

Concurrent ISP Operations in JTAGProgrammer 1.4

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Our latest version of JTAGProgrammer (included in our Alliance Series and Foundation Series 1.4 software) includes a special option to speed ISP operations in XC9500 multi-part boundary-scan chains. This option is called concurrent ISP mode and is enabled under user control.

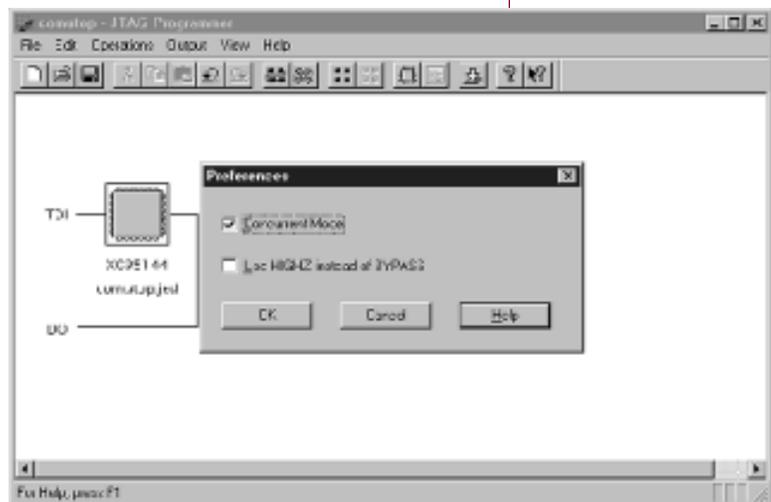
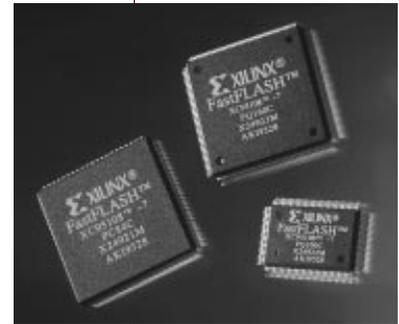
When performing ISP operations using the IEEE Std 1149.1 serial protocol (JTAG), a lot of time is spent waiting for the erase and program operations to complete. During this wait time, no other boundary-scan operations are allowed, and no stimulus is driven through the JTAG test access port (TAP). In sequential ISP mode, each device is programmed (or erased) one at a time. The associated programming (or erase) wait time is therefore additive, resulting in a relatively long programming (or erase) time. If a single XC95144 takes eight seconds to program, three identical parts programmed sequentially would take 24 seconds.

In concurrent ISP mode, the erase and programming data are set up for all devices together. Then the associated wait time elapses for all devices in unison. This means that the total execution time for an ISP opera-

tion on a boundary-scan chain of several devices will be close to that of the largest (longest to program) device on the boundary-scan chain (plus any overhead associated with applying the programming or erasing stimulus

to the TAP). So, if a single XC95144 takes 8 seconds to program, three XC95144's programmed concurrently would take about 12 seconds.

To enable this option in JTAGProgrammer, you should select "Preferences..." from the



"File" pull down menu. In the Preferences dialog select "Concurrent Mode" and press the OK button. (See screen capture.)

Concurrent mode will then be enabled automatically, when you select more than two devices in an arbitrarily sized boundary-scan chain for erase,

program, or verify operations.

Use concurrent mode when you have multiple XC9500 devices in a boundary-scan chain, to optimize the ISP operation execution time. ♦

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