### 24.8.16 ATmega328P Boot Loader Parameters

In Table 24-13 through Table 24-15, the parameters used in the description of the self programming are given.

**Table 24-13.** Boot Size Configuration, ATmega328P

| BOOTSZ1 | BOOTSZ0 | Boot Size | Pages | Application Flash Section | Boot Loader Flash Section | End Application Section | Boot Reset Address (Start Boot Loader Section) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 256 words | 4 | 0x0000 - 0x3EFF | 0x3F00 - 0x3FFF | 0x3EFF | 0x3F00 |
| 1 | 0 | 512 words | 8 | 0x0000 - 0x3DFF | 0x3E00 - 0x3FFF | 0x3DFF | 0x3E00 |
| 0 | 1 | 1024 words | 16 | 0x0000 - 0x3BFF | 0x3C00 - 0x3FFF | 0x3BFF | 0x3C00 |
| 0 | 0 | 2048 words | 32 | 0x0000 - 0x37FF | 0x3800 - 0x3FFF | 0x37FF | 0x3800 |

Note: The different BOOTSZ Fuse configurations are shown in Figure 24-2 on page 280.

**Table 24-14.** Read-While-Write Limit, ATmega328P

| Section | Pages | Address |
|---|---|---|
| Read-While-Write section (RWW) | 224 | 0x0000 - 0x37FF |
| No Read-While-Write section (NRWW) | 32 | 0x3800 - 0x3FFF |

For details about these two section, see "NRWW – No Read-While-Write Section" on page 278 and "RWW – Read-While-Write Section" on page 278

**Table 24-15.** Explanation of Different Variables used in Figure 24-3 and the Mapping to the Z-pointer, ATmega328P

| Variable | | Corresponding Z-value[1] | Description |
|---|---|---|---|
| PCMSB | 13 | | Most significant bit in the Program Counter. (The Program Counter is 14 bits PC[13:0]) |
| PAGEMSB | 5 | | Most significant bit which is used to address the words within one page (64 words in a page requires 6 bits PC [5:0]) |
| ZPCMSB | | Z14 | Bit in Z-register that is mapped to PCMSB. Because Z0 is not used, the ZPCMSB equals PCMSB + 1. |
| ZPAGEMSB | | Z6 | Bit in Z-register that is mapped to PAGEMSB. Because Z0 is not used, the ZPAGEMSB equals PAGEMSB + 1. |
| PCPAGE | PC[13:6] | Z14:Z7 | Program counter page address: Page select, for page erase and page write |
| PCWORD | PC[5:0] | Z6:Z1 | Program counter word address: Word select, for filling temporary buffer (must be zero during page write operation) |

Note: 1. Z15: always ignored
Z0: should be zero for all SPM commands, byte select for the LPM instruction.
See "Addressing the Flash During Self-Programming" on page 282 for details about the use of Z-pointer during Self-Programming.