ANATEK

SMP-16™

SMPTE Synchronizer/ Programmable MIDI+Audio Patchbay/ Macintosh® Interface

Owners Manual

Warranty

The **SMP-16** is warranted against defects in materials and workmanship for 1 year on parts and 90 days on labor from the date of purchase by the original owner. During the coverage period, ANATEK will replace or repair any software or hardware that proves to be defective, provided that the purchaser has followed all instructions in this manual. The choice between repair or replacement of defective parts will be made at the sole discretion of ANATEK. To facilitate warranty service and insure the receipt of software updates, please fill out the Warranty Registartion Card and return it to ANATEK within 14 days of the date of purchase.

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No other warranties are expressed or implied, and ANATEK is not liable for damages based on inconvenience, or for any direct, indirect, incidental, or consequential damages resulting from the use of this product.

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SMP-16™

■ Table of Contents

■ INTRODUCTION ____ 2
■ PRECAUTIONARY NOTES ____ 2
■ PRODUCT OVERVIEW ____ 3
■ PANEL DESCRIPTION ____ 4
■ MENU / EDIT DIAGRAM ____ 6

[1] USING THE SMP-16 ____ 8
1. Power Up ____ 8
2. Loading Patches ____ 8
a. Loading a MIDI Patch Using the Front Panel ____ 8
b. Loading an Audio Patch Using the Front Panel ____ 9
c. Loading MIDI and Audio Patches Using Program Changes ____ 10
3. Show Currently Loaded Patches ____ 11

[2] CREATING CUSTOMIZED PATCHES ____ 12
1. Overview ____ 12
2. Setting Up Your MIDI Patch Bay ____ 13
a. Assigning a MIDI In to a MIDI Out ____ 13
b. Naming Your MIDI Inputs and Outputs ____ 14
c. Assigning a MIDI Input to a Processor / Filter ____ 15
d. Merging Any Two MIDI Inputs ____ 17
e. Connecting Your Macintosh ____ 20
3. Setting Up Your Audio Patch Bay ____ 21
a. Assigning an Audio In to an Audio Out ____ 21
b. Naming Your Audio Inputs and Outputs ____ 23
4. MIDI Filters and Processors ____ 25
a. What are MIDI Filters and Processors? ____ 25
b. Editing the MIDI Filters and Processors ____ 25
c. What is Running Status? ____ 26
5. MIDI Controllers ____ 27
a. What is a MIDI Controller? ____ 27
b. Editing the MIDI Controllers ____ 27
6. Saving Your Patch Changes ____ 29
a. Saving a MIDI Patch ____ 29
b. Saving An Audio Patch ____ 31

[3] USING THE SMPTE FUNCTIONS ____ 32
1. What is SMPTE Time Code? ____ 32
2. Generating SMPTE ____ 34
3. Reading SMPTE and Generating MIDI Time Code (MTC), Direct Time Lock (DTL), or Enhanced Direct Time Lock (DTLe) ____ 35
4. Using MIDI Sync ____ 36
a. Editing Song Starts, Tempos, and Names ____ 36
b. Reading SMPTE and Generating MIDI Sync ____ 37
5. Jam Syncing to SMPTE ____ 38

[4] MIDI UTILITIES ____ 39
1. Setting The MIDI Patch Program Change Receive Channel ____ 39
2. Setting The Audio Patch Program Change Receive Channel ____ 39
3. System Exclusive ____ 40
a. Setting the System Exclusive Device ID Number for Bulk Dumps and Loads ____ 40
b. Sending a System Exclusive Bulk Dump ____ 40

MIDI Implementation Chart ____ 41

■ INTRODUCTION

Congratulations! on your purchase of ANATEK's **SMP-16**. You have just taken the first step in greatly simplifying and enhancing all your midi applications for studio and stage. Our company— made up mostly of musicians — was founded on and is dedicated to the principle of easing the musician's technological burden, and returning him/her to the freedom of creating music, with **technology that helps in creating that freedom**. And this is exactly what the the **SMP-16** will do for you. ANATEK's **SMP-16** was conceived and designed as a solution to the ever-increasing technical demands on the musicians creative time. We know you will enjoy and appreciate the new-found ease that the **SMP-16** will give you.

Our manual is also designed with the same commitment to ease as our products. If you're like us, and most musicians, you don't have alot of time to spend reading and referring to a manual. Therefore, you may just want to read each section of the PRODUCT OVERVIEW, before diving in and figuring out the device on your own. The simple design of the advanced features on the **SMP-16** will allow most of you to do just that. However, for those of you who have never previously used any of the MIDI products on the market, (which we at ANATEK have combined into one box), the learning process will be equally enjoyable, but may require that you read a bit more of the manual. And now, on with the show!

■ PRECAUTIONARY NOTES

- Do not overtighten rack-mounting screws as this may damage the label. Mounting washers are recommended.
- Before you power up your new **SMP-16** make sure the voltage indicated on the back panel corresponds with that used in your part of the world. (i.e., all units sold to be used in the U.S. should read 110 volts AC, and all units sold to be used in foreign countries should read 230 volts AC).
- Always turn off the power to all equipment before making any connections to prevent damaging the unit and/or other equipment.
- Clean the unit with a soft dry cloth. More stubborn dirt may be removed using a mild, detergent. Afterwards, make sure to wipe thoroughly with a soft dry cloth.
- Never apply any strong solvents such as lacquer thinner or alcohol to avoid the risk of defacing to the unit.
- Do not drop the unit or expose it to strong impact.
- The unit radiates a certain small amount of heat. This should not be considered abnormal.
- The unit radiates a small amount of radio energy. If interferance is noticed, move the unit away from the equipment.
- The life of the memory backup battery inside the unit can vary from 5 to 10 years. It may become necessary to replace. At that time, contact an ANATEK Service Center.
- Always back-up important data by writing it down on paper and storing via System Exclusive Bulk Dump.

■ PRODUCT OVERVIEW

- A **16 In by 16 Out MIDI Controlled Audio Patch Bay** that lets you route all of your synthesizers and effects instantly with a single program change, so that you can easily modify your sound without the burden of plugging in and unplugging numerous audio cables, and without the nightmare of remembering where they all went.

- A **7 In by 8 Out MIDI Patch Bay** which includes two MIDI Processors with independent filters for Note On and Off, Aftertouch, Control Change, Program Change, Pitch Bend, System Common, System Real Time, System Exclusive, and All Notes Off, to handle all of your midi routing, filtering, and merging problems.

- **Six Inputs For Variable MIDI Controllers** allow you to access any of the 120 control change messages, such as MIDI Pan, MIDI Volume etc., by foot pedal or with ANATEK's **6 Slider Remote,** and all of these can be recorded into your sequencer or merged with incoming data in real time.

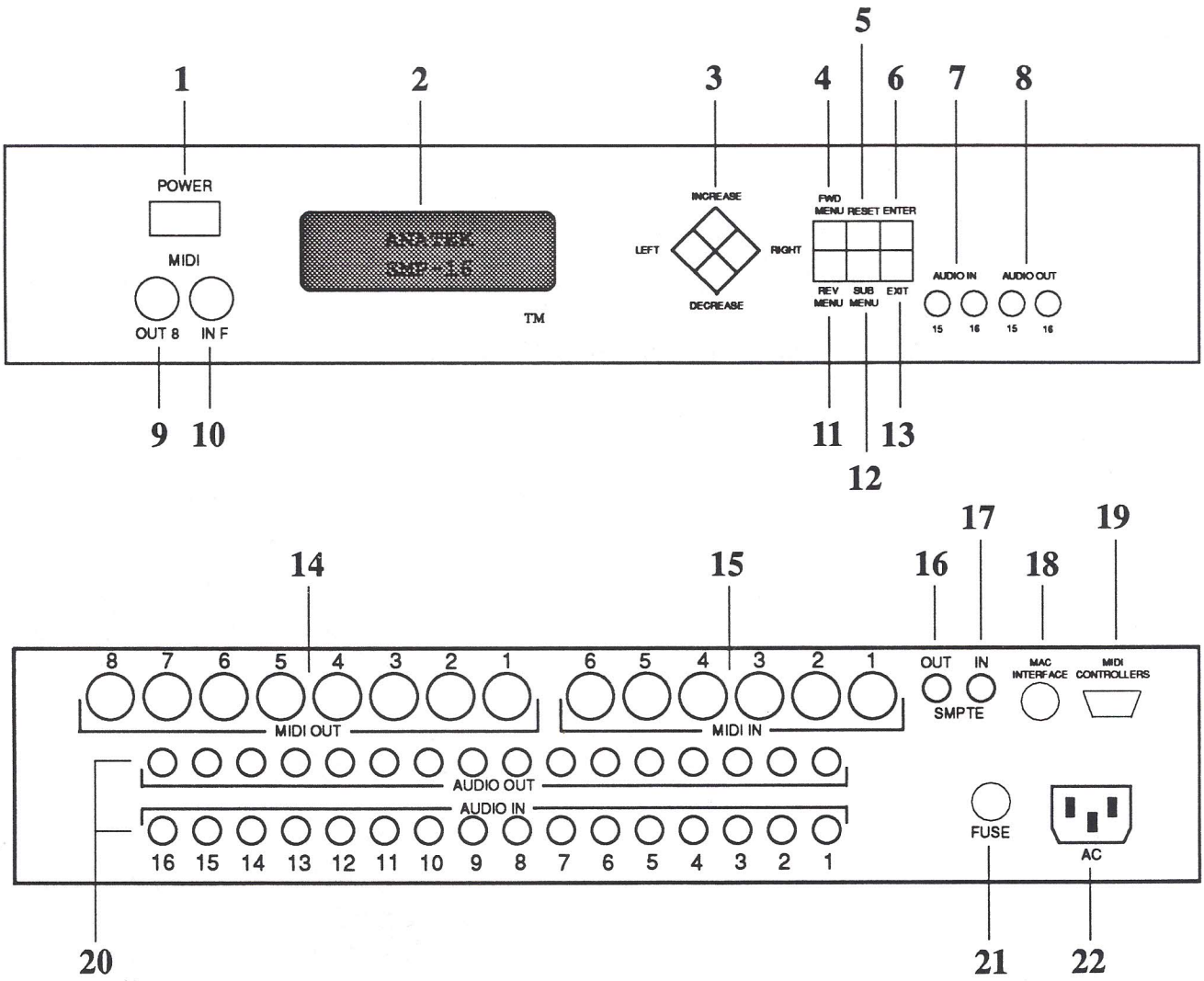
- A **Bit-Accurate SMPTE Read and Write** enables you to lock your sequencer (or any SMPTE device) to audio or video tape by generating MIDI Time Code, Direct Time Lock, Enhanced Direct Time Lock, or MIDI Song Position Pointer and Clock. Six different standard and non-standard frame rates are supported.

- A built-in 1-MHz **Macintosh™ MIDI Interface** connects your MIDI patch bay directly to your sequencer through the modem or printer port.

- **Connectors on the Front** of the unit to both the Audio and MIDI Patch Bays allow extra equipment to be added quickly without having to reach around to the back of your rack. Audio In 15 and 16 on the front panel are summed respectively with Audio In 15 and 16 on the back. Audio Out 15 and 16 on the front panel receive the same signal as Audio Out 15 and/or 16 on the back. MIDI In F (which is, in effect, MIDI In 7) must be routed through Processor A and/or Processor B. MIDI Out 8 on the front panel, if used, receives the same data as MIDI 8 Out on the back panel.

- **10 Character User-Assignable Names** on all inputs, outputs, song titles, and patch titles, allow you to customize your entire set-up, and, as you will see, the **Extra-Large Wide-Angle High-Contrast Display** is extremely easy to read.

■ Panel Description



1 POWER switch...turns the unit on or off. For your convenience the **SMP-16** always powers up to your last active window.

2 DISPLAY window shows menus and editable data, such as input and output names for midi and audio lines.

3 "DIAMOND GROUP" of cursor control and data entry buttons. LEFT/ RIGHT buttons move the cursor in the indicated direction. INCREASE/ DECREASE buttons increment and decrement data respectively.

4,11 FWD MENU/REV MENU buttons are used to scroll in either direction through the Main Menu windows shown in the display window.

5 RESET button is used to reset all data to its lowest possible value. To erase all editable data within a particular Sub Menu window hold the Reset button and the Right cursor button simultaneously until all editable positions return to the original factory setting.

6 ENTER button is basically an execute command button. It is used to execute any command indicated in either a Main Menu or Sub Menu window such as: "Load", "Save", "Edit", "Send", "Read", "Jam", or "Generate". If an edit needs to be made before a command is executed, then the SMP-16 will call up the appropriate Sub Menu window in which to make the edit.

7 AUDIO IN 15 and 16 on the front panel are designed for you to conveniently add temporary or alternate instruments to to your set up without having to reach around to the back of your rack. The two inputs are summed respectively with AUDIO IN 15 and 16 on the back panel.

8 AUDIO OUT 15 and 16 on the front panel are there, once again, for your convenience and accessibility for those times you may need to quickly add an instrument to your set-up. They receive the same signals respectively as AUDIO OUT 15 and 16 on the back panel.

9 MIDI OUT 8 allows you to access MIDI output data without unplugging any cables from the back. MIDI OUT 8 on the front panel receives the same output data as MIDI OUT 8 on the back panel.

10 MIDI IN F (which stands for "Front") is equivalent to MIDI IN 7. This allows you to add a seventh MIDI IN conveniently accessible from the front panel. This MIDI IN must be routed through a MIDI Processor—either Processor A, Processor B, or both. (MIDI processing on the other six MIDI INS is optionally assignable.)

12 SUB MENU button is used to enter a Sub Menu window in which to edit the function described in the Main Menu window.

13 EXIT button is used to reenter the Main Menu window from any of the Sub Menu windows.

14 MIDI OUT jacks. Connect these into your keyboard, effect, or sequencer MIDI inputs.

15 MIDI IN jacks. Connect your keyboard, effect, or sequencer MIDI outputs to these.

16,17 SMPTE IN/OUT jacks. For SMPTE reading and generating.

18 MAC INTERFACE connector. Connect this to either the modem or printer port of your Macintosh™ computer.

19 MIDI CONTROLLERS input. The MIDI Controllers input is a female type DB9 connector for use with **ANATEK's 6 Slider Remote,** providing you with six inputs for variable MIDI controllers.

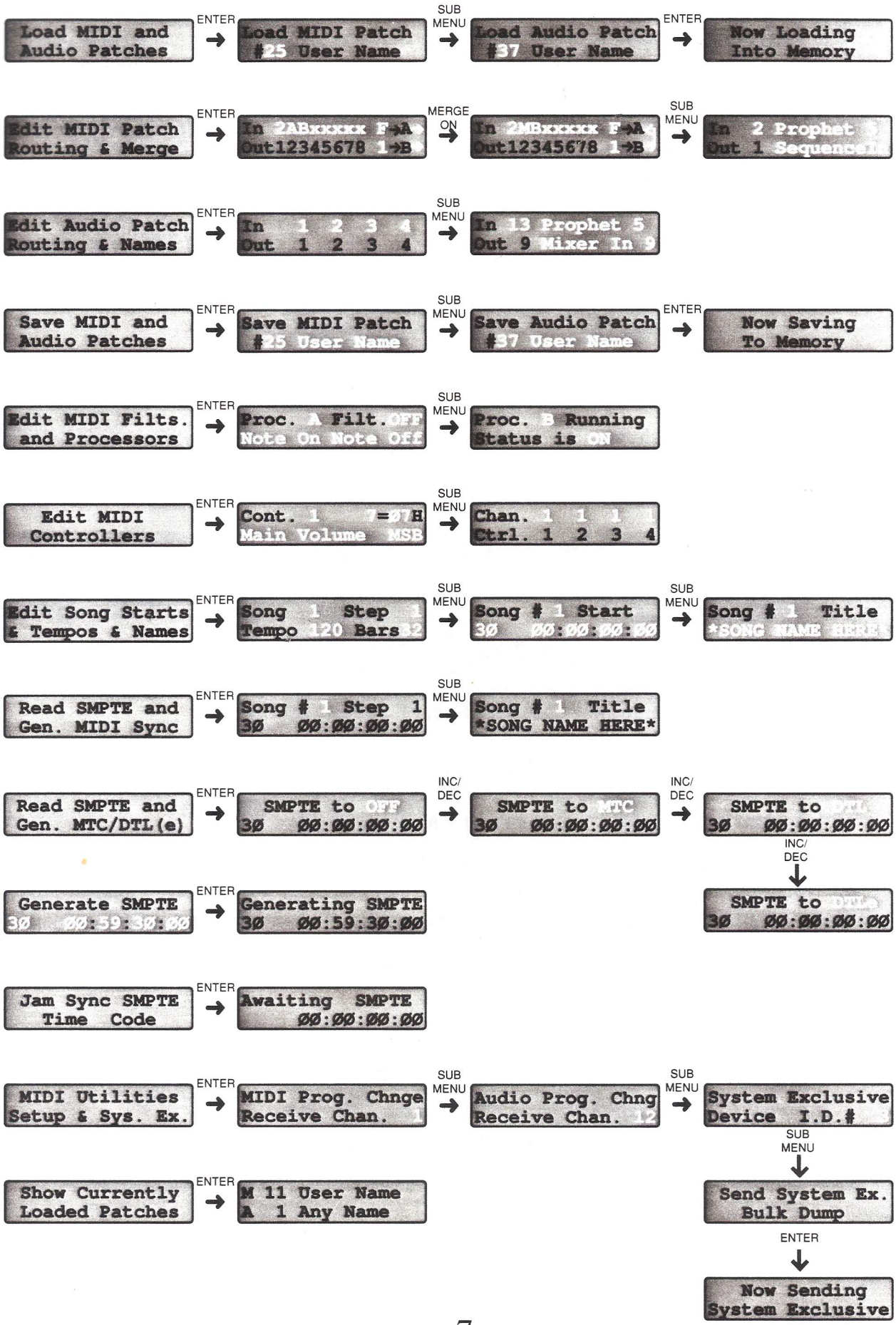
20 AUDIO IN/OUT jacks. Observe that audio out 1 is located directly above audio in 1, and so on. Connect unbalanced line level devices here.

21 FUSE receptacle. Replace with an identically rated fuse when necessary.

22 POWER CORD receptacle. Connect the grounded power cord supplied with the unit here.

■ MENU / EDIT DIAGRAM

The following chart is provided as a quick reference and overview of all the display windows on the **SMP-16.** All the windows in the first column down the left side of the page are the **MAIN MENU** windows, and can be scrolled through using the **FWD MENU** and **REV. MENU** buttons on the front panel. The windows listed respectively to the right of the Main Menu windows are **SUB MENU** windows and can be scrolled through by using the **SUB MENU** button, or in some cases the **ENTER** button, on the front panel. To return to the Main Menu window from any Sub Menu window use the **EXIT** button. All highlighted sections of the Menu/Edit Diagram indicate editable functions.

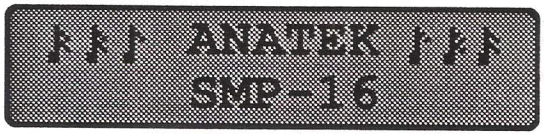

Load MIDI and Audio Patches
ENTER
Load MIDI Patch #25 User Name
SUB MENU
Load Audio Patch #37 User Name
ENTER
Now Loading Into Memory
Edit MIDI Patch Routing & Merge
ENTER
In 2ABxxxxx F→A
Out12345678 1→B
MERGE ON
In 2MBxxxxx F→A
Out12345678 1→B
SUB MENU
In 2 Prophet 5
Out 1 Sequencer
Edit Audio Patch Routing & Names
ENTER
In 1 2 3 4
Out 1 2 3 4
SUB MENU
In 13 Prophet 5
Out 9 Mixer In 9
Save MIDI and Audio Patches
ENTER
Save MIDI Patch #25 User Name
SUB MENU
Save Audio Patch #37 User Name
ENTER
Now Saving To Memory
Edit MIDI Filts. and Processors
ENTER
Proc. A Filt. OFF
Note On Note Off
SUB MENU
Proc. B Running
Status is ON
Edit MIDI Controllers
ENTER
Cont. 1 7=07H
Main Volume MSB
SUB MENU
Chan. 1 1 1 1
Ctrl. 1 2 3 4
Edit Song Starts & Tempos & Names
ENTER
Song 1 Step 1
Tempo 120 Bars 32
SUB MENU
Song # 1 Start
3Ø ØØ:ØØ:ØØ:ØØ
SUB MENU
Song # 1 Title
SONG NAME HERE
Read SMPTE and Gen. MIDI Sync
ENTER
Song # 1 Step 1
3Ø ØØ:ØØ:ØØ:ØØ
SUB MENU
Song # 1 Title
SONG NAME HERE
Read SMPTE and Gen. MTC/DTL(e)
ENTER
SMPTE to OFF
3Ø ØØ:ØØ:ØØ:ØØ
INC/ DEC
SMPTE to MTC
3Ø ØØ:ØØ:ØØ:ØØ
INC/ DEC
SMPTE to DTL
3Ø ØØ:ØØ:ØØ:ØØ
INC/ DEC
SMPTE to DTL
3Ø ØØ:ØØ:ØØ:ØØ
Generate SMPTE
3Ø ØØ:59:3Ø:ØØ
ENTER
Generating SMPTE
3Ø ØØ:59:3Ø:ØØ
Jam Sync SMPTE Time Code
ENTER
Awaiting SMPTE
ØØ:ØØ:ØØ:ØØ
MIDI Utilities Setup & Sys. Ex.
ENTER
MIDI Prog. Chnge
Receive Chan. 1
SUB MENU
Audio Prog. Chng
Receive Chan. 12
SUB MENU
System Exclusive
Device I.D.# 1
SUB MENU
Send System Ex.
Bulk Dump
ENTER
Now Sending
System Exclusive
Show Currently Loaded Patches
ENTER
M 11 User Name
A 1 Any Name

[1] USING THE SMP-16

In this section of the manual we will go through every window on the **SMP-16** step by step. As you will see, once you have completed this section, the extensive features offered by the **SMP-16** are extremely easy to use and understand.

1. Power Up

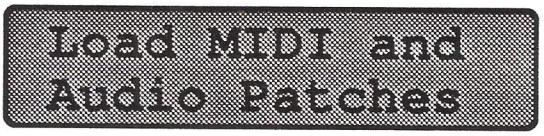
Make sure you have all your equipment properly connected to the **SMP-16**. Then switch on



the power. The screen shown above will display briefly. The last active window used will then appear. We will move first to the load window.

2. Loading Patches

Using the FWD MENU or REV MENU buttons, select this Main Menu window when you



wish to "Load" (i.e. designate for current use) a desired MIDI Patch or Audio Patch.

a. Loading a MIDI Patch From the Front Panel

First, in order to execute the command indicated in this Main Menu window, you must hit the ENTER button in the 'rectangle group' of function buttons. This, in effect executes the first portion of the "Load" command. However, because more information is desired by the **SMP-16** (i.e., exactly what MIDI patch or exactly what Audio patch do you wish to load?), the **SMP-16** will call up the following Sub Menu window in which to provide that information:

As you can see, the cursor is located under the Patch number position which indicates an editable value. Using the INCREMENT or DECREMENT button in the 'diamond group' of function buttons allows you to scroll through and search for the Patch Number (and its corresponding Name) that you wish to load. All Patch numbers which you have yet to Name and Save will simply read "NOT IN USE".

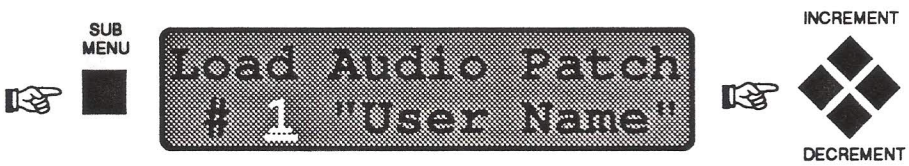
Once you have located the desired MIDI Patch to be loaded, hit the ENTER button once again, and the **SMP-16** will execute the final portion of the " Load" command, (indicated by the "Now Loading Into Memory" which briefly appears in the window).

Hitting the RESET button from this window will reset the Patch number to the lowest possible value which in this case is 1:

Hitting the EXIT button from this Sub Menu window will return you to the Main Menu window:

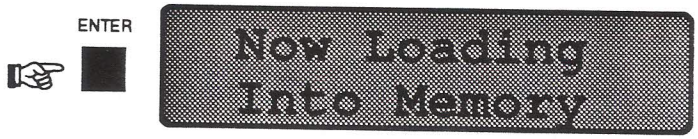
b. Loading an Audio Patch From the Front Panel

If wish to Load an Audio Patch, hit the ENTER button from the Main Menu and then the SUB MENU button until the following window appears:



This window functions exactly like the previous "Load MIDI Patch" window. Again, the cursor is located under the Patch number position which indicates an editable value. Using the INCREMENT or DECREMENT button in the 'diamond group' of function buttons allows you to scroll through and search for the Patch Number (and its corresponding Name) that you wish to load. All Patch numbers which you have yet to Name and Save will simply read "NOT IN USE".

Once you have located the desired Audio Patch to be loaded, hit the ENTER button once again, and the **SMP-16** will execute the " Load" command (indicated by the "Now Loading Into Memory" which briefly appears in the window).



Hitting the RESET button from this window will reset the Patch number to the lowest possible setting, which in this case is 1:

Hitting the EXIT button from the above Sub Menu window will return you to the Main Menu window:

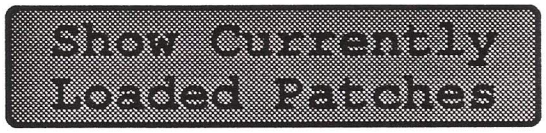
c. Loading MIDI or Audio Patches Using Program Changes

The **SMP-16** can change MIDI and Audio Patches independently, or in combination, by recieving MIDI Program Change messages.

The Program Change number received calls up the Patch number plus one; Program Change #0 Loads Patch #1, Program Change #24 Loads Patch #25; etc. The **SMP-16** does not respond to Program Changes above #49.

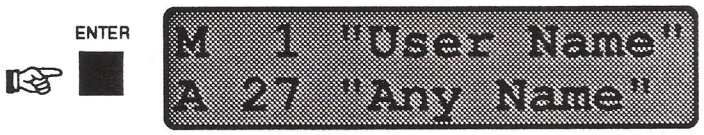
For more detailed information, see the "MIDI Utilities" section in this manual.

3. Show Currently Loaded Patches



Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when you wish to display the current or active MIDI and Audio Patches.

In order to execute the command indicated in this Main Menu window, you must press the ENTER button, and the following display will appear:



This display is helpful in allowing you to instantly view Program Changes to both the MIDI and Audio Patches as the **SMP-16** receives them (which you may find useful in live performance situations).

• There are no editable functions in this Sub Menu display.

Hit EXIT to return to the Main Menu window.

[2] CREATING CUSTOMIZED PATCHES

1. Overview

- **MIDI Patches** that have been previously "Loaded" can be "Edited" using the following three Main Menu window choices:

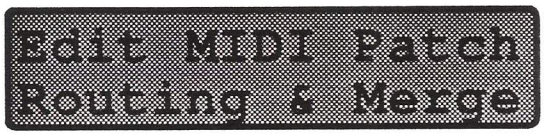
  1. Edit MIDI Routing and Merge
  2. Edit MIDI Filters and Processors
  3. Edit MIDI Controllers

  Each MIDI patch can contain different filter, processor, and controller configurations as well as MIDI routing information.

- **Audio Patches** stored in memory contain Audio routing information. Using the FWD MENU or REV MENU buttons, you would select the Main Menu window **Edit Audio Patch Routing & Names**, when you wish to "Edit" a previously "Loaded" **Audio** Patch set-up.

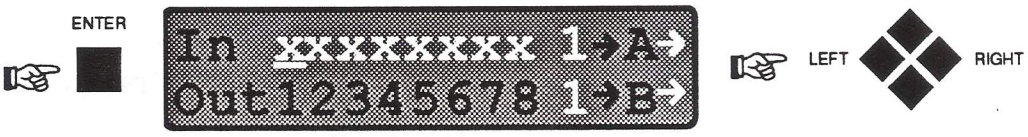
- The **SMP-16** allows you to name all MIDI and Audio input/output configurations.

2. Setting up your MIDI Patch Bay



a. Assigning a MIDI In to a MIDI Out

First, in order to execute the command indicated in this Main Menu window, you must hit the ENTER button:

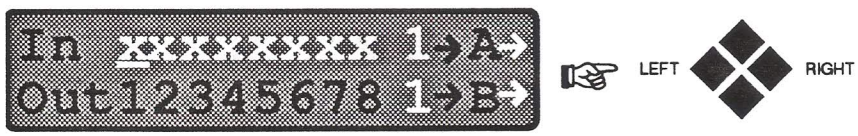


This, in effect executes the first portion of the "Edit" command. However, because more information is desired by the **SMP-16** (i.e., which MIDI Ins get routed to which MIDI Outs; which MIDI Ins get filtered through Processors A and B; which MIDI Ins, if any, get merged; which MIDI Outputs or Inputs get named), the **SMP-16** will call up the above Sub Menu window in which to provide that information.

As you can see, the cursor is located just above the first of the 8 MIDI Outs, thus indicating an editable value. Using the LEFT/RIGHT cursor buttons to scroll through this Sub Menu you can easily learn exactly which positions in this window are editable.

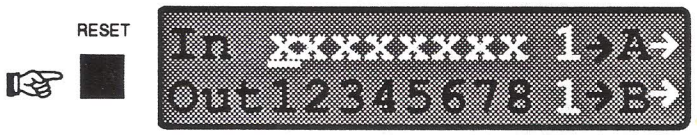
Any one of the 8 MIDI Outputs can receive its data from any one of the 6 MIDI Inputs (7 by assigning MIDI In F to a processor) or the output of Processor A or Processor B (the parameters of which we'll examine later under the Main Menu entitled "Edit MIDI Filters and Processors"). Select 'x' if you have not plugged anything into, or if you want to turn off, a particular MIDI Output.

Thus, using the INCREASE/DECREASE buttons it is possible to assign any of the following values to any of the 8 MIDI Outs: 1,2,3,4,5,6, A, B or x (for no connection). However, when the Merge function is on, Processor A becomes the Merged output and is indicated by the letter M (See: Merging Any Two MIDI Inputs). As an example, lets say you have connected a Roland® D-50 to MIDI Input 2, and you wish to record something on your sequencer, which you have connected to MIDI Out 1. First you would use the LEFT/RIGHT buttons to move the cursor until it was over Out 1:



and then use the INCREMENT/DECREMENT buttons to select In 2:

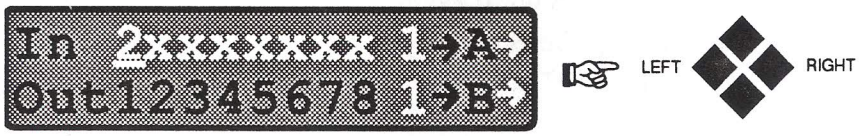
Observe also that you can quickly turn off MIDI Out 1, as well as any other Out, by pressing the reset button while the cursor is over the corresponding number:



b. Naming Your MIDI Inputs And Outputs

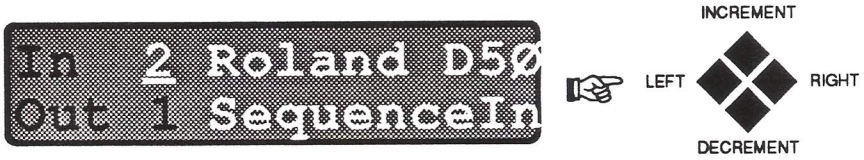
The Names of all MIDI Inputs and Outputs are user-assignable except when using MIDI In F, Processor A, and/or Processor B. When you are using the aforementioned Inputs and Outputs the **SMP-16** names them for you and the cursor bypasses their positions. (Naturally the cursor also bypasses all MIDI Out number positions for they always remain the same). Initially, you will want to name each instrument as you plug it in to either an Input or Output, and the following tutorial will show you how this is done.

Staying in the window shown above, it is possible to name the Input and Output of the previous example. Again, put the cursor in the position above MIDI Out 1 using the LEFT/RIGHT cursor buttons:



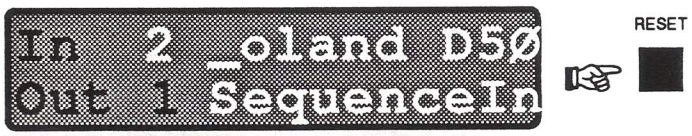
To document this Input/Output assignment for all future reference you simply press the SUB MENU button which calls up the following window (pressing the SUB MENU button successively will switch you back and forth between the two windows):

Move the cursor to the first of the 10 Character assignable positions by using the RIGHT cursor button. Now using the INCREASE/DECREASE buttons print whatever name you want in the 10 spaces allotted, for example Roland® D-50. Once you have finished, you can name the Output appropriately in the same way. (Note: You will notice that the Input Number is an editable value in this window. Any change to this position will also show up in the previous Sub Menu edit window).



- Once you have all of your Inputs named, this menu will allow you to scroll and assign your Inputs by their names as well as their numbers.

Pressing the RESET button does two quick functions in this window that are helpful when editing:

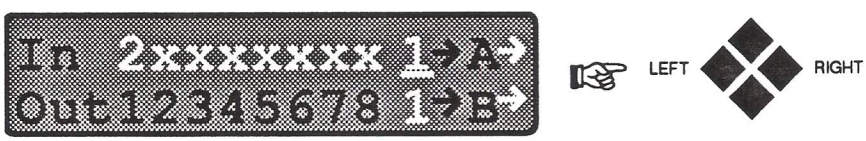


While the cursor is under the Input name, the corresponding character is set blank.

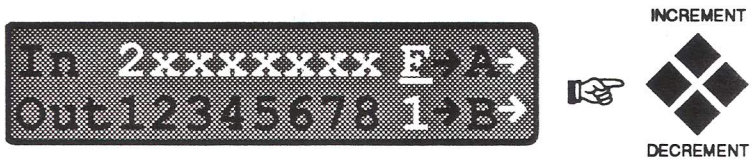
While the cursor is under the Input number, the value is set to "x", thus turning the corresponding Output off.

c. Assigning a MIDI Input to a Processor / Filter

To assign a MIDI In to a Processor A, for example, move the cursor, using the LEFT/ RIGHT buttons, to the position in the window shown below:

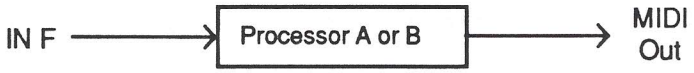


Now, using the INCREASE/DECREASE buttons note that it is possible to assign any of the following Input values to Processors A and B: 1,2,3,4,5,6 and F, making the **SMP-16** a 7 In by 8 Out MIDI Patch Bay.

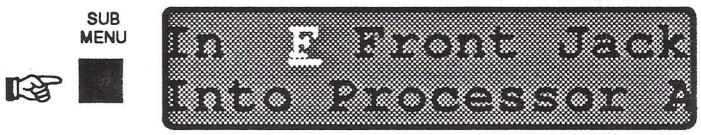


- MIDI IN F, located on the "Front" panel, (which is MIDI In 7) must always be routed through Processor A and/or Processor B before being assigned to an Out.

MIDI IN F

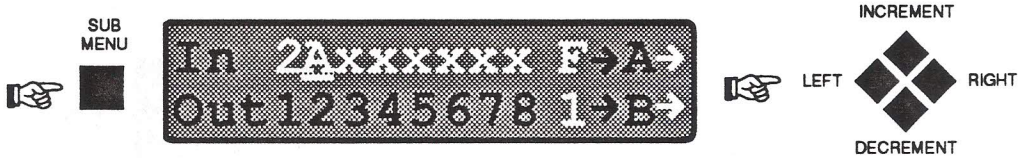


Suppose now we have assigned MIDI IN F to the Input of Processor A as shown above. Hit the SUB MENU button. The Sub Menu window should now look like this:

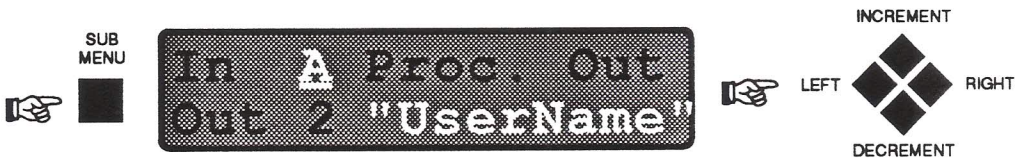


As you can see, in this case, because you are using two of the exceptions to user-assignable names mentioned in "Naming your MIDI Ins and Outs" (i.e., MIDI In F, and Processor A), the **SMP-16** has named both the Input and Output for you. Thus, the cursor will not respond to the LEFT/RIGHT buttons because the only editable value in this window is in the Input assign position.

Now go back to the preceding Sub Menu by hitting the SUB MENU button and assign MIDI Out 2 to receive data from Processor A by using the appropriate keys from the "diamond group". (If the Processor A does not show as a choice for an Input, the Merge is on. To turn it off, refer to: "Merging Any Two MIDI Inputs"):



Now press theSUB MENU button and the following window will appear:

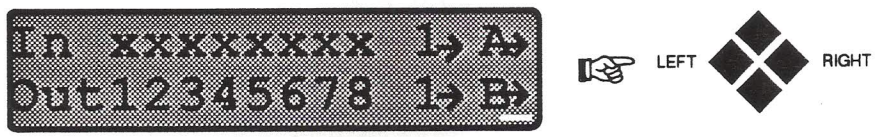


If you scroll through this window with the cursor you will find that the **SMP-16** has already named the Input for you, and the only editable values for you to assign is the Input Number and the MIDI Out 2 name. Moving the cursor to the Input Number position and using the INCREASE/DECREASE buttons allows you to scroll and assign your Inputs by their names as well as their numbers.

Pressing the SUB MENU button with the cursor in any position returns you to the preceding Sub Menu window. Pressing the RESET button will reset the position indicated by the cursor to its lowest possible value (which, in the case of the Number position, is 'x'; and in the case of the 10 Character positions, is a blank space). Pressing the EXIT button will allow you to exit the Sub Menu window and return you to the Main Menu window. (See "Naming Your MIDI Ins and Outs").

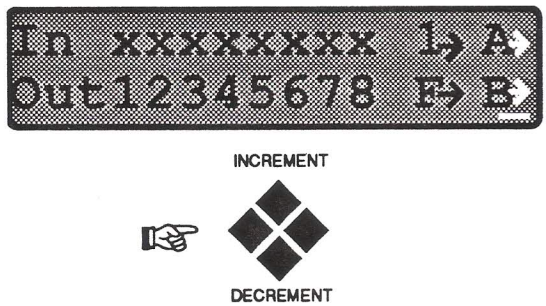
d. Merging Any Two MIDI Inputs

Now is a good time to look at the portion of the first Sub Menu window which applies to Merging:

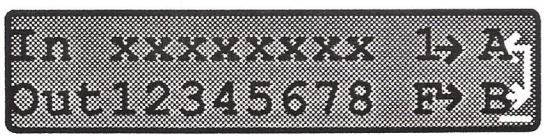


With the cursor in the far right position as indicated in the diagram, the INCREASE/DECREASE buttons turn the Merge function On and Off. The arrows to the right of A and B in the window indicate whether Processor B is being Merged with Processor A or whether Processor B is used independently of Processor A.

Merge Off

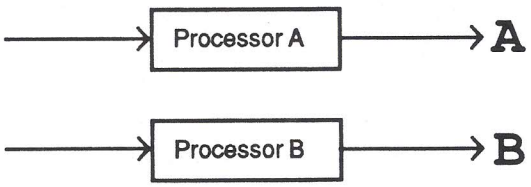


Merge On

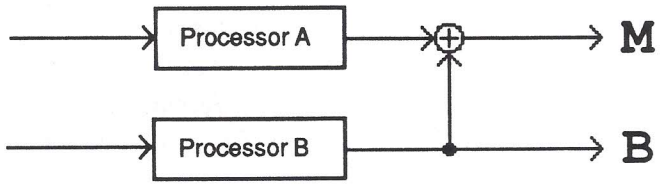


If you wish to merge any two Inputs, the **SMP-16** always does so by merging the Output of Processor B with the Output of Processor A. The following diagrams illustrate this:

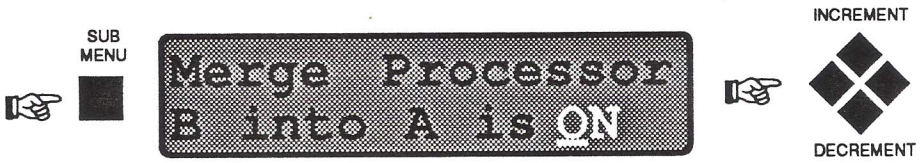
Merge Off



Merge On



If we go back to the previous window diagram with the cursor under the Merge arrows and press the SUB MENU button:

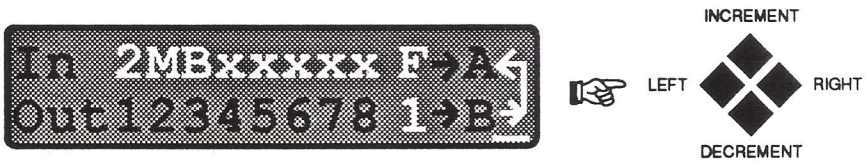


we see that the **SMP-16** tells us the Merge status and allows Merge to be set ON or OFF by using the INCREMENT/DECREMENT buttons.

With the Merge OFF, the above diagram shows that the Processor Outputs are labeled by their respective letters. With Merge On, Processor Output A is now labeled M, for the Merge of A and B, and Processor Output B remains the same since it is unchanged by the Merge.

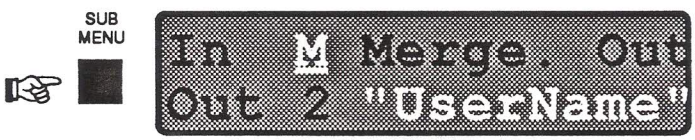
Lets look at an example. The only Inputs you are able to Merge are those which you have selected and assigned to Processor A and Processor B respectively (See: "Assigning a MIDI In to a Processor/Filter"). Go back to the preceding Sub Menu window by pressing the SUB MENU button:

Set Merge Off and assign MIDI Out 1 to MIDI In 2, Midi Out 2 to Processor A, and MIDI Out 3 to Processor B. Now go and turn the Merge On:



As you will notice, Input 2 which previously was the Output of Processor A has now been changed to M indicating that the Merge function is On and all information coming Out of Processor A is now the Merged information of Processor B and Processor A. The connection of Processor B to Midi Out 3 remains unchanged.

Now, move the cursor above MIDI Out 2 and press the SUB MENU button. The following window will appear:



If you scroll through this window with the cursor you will find that the **SMP-16** has already named the Input for you, and the only remaining editable values for you to assign in this instance is the Output 2 name.

Press the EXIT button to return to the Main Menu window and move on to the next Menu.

e. Connecting Your Macintosh

The Macintosh™ interface provided with the **SMP-16** operates at 1-MHz and connection is made with a RS-422 cable. Either the printer or modem port may be used. Remember to select 1-MHz as the interface speed in your sequencer software.

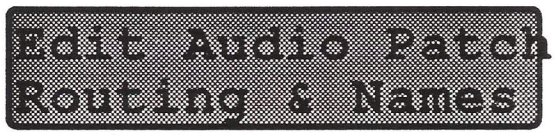
With the **SMP-16** Mac interface, your Macintosh™ can be assigned in the patch bay using MIDI Input 1 and MIDI Output 1 that appear in the display of the **SMP-16.** MIDI Input 1 on the **SMP-16** is now internally connected to the Macintosh™ MIDI Out, and MIDI Output 1 on the **SMP-16** is now internally connected to the Macintosh™ MIDI In. DO NOT plug anything into MIDI Input 1 on the **SMP-16** when using the interface; A hardware merge can occur creating undesirable results. On the other hand, you can plug something into MIDI Output 1 on the **SMP-16**, and it will receive the same MIDI data as the Macintosh™ (just like a MIDI Thru or Split Box, or the same way MIDI Output 8 on the front and back of the **SMP-16** functions). (See: Panel Description.)

We suggest that you name MIDI Input 1 as 'Macintosh' or 'Mac Out' and similarly MIDI Output 1 as 'Macintosh', or 'Mac In' (or what ever other device you may have connected to MIDI Output 1). (See: Naming Your MIDI Inputs and Outputs.)

All other functions of the **SMP-16** MIDI Patch Bay (routing, merging, filtering, etc.) operate as described in the previous sections of this manual. Treat the Macintosh as if it were a keyboard or other MIDI device when using the **SMP-16** as an interface.

- Note: Beware of MIDI loops when you have your sequencer "echo" or "thru" incoming MIDI data.

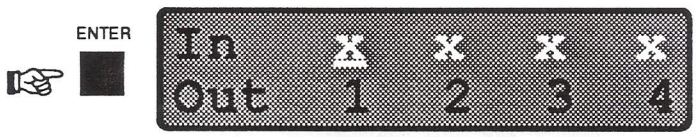
3. Setting Up Your Audio Patch Bay



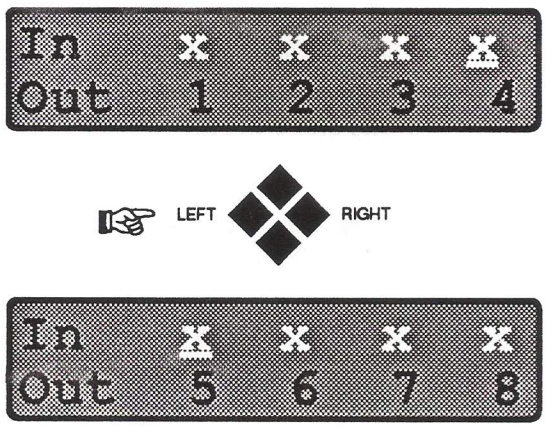
Using the FWD MENU or REV MENU buttons, you would select the above Main Menu window when you wish to "Edit" a previously "Saved **Audio** patch set-up or create a new one.

a. Assigning an Audio In to an Audio Out

First, in order to execute the command indicated in this Main Menu window, you must hit the ENTER button. This, in effect executes the first portion of the "Edit" command. However, because more information is desired by the **SMP-16** (i.e., which Audio Ins get routed through which Audio Outs, and what do you wish to name these Inputs and Outputs), the **SMP-16** will call up the following Sub Menu window in which to provide that information:



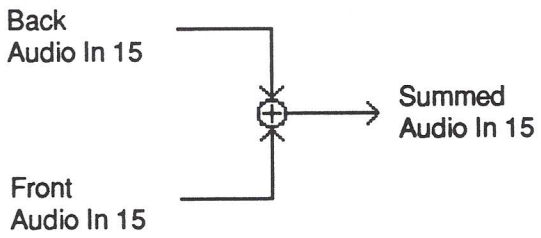
The Audio Patch Bay portion of the **SMP-16** is a 16 In by 16 Out matrix, so using the LEFT/RIGHT cursor buttons the **SMP-16** will call up 4 Input/Output assign windows consecutively, covering all 16 pairings, and, then return once again to the first four Input/Output positions. As with the MIDI Output number positions, the cursor bypasses all **Audio** Output number positions for they always remain the same.



••• Note that signal flow through the **SMP-16** is <u>one-way</u> only; signals come in the inputs and are routed out the outputs.

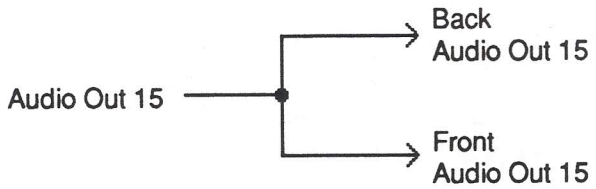
Each Audio In and Out is discrete and seperate except for numbers 15 and 16. The following diagram illustrates that the Front Panel Audio In 15 is summed equally with the Back Panel Audio In 15, to create a single Patch (or 'Mixed') Audio In 15 that can be patched to any combination of Audio Outs. In fact, Audio In 15 can be used as a 2-In 1-Out Line Mixer. The same holds for Audio In 16. (Ever need an extra channel on your mixer?)

Special Inputs 15 & 16

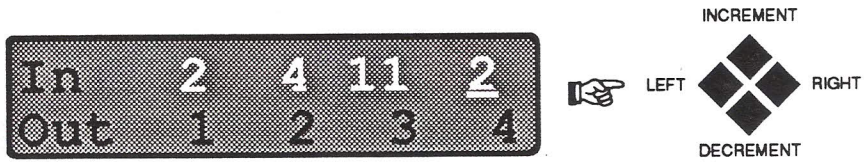


Conversely, the next diagam shows how the Audio Out 15 (shown in the editing windows) is the same signal on the Front Panel as it is on the Back Panel. This is handy for doing simultaneous recordings on different tape decks, without taking up two seperate outputs on the **SMP-16**.

Audio Outs 15 & 16

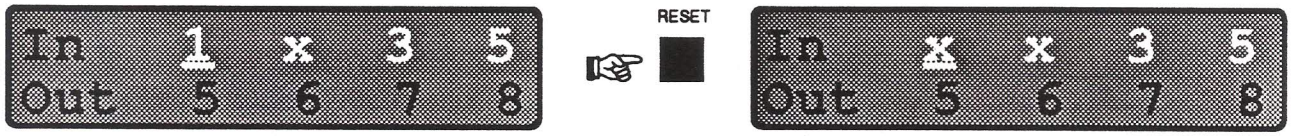


Thus, by moving the cursor to the desired Output position, you can assign any Input or simply disconnect that Output (by assigning 'x'). Observe that the same Input can be routed to any number of the Outputs at the same time.



etc...

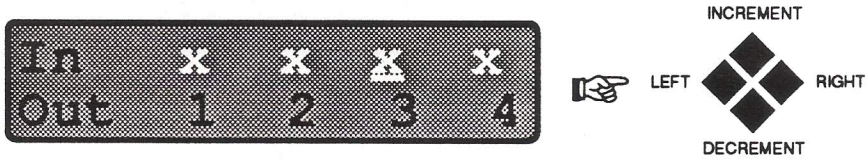
Pressing the RESET button quickly disconnects an Out:



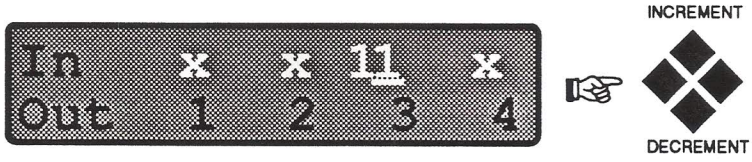
b. Naming Your Audio Inputs and Outputs

Press the SUB MENU button with the cursor above a specific Output. This will call up the appropriate Sub Menu window allowing you to name that specific **Audio** Output (and any of the 16 **Audio** Inputs). Press the SUB MENU button to return to the previous Sub Menu and move the cursor to the next Output you wish to name, and follow the same procedure until all Inputs/Outputs have been named. In most cases, you will only have to do this once, since all Input and Output names are the same for every patch (patch names will vary). You may also edit the Input/Output routing by Incrementing or Decrementing while the cursor is under the Input number, essentially assigning by names as well as numbers.

Imagine an Audio Patch with all points disconnected. Put the cursor in the position above Audio Out 3 using the LEFT/RIGHT cursor buttons:



Say, for example, Audio In 11 has a Prophet 5 connected, and you want to send the Output of this keyboard to channel 3 on your mixer which you have plugged into Audio Out 3:

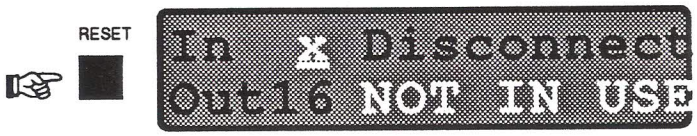


To document this Input/Output assignment for all future reference you simply press the SUB MENU button which calls up the following window (pressing the SUB MENU button successively will switch you back and forth between the two windows):

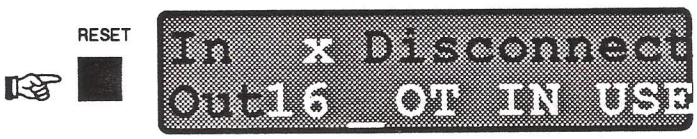
Move the cursor to the first of the 10 Character assignable positions by pressing the RIGHT cursor button. Now using the INCREASE/DECREASE buttons print whatever you desire to indicate your Prophet 5 in the 10 spaces allotted. Once you have finished, you can name the Output appropriately in the same way.

- Notice that the Input Number is an editable value in the above window. Any change to this position will show up in the alternate Sub Menu edit window. Once you have all of your Inputs named, this feature will act as a scroll to reference the names of all your Inputs so you can assign by name as well as number.

The possible values for all Input assignments are 1-16 or 'x' . If you select 'x' as an assigned Input value, this means that you wish to send NO signal to the corresponding Output. The **SMP-16** will name all Inputs to which you have assigned an 'x' value as 'Disconnect'. All Inputs or Outputs which you have yet to use, or assign a name, will read 'NOT IN USE'. Pressing the RESET button while the cursor is under the Input number, sets the value to "x", thus turning the corresponding Output off:



While the cursor is under the Input name, pressing the RESET button sets the corresponding space blank.



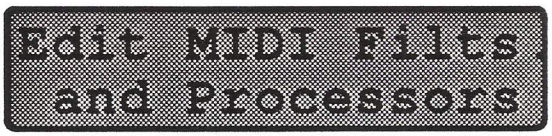
Press the EXIT button to return to the Main Menu window and move on to the next Menu.

4. MIDI Filters and Processors

a. What Are MIDI Filters and Processors?

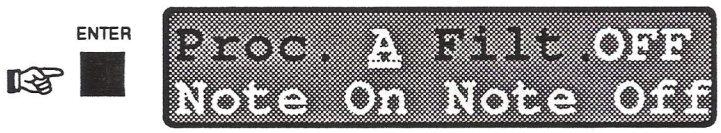
MIDI Filters, when turned ON, "filter" or block the flow of certain incoming MIDI messages. When a Filter is turned OFF the specific message is freely received. The **SMP-16** routes this incoming data to the Output of either Processor A, Processor B, or Both. You decide if the 7 MIDI Inputs are to independently receive the following messages by simply turning each Filter ON or OFF: Note On and Off, Aftertouch, Control Change, Program Change, Pitch Bend, System Common, System Real Time, System Exclusive, and All Notes Off.

b. Editing the MIDI Filters and Processors



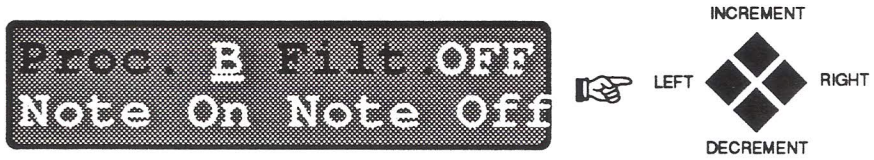
Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when you wish to "Edit" the Independent Filters of the **SMP-16's** two MIDI Processors.

First, in order to execute the command indicated in this Main Menu window, you must hit the ENTER button. This, in effect executes the first portion of the "Edit" command. However, because more information is desired by the **SMP-16** (i.e., do you wish to edit the filters of Processor A, Processor B, or both; and which of the filters do you wish to turn On or Off?), the **SMP-16** will call up the following Sub Menu window in which to provide that information:



There are three editable cursor positions in this Sub Menu window: The first position (shown above) allows you to select Processor A or Processor B (using the INCREASE/DECREASE buttons). The second as you move the cursor to the right, allows you to turn the Filter (named in the window) On or Off (using the INCREASE/DECREASE buttons once again). The final editable feature, as you continue to move the cursor to the right, allows you to select the Filter you are turning On or Off (once again, using the INCREASE/DECREASE buttons). With the cursor in this position, using the INCREASE/DECREASE buttons, you can choose any combination of the following Filters for each Processor: Note On Note Off, Aftertouch (Key), Control Changes, Program Changes, Aftertouch Channel, Pitch Bend, System Common, System Real Time, System Exclusive, and All Notes Off.

For example, lets set Processor B to filter Program Changes only. First select Processor B in the window:



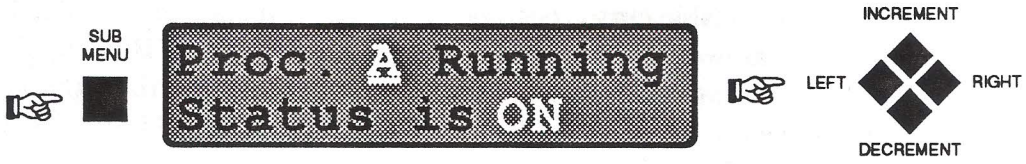
Next, move the cursor, RIGHT or LEFT, to the Filter description position. Scroll through all the Filter types (using the INCREMENT/DECREMENT buttons), while watching the 'FiIt.' position. If any other types are on, move the cursor and turn them off. Finally, the window that displays Filtering Program Changes on Processor B should look like this:

• Note: More than one Filter (and naturally more than one Processor) may be On at a time.

c. What is Running Status?

There are two types of bytes sent over MIDI: Status bytes and Data bytes. Status bytes are eight-bit binary numbers in which the Most Significant Bit (MSB) is set (binary 1). Status bytes serve to identify the message type, that is, the purpose of the Data bytes which follow it. With Running Status OFF, the Status byte (followed by either one or two Data bytes each time) is constantly repeated even if it wants the receiver to remain in the same status for the duration of a lengthy message. Such large amounts of information can sometimes clog the MIDI stream causing MIDI delays and consuming MIDI bandwidth. With Running Status ON, if the same Status byte were to be repeated, it can optionally be omitted so that only the Data bytes need to be sent. Running Status will be stopped when any other Status byte intervenes.

If you hit the SUB MENU button at any time while in a filter window, you will call up the following Sub Menu window:



The two editable features in this window allow you to switch between Processor A and Processor B (using the INCREASE/DECREASE buttons), and to turn Running Status On or Off (using the INCREASE/DECREASE buttons) in each Processor.

To return to the preceding Sub Menu hit the SUB MENU button.

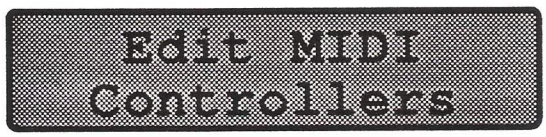
To return to the Main Menu hit the Exit button.

5. MIDI Controllers

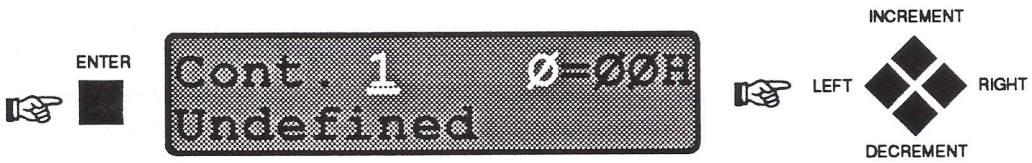
a. What is a MIDI Controller?

A MIDI Controller is basically any device that generates specific MIDI information (i.e., control change messages) and sends it to a receiving instrument in order to get that instrument to perform a specific function (known as a control function). To keep things simple, if you wish to send a message to any of your MIDI instruments, perhaps telling it to increase its volume or to pan or to modulate etc., you would do so through any or all of the **SMP-16**'s 6 Variable MIDI Controllers. Furthermore, the actual transmission of the information you specify to send is physically controlled by up to 6 foot pedals or **ANATEK's 6 Slider Remote**. Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when you wish to "Edit" any or all of the **SMP-16**'s 6 Variable MIDI Controllers.

b. Editing the MIDI Controllers



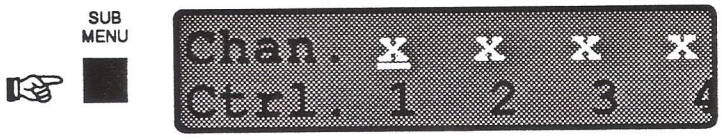
First, in order to execute the command indicated in this Main Menu window, you must hit the ENTER button. This, in effect executes the first portion of the "Edit" command. However, because more information is desired by the **SMP-16** (i.e., which of the 6 Controllers do you want to use, what control change information do you want to send, and what channel do you want to receive that information?), the **SMP-16** will call up the following Sub Menu:



Using the LEFT/RIGHT cursor buttons, you will see that there are two editable values in this window. The first allows you to select the Controller Number (by using the INCREASE/DECREASE buttons). Moving the cursor to the right, allows you to select the control change message you want to send. The **SMP-16** sends this message via the Output of Processor A (merging it with any other information being routed through Processor A). You are actually sending a coded message expressed by a code number in the Decimal system (the equivalent number from the Hexidecimal system is also given, because some control changes are listed as such). As you scroll through the 121 possible control change message numbers, the standard control function names (taken from the MIDI 1.0 Specification Tables) are displayed for you. But as you will notice, some control change messages are "Undefined" allowing the manufacturer of your particular MIDI instrument to assign their own specific function to these controller numbers. You will want to check the specifications of your particular synthesizer to make sure you are sending the message that you are intending. Once you are sure you have selected the right code for the control change

message you want to send, you must select a MIDI Channel (1-16) to Send it on (and also set the same MIDI Receive channel on the instrument(s) you want to receive this message).

To Set the MIDI Transmit Channel Number of any or all of the **SMP-16**'s 6 MIDI Controllers hit the SUB MENU button which will call up the following Sub Menu window:

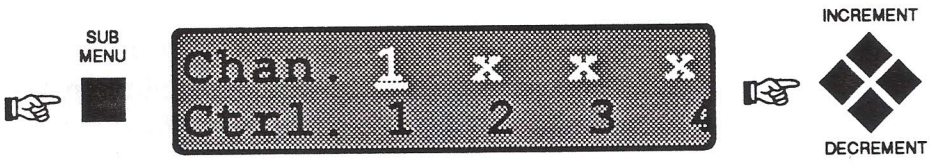


Using the LEFT/RIGHT cursor buttons the **SMP-16** will scroll through and allow you to assign the first four Controller/Channel pairings, and will then continue into a second Sub Menu window, (which "carries over" Controllers 3 & 4), and allows you to assign the MIDI Transmit Channels for Controllers 5 & 6. (Continuous scrolling switches back and forth between the two MIDI Transmit Channel assign Sub Menu windows).

••• IMPORTANT! In order to avoid the transmission of erroneous information, set the MIDI Channel to 'x' on all of the **SMP-16**'s MIDI Controllers that are <u>not being used</u>.

For example, let's say you have plugged a MIDI Controller Pedal into Input 1 of ANATEK**'s Remote MIDI Controller Interface**, and you wanted to send Main Volume to your Roland® D-50, which you have already connected to a **SMP-16** Midi Out and assigned it to Processor A (Refer to "Setting Up Your MIDI Patch Bay"). After hitting the appropriate cursor keys, the Contoller Sub Menu window should look like this:

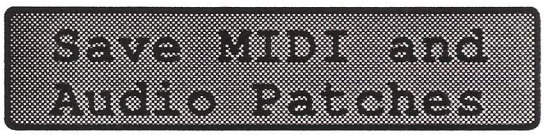
Finally, set the transmit channel for Controller 1 to the receive channel of the Roland® D-50:



Pressing the RESET button while on any of the cursor positions will reset the respective position to its lowest possible value.

The SUB MENU button returns you to the "Controller Number"/"Message Number" Sub Menu window.
The EXIT button returns you to the Main Menu window.

6. Saving Your Patch Changes



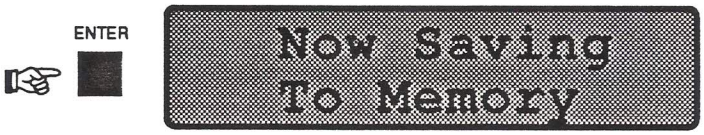
Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when you wish to "Save" your personally programmed and named MIDI Patch or Audio Patch to a specific Patch number in memory.

a. Saving a MIDI Patch

First, in order to execute the command indicated in this Main Menu window, you must hit the ENTER button. This, in effect executes the first portion of the "Save" command. However, because more information is desired by the **SMP-16** (i.e., exactly what MIDI patch or exactly what Audio patch do you wish to Save?), the **SMP-16** will call up the following Sub Menu window in which to provide that information:

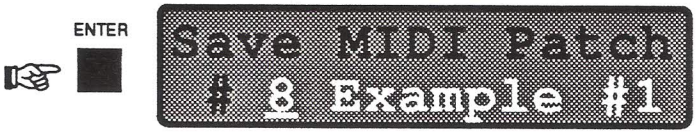
As you can see, the cursor is located under the Patch number position which indicates an editable value. Using the INCREMENT/DECREMENT buttons allows you to scroll through and assign the Patch Number to which you wish to Save your MIDI Patch. (The INCREASE/DECREASE buttons scroll from 1-50 and wrap around for your convenience. It is possible to store up to 50 programmable MIDI Patch settings.) Using the LEFT/ RIGHT cursor buttons (which also wrap around) in combination with the INCREASE/ DECREASE buttons you can assign a 10 Character Name to your MIDI Patch.

Once you have chosen your desired Patch Number and Name, then hit the ENTER button and the **SMP-16** will execute the final portion of the "Save" command, (indicated by the "Now Saving To Memory" which briefly appears in the window):



Hitting the RESET button with the cursor under the Patch Number position will reset the Patch Number to the lowest possible value, which in this case is 1 and its corresponding Name. Hitting the RESET button with the cursor under any of the 10 character positions will reset that position to its lowest possible value, which in this case is a blank space.

Using the above explanation, let's Save an example. Suppose you "Loaded" and "Edited" Patch Number 8. When you go to Save it to memory, the following window appears:



There are two options you have when Saving:

1. When you are Saving to the same memory number, you may change the name if you wish before pressing the ENTER button, thus executing the Save:

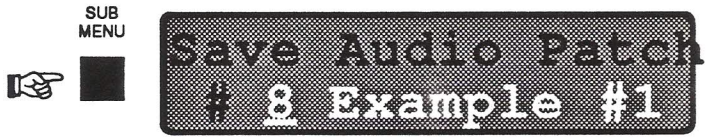
2. If you want to save to a different memory number, you must first choose a memory number (using the INCREMENT/DECREMENT buttons.) When scrolling through memory, the window shows what is currently stored in each number. This prevents you from writing over important patches. Once you find the desired memory number, you can move the cursor and edit the name:

or leave the 'old' name already assigned to your 'new' number. Press the ENTER button to Save your changes:

Pressing the EXIT from this Sub Menu window will return you to the Main Menu window.

b. Saving An Audio Patch

If wish to Save an Audio Patch , then press the ENTER button from the Main Menu and then the SUB MENU button from the Sub Menu and the following window appears:



- This window functions exactly like the previous "Save MIDI Patch" window. (See: "Saving a MIDI Patch")

Again, the cursor is located under the Patch number position which indicates an editable value. Using the INCREMENT/DECREMENT buttons allows you to scroll through and assign the Patch Number to which you wish to Save your Audio Patch. (The INCREASE/DECREASE buttons scroll from 1-50 and wrap around for your convenience. It is possible to store up to 50 programmable Audio Patch settings.) Using the LEFT/RIGHT cursor buttons (which also wrap around) in combination with the INCREASE/DECREASE buttons you can assign a 10 Character Name to your Audio Patch. Once you have chosen your desired Patch Number and Name, then hit the ENTER button and the **SMP-16** will execute the final portion of the "Save" command, (indicated by the "Now Saving To Memory" which briefly appears in the window).

Hitting the RESET button with the cursor under the Patch Number position will reset the Patch Number to the lowest possible setting, which in this case is 1 and its corresponding Name. Hitting the RESET button with the cursor under any of the 10 character positions will reset that position to its lowest possible value, which in this case is a blank space.

Hitting the EXIT button from this Sub Menu window will return you to the Main Menu window.

[3] USING THE SMPTE FUNCTIONS

1. What is SMPTE Time Code?

Basically SMPTE Time Code is a synchronization format adopted by the Society of Motion Picture and Television Engineers. It was designed as a standard for the Filming Industry to synchronize audio to video, but has since become the standard format for the Music Industry as well. Unless you are working on a video soundtrack , you will be using SMPTE, primarily, to synchronize your sequencer(or drum machine) to your tape recorder.

SMPTE time code is recorded onto tape as a digital (binary) code which represents time information divided into hours, minutes, seconds, and frames. Therefore, each frame gets its own unique signature or address on the tape. The number of frames per second depends on the format being used. In the United States, 30 frames per second is the standard format for video and audio tape, and (because of its higher resolution) is the frame rate you will want to select if you are using SMPTE strictly for the musical purpose of synchronizing your sequencer (or drum machine) and your tape recorder. (All other frame rates—24, 25, 29.97, 29.97 drop frame, and 30 drop frame—are used for various audio/video synchronizing applications, and are available options on the **SMP-16** if you should need to use them).

(Special Note: 30 drop frame is not a bonafide SMPTE format. It is a "field" developed format and is rarely used. We have only included it for those who know what it is and how it can be of use for them.)

The first thing you will need to do in all synchronizing applications is to record SMPTE Time Code onto a track of your tape recorder. This is referred to as "striping" the tape. The usual practice is to put the SMPTE stripe on the outermost track of the tape recorder (i.e., track four, eight, sixteen, or twenty-four). Whenever possible, you should leave the adjacent track blank. This will not only guard against SMPTE bleeding into your music, but will also protect against your music bleeding-through and disrupting the SMPTE reading. Tight synchronization is not possible if this happens. If you can't spare a guard track between the SMPTE signal and the other audio tracks, then be attentive to the record level and the selection of the instrument you record in the adjacent track. The other main requirement to trouble-free synchronization is that the SMPTE signal be recorded at a high enough level so that no "drop out" occurs. In general you should record the SMPTE signal as "hot" as possible. For starters, experiment with the record level in the -3db to -5db range to see what works best in your situation.

Once SMPTE Time Code has been recorded onto tape, your sequencer (or drum machine) will need to receive certain information from the **SMP-16** in order to "lock up" and sync accurately. Depending on your specific sequencer (or drum machine), you will want to either sync **SMPTE to MIDI TIME CODE**, or **SMPTE to DIRECT TIME LOCK** (sometimes referred to as Direct Sync), or **SMPTE to ENHANCED DIRECT TIME LOCK**, or **SMPTE to MIDI SYNC.**

VISION → If your sequencer supports **MIDI TIME CODE (MTC),** then the **SMP-16** will read the audio SMPTE signal on the tape and send MTC information via MIDI to your sequencer. The sequencer is now "locked" to SMPTE or, in other words, "slaved" to the tape recorder. When you roll tape from any position in the song, the sequencer will automatically follow.

Similarly, if your sequencer supports **DIRECT TIME LOCK (DTL)**, or **ENHANCED DIRECT TIME LOCK (DTLe)**, then the **SMP-16** will read the audio SMPTE signal on the tape and send the appropriate information via MIDI to your sequencer, thus "locking" it to tape. (Please note that DTLe only supports the following frame rates: 24 fps, 25 fps, 30 fps, and 29.97 fps drop frame.)

If your sequencer (or drum machine) doesn't support MTC, then you may want to use **SMPTE to MIDI SYNC**. In this instance, the **SMP-16** reads the audio SMPTE signal on the tape, but will need additional information before "locking" is possible— this information is known as **Song Position Pointer**. A song pointer is basically a message sent ahead of the SMPTE position telling the sequencer or drum machine to "position" to a certain "point" in the "song", waiting to lock to SMPTE as soon as the clock information is received. Thus, if you are using MIDI SYNC you must provide the **SMP-16** with the Song Start Time, Tempo Map, and appropriate Frame Rate. (See: "Reading SMPTE and Generating MIDI Sync")

2. Generating SMPTE

Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when you wish to "Generate" or "write" SMPTE Time Code (i.e., "stripe" your audio tape):

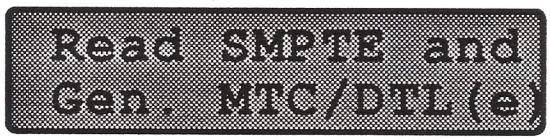
This is the only Main Menu window on the **SMP-16** in which you can edit information. With the cursor in the correct position, you must first select the Frame Rate (using the INCREASE DECREASE buttons). The **SMP-16** supports six different "frames per second" formats: 24, 25, 29.97 (which the **SMP-16** displays as 29), 30, 29.97 Drop Frame (which the **SMP-16** displays as 29DF) and 30 Drop Frame (30DF). (See: What is SMPTE Time Code?) Moving the cursor to the right, set the SMPTE Start Time that is to be encoded on the tape. (The factory default setting is 00:59:30:00. This gives you thirty seconds of "lead time" and starts your song exactly on the hour). Whatever the case may be, make sure you lead your desired song start time with plenty of SMPTE time code because you may want to go back and make changes to your song. After you have selected the Frame Rate and SMPTE Start Time, proceed as follows:

1. Make sure that the SMPTE Out jack of the **SMP-16** is connected to the correct input channel on your tape recorder.
2. Put the tape recorder into Record/Pause.
3. Set the proper record level (-5 to -3 dB).
4. Take the tape out of Pause and let it run until you are sure that the leader has passed.
5. Hit the ENTER button on the **SMP-16** which then starts to generate SMPTE.

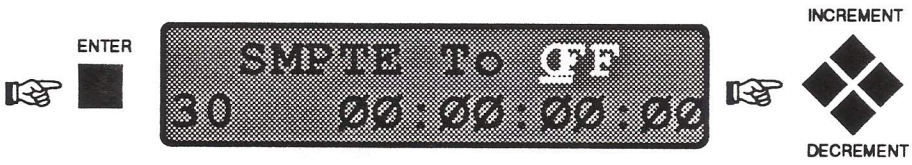
6. When sufficient time code has been recorded for the entire length of music you plan to record, hit the ENTER button a second time to stop generating SMPTE, and then stop your tape deck. Always record more SMPTE than you think you will need, so that if a cue point changes, or you change the tempo to your song, you will have enough encoded tape to accommodate a change. You may even want to "stripe" the entire tape, and choose your Song Start Times accordingly, which is a convenient approach that most studios will use. The RESET button will reset the Frame Rate to its lowest possible value, which is 24, and the SMPTE Start Time positions to 00:59:30:00 respectively.
7. To stop Generating SMPTE, simply press the ENTER button again, and the Generate SMPTE window returns.

3. Reading SMPTE and Generating MIDI Time Code (MTC), Direct Time Lock (DTL), or Enhanced Direct Time Lock (DTLe)

Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when you wish to sync your tape deck to your sequencer via SMPTE to MTC, DTL, or DTLe:



In order to execute the command indicated in this Main Menu window, you must hit the ENTER button, and the following display will appear:



- NOTE: Make sure that the correct channel output from your tape deck is connected to SMPTE IN on the **SMP-16**.

Using the INCREASE/DECREASE button, select which synchronization format you need, and as soon as the **SMP-16** receives a SMPTE signal from the tape deck, it will begin to generate the corresponding sync, thus locking the sequencer to the tape. The frame rate (in the lower left corner) and SMPTE (in the lower right corner) being read are displayed in real time for your convenience. (Please note that DTLe only supports the following frame rates: 24 fps, 25 fps, 30 fps, and 29.97 fps drop frame.)

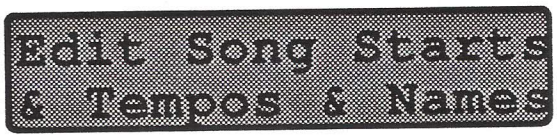
- The MTC, DTL, or DTLe is merged with the input assigned to Processor A so that you may assign it to a MIDI Out on the **SMP-16**. (See: "Setting Up Your MIDI Patch Bay")

Pressing the EXIT button allows you to leave this Sub Menu window and enter any other Main or Sub Menu window and perform the functions therein, while simultaneously Generating one of the sync choices. Whenever you want to terminate the "Read SMPTE and Generate MTC/DTL(e)" operation, just remember to come back and select 'SMPTE to OFF'.

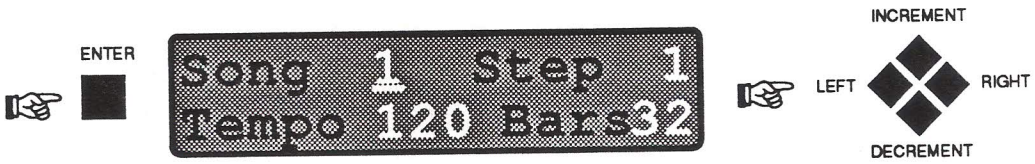
4. Using MIDI Sync

a. Editing Song Starts, Tempos, and Names

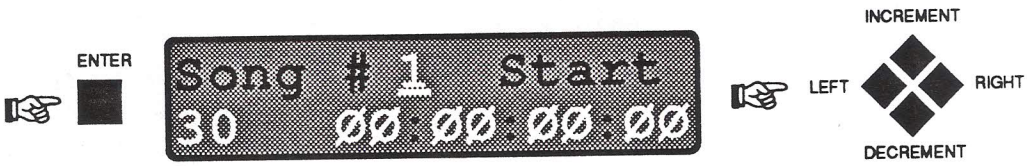
In order to Read SMPTE and Generate MIDI Sync, you must first give the **SMP-16** Song Start and Tempo information (i.e., Song Position Pointer information). Using the FWD MENU or REV MENU buttons, you would select the following Main Menu window to provide that information:



In order to execute the command indicated in this Main Menu window, you must hit the ENTER button to call up this Sub Menu window:



The cursor in the first position allows you to select (using the INCREASE/DECREASE buttons) any of the 10 Songs currently in memory. Moving the cursor Right to the next position allows you to select up to 10 Steps (10 different tempo changes) within the Song. The next cursor position allows you to select the Tempo for each Step within the Song (from 40-240). And the final cursor position in this Sub Menu allows you to select the number of Bars (a Bar equals one measure of 4/4 signature) for each Tempo Change (1-99 or 'L'). If you select 'L' for the number of Bars within a Step, the **SMP-16** will consider that Step to be the last Step of your Song, and will "Loop" the Tempo setting indefinitely. So, if you want a constant Tempo for your Song from start to finish, first select Step 1, then set your desired Tempo, and then select 'L' for the number of Bars. Now, press the SUB MENU button to call up the following Sub Menu window:



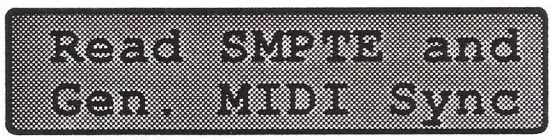
In this window you will select the Start Time and correct Frame Rate for any or all of the 10 Songs which are then stored into memory. The first cursor position also allows you to change the Song Number from this Sub Menu window. The next cursor position to the right allows you to select the correct Frame Rate (i.e., the same Frame Rate you selected when you recorded SMPTE onto your tape). And the final cursor positions allow you to set the desired Start Time for each Song.

To name each of the 10 allotted Songs , press the SUB MENU button and the following Sub Menu window appears:

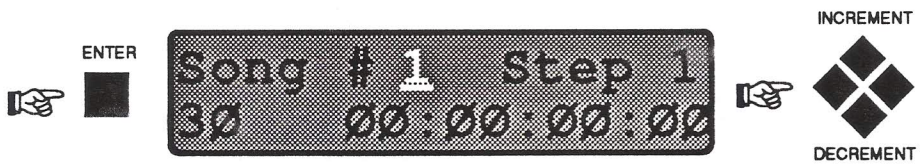
Using the INCREASE/DECREASE buttons with the cursor in the first editable position, allows you to select the Song Number you wish to name. Moving the cursor to the right one position you can begin to enter your Song Title of up to 16 characters (using the appropriate buttons from the 'diamond group'.

b. Reading SMPTE and Generating MIDI Sync

Now that the **SMP-16** has all the MIDI Sync information it needs, press the FWD MENU or REV MENU buttons and select this Main Menu window to sync your tape deck to your sequencer or drum machine via SMPTE to MIDI Sync:

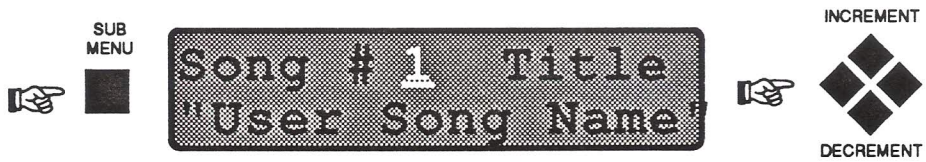


In order to execute the command indicated in this Main Menu window, you must hit the ENTER button to call up this Sub Menu window:



Select the Song number you wish the **SMP-16** to use as a Tempo Map, and start your tape deck. (NOTE: Make sure that the correct channel Output from your tape deck is connected to SMPTE IN on the **SMP-16**.) As soon as the **SMP-16** receives a SMPTE signal from the tape deck, it will begin to generate MIDI Sync, thus locking the sequencer to the tape. The window displays the frame rate (in the lower left corner) and SMPTE (in the lower right corner) and the current Song Tempo Map Step in real time for your convenience. (If you experience Tempo problems, check to see if you have selected the same frame rate that is on your tape.)

If you wish to view the current Song Name while Generating MIDI Sync, press the SUB MENU button and the following Sub Menu window appears:



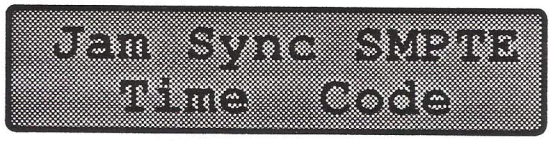
• The MIDI Sync information is merged with the input assigned to Processor A so that you may assign it to a MIDI Out on the **SMP-16**. (See: "Setting Up Your MIDI Patch Bay")

Unlike the other Read and Generate SMPTE functions, you cannot exit these windows and continue Generating MIDI Sync.

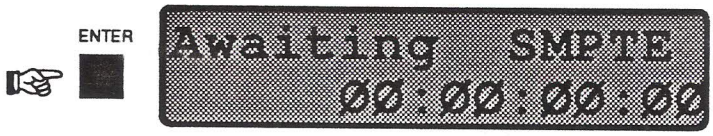
••• IMPORTANT! All changes made in the 'Read SMPTE and Generate MIDI Sync' windows are stored in memory immediately; as you make them. Be careful not to loose important Songs. Save them by System Exclusive Bulk Dump. (See: "System Exclusive")

5. Jam Syncing to SMPTE

Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when a portion of your SMPTE track has become damaged or erased and you wish to regenerate SMPTE:



In order to execute the command indicated in this Main Menu window, you must hit the ENTER button, and the following display will appear:



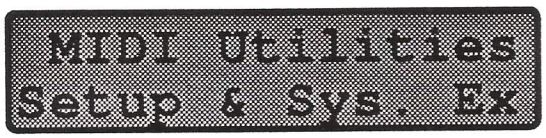
• NOTE: Make sure that the SMPTE OUT is going to the correct channel on your tape deck and that the correct channel Output from your tape deck is connected to SMPTE IN on the **SMP-16**.

First you must locate the damaged portion of your recorded SMPTE track, and determine if this is in fact the cause of the problem. If it is, you should be able to see a "drop-out" in the playback level of the SMPTE track in and around the problem area. Now set the record level to approximate that of the original and prepare the SMPTE track for a normal "punch-in/ punch-out" procedure and roll tape, giving yourself ample lead time. Using the INCREASE/ DECREASE button turn the SMPTE Read ON, and as soon as the **SMP-16** receives a SMPTE signal from the originally recorded SMPTE track (which you can see on the display), it will begin to regenerate SMPTE to be recorded over the damaged area. Now punch in prior to the damaged section and out at the desired time, and if all went well, your SMPTE track should be as good as new!

To return to the Main Menus, turn the SMPTE Read OFF and press the EXIT button.

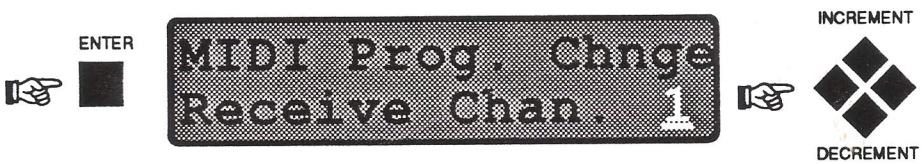
[4] MIDI UTILITIES

Using the FWD MENU or REV MENU buttons, you would select this Main Menu window when you wish to set the MIDI RECEIVE CHANNELS for the following: MIDI Program Changes, Audio Program Changes, and System Exclusive Device ID# or if you wish to Send System Exclusive Bulk Dump:



1. Setting the MIDI Patch Program Change Receive Channel

In order to execute the "Set-up" command indicated in this Main Menu window, you must hit the ENTER button, and the following window will appear:



This Sub Menu window allows you to select the MIDI Channel on which the **SMP-16** is to receive a MIDI Program Change. This allows you to change patches stored in the MIDI Patch Bay from another external MIDI Instrument. The **SMP-16** is always Omni Off. MIDI Program Changes are received on any of MIDI Channels 1-16 which you select by assigning the appropriate MIDI Input to Processor A or B. The 'x' value, once again, indicates OFF.

2. Setting the Audio Patch Program Change Receive Channel

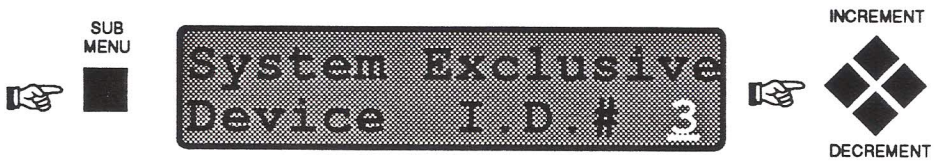
Pressing the SUB MENU button calls up the following Sub Menu window:

This Sub Menu window allows you to select the MIDI Channel on which the **SMP-16** is to receive a MIDI Program Change. This allows you to change patches stored in the MIDI Patch Bay from another external MIDI Instrument. The **SMP-16** is always Omni Off. MIDI Program Changes are received on any of MIDI Channels 1-16 which you select by assigning the appropriate MIDI Input to Processor A or B. The 'x' value, once again, indicates OFF.

3. System Exclusive

a. Setting the System Exclusive Device ID Number for Bulk Dumps and Loads

Pressing the SUB MENU button calls up the next Sub Menu window. This window allows you to assign an "ID Number" to each of your **SMP-16**'s, (when you have more than one), so that System Exclusive Dumps and Loads can be device independent:



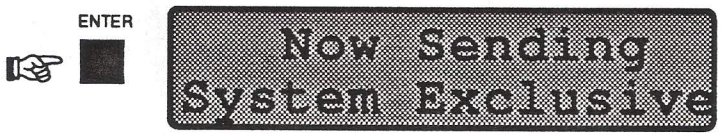
System Exclusive Messages are basically a "snapshot" of an instrument's internal memory at a particular time, which can be dumped (stored externally to another MIDI device) and retrieved as needed. To receive a Sytem Exclusive message from external storage, select the desired "ID Number", and assign the appropriate MIDI Input to Processor A. The above window illustrates that the **SMP-16** is to send and receive System Exclusive Messages, with the "ID Number" of 3.

• To turn System Exclusive Receive OFF, select 'x' in the above window.

b. Sending a System Exclusive Bulk Dump

Pressing the SUB MENU button calls up the following Sub Menu window:

Pressing the ENTER button from this window executes the "Send" command (indicated by the "Now Sending System Exclusive" which briefly appears in the window) and the System Exclusive Bulk Dump is transmitted through Processor A (don't forget to assign it to an output) to any MIDI device that supports System Exclusive and is set to receive.



The data contained in a System Exclusive Bulk Dump includes the entire **SMP-16** memory:

1. All MIDI Patch Programs (including filters and controllers) and Names.
2. All Audio Patch Programs and Names.
3. All MIDI and Audio Input and Output Names.
4. All SMPTE to MIDI Sync Data including each Song Start, Tempo Map, and Title.

? LOAD BULK

ANATEK
SMP-16

Date: Nov: 1, 1989
Version: 1.0

MIDI Implementation Chart

Function • • •		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	Memorized
Mode	Default Messages Altered	X X **********	X X X	O = YES X = NO
Note Number	True Voice	X **********	X X	
Velocity	Note On Note Off	X X	X X	
After Touch	Keys Channels	X O * 1	X X	
Pitch Bender		O * 1	X	
Control Change	All 0 - 119	O * 1	X	
Prog Change	True #	X **********	O (0 - 49) * 2 0 - 49	
System Exclusive		O	O	All Memory
System Common	Song Pos Song Sel Tune	O * 3 X X	X X X	
System Real Time	Clock Commands	O O * 4	X X	
Aux Message	Local ON/OFF All Notes OFF Active Sense Reset	X X X X	X X X X	

Notes

* 1 Six Controllers can be transmitted at once using **ANATEK** Remote Controller Interface.
* 2 Patch Number is (n+1), 0≤n≤49. Program Changes 50-127 are ignored.
* 3 Only when in 'Read SMPTE and Generate MIDI Sync' window.
* 4 MIDI Time Code, Direct Time Lock, and Enhanced Direct Time Lock.

SMP-16 Audio Specifications

THD	< 0.003% @ +10 dB, 1 kHz
Noise Floor	-95 dB INPUT SHORTED -100 dB INPUT DISCONNECTED
Channel Crosstalk	111 dB @ 1 kHz 103 dB @ 20 kHz
Input Impedance	10 k Ohm
Output Impedance	< 100 Ohm
Max. Signal	+ 19 dB
Frequency Response	DC to 40 kHz
Signal to Noise Ratio	114 dB

Specifications subject to change without notice.