HR16B EPROM Editor

v1.0.0.0

System Requirements

- Windows XP/7 32/64 bit – Should also work with Vista and Windows 8, but has not been tested.
- .NET Framework 4.0 – You probably already have this courtesy of Windows update. If the installation process detects that it's missing, you'll be taken to the Microsoft download page to install it.

Introduction

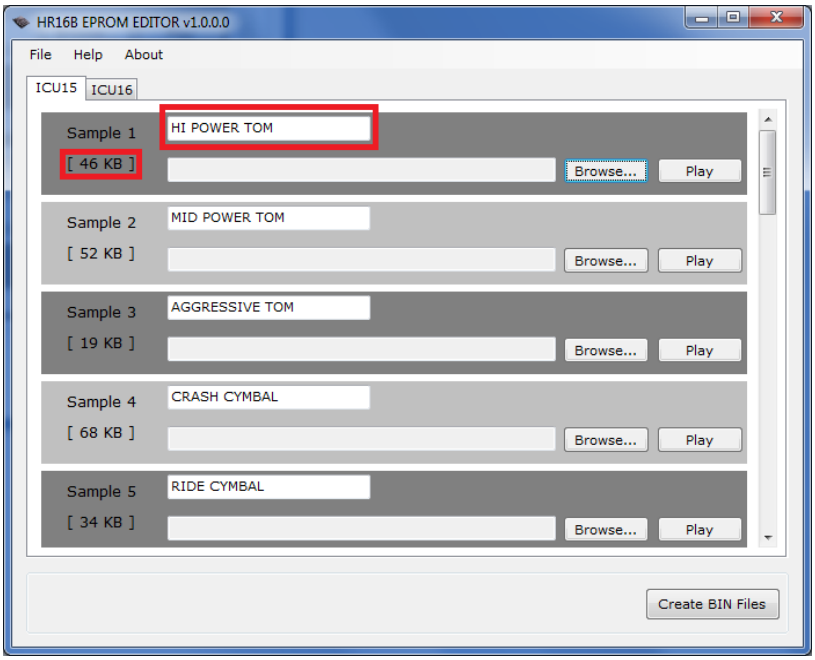
The HR16B EPROM Editor allows you too easily create custom EPROM images for the HR-16 and HR-16B drum machines. Both the samples and sample names can be customized, using the HR-16B 2.0 OS. In addition to this software, you will need the following to create your own EPROM's:

- EPROM Programmer
- 2 27C4001 32 Pin EPROM's, for the sample data.
- 1 27256 28 Pin EPROM, for the OS.

eBay is a great source for these items.

Using the Application

This software will create three BIN files, two for the sample data, and one for the OS. These files will need to be programmed on to your EPROM's. Refer to your EPROM Programmer documentation for this process.



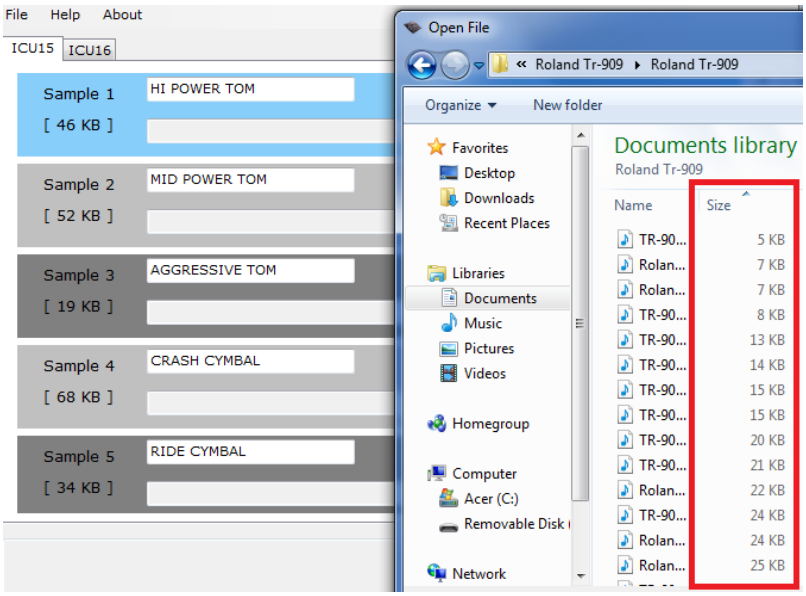
The interface contains a tab for both sample EPROM's, ICU15 and ICU16. Within each tab you'll find a form for each individual sample located within that EPROM. Expanding the interface will expand the tabs, allowing you to view more samples at once.

The **Sample Name** field, located along the top of each form, is the name of the current sample stored in the HR-16B OS. You can change this value to any name you wish, up to 16 characters in length.

The **Sample Size,** located in brackets, is the amount of space allotted on the EPROM for the current sample.

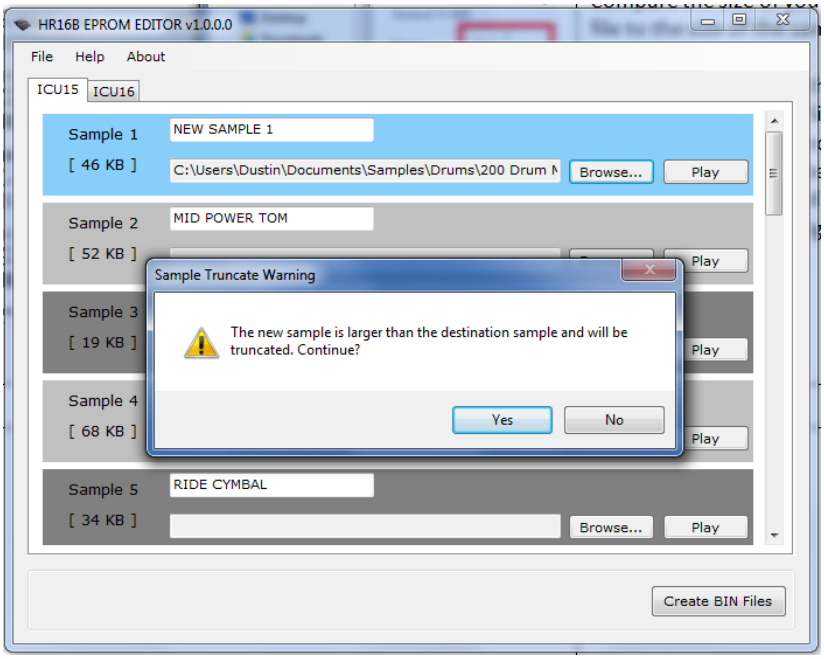
Clicking the **Browse** button will launch the Windows Open File Dialog.

The sample location will highlight in blue, indicating that it has been selected.



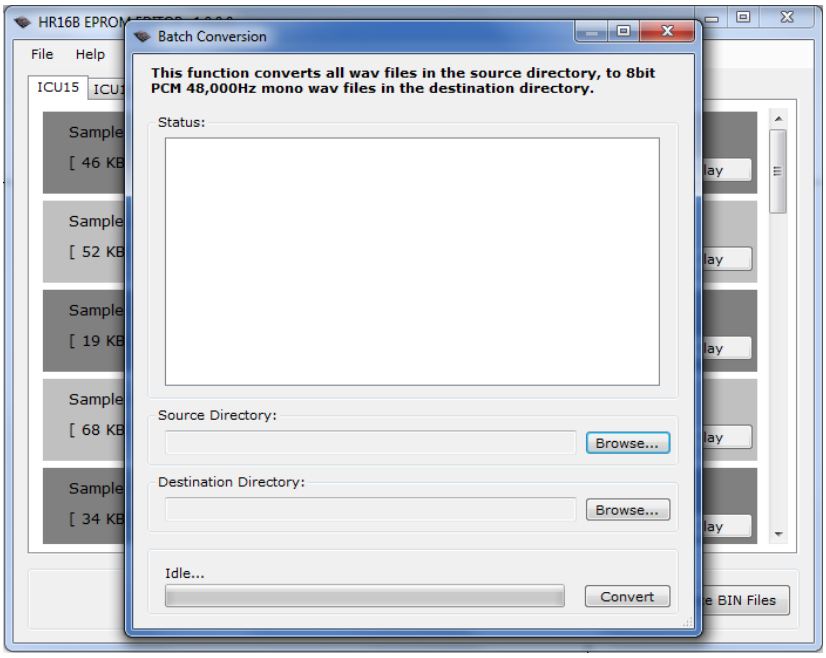
Browse to a directory containing wav files. If not already visible, right click on the Open File Dialog column headers, and select the **Size** column. Compare the size of your new wav file to the size of the sample location.

The sample format for the HR-16 / HR-16B is 48,000Hz, 8bit, Signed, Mono, PCM. If your new samples are not in this format, their data will be converted in memory when compiled into a BIN file. Your original sample file will not be altered.



If the new wav file you select is larger than the size of the sample location, you will receive a warning. If you choose to proceed, the length of your new sample will be truncated down to the length of the sample location.

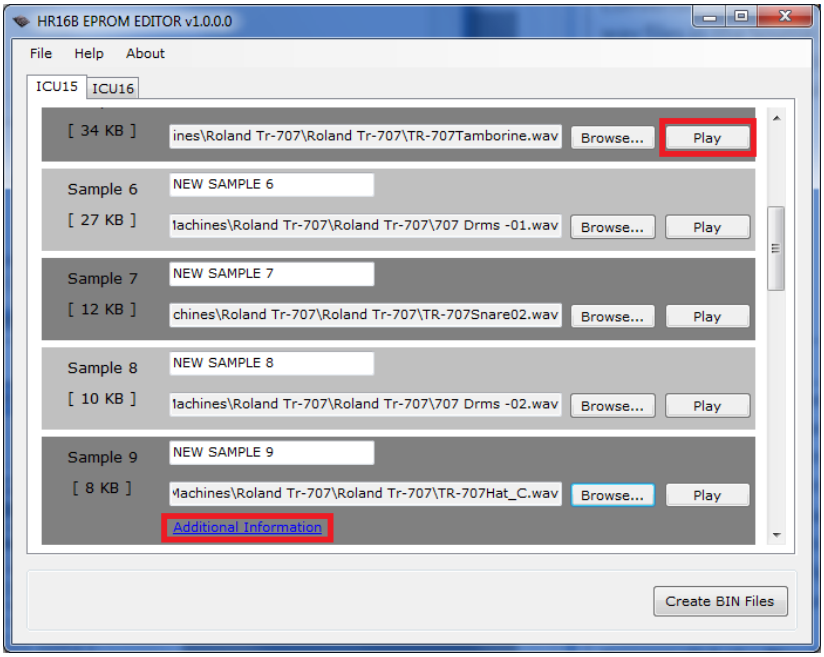
In order to more accurately compare the size of your new samples, to the size of the sample locations, it is recommended that you convert your wav files to the HR-16 / HR-16B accepted format before beginning the creation process. You can do this using the **Batch Conversion** option, described in the next section.



Click the **File** menu, and then **Batch Conversion**, to launch the Batch Conversion Dialog.

This will allow you to convert all wav files in a single directory to the format accepted by the HR-16 / HR-16B.

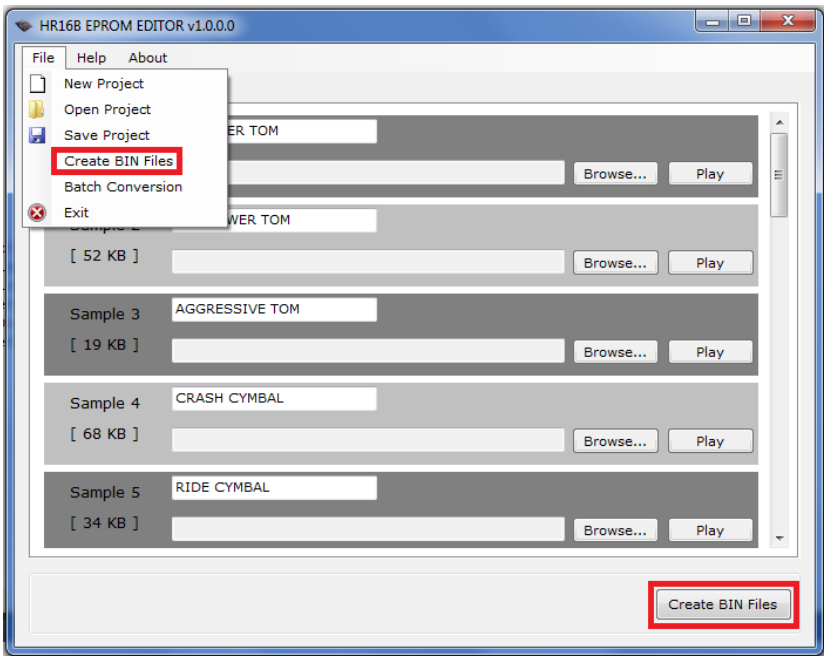
Converted copies will be made of all wav files in the Source Directory, and placed in the Destination Directory. Your original sample files will not be altered.



After your files have been converted, you are ready to start selecting your new samples. Go through each tab, changing as many samples and sample names as you wish. Sample locations left blank will be filled in with the original data when you compile your BIN files.

You can click the **Play** button to audition your new samples as you select them.

Some samples come with special circumstances, for example the data for ICU15 Sample 9, is referenced for two different samples. When special circumstances apply, click the **Additional Information** link for more details.

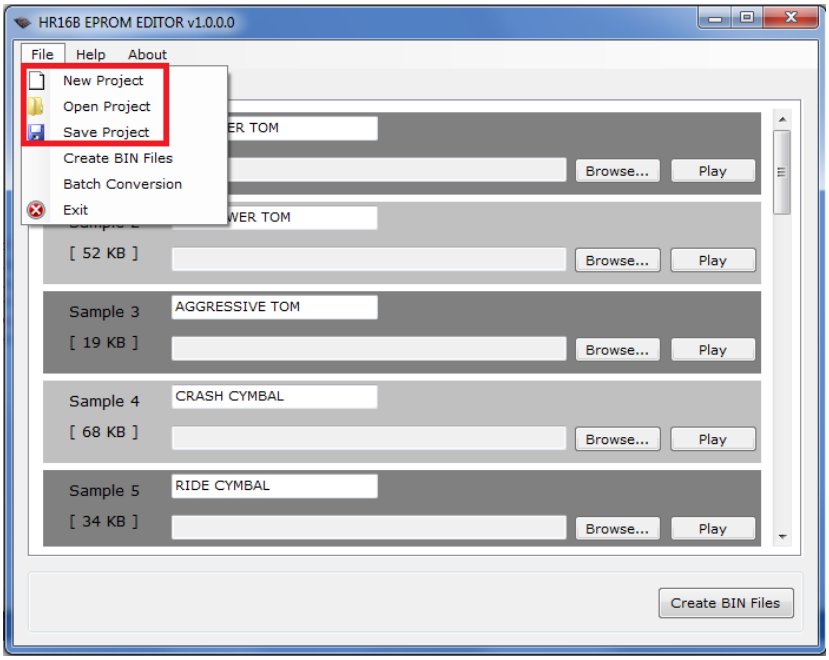


Once you've assigned your new samples and sample names, you are ready to create your BIN files. This can be done by clicking the **File** menu, and then **Create BIN Files,** or by clicking the **Create BIN Files** button located in the bottom right corner of the main window.

The Windows Save File Dialog will be displayed. Three separate BIN files will be created, but you'll only need to specify one file name and save location.

The BIN files will be created as:

- FileName_ICU15.BIN
- FileName_ICU16.BIN
- FileName_OS.BIN



You can save and re-open your project at a later time, using the **Save Project** and **Open Project** menu items. Project files are saved as .ROM files. Your samples must remain in the same locations that they were at, when you created the project. If any files have been moved, you will be prompted when re-opening the project.

The **New Project** menu item will clear the current project, resetting all sample names and data back to their factory default values.

Custom EPROM Installation

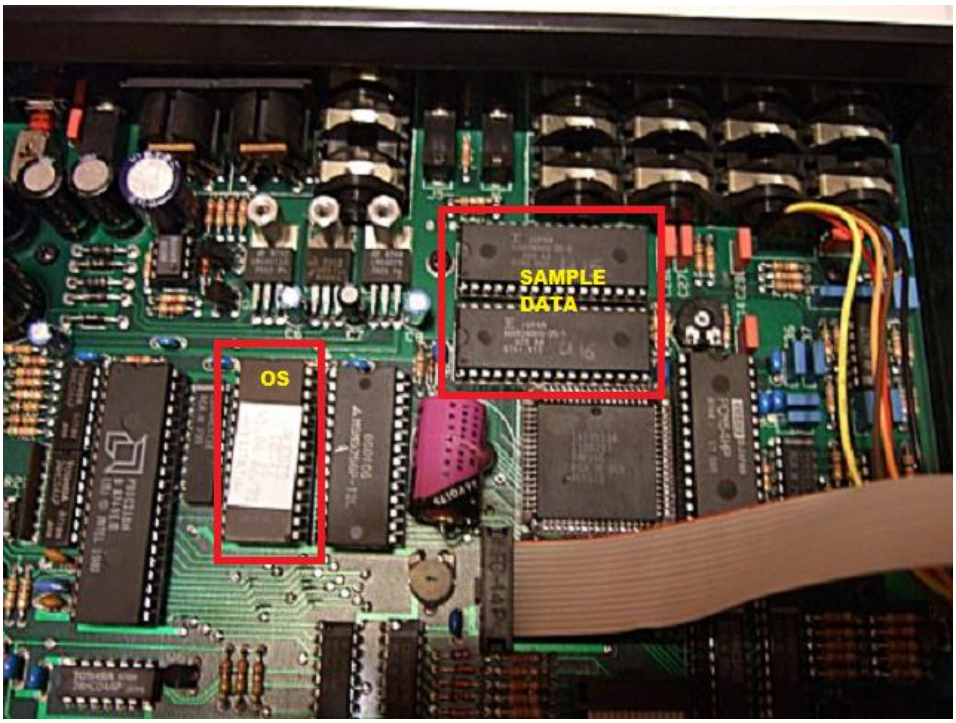
After you've created your BIN files and programmed them on to your EPROM's (refer to your EPROM programmer documentation), you'll need to install the new EPROM's in your HR-16 or HR-16B drum machine. If your current OS EPROM is of an earlier version, your drum machine will be upgraded to the HR-16B 2.0 OS, as part of this installation process. The images below show the circuit board from an HR-16 drum machine, and an HR-16B drum machine. Your board may differ slightly based on the revision, but overall it is very easy to locate the OS and Sample EPROM's. The OS EPROM is typically labeled, and the sample EPROM's are always side by side. All 3

EPROM's are socketed, and fairly easy to remove. After removing, you'll see labels on the board for each EPROM, ICU15 (or U15) and ICU16 (or U16) for the sample data, and ICU11 (or U11) for the OS. If in doubt, check these labels to make sure you've removed the correct EPROM's.

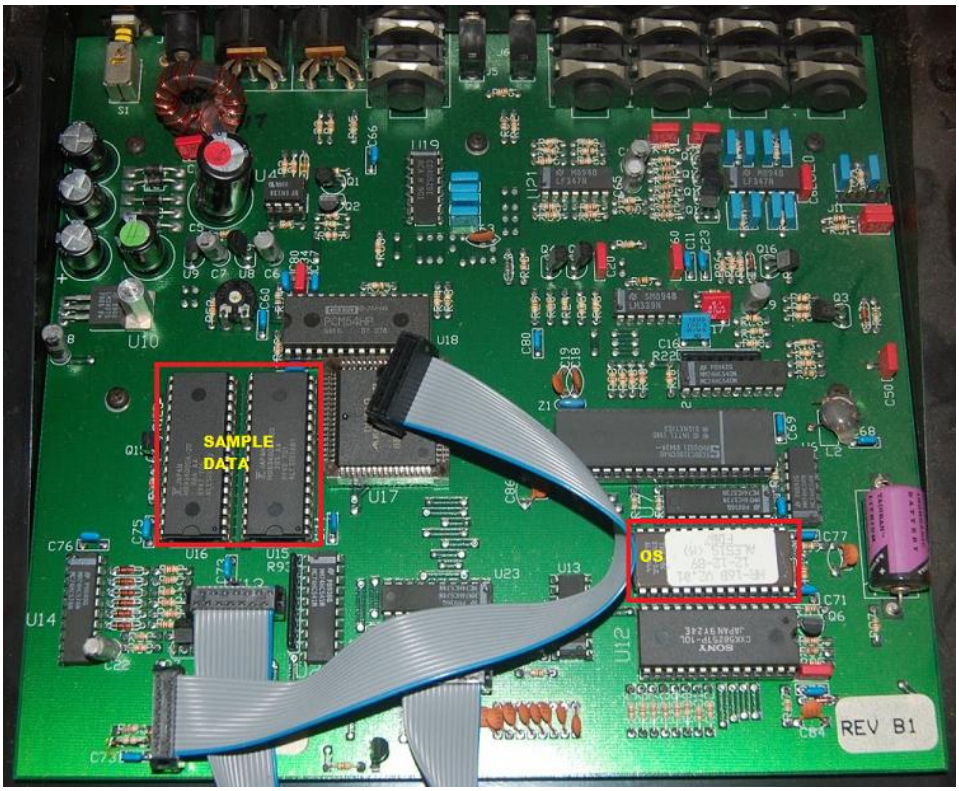
Please observe the following when installing your new EPROM's:

- Power off and unplug your drum machine first, to avoid possible damage to the machine or to yourself.
- You can remove the EPROM's from their socket using a flat head screwdriver to carefully leverage up each side, but if possible, using an EPROM extractor tool is recommended. They only cost a few dollars, and cut down on the chances of bent or broken pins. Radio Shack and eBay are good sources for these tools.
- Be sure to align the notch in your EPROM, with the notch in the socket, and double check to make sure all PIN's are inserted properly, and none are sticking out over the side of the socket.
- If you plan on swapping out your EPROM's regularly, consider purchasing ZIF (zero insertion force) sockets, and inserting those into the sockets on the drum machine circuit board. This way you can easily eject and insert EPROM's, without prying or pulling. The sample EPROM's are very close together, and depending on the size of your ZIF sockets, both may not fit side by side. With a little ingenuity, you can modify the circuit board to make the new sockets fit. Most of you reading this are probably circuit benders, and you know that getting all of your new parts to fit into the machine is half the fun…

HR-16 Circuit Board



HR-16B Circuit Board



Disclaimer

The author of this application is not affiliated with Alesis, and the Alesis Corporation does not support or endorse this application in any way. Questions and comments should be directed to dustin.licis@gmail.com.

Incorrect removal or insertion of the EPROM's can cause damage to your drum machine, or possibly yourself. By using this application you acknowledge the fact that any damage done is the sole responsibility of the user, and the author of this application cannot be held liable in any way.

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