

AMD Alchemy™ Solutions and AMD Geode™ Solutions Product Selection Guide



AMD offers a broad range of low-power processors and design tools that help customers to design the right product quickly for their target application. Two processor families are available: the AMD Alchemy™ and AMD Geode™ families:

- AMD Alchemy Solutions are exceptional for low-power, high-performance applications such as PDAs (Personal Digital Assistants), Web tablets, portable and wired Internet access devices, and gateways.
- AMD Geode Solutions leverage proven mobile technology to give designers a broad range of low-power, high-performance x86 capabilities for designing a variety of applications, including thin-client and peripheral devices – backed by the AMD commitment to long-term support of the x86 marketplace.

Both families of processors are backed by a set of development tools including Reference Design Kits and Development Boards.

- Reference Design Kits (RDKs) are complete reference design solutions that help enable the customer to get from concept to actual product in a short period of time. The RDK is a manufactured product that is available for demonstration and includes all the information required for a customer to recreate the design. Comparable or derivative solutions based on the RDK design may be available from our manufacturing partners, depending on negotiated business terms with the partner. The RDK is the right place for a customer to begin their design process.
- Development Boards help enable developers to write and test software code and to simulate hardware for their applications. They are highly configurable and allow customers to use all of the features of the processor, either natively on the board or via a plug-in card. While not ideal as a starting point for customer designs, they do allow a customer to begin their software development in parallel with the hardware to reduce the overall time-to-market.

Development Boards					OS (Note 1)										I/O Connectors										Typical Kit Contents				
Name	Processor (* Denotes Processor shipped in Kit)	Companion Device	Form Factor (Inches)	Video Output	Windows® XP/Pe	Windows CE 4.2 (Note 2)	Windows CE 5.0	Linux 2.4.x	Linux 2.6.x	Audio Out Channels	USB	PCI Slots	LPC Slots or Headers	Super I/O on Board	Ethernet on Board	Power	Serial ATA	IDE UDMA	Serial Ports	PS/2 Keyboard/Mouse	Parallel Port	IrDA	5.0V to 3.3V PCI Card	TFT Interface Card	LPC Card with Super I/O	PCI Ethernet Card	CD-ROM/Std. Documentation		
AMD Alchemy™ Solutions																													
DBAu1550™	Au1550™*	N/A	8.25x6.75	CRT	✓	✓	✓	2	2	2 (Note 3)	2	2	2	2	12VDC	1	2	1										✓	
DBAu1500™	Au1500™*	N/A	7.75x6x1	CRT	✓	✓	✓	2	2	1 (Note 3)	2	2	2	2	12VDC	1	2	1										✓	
DBAu1200™	Au1200™*	N/A	8.25x6.75	CRT, S-Video, LCD	✓	✓	✓	2	2		2	2	2	1	12VDC	1	2	1										✓	
DBAu1100™	Au1100™*	N/A	8x6x1	CRT	✓	✓	✓	2	1		2	2	2	1	12VDC	1	2	1		1								✓	
DBAu1000™	Au1000™*	N/A	8x6.5x1	CRT	✓	✓	✓	2	2		2	2	2	2	12VDC	1	2	1										✓	
AMD Geode™ Solutions																													
NX DB1500	Geode NX 1750 @ 1.4W Geode NX 1500 @ 6W Geode NX 1250 @ 6W (Note 4)	SiS741CX SiS964	Mini-ITX 6.7x6.7	TFT	✓	✓	✓	2	6	1	1	1	1	1	ATX	2	✓	1	1	1	1								✓
LX DB800	Geode LX 800 @ 0.9W (Note 5)	AMD C5536	Mini-ITX/ETX	CRT, TFT	✓	✓	✓	2	4	1 @ 66/33MHz	1	1	1	1	ATX	✓	3	1	1	1									✓
GX DB533-C	Geode GX 533 @ 1.1W*	AMD C5535	SOM-144 Flex ATX 7.5x9	CRT	✓	✓	✓	5	4	3 (Note 7)	1	1	1	1	ATX	✓	2	1	1									✓	
GX DB533-T	Geode GX 500 @ 1.0W Geode GX 466 @ 0.9W (Note 6)			TFT																									
DBSC1200	SC1200*/SC1201 SC2200 SC3200	N/A	ETX/ATX 7x12	CRT, TFT	✓	✓	✓	2	3	4	1	1	1	1	ATX	✓	2	1	1	1									✓

Note 1. OS support typically includes BIOS and drivers for audio, display, and bootloader if required.
 Note 2. The DBAu1550, DBAu1500, DBAu1200, DBAu1100, and DBAu1000 also support Windows CE 5.0.
 Note 3. The DBAu1550 and DBAu1500 support 3.3V PCI cards only.
 Note 4. The Geode NX 1750@1.4W processor operates at 1.4GHz, the Geode NX 1500@6W processor operates at 1.0GHz, and the Geode NX 1250@6W processor operates at 667MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodenbenchmark>.
 Note 5. The Geode LX 800@0.9W processor operates at 500MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodelxbenchmark>.
 Note 6. The Geode GX 533@1.1W processor operates at 400MHz, the Geode GX 500@1.0W processor operates at 366MHz, and the Geode GX 466@0.9W processor operates at 333MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodegbenchmark>.
 Note 7. The Geode GX DB533 has a total of three slots – two at 3.3V and one at 5.0V. Two slots available at 66MHz or three slots available at 33MHz.

About AMD
 AMD (NYSE:AMD) designs and produces innovative microprocessors, Flash memory devices and low-power processor solutions for the computer, communications and

consumer electronics industries. AMD is dedicated to delivering standards-based, customer-focused solutions for technology users, ranging from enterprises and governments to individual consumers.

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Reference Design Kits																												
					OS (Note 1)										I/O Connectors										Typical Kit Contents			
Name	Processor	Companion Device	Form Factor (Inches)	Video Output	Windows® XP/Pe	Windows CE 4.2	Linux 2.4.x	Audio Out Channels	USB	PCI Slots	LPC Slots or Headers	Super I/O on Board	Ethernet on Board	Power	Serial ATA	IDE UDMA	Serial Ports	PS/2 Keyboard/Mouse	Parallel Port	IrDA	5.0V to 3.3V PCI Card	TFT Interface Card	LPC Card with Super I/O	PCI Ethernet Card	CD-ROM/Std. Documentation			
AMD Alchemy™ Solutions																												
Access Equipment	Au1500™	N/A	7x6x1	CRT	✓	✓	2	1	2				2				1											✓
AMD Geode™ Solutions																												
GX Thin Client	Geode GX 533 @ 1.1W (Note 2)	AMD C5535	5.5x5x12.5	CRT	✓	✓	✓	1	4		1	1	1	12VDC	✓													✓
GX SOM-144 (Note 3)	Geode GX 533 @ 1.1W (Note 2)	AMD C5535	5.5x5	CRT TFT	✓	✓	✓																					✓
GX Single Board Computer	Geode GX 466 @ 0.9W (Note 2)	AMD C5536	5.5x5	CRT	✓	✓	✓	1	4					12VDC	✓													✓

Note 1. OS support typically includes BIOS and drivers for audio, display, and bootloader if required.
 Note 2. The Geode GX 533@1.1W processor operates at 400MHz and the GX 466@0.9W operates at 333MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodegbenchmark>.
 Note 3. The SOM-144 is a CPU module specification that supports many features but requires a base board to support the appropriate connectors.



Processors

Processor Family	Device Number	Companion Device(s)	Package/Operating Case Temperature	Core Freq. (Perform. Rating)	Core Volt	Thermal Design Power	Power Management/ Rating	FPU	Memory Support	PCI	Ethernet	IDE	USB	LPC	Audio	UART/IR	Serial/ Parallel Interfaces	RTC	MAX GPIOs	Security	Video: Max Resolution	
AMD Alchemy™ Au Processors	Aul550™ (System On Chip)	N/A	LF-PBGA483 0°C to 85°C	500MHz	1.2V	1.6W	Idle, Sleep, Hibernate	MIPS32™	DDR333/SDR125	v2.2	2 10/100 MAC Controllers	No	2 Ports, v1.1 w/OTG	No	AC97 v2.3	3	SPI, I ² S, SMBus, PCMCIA	1 and TOY with Battery Backup	43	IPsec, SSL	PCI Video	
			LF-PBGA483 0°C to 85°C -40°C to 100°C	400MHz		1.5W			DDR400/SDR100													DDR333/SDR81
	Aul500™ (System On Chip)	N/A	LF-PBGA424 0°C to 50°C	500MHz	1.8V	2.5W	Idle, Sleep	MIPS32	SDR125	v2.2	2 10/100 MAC Controllers	No	2 Ports, v1.1	No	AC97 v1.x	2	PCMCIA	2	39	No	PCI Video	
				LF-PBGA424 0°C to 70°C		400MHz			1.5V													1.6W
	Aul200™ (System On Chip)	N/A	LF-PBGA372 0°C to 85°C	500MHz	1.2V	TBD	Idle0, Idle1, Sleep, Hibernate	MIPS32	DDR400/DDR2-533	No	No	IDE PIO Mode 4	2 Ports, v2.0 w/OTG	No	AC97 v2.3	2	SPI, I ² S, SMBus, PCMCIA, CCIR656	1 and TOY with Battery Backup	48	128-Bit AES	Video Decode, Camera, LCD, TFT and STN	
400MHz				TBD		333MHz			TBD													
Aul100™ (System On Chip)	N/A	LF-PBGA399 0°C to 70°C	500MHz	1.1V to 1.3V	0.9W	Idle, Sleep	MIPS32	SDR125	No	1 10/100 MAC Controller	No	2 Ports, v1.1	No	AC97 v1.x	3	I ² S, SSI, IrDA, PCMCIA	2	48	No	LCD, TFT and STN		
			400MHz		0.6W			SDR100													SDR81	
Aul000™ (System On Chip)	N/A	LF-PBGA324 0°C to 70°C	500MHz	1.8V	1.9W	Idle, Sleep	MIPS32	SDR125	No	2 10/100 MAC Controllers	No	2 Ports, v1.1	No	AC97 v1.x	4	I ² S, SSI, IrDA, PCMCIA	2	32	No	LCD, TFT and STN		
			400MHz		1.5V			1.2W													SDR100	SDR81
AMD Geode™ NX Processors	Geode NX I750 @14W (Mobile AMD Athlon™ Processor Technology) (Note 1)	SiS 741CX/963L or 964 VIA KN400A/VT8237	OPGA - Socket A 0°C to 95°C	1.4GHz (1750)	1.05V to 1.25V	25W	ACPI v1.0b/v2.0, AMD PowerNow!™ technology	MMX® 3DNow!™ technology	DDR333	v2.2/v2.3	1 10/100 MAC Controller	2 Ch., UDMA-133, 2 S-ATA (964)	6/8 Ports, v2.0/1.1	2 LDRQs	AC97 v2.2/v2.3	No	No	1	25	No	CRT: 2048x1536 TFT: 1600x1200	
									ACPI v2.0, AMD PowerNow! technology	v2.2	1 10/100 MAC Controller	2 Ch., UDMA-133, 2 S-ATA	8 Ports, v2.0/1.1	2 LDRQs	AC97 v2.1	No	No	1	35	No	CRT, TFT: 1600x1200	
	Geode NX I500 @6W (Mobile AMD Athlon Processor Technology) (Note 1)	SiS 741CX/963L or 964 VIA KN400A/VT8237	OPGA - Socket A 0°C to 95°C	1.0GHz (1500)	1.0V	9W	ACPI v1.0b/v2.0, AMD PowerNow! technology	MMX, 3DNow! technology	DDR333	v2.2/v2.3	1 10/100 MAC Controller	2 Ch., UDMA-133, 2 S-ATA (964)	6/8 Ports, v2.0/1.1	2 LDRQs	AC97 v2.2/v2.3	No	No	1	25	No	CRT: 2048x1536 TFT: 1600x1200	
									ACPI v2.0, AMD PowerNow! technology	v2.2	1 10/100 MAC Controller	2 Ch., UDMA-133, 2 S-ATA	8 Ports, v2.0/1.1	2 LDRQs	AC97 v2.1	No	No	1	35	No	CRT, TFT: 1600x1200	
Geode NX I250 @6W (Mobile AMD Athlon Processor Technology) (Note 1)	SiS 741CX/963L or 964 VIA KN400A/VT8237	OPGA - Socket A 0°C to 95°C	667MHz (1250)	1.1V	9W	ACPI v1.0b/v2.0, AMD PowerNow! technology	MMX, 3DNow! technology	DDR333	v2.2/v2.3	1 10/100 MAC Controller	2 Ch., UDMA-133, 2 S-ATA (964)	6/8 Ports, v2.0/1.1	2 LDRQs	AC97 v2.2/v2.3	No	No	1	25	No	CRT: 2048x1536 TFT: 1600x1200		
								ACPI v2.0, AMD PowerNow! technology	v2.2	1 10/100 MAC Controller	2 Ch., UDMA-133, 2 S-ATA	8 Ports, v2.0/1.1	2 LDRQs	AC97 v2.1	No	No	1	35	No	CRT, TFT: 1600x1200		
AMD Geode™ LX Processors	Geode LX 800 @0.9W (Integrated North Bridge/Graphics) (Note 2)	AMD CSS536	BGU481 0°C to 85°C	500MHz	1.2V or 1.25V	<3.9W	ACPI v2.0	MMX, 3DNow! technology	DDR400	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	Yes	AC97 v2.3	2/1	ACCESS.bus w/2 Ports	1	32	128-Bit AES w/ Optional In-package EEPROM	CRT: 1920x1440 TFT: 1600x1200 VIP/VOP = 1.1, 2.0	
	Geode LX 700 @0.8W (Integrated North Bridge/Graphics) (Note 2)	AMD CSS536	BGU481 0°C to 85°C	433MHz	1.2V	<3.1W	ACPI v2.0	MMX, 3DNow! technology	DDR333	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	Yes	AC97 v2.3	2/1	ACCESS.bus w/2 Ports	1	32	128-Bit AES w/ Optional In-package EEPROM	CRT: 1920x1440 TFT: 1600x1200 VIP/VOP = 1.1, 2.0	
AMD Geode™ GX Processors	Geode GX 533 @1.1W (Integrated North Bridge/Graphics) (Note 3)	AMD CSS536 AMD CSS535	BGD368 0°C to 85°C	400MHz (533)	1.5V	<3.5W	ACPI v2.0	MMX, 3DNow! technology	DDR266	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	1 LDRQ	AC97 v2.1	2/1	ACCESS.bus w/2 Ports	1	32	No	CRT: 1600x1200 TFT: 1280x1024	
			1 Ch., UDMA-66									4 Ports, v1.1										
	Geode GX 500 @1.0W (Integrated North Bridge/Graphics) (Note 3)	AMD CSS536 AMD CSS535	BGD368 0°C to 85°C	366MHz (500)	1.5V	<3.5W	ACPI v2.0	MMX, 3DNow! technology	DDR244	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	1 LDRQ	AC97 v2.1	2/1	ACCESS.bus w/2 Ports	1	32	No	CRT: 1600x1200 TFT: 1280x1024	
			1 Ch., UDMA-66										4 Ports, v1.1									
Geode GX 466 @0.9W (Integrated North Bridge/Graphics) (Note 3)	AMD CSS536 AMD CSS535	BGD368 0°C to 85°C	333MHz (466)	1.5V	<3.5W	ACPI v2.0	MMX, 3DNow! technology	DDR222	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	1 LDRQ	AC97 v2.1	2/1	ACCESS.bus w/2 Ports	1	32	No	CRT: 1600x1200 TFT: 1280x1024		
		1 Ch., UDMA-66										4 Ports, v1.1										
AMD Geode™ SC Processors	SC1200/SC1201 (System On Chip)	N/A	BGU481 0°C to 85°C	266MHz	1.8V	3.3W	ACPI v1.0	MMX	SDR100	v2.1	No	2 Ch., UDMA-33	3 Ports, v1.0	1 LDRQ	AC97 v2.0	3/1	ACCESS.bus w/2 Ports, 1 Parallel Port	1	27	No	CRT, TFT: 1280x1024 TV: NTSC/PAL	
	SC2200 (System On Chip)	N/A	BGU481 0°C to 85°C	300MHz	2.1V	4.1W	ACPI v1.0	MMX	SDR100	v2.1	No	2 Ch., UDMA-33	3 Ports, v1.0	1 LDRQ	AC97 v2.0	3/1	ACCESS.bus w/2 Ports, 1 Parallel Port	1	27	No	CRT, TFT: 1280x1024	
				266MHz		1.8V																3.1W
				233MHz		1.8V																2.9W
SC3200 (System On Chip)	N/A	BGU481 0°C to 85°C	266MHz	1.8V	3.0W	ACPI v1.0	MMX	SDR100	v2.1	No	2 Ch., UDMA-33	3 Ports, v1.0	1 LDRQ	AC97 v2.0	3/1	ACCESS.bus w/2 Ports	1	27	No	TFT: 1280x1024		
			233MHz		1.8V																2.8W	

Note 1. The Geode NX I750@14W processor operates at 1.4GHz, the Geode NX I500@6W processor operates at 1.0GHz, and the Geode NX I250@6W processor operates at 667MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodenbenchmark>.
 Note 2. The Geode LX 800@0.9W processor operates at 500MHz and the Geode LX 700@0.8W processor operates at 433MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodelxbenchmark>.
 Note 3. The Geode GX 533@1.1W processor operates at 400MHz, the Geode GX 500@1.0W processor operates at 366MHz, and the Geode GX 466@0.9W processor operates at 333MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodegxbenchmark>.