

## SX 'A'-Style Microcontroller Update

Starting 6/7/99, Scenix Semiconductor released chips containing a new SX18/20/28AC silicon version. These chips have a date code that begins with the letter "A".

The main differences between the old and new chips are:

- Reduced programming time (48 seconds for a full part as opposed to 3.5 minutes)
- Extended operating voltage range (2.5 to 5.5 vdc)
- Enhanced oscillator design with programmable gain
- Internal 4MHz oscillator can be divided down to 4MHz, 1MHz, 128KHz and 32KHz only.

The "A"-style SX chips can be programmed with SX-Key Rev. E using the SXKey28L.exe software version 1.05 or above.

The following DEVICE directive modifications are required in source code:

- Use the SX28L setting in place of the discrete PINS28, PAGES4, BANKS8 device settings. Use the SX18L setting in place of the discrete PINS18, PAGES4, BANKS8 device settings. Additional pin, page and bank combinations are now implemented through settings which correspond to a comparable Microchip PIC device. See the SXKey28L.txt file for more information.
- Use the STACKX\_OPTIONX setting in place of the discrete STACKX, OPTIONX device settings.  
**NOTE: If code previously contained only a STACKX directive and not an OPTIONX directive, and a MOV !OPTION... command was used anywhere in the code, be sure that OPTION bits 7 and 6 are set high to avoid activating the RTCC/W swap or Interrupts. Ex: MOV !OPTION,#\$0F should be changed to MOV !OPTION,#\$CF.**
- Use BOR42, BOR26 or BOR22 in place of the BROWNOUT device setting. The three brownout settings correspond to a brownout below 4.2 volts, 2.6 volts and 2.2 volts, respectively.
- Unless the oscillator setting is OSCRC, replace the oscillator setting as indicated by the Recommended Setting below:

Crystal/Resonator/Oscillator Type:	Range of settings	Recommended setting
50 MHz (res/xtal)	OSCXT4 – OSCXTMAX	OSCXT5
20 MHz (res/xtal)	OSCXT3 – OSCXTMAX	OSCXT4
4 MHz (res/xtal)	OSCXT2 – OSCXT3	OSCXT3
Crystal-Oscillator Pack (connected to OSC1 with OSC2 disconnected)	OSCIN	OSCIN
Resistor/Capacitor clock	OSCRC	OSCRC
Internal 4 MHz oscillator	OSC4MHZ	OSC4MHZ
Internal 1 MHz oscillator	OSC1MHZ	OSC1MHZ
Internal 128 KHz oscillator	OSC128KHZ	OSC128KHZ
Internal 32KHz oscillator	OSC32KHZ	OSC32KHZ

The "A"-style SX chips can be connected to the 50, 20 and 4 MHz, Murata resonators Parallax distributes without any additional components on the oscillator pins (capacitors or resistors).