Security Bit Setting for ATMega Family of Processors (How to activate External Crystal/Ceramic Resonator.)

Some devices require a 'Flash Fuse Bits Setting' for the desired clock source setting to activate an external crystal. Default setting is an 'Internal RC Oscillator', which is normally 1MHz. Refer to the section on 'Clock Options' on the device sheet for the detailed bit setting specifications. If it seems that your AVR CPU is kind of slow, check the bit configuration.

How to change 'Flash Fuse Bits'.

1. Connect the board to the PC with a downloading cable.
2. Provide appropriate DC power to the board.
3. Run **Ponyprog2000**.
4. Select your device on the menu. For example, if you have an ATmega8535 Board, select 'Device → AVR Micro → ATmega8535'.
5. Select 'Command → Security and Configuration Bits…'.
6. Click on the **Read** button on the 'Configuration and Security bits' dialog box.
7. Check or uncheck the bits you want to change and then click on the **Write** button. Refer to the Pictures below to activate your external crystal.
8. Beware that **Unchecked box means 1** instead of 0 in the dialog box.

The following figures show how to set the bits on your PC board to enable your external crystals. Refer to the figure corresponding with your particular PC board's model. Your bit settings window in PonyProg2000 should look just as indicated to enable your board's external crystal.

Fig 1.0 ATmega128 or ATmega103

Fig 1.1 ATmega8 (MR-8)

Fig 1.2 ATmega8535 (MR-8535)

Fig 1.3 ATmega162 (MR-162)

Fig 1.4 ATmega16 (MR-16)

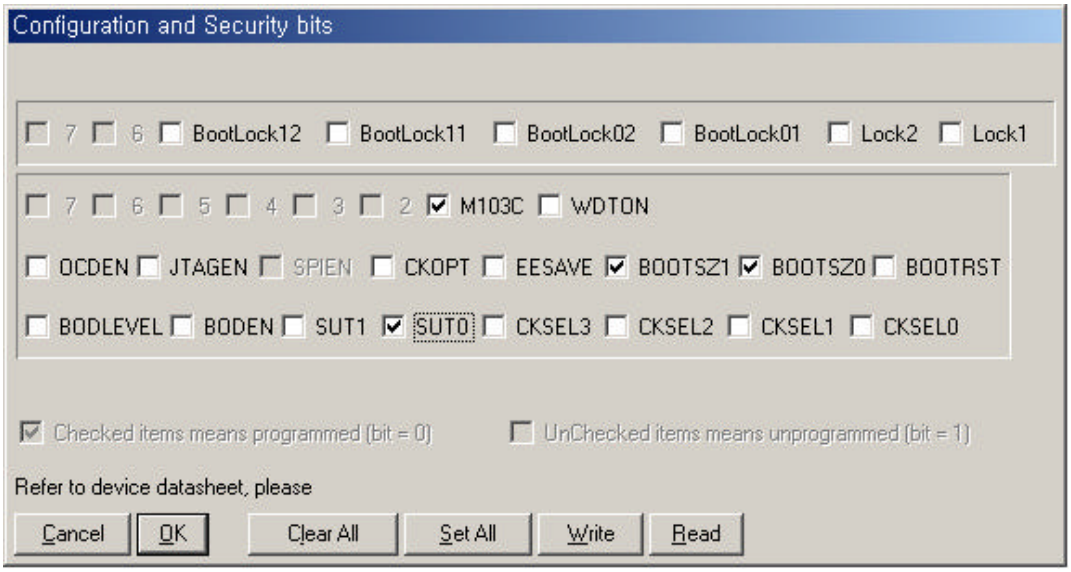

Fig 1.0 ATmega128 or ATmega103

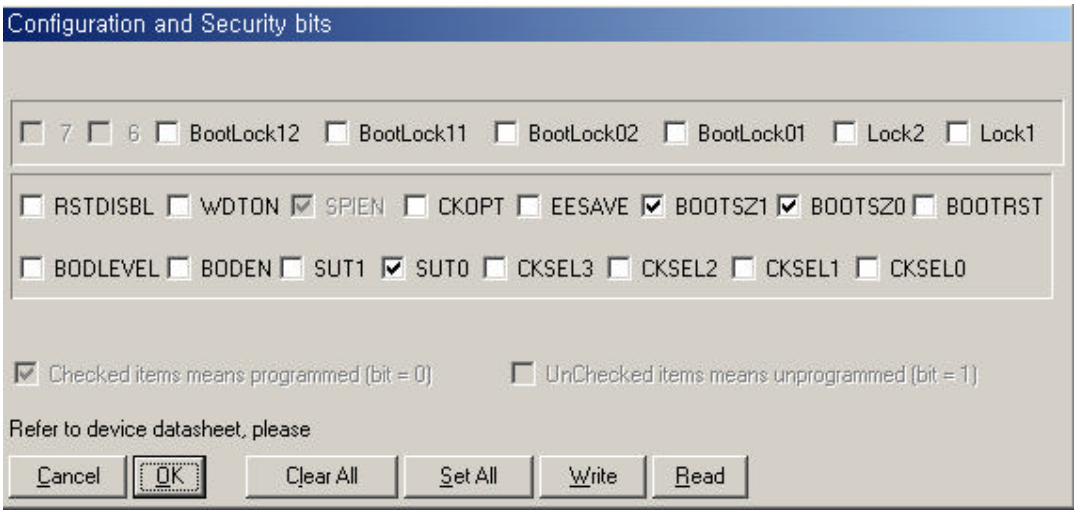

Fig 1.1 ATmega8 (MR-8)

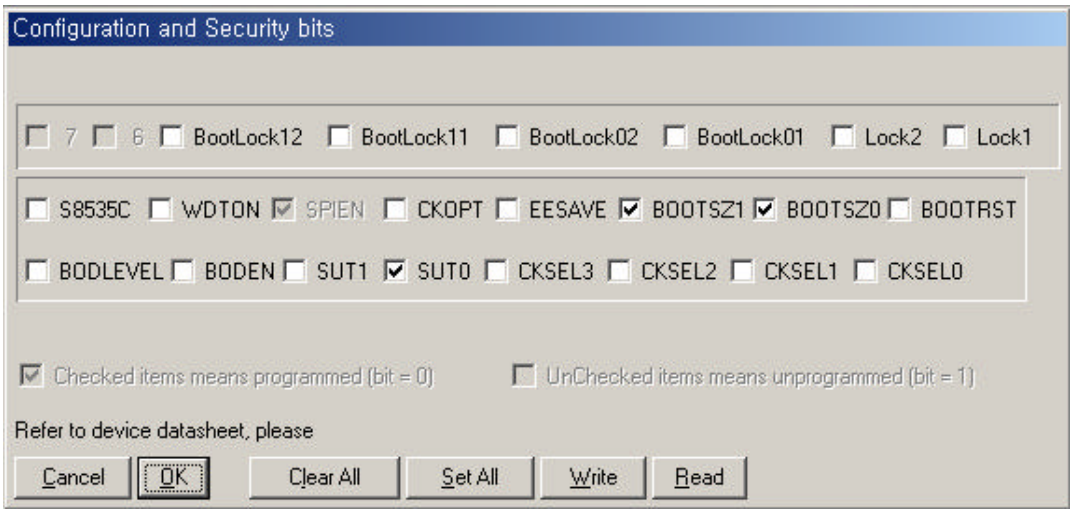

Fig 1.2 ATmega8535 (MR-8535)

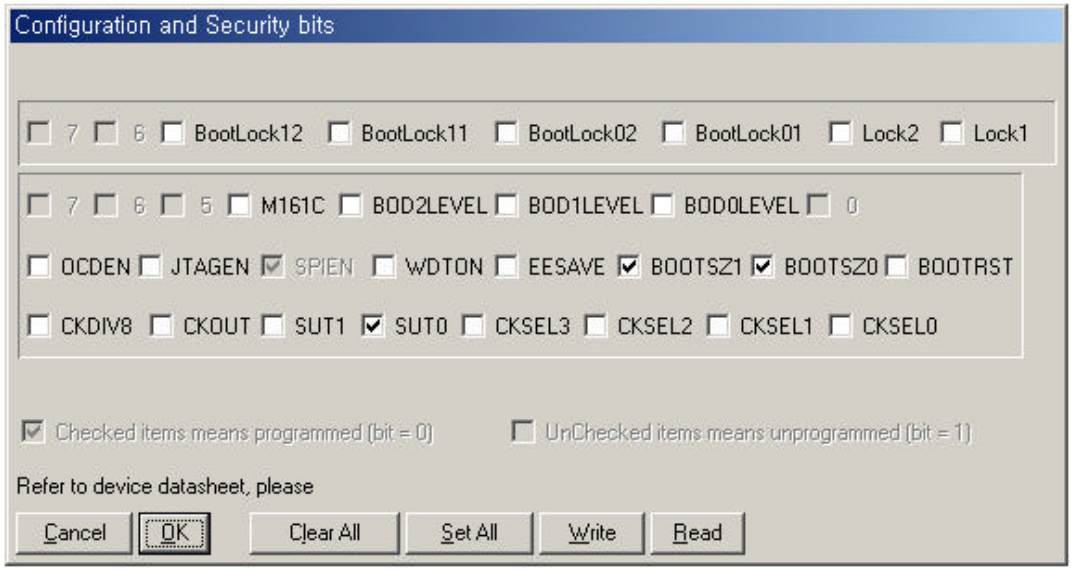

Fig 1.3 ATmega162 (MR-162)

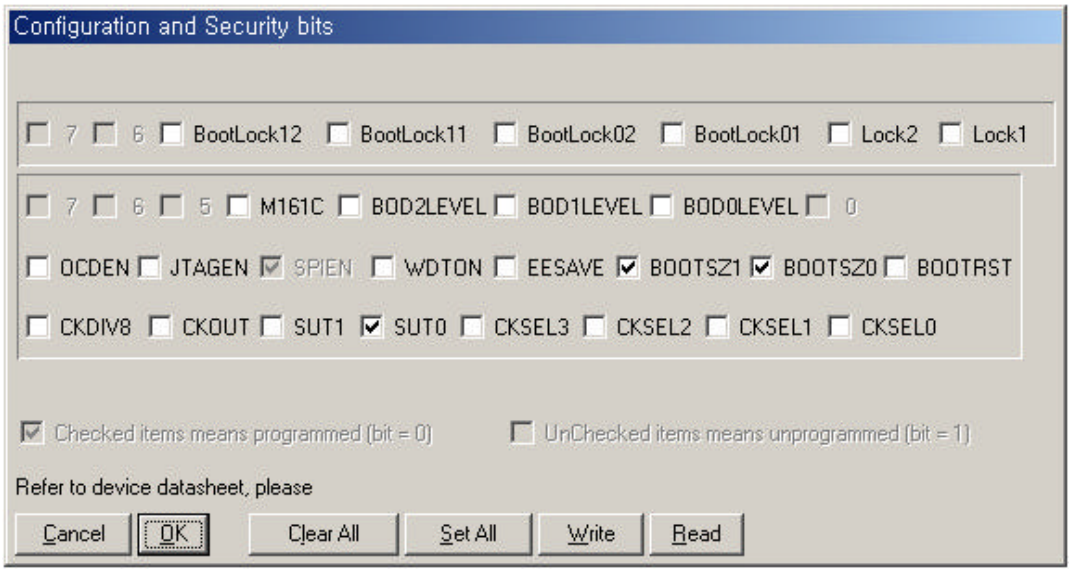

Fig 1.4 ATmega16 (MR-16)