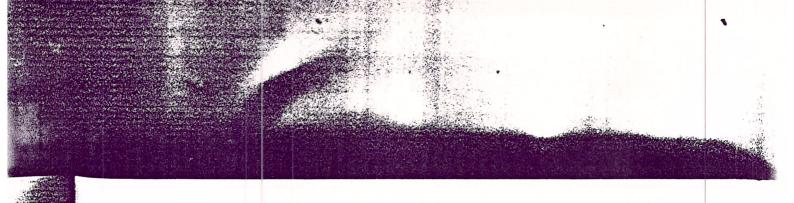
PROGRAMMER'S GUIDE TO THE IBM PC AND PS/2

Figure 13-2. continued

| Service | Interrupt | Register Input | Output | Notes |
|---|-----------|---|---|--|
| Enable/disable watchdog timer. | 15H | AH = C3H BX = timer count (01H-FFH) To enable: AL = 01H To disable: AL = 00H | CF = 0 if successful | PS/2 models 50, 60, 80 only. |
| Programmable Option Select (POS) interface. | 15H | AH = C4H To get POS register base address: AL = 00H To enable slot for POS setup: AL = 01H To enable an adapter: AL = 02H | If called with AL = 00H: AL = 00H DX = base POS register address If called with AL = 01H: AL = 01H BL = slot number If called with AL = 02H: AL = 02H | PS/2 models 50, 60, 80 only. |
| Keyboard Servi | ces | | | |
| Read next keystroke. | 16H | AH = 00H | AH = scan code AL = ASCII character code | |
| Report whether keystroke ready. | 16H | AH = 01H | ZF = 0 if keystroke available AH = scan code (if ZF = 0) AL = ASCII character code (if ZF = 0) | |
| Get shift status. | 16Н | AH = 02H | AL = shift status bits | Shift status bits: bit 7 = 1: Insert state active bit 6 = 1: Caps Lock active bit 5 = 1: Num Lock active bit 4 = 1: Scroll Lock active bit 3 = 1: Alt pressed bit 2 = 1: Ctrl pressed bit 1 = 1: left Shift pressed bit 0 = 1: right Shift pressed |

(continued)



Chapter 13: ROM BIOS Services Summary

Figure 13-2. continued

| | | Register | | |
|-------------------------------|-----------|--|--|--|
| Service | Interrupt | Input | Output | Notes |
| Set typematic rate and delay. | 16H | AH = 03H AL = 05H BL = typematic rate BH = delay value | None | PC/AT (BIOS dated 11/15/85 and later) and PS/2s only. See Chapter 11 for rate and values |
| Write to keyboard buffer. | 16H | AH = 05H CH = scan code CL = ASCII character code | AL = 00H (success); AL = 01H (keyboard buffer full) | PC/XT (BIOS dated 01/10/86 and later), PC/AT (BIOS dated 11/15/85 and later), and PS/2s only. |
| Extended keyboard read. | 16H | AH = 10H | AH = scan code AL = ASCII character code | PC/XT (BIOS dated 01/10/86 and later), PC/AT (BIOS dated 11/15/85 and later), and PS/2s only. |
| Extended keyboard status. | 16Н | AH = 11H | If no keystroke available: ZF = 1 If keystroke available: ZF = () AH = scan code AL = ASCII character code | PC/XT (BIOS dated 01/10/86 and later), PC/AT (BIOS dated 11/15/85 and later), and PS/2s only. |
| Extended shift status. | 16Н | AH = 12H | AL = shift status (as above) AH = extended shift status: bit 7: Sys Req is pressed bit 6: CapsLock is pressed bit 5: NumLock is pressed bit 4: ScrollLock is pressed bit 3: right Alt is pressed bit 2: right Ctrl is pressed | PC/XT (BIOS dated 01/10/86 and later), PC/AT (BIOS dated 11/15/85 and later), and PS/2s only. |

(continued)

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Figure 13-2. continued

| Service | | Register | | |
|-----------------------------------|-----------|--|--|---|
| | Interrupt | Input | Output | Notes |
| Extended shift status, continued. | | | bit 1: left Alt is pressed bit 0: left Ctrl is pressed | |
| Printer Services | | | | |
| Send 1 byte to printer. | 17H | AH = 00H AL = character DX = printer number | AH = success/ failure status flags | Status bit settings: bit 7 = 1: not busy bit 6 = 1: acknowledge bit 5 = 1: out of paper bit 4 = 1: selected bit 3 = 1: I/O error bit 2 = unused bit 1 = unused bit 0 = time out |
| Initialize printer. | 17H | AH = 01H DX = printer number | AH = status code | Status code bit settings as above. |
| Get printer status. | 17H | AH = 02H DX = printer number | AH = status code | Status code bit settings as above. |
| Miscellaneous Se | rvices | | | |
| Switch control to ROM BASIC. | 18H | None | N/A | No return, so no possible output. |
| Reboot computer. | 19H | None | N/A | No return, so no possible output. |
| Time-of-Day Ser | vices | | | |
| Read current clock count. | 1AH | AH = 00H | AL > 00H if time of day has passed midnight CX = tick count, high word DX = tick count, low word | Timer-tick frequency is about 18.2 ticks/second, or about 65,543 ticks/hour. |

(continued)