# JUMA TX136/500 Boot loader

Close any terminal or other program which can reserve the PC com port. Start the ingenia dsPIC bootloader in your PC and follow the instructions.

Switch OFF the JUMA TX136/500
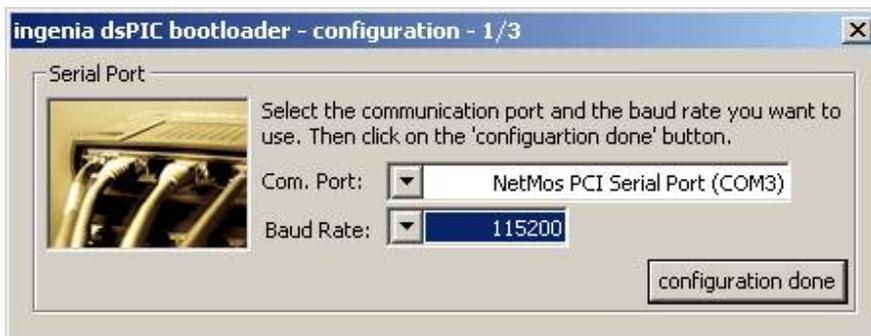
Configure the PC com port if needed. Normally the default baud rate of 115200 works fine but you can select a lower speed if needed. When ready with the com settings, klick configuration done button.
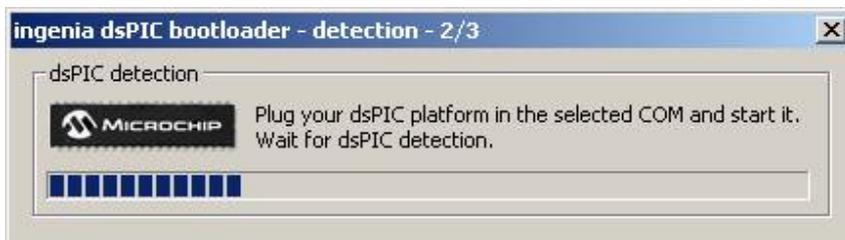

Now the PC software is waiting the JUMA-TX136/500 Flash Writer to be started. Start up (power on) JUMA-TX136/500 while **keeping OPER button pressed**.
You should see the text below in the JUMA TX136/500 LCD display.
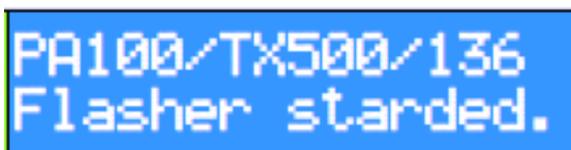

JUMA TX136/500 Flash writer started
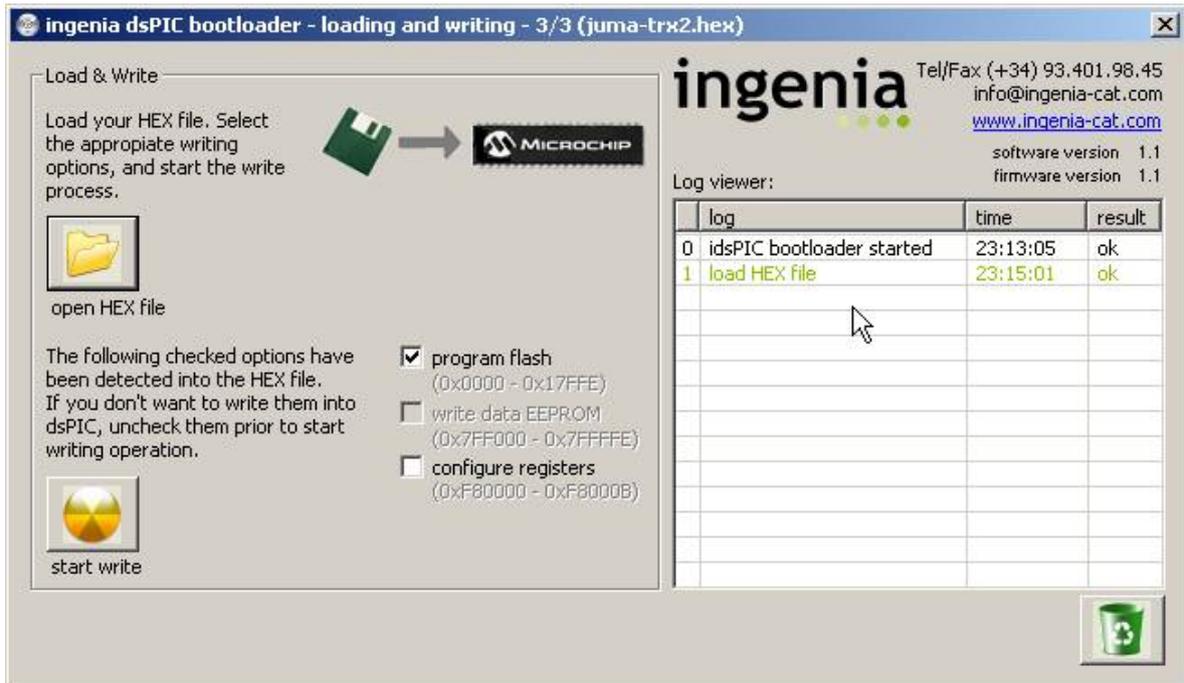
Successful communication between the PC software and JUMA-TX136/500 brings the above screen visible.

Click the open HEX file button and select the hex file from your hard disk (**juma-tx500.hex**).
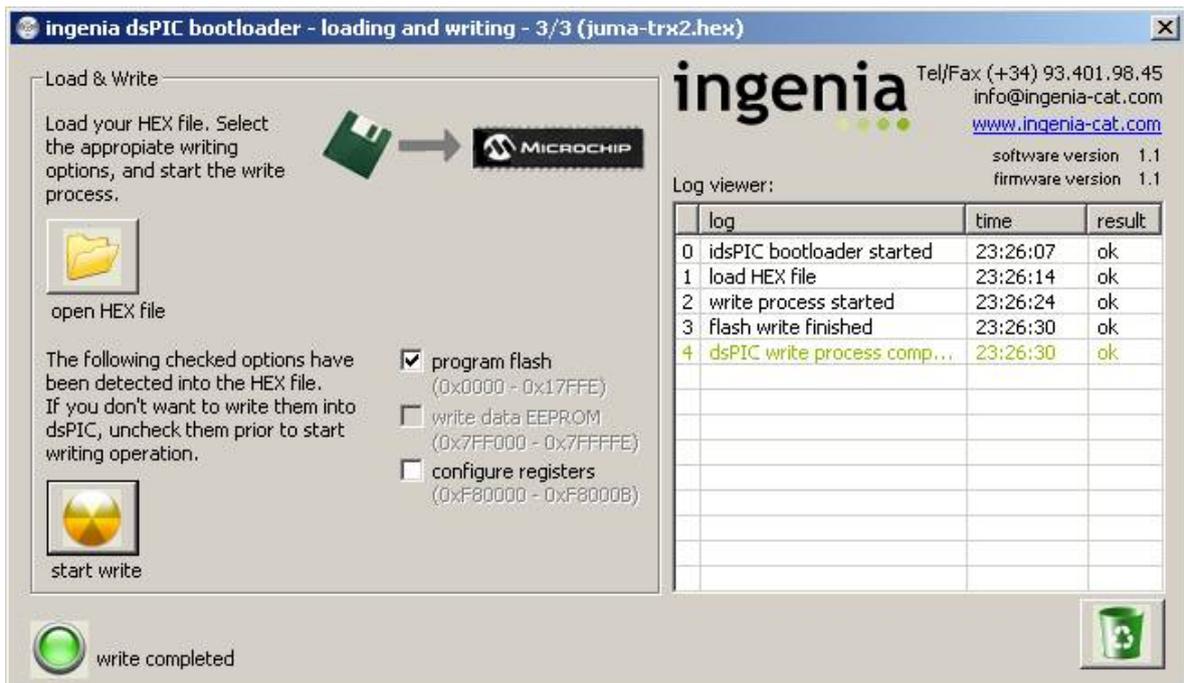
After selection of the hex file, the start write button appears. Click start write button to start the flash programming. The programming should take about 5...15 seconds, depending on the baudrate.

Note! After successful programming you have to disconnect power from the power supply because the TX136/500 green PWR button does not work in this state.
Finally switch on the JUMA TX136/500 and test the new firmware. Check also the calibration parameters in the Service mode.