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| Bochs Developers Guide | | |
| [Prev](http://docs.google.com/timers.html) | Chapter 2. About the code | [Next](http://docs.google.com/sb16-emulation-basics.html) |

2.7. Bochs's CMOS map

In addition to the default CMOS RAM layout, the Bochs BIOS uses some additional registers for harddisk parameters and the boot sequence. The following table shows all CMOS registers and their meaning.

Legend:  
S - set by the emulator (Bochs)  
Q - set by the emulator (Qemu)  
B - set by the bios  
U - unused by the bios  
  
LOC NOTES MEANING  
0x00 S rtc seconds  
0x01 B second alarm  
0x02 S rtc minutes  
0x03 B minute alarm  
0x04 S rtc hours  
0x05 B hour alarm  
  
0x06 S,U day of week  
0x07 S,B date of month  
0x08 S,B month  
0x09 S,B year  
  
0x0a S,B status register A  
0x0b S,B status register B  
0x0c S status register C  
0x0d S status register D  
  
0x0f S shutdown status  
 values:  
 0x00: normal startup  
 0x09: normal  
 0x0d+: normal  
 0x05: eoi ?  
 else: unimpl  
  
0x10 S fd drive type (2 nibbles: high=fd0, low=fd1)  
 values:  
 1: 360K 5.25"  
 2: 1.2MB 5.25"  
 3: 720K 3.5"  
 4: 1.44MB 3.5"  
 5: 2.88MB 3.5"  
  
!0x11 configuration bits!!  
  
0x12 S how many disks first (hd type)  
  
!0x13 advanced configuration bits!!  
  
0x14 S,U equipment byte (?)  
 bits where what  
 7-6 floppy.cc  
 5-4 vga.cc 0 = vga  
 2 keyboard.cc 1 = enabled  
 0 floppy.cc  
  
0x15 S,U base memory - low  
0x16 S,U base memory - high  
  
0x17 S,U extended memory in k - low  
0x18 S,U extended memory in k - high  
  
0x19 S hd0: extended type  
0x1a S hd1: extended type  
  
0x1b S,U hd0:cylinders - low  
0x1c S,U hd0:cylinders - high  
0x1d S,U hd0:heads  
0x1e S,U hd0:write pre-comp - low  
0x1f S,U hd0:write pre-comp - high  
0x20 S,U hd0:retries/bad\_map/heads>8  
0x21 S,U hd0:landing zone - low  
0x22 S,U hd0:landing zone - high  
0x23 S,U hd0:sectors per track  
  
0x24 S,U hd1:cylinders - low  
0x25 S,U hd1:cylinders - high  
0x26 S,U hd1:heads  
0x27 S,U hd1:write pre-comp - low  
0x28 S,U hd1:write pre-comp - high  
0x29 S,U hd1:retries/bad\_map/heads>8  
0x2a S,U hd1:landing zone - low  
0x2b S,U hd1:landing zone - high  
0x2c S,U hd1:sectors per track  
  
0x2d S boot from (bit5: 0:hd, 1:fd)  
  
0x2e S,U standard cmos checksum (0x10->0x2d) - high  
0x2f S,U standard cmos checksum (0x10->0x2d) - low  
  
0x30 S extended memory in k - low  
0x31 S extended memory in k - high  
  
0x32 S rtc century  
  
0x34 S extended memory in 64k - low  
0x35 S extended memory in 64k - high  
  
0x37 S ps/2 rtc century (copy of 0x32, needed for winxp)  
  
0x38 S eltorito boot sequence + boot signature check  
 bits  
 0 floppy boot signature check (1: disabled, 0: enabled)  
 7-4 boot drive #3 (0: unused, 1: fd, 2: hd, 3:cd, else: fd)  
  
0x39 S ata translation policy - ata0 + ata1  
 bits  
 1-0 ata0-master (0: none, 1: LBA, 2: LARGE, 3: R-ECHS)  
 3-2 ata0-slave  
 5-4 ata1-master  
 7-6 ata1-slave  
  
0x3a S ata translation policy - ata2 + ata3 (see above)  
  
0x3d S eltorito boot sequence (see above)  
 bits  
 3-0 boot drive #1  
 7-4 boot drive #2  
0x5b S extra memory above 4GB  
0x5c S extra memory above 4GB  
0x5d S extra memory above 4GB  
0x5f Q number of processors

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| [Prev](http://docs.google.com/timers.html) | [Home](http://docs.google.com/index.html) | [Next](http://docs.google.com/sb16-emulation-basics.html) |
| Internal timers | [Up](http://docs.google.com/about-the-code.html) | Sound Blaster 16 Emulation |