BIOS Beep Codes

What is a BIOS Beep Code?

When you power on a computer the BIOS immediately takes control of the computer and performs the P.O.S.T (Power On Self Test). At the end of the POST the computer will play an audible 'BEEP' through either the PC's internal speaker of through speakers attached to the sound card (if you have a built-in sound chip). If the POST completed successfully without detecting any problems with then system will play a single short beep to let you know the test is complete and the computer will continue to startup and load the operating system.

If during the POST the BIOS detects a problem it will normally display a visual error message on the monitor explaining what the problem is. However, if a problem is detected before the BIOS initializes the video card, or a video card is not present or not detected then the BIOS will play several 'BEEPS' through the speaker to let you know there is a problem. Depending on the type of the BIOS you have the BIOS may play beeps in a specific pattern to indicate what the problem is, or play the same beep a number of times indicating the problem. It is very important that you pay close attention to the number and/or pattern of the beeps your computer plays on startup.

Below is a table of the most common AMI, Phoenix and Award BIOS beep codes.

AMI (American Megatrends International) BIOS Beep Codes.

AMI BIOS uses beeps of the same length and pitch. The error is displayed as a number of beeps. For example, 4 beeps indicated a timer failure.

BEEP CODE	MEANING	POSSIBLE CAUSE
1 Beep (No video)	Memory refresh failure	Bad memory
2 Beeps	Memory parity error	Bad memory
3 Beeps	Base 64K mem failure	Bad memory
4 Beeps	Timer not operational	Bad motherboard
5 Beeps	Processor error	Bad processor
6 Beeps	8042 Gate A20 failure	Bad CPU or Motherboard
7 Beeps	Processor exception	Bad processor
8 Beeps	Video memory error	Bad video card or memory
9 Beeps	ROM checksum error	Bad BIOS
10 Beeps	CMOS checksum error	Bad motherboard
11 Beeps	Cache memory bad	Bad CPU or motherboard

Award BIOS Beep Codes

Award BIOS uses beeps of varying duration. A long beep will typically last for 2 seconds while a short beep will last only 1 second. Award BIOS also uses beeps of different frequency to indicate critical errors. If an Award BIOS detects that the CPU is overheating it may play a high pitched repeating beep while the computer is running.

BEEP CODE	MEANING	POSSIBLE CAUSE
1 Long, 2 Short	Video adapter failure	Bad video adapter
Repeating (Endless loop)	Memory error	Bad memory or bad connection
1 Long, 3 Short	Video adapter failure	Bad video adapter or memory
High freq. beeps (while running)	CPU is overheating	CPU fan failure
Repeating High, Low beeps	CPU failure	Bad processor

Phoenix BIOS Beep Codes

Phoenix BIOS uses beep code patterns to indicate problems. In the table below the '-' indicates a brief pause between beeps.

Example: 1 - 1 - 2 would sound like BEEP <pause> BEEP <pause> BEEP BEEP

BEEP CODE	MEANING	POSSIBLE CAUSE
1 - 1 - 2	CPU / motherboard failure	Bad CPU / motherboard
1 - 1 - 3	CMOS read/write failure	Bad motherboard
1 - 1 - 4	BIOS ROM failure	Bad BIOS chip
1 - 2 - 1	Timer failure	Bad motherboard
1 - 2 - 2	DMA failure	Bad motherboard
1 - 2 - 3	DMA failure	Bad motherboard
1 - 3 - 1	Memory refresh failure	Bad memory
1 - 3 - 2	64K memory failure	Bad memory
1 - 3 - 3	64K memory failure	Bad memory
1 - 3 - 4	64K memory failure	Bad memory
1 - 4 - 1	Address line failure	Bad memory
1 - 4 - 2	Parity error	Bad memory
1 - 4 - 3	Timer failure	Bad motherboard
1 - 4 - 4	NMI port failure	Bad motherboard
2 - 1 - 1	64K memory failure	Bad memory
2 - 1 - 2	64K memory failure	Bad memory
2 - 1 - 3	64K memory failure	Bad memory
2 - 1 - 4	64K memory failure	Bad memory
2 - 2 - 1	64K memory failure	Bad memory
2 - 2 - 2	64K memory failure	Bad memory
2 - 2 - 3	64K memory failure	Bad memory
2 - 2 - 4	64K memory failure	Bad memory
2 - 3 - 1	64K memory failure	Bad memory
2 - 3 - 2	64K memory failure	Bad memory
2 - 3 - 3	64K memory failure	Bad memory
2 - 3 - 4	64K memory failure	Bad memory
2 - 4 - 1	64K memory failure	Bad memory
2 - 4 - 2	64K memory failure	Bad memory
2 - 4 - 4	64K memory failure	Bad memory
2 - 4 - 4	64K memory failure	Bad memory
3 - 1 - 1	Slave DMA failure	Bad motherboard
3 - 1 - 2	Master DMA failure	Bad motherboard
3 - 1 - 3	Interrupt controller failure	Bad motherboard
3 - 1 -4	Slave IC failure	Bad motherboard
3 - 2 -2	Interrupt Controller failure	Bad motherboard
3 - 2 - 3	<RESERVED>	
3 - 2 - 4	Keyboard control failure	Bad motherboard
3 - 3 - 1	CMOS batter failure	Bad CMOS battery
3 - 3 - 2	CMOS configuration error	Incorrect setting
3 - 3 - 3	<RESERVED>	
3 - 3 - 4	Video memory failure	Bad video card or memory
3 - 4 - 1	Video init failure	Bad video card or memory
4 - 2 - 1	Timer failure	Bad motherboard
4 - 2 - 2	CMOS shutdown failure	Bad motherboard
4 - 2 - 3	Gate A20 failure	Bad motherboard
4 - 2 - 4	Unexpected interrupt	Bad processor
4 - 3 - 1	RAM test failure	Bad memory
4 - 3 - 3	Timer failure	Bad motherboard
4 - 3 - 4	RTC failure	Bad motherboard
4 - 4 - 1	Serial port failure	Bad motherboard

4 - 4 - 2	Parallel port failure	Bad motherboard
4 - 4 - 3	Coprocessor failure	Bad motherboard or CPU.
9 - 2 - 1	Video adapter incompatibility	Use a different brand of video card