
89V/LV51Rx2 bootcode enhancements

89V/LV51RD2 enhancements

In response to requests from customers, a new feature has been added to the bootcode of the 89LV51RD2 and 89V51RD2 devices. This feature allows the end user to bypass the normal default power-on boot sequence. A user may now force the device to enter ISP mode, force the device to run the user code, or specify that a specific port pin is to be used to determine if the device should immediately execute the user's code or should immediately enter the autobaud sequence of ISP mode. The user can specify the polarity of the port-pin used for this function. All cases bypass the 400ms delay and the test for SoftICE.

The factory default is to perform the 400ms timeout, test for SoftICE, etc. The part may be configured to use the port pin via ISP or with a parallel programmer (once supported by programmer vendors). ISP configuration is by an added ISP command ("SET ISP Entry Mode"):

:nn 0000 0C ss pp cc

where:

nn = number of bytes in record (1 or 2)

ss= set entry mode command

00 = disable port use (use factory defaults)

01 = run user code if port pin is high, else run ISP

02 = run user code if port pin is low, else run ISP

03 = run ISP code

04 = run USER code

pp = port pin bit address

cc= record checksum

EXAMPLES:

:01 0000 0C 00 F3 => use factory default power-on sequence

:02 0000 0C 01 A7 4A => Execute user code if P2.7 = 1, else execute ISP

:02 0000 0C 02 A7 49 => Execute user code if P2.7 = 0, else execute ISP

:01 0000 0C 03 F0=> run ISP code

:01 0000 0C 04 EF=> run user code

Please note that these effects take place after the next qualified reset (a reset that will invoke the bootloader). Entry mode command 04 (run user code) is dangerous. The user's application must have a means of invoking an IAP call (see below) to program one of the other ISP entry methods, otherwise, the application can not enter ISP mode again.

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IAP additions:

In addition an IAP function call has been provided for these services:

R1 = 04H

DPL = 00H = autobaud with WDT timeout

DPL = 01H = run user code if port pin high

DPL = 02H = run user code if port pin low

DPL = 03H = run ISP after reset

DPL = 04H = run user code after reset

DPH = port pin address, as needed