# Getting started with JBug11 and MicroCore11

Jbug11 is a Windows-based PCBug11 replacement. Jbug11 permits the editing of memory and registers as well as debugging and disassembly of an onboard program. Before you can start using Jbug11 with your MicroCore11, you need to configure Jbug11 for use with a M68HC11E0. To do this you need to go to the Settings⇒Settings and then go to the **Memory Map** tab. Then under **Common chip defaults** select **E0.** Depending on if you have external RAM or not the RAM settings will vary. Below is an example of what your settings may look like.

.
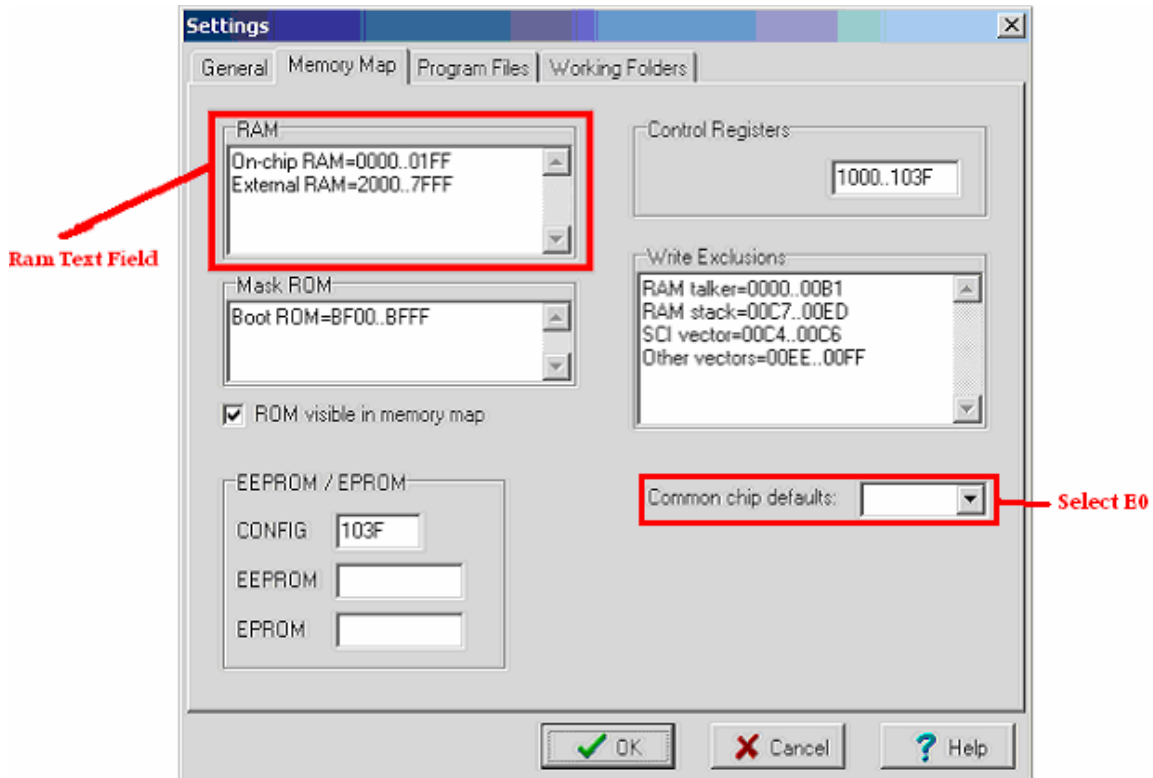
Use the following lookup table for the value you must type into the RAM text field. The On-Chip RAM is the same for all of the MicroCore11 family.

MicroCore11 8K	External RAM=1040..7FFF External RAM=0200..0FFF	32K External RAM 8K External EEPROM
MicroCore11 32K	External RAM=1040..7FFF External RAM=0200..0FFF	32K External RAM 32K External EEPROM

Now that the memory map has been setup for the target board there are some settings on the **General** tab that need to be changed. Because of the external memory you need to check the **Alter HPRIO on reboot?** and set **Byte to send** to "E5". Also, you need to uncheck **Allow local commands only**, check Allow writing **To CONFIG**, and don't forget to change the **Port** to the correct com port connect to your MicroCore11.
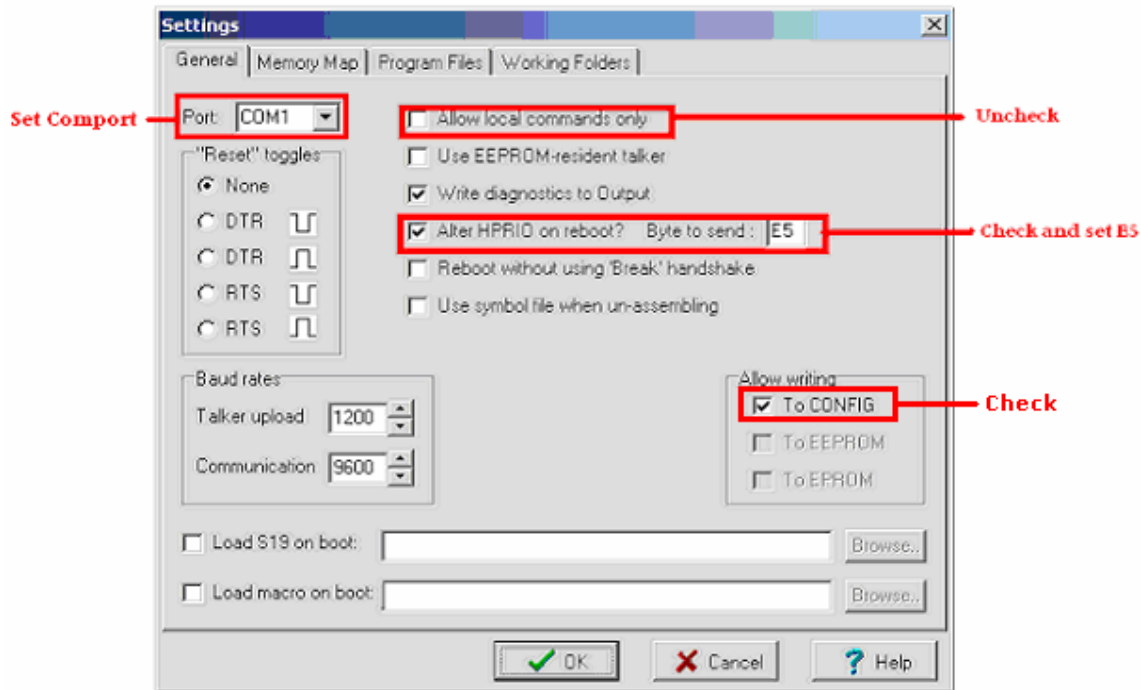
Next thing to do is to set the Talker and the Map file. To do this you need to go to the **Program Files** tab. Depending on if you have a turbo board or not the talker file you choose will vary. For the 8MHz version of MicroCore11(standard) you need to pick the JBug_Talk_E.BOO. For the turbo board you need to pick JBug_Talk_E(9.8304).BOO also if you are using a turbo board you need to go back to the **General** tab and change the baud rate, ***Talker Upload = 9600**, **Communication = 38400* Only for turbo boards!** The Map file is the same for both boards and is called JBug_Talk_A.map

> *Take note that external EEPROM cannot be programmed/modified with Jbug11 or Pcbug11, but you can use the MD command to display its content.*

To restore the Config register back to factory settings for an 68HC11E0

Once you are done setting up JBug11 connect your MicroCore-11 to the com port and move SW2 to BOOT. After resetting the board, you should see a blue progress bar at the bottom of the JBug11 window as the talker is loaded into RAM. It is a 2 step process to edit the Config register. First step is to turn off the write protection on the Config register by setting Bprot to 0F. Type

```
R bprot=0F
```

Then to set the Config register type

R config=0C

Misc information about JBug11

To change any register use the R command and its name. For example, to turn on the LED on PA6 use **R porta=40.**

The manual for JBug11 is very complete and helpful. There is also a discussion group about JBug11.   Visit http://freespace.virgin.net/john.beatty/Jbug11_main.html for more.