



MediaQ Multimedia Platform Controller

MQ-1188

The MQ-1188 is a high performance/low power multimedia platform controller and is the third generation of the MQ-1000 series of devices. The MQ-1188 provides rich video and audio functions in addition to high performance graphics and integrated peripherals enabling mobile device OEMs to deliver a true multimedia experience. The Host interface has been expanded to include support for CPUs that do not have RDY (Ready) signal. This flexibility allows seamless interface to popular mobile phone Baseband Processors.

The MQ-1188 integrates a 64-bit 2D graphics engine, a dedicated video post processing engine, expanded direct LCD display interface, Video Input Module and includes connectivity, storage and expansion capabilities. This device provides OEMs the flexibility to create

products based on performance and power consumption requirements and is ideally suited for mobile, networked platforms such as Personal Digital Assistants, Smart Phones and other Mobile Appliances.

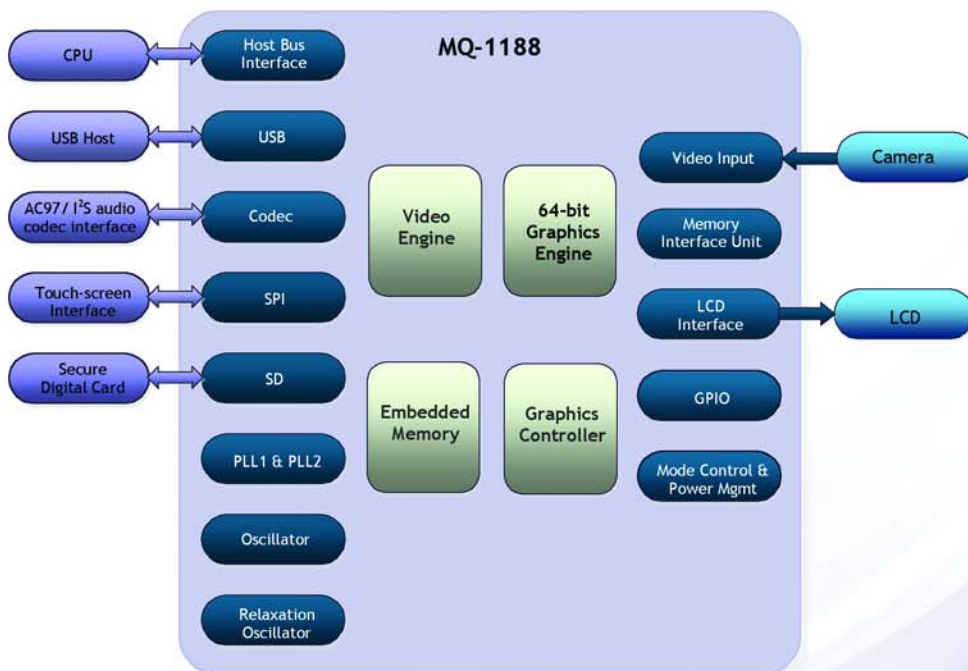
The MQ-1188 has a 64-bit wide internal bus to 256KB of embedded memory providing scalable bandwidth of up to 528 MB/s. The embedded SRAM provides on-chip storage for frame buffer, video buffers and transactional buffers for USB, SD and Audio.

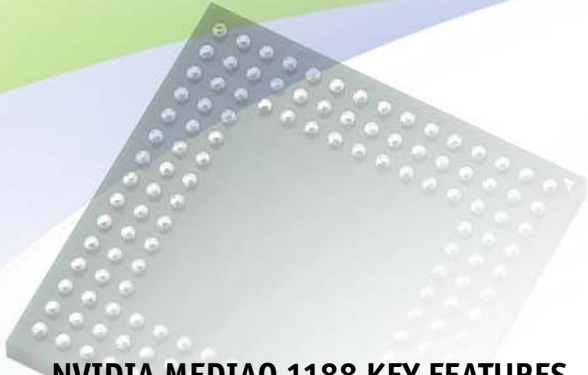
Fine-grained power management is made possible by the proprietary NVIDIA® DynamiQ™ power saving feature, reducing power consumption in handheld devices.

The MQ-1188 provides hardware assist for video playback applications on mobile devices. The video stream can be input from the CPU host interface or from the CCIR656 compliant Video Input port to which a CMOS or CCD camera can

be attached. The same video engine provides post-processing support for MPEG4 or camera video streams. The efficient image interpolation algorithms allow the video to be streamed at low resolution for full screen playback without significant loss of image quality. This feature provides high quality video playback functionality while alleviating compute and memory access overheads from the host CPU.

To speed system integration, the MQ-1188 integrates key interface functions with direct support for a wide range of microprocessor architectures. The CPU interface of the MQ-1188 directly supports custom interfaces to the Intel StrongARM/XScale series, the Motorola Dragonball series, the Hitachi SH-3 and SH-4, the NEC VR-41xx family, and CPUs with fixed cycle read/write.





NVIDIA MEDIAQ 1188 KEY FEATURES

MULTIPLE MICROPROCESSOR SUPPORT

- CPUs with fixed cycle read/write
- Intel SA-1110 and PXA2x0
- Hitachi SH-7750 and SH-7709
- Motorola DragonBall MC68xZ328
- NEC VR-41xx
- PCI version 2.1

INTEGRATED 256 KB OF SRAM

- 528 MB/s throughput
- Frame Buffer, Transactional and Video buffers

DISPLAY SUPPORT

- Resolutions up to 320 x 320 (16 bpp) or 640 x 240 and 320 x 480 (8-bpp)
- S-STN and TFT Panels (Color and Monochrome)
- Built-in Timing Control supports direct interface to a variety of LCDs
- 64 x 64 pixel Hardware Cursor
- Hardware Rotation (90, 180 and 270 degrees)

DYNAMIQ POWER MANAGEMENT

- Efficient Gated clock Design to conserve power in active and inactive modules
- Selective Power down on individual modules
- Software and Hardware supported power down modes

FULL 2D GRAPHICS ACCELERATION

- Rectangular source-copy block transfers
- Hardware ROPs and Bresenham line draw
- Pattern and Area fill
- Monochrome to Color conversion
- Clipping and Transparency

VIDEO INPUT MODULE

- CCIR656 Compliant 8-bit input port
- Hardware Color Space Conversion and Image Scaling
- Front end decimation engine to scale down large resolution input video

PERIPHERAL SUPPORT

- USB Device interface (Full-Speed)
- USB Host interface (Full-Speed and Low-Speed) – OHCI compatible.
- Serial Peripheral Interface (SPI)
- AC-97/I2S Audio Interface
- Secure Digital IO Interface (SDIO) for storage and expansion

MISCELLANEOUS

- 2 PLLs
- Relaxation Oscillator to reduce power consumption in idle mode

PACKAGE DIMENSIONS

- 144-pin ECSP - 10mm x 10mm with 0.8mm pitch

