

NVIDIA GoForce 6100



Life. Experienced.™

The Highly Integrated and Power
Optimized Mobile Multimedia Experience

The NVIDIA® GoForce® 6100 application processor delivers the best multimedia performance combining the flexibility of highly optimized DSP technology with hardwired acceleration for unsurpassed battery life on any mobile device platform

An ideal mix of interfacing, connection, integration, multimedia and ultra-low power features, the GoForce 6100 has been designed from the ground-up to enable fast time to market for award-winning connected and mobile products in 2007 and 2008.



NVIDIA GoForce 6100 | Life Experienced.

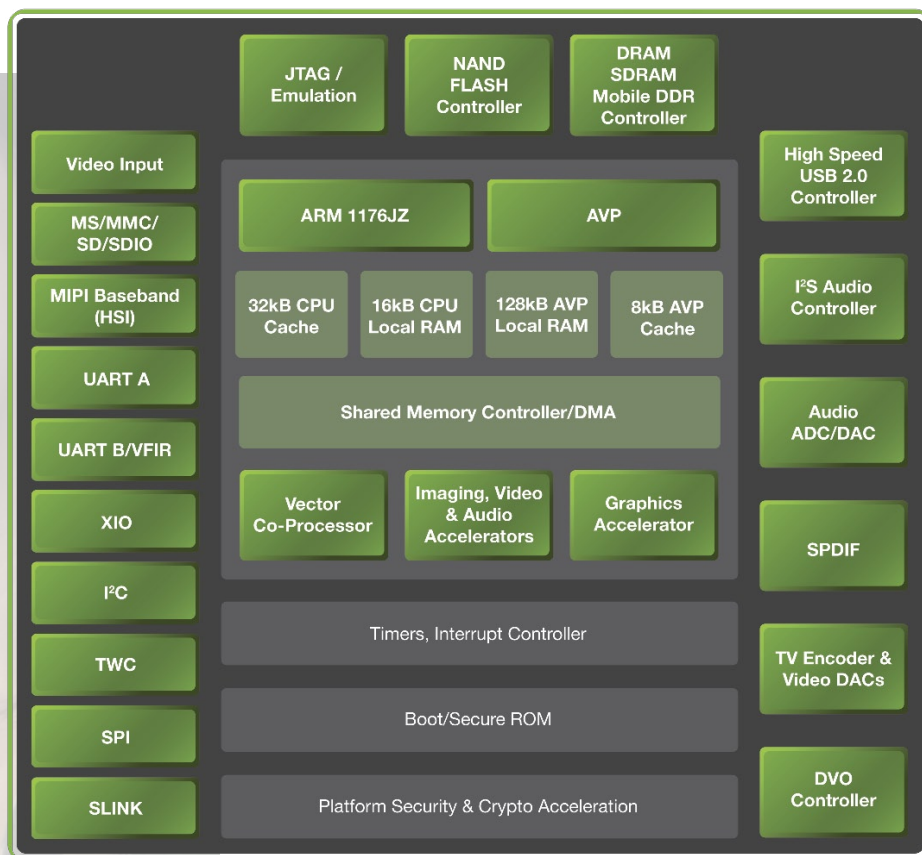
Entertainment Without Limits

A key benefit offered by the GoForce 6100 is that it provides turn-key, flexible and highly optimized multimedia platform for shorter design cycles. This, together with the benefit of ultra low power consumption—even when running high-performance media features—empowers OEMs to create leading-edge devices for the increasingly multimedia hungry consumer market.

The commitment of the NVIDIA GoForce family is to continue pushing the limits of multimedia performance on mobile phones and to deliver an enjoyable, user experience at the most optimized power performance. With the NVIDIA GoForce 6100 application processor, consumers can now experience life through their device, anytime, anyplace and with the best power performance on the market today.

More Hours of Entertainment, Less Drain on Talk Time

Multimedia applications can be processing-power intensive. The GoForce 6100 provides the right amount of processing power while preserving battery life thanks to its unique hard-wired architecture. Moreover, it has been built from the ground-up with highly intensive multimedia processing for the most optimized performance.



Inside the NVIDIA
GoForce 6100



Best Video Record and Playback Quality

The NVIDIA GoForce 6100 enables both encoding and decoding video at a fluid 30 frames per second. So whether watching a quick film clip while on-the-go or recording an impromptu moment to share, the GoForce 6100 delivers and captures remarkably high quality video. It can also deliver H.263 video VGA at 30 frames per second.

High-fidelity Audio

The GoForce 6100 features top of the line integrated Audio DAC resulting in an exceptional iPod-quality listening experience.

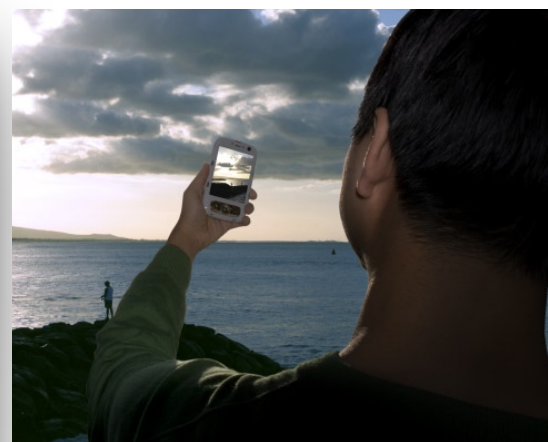
Sharp, Vivid Photos

Features that are standard in digital cameras are now possible on the handheld device, including removable storage cards, 8x digital zoom, and real-time capture, storage, and viewing of multiple digital images.

NVIDIA GoForce 6100 Features

Dedicated high performance 250MHz ARM1176JZ-S core
Hardwired acceleration for all processing-intensive multimedia and security functions
H.264, WMV9/VC-1, and MPEG-4 at up to VGA resolution, 30fps
High-quality graphics acceleration
Up to 10 megapixel camera sensor support
Support for all available DRM formats
Fully integrated, high quality analog audio subsystem
Integrated TV encoder and video DACs
USB 2.0/OTG PHY integrated
Connects to any network – from 3G cellular (HSDPA) to Bluetooth, GPS, WIMAX

Simulation of Mobile TV





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Interfaces

- Memory Storage
 - High-speed memory interface, support for
 - mobile SDRAM
 - mobile DDR
 - Supports
 - NOR Flash
 - NAND Flash controller for SLC/MCL with hardware ECC
 - IDE interface support
 - CE-ATA interface support
- Displays
 - Two DVO interfaces for TV out, TFT, and LCD panels
 - Support for multiple memory-mapped displays up to D1 resolution
 - Support for scaling, and display rotation
 - CCIR601 and CCIR656 support
- Connectivity
 - High-speed USB device 2.0 interface with integrated Phy
 - 2 high-speed UART interfaces (up to 4 Mbits per second)
 - 3 SDIO controllers, supporting up to 8 bits per interface
 - MIPI interface for cellular baseband
 - Support for I2C master and slave, SPI master, and I2C audio
 - S/P DIF
 - Multiple, fully programmable GPIOs
 - JTAG support and obfuscation
 - 430 pin 12 mm x 12 mm BGA package

Clock and Power Management

- Clocking
 - Low-power PLLs
 - Dynamic clock speed control
 - Four power modes: On, Standby, hibernate, and off
- Power Management
 - Dynamic voltage control
 - Four power modes: on, standby, hibernate, and off

Security Features

- Supports Microsoft Plays For Sure and OMA 2.0
- Hardware-accelerated 128/192/256 bit AES encryption
- Secure boot loading
- Secure Chip ID with eFuse
- Secure boot loading
- Secure Internal ROM
- Secure Watch dog timer

Processor

- High performance 300 MHz ARM1176JZ-S applications processor core with memory management unit.
- Media coprocessor and hard-wired acceleration for all processing-intensive multimedia and security functions

Hardwired Acceleration

- Video
 - Ultra-low power hardware acceleration video pipelines
 - Supports WMV9/VC-1, MPEG-4, H.264, and H.263 codecs
 - Supports 30 fps at VGA resolutions
 - Supports mobile video conferencing up to 15 fps VGA
- Audio
 - Configurable bitstream engine can be used to accelerate Huffman decoding operations
 - Audio Video Processor (AVP) is used to accelerate signal processing functions at full 64 bit precision
 - AVP is power optimized to handle third order IIR filter and up to 256-tap FIR filter for postprocessing (up to 10-band EQ, Reverb, 3D)
 - Support for MP3, AAC, AAC+, eAAC+, WMA, WMA lossless, WMA9/10 pro, AMR-NB, AMR Wideband Plus
 - Support for MIDI and SMAF

- Highest quality playback performance including a robust, proven software stack, codecs, and database management

- Imaging
 - High performance DVI subsystem
 - 30 fps hardware-accelerated QVGA preview
 - Flexible interface to CMOS sensors
 - JPEG encode/decode at 10 megapixel/second
 - 4-Tap downscaling horizontal and vertical filters
- Graphics
 - Hardware acceleration for image rotation, alpha blending, image scaling, horizontal and vertical mirroring, and block copy and fill
 - On-screen display overlay
 - Parameterized palette with selection for either 2/4/16 deep
 - Programmable OSD window size
 - OSD transparency
 - Hardware accelerated dithering and gamma correction
 - Power optimized Open VG, Open GL, and Java graphics libraries

Integration

- Analog
 - TV Encoder and Video DACs
 - 24 Bit stereo DAC, 100 dB SNR
 - Class G headphone amp
 - Low power, stereo 500 mW Class D speaker amplifiers
 - 24 Bit stereo ADC and mic amplifier
 - Flexible power-down modes

For more information and where to buy, please visit www.nvidia.com

