Overview: MIDIWizard and the Tech21 SansAmp PSA-1 Interface

The SansAmp PSA-1 Users Guide

MIDIWizard's on-line help makes frequent reference to page numbers in the SansAmp PSA-1 Users Guide. If you don't have a copy of this manual, you can use the following email address to request Tech21 NYC send you a copy:

info@tech21nyc.com

Hooking Up Your PSA-1 to Your Computer

Older desktop computers come equipped with a game port and a set of pre-installed MIDI device drivers. If yours is one of these, all you need to hook your GSP-2101 up to your computer is a special cable that adapts the game port to a pair of MIDI plugs, one for MIDI In and the other for MIDI Out.

Newer computers, including laptops, require the purchase of a separate MIDI hardware interface. Typically, these external devices use a USB port and translate USB traffic into MIDI signals. An example of such a device is the M-Audio MidiSport 2x2.

All MIDI hardware interfaces require the installation of a Windows-compatible software device driver. Software device drivers are either provided on a CD or can be downloaded from the manufacturer's web site. All you need in addition to the MIDI hardware interface and its software device driver is a pair of MIDI cables, one for MIDI In and the other for MIDI Out.

**Configuring MIDIWizard for Your Computer**

When you install **MIDIWizard** on your computer, the first thing it needs to know is which MIDI device drivers to use. The **MIDI Driver Setup** feature, accessed via the MIDI menu, displays the options available.

You must select one of the MIDI In and MIDI Out device drivers appearing in the combo boxes. The remaining values are there just in case we have a communications problem. The default values should work just fine.

Configuring MIDIWizard for Your PSA-1

The next thing you need to do is let **MIDIWizard** know how your PSA-1 is configured. The **PSA-1 Driver Setup** feature, accessed via the PSA-1 menu, displays the options available.
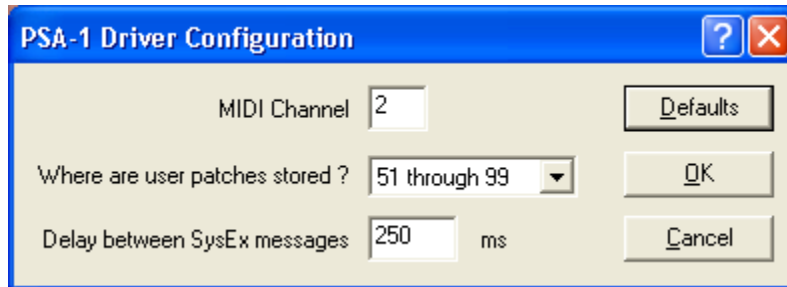
This dialog allows you to select the MIDI channel being used to communicate with your PSA-1. This value MUST match the channel being used by your PSA-1 or no communications will be successful.

This dialog allows you to set the bank used for user patches. User patches are saved in the range 01 through 49 or 51 through 99, depending on the PSA-1's Special Page function 4 (Fixed/Programmable Swap Bit) setting. The default (as shipped from the factory) is the range 51 through 99.

Most of the communications between **MIDIWizard** and your PSA-1 use a special type of MIDI message called a System Exclusive message or SysEx for short. Tech21 NYC describes the format of these messages in a document available by request from:

<div align="center">

info@tech21nyc.com

</div>

SysEx messages can be quite long and your PSA-1 needs time to "breathe" between sending and receiving a series of SysEx messages. On the PSA-1 Driver Configuration screen, you can set the breathing time, or the delay between SysEx messages, in

milliseconds. The default of ¼ second (250 milliseconds) is usually sufficient but if we have problems communicating with your PSA-1, we'll ask you to increase this value.

Backing Up Your PSA-1 Memory

You've probably spent hours creating user patches to get your sound just right. There's a tiny battery in your PSA-1 that keeps these patches and other values safe and warm when you power down your unit. So what happens when this battery goes dead and you need to replace it? Well, if you've never backed up your PSA-1 memory, you're out of luck.

MIDIWizard includes an option to **Backup All Patches**. A "raw" file format is used to save your backup. "Raw" means that a bank backup file contains nothing more (or less) than the contents of the SysEx message received during a user bank backup.

MIDIWizard's bank backup files can be used to restore your PSA-1 memory. They can also be used by any other MIDI utility program that uses raw SysEx files to restore your PSA-1 memory.

Restoring Your PSA-1 Memory

The first step is selecting one of your system backup files. Any file created by the **Backup All Patches** can be used. Also, a file created by your PSA-1's Special Page function 1 (Custom Preset Data Dump) can be used. **MIDIWizard** performs special error-checking on the file you select to make sure it contains bank backup information.
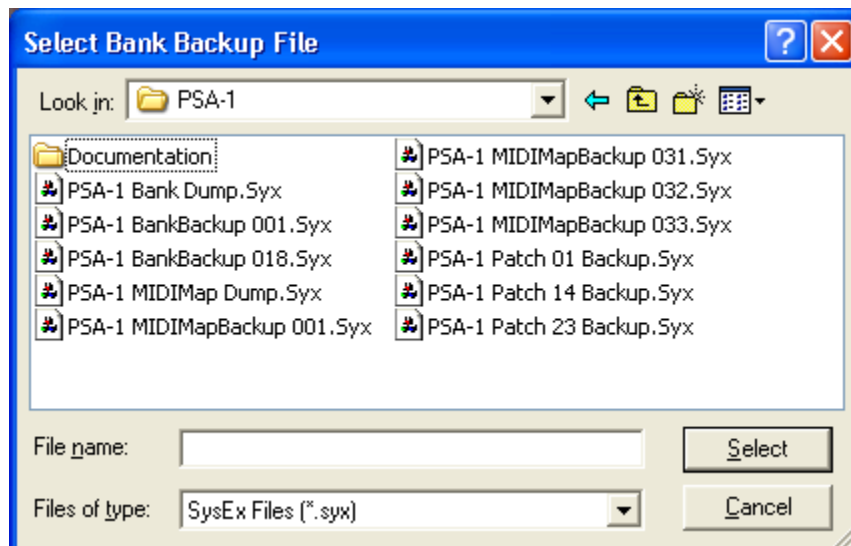

After you select a file, the following screen appears:
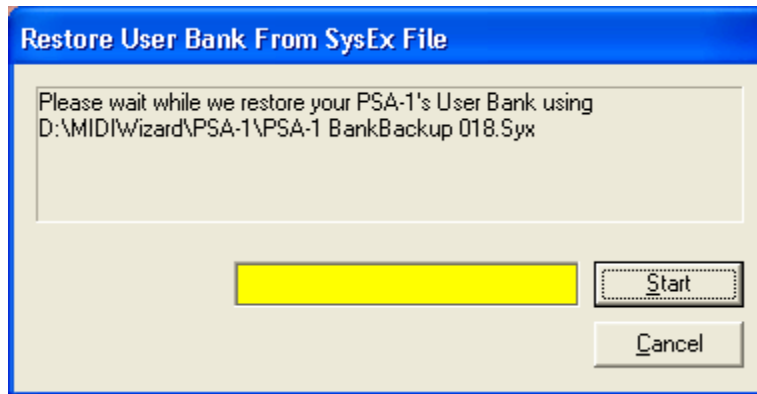
Backing Up and Restoring Each User Patch

The **Backup One Patch** and **Restore One Patch** options help you back up and restore patches on an individual basis. Contrast this to the **Backup All Patches** and **Restore All Patches** options, which save and restore all of your patches in one operation.

The **Backup One Patch** option lets you back up any of the user or factory patches on your PSA-1 and saves them to individual files. The **Restore One Patch** option lets you select any of these patch backup files for restoring any of your user patches. For example, you can use a backup file saved from patch 56 to restore patch 78.
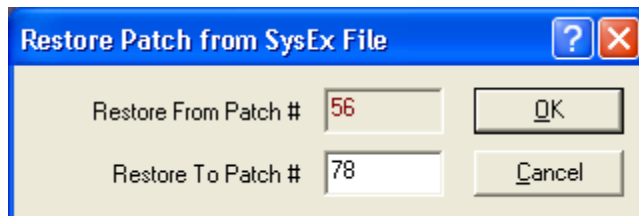
Backing Up and Restoring the MIDI Map

The MIDI map is a cross-reference table between MIDI Program Change messages received at your PSA-1's MIDI In port and your PSA-1 patches. There are 128 entries in this table, one for each possible MIDI Program Change message. The first entry specifies which of the 100 patches is to be loaded when the PSA-1 receives a "Change to Program 01" message at its MIDI In port, and so on.

The **Backup MIDI Map** option retrieves the MIDI map from your PSA-1 and saves it in a MIDI-map dump file. You decide the name and folder used for this MIDI-map dump file.
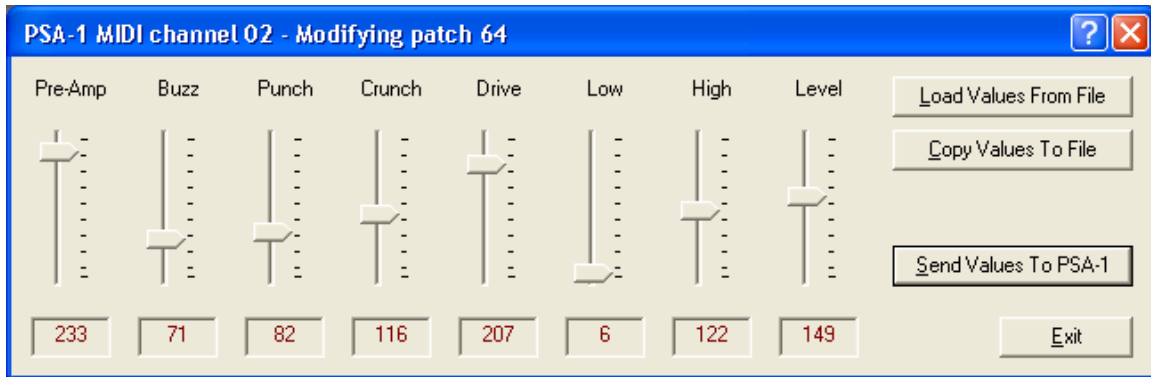
The **Restore MIDI Map** option uses a MIDI-map dump file to restore the PSA-1's MIDI map. During the restore process, you can make changes to any or all 128 entries in the MIDI map. This is more convenient than making changes one at a time using the PSA-1's Special Page function 2 (MIDI Mapping).

MIDI In Map

Row / column titles are Program Change IDs
Values are PSA-1 patch numbers

OK   Cancel   Reset

	00	01	02	03	04	05	06	07	08	09
000		1	2	3	4	5	6	7	8	9
010	10	11	12	13	14	15	16	17	18	19
020	20	21	22	23	24	25	26	27	28	29
030	30	31	32	33	34	35	36	37	38	39
040	40	41	42	43	44	45	46	47	48	49
050	50	51	52	53	54	55	56	57	58	59
060	60	61	62	63	64	65	66	67	68	69
070	70	71	72	73	74	75	76	77	78	79
080	80	81	82	83	84	85	86	87	88	89
090	90	91	92	93	94	95	96	97	98	99
100	0	1	2	3	4	5	6	7	8	9
110	10	11	12	13	14	15	16	17	18	19
120	20	21	22	23	24	25	26	27	28	

Changing Patch Parameters

The **Modify Patch** feature loads the current PSA-1 patch into your computer and then allows you to change parameters using sliders rather than the PSA-1's knobs.

The down-side to this approach is that it takes about 2 seconds to make a parameter change. This is due to the I/O overhead associated with transmitting MIDI System Exclusive messages. The up-side is that you can quickly get a feel for all your patch settings because of the more "visual" aspect of sliders versus the PSA-1's rotary knobs.

PSA-1 MIDI channel 02 - Modifying patch 64

Pre-Amp	Buzz	Punch	Crunch	Drive	Low	High	Level
233	71	82	116	207	6	122	149

Load Values From File
Copy Values To File
Send Values To PSA-1
Exit

The FileHacker Utility

If you've made any user bank, patch, or MIDI map backups, you end up saving a file whose contents are one or more System Exclusive messages. This file is in binary (or machine-readable) format so it won't make much sense if you try to open it with a text editor such as Notepad or Microsoft Word.

To inspect the contents of your backup files, or any other binary file for that matter, we've provided a utility called **FileHacker**. **FileHacker** is a program we developed some time ago to help us snoop around other people's files. It can be used to repair the contents of files that have been corrupted due to transmission errors, old age, etc.

You access **FileHacker** using the **File / Open** option. First, you select the file you want to view and then **FileHacker** displays the contents of this file.
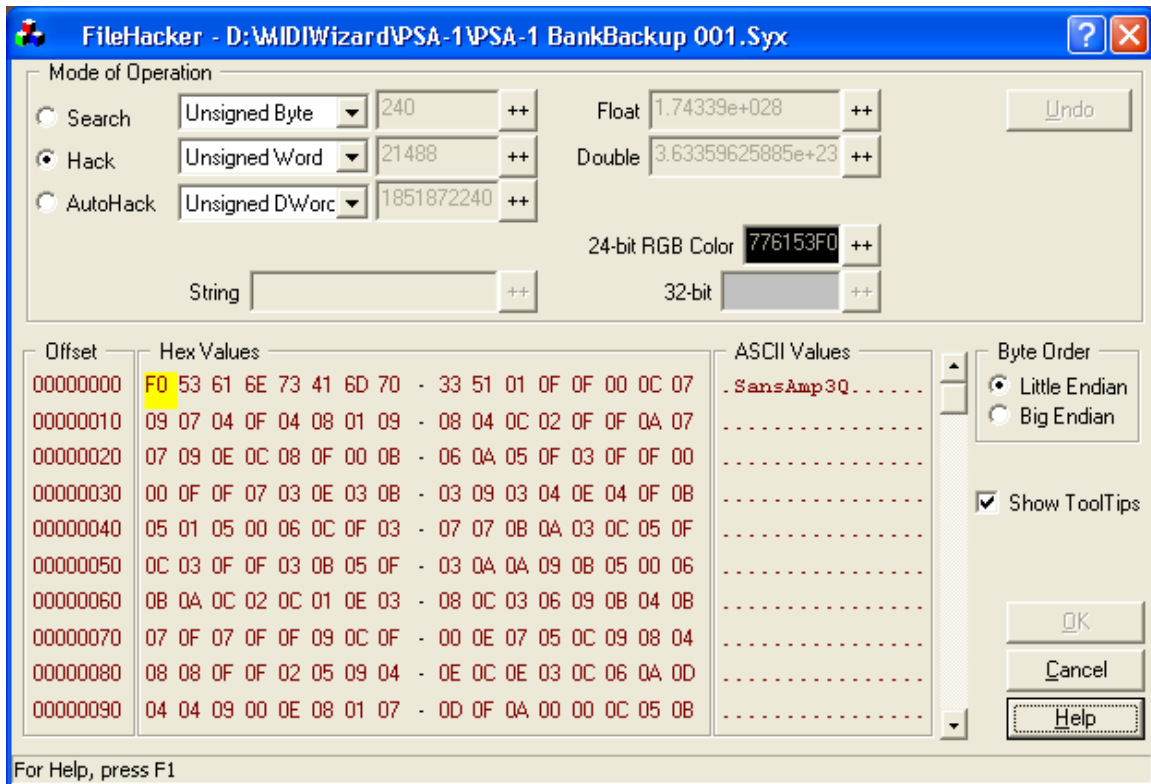
File contents are displayed in two formats. The **Hex Values** box shows the contents in hexadecimal format. The **ASCII Values** box shows the contents in ASCII (human-readable) format, wherever possible – not all hexadecimal values have an ASCII equivalent. We use dots where there is no ASCII conversion. Use the vertical scroll bar to move up and down the file.

We've spent a lot of time writing Help for **FileHacker**. Don't be afraid to click the **Help** button. Context-help is available for most **FileHacker** controls by clicking the title bar help button [?] and then clicking the control you want help for.

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