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*Using the ST10 Flasher Tool* <span style="float:right">*Application Note 157*</span>
*with the Keil MCB167-NET Board*

Several ST Microelectronics ST10 devices offer on-chip Flash ROM. This on-chip Flash ROM can be programmed with ST10 **Flasher** tool available at www.st.com. A complete overview of most available Flash utilities is provided at: http://www.keil.com/flash/utilities.htm. This application note shows you how program an ST10-F168 with the ST10 **Flasher** on a Keil MCB167-NET Board.

## MCB167-NET Board Modification for 12V Programming Voltage

The ST10-F168 requires 12V Flash programming voltage on the pin $V_{pp}$. The MCB167-NET board does not provide this 12V programming voltage. However, you can make a small hardware modification.

The simplest way to get the 12V programming voltage is to connect pin 1 of the voltage regulator to the jumper VPP that connects to the pin $V_{pp}$ on the ST10-F168. In addition you need to supply the MCB167-NET board with a stable 12V DC power supply. **Important: make sure that the jumper VPP is not set.**
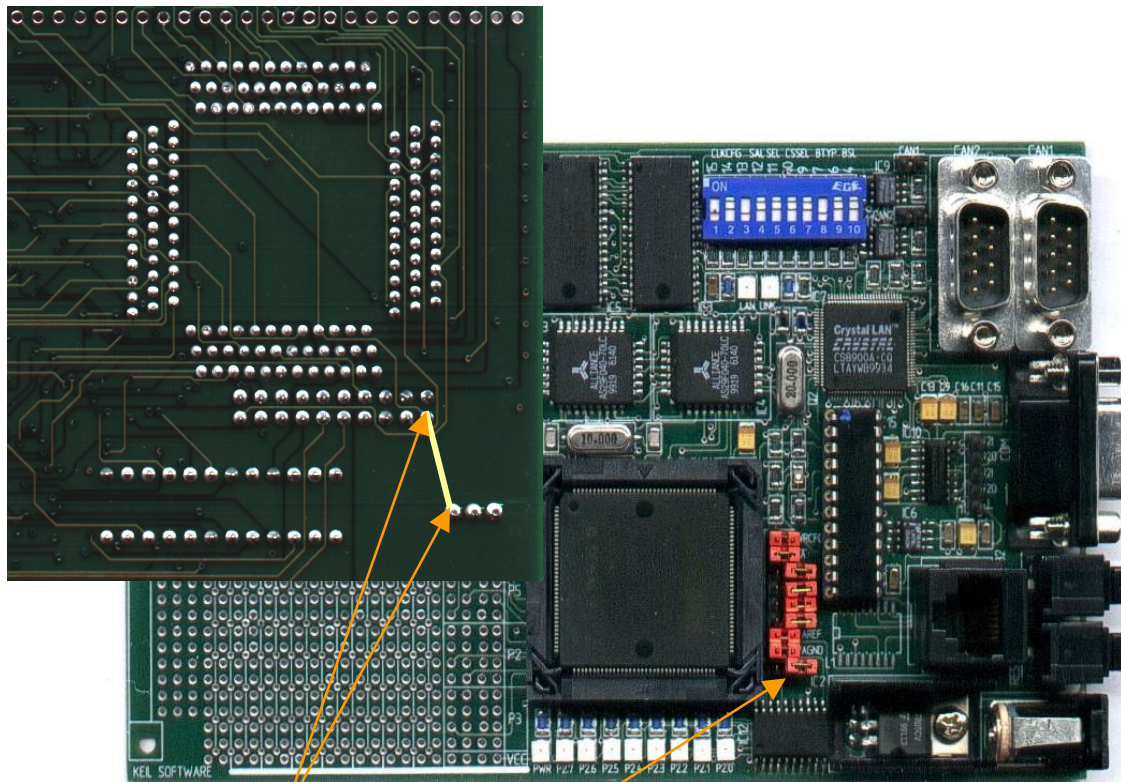


1. Connect these 2 pins with a cable
2. Make sure that this jumper (VPP) is open
3. Connect the board to a stabilized wall plug supplying 12V.

## Change the START167.A66 File

In addition to the above hardware configuration it is important that you set the bit ROMEN in the **START167.A66** file. This application note comes with the **BLINKY** example that contains already a correctly configured **START167.A66** file. You can build this BLINKY example with **BLINKY.UV2** project file within the µVision2 development environment.

## Load the Application with the ST10 Flasher Tool

Once the example project is created, you may program it into the Flash ROM as described below:

- Connect the **MCB167 NET** board with a standard serial cable to your PC.

- Set the DIP-switch **BSL**, to the position ON and execute the tool.

- The **ST10 Flasher tool** displays the following dialog page. In case of problems consult the ST10 Flasher tool user's manual that lists recommended baud rates and troubleshooting.
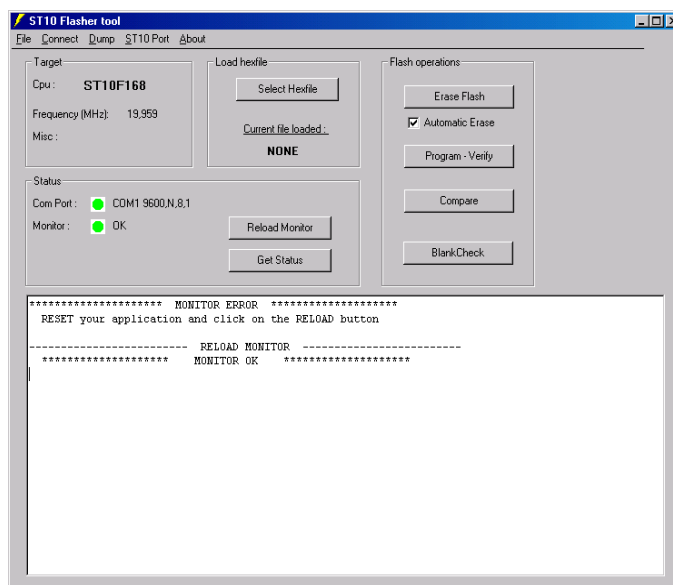


- Use **Select Hexfile** and specify the BLINKY.H86 file that has been generated by µVision2 with the BLINKY.UV2 project.

## Execute Programs in On-Chip Flash ROM on the MCB167-NET Board

The default setting of the MCB167-NET board uses the bootstrap loader to download applications to off-chip RAM. This is required for debugging with the Monitor-166. To execute programs that are stored in on-chip Flash ROM you need to change this configuration to:

1. Open the jumper EA.
2. Disable bootstrap mode by setting the DIP-switch **BSL** (4) to OFF.