



# GP-LP Product Overview

## Product Description

GigaPixel's GP-LP™, based on the Giga3D™ architecture, is a high-performance, high visual quality, low-power, and low-cost 3D graphics core available for licensing. GP-LP verilog models, C-sim models, test suites, and software drivers are available for integration into your final product.

Fully compliant with Direct3D and OpenGL, GP-LP is extremely flexible and programmable. Features are configurable to meet the requirements in different market segments.

GP-LP's patent-pending technology has an advanced tiling, visibility, and rendering subsystem that tiles the frame, determines visible pixels, and renders the tiles. The rendering engine processes only visible pixels. And setup, shading, and texturing are done only on visible pixels, greatly reducing internal processing and memory bandwidth requirements.

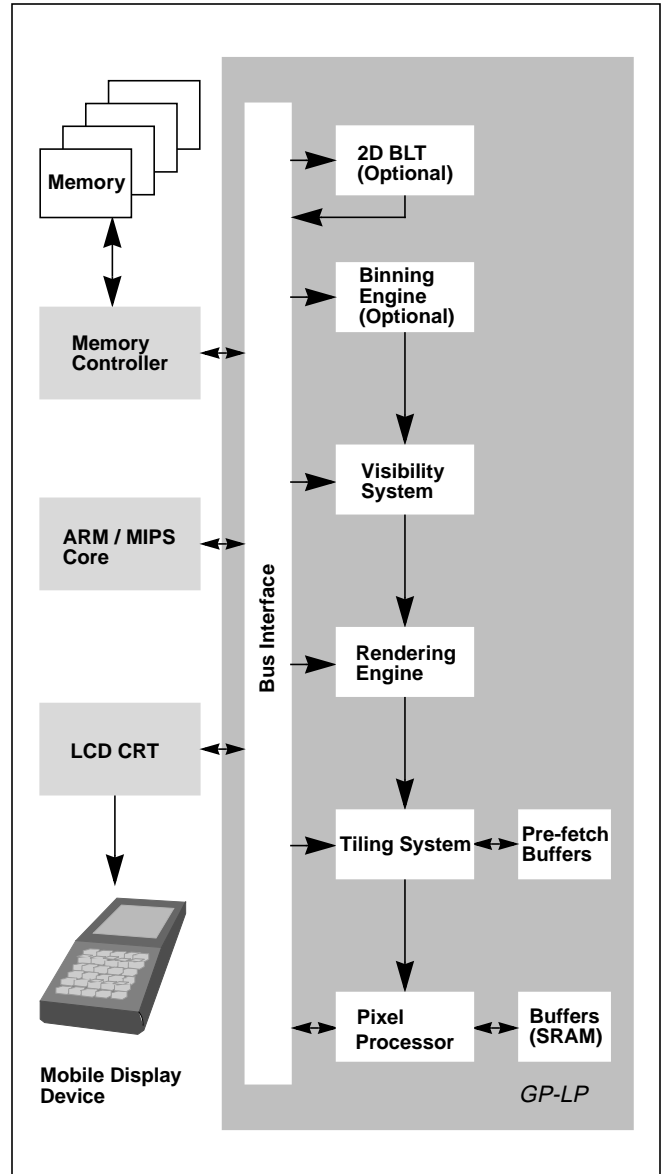
The core performs full-scene, full-speed anti-aliasing—*there's no speed penalty* even at high screen resolutions! Framebuffer reads, Z-buffer reads, large numbers of polygons within a tile, and transparency problems have been solved with our Giga3D architecture.

GP-LP correctly implements the pipeline to ensure full 3D API compatibility. GP-LP does not require any CPU overhead in the driver or software applications to support the underlying hardware.

## GPDRV

GPDRV, GigaPixel's software driver for the GP-LP, is a portable, API-neutral hardware abstraction layer which hides the details of programming the GP-LP hardware from the API implementor. GPDRV is tuned for high performance, with all speed-critical paths provided to the client environment as inline functions. GigaPixel also provides reference OpenGL and Direct3D implementations which use GPDRV.

*See the back of this data sheet for a complete list of GP-LP features and specifications.*



## About GigaPixel

GigaPixel Corporation™ was founded in August 1997 to develop and license 3D graphics cores to chip, board, and system companies. The management and engineering team have extensive product development and business experience in graphics and video markets.

## Giga3D GP-LP Core Features and Performance Specifications

- Fully compliant with Direct 3D and OpenGL
- Full scene, full-speed anti-aliasing
- Tri-linear mipmapping (2 clocks)
- Perspective correction
- Floating point setup engine
- Visibility optimizations
- Fill rate (depth complexity = 4): 324 Mpixel/sec @ 81Mhz
- Polygon rate: 1-5 Million/sec
- Z buffer (24 bit)
- Z buffer read back
- Sub-pixel and sub-textel accuracy
- Diffuse shading
- Fog
- Specular
- 32-bit color
- Alpha blending
- Alpha test
- Strip and fan support
- Shadows
- Spot lights
- Non-square texture support
- Texture compositing
- Texture compression
- Gate count: <400K
- SRAM: 8-10 Kbytes
- Tile size: 16×16