



GEO Semiconductor Inc.

MG2580

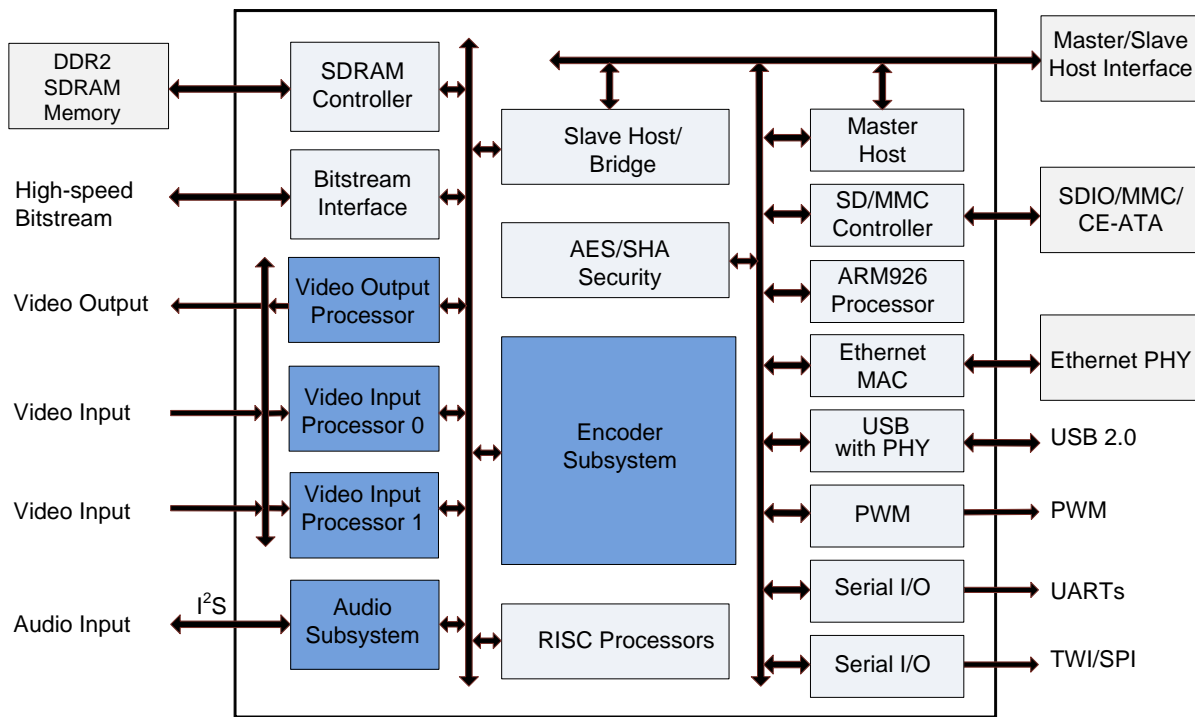
720p30 H.264 Compression SoC

General Description

The MG2580 is a highly integrated, low-power, HD H.264 SoC ideal for today's consumer and security markets. It offers a fully compliant baseline, main, and high-profile HD H.264 codec, MJPEG codec, HD MPEG2 decoder, video preprocessors and postprocessors, 240MHz ARM9™ CPU, and a host of peripherals including Gigabit Ethernet MAC, USB 2.0 OTG, SD™ card, compact Flash, IDE, CE-ATA, SDIO, and MMC.

At the heart of the audio/video subsystem are two real-time programmable multimedia engines (MME). One controls the video codecs and input/output processors, while the other implements the soft audio codecs and low-level analytics, leaving the ARM9 processor completely available for application programs.

System Block Diagram





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Features

Video Inputs

- Two advanced Video Input Processors (VIPs)
- Two 8-bit video ports: one input port, one bidirectional port

Video Processing

- Spatial and temporal noise filtering
- Vertical and horizontal scalars using 8-tap polyphase filters
- Four field motion adaptive deinterlacer
- Impulse noise filter
- Statistic extraction for better compression

Video Outputs

- One Video Output Processor (VOP) with graphics plane support
- 16-bit parallel output

Video Codecs

- High Definition (HD) or Standard Definition (SD) H.264 codecs (encoder + decoder)
- High, Main, and Baseline profiles support for resolutions up to 1280x720 at 30fps
- Single HD or multi-stream encoding support
- H.264 codec up to level 4.1
- Programmable resolutions and frame rates
- Video bit rates: 64Kbps to 62.5Mbps
- Interlaced and Frame capturing and encoding support
- JPEG Codec (encoder + decoder)
- HD or SD MJPEG support

Audio I/O

- One I²S Audio input port and one I²S Audio output port
- One Sony/Philips Digital Interface (S/PDIF) output port

Audio Codecs

- High-fidelity, 2-channel Audio Coding-Low Complexity (AAC-LC) codec
- MPEG-1/2 Audio Layer II codec (MP2)
- MPEG-1/2 Audio Layer I and III decoder (MP1)
- Pulse Code Modulation (PCM) format
- G.711, G.722, G.726 codec
- Flexible bit rates and sample rates

Integrated ARM9 Processor

- 240MHz general purpose processor
- 16kByte Data cache
- 16kByte Instruction cache
- 16kByte Scratch pad memory

Memory Interface

- DDR2 SDRAM memory
- 32-bit data at 264MHz

Peripheral Interfaces

- One Two-wire interface port
- One UART port
- One Pulse Width Modulator (PWM)
- High-speed Bit stream I/O or one SPI
- USB 2.0 port including physical layer
- AES and SHA hardware acceleration
- Up to 24 GPIO with four dedicated GPIO pins



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Power and Voltage

- Core voltage: 1.05V \pm 5%
- SDRAM voltage: 1.8V \pm 0.1V
- I/O voltages: 1.8V, 2.5V, 3.3V \pm 5%
- On-chip audio, video Phase Lock Loops (PLLs) driven from a single crystal

Packaging

- 376-pin CTBGA, 17x17mm, 0.5mm pitch, RoHS compliant

Applications

- Home Monitoring cameras
- Compression cameras for consumer video conferencing
- Security IP cameras

Ordering Information

Part Number	Package: Type/Pins/FootPrint Package Code/Variation	RoHS/Lead-Free
MG2580A3-376B	Package: CSBGA; 376-pin; 324 mm ² Package Code/Variation: X37688+2*	RoHS/Lead-Free

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