MMS SASI MBR
Harddisk Partition Scheme by
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(extended)
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The "MMS Magic Sector" consists of a single 512-byte region at LBA 0 of the disk. For systems like Heathkit, where LBA 0 is executable boot code, the boot code must be structured around the magic sector data. For this purpose, space is reserved at offset 0 for a jump instruction. Typically, the pattern in those first bytes implies what system the image will boot on.

This same "magic sector" format is used for modern disks, which are not SASI. In such cases the fields highlighted in light blue below may be re-purposed by the respective device drivers.

In order to minimize TPA used, drivers are typically compiled for a minimal number of partitions. Partition information beyond the driver's capacity is ignored.

Offset	Length	Description/Notes
0	3	Boot entry point (0xc3 0x80 0x24 for Heathkit systems)
3	1	Drive/Controller code (Identifies controller/drive variations)
4	1	Command control byte (SASI cmd block byte 5)
5	8	Drive Characteristic data (XEBEC only, SASI cmd 0x0C)
13	6	Assign Drive Type command (DP-900 only)
19	1	Number of (primary) partitions, 1-9
20	3	Partition 0 offset, 128-byte records, big-endian
23	3	Partition 1 offset, 128-byte records, big-endian
26	3	Partition 2 offset, 128-byte records, big-endian
29	3	Partition 3 offset, 128-byte records, big-endian
32	3	Partition 4 offset, 128-byte records, big-endian
35	3	Partition 5 offset, 128-byte records, big-endian
38	3	Partition 6 offset, 128-byte records, big-endian
41	3	Partition 7 offset, 128-byte records, big-endian
44	3	Partition 8 offset, 128-byte records, big-endian
47	21	Partition 0 CP/M 2.2 DPB + MMS 2.2 mode bytes
68	21	Partition 1 CP/M 2.2 DPB + MMS 2.2 mode bytes
89	21	Partition 2 CP/M 2.2 DPB + MMS 2.2 mode bytes
110	21	Partition 3 CP/M 2.2 DPB + MMS 2.2 mode bytes
131	21	Partition 4 CP/M 2.2 DPB + MMS 2.2 mode bytes

Offset	Length	Description/Notes
152	21	Partition 5 CP/M 2.2 DPB + MMS 2.2 mode bytes
173	21	Partition 6 CP/M 2.2 DPB + MMS 2.2 mode bytes
194	21	Partition 7 CP/M 2.2 DPB + MMS 2.2 mode bytes
215	21	Partition 8 CP/M 2.2 DPB + MMS 2.2 mode bytes
236	1	Number of extended partitions, 0-7
237	3	Partition 9 offset, 128-byte records, big-endian
240	3	Partition 10 offset, 128-byte records, big-endian
243	3	Partition 11 offset, 128-byte records, big-endian
246	3	Partition 12 offset, 128-byte records, big-endian
249	3	Partition 13 offset, 128-byte records, big-endian
252	3	Partition 14 offset, 128-byte records, big-endian
255	3	Partition 15 offset, 128-byte records, big-endian
258	21	Partition 9 CP/M 2.2 DPB + MMS 2.2 mode bytes
279	21	Partition 10 CP/M 2.2 DPB + MMS 2.2 mode bytes
300	21	Partition 11 CP/M 2.2 DPB + MMS 2.2 mode bytes
321	21	Partition 12 CP/M 2.2 DPB + MMS 2.2 mode bytes
342	21	Partition 13 CP/M 2.2 DPB + MMS 2.2 mode bytes
363	21	Partition 14 CP/M 2.2 DPB + MMS 2.2 mode bytes
384	21	Partition 15 CP/M 2.2 DPB + MMS 2.2 mode bytes
405	107	Unused/Reserved

Drive/Controller code:
    0b000xxxxx = XEBEX (xxxxx is drive type)
            00000 = ST-506
            00001 = CM5619
            00010 = CM5412
            00011 = MS-10
            11111 = other
    0b001xxxxx = DP-900 (drive type?)
    0b01000000 = MRX 101D
    0b011xxxxx = IDE drive (xxxxx is drive type, TBD)
    0b100xxxxx = CF (IDE) card (xxxxx is capacity, 2^(x+20))
    0x101xxxxx = SDCard (xxxxx is capacity, 2^(x+20))
    0b11111111 = other/unknown

    "Capacity" is space required by partition tables, not physical capacity of underlying storage. i.e.
    it is the minimum size of storage media allowed/required to contain the partitions. For example,

tools for a segmenting scheme may use this capacity to determine how to place an image on physical media.

- Assign Drive Type command is only used if Drive/Controller type is SASI and not XEBEC.
- Legacy drivers use only ...
- If DPB SPT is 0, partition does not have a CP/M filesystem (e.g. is HDOS). TBD: Other parameters indicate specific usage?
- Mode bytes are 0b000000xx 0x80 0x00, where "xx" indicates physical sector size. "00" is 128-byte, "01" is 256, "10" is 512, "11" is 1024.
- Mode masks are 0xFF 0xFF 0xFF.