

Programming the Dragon12 boards using Pemicro's BDM-Multilink cable

Pemicro's BDM-Multilink cable can be used to program the Flash EEPROM of the MC9S12DP256B/C. This is a much faster alternative to programming the chip through a second Dragon12 board running *DBug-12*. Unfortunately, this is not always as straight forward as would be desirable. The Pemicro Flash programming software *PROG12Z* (Figure 1) appears to be a little flaky at times. This document lists the steps that are required to download a program using PROG12Z.

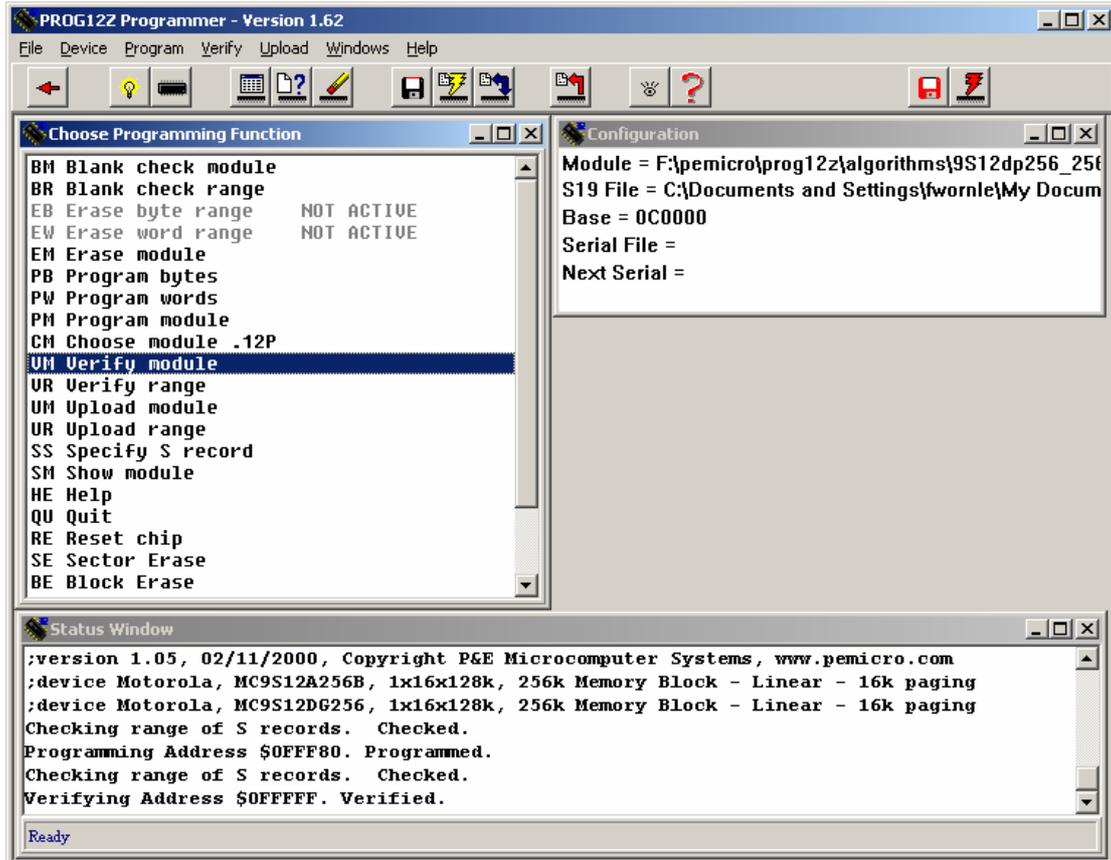


Figure 1 Pemicro's Flash programming software PROG12Z

Connect the 6-wire P&E cable to the JTAG port 'BDM IN' of the Dragon-12. Switch on the power of the Dragon-12 board – the red stripe should be near pin 1 and the LED on the BDM module should be lit. If the LED stays dark, the BDM cable might have been plugged in the wrong way round.

Start PROG12Z and select 'Autodetect Communications Speed' (Figure 2). Click OK.

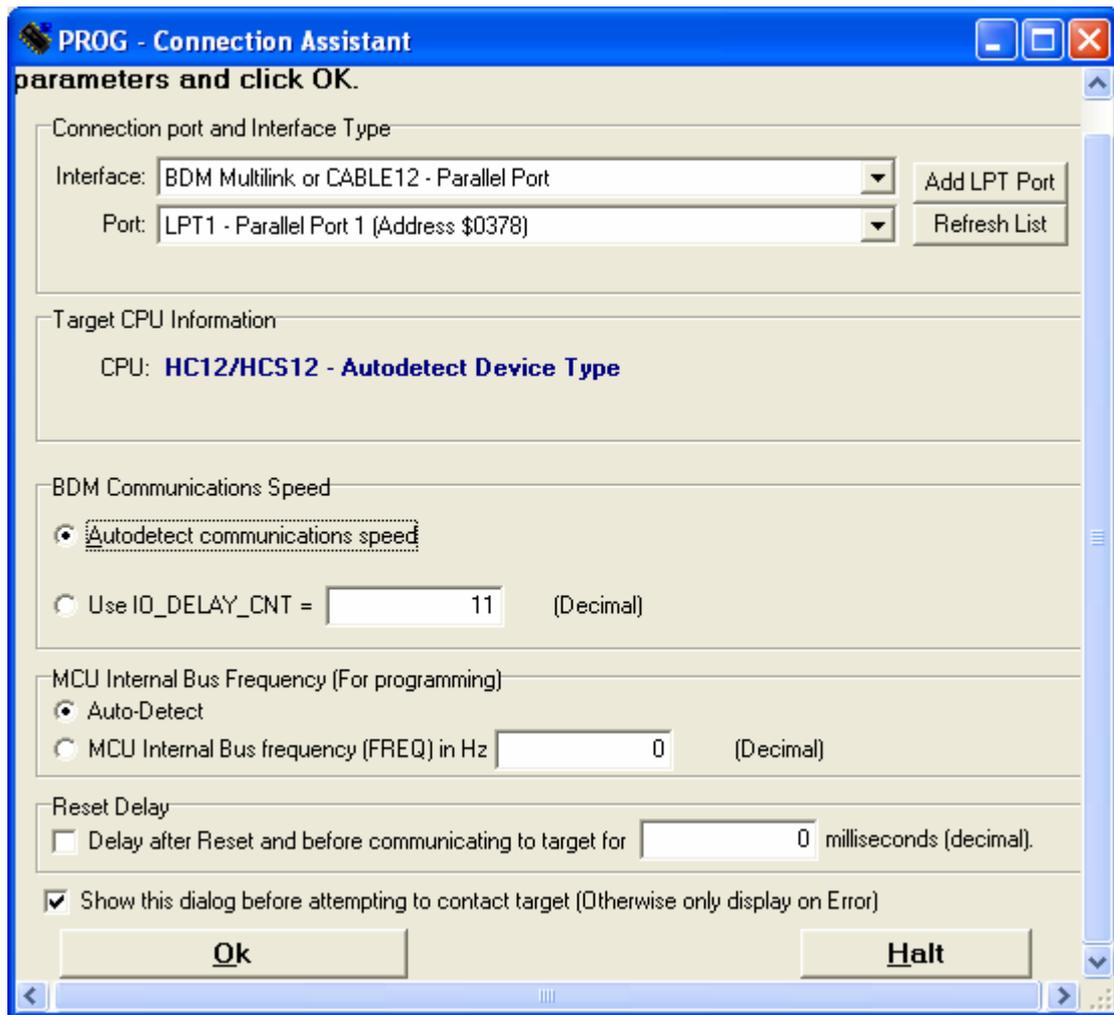


Figure 2 Selecting the communication speed

Choose the required programming algorithm. For the MC9S12DP256B/C on the Dragon-12 board, you should select '9s12dp256_256k.12P' (Figure 3).

Erase the Flash module by clicking on the 'erase' button (yellow pencil with rubber eraser).

Specify the S-Record to be downloaded by clicking on the 'Select S-Record' button (small black floppy disc). Select the file 'bin/S12SerMon2r0.bdm.s19'. This file is generated by the script 'make_s19_bdm.bat' which should be called upon compilation of the S12SerMon2r0 project.

Program the chip by clicking on the 'Programming' button (yellow lightning bolt).

Verify the contents of the freshly programmed Flash by clicking on the 'Verify' button (button next to the Programming button). If everything has worked, you should be presented with the screen shown in Figure 5.

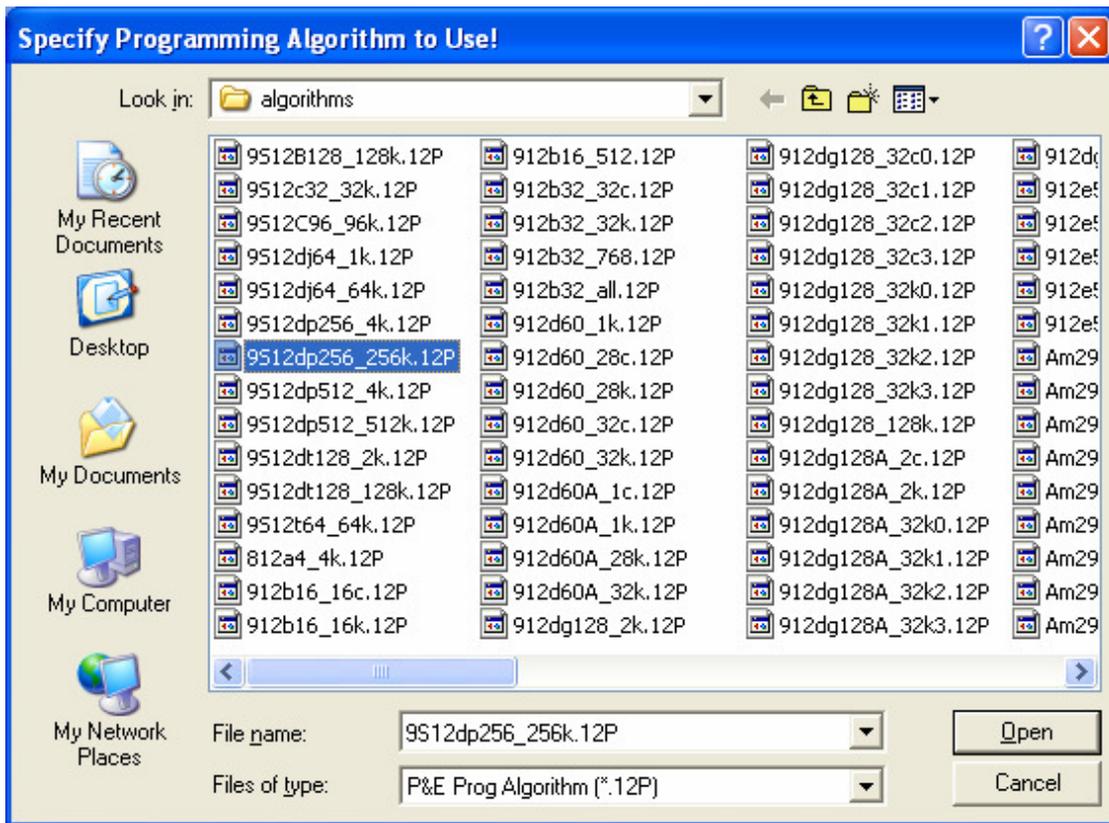


Figure 3 Selecting the programming algorithm

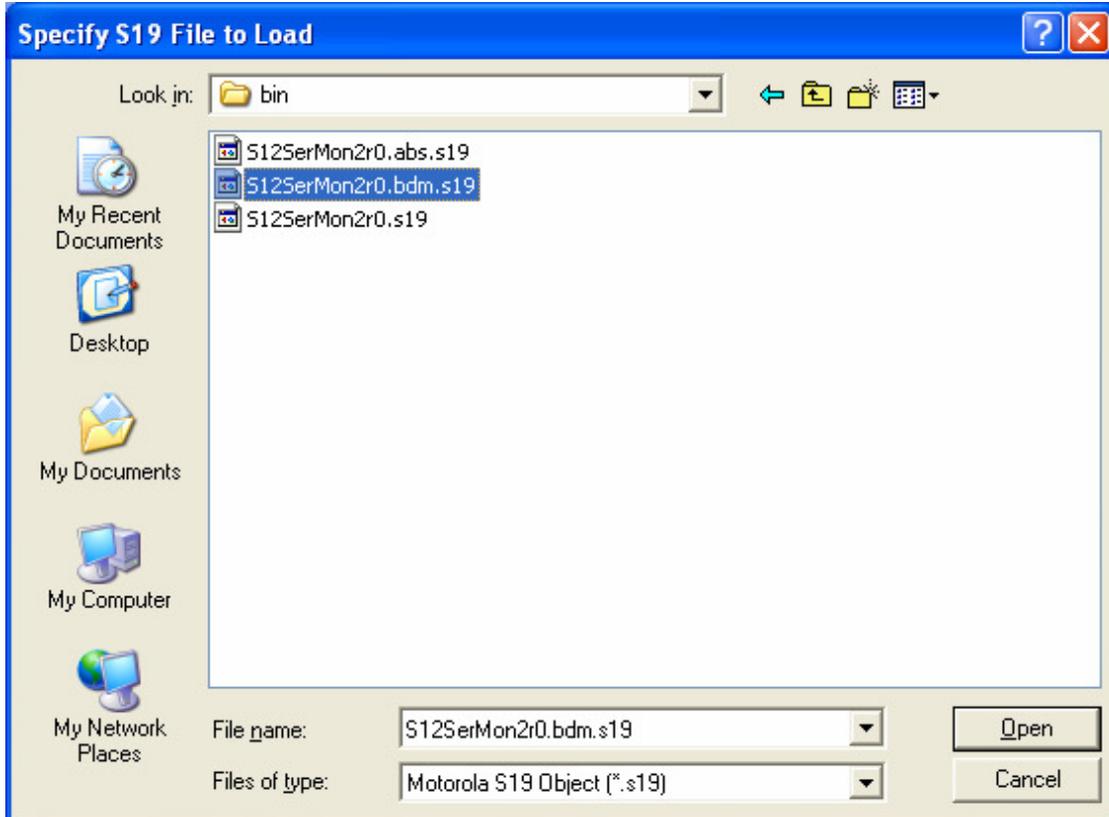


Figure 4 Specifying the S-Record to be downloaded

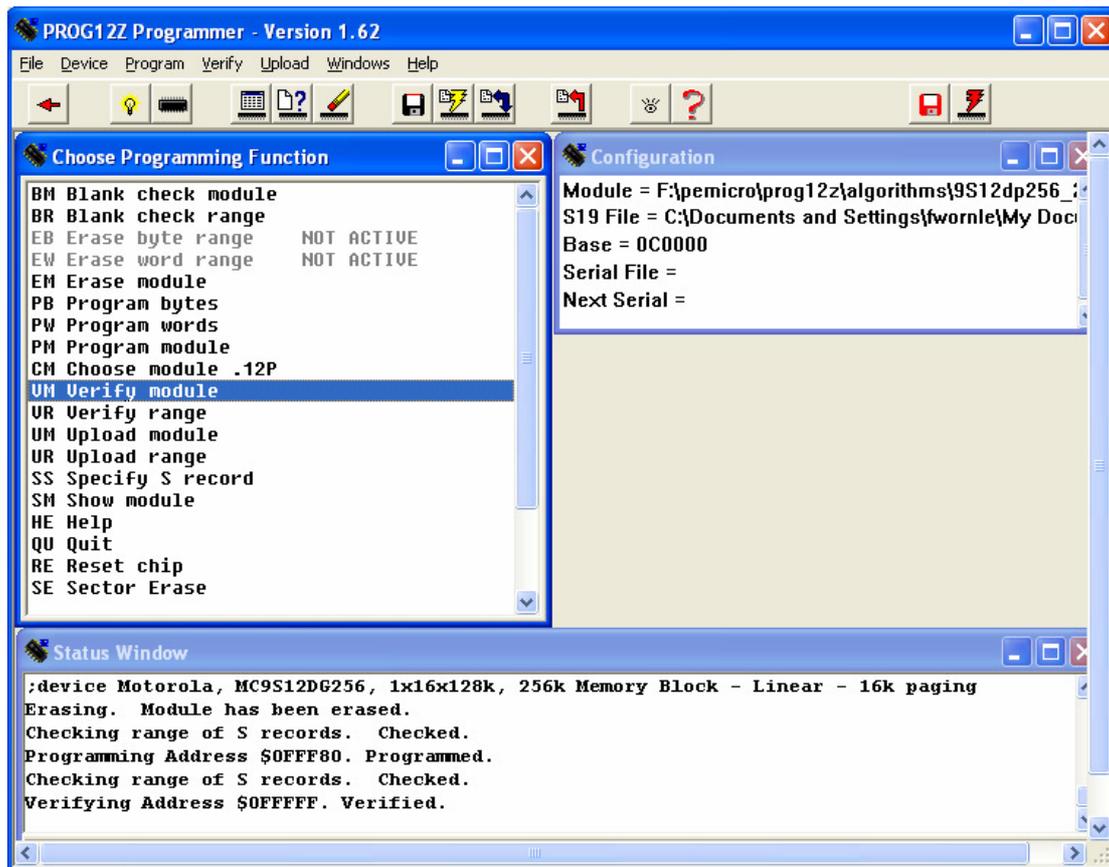


Figure 5 Programming and verifying

If anything goes wrong, the entire procedure has to be repeated. This can be initiated by clicking on the 'Reset' button (small yellow light bulb). Upon resetting the BDM interface, the programming algorithm has to be chosen again. This can be done by clicking on the 'Choose Module' button (symbol is the top view of a 'chip', next to the Reset button).

Once reprogrammed, the Dragon-12 is ready to be used with CodeWarrior. Exit from PROG12Z and remove the BDM cable. To test if the monitor program is running properly, activate both switches of SW7 (the 'BOOTLOAD' LED should be lit). Pressing the reset button of the Dragon-12 should display a short message on the LCD display.