**Phoenix ISA/MCA/EISA BIOS Beep Codes:**

The beep codes are represented in the number of beeps. E.g. 1-1-2 would mean 1 beep, a pause, 1 beep, a pause, and 2 beeps.

- With a Dell computer, a 1-2 beep code can also indicate that a bootable add-in card is installed but no boot device is attached. For example, in you insert a Promise Ultra-66 card but do not connect a hard drive to it, you will get the beep code. I verified this with a SIIG (crap -- avoid like the plague) Ultra-66 card, and then confirmed the results with Dell. Submitted by John Palmer.

| Beeps | Error Message | Description |
|-------|---------------|-------------|
| 1-1-2 | CPU test failure | The CPU is faulty.  Replace the CPU |
| Low 1-1-2 | System board select failure | The motherboard is having an undetermined fault. Replace the motherboard |
| 1-1-3 | CMOS read/write error | The real time clock/CMOS is faulty.   Replace the CMOS if possible |
| Low 1-1-3 | Extended CMOS RAM failure | The extended portion of the CMOS RAM has failed. Replace the CMOS if possible |
| 1-1-4 | BIOS ROM checksum error | The BIOS ROM has failed.  Replace the BIOS or upgrade if possible |
| 1-2-1 | PIT failure | The programmable interrupt timer has failed.  Replace if possible |
| 1-2-2 | DMA failure | The DMA controller has failed.   Replace the IC if possible |
| 1-2-3 | DMA read/write failure | The DMA controller has failed.   Replace the IC if possible |
| 1-3-1 | RAM refresh failure | The RAM refresh controller has failed |
| 1-3-2 | 64KB RAM failure | The test of the first 64KB RAM has failed to start |
| 1-3-3 | First 64KB RAM failure | The first RAM IC has failed.   Replace the IC if possible |
| 1-3-4 | First 64KB logic failure | The first RAM control logic has failed |
| 1-4-1 | Address line failure | The address line to the first 64KB RAM has failed |
| 1-4-2 | Parity RAM failure | The first RAM IC has failed.   Replace if possible |
| 1-4-3 | EISA fail-safe timer test | Replace the motherboard |
| 1-4-4 | EISA NMI port 462 test | Replace the motherboard |
| 2-1-1 | 64KB RAM failure | Bit 0; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-1-2 | 64KB RAM failure | Bit 1; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-1-3 | 64KB RAM failure | Bit 2; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-1-4 | 64KB RAM failure | Bit 3; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-2-1 | 64KB RAM failure | Bit 4; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-2-2 | 64KB RAM failure | Bit 5; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-2-3 | 64KB RAM failure | Bit 6; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-2-4 | 64KB RAM failure | Bit 7; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-3-1 | 64KB RAM failure | Bit 8; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-3-2 | 64KB RAM failure | Bit 9; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-3-3 | 64KB RAM failure | Bit 10; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-3-4 | 64KB RAM failure | Bit 11; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-4-1 | 64KB RAM failure | Bit 12; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-4-2 | 64KB RAM failure | Bit 13; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-4-3 | 64KB RAM failure | Bit 14; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 2-4-4 | 64KB RAM failure | Bit 15; This data bit on the first RAM IC has failed. Replace the IC if possible |
| 3-1-1 | Slave DMA register failure | The DMA controller has failed.   Replace the controller if possible |
| 3-1-2 | Master DMA register failure | The DMA controller had failed.   Replace the controller if possible |
| | Master interrupt mask register | |

| 3-1-3 | Master interrupt mask register failure | The interrupt controller IC has failed |
|-------|----------------------------------------|----------------------------------------|
| 3-1-4 | Slave interrupt mask register failure | The interrupt controller IC has failed |
| 3-2-2 | Interrupt vector error | The BIOS was unable to load the interrupt vectors into memory.  Replace the motherboard |
| 3-2-3 | Reserved | |
| 3-2-4 | Keyboard controller failure | The keyboard controller has failed.   Replace the IC if possible |
| 3-3-1 | CMOS RAM power bad | Replace the CMOS battery or CMOS RAM if possible |
| 3-3-2 | CMOS configuration error | The CMOS configuration has failed.   Restore the configuration or replace the battery if possible |
| 3-3-3 | Reserved | |
| 3-3-4 | Video memory failure | There is a problem with the video memory.  Replace the video adapter if possible |
| 3-4-1 | Video initialization failure | There is a problem with the video adapter.  Reseat the adapter or replace the adapter if possible |
| 4-2-1 | Timer failure | The system's timer IC has failed.   Replace the IC if possible |
| 4-2-2 | Shutdown failure | The CMOS has failed.  Replace the CMOS IC if possible |
| 4-2-3 | Gate A20 failure | The keyboard controller has failed.   Replace the IC if possible |
| 4-2-4 | Unexpected interrupt in protected mode | This is a CPU problem.  Replace the CPU and retest |
| 4-3-1 | RAM test failure | System RAM addressing circuitry is faulty.  Replace the motherboard |
| 4-3-3 | Interval timer channel 2 failure | The system timer IC has failed.   Replace the IC if possible |
| 4-3-4 | Time of day clock failure | The real time clock/CMOS has failed.   Replace the CMOS if possible |
| 4-4-1 | Serial port failure | A error has occurred in the serial port circuitry |
| 4-4-2 | Parallel port failure | A error has occurred in the parallel port circuitry |
| 4-4-3 | Math coprocessor failure | The math coprocessor has failed.   If possible, replace the MPU |

| Beeps | Description |
|-------|-------------|
| 1-1-1-3 | Verify real mode |
| 1-1-2-1 | Get CPU type |
| 1-1-2-3 | Initialize system hardware |
| 1-1-3-1 | Initialize chipset registers with initial values |
| 1-1-3-2 | Set in POST flag |
| 1-1-3-3 | Initialize CPU registers |
| 1-1-4-1 | Initialize cache to initial values |
| 1-1-4-3 | Initialize I/O |
| 1-2-1-1 | Initialize power management |
| 1-2-1-2 | Load alternative registers with initial POST values |
| 1-2-1-3 | Jump to UserPatch0 |
| 1-2-2-1 | Initialize timer initialization |
| 1-2-3-1 | 8254 timer initialization |
| 1-2-3-3 | 8237 DMA controller initialization |
| 1-2-4-1 | Reset Programmable Interrupt Controller |
| 1-3-1-1 | Test DRAM refresh |
| 1-3-1-3 | Test 8742 Keyboard Controller |
| 1-3-2-1 | Set ES segment register to 4GB |
| 1-3-3-1 | Autosize DRAM |
| 1-3-3-3 | Clear 512K base memory |
| 1-3-4-1 | Test 512K base address lines |
| 1-3-4-3 | Test 51K base memory |
| 1-4-1-3 | Test CPU bus-clock frequency |
| 1-4-2-1 | CMOS RAM read/write failure (this commonly indicates a problem on the ISA bus such as a card not seated) |
| 1-4-2-4 | Reinitialize the chipset |
| 1-4-3-1 | Shadow system BIOS ROM |
| 1-4-3-2 | Reinitialize the cache |
| 1-4-3-3 | Autosize the cache |
| 1-4-4-1 | Configure advanced chipset registers |
| 1-4-4-2 | Load alternate registers with CMOS values |
| 2-1-1-1 | Set initial CPU speed |
| 2-1-1-3 | Initialize interrupt vectors |
| 2-1-2-1 | Initialize BIOS interrupts |

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| 2-1-2-1 | Initialize BIOS interrupts |
| 2-1-2-3 | Check ROM copyright notice |
| 2-1-2-4 | Initialize manager for PCI Options ROMs |
| 2-1-3-1 | Check video configuration against CMOS |
| 2-1-3-2 | Initialize PCI bus and devices |
| 2-1-3-3 | initialize all video adapters in system |
| 2-1-4-1 | Shadow video BIOS ROM |
| 2-1-4-3 | Display copyright notice |
| 2-2-1-1 | Display CPU type and speed |
| 2-2-1-3 | Test keyboard |
| 2-2-2-1 | Set key click if enabled |
| 2-2-2-3 | Enable keyboard |
| 2-2-3-1 | Test for unexpected interrupts |
| 2-2-3-3 | Display prompt "Press F2 to enter setup" |
| 2-2-4-1 | Test RAM between 512K and 640K |
| 2-3-1-1 | Test expanded memory |
| 2-3-1-3 | Test extended memory address lines |
| 2-3-2-1 | Jump to UserPatch1 |
| 2-3-2-3 | Enable external and CPU caches |
| 2-3-2-3 | Configure advanced cache registers |
| 2-3-3-1 | Enable external and CPU caches |
| 2-3-3-2 | Initialize SMI handler |
| 2-3-3-3 | Display external cache size |
| 2-3-4-1 | Display shadow message |
| 2-3-4-3 | Display non-disposable segments |
| 2-4-1-1 | Display error messages |
| 2-4-1-3 | Check for configuration errors |
| 2-4-2-1 | Test real-time clock |
| 2-4-2-3 | Check for keyboard errors |
| 2-4-4-1 | Setup hardware interrupt vectors |
| 2-4-4-3 | Test coprocessor if present |
| 3-1-1-1 | Disable onboard I/O ports |
| 3-1-1-3 | Detect and install external RS232 ports |
| 3-1-2-1 | Detect and install external parallel ports |
| 3-1-2-3 | Reinitialize onboard I/O ports |
| 3-1-3-1 | Initialize BIOS Data Area |
| 3-1-3-3 | Initialize Extended BIOS Data Area |
| 3-1-4-1 | Initialize floppy controller |
| 3-2-1-1 | Initialize hard disk controller |
| 3-2-1-2 | Initialize local bus hard disk controller |
| 3-2-1-3 | Jump to UserPatch2 |
| 3-2-2-1 | Disable A20 address line |
| 3-2-2-3 | Clear huge ES segment register |
| 3-2-3-1 | Search for option ROMs |
| 3-2-3-3 | Shadow option ROMs |
| 3-2-4-1 | Setup power management |
| 3-2-4-3 | Enable hardware interrupts |
| 3-3-1-1 | Set time of day |
| 3-3-1-3 | Check key lock |
| 3-3-3-1 | Erase F2 prompt |
| 3-3-3-3 | Scan for F2 keystroke |
| 3-3-4-1 | Enter SETUP |
| 3-3-4-3 | Clear in-POST flag |
| 3-4-1-1 | Check for errors |
| 3-4-1-3 | POST done - prepare to boot operating system |
| 3-4-2-1 | One beep |
| 3-4-2-3 | Check password (optional) |
| 3-4-3-1 | Clear global descriptor table |
| 3-4-4-1 | Clear parity checkers |
| 3-4-4-3 | Check virus and backup reminders |
| 4-1-1-1 | Try to boot with INT 19 |
| 4-2-1-1 | Interrupt handler error |
| 4-2-1-3 | Unknown interrupt error |
| 4-2-2-1 | Pending interrupt error |
| 4-2-2-3 | Initialize option ROM error |
| 4-2-3-1 | Shutdown error |
| 4-2-3-3 | Extended Block Move |
| 4-2-4-1 | Shutdown 10 error |
| | Keyboard Controller failure (most likely problem is with RAM or cache unless no |

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| 4-2-4-3 | Keyboard Controller failure (most likely problem is with RAM or cache unless no video is present) |
| 4-3-1-3 | Initialize the chipset |
| 4-3-1-4 | Initialize refresh counter |
| 4-3-2-1 | Check for Forced Flash |
| 4-3-2-2 | BIOS ROM is OK |
| 4-3-2-4 | Do a complete RAM test |
| 4-3-3-1 | Do OEM initialization |
| 4-3-3-2 | Initialize interrupt controller |
| 4-3-3-3 | Read in bootstrap code |
| 4-3-3-4 | Initialize all vectors |
| 4-3-4-2 | Initialize the boot device |
| 4-3-4-3 | Boot code was read OK |