

FEATURE	ZF Micro Solutions ZFx86 PC-on-a-Chip	AMD ElanSC520	AMD Geode LX700/800
CPU Speed	100MHz	133MHz	LX700 – 433MHz LX800 – 500MHz
Power Requirement	100MHz < 1W	133MHz 2.0W	433MHz 3.1W + CS5536 @ .6W ¹ 50MHz 3.9W + CS5536 @ .6W
L1 Cache	8K	16K	64K
FPU	YES	YES	YES
Total Active Devices Required ²	ZFx86, 1 DRAM, 1 Flash, Clk Gen	SC520, 2 DRAM, 1 Flash	LX800, CS5536, 4 DRAM, 1 Flash, Clk Gen
Fully PC Compatible	YES	NO	YES
DMA Controller	8237/AT compatible 7-ch. internal / 2 ext.	8237/AT comp. 4 ext. channels	(2) 8237-equivalent
Interrupt Controller	(2) 8259/AT compatible, 16 IRQs, ISA & PCI	22 interrupts (all muxed ex. 4 PCI)	(2) 8259A-equivalent
Timer / Counters	(3) 8254 compatible	YES (3)	8254-equivalent
Z-TAG™	YES ³	NO	NO
ZF-Logic™	YES ⁴	NO	NO
FailSafe BOOT	YES ⁵	NO	NO
BIOS license	YES, included & ready-to-run	NO	NO & requires serial PROM
Linux Image	YES	NO	NO
ISA BUS	YES ⁶	NO – requires additional component	NO – requires additional component
PCI BUS	YES ⁴	YES	YES
I ² C BUS	YES	YES	YES
USB	YES 1.1 (2 ports)	NO	YES 2.0 (4 ports)
Serial Ports	2 (16550)	2 (16550) (1 multiplexed)	NO – requires Super I/O chip
Parallel Port	YES ⁴	NO – requires Super I/O chip	NO – requires Super I/O chip
Floppy Controller	YES ⁴	NO – requires Super I/O chip	NO – requires Super I/O chip
EIDE	YES	YES	YES (ATA-6)
Graphics	NO ⁷	NO	YES
PC/AT Keyboard	YES ⁴	NO – requires Super I/O chip	NO – requires Super I/O chip

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PS2 Mouse	YES ⁴	NO – requires Super I/O chip	NO – requires Super I/O chip
IrDA infrared port	YES	NO	YES
DRAM Bus	16/32 bit ⁸	32 bit only	64 bit only
DRAM Controller	SDRAM	SDRAM	SDRAM
Real-Time Clock	YES	YES	YES
GPIO	8	32 (all multiplexed)	YES
Watchdog Timer	YES (dual H/W-S/W)	YES (dual H/W-S/W)	NO
Pulse Width Modulator	YES (up to 100KHz)	NO	NO
FLASH decode logic	YES - internal	NO – external device required	NO – external device required
Software Compatibility	Linux, WinCE, Windows 9x, Windows NT, Various DOS & RTOS	Linux, WinCE, Windows 9x, Windows NT, Various DOS & RTOS	Linux, WinCE, Windows 9x, NT, XP & Various RTOS
Standard Temp Rating	100MHz (0 to 70C) Commercial 100MHz (-40 to 85C) Industrial	133MHz (0 to 85C case temperature operating in free air)	0-85C (max case temp)
Voltage	2.2 core, 3.3 I/O, 5V tolerant	2.5 core, 3.3 I/O	2.5 core, 3.3 I/O, 5V tolerant
Advanced Power Management	YES	YES	YES
Package	388-ball grid array	388-ball grid array	LX = 481 BGA, 5536 = 208 BGA
Production Guarantee	YES (minimum 5 years)	NO	NO

1 Total power for full featured system could be significantly higher due to requirement for additional components such as Super I/O, additional memory, etc.

2 Total number of active semiconductor devices required to boot and run an operating system with *ONLY* the features shown in the respective column. In order to match all the features and functions present in the ZFx86 additional components would be required.

3 Z-Tag high-speed serial access allows field or factory software downloads at more than 100 times normal speeds.

4 ZF-Logic chip select control eases x86 system integration.

5 Fail-Safe Boot™ ROM redundant boot mechanism allows full recovery even when system BIOS is corrupted due to adverse operating conditions.

6 ISA, PCI, Floppy, AT/Keyboard, PS2 Mouse, parallel port, serial ports with no signal multiplexing means all devices can be used simultaneously without loss of any features.

7 Graphics controller not included in ZFx86 because standards change rapidly and system power consumption and complexity both increase significantly decreasing reliability.

8 ZFx86's selectable memory bus allows a fully working system with 1, 2, or 4 DRAM chips, a significant cost advantage over devices with a 64-bit bus that always require 4 DRAM chips to operate.

Local representative: