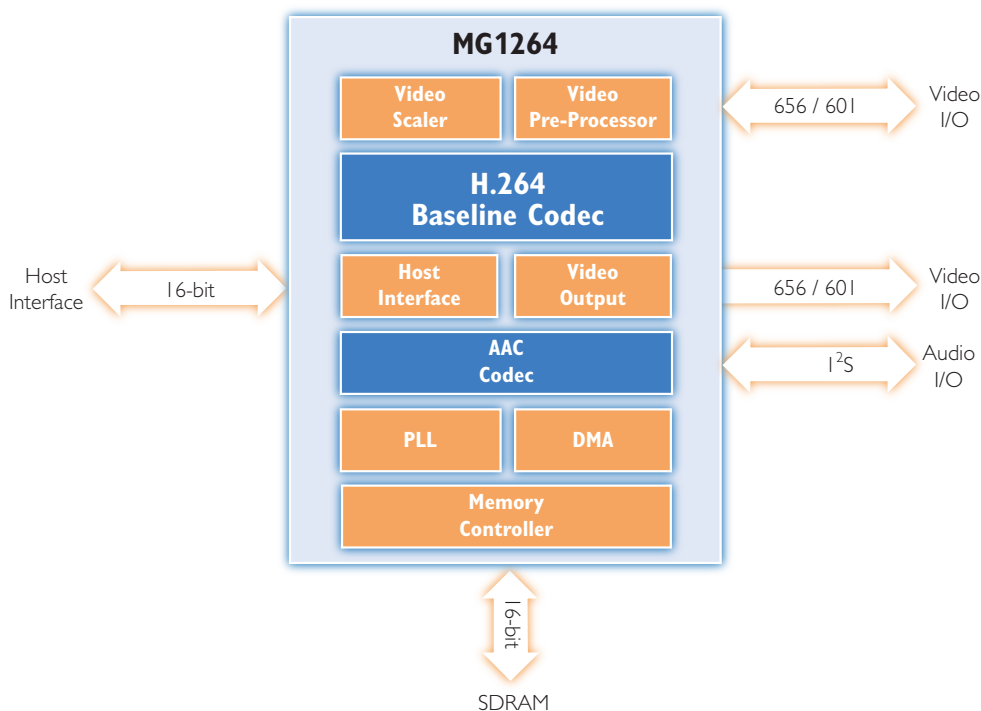
## Mobilygen MG1264, The Low Power A/V Coprocessor for Mobile Devices

The Mobilygen MG1264 H.264 Coprocessor is designed for low-power mobile devices, and dense-packed multi-channel applications. MG1264 consumes 185mW while encoding TV-quality 30fps H.264 video and high-fidelity 2-ch AAC audio. This breakthrough performance and low-power consumption is the benefit of Mobilygen's patented EVE (Enabling Video Everywhere) architecture. The EVE architecture combines hardware data-driven media engines for efficient media processing, hardware-multithreading requiring zero overhead for control functions, and an ultra-efficient memory controller optimized for advanced video processing.



MG1264 enables mobile products to easily incorporate TV-quality H.264 video recording and playback into existing platforms through industry standard interfaces. Mobilygen provides complete H.264 and AAC encoder/decoder firmware. MG1264 requires no customer programming. Flexible APIs provide access to all control and codec parameters, and allow for substantial product differentiation.

The H.264 video standard is gaining universal industry adoption, ranging from digital TV broadcasting, to next generation consumer electronics and much more. H.264 advanced features provides equivalent video quality at half the bit rate of MPEG-2.



# Comet-MG1264 Evaluation and Development Board

## Low-Power H.264 D1 30fps Video Codec AAC 2-channel Audio Codec

### Complete evaluation and development platform

Comet is a self-contained complete evaluation and development platform for the Mobygen MG1264 low-power H.264/AAC codec. It includes a 200MHz ARM920T Host CPU and Linux 2.6 OS capable of running demanding real-world applications. A complete software development tool chain including compiler, debugger, utilities, and libraries, is pre-configured and source code provided.

Comet also provides a standard 50-pin I/O expander header to enable system prototype activities. All common MG1264

AV and ARM general I/O signals are available. Custom daughter cards can be integrated easily using the 50-pin I/O expander header to develop and test complete system functionality.



### Features and Benefits

#### System

- Self-contained complete MG1264 H.264/AAC evaluation and development platform
- 200 MHz ARM920T Host CPU
  - AT91RM9200 (Atmel)
- Linux 2.6 OS
- Complete software tool chain including
  - GCC compiler with support for C and C++
  - GDB debugger
  - Binutils (assembler and ELF tools for ARM)
  - uClibc, libstdc++, dropbear, Busybox, MTD
- Two debug UARTs
  - ARM9
  - MG1264
- Numerous test points
- Integrated web server
  - Run interactive encoding sessions using a web server and browser
- Capture H.264 / AAC bitstreams directly to local USB drive. Support for:
  - Elementary streams
  - MP4 format
- Sample RTP/RTSP IP streaming application
- Schematics, MG1264 firmware APIs, documentation, user manual

#### Input / Output

- Video I/O
  - Y/C in/out
  - Composite in/out
- Audio I/O
  - Mini-RCA in/out
- SD card
- Ethernet (RJ45)
- USB1.1 Host (A)
- USB1.1 Device (B)
- 50-pin I/O custom expander header
  - MG1264 = BT656, I<sup>2</sup>S
  - ARM9 CPU = I<sup>2</sup>C, SPI, UART(x2), IRQ
  - Power and ground

#### Physical

- Small board size (22cm x 17cm)
- 12V DC power brick included
- Status LEDs and onboard control buttons



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