CODE DEVELOPMENT PROCEDURE

To develop code on a PIC16C52 device, a PIC16C54/JW part can be used. In order to use a PIC16C54/JW device, the following conditions should be followed:

1. A PIC16C54/JW has 512 words (0x1FF) of program memory, whereas a PIC16C52 has 384 bytes (0x17F) of program memory. The “extra” locations should be programmed as follows:
   a) Location 0x180 should be programmed with a “GOTO 0x00” instruction
   b) Locations 0x181 through 0x1FF should be programmed with a “GOTO 0x17F” instruction.

   See Figure 1 for details, and for a standard “skeleton” program, use the code in Example 1.

2. The PIC16C54/JW has a Watchdog Timer (WDT), while the PIC16C52 does not. Therefore, the WDT on the PIC16C54/JW must be disabled. The “__CONFIG" command used in Example 1 disables the WDT.

3. The PIC16C54/JW has four oscillator modes, while the PIC16C52 has two. Therefore, only RC and XT oscillator modes should be used. The “__CONFIG" command used in Example 1 takes care of programming the XT Oscillator mode, if required.

FIGURE 1: PIC16C54 PROGRAM MEMORY MAP AND STACK
EXAMPLE 1: CONVERSION CODE

;This test file "skeleton" depicts a standard format, which
;a user can use when programming a PIC16C54-JW device to
;"emulate" a PIC16C52, during code development
;
list p=16c54, f=inhx8m

;include the header file from the correct directory, please
;verify the correct dos path for the header file "P16C5X.INC"
include "c:\pictools\mpasm\P16C5X.INC"

;Define the configuration bits. Please note that the PIC16C52
;does not support the WDT, so _WDT_OFF should be selected.
;Also only RC and XT Oscillator modes are supported on the PIC16C52.
;Code protect is supported on the PIC16C52.

__CONFIG  _WDT_OFF & _XT_OSC      ;for XT mode only
__CONFIG  _WDT_OFF                ;for RC mode

; org     0x00
Start
;User’s code should reside from 0x00 to 0x17F

; org     0x17f   ;reset vector for PIC16C52

; A "goto Start" instruction is recommended to be programmed at the reset
;vector, however the user may elect to program any code at this
;location.
;
*************************************************************************
;The code below MUST be programmed as indicated, in order for a
;PIC16C54-JW to work as a PIC16C52.

org     0x180   ; program location not present in PIC16C52
goto    0x00    ; roll over to location 0

; fill remaining locations with goto reset vector for PIC16C52

FILL  (GOTO 0x17F), (0x1FF - $ + 1)

*************************************************************************

end
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- The PICmicro family meets the specifications contained in the Microchip Data Sheet.
- Microchip believes that its family of PICmicro microcontrollers is one of the most secure products of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the PICmicro microcontroller in a manner outside the operating specifications contained in the data sheet. The person doing so may be engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as “unbreakable”.
- Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our product.

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