

APEXMARK

Performance Benchmarking Suite for HP Prime G2

OVERVIEW

ApexMark is a comprehensive performance testing environment designed to stress the **HP Prime** hardware and its **PPL (Prime Programming Language)** execution engine. It goes beyond simple math loops, testing real-world scenarios like geometry optimization, physics simulations, and memory bandwidth.

THE MAIN MENU

- **Full Suite:** Runs all tests to calculate your global Apex Score.
- **Custom Run:** Toggle specific modules for isolated hardware testing.
- **History:** View and compare your past performance records.
- **Saves:** Manage, rename, or set a "Baseline" to compare performance gains.

DISPLAY MODES

Normal: Watch the hardware process visuals in real-time. This includes drawing time in the final stats.

Headless: Disables visual output. Ideal for testing pure CPU/RAM throughput without GPU-emulation overhead.

CORE TESTING MODULES

1. Geometry & Render (2-OPT)

Uses the 2-OPT algorithm to "untangle" a complex web of points. This tests **logic branching** and **floating-point precision**. The rendering phase uses a custom scanline fill to stress the screen buffer.

2. Black Hole Physics

A multi-body gravitational simulation. It calculates forces, velocities, and collisions for multiple stars orbiting a singularity. Tests **high-frequency iterative math**.

3. 3D Matrix Compute

Renders a high-resolution Torus (Donut) with over 1,700 triangles. It performs real-time matrix multiplication (Rotation, Zoom, Perspective) to test **linear algebra performance**.

4. RAM Memory Stress

Performs massive read/write cycles on the heap. This is designed to test **Memory Bandwidth** and how efficiently the system handles **Garbage Collection**.

UNDERSTANDING SCORES

- > 6000+ pts: PC Emulator Level
- > 4801+ pts: Excellent (Peak G2 Performance)
- > 4200+ pts: Optimal
- > 4000+ pts: Regular
- < 4000 pts: Below Average

Note: Scores are calculated based on "Pure Math" time, excluding visual rendering overhead to ensure hardware accuracy.

Proudly supported by the [r/HP_Prime](#) community

Created by [FerTheWildShadow](#)

Open-source software for educational and performance analysis purposes.