

Full Speed Ahead

*The Super7™ Platform Gains Momentum in Providing a
Robust PC Infrastructure For 1999 and Beyond*

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Introduction: Headroom for the Future

The Super7™ platform initiative provides a tremendous improvement on the proven, cost-effective Socket 7 infrastructure. Developed by AMD and key industry partners, the Super7 platform supercharges Socket 7 by adding support for 100-MHz and 95-MHz bus interfaces and the Accelerated Graphics Port (AGP) specification and by delivering other leading-edge features, including 100-MHz SDRAM, USB, Ultra DMA, ACPI, and PC 98. Other planned enhancements based on the AMD-K6® processor family include support for a full-speed backside L2 cache and an optional frontside L3 cache.

Together, these enhancements give the Super7 platform strong staying power for the remainder of the 20th century. The Super7 platform maintains the vitality of Socket 7 for the life of sixth-generation processors, delivering leading-edge performance and features necessary for sixth-generation CPUs like the AMD-K6-2 processor with 3DNow!™ technology.

Two recent developments coincide to bolster the Super7 platform's robustness and longevity: (1) the May 1998 introduction and volume ramp of the Super7 platform-compatible AMD-K6-2 processor, and (2) the proliferation of third-party Super7 solutions, from 100-MHz, AGP-capable chipsets and motherboards to enhanced BIOS to ultra-fast 3D graphics accelerators.

PCs powered by AMD-K6-2 processors and Super7 infrastructure will continue to provide performance and features competitive with Slot 1-based systems. The current high volumes of AMD-K6-2 processors (with clock speeds now scaling to 350 MHz and soon to 400 MHz, with even higher speeds planned) and the even greater volumes of sixth-generation AMD processors planned for 1999 are expected to keep the Super7 platform viable throughout 1999 and into the year 2000. The broadly supported Super7 platform has the headroom to meet the needs of today's and tomorrow's PC marketplace at an attractive system-level cost structure.

AMD-K6® Processor Family Drives Robust Demand for Super7™ Platform

A driving force behind the acceptance and proliferation of Super7 platform is the success of the AMD-K6 processor family, most notably in the retail market where home and business buyers have embraced the superior value of PCs powered by AMD processors. Five of the top 10 PC OEMs (IBM, Compaq, HP, Acer and Fujitsu) use AMD processors in retail systems. AMD's U.S retail presence has increased from 10 to more than 10,000 storefronts since the AMD-K6 launch in April 1997. AMD processor-based systems are now carried by nine of the top 10

European retailers, as well as by major Japanese retailers. AMD processors averaged more than 30 percent share of the U.S. desktop retail market in the first half of 1998 (Source: PC Data).

AMD's share of the sub-\$1,000 PC market in retail now exceeds 50 percent. AMD is also poised to continue gaining share in the commercial enterprise segment, as evidenced by a recent Ziff-Davis study in which 34 percent of businesses surveyed responded that they would consider purchasing PCs with non-Intel processors.

With AMD's successful migration to 0.25-micron process technology in Feb 25, AMD is now shipping significant volumes of 0.25-micron AMD-K6 family processors and is firmly on track in meeting its goal of manufacturing 12 million AMD-K6 and AMD-K6-2 processors in 1998. AMD expects to be able to produce at least 20 million AMD-K6 family processors in 1999, with clock speeds for these sixth-generation CPUs planned to scale to 400 MHz and beyond.

Commenting on AMD's 0.25-micron technology migration and punctual schedule of speed grade introductions, Nathan Brookwood, a principal at Insight 64 (a microprocessor industry research firm in Saratoga, California), noted, "AMD has recently been displaying the kind of precise execution needed to take on a formidable competitor like Intel."

Super7™ System Logic Support

Major third-party chipset suppliers, including Acer Laboratories Inc. (Ali), VIA Technologies, and SiS, are supporting and continuing to enhance the Super7 platform. ALi's Aladdin V and VIA's Apollo MVP3 chipsets are now shipping in volume. Engineering samples of the Sinbad (SiS530) chipset from SiS are available now, and volume shipments are imminent.

"The Super7 platform provides tremendous value to the PC user by offering very high computing power at a very reasonable price. ALi firmly believes in the Super7 platform and as a result has made a long-term commitment to current and future generation products to support Socket 7-compatible CPUs."

◆ *Nancy Hartsoch, Vice President of Marketing and Sales, ALi*

"VIA and AMD have a longstanding partnership that is best exemplified by the combination of the AMD-K6-2 processor and the VIA Apollo MVP3 chipset. Together, these products have set the standard for high-performance Super7 computing, in addition to initiating and driving the hot sub-\$1,000 PC market. VIA will continue to support AMD in aggressively promoting the Super7 platform, as well as forthcoming product developments."

◆ *Wen-Chi Chen, President and CEO, VIA Technologies*

“Super7 platform-based PCs are gaining tremendous momentum in the marketplace, especially in the consumer/retail segment. The Super7 platform will provide a competitive, high-performance alternative throughout 1999, especially with SiS’ third-generation integrated graphics core logic, the SiS530 chipset. Combining AMD’s Super7 technology and the SiS530—the only solution now available in the industry supporting the AMD-K6-2 processor’s 100-MHz host bus while integrating 3D graphics with the core logic—provides end users with high-performance and affordable 3D solutions. SiS is committed to being a long-term player in the Super7 initiative by continuing the industry leadership position in integrated graphics solutions. In short, AMD has our support, now and in the future.”

◆ *Shing Wong, Senior Vice President, Silicon Integrated Systems (SiS)*

Super7 Motherboard Support

More than 30 leading motherboard manufacturers (*see Appendix on page 9 for complete list*) support the Super7 platform initiative, with more than 40 Super7 motherboard models available today. These Super7 motherboards are optimized for the complete lineup of high-performance AMD-K6-2 processors.

AMD works closely with motherboard suppliers and other infrastructure vendors to ensure that AMD-K6-2 processors are properly supported by Super7 motherboards. A continuously updated list of AMD-tested and approved motherboards is available on the AMD web site at www1.amd.com/K6/k6mbl/. AMD strongly recommends selecting a motherboard from this list to ensure proper motherboard support for AMD-K6 family processors.

“In the PC industry, consumer behavior has been heavily influenced by price/performance considerations. AMD has consistently offered outstanding value to the consumer, and the AMD-K6-2 processor continues to be an ideal market solution.”

◆ *Henry Lu, Vice President of Sales, Microstar International*

“AMD’s continuing enhancement of the AMD-K6 processor family has yielded compelling benefits in price and performance. When combined with a Super7 motherboard, the AMD-K6-2 processor provides PC users around the world with a competitive, high-performance alternative. These developments have led to increased competition, which has enabled better, faster and less expensive PCs for end users.”

◆ *Ben Chen, Marketing Director, Gigabyte*

“We believe that the Super7 specification, which encompasses a 100-MHz host bus together with AGP support, brings the Socket 7 architecture to the next level of performance. This, along with the AMD-K6-2 processor, will continue to extend the life of the Socket 7 architecture because of its inherent value in performance and price.”

◆ *Kenny Wang, Assistant Vice President of Marketing, Biostar*

“The value and performance of the Super7 platform will allow the Socket 7 architecture to maintain significant market share for the foreseeable future. When compared with Intel’s CPU offerings for mainstream computing, the AMD-K6-2 processor provides a more competitive solution.”

◆ *Gary Chi, Vice President of Marketing, Shuttle*

Super7 BIOS Support

Basic Input Output System (BIOS) software is a critical component of the Super7 platform. Optimized Super7 BIOS support is provided by leading third-party suppliers, including American Megatrends, Inc., Award Software International, and Phoenix Technologies.

“The AMD-K6-2 processor and Super7 platform are a powerful combination for mainstream computing. As a primary BIOS supplier for AMD, Award is committed to playing a key role in enabling a competitive Super7 infrastructure by delivering the latest AwardBIOS solutions to our mutual customers.”

◆ *Laurent Gharda, Vice President of Marketing, Award Software International, Inc.*

“AMI is committed to providing BIOS solutions for the Super7 architecture. We offer competitive performance and features for PCs powered by leading-edge, sixth-generation processors like the AMD-K6-2 processor.”

◆ *Mark R. Huffman, BIOS Software Sales Manager, American Megatrends, Inc.*

“AMD has created another powerhouse computing solution with its AMD-K6-2 processor and Super7 platform. We are excited to play a key role and look forward to working with AMD to enable a competitive Super7 infrastructure.”

◆ *Wayne Cantwell, VP and General Manager, North America & Asia, Phoenix Technologies*

3D Graphics Acceleration for the Super7 Platform

High-speed 3D graphics accelerators have become a mainstay in personal computing as more and more games, productivity software titles, and web applications immerse users in 3D realism. The AMD-K6-2 processor's 3DNow! technology is designed to work hand in hand with today's leading 3D graphics accelerators to overcome bottlenecks in the graphics pipeline and maximize 3D processing power. Available only in PCs that use Socket 7 and Super7 infrastructure, 3DNow! has the support of Microsoft and the independent software and hardware communities. Microsoft's DirectX 6.0 API is optimized for 3DNow! technology, and numerous games and applications have been optimized or are in the process of optimization.

Dominic Mallinson, technical director of Psygnosis, Europe's leading electronic games software publisher and developer, recently had this to say about the new 3D computing landscape: "Recent advances in PC architecture such as 3D graphics accelerators, AGP and 100-MHz system bus allow for fantastic numbers of polygons and many special 3D rendering effects. AMD's K6-2 processor represents an important step forward in floating point capability."

Leading graphics vendors, including ATI, 3Dfx, Matrox, NVIDIA, S3 and Trident, have announced their commitment to 3DNow! technology and to delivering optimized drivers.

"3Dfx is up against the edge of CPU performance in our delivery of the best 3D gaming experience. The AMD-K6-2 processor should help PCs to see greater 3D performance from our pace-setting Voodoo2 chipset. Coupling an AMD-K6-2 processor with 3DNow! technology to a Voodoo2 chipset will bring the highest levels of 3D gaming performance...to the home PC."

◆ *Greg Ballard, President and CEO, 3Dfx Interactive, Inc.*

"The new AMD-K6-2 processor, with the first implementation of 3DNow! technology, is certainly at the forefront of the new graphics capabilities coming onto the new PCs. We are delighted to be able to optimize the strengths of 3DNow! on our line of graphics controllers in order to enhance the gaming experience of our end users."

◆ *Gerry Liu, Senior Vice President of Product Marketing, Trident Microsystems, Inc.*

"At Matrox, we are very excited about the AMD-K6-2 processor, and its ability to significantly improve the speed of the 3D geometry pipeline and provide headroom for graphics vendors to innovate. With the 3DNow! instruction set supported natively in Microsoft's DirectX 6.0, we are confident AMD will achieve widespread developer support."

◆ *Ed Dwyer, Executive Vice President, Matrox Graphics*

“One of the biggest bottlenecks in modern 3D processing is the CPU’s ability to do lighting and geometry calculations. AMD’s 3DNow! technology makes a big step forward. The computational capability of the AMD-K6-2 processor helps unleash the power of the RIVA family of 3D graphics processors. That makes the AMD-K6-2 processor and RIVA a killer combination for 3D applications.”

◆ *Jen-Hsun Huang, President and CEO, NVIDIA Corporation*

A More Cost-Effective Platform Offering High Performance and Competitive Features

The advent of the high-performance, feature-rich Super7 platform has proven that the Socket 7 infrastructure can keep pace with Slot 1 technologically while maintaining Socket 7 cost advantages. Michael Slater, founder of MicroDesign resources, has concluded, “For a uniprocessor system, the Pentium® bus [Socket 7 bus] is just as good as—if not better than—the P6 [Pentium II/Slot 1] bus.” (Source: *Microprocessor Report*, Dec. 30, 1996.)

The Super7 platform remains a better alternative for single-processor systems because it:

- Delivers system performance and features competitive with Slot 1—at lower cost
- Leverages a wide range of system designs for superior value and fast time to market
- Enables PC OEMs and resellers to take advantage of a proven, high-volume infrastructure supported by multiple chipset, motherboard, BIOS, and graphics accelerator suppliers
- Reduces inventory and design costs by enabling one motherboard design to be used for a wide range of PC products and system price points
- Builds on a large installed base of more than 100 million Socket 7 motherboards
- Provides an easy upgrade path for future PC users and a bridge to legacy users.

The following chart (*Processor Bus Scoreboard, on page 8*) shows that the bus bandwidths of socket and slot infrastructures are equal at the same bus speeds (533.33 Mbytes/sec for 66 MHz bus and 800 Mbytes/sec for 100-MHz bus). In essence, Slot 1 offers no bus bandwidth advantage over Super7 infrastructure in uniprocessor designs, which constitute the vast majority of mainstream desktop PCs.

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Processor Bus Scoreboard			
	Super7™ (AMD-K6-2®)	Socket 7 (AMD-K6®)	P6/Slot 1 Bus (Pentium II)
Bus Width	64-bit	64-bit	64-bit
Bus Speed	100 MHz	66.67 MHz	66.67 MHz & 100 MHz
Maximum Bus Bandwidth	800 Mbytes/sec	533.33 Mbytes/sec	533.33 Mbytes/sec & 800 Mbytes/sec
Data Bursting	Yes	Yes	Yes
Data Latency	2 Bus Phases	2 Bus Phases	5-7 Bus Phases

In addition to matching Slot 1 feature for feature, the latest Super7 chipsets provide AGP and 100-MHz bus support for AMD-K6-2 processors planned to scale to 400 MHz and beyond. The 100-MHz local bus interface speeds up access to the L2 cache and main memory by 50 percent over the 66-MHz bus, resulting in an overall system performance gain of about 10 percent.

PCs powered by the AMD-K6-2 processor deliver a superior visual computing experience by taking advantage of AMD's 3DNow! technology, an instruction set designed to accelerate 3D graphics and other floating-point-intensive multimedia applications. According to the Ziff-Davis 3D WinBench™ 98 benchmark, an AMD-K6-2/333 processor-based PC delivers faster 3D performance than a 400-MHz Pentium II based system.† The industry's first CPU-based 3D enhancement instruction set, 3DNow! technology is available only in Super7 platform-based PCs.

According to the Ziff-Davis Winstone® 98 benchmark, AMD-K6-2 processor-based PCs using 100-MHz Super7 infrastructure can deliver mainstream business software performance competitive with equally clocked Pentium II based systems.

Above all, the Super7 platform is more cost-effective than Slot 1 because Socket 7 has been in volume production for years, with Socket 7 learning curve issues long resolved. Super7 chipsets and motherboards continue to be less expensive than Slot 1 counterparts. Slot 1 designs also pose a more complex mechanical challenge, which further adds to system cost.

With the AMD-K6-2 processor and AMD's forthcoming "Sharptooth" processor (an enhanced version of the AMD-K6-2 planned for Q1 '99), OEMs will be able to use one high-performance Super7 motherboard design across a range of PC products, from the entry level to the

† AMD-K6-2 processor-based systems enabled with a pre-release NVIDIA driver supporting 3DNow! technology of AMD-K6-2. Pentium II processor-based systems enabled with NVIDIA driver version .0236 (optimally configured for 3D WinBench™ 98). Performance results may vary with final production versions of these software components. NVIDIA and other leading graphics vendors update drivers regularly to take advantage of new developments such as 3DNow! technology.

high end. Sharptooth will feature 256KB of integrated L2 cache, as well as the option of a 100-MHz frontside L3 cache on the Super7 motherboard. Sharptooth's on-chip L2 cache will operate at full processor speed for maximum cache performance, a compelling feature for manufacturers of high-performance systems.

Conclusion

The Super7 platform initiative is built on a bedrock of strong third-party support and sustained by the continuing sales success, volume manufacturing, and planned enhancements of the AMD-K6 processor family. Based on the high level of industry support and market acceptance, the Super7 platform will continue to provide a competitive, robust PC infrastructure for the life of the sixth generation. Socket and slot architectures can coexist throughout 1999 in an open, competitive marketplace. The Super7 platform has the headroom to keep pace with slot designs in support of sixth-generation CPUs, and the addition of full-speed backside L2 cache capability will further strengthen the Super7 platform as a competitive solution for mainstream computing.

AMD Overview

AMD is a global supplier of integrated circuits for the personal and networked computer and communications markets. AMD produces processors, flash memories, programmable logic devices, and products for communications and networking applications. The world's second-leading supplier of Windows[®] compatible processors, AMD has shipped more than 100 million x86 microprocessors, including 55 million Windows compatible CPUs in the last five years.

Founded in 1969 and based in Sunnyvale, California, AMD has sales and marketing offices worldwide and manufacturing facilities in Sunnyvale; Austin, Texas; Bangkok, Thailand; Penang, Malaysia; Singapore; and Aizu-Wakamatsu, Japan. AMD had revenues of \$2.4 billion in 1997. (NYSE: AMD).

Cautionary Statement

This White Paper contains forward-looking statements that involve risks and uncertainties that could cause actual results to differ materially. Any forward-looking statement about the AMD-K6-2 processor or the Super7 infrastructure involves risks and uncertainties including whether the company will be able to produce and distribute AMD-K6-2 processors at higher speed grades; the company will maintain and increase current production yields; and the market will accept the Super7 platform and AMD processors. Investors are urged to consult the risks and uncertainties detailed in the company reports filed with the Securities and Exchange Commission.

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APPENDIX

Third-Party Super7™ Infrastructure Suppliers

Super7 Chipset Vendors		
Acer Laboratories Inc. (ALi)	Silicon Integrated Systems (SiS)	VIA Technologies

Super7 Motherboard Vendors		
Abit Aopen Asus Atrend Biostar Chaintech DataExpert DFI ECS EFA EpoX FIC	Freetech Gainward Gemlight (DTK) Gigabyte GVC Iwill Jbond Jetway LuckyStar Maxtium Microstar PC Chips	Procomp Shuttle (Holco) Soltek Soyo Superpower Tekram TMC (Mycomp) Tyan UMAX USI Wintech

Optimized BIOS Software Vendors		
American Megatrends, Inc.	Award Software International	Phoenix Technologies Ltd.

Graphics Accelerators Vendors Offering 3DNow! Optimizations		
ATI Matrox Graphics	NVIDIA Corporation 3Dfx Interactive	S3 Trident Microsystems, Inc.