

Flashing Firmware onto a MS2000 or a RM2000 controller

To be able to Reprogram the ASIs MS2000 or RM2000 controller with new Firmware over USB/Serial with ASI Console , the controller must first have a firmware called "Bootloader". All Controller leave the factory with a Bootloader already in them, however if the Bootloader is outdated or corrupted then the controller must be Flashed with a new Bootloader.

To Flash the controller with new Bootloader, you will need the following.

1. A Silicon Labs USB Debug Adapter. Available thru many online vendors like Digikey.com, Mouser.com and even Amazon.com.



Figure 1: Silicon Labs USB Debug Adapter

Manufacturer	Silicon Labs
Manufacturer's Part Number	DEBUGADPTR1-USB
Digikey Part Number	336-1182-ND
Mouser Part Number	634-DEBUGADPTR1-USB
Amazon ASIN	B0110TKELK

2. An App called Silicon Labs Flash Programming Utilities, available for free from silabs.com .
<http://tinyurl.com/silabs-flash>

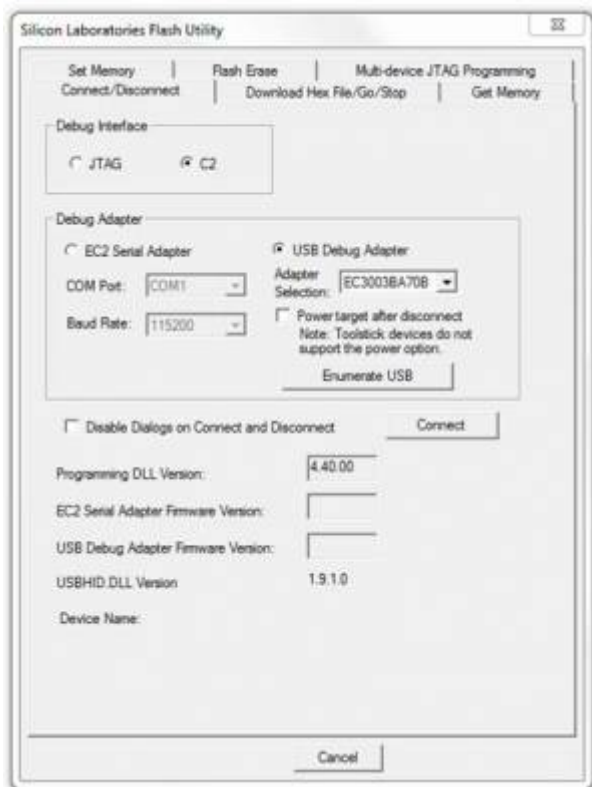


Figure 2: Silicon Labs Flash Programmer

3. And finally, the Bootloader firmware itself called “Whizkid_BOOTLOADER_v1.051”. It can be requested from support@asiimaging.com or downloaded from the following URL <http://tinyurl.com/asi-bootloader>

Steps to Flash the Controller with Bootloader

1. Connect Silicon Lab's USB Debug Adapter to your PC. Windows will automatically locate the drivers for it.
2. The USB Debug Adapter's 10-pin Connector connects to the 10-pin Header connector inside the controllers. To access this connector , the controller's lid must be removed. NOTE: Make sure the controller is turned OFF before you open the LID.
3. A MS2000 controller's lid can be opened by removing 6 screws, locations shown in the pictures below



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4. A Rack mount or RM2000 controller can be opened by removing 9 lid screws. Location shown in

picture below.



5. The USB Debug Adapter connects to the JTAG Connector on the Controller's PCB. Its located on the Bottom Right of the controller's PCB. Location shown in picture below.

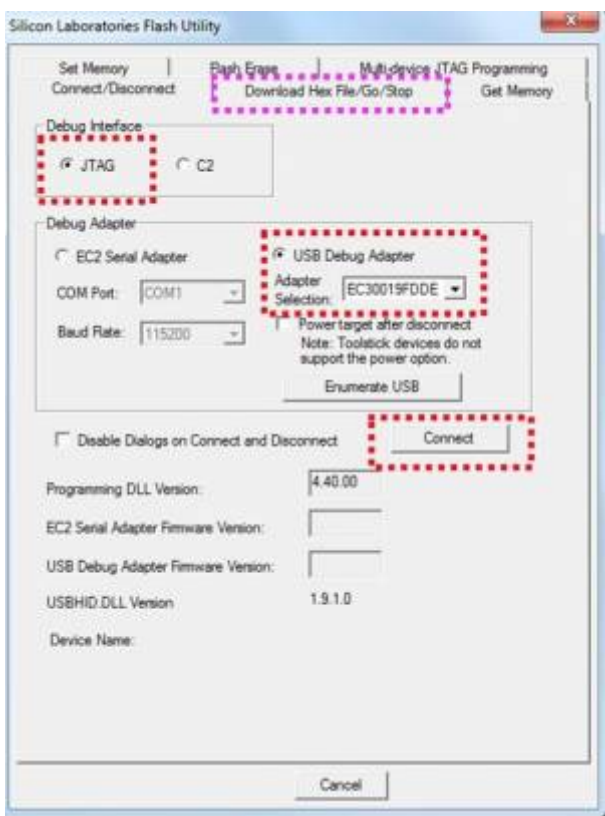


6. Connect USB Debug Adapter to this connector. If your system has a CRISP or Autofocus module, the addon board may be covering this connector. Feel free to move the addon board by unscrewing it.





7. Now Turn on the Controller, and start the “Flash Programming Utility”.

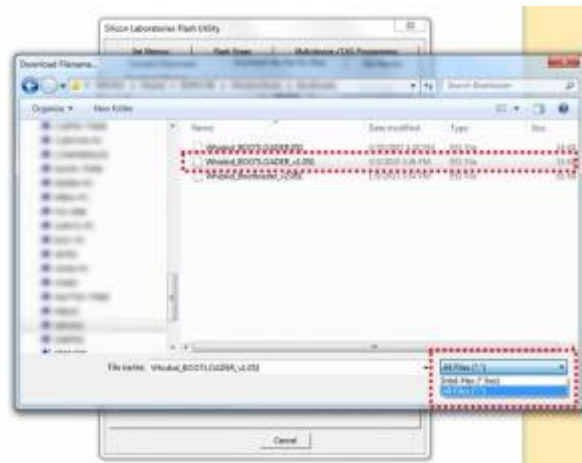


8. Pick Debug Interface as JTAG , Debug Adapter as USB Debug Adapter. The Drop down box Adapter Selection should already be populated with your USB Debug Adapter's ID. Press “CONNECT” when ready.

9. If the connection was unsuccessful , make sure the controller is turned ON and your connected to the correct connector.

10. After the Connection is successful, go to the “Download Hex File/Go/Stop tab”.

11. Use the Browse button, and point the App to the location of the Bootloader. You may have to change the Filter to “All Files” or the file may not show.



- 12. Check "Erase all Code Space" and when ready Hit Download.
- 13. When download is complete, Close the "Flash Utility " App and restart the controller.
- 14. Your Controller is now ready to accept firmware over Serial/USB. Disconnect the USB Debug Adapter, and close the controller lid.
- 15. Instruction on how to program the controller over Serial/USB can be found at <http://www.asiimaging.com/index.php/support/downloads/asi-console/>

[tech note, ms2000](#)

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