APPENDIX B:
Loading New Software into the Micro908

This appendix overviews a way the user can load an updated software program into the Micro908, as provided on the project's Internet web site.

BACKGROUND
Increasingly today, microcontrolled projects have an ability to be "field updated" with new capabilities and software updates made available by the designer. So instead of needing to send your instrument back for re-programming to get these new features, you can now simply download the program update from the Internet and send it to the Micro908 and the instrument automatically updates its internal memory with the new program. What a great way to keep your project completely up to date with the latest features!

PC REQUIREMENTS
- Windows 95, Windows 98, Windows 2000, and Windows XP.
- Works with computers ranging from 33 MHz Intel 486 processors up to 2.4 GHz P4 processors.
- An available RS-232 serial port. (USB-to-RS232 adaptors may work for those computers having only USB-based serial ports.)
- A dumb terminal emulator program, such as TeraTerm (provided on the Micro908 Resource CDROM.)

USAGE
1. Download the latest Micro908 software from the project website located at http://www.amqrp.org/kits/micro908 . Save the S19 file in a known location on your PC (e.g., your desktop folder.) The S19 file is the file with the ".s19" extension to its filename. This is a text representation of the binary image to be loaded onto the Micro908.

2. Connect your Micro908 to the PC using a standard, straight-through male-female DB9-type serial cable. (Do not use a null modem cable that swaps pins 2 and 3 from end-to-end.)

3. Start up the TeraTerm program on your PC. If not already set up, configure the communications as 9600 8N1, no flow control (in the **Setup ➔ Serial Port** menu) , and be certain to have the line delay set to at least "20ms/line". Make sure that you have TeraTerm configured to be using the active serial port in your PC. Be certain that no other program has control of the serial port – e.g., if your Palm HotSync program is running, as evidenced by its icon in the system tray in the lower right of the screen, you must quit that program by right-clicking the icon and select "exit".)

4. Issue the **Update Software** command on the Micro908, located as an option under the CONFIG menu. See the debug monitor program called "HCmon" display its sign-on message.

5. Type **C** to clear out memory. See the C character echoed to the screen and the HCmon> prompt displayed again.

6. Type **L** to load new program. See message "…waiting …"

7. Pull down **the File ➔ Send File** menu.

8. Navigate to where you saved the *.s19 file

9. Once in the folder that contains AA_908v4-0.s19 file, select that file and click the Open button. (Be careful to only load S19 files! If you mistakenly select any other file extension, it is highly likely that you'll mess up the bootstrap loader program.)

10. See line after line of ASCII data displayed in short one-second bursts. This will continue for about 2 minutes until the entire program has been sent to the Micro908 and flashed into its memory. DO NOT INTERRUPT THIS PROCESS!! When it is complete, the **HCmon >** command prompt will be displayed again.

11. Disconnect the serial cable and restart the Micro908 (i.e., turn the power off and on again) to start the newly-loaded program. You will observe the new version number presented in the sign-on display.