

## ICload User Guide

### I. GENERAL DESCRIPTION

The program *ICload* has been developed, to upload software to In-Circuit's hardware modules which are equipped with a bootloader. Following modules are supported:

- ICmega8
- ICmega8 USB
- ICradio Mini 2.4G
- ICradio Module 2.4G
- ICradio Stick 2.4G

*ICload* automatically detects all supported hardware. It can upload .hex- files to the flash memory as well as .eep- files to the EEPROM.

### II. DETECTION OF CONNECTED HARDWARE

In the upper right corner of the GUI is a window that shows all detected hardware modules. By clicking the **Scan** button the program searches for hooked up modules. Please ensure that all modules are in the bootloader mode, by resetting the devices (see section IV). Additionally, it must be guaranteed that no other applications like Hyperterminal or AVRProg are using the desired COM port. Right after the modules show up in the list they can be selected and programmed.

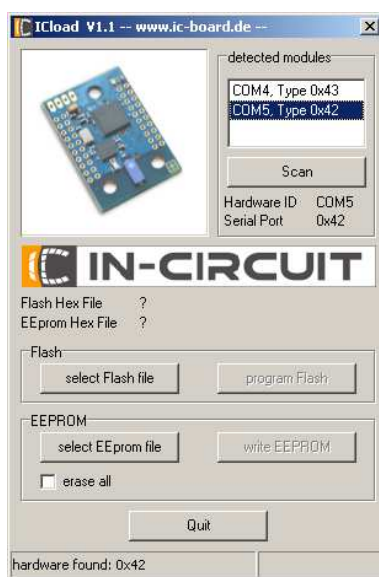


Figure 1. *ICload User Interface*

### III. PROGRAMMING THE CONTROLLERS

After a module has been selected, it can be programmed with a .hex- file resp. an .eep- file. First hit the **select Flash file** or **select EEPROM file** button. If the file works for the selected module it can be uploaded by hitting the buttons **write Flash** resp. **write EEPROM**. Please notice that you can only perform one action at a time. To do another update of the device, the bootloader has to be restarted by resetting the device. By selecting the checkbox **erase all** the entire EEPROM will be erased before programmed.

### IV. SPEZIAL CHARACTERIES OF THE MODULES

#### A. The ICradio Mini 2.4G

Since the ICradio Mini 2.4G is smallest radio the In-Circuit GmbH provides, there are no buttons or USB-UART transceiver on it. To communicate with the ICradio Mini 2.4G we suggest the USB-UART-Bridge, which also provides power to the module. The module owns some test pads, which can be used to trigger the bootloader. If the connection between TP6 and TP7 has low impedance during start-up, the bootloader starts. This can be achieved by just touching those pads with the bare finger (figure 2). LED2 lights up when the bootloader has started (the right LED in the picture). The module is now

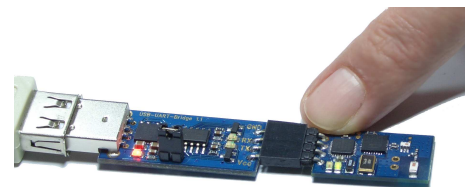


Figure 2. *Starting the bootloader*

ready to be updated by the ICload program. The ICradio Mini 2.4G automatically starts the application right after the upload. To upload another file, the bootloader has to be restarted as described earlier.

#### B. The ICradio Module 2.4G

The ICradio Module 2.4G is not equipped with a USB transceiver, since it has been developed for engineering applications in combination with the *ICradio ADB*. Alternatively, the communication can be established by using In-Circuit's *USB-UART-Bridge* or a standard RS232 transceiver (e.g. MAX232).

The Controller automatically starts in bootloader mode

after a reset. By hitting the **SCAN** button the module gets detected and is ready to get programmed. Please notice that a reset is necessary before another update can be done. To start the uploaded application, a character has to be sent to the module via UART.

### *C. The ICradio Stick 2.4G*

The ICradio Stick 2.4G owns a USB transceiver. Before you can use the USB stick the correct driver for the CP2102 has to be installed, which can be downloaded at [www.ic-board.de](http://www.ic-board.de).

The controller automatically starts in bootloader mode. By clicking **SCAN**, the ICradio Stick 2.4 G gets detected and can be programmed. Please notice that a reset is necessary before another update can be done. To start the uploaded application, a character has to be sent to the Stick via UART.

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