SuperSuperSuperLIBRARIAN™

The ORIGINAL Universal Librarian

STORES & ORGANIZES PATCHES
FOR MORE THAN 100 MIDI INSTRUMENTS

AKAI • ALESIS • ART • CASIO • DIGITAL MUSIC
DIGITECH • EMU • ENSONIQ • GREY MATTER
JL COOPER • KAWAI • KORG • LEXICON
MIDIA • OBERHEIM • PEAVY • ROLAND
SEQUENTIAL • YAMAHA • 360 SYSTEMS • MORE

PIXEL PUBLISHING™

Super Super Super Super Super

LIBRARIAN™

The ORIGINAL Universal Librarian

STORES & ORGANIZES
PATCHES FOR MORE THAN ONE
HUNDRED MIDI INSTRUMENTS

FOR ATARI ST SERIES
COMPUTERS

WRITTEN BY
ROGER GRANT &
CHARLES FAIRFIELD

PACKAGING BY ART & SOUL • TORONTO

PIXEL PUBLISHING™
641 CALEDONIA RD.
TORONTO, ON, CANADA M6E 4V8
TEL (416) 785-3036 FAX (416) 785-6416

MUSICWARE DISTRIBUTORS
C.O.B. AS PIXEL PUBLISHING

LICENSE AGREEMENT

The following terms and conditions shall apply to all Licensees of the Computer Software Programs known by the titles "Super Librarian" and "Clickpad" together with the Key thereto and all written material provided therewith (referred to herein as the "Software"). The Licensee of the Software shall be referred to herein as "Licensee" and Musicware Distributors Inc. c.o.b. Pixel Publishing shall be referred to as "Licensor".

GRANT OF LICENSE

In consideration of the payment of the License fee, which License fee is included in the purchase price of the Software, the Licensor hereby grants to the Licensee, a nonexclusive License to use the Software for the Licensee's own internal purposes provided that the Software is used on only one computer at a time. The Licensor reserves all rights not expressly granted to the Licensee and as between the Licensor and the Licensee, the Software is proprietary to the Licensor.

RESTRICTIONS

The Software and all accompanying written material are protected by Copyright. The Licensee is not permitted to copy the Software nor may the Licensee modify, adapt, translate, reverse enginerr, decompile, disassemble or create derivative works based on the Software. The Licensee may not distribute copies of the Software to third parties nor may the Licensee disclose same to third parties., The Licensee may not electronically transfer the Software form one computer to another.

NO ASSIGNMENT

This Software License may not be transferred or assigned by the Licensee to any third party without the prior written consent of the Licensor. Any authorized transferee or assignee of the Software License shall be bound by the terms and conditions of the Agreement. In no event may the Licensee transfer, assign, rent, lease, sell or otherwise dispose of the Software on a temporary or permanent basis except as expressly provided herein.

TERMINATION

The Licensor shall have the right to terminate the License without notice to the Licensee, in the event the Licensee fails to comply with any of the terms or conditions of this License. Upon such termination, the Licensee shall destroy all copies of the Software.

CONTENTS

PART ONE: USER'S REFERENCE GUIDE & TUTORIAL

PART TWO: PROGRAMMER'S REFERENCE GUIDE

SuperSuperSuperSuperSuper

LIBRARIAN™

The ORIGINAL Universal Librarian

CHAPTER ONE - INTRODUCTION

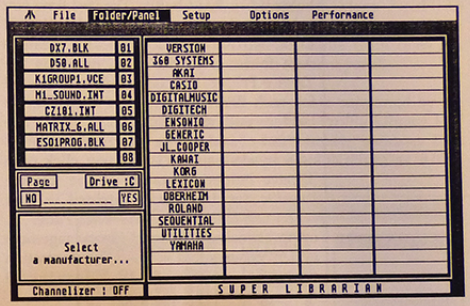
1.1 Introduction

Thank you for purchasing SUPER LIBRARIAN. This program provides a convenient data storage system for patches, sequences, samples, drum patterns or other MIDI data. SUPER LIBRARIAN is truly a 'universal' patch librarian. It is the only program of this nature that supports several different computers and uses the same data storage format for all (Atari, Macintosh, IBM, and Yamaha C1). This means an IBM user can transfer (via modem or direct connect) patches from a friend's Macintosh. Or download SUPER LIBRARIAN patches from a BBS network. Already, over a dozen popular sound manufacturers offer their patches in SUPER LIBRARIAN format.

This manual is a guide to the SUPER LIBRARIAN program and programming language. It has been prepared in two main sections. The first is a user's manual and tutorial. The second part is a programmer's guide that introduces the SUPER LIBRARIAN 'Midi Operating System' (MOS) language. We recommend that at some point, after you've mastered the basic program functions, you experiment with the programmer's tutorial. The more you understand about SUPER LIBRARIAN, the better you can make it function within the context of your MIDI system.

1.2 Program Overview

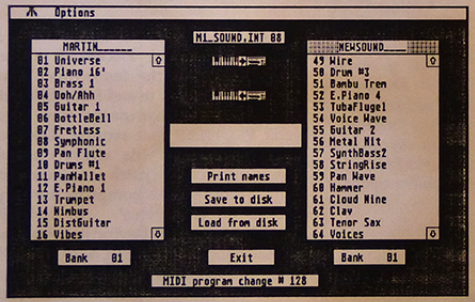
The Main Screen, Bulk Organizer and Desk Accessory are the most frequently used areas of SUPER LIBRARIAN.



SUPER LIBRARIAN MAIN SCREEN

The Main Screen is used to install what we refer to as instrument 'PROFILES'. These PROFILES contain the instructions that control data transfers to and from different instruments. One instrument may have several PROFILES that request different data types. A data file might contain anything from a single patch or sequence, to a bulk dump of the complete memory contents of a 'Device'. In SUPER LIBRARIAN terms, a 'Device' is our catch-all description of anything with a MIDI port on it. PROFILES are 'installed' in the DEVICE PANEL as 'Device Folders'. You may design as many different DEVICE PANELS as you wish - each containing up to 8 PROFILE 'Device Folders' - and save them to disk as part of a 'Setup'.

When you double click on an installed 'Device Folder', SUPER LIBRARIAN requests the data for that PROFILE, receives it from the device via MIDI and holds it in a RAM buffer. The first time you save the buffer data to disk, SUPER LIBRARIAN will automatically create a data folder with the same name as the 'Device Folder'. A unique folder is created for each PROFILE you use. Each 'Device Folder' will store up to 288 files. The number of folders you can create is limited only by disk space. When you click on a 'Device Folder' (installed in the 'Device Panel'), the data files contained in that folder are displayed in the 'Files Panel'. A comprehensive folder and file management system ensures that your MIDI information may be retrieved in meaningful configurations.

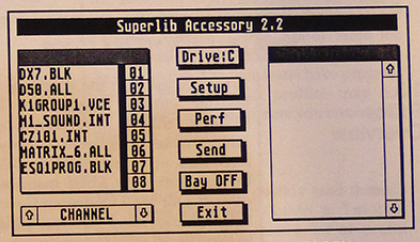


SUPER LIBRARIAN BULK ORGANIZER

The Bulk Organizer is where individual voice names are viewed. The structure of the Bulk Organizer is based around two

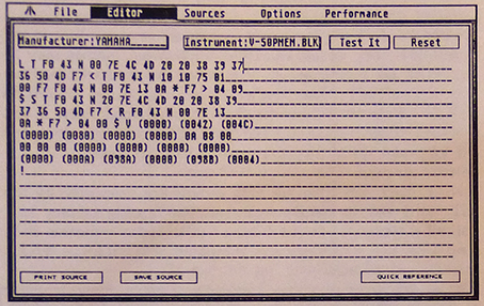
'clipboards' that dominate the left and right half of the Bulk Organizer display. Two banks may be active at one time in the left and right 'clipboards'. Names may be copied, renamed or swapped with patches from either 'clipboard'. Many PROFILES allow patches to be named even if the device the patches came from does not display names on its front panel.

Not all bulk dumps are supported by the Bulk Organizer. The 'Profile Library List' at the front of this binder indicates Bulk Organizer compatible PROFILES as 'B/O'.



SUPER LIBRARIAN DESK ACCESSORY

The SUPER LIBRARIAN Desk Accessory enables you to transmit files created with SUPER LIBRARIAN to your instruments and other devices, without leaving the current application - usually a sequencer program.



SUPER LIBRARIAN PROFILE EDITOR

1.3 Editor Overview

After you get into the program, you may become curious about the 'PROFILE EDITOR'. SUPER LIBRARIAN includes a MIDI-oriented programming language that facilitates updating SUPER LIBRARIAN for use with new MIDI instruments and devices. Our Midi Operating System (MOS) language provides a structure for musicians to experiment with programming via MIDI. The MOS language is not limited to System Exclusive information. You can also use it to send System Common commands (ie. local off), controller data (patch changes) or note data. Use of the 'PROFILE EDITOR' is detailed in Part Two of this manual - the Programmer's Reference Guide & Tutorial.

1.4 SUPPORT.MOS Folder

Included in the SUPPORT.MOS folder are files essential to the operation of SUPER LIBRARIAN. The MOSMED.RSC and MOSHI.RSC are the medium and high resolution resource files. The file named PROFILE.LIB is the current instrument library, and the PROFILE.HLP file contains the help docs that support the current library. To access the Help Files when running SUPER LIBRARIAN, just press the Atari HELP key.

1.5 Profile Version

The Profile version number is accessed from within the program. Select 'INSTALL' from the 'FOLDER/PANEL' menu and you will see a 'VERSION' folder. Click on it to determine the version on your disk. The Profile version changes every time we add a new instrument. You must make sure that the first two digits of the Profile version agree with the SUPER LIBRARIAN Program version (select 'About' from the 'Desk' menu). For example, if you have Profile version 2.31, you must have program version 2.3 or certain profiles may not perform properly. Make sure you return your warranty card!!

1.6 How To Use This Manual

We suggest that you quickly read through the User's Reference Guide & Tutorial. Otherwise you will miss a lot of useful 'extra' features and shortcuts. Just skim - and be happy. This way you'll have a general knowledge of the 'extra' functions. Next, work your way - step by step - through the User Tutorial. This will touch on all the important features of the program and get you up to speed with the basic program operations. Then it is time to start using SUPER LIBRARIAN within your system.

1.8 Update Policy

Upon registering your SUPER LIBRARIAN Warranty card, you will be informed regularly of Updates to the SUPER LIBRARIAN Program or Profile Library. Your first Update is free of charge and will be sent to you automatically. Once you have received your free Update, there are several ways to get a Profile Library or Program Update, most of which will cost you nothing. You may:

1) Copy it at your local dealer - we'll keep our dealers up-to-date.

2) Call our BBS and download it. (1-819-777-3468)

3) Send $15 (cash or money order) and we'll mail you a new disk with the latest program and Profile library.

4) If you wish to add a device PROFILE to your SUPER LIBRARIAN Profile Library, send us a request. Where possible, include a photocopy of the SYSEX information from the device's Owners Manual. If it is possible, we'll write a PROFILE for you, and send you a hard-copy of the Code, along with instructions on how to add the PROFILE to your Library. There is no charge for this service. Keep in mind, however, that some devices do not allow any kind of SYSEX dump.

Your comments and suggestions are welcomed by Pixel Publishing. We have ideas for many new features in CLICKPAD and SUPER LIBRARIAN. If you have any thoughts or requests, feel free to drop us a line. And PLEASE - take a minute right now and register your warranty card! New devices are added every week and we want to make sure you know about these additions and future program enhancements. Thanks for your support!

PIXEL PUBLISHING
641 Caledonia Road
Toronto, Ontario
Canada M6E 4V8
TEL (416) 785-3036
FAX (416) 785-6416

1.9 System Requirements

520, 1040 or MEGA ST.

Monochrome (high resolution) or Color (medium resolution) monitor.

Double sided disk drive. (Single sided program disks are available on request.) The program may be freely installed on a hard drive.

Recommended Optional Equipment:
Programmable MIDI Patch Bay

Super-Super-Super-Super

LIBRARIAN™

The ORIGINAL Universal Librarian

CHAPTER TWO - GETTING STARTED

2.1 Plugging Everything In

Make sure that your disk drive and monitor are properly connected and that all power supply connections have been made. Connect any MIDI equipment that you will be using to the MIDI Port (see 'The MIDI Connection' - Section 2.7). If you are using a MIDI Patchbay, please read Section 4.20.

2.2 Disk Drive Requirements

520 ST Owners Note: The SUPER LIBRARIAN Master disk is double sided. If a 'Drive is not responding...' message appears, make sure that you are using a double sided drive. If you do NOT own a double sided drive, borrow a friend's computer or disk drive, or visit your local dealer (the one you bought the program from!). Make a single sided 'Work' disk as described in Section 2.3. If you can't find anyone to help you, please call us at (416) 785-3036.

2.3 Creating Your 'Work' Disks

We recommend that you backup your SUPER LIBRARIAN Master disk immediately after receiving it. The Master disk is not copy protected. If you own a hard drive, you should copy the entire Master disk to a volume of the drive. See Section 2.4 for the complete hard drive installation procedure.

If you use a double sided drive, you can copy the entire disk using the standard Atari

Super Librarian Getting Started

disk copy procedures (consult your Atari ST Owner's Manual). However, not all of the files on the Master disk are needed when running SUPER LIBRARIAN. If you do not own a double sided drive you must divide the files into 2 disks as described below.

To create a single sided 'Work' disk, not all of the Master disk files will fit on one disk. We suggest that you format 2 disks to 360K (the standard single sided size) and copy the folders and files from the Master disk to your 2 single sided disks as follows. CAUTION: Do not erase or trash any of the files from your Master disk during the copying procedure!

DISK ONE: Super Librarian 'Work' Disk

SUPERLIB.PRG
**SETUP.CNF folder containing:
DEFAULT1.CNF
**SUPPORT.MOS folder containing:
PROFILE.LIB
PROFILE.HLP
MOSMED.RSC (Color monitor)
or
MOSHI.RSC (Monochrome monitor)

DISK TWO: Auxiliary Programs

SUPERLIB.ACC

You don't need to copy both MOSMED.RSC and MOSHI.RSC to the SUPPORT.MOS folder. Copy only the file that applies to your monitor.

The SUPER LIBRARIAN Desk Accessory

(SUPERLIB.ACC) is meant to be used with programs other than SUPER LIBRARIAN, and need not be on your SUPER LIBRARIAN 'Work' disk. In most instances, you would copy it to the Root Directory of your hard drive or sequencer floppy disk. Please read Chapter 7 for complete SUPERLIB.ACC installation procedures. Musicians who use a 1040ST or MEGA2/4 ST will have no trouble running accessories with SUPER LIBRARIAN. 520ST owners should read the 'Important Note' (Section 2.10) at the end of this Chapter.

Once you've created your 'Work' disks, put away the original Master disk for safe keeping.

2.4 Hard Drive Installation

SUPER LIBRARIAN files may be freely copied to any volume of a hard drive. It is a good idea to name a folder 'SUPERLIB' and then copy all of the files from your Master disk into this folder. If you wish to install the SUPER LIBRARIAN Desk Accessory copy SUPERLIB.ACC to the Root Directory of Drive C. When you reboot the computer, the SUPER LIBRARIAN Desk Accessory must be shown the path to the PROFILE.LIB file. This is a one-time procedure. If the necessary resources are not found in the Root Directory, an Alert Box will prompt:

'Please locate PROFILE.LIB using the File selector...'

Click on OK. A standard GEM file selector will appear showing the Root Directory for Drive C. If necessary, select a new drive by clicking on the line immediately below 'Directory:'. Press 'Esc' to clear the line, and type in the letter name of the drive that the SUPERLIB folder is on. The drive letter must be immediately followed by a colon (:). Click on the gray bar at the top of the file selector to display the directory for the new drive. Double click on the SUPERLIB folder to open it, and then double click on the SUPPORT.MOS folder. Locate the PROFILE.LIB file and double click on it. This will return you to the desktop. The program will write a file called PROFILE.LOC to the Root Directory. This file traces the proper path to the PROFILE.LIB file on each successive power up, so do not throw it away. Reboot the computer. If the installation was done properly, no Alert Box will appear.

2.5 Copy Protection

Super Librarian is not copy protected. We trust you not to give the program away to other people. If you wish to share patches with friends, you may give them a copy of the SuperLib Desk Accessory. With your cooperation, we will be able to continue to update the program with new instrument Profiles, and to offer free telephone support. Only Registered Owners will be given phone support, so please send in your Registration Card today!

2.7 The MIDI Connection

The term 'device' is used as a catch-all description of keyboards, drum machines, effect units, patchbays or anything else that SUPER LIBRARIAN might support. MIDI devices require that their IN and OUT ports are both connected to a computer to exchange System Exclusive data. Testing patches requires that your master keyboard's MIDI output is on line with your Atari. This may mean a lot of cable switching unless you own a patchbay.

A programmable patch bay controlled by SUPER LIBRARIAN will perform these cable switching functions automatically. You won't even have to push a button! We strongly suggest that you acquire some sort of MIDI patching unit. Even a manual MIDI input selector can save you from the MIDI cable blues. Better still, use a full fledged MIDI controlled patch bay such as Digital Music's MX-8.

The 'Patch Bay' option automatically sends patch changes to a programmable MIDI patch bay, determining which synth or module is 'on-line' with the computer. The Patch Bay program change settings are stored with each 'SETUP'. You should quickly reach a point where you never have to poke buttons on your modules and/or get tangled up in MIDIghetti. For more info, see Section 4.20.

2.8 Loading Super Librarian

Place your SUPER LIBRARIAN 'Work' disk in Drive A and turn on the ST. After a short wait, you will see the GEM Desktop screen display of disk drive icons and a trash can icon. If the Drive A window (displaying the SUPER LIBRARIAN files) is not open, double click on the Drive A icon. Locate the file called SUPERLIB.PRG and double click on it. The program will load and should appear on your screen in a matter of seconds. SUPER LIBRARIAN is now ready to use.

2.9 Data Disks

SUPER LIBRARIAN is a MIDI data storage and retrieval program, and requires disk space to save this data. If you run SUPER LIBRARIAN from a hard drive you will probably want to store data directly to the drive. If you use floppy disks, you must create data disks. As with all your other programs, before a disk can be used for data storage it must be formatted. Use the procedures described in the Atari ST Owners Manual or insert a blank disk and select 'Format' from the File Menu within the SUPER LIBRARIAN program. The number of disks you need will depend upon the number of Devices in your MIDI setup and the size of your patch library. Format more disks as they are needed. Do not store data files on your SUPER LIBRARIAN Master disk.

2.10 Note To 520ST Owners

If you own a 520ST you can save valuable memory by not running the SUPER LIBRARIAN Desk Accessory at the same time as the SUPER LIBRARIAN program. The DA is intended to be used in conjunction with other programs (ie. your sequencer), NOT the SUPER LIBRARIAN program. All the DA functions are duplicated in the main program.

We recommend that you use an Accessory Switching program like MultiDesk (from CodeHead Software). MultiDesk takes up very little memory itself, and allows you to install and remove Accessories as needed without rebooting your computer or renaming files. If you want to use the SUPER LIBRARIAN main program, MultiDesk will allow you to remove the SUPERLIB DA, and then reinstall it when you want to use your sequencer - with only a few clicks of the mouse.

If you don't own MultiDesk, here's how to maximize the available RAM on your 520ST:

If you don't own a hard drive, copy the DA (SUPERLIB.ACC) and PROFILE.LIB to the Root Directory (ie. do not put it in a folder) of the same disk that your sequencer program is on. This is where you will need it. Now, if you haven't already done so, trash the SUPERLIB.ACC file from your SUPER LIBRARIAN 'Work' disk. Put the 'Work' disk in Drive A and reboot the computer. The SUPERLIB DA will no longer load into RAM.

If you boot your computer from a hard drive, and you've already copied the DA to the Root Directory of Drive C (as described in Section 2.4), go to the Atari Desktop (the screen that appears when you first boot up), open Drive C and locate the SUPERLIB.ACC file. Highlight it by clicking on it once. Select 'Show Info' from the File Menu and click on the file name. Press the 'Backspace' key once to erase the last 'C' of the file name, and replace it with another letter (ie. SUPERLIB.ACX). Click on OK, and when you reboot the computer, the DA won't load into RAM. NOTE: If your sequencing software requires that you boot from a floppy disk, make sure you copy the DA file to the Root Directory of your sequencer floppy as described in the previous paragraph.

Without the DA installed, you will have significantly more memory for data transfers. Some instruments with very large data files (ie. DX7 with E!) will only allow one 'clipboard' of the Bulk Organizer to be active, but in most situations you will be fine. If this is really frustrating, we suggest that you look for a third party RAM expansion kit - or perhaps consider buying a computer with more memory.

When you want to use the SUPER LIBRARIAN DA with your sequencer, just reboot the computer with the sequencer disk inserted and the DA will load into RAM. If your sequencer allows you to boot from a hard drive, change the DA file name back to SUPERLIB.ACC and reboot. If you want to change patches while in your sequencer, select the SUPER LIBRARIAN DA, load a SETUP and select the file you want to send.

2.11 Let's Do Something

If you have the patience to take 45 minutes and read through the User's Reference Guide - we encourage you to DO IT! If however, you want to get into the program right away, turn to the User's Tutorial. For a complete overview of the program, make sure that you read the Reference Guide AND the Tutorial.

If you have absolutely no desire to read the Reference Guide or Tutorial, the following instructions should get you started. If you get stuck while using the program, press the Atari ST 'HELP" key.

RECEIVE DATA - Double Click on a Device Folder in the Device Panel or press 'G' for 'Get Midi'. The Help Panel will display the prompt 'Is instrument ready?'. Click 'YES' in the Control Panel. A dialogue box indicates whether the program is receiving, transmitting, or waiting for data. If valid data is received the message 'Save under filename...' will appear in the Help Panel.

SAVE DATA - After data is received from a device, it is temporarily held in a RAM buffer. A cursor appears on an empty line in the Control Panel. To save the current buffer to disk, type in a filename and then click on 'YES' , or hit the <RETURN> key.

If the 'Memo' option is checked (OPTIONS), a cursor appears in the Help Panel when data is received. A message may be stored with the data. The cursor and backspace keys are used to move the cursor. The ESCape key clears the current line. To exit the Memo Box hit <RETURN> or click on YES.

The first time data is saved for a particular PROFILE, SUPER LIBRARIAN automatically uses the 'Device Folder' name to create a data folder. The name of the new file is displayed in the Files Panel. SUPER LIBRARIAN stores files in alphabetical order with up to 288 files in each folder.

NOTE: Some synthesizers and drum machines require that you place the machine in a 'SYSEX TRANSMIT' or 'SEND MIDI' mode before they will transmit System Exclusive data to the Atari ST. If you need help, highlight a Device Folder (click on it once) and press the Atari ST HELP key. Instructions pertinent to that device will appear. Check your synthesizer manual for information on how to place your synth into the System Exclusive 'ENABLE' or 'ON' mode.

TRANSMIT DATA - Click on a Device Folder to obtain its file directory. Select the data file (in the Files Panel) that you want to send and double click on it (or type 'L' to load). The Help Panel will display the prompt 'Is instrument ready?'. Click on 'YES' , hit <RETURN> or type 'T' to transmit.

The current contents of the buffer may be transmitted at any time. Double click on the Buffer Message Box (see Section 3.1) at the bottom of the screen, or use the [T] key command. Make sure the Midi channel of the Device Folder matches the MIDI Receive channel of your device.

NOTE: Some MIDI devices require that you place the machine in a 'RECEIVE SYSEX' or 'LOAD MIDI' mode before it will receive MIDI data. If the transmission fails, check the SUPER LIBRARIAN HELP files. Also check the device manual for System Exclusive transfer and memory protect instructions.

If you do experience difficulty, give us a call at (416) 785-3036. Sometimes an out-of-date ROM can cause strange problems. With your input, we can document this to the benefit of all Super Librarian users.

Super LIBRARIAN™

The ORIGINAL Universal Librarian

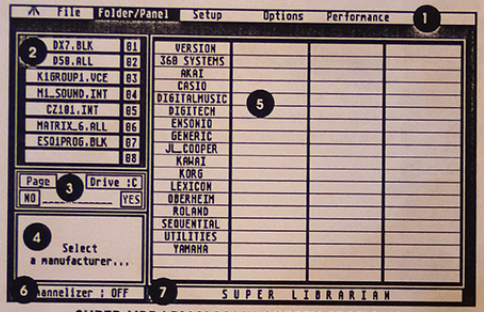
CHAPTER THREE - DESIGNING YOUR SETUP

3.1 The Main Screen

There are seven sections to the main screen:

1. The MENU BAR presents standard GEM pull down menus.

2. The DEVICE PANEL displays the 'Device folders' in the current set-up.



SUPER LIBRARIAN MAIN SCREEN SECTIONS

3. The CONTROL PANEL manipulates folders and their corresponding files.

4. The HELP PANEL displays operating prompts, error messages and any Memos stored with your files.

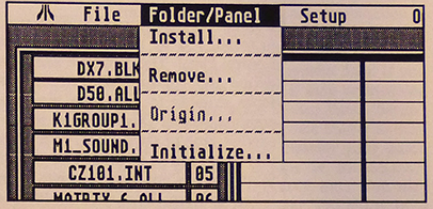
5. The FILES PANEL lists the files stored in the selected folder. The Files Panel is also used to list Manufacturer names, Device Profiles and Sources.

6. The CHANNELIZER ON/OFF switch toggles the MIDI Thru function on and off.

7. The BUFFER MESSAGE BOX displays the name of the current file in the buffer.

FOLDER/PANEL MENU

Instrument 'PROFILES' are selected from a list of manufacturers and installed as 'Device Folders' in the Device Panel. Setup procedures for the Device Panel are controlled by the 'Folder/Panel' menu options.



SUPER LIBRARIAN FOLDER/PANEL MENU

3.2 /Install

Select the 'Folder/Panel' Menu and click on 'Install'. A list of manufacturers supported by SUPER LIBRARIAN will appear in the Files Panel. The message 'Select a manufacturer' appears in the Help Panel.

Click on a manufacturer name and a list of instruments appears in the Files Panel. An instrument name may appear several times in the list, appended with different extensions such as .BLK, .ALL or .ONE. These extensions specify the type of data 'dump' the PROFILE actually requests. If the Files Panel is full, click on the PAGE button to see additional PROFILES.

The list of PROFILE names may seem a bit confusing at first glance. Most devices can transmit more than one type of System Exclusive data. Each data type is requested by a different PROFILE. We have attempted to reflect the data content of

each PROFILE in the PROFILE name. Check the SYSEX section in your instrument manual and read the 'Profile Library List' at the front of this binder. This information should help you determine the type of data requested by each PROFILE.

Click on the instrument PROFILE you want to install and its name will appear in the Control Panel. The PROFILE name may be edited and replaced with a name that is more suitable to you. You may want to assign a special Device Folder name for a specific type of patch data, or for a particular song you're writing. Use the BACKSPACE or ESCape key to change the name. When you are done, click on 'YES' and a Device Folder - using the name you have chosen - will be installed in the Device Panel.

3.3 PROFILE vs. Device Folder

It is important to understand the difference between PROFILES and Device Folders. A PROFILE is a set of instructions dealing with a specific type of data transfer. PROFILES are installed in the Device Panel as part of Device Folders. A Device Folder contains all data files that you have received from the device and saved to disk.

Confusion arises for two reasons: (1) a Device Folder may or may not have the same name as its PROFILE (depending upon your preferences); and (2) a Device Folder will not appear on disk until the first time you save a data file for that particular Folder.

This DOES NOT mean that unused Device Folders will be lost when you turn off the computer. If you've installed 8 Device

Folders, but have only received and saved data files with 3 of them, don't worry! As long as you've saved your 'Setup' (Section 3.9), SUPER LIBRARIAN will keep track of your various Device Folders.

The Device Panel may be customized for your MIDI system using any combination of eight Device Folders. Most users will create several different Device Panel configurations to maintain their system data. If you wish, the same PROFILE may be installed 8 times in the same Device Panel 'Setup', using eight different Device Folder names. This is handy if you classify your patch library by sound groups (ie. BRASS.DX7, BASS.DX7, PERCUSS.DX7, etc.). You may also install a particular PROFILE in a number of DIFFERENT Device Panel 'Setups'. As long as the same Device Folder name is used, they will write and read data files to and from one data folder on disk.

3.4 /Remove

This menu item removes a PROFILE & Device Folder NAME from the Device Panel. This operation does NOT delete the Device Folder or corresponding data files from your data disk. Select 'Remove', then select the PROFILE you wish to remove from the Device Panel. The operation is automatic and there is no prompt before the removal is executed. You may cancel the removal operation BEFORE you select a PROFILE by clicking on 'NO' in the Control Panel. If a PROFILE is removed in error, it may be reinstalled at any time. As long as it is given the same Device Folder name, it will be able to access existing data files.

If you rename a Device Folder and forget

3.5 /Origin

which PROFILE was originally used to create it, this function will identify the Folder's origin. Select a Device Folder and choose the 'Origin' menu item. The original name of the PROFILE for that Folder will temporarily be displayed. This feature explains the presence of the special PROFILE file in every folder. Do not delete this file. It is used to verify that new data files match the specifications of the original PROFILE.

3.6 /Initialize

This is essentially a reset command to create a new Setup. Select 'Initialize' from the menu to clear the Device Panel. Before using this command make sure that the current Setup in the Device Panel has been saved. If you 'Initialize' a Setup that has not been saved, it must be re-installed from scratch.

3.7 MIDI Channel Assignment

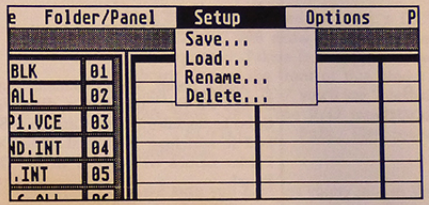
SUPER LIBRARIAN communicates on all 16 MIDI channels. In the Device Panel there are numbered icons that represent the channel assignment for each Folder. Make sure that the MIDI channel of each Device Folder agrees with the channel assignment of the destination Device. Some Devices require that a specific MIDI channel be used. Where possible, we have provided this information in the Help files (see Section 3.8).

To change channels, move the cursor to the channel number box of the Device you wish to change. Click the left mouse button to decrement and the right mouse button to increment the channel number.

To access the built-in HELP prompts, highlight an instrument PROFILE in the Device Panel (click once on its name) and then press the Atari ST HELP key. An Alert Box will appear with information regarding the selected PROFILE.

3.8 Help Files

SETUP MENU



SUPER LIBRARIAN SETUP MENU

3.9 /Save

Any combination of up to 8 Device Folders, their channel and Patch Bay settings and other parameters may be saved in each Setup file. A Setup file might correspond to a different arrangement of equipment (ie. STUDIO versus LIVE), or a particular piece of music.

When you click on 'Save' from the Setup menu, the name of the last Setup will appear in the name box of the Control panel. You can use Escape or Backspace keys to rename the Setup (ie. 'BRASS.CNF', 'STUDIO_A.CNF').

The following SUPER LIBRARIAN parameters are stored with each SETUP:

- Current Device Panel configuration
- Ten mini test sequences stored on function keys F1 - F10
- MIDI Patch Bay settings
- Channelizer Status (ON/OFF)
- Memo Status
- Prompt Status
- English/French Status

3.10 /Load

To load a 'Setup', select this menu item. All Setups on the current data disk will be listed in the Files Panel. Click on a 'Setup' and it will load from disk. The Device Folder names will appear in the Device Panel.

3.11 /Rename

Allows you to change Setup names. Click on this Option and highlight the file to be renamed. The name will appear in the Control Panel. Press escape to clear the line and type in the new name.

3.12 /Delete

Used to delete Setups from disk. Click on this option and then highlight the file you wish to delete. The Setup name will appear in the Control Panel. Click 'YES' to complete the operation or 'NO' to cancel.

3.13 Default Setup

If you name a Setup 'DEFAULT1.CNF', it will automatically load when you boot SUPER LIBRARIAN. This is useful if you use a standard Setup for your system. If a 'DEFAULT1.CNF' file is not found on disk, an empty Device Panel will load when you boot the program.

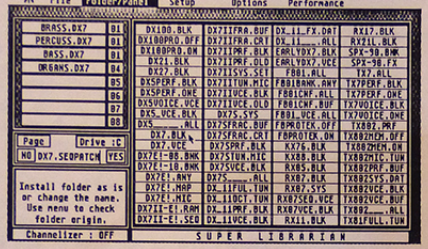
3.14 A Few Examples

Let's run through a few theoretical examples of Device Panel 'Setups'.

(1) You have a DX7, and you wish to save all your patches in sound groups. You'd also like to be able to use SUPER LIBRARIAN's Bulk Organizer so that you can 'mix and match' patches to create banks of sounds to use in various 'gigging' situations.

First of all, you'll need to select a DX7 PROFILE that will allow you to use the Bulk Organizer. Take a look at the 'Profile Library List' at the front of this binder. Under 'YAMAHA DX7' you'll see 'Internal Voice Bank - B/O'. The 'B/O' means that this PROFILE is Bulk Organizer Compatible.

Make sure you have an empty slot in the Device Panel for your new Device Folder. You can either Remove a Folder (Section 3.4) or if you want to start from scratch, you can Initialize the Device Panel (Section 3.6). Install the Yamaha 'DX7.ALL' PROFILE. The PROFILE name will appear in the CONTROL PANEL. You may now use the Backspace key or ESCape key to change the name. You might wish to call it 'BRASS.DX7'. When you're done editing the name, click on 'YES' and the new Device Folder will appear in the Device Panel. Repeat this procedure, giving the PROFILE a different name each time. When you're finished, save this Device Panel 'Setup' to disk. You might want to call it 'DX7_1.CFG'. If you have more than 8 DX7 sound catagories, Initialize the Device Panel and use the 'DX7.ALL' PROFILE to install 8 more Device Folders. Save this 'Setup' as 'DX7_2.CFG'.



A SETUP EXAMPLE

The DX7.BLK PROFILE has been installed in the Device Panel four times. By doing this, you may classify your DX7 patches, and store each type (brass, organs, etc.) in a separate Device Folder. A fifth Folder, DX7.SEQPATCH, is about to be installed (see CONTROL PANEL). This could hold the patches used with your sequencing software.

(2) You have 8 different MIDI devices in your studio, and you want to use SUPER LIBRARIAN in conjunction with your sequencing software. You'd like to have a single 'sequencing Setup' containing all 8 Devices.

Initialize the Device Panel (make sure you've saved the current configuration as a 'Setup', otherwise you'll lose it!) and install your 8 Devices one at a time. You might want to rename the Device Folders with an extension like '.SEQ', so that you can distinguish your 'gigging' patches from your 'sequencing' patches. (For example, if you've already created Device Folders called 'BRASS.DX7' and 'PERCUSS.DX7', you could call your sequencing Device Folders 'DX7.SEQ', 'D50.SEQ', etc.) Once you've installed all the Device Folders, save your 'Setup' with an appropriate name, such as 'SEQUENCE.CNF'.

Here is another way to use 'Setups' to organize your patches. The 'Performance' feature can be used to download data from all Devices in the current 'Setup'. after finishing a session or song, create and Save a Setup for all the Devices that were used. Select 'Performance', and 'Request All'. All system data will be recorded in a 'Performance' file. To recreate your Setup, just execute the Performance. See Chapter 6 for more information.

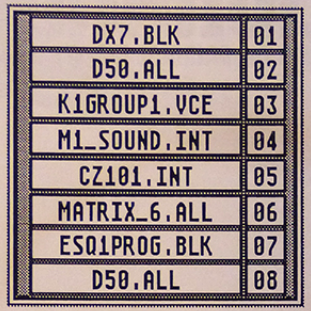
SUPER LIBRARIAN is an open-ended program that allows you to design configurations for your specific needs. The possibilities are only limited by your imagination! Once you've used the program for a few days, you'll find a Device Folder/Setup configuration to suit your MIDI system.

Super Super Super Super

Super LIBRARIAN™

The ORIGINAL Universal Librarian

CHAPTER FOUR - TRANSFERRING & STORING DATA



SUPER LIBRARIAN DEVICE PANEL

The Device Panel controls the reception and transmission of data. In order to receive or transmit data, you must have a Device Folder installed in the Device Panel. To do this, 'load' an existing SETUP from disk, or create a new one using the Folder/Panel 'Install' procedure (see Section 3.2).

4.1 Receive Data

Select a Device Folder in the Device Panel and 'double click' (or press 'G' for 'Get Midi'). The Help Panel will display the prompt 'Is instrument ready?' (if 'Prompts' are ON in the Options menu). Click on the 'YES' button in the Control Panel. A dialogue box indicates whether the program is receiving, transmitting, or waiting for data. If valid data is received, the message 'Save under filename...' will appear in the Help Panel.

NOTE: Some synthesizers and drum machines require that you place the machine in a 'SYSEX TRANSMIT' or 'SEND MIDI' mode before sending the data to the Atari ST. If you need help, highlight the Device Folder and press the 'HELP' key. Instructions pertinent to that device will appear. Check your synthesizer manual for information on placing your synth in System Exclusive 'ENABLE' mode. Double click on the Device Folder for data reception.

4.2 Save Data

After data is received from a device, it is temporarily held in a RAM buffer. A cursor appears on an empty line in the Control Panel. To save the current buffer to disk, type in a name and then click on 'YES' , or hit the <RETURN> key. The data file will be stored on disk in the corresponding Device Folder.

If this is the first time that data for a particular Device Folder has been stored, SUPER LIBRARIAN will automatically create a folder on disk using the same name as your on-screen Device Folder. If a corresponding Device Folder already exists on disk, SUPER LIBRARIAN will automatically write the data files to this folder. SUPER LIBRARIAN stores files in alphabetical order with up to 288 files in each folder.

4.3 Transmit Data

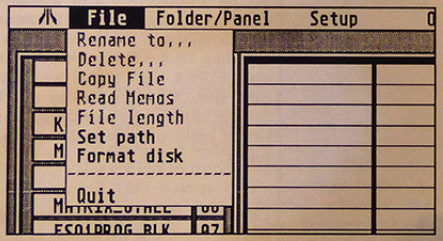
Click once on a Device Folder to obtain a file directory. Use the mouse to select the data file (in the Files Panel) that you want to send. If the Files Panel is full, click on the PAGE button to see more filenames. Double click on the filename (or type 'L' to

load) and the Help Panel will display the prompt 'Is instrument ready?'. Click on 'YES' , or hit <RETURN> to transmit.

The current contents of the buffer may be transmitted at any time. Double click on the Buffer Message Box (see Section 3.1.7) at the bottom of the screen, or use the 'T' (Transmit) key command. Make sure the Midi channel of the Device Folder matches the instrument.

NOTE: Some MIDI devices require that you place the machine in a 'RECEIVE SYSEX' or 'LOAD MIDI' mode before it will receive MIDI data. If the transmission fails, check the online HELP files. Also check the device manual for System Exclusive transfer or memory protect instructions.

FILE MENU



SUPER LIBRARIAN FILE MENU

4.4 /Rename To

Select the file you wish to rename and then click on 'Rename' under the 'File' menu. The file name will appear in the Control Panel where it can be edited using the Backspace or ESCape keys. Type in the new name and click on 'YES' or hit <RETURN> to save it. 'NO' cancels the operation.

4.5 /Delete

Highlight the name of the file you wish to delete in the Files Panel and then select this menu item. The filename will appear in the Control Panel. Select 'YES' to complete the operation. 'NO' cancels the operation. Use a SHIFT-SELECT to select multiple files to delete.

4.6 /Copy

Select the file(s) to be copied from the Files Panel and choose this menu item. Select a destination folder. If you attempt to copy incompatible data (ie. DX7II file to a ESQ1 folder), the PROFILE conflict will result in an error message unless 'Free Trade' is selected.

4.7 /Memos

To read an Memo, select a filename and then choose the 'Memo' menu option. The Memo stored with this file will be displayed in the Help Panel.

4.8 /Length

Displays the byte size (including any memos) of the highlighted file.

4.9 /Set Path

Used to access Super Librarian files in a folder other than the default drive. You may set a path to any available drive or volume.

In a floppy disk system, the default drive is the drive you loaded the program from. In a hard drive, it is the 'path' specified by

the PROFILE.LOC file.

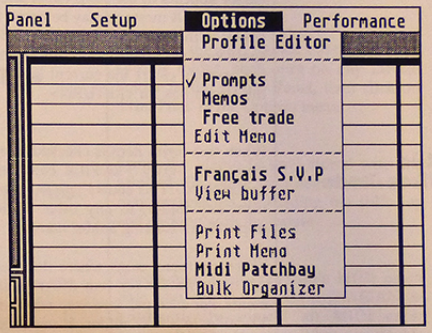
When 'SET PATH' is selected, the prompt 'Set the path to Super Librarian's folders...' appears in the Help Panel. Click on the Drive Selector to access the appropriate drive or volume (left/right mouse), then select the GEM folder that contains the new SUPER LIBRARIAN files. Click on 'YES' when the SUPER LIBRARIAN 'Device Folder' names appear. This will set the 'path' to these Folders. If you accidentally click on a Device Folder name in the Files Panel, click on the two dots (..) at the top left of the Files Panel to step back one folder.

NOTE: The GEM file selector does not work properly with folders that are nested more than four deep. If you do nest folders this deep and try to access them from the Bulk Organizer, a form alert will instruct you to load the files from the main page.

4.10 /Format Disk

This disk utility allows single or double sided disks to be formatted in either drive A or B.

OPTIONS MENU



SUPER LIBRARIAN OPTIONS MENU

4.11 /Profile Editor

The Profile Editor is used to create and modify the various PROFILES used by SUPER LIBRARIAN. These PROFILES contain the instructions needed for data transfers to and from each device. See Part 2, the Programmer's Reference Guide, for more information.

4.12 /Prompts

This menu item toggles the various Prompts 'ON' or 'OFF'. When turned on (selected with a check mark) you are prompted before you transmit, receive, save or delete Files or Device Folders. We suggest you leave Prompts enabled until you become familiar with SUPER LIBRARIAN's various routines.

4.13 /Memos

This menu item toggles MEMOs 'ON' or 'OFF'. If the 'Memo' option is checked, a cursor appears in the Help Panel after data is received. A message may be typed in and stored with the data. The cursor and back-space keys are used to move the cursor. The ESCape key clears the current line. To exit the Memo Box hit <RETURN>.

4.14 /Free Trade

When this menu item is checked, the functions that verify PROFILE compatibility are disabled. This allows you to copy a file from any folder, to any other folder, or duplicate an existing Folder name.

There are many cases where data formats are quite similar for two different instruments. For example, you may want to copy TX7 files to a DX7 folder. If you highlight the TX7 filename and select COPY, the prompt 'The PROFILE destination folder mismatches the one in the original folder' will appear. Select FREE TRADE and repeat the process, and this prompt will not be displayed. SUPER LIBRARIAN will complete the copy operation. Otherwise, make sure this option is unchecked.

4.15 /Edit Memo

This option will allow you to create or edit Memos. Highlight a filename and select this item. A cursor will appear in the Help Panel. Type in a new memo or edit the existing one.

4.16 /Francais SVP

This menu item changes all program menus and prompts to French. Merci.

4.17 /View Buffer

Select 'View Buffer' or press 'V' to display the data for the current file in the RAM buffer.

4.18 /Print Files

To print the file names contained in a specific folder, click once on any Device Folder in the Device Panel, then click on 'Print Files' in the Options menu.

4.19 /Print Memos

Prints the Memo (if any) stored with the selected file. More than one file at a time may be selected by holding the shift key and clicking with the mouse.

4.20 /MIDI Patchbay

If you own a programmable MIDI patch bay, you can set SUPER LIBRARIAN to automatically control all MIDI cable routing for data transfers. When you double click on a folder (receive data) or a file-name (transmit data), SUPER LIBRARIAN will send a preassigned program change to the selected device to ensure it is on-line with the computer for the oncoming data transfer.

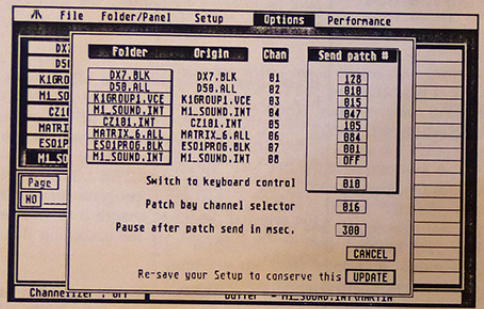
The set up procedure for the patchbay is very simple. Make sure that the MIDI IN and OUT ports of each device (including the computer) are connected to the patch bay.

Each device must have a unique patchbay 'port' assignment. For example, if you want to use Input #2 on the patch bay for your Atari, plug the MIDI OUT from the ST to MIDI IN of Input #2 on the patchbay. Output #2 of the patchbay connects to the MIDI IN port of the Atari. Port #5 on the patchbay might be for your DX7. The MIDI

IN and OUT of the DX7 would be connected to Port #5 IN/OUT. Just remember - OUT goes to IN. Consult your patch bay manual for details.

Be sure that the patch bay input the Atari is assigned to recognizes patch changes and that system exclusive data is not being filtered.

When you click on MIDI Patch Bay in the options menu, a dialogue box appears.



SUPER LIBRARIAN MIDI PATCHBAY DIALOGUE BOX

On the left hand side are 8 slots that correspond to the 8 Device Folders in the Device Panel. The actual PROFILE names of the folders appear in the second column. This is useful information if a Device Folder has been given a name different than the original PROFILE. The communication channel selected for each folder is also displayed.

The 'Send Patch #' column stores the patch change values to be sent when data transfers are initiated. These patch numbers will be sent automatically whenever a folder or one of its files is selected. If no program change is required, set the value to 'OFF'. Use the left/right mouse to edit this value.

4.21 Switch To Keyboard Control

When a data transfer is complete, the program change value for 'Switch to Keyboard Control' will automatically switch your keyboard back on-line. Switch this function OFF if you do not want a program change sent.

4.22 Patchbay Channel Selector

After each folder has been assigned a program change value, set the channel assignment for the patch bay. It must agree with the patchbay input channel. The OFF position serves as a 'master off' switch. Patch changes will not be sent to any folder if the patch bay channel selector is set to OFF.

4.23 Pause After Patch Send

Immediately below the patch bay channel selector is the 'pause setting'. In increments of 50 milliseconds, it goes from the OFF position to 950 ms then wraps around. If you experience MIDI transfer problems that you don't have when your instrument and computer are hardwired, increase the delay value by 50 ms until the equipment responds as it should. The actual time it takes for a patchbay to 'settle' into a new configuration varies between various units. This feature ensures that you do not send a dump request to an instrument that is not quite 'on-line'.

When your patch bay settings are complete,

4.24 A Typical Patchbay Setup

be sure to execute a 'Save Setup' command to update your Setup file with this information.

Here is an example of a typical Patchbay configuration, and the corresponding SUPER LIBRARIAN settings:

You own a Roland MT32, a Korg M1 and a Yamaha SPX-90. Your ST's MIDI IN/OUT ports are connected to IN/OUT #1 on your patchbay, while the MT32 is connected to #2, the M1 to #3 and the SPX-90 to #4.

You have the patchbay configured as follows:

PATCH 1: (sequencing)
#3 (M1) ---> #1 (ST)
#1 (ST) ---> #2 (MT32); #3 (M1); #4 (SPX)

PATCH 2: (loading data to/from MT32)
#2 (MT32) ---> #1 (ST)
#1 (ST) ---> #2 (MT32)

PATCH 3: (loading data to/from M1)
#3 (M1) ---> #1 (ST)
#1 (ST) ---> #3 (M1)

PATCH 4: (loading data to/from SPX-90)
#4 (SPX) ---> #1 (ST)
#1 (ST) ---> #4 (SPX)

In this scenario, you would install Device Folders for the three instruments. In SUPER LIBRARIAN's MIDI Patchbay window, enter a Patch Change value of 2 for the MT32, a value of 3 for the M1, and 4 for the SPX-90. Now, when you perform a data transfer with any of your devices, SUPER LIBRARIAN will instruct your patchbay to

put the proper device on-line. If you wish to return to your sequencing configuration after the data transfer is complete, enter a value of 1 in the 'Switch To Keyboard Control' box. If you save your Device Panel Setup, this information will be recalled every time you load this Setup.

4.25 To Buy Or Not To Buy

If you do not own a MIDI patchbay, but have two or three MIDI devices and a computer, you might give some serious thought to the acquisition of a patchbay unit. You can use SUPER LIBRARIAN just fine without automatic switching, however, the operation of your entire MIDI setup will be tremendously enhanced with the purchase of a patchbay. It will be money very well spent and save you literally hours (days!!) of plugging cables in and out.

We use Digital Music's MX8 and love its powerful MIDI processing capabilities. When choosing a patchbay unit, PLEASE make sure it meets the following criteria:

1) Will the patchbay receive program changes?
2) Will the patchbay transmit internal System Exclusive information?

If the answer to either of these questions is no, we suggest that you look at another unit, and save for a while if necessary (no movies for the next few months!). There are several good devices on the market. SUPER LIBRARIAN currently supports the MX8 (Digital Music), MidiPatcher (360 systems) and the MSB+ and MSB16/20 (J.L. Cooper). The Roland A880 recently had a few SYSEX updates. We will fully support the

A880 when we get our hands on a unit with the current ROMs. Also, early ROM versions of the MSB+ (< 2.02) have a few 'ghosts'. Cooper has fixed the problems and has a very fair update policy. Ask your dealer or contact J.L. Cooper directly.

4.26 /Bulk Organizer

The Bulk Organizer is where patches are copied, swapped and renamed. Not all PROFILES are supported by the Bulk Organizer. See Chapter 5 for detailed information on Bulk Organizer functions.

MORE FEATURES...

4.27 Mini Sequencer

SUPER LIBRARIAN incorporates a mini-sequencer with 10 storage/recall F-keys. This allows you to test your 'keyboardless' devices with customized riffs at the touch of a button.

To record sequences from your keyboard, hold the shift key and press one of the Function keys (F1 through F10). Once you play a note, you have 5 seconds available for recording. Remember, the Channelizer button below the Help Panel in the Main Screen must be 'ON' if you want to hear a remote sound source while you record.

To playback a sequence, simply hit the desired Function key. Playback will occur on the channel specified by the highlighted PROFILE, not the original channel from which it was recorded. Use ESC to abort either record or playback modes.

A set of ten different sequences (one for each function key) can be created this way. When you execute a 'Save Setup' command, any sequences you have created are stored as part of that Setup file.

4.28 The Channelizer

You may also test patches directly from a keyboard, providing its MIDI output is patched to the Atari MIDI input (directly or via patch bay). If the Channelizer is 'ON' and a Device Folder is highlighted, the MIDI OUT port acts as a rechannelized THRU port (specified by the highlighted Folder's channel setting) for note and controller events. This feature is disabled if data transfers are in progress, no instrument is highlighted, or the Channelizer switch is set to OFF.

To change the Channelizer output, click on the channel icon. Use the left and right mouse buttons to decrease or increase the channel number. To turn off the THRU, use the 'Channelizer' switch on the main panel. An 'all notes off' command is sent when the channelizer is switched off. This prevents 'hanging' notes.

This 'MIDI THRU' feature is also active in the 'Bulk Organizer' mode.

4.29 Program Change Transmission

The '+' or '-' keys on the numeric keypad of the computer increment or decrement patch changes to the on-line instrument by a value of one. Use 'shift' + or - to change patches by a factor of eight. The asterisk key '*' transmits Program Change #1.

4.30 Pixel 'Super Patch'

One very confusing aspect of today's instruments is the topic of 'Patch Architecture'. The current trend by most instrument manufacturers is to offer multi-timbral capabilities. This is wonderful, but these instruments should also provide enough onboard memory to store all 'Patch' parameters, not just 'patch pointers'.

It is very convenient to use Performance Patches (Dual/Split/Multi) to access preset combinations of sounds. The data that is stored with each 'Peformance' generally includes parameters such as transposition, pan, volume and velocity. Most instruments, however, do not store any actual SOUND data as part of the Performance. The sounds that are used with each Performance are 'called' by the 'patch pointers' stored with that Performance.

This works fine (to a degree) if you use only the internal memory of the synthesizer to store your Performance patches. But with a computer-based librarian program such as SUPER LIBRARIAN, you can display more than one bank of Performance Patches at one time. You want to be able to swap Performance patches from one bank to another, right? This is where the trouble starts.

With 'patch pointers', it is very easy to lose track of, or inadvertantly change, specific sounds used by a particular Performance. Let's say you have two banks of sounds - Bank A and Bank B. As an example, we will presume that we want to move Performance Patch #1 from Bank A to an empty location at Performance Patch #2 in Bank B.

Bank A, Performance Patch #1:
name = Stringhorn
dual patch / sound 5 (string) and 6 (brass)

Bank B, Performance Patch #1:
name = Pianovibe
dual patch / sound 6 (piano) and 23(vibes)

What you want to do is really quite simple -- just copy Stringhorn from Bank A to an empty Performance in Bank B - let's say #2.

Remember that Stringhorn uses two specific sounds - 5(string) and 6(brass). Also keep in mind that Performance #1 in Bank B (Pianovibe) uses 6(piano) and 23(vibes). When you copy Stringhorn (#1/Bank A) to Performance #2/Bank B one of two things might happen, depending on the System Exclusive implementation of your particular instrument.

If sound 5(string) and 6(brass) are copied with the Stringhorn Patch, then sound 6 (piano) in Bank B will be replaced by a brass sound and Pianovibes will not sound right.

In the other case, if only the Stringhorn Performance data is be copied, the 'patch pointers' for Stringhorn will call sound 6 (piano), not a string sound. Either way this is not what you had in mind.

If instruments were designed differently, this would not happen. For example, an instrument described as '8 Voice Multi Timbral' with potentially '100 Multi-Timbral Combos', should be able to store 800 programs (sounds) to support these 'Multi' setups. And as each 'patch' is copied or stored, the 'programs' associated with that

patch should also be copied.

At today's DRAM prices, this would of course be prohibitively expensive and would drive up the price of keyboards dramatically. One solution may be for manufacturers to realize that many musicians DO already own a computer, and probably prefer to use it for data storage. Each manufacturer could implement an alternate 'Patch Architecture' for computer users. All users will benefit from a more creative approach to memory management. Even if an instrument offers only 64 programs that may be combined for 8 patches or multi-timbral setups, at least the data will be intact when it is needed.

A primary goal of Pixel Publishing is to help make life easier for musicians that use Multi Timbral and Performance setups. Our SUPER PATCH will offer users of selected instruments the ability to easily and effectively organize Multi Timbral setups and dual/split/quad combination patches.

Some of the terms used by instrument manufacturers to describe Patch Architecture include Performances/Voices, Combinations/Programs, Patches/Tones and Multi/Singles .

The Pixel SUPER PATCH is indicated by the extention PX2, PX4 or PX8. We will probably soon offer .X16 patches for the 16 voice Multi Timbral synths that are inevitably just around the corner. A couple of examples will give you an idea of how the SUPER PATCH works.

Let's look at the Roland MKS80 (Super Jupiter) - a classic synth that uses 'Patches'

and 'Tones'. The 'MKS80.PX2' SUPER PATCH reduces the actual number of 'Patches' to 32 and 'forces' the Tones for each Patch to specific locations. The names displayed in the Bulk Organizer for the MKS80.PX2 profile represent Patches 1-1 through 4-8. The Patch/Tone relationship is as follows.

Patch 1-1	Tones 1-1 , 1-2
Patch 1-2	Tones 1-3 , 1-4
Patch 1-3	Tones 1-5 , 1-6
Patch 1-4	Tones 1-7 , 1-8
Patch 1-5	Tones 2-1 , 2-2
Patch 1-6	Tones 2-3 , 2-4
Patch 1-7	Tones 2-5 , 2-6
Patch 1-8	Tones 2-7 , 2-8
Patch 2-1	Tones 3-1 , 3-2

...and so on.

To make it easier to organize the position of the two Tones used with each SUPER PATCH, the MKS80 also has a profile (MKS_PX2.BLK) that numbers the Tones according to their SUPER PATCH position. The names displayed in the Bulk Organizer for the MKS80_PX2.BLK profile represent 'Tones' and are numbered as follows.

1-1, 1-2, 2-1, 2-2, 3-1, 3-2, 4-1, 4-2 and so on.

The idea is that you first organize thirty two combinations of two Tones to use with each SUPER PATCH. The first digit of Tone number indicates which SUPER PATCH uses that Tone. After the Tones are organized, send the bank to the MKS80. Request the data using the MKS80.PX2 profile and begin to organize and name each SUPER PATCH. Now, when you copy a SUPER PATCH from one bank to another it

will also copy the Tones associated with that Patch.

The 'M1_MULTI.PX8' profile is another example of what we have in mind. In this case we have reduced the actual number of M1 'Multi' Combinations to 12, supported by 96 programs (last 4 not used). The M1 SUPER PATCH is arranged as follows:

Combo 00 Programs 00-07
Combo 01 Programs 08-15
Combo 02 Programs 16-23
Combo 03 Programs 24-31
Combo 04 Programs 32-39
Combo 05 Programs 40-47
Combo 06 Programs 48-55

and so on.

To organize the programs that you wish to use in each M1 SUPER PATCH, use the profile named 'M1_PX8.BLK'. The numbering system used is as follows. The first two digits represent the SUPER PATCH that will use these programs.

00-00, 00-01, 00-02, 00-03, 00-04, 00-05, 00-06, 00-07
01-00, 01-01, 01-02, 01-03, 01-04, 01-05, 01-06, 01-07
02-00, 02-01, 02-02, 02-03, 02-04, 02-05, 02-06, 02-07

and so on.

For information about how various instruments use the SUPER PATCH, install the .PX(x) profile and press the HELP button. Other instruments that will soon support the Pixel SUPER PATCH format include the D10, D110, DX7II, TX81Z, VFX, K1, K4

to name a few.

We hope that our SUPER PATCH will make it easier to create, store and conveniently retreive Multi Timbral and combination Performance patches. We will continue to address this important area of patch management and will value your feedback to help us gauge of the effectiveness of our approach.

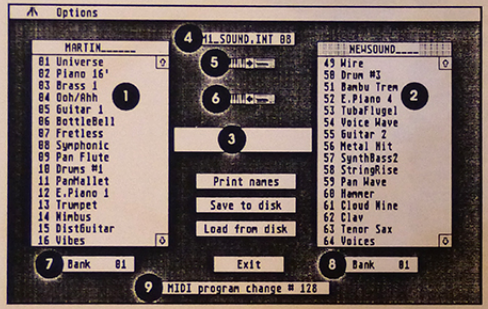
Super-Super-Super-Super

LIBRARIAN™

The ORIGINAL Universal Librarian

CHAPTER FIVE - THE BULK ORGANIZER

The Bulk Organizer is the area of SUPER LIBRARIAN that displays patch names for the current RAM buffer. Two banks may be active in the Bulk Organizer at one time. Patches names may be copied, swapped or renamed. For information on which files use the Bulk Organizer see the 'Profile Library' listing included with this manual. Bulk Organizer compatible files are identified as 'B/O'.



SUPER LIBRARIAN BULK ORGANIZER

5.1 Bulk Organizer Screen

1. Left Clipboard.
2. Right Clipboard.
3. Patch Buffer Box.
4. Device Status Box.
5. Keyboard --> Computer Transfer Icon.
6. Computer --> Keyboard Transfer Icon.
7. Left Bank Selector.
8. Right Bank Selector.
9. MIDI Program Change Indicator.

5.2 Supported Profiles

To determine if a 'PROFILE' is supported by the 'Bulk Organizer', simply highlight the 'PROFILE' name in the Device Panel. The Bulk Organizer (B/O) name in the Options Menu will be 'enabled' if supported, and 'greyed out' if not. Double click on a supported Device Folder and receive data. Select 'Bulk Organizer' (or press 'B') and the patch names will be displayed.

5.3 Patch Numbering

Patch numbers appear in the Clipboard to the left of the patch names. Whenever possible, SUPER LIBRARIAN uses the same Patch numbering scheme as the device. For example, a bank of Yamaha DX7 patches will be numbered from 1-32, while Roland D10 patches will be numbered from 11-18, 21-28...81-88.

5.4 Loading The Buffer

To load the RAM buffer from disk, select a file from the Files Panel and press 'L ' (or double click). The file will load into RAM - ready for transmission or editing. Select 'Bulk Organizer' and the patch names for the current file will be displayed in the left clipboard. Banks can also be loaded from disk from within the B/O.

5.5 The Bank Selector

The 'Bank Selector' button is directly below each clipboard. Click on the button with the left or right mouse buttons to select different banks of sounds.

To scroll through the sounds within a Bank,

click on the arrow keys at the top and bottom of each Bank. The up and down cursor keys perform the same function.

Manufacturers organize patches in many different ways. For example, a bank that contains 64 patches might be organized as 2 banks of 32 by one company, and 8 banks of 8 by another. If you can't seem to find all the patches in a dump, try clicking on the 'Bank Selector' button.

5.6 Active Clipboard

Either 'clipboard' may be activated by clicking on the 'Title Bar' (as in GEM desktop operations) or by using the right and left cursor keys to toggle between them. The Title Bar of the active clipboard will turn grey.

There is no such thing as a 'blank' clipboard. To copy a patch from one clipboard to the other (left to right side of B/O), both clipboards must be filled with data. When 'building' new banks, it is a good idea to have an 'INIT.BLK' bank saved as a blank template. Initialized banks can be easily created with the multiple copy function. Select an INIT or BLANK patch. Now press and hold the 'Alternate-Shift' keys and click to do multiple copies of the same patch.

5.7 Device Status Box

The 'Device Status' box at the top (middle) of the Bulk Organizer panel displays the name and MIDI channel assignment of the current device. The channel may be changed (L/R mouse button) without leaving the B/O.

5.8 Transfer Icons

Clicking on the 'Keyboard -> Computer' icon will fill the active clipboard, much like 'Load From Disk', directly from the instrument via MIDI. Clicking on the 'Computer -> Keyboard' icon will transmit the active Bank to the device.

5.9 Print Names

Click on the Print Names box and the prompt 'Print to Disk or printer' appears. If 'Disk' is selected, SUPER LIBRARIAN will print a text file (one record per line) to disk with the extention .PRT and the same filename name as the bank. This file may be imported into a word processor or database for further modification. If 'Printer' is selected, an ASCII file is send out the printer port. The names are printed across the page. The number of names on each line varies for different devices and is determined by the maximum number of characters in each name.

5.10 Save To Disk

This function saves the current file to disk.

5.11 Load From Disk

This function loads a file from disk. If you try to access files nested more than four folders deep, you will be prompted to load them from the main page to avoid a GEM bug.

5.12 Quick View

The Quick View option is essentially a non-editable third clipboard. It allows you to 'peek' into any Bulk Organizer compatible file, in any folder on disk, regardless of its origin. This permits direct comparison of files from different instruments. The Quick View File is loaded into the active clipboard 'overtop' of the existing file, which

is restored when you exit Quick View.

To use this function, activate either clipboard and click on Quick View in the Options Menu. The file selector will appear with the root path selected for you. Click on the folder and the file you wish to view and press return to load it into the active clipboard. The patch names are shaded to remind you that this is a Quick View file. You may scroll through patch names or print them as you would any other file.

You can Load Quick View files from Disk as many times as required without losing the regular contents of the clipboard. Quick View is very useful when organizing the names of one device to correspond to another.

Quick View is reset when you exit the Bulk Organizer.

5.13 Program Change

When you click on a patch name with the RIGHT mouse button, SUPER LIBRARIAN sends a corresponding program change value to the on-line instrument. Bear in mind that no system exclusive data is sent. In order to hear the patch you have selected, it must reside in the instrument's memory. Program changes may also be send with the + or - keys on the numeric keypad or SHIFTED +/ - key (8 programs each step). The * key will send Program Change #1.

NOTE: Always be sure that a newly created or edited bank has been transmitted to the instrument before auditioning. Use the Computer -> Synth icon.

5.14 Swap Patches

Select the 'source' patch by clicking on it (either clipboard). The name of that patch will appear highlighted in the 'Patch Buffer' box in the center of the screen. Click on any other patch name (either clipboard) and the patches will be 'swapped'. To abort the swap procedure after selecting a patch, click on the 'Patch Buffer' box that displays the patch name.

5.15 Copy Patches

To 'copy ' patches, first select a 'source' patch, then hold the Shift key down and click on the new destination (in either clipboard). The 'source' patch will be 'copied', replacing the destination patch. The 'Patch Buffer' box is automatically cleared.

Remember - both clipboards must contain data if you wish to copy or swap from 'clipboard to clipboard'.

5.16 Multiple Copies

It is possible to make multiple copies of the source patch by simultaneously holding the Alternate and Shift keys when executing a copy. As long as these keys are depressed, you may continue making multiple copies. Any time you wish to terminate the copy procedure, click on the 'Patch Buffer' box in the center of the screen.

5.17 Rename Patches

Double click on the patch to be renamed, and a standard GEM dialogue box will open. Use the Backspace and cursor keys to edit the current name. The Escape key clears the name field entirely. SUPER LIBRARIAN supports upper and lower case characters when naming patches, however, some instruments may not support the full range of characters (or any) .

5.18 Unnamed Patches

Patch names are supported for all B/O PROFILES. If a device does not support names and it's data is supported by the B/O, SUPER LIBRARIAN displays the patches as 'UNNAMED'. You can rename these patches for use within SUPER LIBRARIAN. Just make sure that you save any patches you've named to DISK!! This way you can load the 'named patches' to the left clipboard, and receive new patches from the device to the right. When you want to store a new patch from the right clipboard, you must name it and then copy it to an initialized patch slot in the left clipboard. Be sure to SAVE the left clipboard to disk, so all the new names are stored.

This feature is very useful and easy to work with after a bit of experimentation. Remember, all dumps that you receive from the device will display 'UNNAMED' patches - even if you already have named them!! You must load your 'named patches' from disk, then send them to the instrument. Some devices that operate like this include the Super Jupiter (MKS 80), Lexicon LXP-1, Cooper MSB+ Patchbay ....to name a few.)

SuperSuperSuperSuperSuperSuper LIBRARIAN™

The ORIGINAL Universal Librarian

CHAPTER SIX - THE PERFORMANCE MENU

The Performance feature is used to 'record' a sequence of file transmissions for up to sixteen different devices. A Performance File is created by 'recording' a Performance. It contains data for up to sixteen different Device Folders and may be executed with a single command. The Performance feature works much like a 'macro recorder' in a spreadsheet application.

6.1 /Start

When the 'Start' command is selected a prompt to select 'Manual Record' or 'Request All' will appear. Either of these buttons activates the Performance record function.

6.2 Request All

This function will send a 'transmit data' request to all the Devices currently installed in the Device Panel. This 'snapshot' of your current Setup may be stored to disk in a Performance file. The Performance file may be executed with one command to update the devices in an entire studio. If a Device does not respond, or is unable to transmit its data (patchbay settings incorrect), a 'Skip device' or 'Cancel' prompt will appear.

Note: To modify any of the data files contained within a Performance you must re-record the entire Performance, using the new data files.

6.3 Manual Record

If you select 'Manual Record' each receive or transmit operation is stored sequentially to a buffer. The buffer may be stored to disk for future access, and 'replayed' with only one command.

To Receive data, follow the normal procedure of double clicking on a Device Folder. Repeat this operation for each device from which you wish to receive data. New Setups may be loaded from disk if necessary. When data has been received from the appropriate devices, click on END. Give the Performance file a name and click on YES to save it to disk.

To Transmit data, select a Device in the Device Panel, then double click on a data file to transmit data to the device. The Manual Record Performance Function cumulatively stores all voice data for each device that is selected during the 'Performance' and stores it in one large file. The size of the file is limited by the available memory of your computer. To terminate recording, return to the Performance menu and select 'End'. You will be prompted to name and save the sequence as a Performance File.

6.4 /Rename

Select this function to rename a Performance file.

6.5 /Delete

Select this function to delete a Performance file.

6.6 /Execute

To execute a Performance File, select this function and then choose the Performance filename from the Files Panel. Performances may also be executed from the SUPER LIBRARIAN Desk Accessory.

SuperLIBRARIAN™
The ORIGINAL Universal Librarian

CHAPTER SEVEN - THE SUPERLIB DESK ACCESSORY

The SUPER LIBRARIAN accessory can be accessed from the 'Desk' menu of any Gem application. It enables you to transmit files created with the SUPER LIBRARIAN program without quitting the current application. It is particularly useful when used with a sequencer. The Accessory does not SAVE files.

7.1 Installation From A Floppy Disk

Accessories are installed from the root directory of the boot disk. Insert the disk that contains the file 'SUPERLIB.ACC' (either your SUPER LIBRARIAN 'Work' disk or your sequencer disk -- see Section 2.3) and reboot the computer. As with all other GEM accessories, SUPERLIB.ACC will load into RAM on power-up.

7.2 File Selector

To access files on other disks or hard drive volumes, click on the grey bar over the Files Panel. Set the desired 'path' using the GEM file selector.

7.3 Installation From A Hard Drive

The 'boot disk' on a partitioned hard drive is Volume C. To load into RAM, the SUPERLIB.ACC (like all accessories) must be in the Root Directory of Volume C when the computer is turned on. For purposes of organization, you may wish to have your Super Librarian program, resources, and files on another partition in a 'SUPERLIB' folder. If this is the case, SUPERLIB.ACC must be 'shown' the path to that folder. This is a one time procedure. The first time you use SUPER LIBRARIAN with a hard drive, the program writes a file called PROFILE.LOC. This file traces the proper path on each successive power up, so do not throw it away.

To perform the installation, copy SUPERLIB.ACC to Disk C of your hard drive. Reboot the ST. If the necessary resources are not found in the root directory, a form alert box will prompt:

'Please locate PROFILE.LIB using the File selector....'

Click on OK. A standard GEM file selector appears showing the root directory for Disk C. If necessary, select a new drive by clicking on the line immediately below 'Directory:'. Press 'Esc' to clear the line, and type in the letter name of the drive you need to access. The drive letter must be immediately followed by a colon. Click on the grey bar at the top of the file selector to bring up the root directory for the new drive. Open the path to the SUPPORT.MOS folder. Open the SUPPORT.MOS folder and double click on PROFILE.LIB. This will return you to the desktop. Reboot the computer. If the installation was done properly, no Form Alert will appear.

Click on 'Super Librarian' in the desk menu. The accessory will appear.

The SUPER LIBRARIAN accessory can be accessed from the 'Desk' menu of any Gem application. It enables you to transmit files created with the SUPER LIBRARIAN program without quitting the current application. It is particularly useful when used with a sequencer. The Accessory does not SAVE files.

7.1 Installation From A Floppy Disk

Accessories are installed from the root directory of the boot disk. Insert the disk that contains the file 'SUPERLIB.ACC' (either your SUPER LIBRARIAN 'Work' disk or your sequencer disk -- see Section 2.3) and reboot the computer. As with all other GEM accessories, SUPERLIB.ACC will load into RAM on power-up.

7.2 File Selector

To access files on other disks or hard drive volumes, click on the grey bar over the Files Panel. Set the desired 'path' using the GEM file selector.

7.3 Installation From A Hard Drive

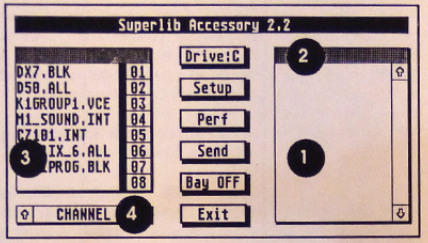
The 'boot disk' on a partitioned hard drive is Volume C. To load into RAM, the SUPERLIB.ACC (like all accessories) must be in the Root Directory of Volume C when the computer is turned on. For purposes of organization, you may wish to have your Super Librarian program, resources, and files on another partition in a 'SUPERLIB' folder. If this is the case, SUPERLIB.ACC must be 'shown' the path to that folder. This is a one time procedure. The first time you use SUPER LIBRARIAN with a hard drive, the program writes a file called PROFILE.LOC. This file traces the proper path on each successive power up, so do not throw it away.

To perform the installation, copy SUPERLIB.ACC to Disk C of your hard drive. Reboot the ST. If the necessary resources are not found in the root directory, a form alert box will prompt:

'Please locate PROFILE.LIB using the File selector....'

Click on OK. A standard GEM file selector appears showing the root directory for Disk C. If necessary, select a new drive by clicking on the line immediately below 'Directory:'. Press 'Esc' to clear the line, and type in the letter name of the drive you need to access. The drive letter must be immediately followed by a colon. Click on the grey bar at the top of the file selector to bring up the root directory for the new drive. Open the path to the SUPPORT.MOS folder. Open the SUPPORT.MOS folder and double click on PROFILE.LIB. This will return you to the desktop. Reboot the computer. If the installation was done properly, no Form Alert will appear.

Click on 'Super Librarian' in the desk menu. The accessory will appear.



SUPER LIBRARIAN DESK ACCESSORY

7.4 Desk Accessory Screen

1. Files Panel.
2. Click here for GEM File Selector.
3. Device Panel.
4. MIDI Channel Selector.

7.5 Loading Setups & Files

By the time you use this accessory, you will most likely be quite familiar with the master program. We'll keep our explanations short.

At the top of the Accessory box is the drive selector. A single click on the selector (left mouse button) advances it to the next drive while double clicking selects the previous drive. For hard drive users, the selector defaults to the path specified by the PROFILE.LOC file, written when the accessory was installed.

NOTE: Files may be accessed on other partitions or floppies by clicking on the grey bar over the Files Panel and using the GEM file selector to set a path to Super Librarian's files.

When you click on 'SETUP', the Files Panel (right panel) will display all SETUPs on the selected drive. Select the SETUP you wish to install into the mini 'Device Panel' on the left side of the dialogue box. Operation of the SUPERLIB.ACC Device Panel is much the same as the SUPERLIB.PRG Device Panel.

NOTE: If you do not have a hard drive, make sure that the PROFILE.LIB file is on the same disk as your Setup.

-Click on a the 'SETUP' button.
-Select a Setup and the Device Folders will load.
-Click on a Device Folder.
-Files for this folder appear in Files Panel.
-Select the Device transmission channel using the channel selector (directly below the Device Panel).
-Use the arrows at the far right of the Files Panel (right side) to view additional files if the display is full.
-Double click on name of the file you wish to transmit.
-Select another setup and/or Device Folder etc...

7.6 Loading A Performance

The 'PERF' button gives you access to any Performance Files created with the master program. This is very useful for live situations. You could load all instruments with new data between every song or set without quitting your sequencer program.

7.7 Send File

Click on SEND to transmit the data in the current buffer, indicated by the top line of the dialogue box. You must double click on a

filename to load the buffer. The Send button flashes while a transfer is taking place.

7.8 Accessory Patchbay

This option activates or de-activates the Patch Bay configuration that was loaded with the current SETUP. If any Devices in the SETUP require two way communication to receive System Exclusive data, select BAY ON. The Patch Bay settings are exactly as specified in the current SETUP that was created with the SUPER LIBRARIAN program.

7.9 Exit

The last button needs no explanation apart from the fact that the current Setup is preserved when you click on the Exit button.

7.10 Using The DA With A Sequencer

VERY IMPORTANT NOTE: When using the SUPER LIBRARIAN accessory in conjunction with a sequencer program, it may be necessary to DISABLE 'MIDI THRU' in the sequencer program before attempting to transmit files. Some instruments transmit a 'handshake' or acknowledgement that a packet of data was received. If the MIDI THRU function on the sequencer echoes this back to the synthesizer, you may experience communication errors.

Super-Super-Super-Super-Super

LIBRARIAN™

The ORIGINAL Universal Librarian

CHAPTER EIGHT - ALTERNATE COMMAND KEYS

8.1 Bulk Organizer Mode

The following is a list of the keyboard functions. Some are duplicates of menu entries while some are independent buffer oriented commands.

(The letter in brackets [ ] activates the command)

[L]oad: same as 'Load' button.

[S]ave: same as 'Save' button.

[G]et MIDI: same as Synth -> Computer icon click.

[T]ransmit: active clipboard: same as Computer -> Synth icon click.

[+] and [-]: send forward and reverse patch changes.

[Shift] [+] and [-]: as above but by a factor of eight.

[*]: reset program counter to patch one.

[A]lternate: or <- -> cursor keys; select active B/O clipboard.

[B]ank selector: scroll through Banks on active clipboard

[E]xit: return to Main Panel.

[F1 to F10]: see Section 4.22 (Mini-Sequencer)

8.2 Main Panel

[E]ditor mode: if there is an active file in the editor buffer, this keystroke will take you directly to the Editor. Otherwise you will have to load a source using the 'Load...' menu item in the 'Sources' menu.

[C]apture mode: raw MIDI IN monitor; f8H's (clock) and feH's (active sensing) are stripped.

[F1 to F10]: see Section 5.5 (Mini-Sequencer)

[G]et MIDI: from highlighted device (simulates double clicks on Folder Panel).

[T]ransmit MIDI buffer: transmits active buffer as indicated in the message box below the Files Panel regardless of which folder is presently highlighted.

[L]oad buffer: loads highlighted file into the buffer. This buffer will remain there until a subsequent load command is executed.

[S]ave buffer: saves buffer to disk.

[V]iew buffer: buffer monitor function.

[↑] and [↓] to scroll by lines.

SHIFTED [↑] and [↓] to scroll by pages.

[←] = TOP OF BUFFER.

[→] = END OF BUFFER.

[+] and [-]: increment or decrement patch changes.

Shifted [+] and [-]: as above but by a factor of eight.

[*]: reset program counter to patch one.

[B]ulk Organizer: same as menu entry.

Super-Super-Super-Super-Super

LIBRARIAN™

The ORIGINAL Universal Librarian

CHAPTER NINE -
TUTORIAL

9.1 Introduction

This tutorial is a brief introduction to the main features offered by SUPER LIBRARIAN. We suggest that you leave the 'PROMPTS' option turned 'ON' (checked). Hard drive users should make a folder named 'SUPERLIB' and copy all SUPER LIBRARIAN files to this folder. See Section 2.4 for more details on hard drive installation. Floppy disk users should make a 'Work' copy of the master disk and also format a 'data disk' to store files on. See Section 2.3 for more details.

9.2 Designing A Device Panel Setup

Double click on SUPERLIB.PRG to load the program and then follow these steps. When the program boots it looks for a 'default' Setup file named DEFAULT1.CNF. A list of instruments appears in the upper left of the screen called the DEVICE PANEL. Each Device Panel configuration may be stored to disk as a SETUP. Any number of SETUPs may be saved to disk. Let's have a look.

- Under the SETUP menu, select LOAD.

The GEM file locator will display a directory of other SETUP's stored on the default drive. To access files stored on other drives or hard disk volumes, use the 'Set Path' option (see Section 4.9).

- Double click on the SETUP named KORG_M1.

The Setup loads from disk and the DEVICE PANEL now displays the different 'DEVICE FOLDERS' for the M1. Device Folders are simply installed PROFILES. They may have a different name than the original PROFILE. Each of these different

instrument 'PROFILEs' contains code that requests the M1 to send a specific type of data to Super Librarian.

Depending on the Device Folder you select, Super Librarian will request anything from patch parameters to sequencer data. After the data is received, it may be stored to disk.

The first thing you should do is create a custom SETUP for your system.

- Under the Folder/Panel menu select INITIALIZE.

The current DEVICE PANEL is cleared and there is now room to start adding your devices.

- Choose the Folder/Panel menu again and select INSTALL. Select a MANUFACTURER name by clicking on it.

The FILES PANEL will display a list of PROFILES for the various instruments for that manufacturer. If the entire page is full, click on the PAGE button on the left (middle) of the screen . The second page of the directory will appear.

- Click on a PROFILE name to install it.

The dialog box in the lower left of the screen will prompt you to install the name of the PROFILE as it now appears. If desired, you may type in a name of your own choice (hit backspace or ESC to clear the current name) that will represent the PROFILE in the DEVICE PANEL. When you are satisfied with the name, click on YES to install the PROFILE as a 'DEVICE FOLDER'.

- Repeat these steps until the Device Panel displays all the Device Folders that you wish to install.

The procedure again is as follows. Under the FOLDER/PANEL menu, select INSTALL, then select a MANUFACTURER, select a PROFILE and then click on YES to install it.

- Use the left and right mouse buttons to set the MIDI channel of the Device Folder to match the device.

- If you have a programmable patchbay set the Midi Patchbay parameters (see Section 4.20).

- Choose the SETUP menu and SAVE your current SETUP.

SUPER LIBRARIAN will automatically create a folder called SETUP.CNF to hold all Setup files. If you are working with a floppy disk system you can save your Setups on the same disk as the program, or on a data disk that holds the files for a particular Setup. If a Setup is named DEFAULT1.CNF it will automatically load when the program is booted. If no DEFAULT1.CNF file is found, an empty Device Panel loads.

9.3 Receive Data

Before you initiate a transfer from your instrument to Super Librarian, you must be sure that the instrument is set to communicate with the Atari. Both MIDI IN and OUT ports must be properly connected from the synth to the computer.

In addition, you may have put it your instrument in a mode that permits System Exclusive transfers. This is usually called SYSEX ON or SYSEX AVAIL.

- To receive data, double click on a Device Folder.

You may also highlight a folder and press 'G' for 'Get Midi'. The box in the lower left of the screen will prompt you to verify the request. Click on yes. If the transfer fails, see the HELP section below. Once the transfer is completed you are prompted to name the file.

- To save the file, type in a name and click on 'YES'.

Super Librarian will then create a folder with the same name as the selected Device Folder. All data files for that Folder are automatically stored there. If you answer NO to the 'Save Under Filename' prompt, the current buffer remains intact. You can go directly into the BULK ORGANIZER (if supported) to view the patches.

9.4 Help

If you ever experience difficulties with a transfer, check the 'on-line' HELP files. Click once on a Device Folder to highlight it, then press the HELP button on the Atari keyboard. Instructions pertinent to the selected PROFILE will appear.

9.5 Transmit Data

- Click once on a Device Folder to highlight it.

A list of all patch banks for that Device Folder will be displayed in the Files Panel.

9.6 Bulk Organizer

- To transmit data, double click on any file-name displayed in the Files Panel.

You may transmit the current buffer at any time by pressing 'T' for 'Transmit', or by clicking on the 'Buffer Status Bar' at the bottom of the screen.

The BULK ORGANIZER allows you to view, copy, swap and rename your patches. To access the BULK ORGANIZER, you must use a PROFILE that supports this operation.

In most cases, the PROFILE that supports the BULK ORGANIZER is named with the extention .BLK (bulk). Most patch auditioning is done from within the BULK ORGANIZER.

- Request a dump from your synth, select the OPTIONS menu and choose BULK ORGANIZER (or press'B').

If the words 'BULK ORGANIZER' are 'greyed out', select a Device Folder that is supported by the B/O (for more info see Section 5.2). A screen displaying two CLIPBOARDs will appear. The patch names of the current buffer will be listed in the left CLIPBOARD.

- Use the left mouse button to click on Patch #1.

The 'Patch Buffer Box' in the center of the screen displays the selected patch name.

- Now click on Patch #2. Notice that patches #1 and #2 reverse positions.

This is how we SWAP sounds. If you double click on a patch name you are presented with a dialog box that lets you RENAME the patch.

- Click on a patch and then press and hold the shift key. Now click on another patch to COPY the first one over it.

The scroll arrows at the top and bottom of each CLIPBOARD let you access more names. The BANK button will allow you to access additional banks of sounds, for synths that use a multi-bank setup.

The BULK ORGANIZER is generally used with two banks of sounds at once. Usually the current bank in the synth is loaded into the left CLIPBOARD and the other is a file that you have loaded from disk. The two small icons in the upper center of the screen (keyboard/ computer) are used to control transfers from within the BULK ORGANIZER.

- Click on the title bar at the top of the right hand CLIPBOARD to make that panel active.

- Click on the KEYBOARD to COMPUTER icon (arrow toward computer) and the current data in your synth will be sent to the right CLIPBOARD.

You can swap voices between different banks, rename and organize your patches and then save the banks to disk. When you are finished, click on the COMPUTER to KEYBOARD icon to send the new bank back to your synth. Be careful that you don't lose any important patches!

9.7 Auditioning Sounds

There are a couple of ways to audition patches with Super Librarian. You may record and store up to 10 'mini sequences' for use in testing sounds. The 10 sequences are stored under the Function keys F1-F10 on the Atari keyboard.

- Click on the 'EXIT' button to return to the Main Screen.

- To record a test sequence, turn the Channelizer 'ON', highlight a device in the DEVICE PANEL and then hit 'SHIFT-F1'.

The message 'recording, hit ESC to abort' appears and the computer waits for you to record something. After the first note you have about 5 seconds to play. Repeat this procedure for Functions keys F2-F10.

- 'Save' the current 'Setup' to store test sequences F1 - F10.

The Test Sequences (and other data -- see Section 3.9) are stored with the Setup file. This means that every time you load a new SETUP there are 10 different sequences available for auditioning. Just press the desired function key (F1-F10) to play back a sequence. Select different instruments in the Device Panel to hear the sequences played by them.

Another way to test your sounds is by using the CHANNELIZER feature.

- Click on the CHANNELIZER to turn it 'ON' and then highlight an instrument PROFILE in the DEVICE PANEL.

The MIDI data from your master keyboard will be echoed thru and 'rechannelized' to

the MIDI channel of the selected Device Folder. Use the left and right mouse buttons to change MIDI channel numbers.

The BULK ORGANIZER provides the most convenient way to audition sounds with Super Librarian.

- Click on a patch name with the RIGHT mouse button, a program change corresponding to that location is sent to the synth.

You can also use the +/- keys to send Program change values. The * key will reset the program change value to 1. We offer the following approach to using this system.

- From within Bulk Organizer use the Synth -> Computer Icon to load the left CLIPBOARD with the current sounds in the instrument.

- Click with the right mouse button on the name of the patch you want to audition and then use the Function key sequences or your master keyboard to audition the sound.

- When you find a patch that you like, click on it with the left mouse button and COPY it to the right CLIPBOARD.

There must be a bank of patches loaded in the right CLIPBOARD before you can access it. You probably will want to create an INIT bank of sounds for your instrument. Initialize just one patch from the current bank in your synth and transfer that Bank to the BULK ORGANIZER. Click on the INIT patch and use the key combination ALTERNATE- SHIFT to do multiple copies to all patch locations. This way you do not

have to reselect the INIT patch for each copy and paste operation.

- After you have auditioned the sounds in the left CLIPBOARD bank and copied the ones you like to the right CLIPBOARD, SAVE the right CLIPBOARD to disk.

Now load another bank to the left CLIPBOARD repeat the auditioning process.

9.8 Transmit Sounds

After you have organized and stored your patches, you can send them back to the synth. Make sure that the MIDI channel assigned in the DEVICE PANEL matches the current settings on the instrument.

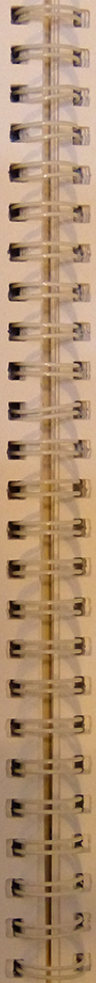
- Select a Device Folder and double click on a filename in the FILES PANEL to transmit the selected file.

9.9 MIDI Patchbay

If you use a MIDI patchbay that will receive program changes, Super Librarian can automate the switching during data transfers to and from the computer.

To configure the patchbay settings in Super Librarian, select the OPTIONS menu, then choose MIDI PATCHBAY. Under the heading 'SEND PATCH', use the L/R mouse buttons to assign programs in the Patchbay that have the IN and OUT of each device 'looking' at the computer.

After a data transfer is complete, SWITCH TO KEYBOARD CONTROL recalls the patchbay program that routes the output from your master keyboard to the computer. The PATCHBAY CHANNEL SELECTOR should agree with the MIDI receive



channel setting on the patchbay.

The 'PAUSE AFTER PATCH SEND' value will instruct the program to pause for a user defined time (milliseconds) to make sure the patchbay is 'settled' before the data transfer actually begins.

9.10 Performance Files

The PERFORMANCE menu lets you create and execute PERFORMANCE files. These files can store the patch data for an entire studio. A Performance can either 'RECEIVE' or 'TRANSMIT' a series of files. Let's try the Request 'ALL' Performance. This requests all system patches with just one command.

- Initiate the PERFORMANCE by selecting START. Choose 'ALL'

SUPER LIBRARIAN will scan the Device Folders in the current Device Panel and one by one, issue a dump request. If you have a programmable patchbay, you won't have to touch a thing (assuming it is set up properly). If you don't have a patchbay, follow the prompts.

- Give the Performance file a name and save it to disk.

Performances may be 'played back' from within the program or by the SUPER LIBRARIAN Desk Accessory.

A 'Manual' Performance can record the Transmission or Reception of data.

- To record a 'Reception' Performance, select 'START', 'Manual' and then double click on a Device Folder. When the prompt 'The data has been recorded' appears click on

'OK'.

Request data from another device, or select 'END'. Manual record mode allows new Setups to be loaded within the same Performance. This enables users with more than eight devices to save all system data.

- To record a 'Transmission' Performance, select 'START', 'Manual' and highlight a device in the DEVICE PANEL. Double click on one of the banks displayed in the FILES PANEL to record the data.

Follow the prompts - you may or may not wish to actually transmit data to the device. Repeat this procedure again, and again - even load a new setup and send a few more banks. When you are done, select END.

All the data recorded is stored in a single PERFORMANCE that can be executed from the main program OR the Desk Accessory. The MIDI Patchbay settings will make sure that all your synths are properly 'online' for the transfers.

This Performance feature has been very well received by studios that need to continually switch their synth patches around for various projects.

9.11 Capture Mode

If you hit 'C' for 'Capture Mode', Super Librarian displays all incoming MIDI data in hex format.

- From the Main Display press the 'C' key. Play a few notes on your master keyboard.

This is very useful for those who wish to gain a better understanding of how MIDI works. Another buffer oriented SUPER LIBRARIAN function is the 'V' command for 'View Buffer'.

- Highlight a Device Folder to display its files. Double click on a filename to load the buffer and select 'NO' at the prompt. Press the 'V' key. Hit 'ESC' to exit.

9.12 Desk Accessory

The SUPER LIBRARIAN Desk Accessory is basically a mini version of the program that can load Setups, and allow you to transmit any of your SUPER LIBRARIAN files to your devices. If you have read this far in the Tutorial, you should have no trouble using the accessory. Just make sure it is in the root directory of the disk or volume you boot your computer from, and is able to find the file PROFILE.LIB.

9.13 Profile Editor

Instrument PROFILES are created using the PROFILE EDITOR. These PROFILEs contain the instructions that control the transfer of data to and from your synth. Let's look at the code used in one of the PROFILEs.

- Go to the OPTIONS menu and select PROFILE EDITOR. Then under the EDITOR menu, select EDIT. Click on the name KORG and then select the PROFILE named M1_ALL.INT.

The two lines of instructions you see request the M1 to dump its entire internal memory to Super Librarian.

- Click on the box marked QUICK REFERENCE at the lower right hand side of the screen.

You will see a condensed reference guide for Super Librarian's MOS (MIDI Operating System) programming language. With a bit of study and a fair bit of practice, you can learn to program your own PROFILES. Every synth manufacturer seems do things a little differently, but if you enjoy programming, the MOS language is there at your disposal for whatever creative applications you may dream up.

- Click on OK to get back to the PROFILE EDITOR, and then RESET to return to the main program.

If you have an instrument or MIDI device that is not currently supported by Super Librarian and are able to initiate a 'BULK DUMP' of System Exclusive data from that device, you can use the GENDUMP profile to capture the data, store it to disk and then send it back.

- Under the EDITOR menu, select EDIT and then GENERIC. Click on the PROFILE named GENDUMP.BLK.

The instructions in this PROFILE will set Super Librarian to a 'ready to receive data' mode from any MIDI device. For more information refer to the 'Programmer's Reference Guide' on page 95.

- Click on 'RESET' and then deselect the 'Profile Editor' option.

This ends our introductory tutorial. Super Librarian provides the user with a complete MIDI operating system. This means that you can program your own System Exclusive routines to control the MIDI devices in your setup. It also means

9.14 Conclusion

that we can easily add new devices to the existing list of instruments supported by Super Librarian.

This program will never become obsolete - we will just keep adding new devices and features. Be sure to register your warranty card!! This is the only way we can contact you about program updates, enhancements and instrument additions.

Some PROFILES are more complex than others but you can be sure we'll always support the latest and greatest new instruments. We welcome user input with regard to suggestions for PROFILES and requests for devices that are not yet supported. In fact, several users have been contributing quite regularly to our BBS (1-819-777-3468) with requests for new PROFILEs and features. And even better - they have uploaded PROFILEs that they created themselves. In the near future, we hope to organize a library of Public Domain patches in Super Librarian format, and will encourage all users to contribute.

This is only the beginning for Super Librarian. There are many additional features planned for future versions. The program is now shipping for the Atari, Macintosh, IBM and Yamaha C1. The Amiga will be shipping by January 1990 (sounds like a long way off!!). You are now able to swap patches and other MIDI data with any musicians that use one of these computers via disk, modem or direct computer connect.

Even if you already own Patch Editor/ Librarian programs for your instruments, it makes sense to use Super Librarian as your

standard storage format. Super Librarian will help you get your system under control. You will never have to worry about where your sounds are stored. They will be waiting for you - right under the Super Librarian Desk Accessory.

SuperLIBRARIAN™

The ORIGINAL Universal Librarian

SuperSuperSuperSuperSuper

PROGRAMMER'S REFERENCE GUIDE

CHAPTER ONE - THE SUPERLIB MIDI OPERATING SYSTEM

1.1 Introduction

Super Librarian's Profiles are written in the MIDI Operating System (MOS) language. We are constantly adding new routines to keep up with today's feature-packed MIDI products. The language performs two primary functions.

1) To initiate communication and the exchange of data with a MIDI device.

2) To organize data received from a MIDI device (ie. patches, performances, presets) into moveable blocks for use in the 'Bulk Organizer'.

Any kind of MIDI message may be sent to a device, from program changes or note on messages, to system exclusive commands. Section One of the guide deals with the various MOS symbols used to exchange messages and data with MIDI devices. Section Two examines the data structure of the Bulk Organizer, complete with specific examples.

If you are in any way 'MIDI literate' and have a bit of an interest in programming in general, you should find the MOS language relatively simple to understand. The part that is tough for us to document includes all the weird things we have to do to manipulate the various sysex data schemes - those fun variables like timing errors (maybe too fast ... maybe too slow) or special handshake packet requirements.

The examples given in the Programmers Guide, and a fair bit of practical experience, should give the committed MIDI hacker the tools necessary to get inside just about any box on the market. Of course, there will be exceptions and new techniques

used as MIDI devices continue to evolve. In these cases, we will have to expand the MOS language to accomodate these changes. If you are truly stumped, turn on your modem and log on to the MOSWARE BBS: (819) 777-3468. This is our link to the outside world. The SYSOP is very knowledgable about what Super Librarian can and cannot do, and will be glad to try and answer any questions that users might field. Now on to the good stuff.

1.2 The PROFILE Editor

All Profiles begin as Source code which is written, tested and compiled while in the Edit Mode. Enter Edit Mode by selecting PROFILE EDITOR from the OPTIONS menu. The main body of the screen doesn't change but a new set of selections, needed to test, save, load and compile new profiles, appears in the Menu Bar. The Profile Source code is created in the Edit Screen, which is invoked by selecting EDIT from the EDITOR menu. When you do this, the Help Panel prompts you to 'select a manufacturer' from the list that appears in the Files Panel. By selecting a manufacturer and an instrument, you can study or edit any existing profile. For now, you want a blank edit screen, so click on YES without selecting any manufacturer.

THE EDIT SCREEN LAYOUT

1.3 /Manufacturer

The box at the top left of the Edit Screen is for the "Manufacturer" name. Profiles for instruments from one manufacturer are grouped under one title. When entering a manufacturer name, remember that this field is case sensitive. For example, Yamaha____ is not the same as YAMAHA____. It is also space sensitive ie. ROLAND__ is not equal to ROLAND _. Get the name right, or you'll have two ROLAND manufacturers to choose from when you try to install a new Profile in a Setup.

You can also group profiles that are geared to a particular task. For instance, the UTILITIES 'manufacturer' group in your Profile Library includes LOCAL ON/OFF, ALL NOTES OFF, OMNI ON/OFF and other common routines that do not involve SysEx transfers.

1.4 /Instrument

The space at the top centre of the screen is for the Instrument name. Enter it using the standard ST filename format of up to 8 characters followed (optionally) by a period and maximum 3 character suffix (ABCDEFGH.123). When you save the profile as a Source, the Instrument name is used as the Source filename. After a Source has been compiled, the Instrument name becomes the default name for the Profile when it is installed in the Device Panel.

1.5 /Test It & Reset

If you click on the TEST IT button, you exit to the Main screen with the currently loaded Source (if there is one) installed as Device 8. The Source can be used as if it were a compiled profile to see if it works. You can return to the edit screen with the Source intact by selecting Edit from the EDITOR menu or by typing 'e'.

Click the RESET button to clear the editor and exit to the main screen.

1.6 /The Text Editor

The 17 blank lines of the text editor is where the Source code is entered. The arrow keys move the cursor. The escape key clears the entire line the cursor is on. Backspace and Delete both function normally. Return doesn't do anything.

1.7 /Other Buttons

The other buttons on the page are fairly self explanatory.

Print Source - outputs a hard copy of the edit screen to any standard printer configuration.

Save source - saves the uncompiled source to

disk using the instrument name as the filename.

Quick Reference - lists all the MOS language symbols with a brief explanation of each.

THE MOS LANGUAGE

1.8 'S' and 'L'

In a Super Librarian Profile the S and L commands distinguish between (S)ave and (L)oad operations. Save operations are those initiated by double clicking on a Device Panel box. Load operations are those initiated by double clicking on a Files Panel box. Every profile must have both an S and L statement before it can be tested. This tutorial assumes that the S statement is always developed first. The L statement could simply be L [ ] (load a blank text box) until it is developed. In practice, the order of the S and L statements doesn't matter.

To begin, we'll create a Source using TEST as the Manufacturer name and GENERIC as the Instrument name. Use the cursor arrows to move between the name boxes and the text editor. On the first line of the text editor type:

```
S R *
```

When you double click on a device in the panel, the program looks for the S command in the Profile and executes the code following it. If the profile is going to save data to disk, the code must include an (R) receive command and a (*) buffer command somewhere in the S statement. The buffer

(Atari ST version) is a reserved chunk of memory equal to 5/8 of the available RAM. If the buffer receives any data while executing the S statement, the program prompts the user to create a filename and save the data to disk. The disk operation automatically creates a folder bearing the Instrument name of the selected device and stores the file in that folder.

Move the cursor to the second line and type:

```
L T *
```

The job of the L statement is to load the file saved by the S statement from disk and transmit it to a MIDI device. When you double click on a file in the Files panel, the program looks for the L command in the Profile and executes the code following it. If the profile is going to transmit stored data to a MIDI device, the L statement must contain a (T)ransmit and (*) buffer command.

Every common profile could begin as:

```
S R *
L T *
```

1.9 Semi-Colon;Text;

When you create a Source, you can add remarks to indicate what each part of the code is doing. An annotated version of the above source could be -

```
S;ave data; R;eceived in; *;buffer to disk
L;oad data from disk to buffer; T;ransmit;
*;buffer
```

The semi-colon is used to separate inactive text from active code so that remarks can be

saved with a Source. To save memory, the remarks are discarded when the Source is compiled.

1.10 Testing The Source

Click on TEST IT. The name GENERIC should appear in slot 8 of the Device Panel. When you double click on the device, S R * will receive any MIDI data into the buffer until the data flow stops for 1 second. Then the program automatically 'times out' and prompts you to name and save any data that was received. In practice, you would have to double click on the device box and start transmission from the MIDI device within 1 second or the program will terminate with nothing in the buffer. This is hardly practical.

Return to the Edit screen by typing 'e'. Since all system exclusive messages must start with F0, the situation can be remedied by editing the profile to read:

**S R F0 *
L T F0 ***

Now when you click on the Device box, the program will wait indefinitely until it receives the specified F0 'begin sysex' byte. Then it will receive data into the buffer until a one second time out.

When you specify a byte after a Receive symbol, it is not stored in the buffer. Since the F0 must precede any data sent back to the device, F0 must also be specified after the T in the L statement.

The profile we've just created, S R F0 * L T F0 *, is functionally identical to the GENDUMP profile under the GENERIC manufacturer heading. It will capture a simple bulk dump initiated from an instrument, store it to disk and send it back on command. This will work for many instruments, but there are many others that require a more complex profile. Even the instruments that this profile works with can benefit from refinements to increase the efficiency and convenience of the transfer process.

1.11 SysEx Headers

So, we now have a profile that receives and transmits data. What more do we need? For one thing it would handy to be able to assign the MIDI channel that the data is received and transmitted on. The GENDUMP profile makes no allowances for specifying the MIDI channel. If the dump was received on channel 1, it is sent on channel 1. If you change the System Exclusive receive channel on the device, it won't get the message.

Though SysEx data itself has no channel assignment, nearly all manufacturers specify a MIDI channel in a string called the SysEx header. The header follows the F0 'begin SysEx byte' and precedes the actual voice data. The header is unique to the manufacturer and will usually contain the manufacturer and instrument I.D., as well as the System Exclusive MIDI channel to be used and other commands the instrument might need to direct the data to the right place.

This is a data header for the Korg M1:

42 3n 19 50 00

The first byte, 42, is Korg's I.D. The second

byte, 3n, is the channel specifier, the third, 19, is the M1 instrument I.D., the fourth, 50, is a command that means 'prepare to receive a bulk data dump', and the last byte, 00, directs the dump to the internal memory of the MI. Put in the context of a profile, the header looks like this:

S R F0 42 3n 19 50 00 *
L T F0 42 3n 19 50 00 *

1.12 The MIDI Channel Variable: N

Let's look at the channel specifier byte in the above profile, 3n. 3n can be any number from 30 to 3F. The n is referred to as the variable. If the value of n is 0, making the byte 30, then the MIDI channel is 1. If n=1 (31) the MIDI channel is 2 and so on up to n=F (3F) for MIDI channel 16. The first number in the channel specifier, 3 in this case, can vary from one instrument to another and must be determined from the SysEx documentation supplied by the manufacturer.

Super Librarian allows you to control the channel variable from the Device panel. Place an N before the channel specifier byte and make the second number in the byte 0.

The M1 profile with variable MIDI channel looks like this:

S R F0 42 N 30 19 50 00 *
L T F0 42 N 30 19 50 00 *

Now when you set a MIDI channel in the Device panel, N reads it in to the channel specifier byte.

Another byte of interest in this header is

the command byte, 50. This command indicates that an M1 dump consisting of all the data in memory will follow the header. The M1 and most other synthesizers recognize several commands. One of the most common and most useful is a Request data command. With this command you can initiate a dump using the computer as a 'remote control' rather than having to start the dump from the synthesizer panel. To accomplish this, the S statement must transmit the Request to the device before receiving any data.

From the M1 SysEx documentation we learn that the request all data command is 0F. In addition the documentation tells us that data can be requested from the internal RAM, 00, or from a data cartridge, 01.

With the addition of the Request for internal memory, the M1 profile looks like this:

S T F0 42 N 30 19 0F 00 F7 R F0 42 N 30 19 50 00 *
L T F0 42 N 30 19 50 00 *

The bytes in the request are: Begin SysEx F0, Korg I.D. 42, the variable MIDI channel N 30, M1 I.D. 19, the request all data command 0F, the internal memory bank specifier 00, and the end of SysEx byte F7.

This profile can get data without the user having to touch the M1.

1.13 MIDI Byte 'F7'

This is a good place to discuss the function of the MIDI byte F7. Like the F0 that marks the start of every SysEx message the F7 marks the end of each message. In this M1 profile, it is used to mark the end of the

data request. When M1 data is transmitted it also ends in an F7. In the above profile, the (*) buffer receives the F7 at the end of the dump, waits for 1 second and automatically times out because no further data is received. If you edit the profile so that F7 is specified after the *, then it will exit as soon as it sees an F7. The one second wait is eliminated.

Add the F7 and our profile looks like this:

S T F0 42 N 30 19 0F 00 F7 R F0 42 N 30 19 50 * F7
L T F0 42 N 30 19 50 * F7

Remember that the byte must be specified in both the S and L statements. If the F7 is not specified in this L statement, the M1 will 'hang' when you send it data because it never receives an F7 telling it the dump is over.

1.14 User Input @ and Text Boxes (I I)

The above M1 profile exchanges data with the internal memory bank only. The profile can be further refined to ask for internal or cartridge memory. The User Input symbol, @, can be substituted for any specified byte. The user chooses the value of this byte each time the profile is executed.

This is how @ is used with the M1 profile to vary the bank specifier byte:

S @ [Select 001 for internal|Select 002 for cartridge]
T F0 42 N 30 19 0F @ F7
R F0 42 N 30 19 50 @ * F7
L @ [Select 001 for internal|Select 002 for cartridge]
T F0 42 N 30 19 50 @ * F7

The first @ is placed right after the S. It alerts the profile to the fact that there will be a User Input variable in the S statement.

The braces [ ] contain the text that will prompt the user to select the internal or cartridge bank. Uprights (shift backslash) within the braces are used to separate each line of text (up to 5 lines, maximum 30 characters per line). The second @ replaces the bank specifier byte in the dump request.

Now, when a save is initiated, a text box appears that prompts the user to 'Select 001 for internal. Select 002 for cartridge'. An arrow box within the text box is used to scroll through DECIMAL numbers 001 to 127. (Hex is not used as many end users are unfamiliar with it.) The user scrolls to 001 or 002 (001 decimal = 00 Hex) and clicks on OK. The profile continues and when it encounters the second @, which is now the bank specifier, it uses the hex version of the selected number. The M1 responds with a dump of the specified memory bank.

The L statement uses the same set up. This permits a dump which originated from internal memory to be transmitted to card memory and vice versa.

For information on changing USER INPUT's numbering system, see hh25 (Section 2.12).

1.15 Loops < > 00 00 $

Many devices don't dump memory in one continuous block of data but use a scheme where data is devided into blocks or packets. Each packet may require its own dump request and send its own dump header. In cases such as this, you can set up

a loop. A looped section of code will repeat a specified number of times (maximum FE) and can increment up to 5 designated bytes in the statement. The start loop symbol is < (shift comma), end loop is > (shift period). The first byte following the end loop sets the number times the loop will be executed and the next 5 bytes are the counting variables. At least one counting variable must be specified. A $ marks the end of the variable list.

This is how a loop looks in a very simple profile:

S < R F0 00 * F7 > 04 02 $
L < T F0 00 * F7 > 04 02 $

The statement R F0 00 * F7 will be executed 4 times as indicated by the first byte following >. The second specified byte in the statement, 00, will increase its value by one each time the loop is executed, as indicated by the second byte following >.

Note: When determining the position of a counting variable, always skip the first R or T inside the loop. Count 1 for each specified byte. If the variable follows any other symbols, as it usually will, count each symbol as 2 bytes. If the variable follows a text box inside the loop, the braces count as 2 each and the characters count as 1 each.

When the S statement receives the specified bytes F0 00, it begins to receive data to the buffer until it sees an F7. Then it starts over at the beginning of the statement. On the second pass the specified bytes change to F0 01. In the fourth and final pass the

specified bytes would be F0 03.

Here is a practical example of a profile that uses a loop. You can load it in to the Edit screen by selecting Edit, choosing CASIO as the manufacturer and CZ101.INT as the instrument.

The CZ101 will not dump a bank of voices with a single request. Each voice must be requested separately.

The profile uses a loop to request voices 1 to 16.

S < T F0 44 00 00 N 70 10 20
R F0 44 00 00 N 70 30
T N 70 31
R * (0100) F7
T F7 > 10 09 $
L < T F0 44 00 00 N 70 20 20
R F0 44 00 00 N 70 30
T * (0100) F7
T F7 > 10 09 $

The underlined byte at the end of the first line, 20, indicates voice 1 in internal memory. This will be the counting variable. Its position, 09, is determined by skipping the T and counting one for each specified byte up to and including 20, and counting 2 for the symbol N. The statement is transmitted 10 times (16 decimal), each time requesting the next voice in the bank.

In the L statement, the counting variable tells the synthesizer where to store each voice.

1.16 Infinite Loops

Data from a sampler or sequencer is usually sent in packets that are conveniently handled by a loop. The number of packets

sent can vary according to the size of the sample or sequence. When an unknown number of loops are needed use 00 as the loop specifier.

S <R F0 00 * F7> 00 01 $
L <T F0 00 * F7> 00 01 $

The save statement waits for F0 00 and then receives unspecified data into the buffer until it gets an F7. It continues to execute each loop until no data is received. Then it 'times out' and either executes the rest of the statement or prompts you to save.

Note: An infinite loop containing a Receive command cannot be immediately followed by another Receive command.

1.17 Nested Loops

< T F0 00 F7 < R F0 * F7 > 00 00 $ > 10 02 $

The outer shell of this nested loop is a request that is repeated 16 times. The second byte of the request is incremented on each pass. Each request receives data in the undefined inner loop.

1.18 Timing Symbols 'W' and 'G'

When a device is engaged in a SysEx transfer, it may need to perform internal 'housekeeping' routines that can interrupt the inflow or outflow of data. Hopefully, the manufacturer of the device will point this out in its SysEx documentation. These devices require the profile to wait at certain points so that the device can keep up. This happens most frequently where a loop is involved.

S <R F0 00 * F7> 00 01 $
L <W 20 T F0 00 * F7> 00 04 $

When this L statement is executed, the W tells it to wait 20/70 (if a Hi Res monitor is used) of a second between each loop. For Medium Res systems, this changes to 20/60 of a second. Notice that the Wait command does not have to be used in both S and L statements, but the counting variable position in L must change to accomodate it.

The G command actually slows down the entire rate of transfer, with G 00 being a full speed transfer, G 20 3/4 speed, G 40 half speed and so on. G would usually be placed directly after S or L to reduce the transmission rate of the entire profile.

1.19 PROFILE Practice

That takes care of all the commands that would normally be used for SysEx transfers. In order to get a feel for them, and a few additional commands, we have included a few profiles that deal with non-exclusive data. These profiles transmit note and controller data and will give you some immediate feedback as you get comfortable with the basics of the MOS language.

Instrument/Filename PROG_CHG.TST

UTILITIES
S T N C0 00
L [ ]

This profile transmits program change 1 on the channel specified in the device panel.

Instrument/Filename PROG_INP.TST

UTILITIES
S @ [Select program number 1-127] T N C0 @
L [ ]

This profile uses Single Value User Input (@) to get the program to prompt you to choose a program number.

Instrument/Filename PROGLOOP.TST

UTILITIES
S <W 70 T N C0 00> 10 07 $
L [ ]

This profile sends patches 1 through 16. There is a 1 second wait between each loop.

Instrument/Filename PRGSCALE.TST

UTILITIES
S <T N C0 00 W 20 <T N 90 40 40 W 20 40 00> 0D 04 09 $ > 10 04 $
L [ ]

This nested loop profile sends a program changes 1-16. After each program change it plays a one octave chromatic scale.

Instrument/Filename CH_SCALE.TST

UTILITIES
S <T 90 <T 40 40 W 05 40 00> 0D 01 05 06 $ > 10 01 $
L [ ]

This profile plays a 1 octave chromatic scale on each MIDI channel. A tempo retard is accomplished by incrementing the wait value in each loop.

COMPILING A PROFILE

1.20 Source

A profile under developement is referred to as a Source. An uncompiled Source is not part of PROFILE.LIB and can only be installed in the device panel if it is first loaded into the edit screen. Sources can contain Remarks that explain what the profile is doing.

1.21 Compile

When a Source is finished and tested you can Compile it. It then becomes part of the PROFILE.LIB. By using the Install procedure you can add the profile to a device panel. All remarks are removed in the compilation process.

It is strongly recommended that you make a back up of your original PROFILE.LIB when experimenting with compiling new Profiles.

Super Super Super Super

LIBRARIAN™

The ORIGINAL Universal Librarian

PROGRAMMER'S REFERENCE GUIDE

CHAPTER TWO - THE BULK ORGANIZER

In order to set up data for use in the Bulk Organizer, you must first look at and interpet the raw data dumped from a device.

2.1 View Buffer

You can examine any data in the buffer by typing 'v' from the main screen. The View Buffer screen displays the byte/nibble count in a column down the left side, the data in HEX in the centre, and the data in standard ASCII in the right hand column. You can scroll through the data, one line at a time using the up/down arrows, or one full screen at a time using shifted up/down arrows, or to the end with the right arrow and to the beginning using the left arrow.

2.2 Setting Up The Bulk Organizer

Within each Bulk Dump are individual blocks of data that make up 1 voice, patch, performance, combination or whatever. As a simple example, imagine a 3200 byte dump made up of 32 voices of 100 bytes each. The header and the F7 end of exclusive message are not included because they should have been specified after the Receive command. The aim of the Bulk Organizer is to identify each block of data and allow it to be moved around without affecting the other blocks.

A profile must contain a V statement to use the Bulk Organizer. The V statement is placed after the S and L statements and takes the form-

V (0000) (0000) (0000) (0000) (0000) (0000) (0000) 00 00 00

...or

V (0000) (0000) (0000) (0000) (0000) (0000) (0000) 00 00 00 00 00 00 (0000) (0000) (0000) (0000)

...or

V (0000) (0000) (0000) (0000) (0000) (0000) (0000) 00 00 00 00 00 00 (0000) (0000) (0000) (0000) (0000) (0000) (0000) (0000) (0000) (0000)

...depending on the complexity of the data. Each (0000) or 00 is a Hex number that tells the Bulk Organizer something about how the data is organized. To identify each (0000) or 00, we'll refer to it by numbering its position like this - (hhhh)01 or hh08 etc.

2.3 The Header Offset (hhhh)01

(hhhh)01 counts of the number of bytes in the data buffer before actual voice data begins. These bytes will most likely represent a variable part of the header that could not be specified after the receive command. They can include such things as a data address, bank specifier, or any other data that starts the dump but is not part of a voice. If the entire header was specified in the S statement, voice data starts immediately, so this number is (0000).

There are various situations where the entire header cannot be specified. For example Roland D10 dump header includes a 3 byte data address. When the D10 calculates its checksum, the address is included, so it must be stored with the voice data. The header offset for the D10 would be (0003).

2.4 Voice Name Position (hhhh)02

Assume that the device is actually sending voice (or patch, performance etc.) names (some older devices don't). Count the number of bytes from the beginning of the voice data (after any header) to the beginning of the voice name. If the name starts the data, then (hhhh)02 = (0000). That may seem obvious, but finding the voice name can provide several very important clues to determining the nature of the data.

The View Buffer assumes that the dump was sent in whole bytes and displays fresh data exactly as it was received. However, the display may not truly represent what was contained in the device because many manufacturers encode data for transmission. With any encoding scheme, ASCII characters represented by the transmitted code are meaningless until the data is decoded. So it follows that if you don't see any names in the ASCII column, either the data is not in straight byte format, or the manufacturer is not using the standard ASCII table.

The most common in encoding scheme for MIDI data transmission is the nibble dump. Each true byte is broken into two and only the second number is used. If the data is nibblized, the first number in each byte will be zero when viewed from the byte screen.

Type N to change to the nibble display. This removes the zeroes and reassembles the data into whole bytes. The order of the MSB (most significant byte) and LSB (most significant byte) can change from one scheme to another. Each time you press N the order will reverse.

For example, if the byte display reads 01

02 03 04

and you press N once you see:

Nibble LSB-MSB 21 43

Press N again and you get:

Nibble MSB-LSB 12 34

If the dump is nibblized, then one of these settings should reveal voice names. But you may not be out of the woods yet. There are a few more variations on a dump that must be handled from other parts of the V statement.

2.5 Number of Bytes or Nibbles In A Voice (hhhh)03

Hopefully the manufacturer tells you this in the SysEx specs. If not, just divide the number of bytes in the dump (excluding headers) by the number of voices. This works as long as no other data, like a system setup, was sent along with the voice data.

The voice name itself may be the best indication of voice length. Count the number of bytes from the beginning of the first name to the beginning of the second name. Even if the name is not at the beginning of the voice data this method should work.

2.6 Checksum Byte Position (hhhh)04

A checksum is a way of checking for errors in a dump. It is usually the last byte in a dump. If there are 1025 bytes in a dump, assume the checksum is byte 1025. Some manufacturers don't use a checksum, in which case (hhhh)04 is (0000).

If the dump is in packets, the checksum

will be covered by the packet specs (hhhh)18 to (hhhh)23. In this case (hhhh)04 is (0000).

One way identifying the checksum position is to get a dump and save it, then change a voice name in the synthesizer, get a new dump and compare it to the first.

For example, if the first name in dump number one is APPLE, change the name to BPPLE and retransmit the dump. If the last byte of dump one was 18 and the last byte of dump two is 17 or 19, then you know you've found the checksum. There are several ways of computing a checksum. The various methods are explained later under the Bit Field heading.

2.7 Number of Voices In Bank (hhhh)05

This one is easy. Just remember to input in Hex and to divide the total number of voices by the number of banks, if banks are used. For example if there are 32 voices, you would input (0020).

2.8 Number of Banks in Dump (hhhh)06

Another easy one. If banks aren't used, input (0000). If 10 banks are used, input (000A). The number of banks times the number of voices specified above will equal the total number of voices in the dump.

2.9 Bank Header Offset (hhhh)07

This value is 0 unless headers or other non-voice data are used before each bank.

2.10 Voice Name Length: hh08

This number is not bracketed and is only two figures. It represents the maximum number of characters the device allows in a name. Super Librarian's maximum is 30 (decimal) or 1E (hex). Only the first 18 characters can be viewed in the Bulk Organizer Clipboards. Additional characters may be edited by double-clicking on the patch name.

2.11 The Bit Fields

The bit fields each provide eight 'switches' that can be turned on and off. In the binary number 0000 0000, each zero represents 1 bit and all the bits are off. Its hex equivalent is 00. The number 0000 0001 has bit zero turned on. Its hex equivalent is 01. The number 1111 1111 has all bits turned on. Its hex equivalent is FF.

To determine the value of the bit field, turn each bit on or off as required and convert the result to hex.

Bit Field 1: hh 09

Bit 0-Type of Dump.
Off=Byte Dump
On=Nibble Dump [0000 0001] = 01H

Bit 1-Special ASCII
Off=Normal ASCII
On=Use special lookup table [0000 0010] = 02H

If this bit is on, the standard ASCII table is modified by the specs set in hh 11-13 and (hhhh) 14-17.

Bit 2-Checksum type
Off=2's Complement
On=1's Complement[0000 0100] = 04H

The two's complement checksum is most often used. Turning this bit on gives the one's complement result. For other variations, see bit 7 in this bit field (no complement), and bit 3 in bit field 2 (add to checksum).

Thankfully, its not usually neccessary to compute checksum values yourself. You can tell if you're using the right type by noting the checksum of a fresh dump, entering and exiting the bulk organizer, then checking the checksum again. Every time you enter the bulk organizer, it computes the checksum according to the Profile specs. If you don't make any changes to the data the checksum shouldn't change. If it did, change bit 2 or bit 7 and try again.

Bit 3-Packet specs
Off=No packets
On=Packets used [0000 1000] 08

If this bit is on, the specs set in (hhhh)18-23 are used.

Bit 4-MSB Cruncher
Off=Normal
On=MSB Cruncher [0001 0000] 10

The most efficient method currently used for encoding data for transmission is to use 8 MIDI bytes to represent 7 data bytes. The first seven bytes are each stripped of their MSB. The eighth byte is made up of the seven stripped MSB's. For example the seven bytes-

0000 0000 1111 1111 2222 2222 3333 3333 4444 4444 5555 5555 6666 6666 7777 7777

are sent as-

0000 0000 0111 1111 0222 2222 0333 3333 0444 4444 0555 5555 0666 6666 0777 7777 0123 4567

Why does anyone use these encoding schemes anyway? Wouldn't it be simpler to send the bytes in their original form? It sure would. The problem is that the MIDI spec only allows the low 7 bits to be used in transmission. All MIDI realtime or system common information has a range of 0 to 127 decimal. That's 00 to 7F Hex or 0000 0000 to 0111 1111 binary. The internal data of the MIDI device is under no such restriction, as long as it remains internal data. However, as soon as it has to be sent out over MIDI, it must conform to the MIDI Spec. So, we get nibblizing, ASCII representations of Hex, and MSB displacement encoding schemes.

Bit 5-Packet Offset
Off=Two Byte Packet offset
On=One Byte Packet offset[0010 0000] 20

The default setting is used when packets are sent as individual blocks, with a handshake between each. Super Librarian inserts an FF byte between each block.

Packets dumps that are sent in one contiguous block of data contain no FF bytes and use the one byte packet offset.

Bit 6-Checksum nibble dump
Off=Checksum Reconstructed bytes
On=Checksum nibbles[0100 0000] 40

Only relevant if bit 0 is ON. The default setting computes the checksum based on the true value of bytes represented by the nibbles.

Bit 7-Checksum no complement
Off=As per bit 2
On=No complement[1000 0000]=80H

See bit 2.

Bit Field 2: hh 10

Bit 0-Nibble Order
Off=LSB-MSB
On=MSB-LSB=01H

Bit 1-ASCII Representation of Hex
Off
On=02H

In this scheme (used by some Yamaha equipment) each byte represents one HEX digit. So it follows that two bytes of this type are required to represent one byte of hex. For example the ASCII representation of Hex 10 is 31 30.

Bit 2 - RESERVED (DO NOT USE...)

Bit 3 - Add to Checksum
ON=08H

Turning this bit on adds the field (hhhh)25. The value of this field is added to the checksum computation.

Bit 4 - Use Extension Bit Fields
ON=10H

This turns on bit field hh26, which sets the specs for restructuring voice and User Input numbering systems. The (hhhh)25 field must be present (though not necessarily active) for the extension bit field to be valid.

Bit 5 = Strip Copyright Bit
ON=20H

Subtracts 80 hex from bytes that exceed 7F.

Bit 6 = No Name edit
ON=40H

Disables voice name editing.

Bit 7 = Char is int
ON=80H

2.12 Special ASCII

Special ASCII A-Z hh 11
Special ASCII a-z hh 12
Special ASCII 0-9 hh 13

When the Special ASCII lookup (bit 1 in bit field 1) is on, hh 11 to 13 set the start of each character set. For example if hh 11 is 00, A=00, B=01, etc to Z=19. If the manufacturer doesn't tell you what kind of ASCII table they are using, figuring this out can involve a lot of guesswork!!!

Special ASCII for Individual Characters (hhhh)14-17

(hhhh)14 through 17 allow you to convert up to four individual characters to a new ASCII value. The byte representing the standard hex representation of the ASCII value is placed first, the new version second. For example Standard ASCII for & is 26. If instead you need 3C to produce an '&', you would input (263C).

If bit 3 in bit field 1 (packet specs) is ON, (hhhh)18 through 23 set the parameters.

2.13 Packet Specs

Header Offset (hhhh)18

Usually the same as (hhhh)01, but will be smaller if the packet has a header that must be included in the checksum range.

Packet Offset (hhhh)19

When each individual packet includes its own header, this specifies the number of bytes in that header.

Packet Length (hhhh)20

The number of bytes in one packet, starting after the packet header up to the checksum byte.

Packet Checksum Start (hhhh)21

The number of bytes from the beginning of a packet up to the first byte included in the checksum value. If the whole packet is checksummed it is (0000).

Packet Checksum Position (hhhh)22

The number of bytes from the beginning of the packet up to the checksum byte.

Number of Packets in Dump (hhhh)23

2.14 Add To Checksum

Add to Checksum (hhhh)24

If bit 3 in hh11 is on, this value is added to the checksum computation.

2.15 Bit Field hh25

Active if bit 4 in hh11 is on. This bit field permits offsets and octal numbering schemes to be used in the Bulk Organizer and User Input.

Bit 0 Use Octal numbering for banks.
ON=01

Bit 1 Use Octal numbering for patches.
ON=02

Bit 2 Add the value of (hhhh)29 to bank number.
ON=04

Bit 3 Add the value of (hhhh)30 to patch number.
ON=08

Bit 4 Set User Input limits in (hhhh)31.
ON=10

Bit 5 Add the value of (hhhh)32 to User Input.
ON=20

Bit 6 Use Octal Numbering for User Input.
ON=40

Bit 7 = RESERVED

Extension bit fields hh26-28 are reserved for handling new features.

2.16 Optional Numbering Systems

Addbank# (hhhh)29

If bit 2 in hh25 is on, bank numbers in the Bulk Organizer start at the value set by (hhhh)29. This is usually used to start from 0 instead of 1, but any value less than 80H

is valid.

Addpatch# (hhhh)30

If bit 3 in hh25 is on, patch numbers in the Bulk Organizer start at the value set by (hhhh)30. Any value less than 80H is valid.

Single User Input Limits (hhhh)31

If bit 4 in hh25 is on, (hhll)31 sets the upper and lower limits of the Single User Input. hh is the upper limit and ll is the lower limit.

Single User Input Starting Number (hhhh)32

If bit 5 in hh 25 is on, (hhhh)32 sets the Single User Input starting number.

2.17 Multiple V Statements

The Case of the Voice with No Name

Some devices, particularly older ones, don't use voice names. Super Librarian lets you append a block of data to these files so that you can give each voice a name in the Bulk Organizer.

A V statement is constructed to deal with the data sent by the device. In this statement, (hhhh)01 the voice name position, is (0000) and hh08 voice name length, is 00.

A second V statement follows.

(hhhh)01= Use the total number of bytes received in the dump as the offset.
(hhhh)02= (0000)
(hhhh)03= The voice length now becomes the number of characters desired for the name. (up to 0011)
(hhhh)04= (0000)
(hhhh)05= (hhhh)05 in the first V statement.
(hhhh)06= (0000)
(hhhh)07= (hhhh)07 in the first V statement.
hh08= 00
hh09= 00
hh10= 00

Now when voice data is moved the voice name moves with it. Name data is not mixed with voice data but moves 'parallel' to it. Of course these names cannot be sent back to the device, but they make it much more convenient to handle voice data in the computer.

2.18 Multiple Data Types

Some devices send two or more 'independent' dumps of data that relate to the same voice. The profile simply requests each dump in succession and stores them in one file. For example, the Roland D10 sends Tone Data and Timbre Data as separate dumps. The Timbre data contains such information as the transposition and reverb setting for each Tone. When you move a Tone, you'll likely want it to keep all its original settings, so you must move the Timbre data to a co-responding location.

To accomplish this, a V statement must be constructed for each dump. In these cases, the first V will always relate to the dump containing the name. Up to 15 V statements can be stacked.

2.19 The HELP Editor

To create a Help File for any Profile, select Edit while holding the right shift key. Use the same manufacturer and instrument name that the profile source used. Use [] to bracket the text for each help box. Use as many boxes as necessary. Each box can contain up to 5 lines of 30 characters each. Mark the end of each line with an upright (shift backslash).

Note: Selecting edit while holding the right shift key toggles between the Help Editor and the Profile Editor. You must save and compile Help sources from within the help editor, and Profile sources from the profile editor.

This ends the Programmer's Reference Guide. If you have any programming related questions, the best way to communicate with us is by mail or modem via our BBS: (819) 777-3468. Please direct your inquiries to Roger Grant

We are committed to the continuing evolution of the Super Librarian MIDI Operating System. We encourage your input regarding new features and enhancements to our program. Thanks for your support.