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Perf/x MIDI Performance Effects

by Oberheim

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OWNER'S MANUAL

Perf/x
MIDI Performance Effects

by Oberheim.

Preliminary Edition – September, 1988

Welcome to the Systemizer™

INTRODUCTION

Welcome to the Oberheim **Systemizer**™ and congratulations on your purchase of one of the most exciting developments in MIDI technology to date. The Systemizer is a master MIDI control center and memory bank that allows you to create and store a wide variety of MIDI keyboard setups that can be as simple or elaborate as you want.

Think of the **Systemizer** is a Master MIDI Control Station that enhances your MIDI instruments' capabilities by allowing you to recall any setup between Master and Slave(s) instantly, and even perform functions that your instruments cannot do on their own. For example, the **Systemizer** permits multiple Splits to be created and played from your MIDI keyboard as a "Master Controller" to you're other instruments even if it doesn't have that capability on its own.

The heart of the **Systemizer** is the ZONE, and those of you familiar with the Oberheim Matrix™ series of synthesizers will know the important role it plays in achieving total MIDI control. The Zone concept permits you to select and store a set of MIDI commands as a "module" of information. The Zone module contains the specific MIDI data that you want to use for each setup. Parameters such as the Split Point (and whether it's Fixed or Floating), the Zone Type (Layered or Crossfading), and other performance functions like Polyphonic, Monophonic or Unison play modes can all be selected and stored into one of 32 Setups. More can be stored onto an optional Memory Card that is inserted into the slot on the left side of the **Systemizer**.

If you own more than one MIDI instrument or device — and it just so happens that they are connected together — you have what is known as a MIDI "system". Now, two MIDI products hooked up to one another may not sound like much of a "system", but you'd be surprised at what you can do with just two units, especially if you add the Oberheim **Systemizer** to your rig. But if your one of the many MIDI users that are playing several MIDI instruments and possibly a sequencer, computer or one or more MIDI effects, the **Systemizer** will do things for your MIDI system that you never thought possible or, up until now, only wished that you could.

HOW TO USE THIS MANUAL

The **Systemizer** is a very straight-forward and easy-to-use product that will add greatly to the versatility of any MIDI system. But as simple as the **Systemizer** is, there is some learning required especially if you intend to get the most out of it and the rest of your instruments. Therefore, we encourage you to read this manual in its entirety. The following outline will help you in understanding how the manual is arranged so that you will be able to learn the **Systemizer** as quickly as possible.

Quick Starting the Systemizer

If you're in a hurry, use the following outline to set your **Systemizer** up. Detailed instructions on the use of your **Systemizer** is in the remainder of the manual.

1. Before plugging the **Systemizer** into an electrical outlet, take a standard MIDI cable and plug one end into your Master controller's MIDI OUT port and plug the other end into the MIDI IN port of the **Systemizer**.

   Take another MIDI cable and plug one end into the MIDI OUT port of the **Systemizer** and plug the other end into the slave unit or, if you are using several MIDI instruments, plug the other end of the cable into the MIDI IN of the <u>first</u> slave in the system. If more than one slave is used, get yet another MIDI cable and plug one end into the first slave's MIDI THRU port and plug the other end into the MIDI IN of the second slave. Use this "MIDI THRU-to MIDI IN" chaining until all slaves have been connected.

2. Connect the **Systemizer**'s Power Pack to the unit's DC receptacle. It is located on the left rear panel as you are facing the **Systemizer** from the front. Plug the Power Pack into a standard electrical wall outlet. Turn the **Systemizer** ON with the switch located adjacent to the DC receptacle on the Rear Panel. Turn the other units in your system on.

3. Set each of your Slave Instrument to a different MIDI Channel. Turn OMNI Mode <u>off</u> for each of these Slaves.

4. Go to the MIDI Section on the front panel. Perform the following operations by pressing the button beneath the MIDI column to select the desired function:

BASIC CHANNEL	Use the < or > button to set the Basic Channel of the **Systemizer** to correspond to the Channel your Master is transmitting on.
ECHO/BYPASS	You want to turn MIDI ECHO on. When this function is selected, use the < or > button to select *on* status.

5. Select SETUP 31 press the ENTER button. The CLEAR SETUP function is in the MASTER Section under AUTO-EDIT. Press the button beneath the MASTER column to select AUTO-EDIT. Use the <> buttons to select CL (Clear), press ENTER. Now use the <> buttons to select LA (layer), press ENTER. You have now cleared previous information in PATCH 31 and reset it to be ZONE #1 in a layer mode.

6. Go to the ZONE Section on the front panel. Enter ZONE # Select mode with the MODE button. Press the < or > buttons to select the ZONE 1.

   Perform the following operations by pressing the button beneath the MODE column to select the desired function, and make the following settings:

INPUT CHANNEL	Use the third button to the right of MODE to select the "INPUT CHANNEL" function. This selects the INPUT CHANNEL of that ZONE. The current status of the INPUT CHANNEL will be displayed. Use the < or > buttons to select the MIDI Channel that matches the Channel that your Master is transmitting on.
	For now, we will not be doing any splits (we'll tell you how at the end of this section), so you want to set the SPLIT POINT to the highest MIDI Note Number to get the full range of the keyboard. Use the following procedure:
	Use the first button to the right of MODE to select SPLIT POINT Select mode.
	The current SPLIT POINT for the ZONE 1 will be displayed. Use the < or > buttons to change the SPLIT POINT to the highest note value of *G8*.
ZONE TYPE	We'll start out by using a simple layering of the Slave Instruments. Therefore, when you play your Master, all four instruments in this ZONE will play together in a layer (providing you have 4 instruments hooked up):

Press the second button to the right of MODE to select the ZONE TYPE function. The current ZONE TYPE will be displayed.

Using the < or > buttons, select *LA* (Layer) for the ZONE TYPE.

7. The next step is to set up the instruments for ZONE 1:

OUTPUT CHANNEL   In the current SETUP, press the MODE button twice to enter INST # Select mode. Use the < or > buttons to select the desired INST #, numbered *01* ··· *04* to edit.

The OUTPUT CHANNEL function selects the MIDI Channel 1 through 16 that the **Systemizer** will use to transmit MIDI data to the designated Slave Instrument in that ZONE.

Press the first button to the right of MODE to select the OUTPUT CHANNEL sub-function. When this sub-function is selected, the current MIDI Channel status will be displayed. Pressing the < or > buttons changes the OUTPUT CHANNEL. Select the OUTPUT CHANNEL you wish to use.

PATCH   Next, we want to send the right program number to the Slave Instruments:

Press the second button to the right of MODE to select the PATCH sub-function. When this sub-function is selected, the current MIDI Patch Number that will be transmitted to the designated Slave Instrument will be displayed.

Pressing the < or > buttons changes the Patch Number, or Transmit Off status. When the current Patch Number is changed, a dot will flash in the display. Press ENTER and the dot will disappear, confirming your selection. If the Slave Instrument assigned to that INST # has Patch Select on, its Patch Number will change when ENTER is pressed.

Split Keyboard

After you've become familiar with the Systemizer by trying the above operations and experimenting with layering the Slave Instruments, you may want to try a Split. Splitting the Master is accomplished by assigning one Slave to ZONE 1 and the other to ZONE 2 (you cannot split among the instruments within the same ZONE). Follow this procedure:

In the current SETUP, enter ZONE # Select mode with the MODE button. Use the < or > buttons to select ZONE 1.

Use the first button to the right of MODE to select SPLIT POINT Select mode. The current SPLIT POINT for the ZONE 1 will be displayed. Use the < or > buttons to change the SPLIT POINT to the desired note value. Display abbreviations for actual note values are listed in Chapter 7. This sets up the lower split instrument. You can also hold the ENTER button and press the key on your Master Keyboard where you wish the split point to be.

Now we want to set up the Slave Instrument that will play from the <u>upper</u> split:

Enter ZONE # Select mode with the MODE button. Use the < or > buttons to select ZONE 2. Press the MODE button again to enter INST # Select mode. Use the < or > buttons to select INST #01 to edit.

Press the first button to the right of MODE to select the OUTPUT CHANNEL sub-function. When this sub-function is selected, the current MIDI Channel status will be displayed for INST #01. Press the < or > buttons to change the OUTPUT CHANNEL to correspond with the MIDI Channel of the Slave Instrument that will be played from the upper part of the Split.

Saving to Memory
You may eventually want to STORE this SETUP to the **Systemizer's** memory. If so, do this:

Press the MODE button to select the current SETUP # (remember, we're working with SETUP 31). Be careful — selecting another SETUP # by mistake will erase all the edits you've done to the current SETUP.

Press the button beneath MASTER to access STORE/COPY MODE. The display will read *St* (store) with a flashing dot.

Press ENTER. The display shows the SETUP you are storing to, in this case its 31.

Press ENTER again. The display says GO. This similar to, Are you sure?

Press ENTER a third time. SETUP is now stored in 31.

Pressing the MODE button, or any button to the right of it at any time aborts the STORE/COPY function.

Factory Presets

Patch #	Type	Channels	Local Ped 3	Local Ped 4
0	4-Way layer	(chan 1-4)	Bypass	Change CH1 patch
1	2-Way split at C3	(chan 1,2)	"	Change split to layer
2	3-Way split a C3, G4	(chan 1-3)	"	Go to patch #0
3	Pressure crossfade	(chan 1,2)	"	Ctlr crossfade (ctlr #1
4	Controller switch	(chan 1,2)	"	Chain to Patch # 9
5	Positional crossfade	(chan 1-3)	"	Layer to split at C3
6	Velocity switch	(chan 1,2)	"	Chain to Patch #4
7	2-way split at C3 (zone 1 = chan 3 octave doubled) (zone 2 = chan 1,2 grouped)	(chan 1-3)	"	Move split point down octave
8	Floating split	(chan 1,2)	"	Fix/float on/off
9	1-key (4-note) chord	(chan 1-4)	"	Chain to Patch #6
10	Stacked 5th by pedal	(chan 1-4)	"	Transpose instrument by P5
11	Detune by pedal	(chan 1,2)	"	Change fine tune message (only if synth responds to MIDI fine tune, such as Matrix-1000)
12	1-instrument layer	(chan 1)	"	Patch decrement

Chapter 1

Unpacking & Connections

Unpacking
Once you open the **Systemizer's** carton, you should find a number of accessories that were shipped with the unit. The following checklist details the items that you should have when you first open the box. If any of these are missing, **contact the Oberheim Dealer that sold you the unit** and they will assist you in obtaining the missing items:

> The **Systemizer**
> This Owner's Manual
> AC Adaptor/Power Pack

Connections

Incorporating the Systemizer into your MIDI system is easy and straight-forward. Since the **Systemizer** makes no sound of its own, there are no audio connections to worry about. All you need to do is connect the MIDI IN and MIDI OUT ports and plug the unit into an electrical AC outlet. The Oberheim FS-7 Pedals are optional and can be ordered from your Authorized Oberheim Dealer separately.

Procedure

1. Before plugging the **Systemizer** into an electrical AC outlet, make your MIDI connections. At this point, you should decide which of your MIDI keyboards (or guitar controller, wind controller, etc.) will be the Master Controller in the system. Take a standard MIDI cable and plug one end into its MIDI OUT port and plug the other end into the MIDI IN port of the **Systemizer**.

2. Take another MIDI cable and plug one end into the MIDI OUT port of the **Systemizer** and plug the other end into the slave unit or, if you are using several MIDI instruments, plug the other end of the cable into the MIDI IN of the first slave in the system.

3. If more than one slave is used, get yet another MIDI cable and plug one end into the first slave's MIDI THRU port and plug the other end into the MIDI IN of the second slave. Use this "MIDI THRU-to MIDI IN" chaining until all slaves have been connected.

    An alternate method of connecting the system can also be accomplished if you want to use a MIDI THRU Device. A "THRU Box" as they are called is in many respects like a "Y" connector for MIDI signals. It is comprised simply of a MIDI IN port that divides the MIDI signal to two or more MIDI THRU ports. If you plan to use one of these units, plug the end of the MIDI cable from the Systemizer's MIDI OUT port into the MIDI IN of the THRU box. Then connect the MIDI IN ports of the slaves to the THRU ports of the THRU box.

4. Pedals & Footswitches: The **Systemizer** can be controlled from either Local pedals (plugged into any of the four inputs on the real panel) or "External" pedals (pedal control coming in from your Master MIDI Controller). Plug any momentary SPST spring-loaded pedal into the desired pedal input on the rear panel (the Oberheim FS-7 is recommended); MIDI pedal control is discussed in Chapter 6.

5. Connect the **Systemizer's** Power Pack to the unit's DC receptacle. It is located on the right rear panel as you are facing the **Systemizer** from the front.

6. Plug the Power Pack into a standard electrical wall outlet. Be sure that the Power Pack that came with the unit is correct for the AC power in your area.

7. Turn the **Systemizer** ON with the switch located adjacent to the DC receptacle on the Rear Panel. Turn the other units in your system on.

Chapter 2

An Overview of the Systemizer:
Its Operations & Applications

The MIDI instruments, devices and effects that you own may or may not be connected and used together at this point in time. We all know (hopefully) that just because you are able to connect MIDI OUTs to MIDI INs doesn't mean that you should. Hooking everything together without some purpose often causes a lot of confusion — and sometimes malfunctions. Those of us who are veterans in the MIDI world will attest to this fact of musical life.

Eventually, your musical requirements may call for interfacing two or more units, or you just might simply begin to experiment with the products you have. As your MIDI needs grow, you may soon find that the individual capabilities of each device are somewhat (maybe even severely) limited, and you discover that your gear just can't do what you need them to do to get the job done. How many times have we gotten to a point and could go no further because we ran out of INs or OUTs or MIDI Channels? Or how often do we find that we need to split the keyboard, do a general key transposition, transmit on more than one MIDI Channel or filter certain MIDI data out? In addition to all of the practical MIDI programming, once in while we might like to do an out-of-the-ordinary function like invert the effect of Velocity, crossfade between two Slave synthesizers or make the Pitch Bend Wheel do something other that bend notes (like change Volume or affect After-touch), wouldn't we?

The simplest MIDI connection of one Master device and one Slave constitutes what is called a MIDI "System". When MIDI was first devised, this simple Master-Slave idea was the basic premise upon which MIDI was built. As more and more MIDI products were developed, MIDI as an interfacing network developed as well. But one of the drawbacks that has to be dealt with, however, is that not all MIDI instruments incorporate the same MIDI functions. When these products are connected, what is expected to be a "system" may or may not perform like a system at all.

Enter the Oberheim **Systemizer** . This simple-looking little box is actually a powerful MIDI Control Station that takes up where many popular MIDI instruments leave off. As an overview, let's take a brief look at what the **Systemizer** is designed to do and, in general, how it works.

WHAT IT DOES

1. SPLIT Function

Many popular MIDI keyboards (synthesizers, MIDI pianos, and controllers including keyboard controllers, guitar controllers and wind controllers) do not have the ability to split the keyboard. The **Systemizer** can create a split point <u>anywhere</u> in the MIDI Note Range and allow your Master Controller to play two Slave instruments, one from the upper keyboard range and one from the lower. A 3-way Split function is also included that allows control of three Slaves on three distinct ranges of the keyboard.

The Split Point can be Fixed (stays at the same note) or Floating (moves up and down the keyboard giving you variable ranges).

2. The ZONE

The Zone is the **Systemizer's** "data module" that allows you to program the performance functions of the Master and Slave(s). The Zone allows complete customizing of functions such as Velocity Sensitivity, Pressure or After-touch Sensitivity, keyboard Play modes (Unison, Monophonic or Polyphonic) and exciting performance functions like switching or crossfading between (or among) the Slaves, rotating among the Slave instruments as you play and inverting the effect of Velocity. The Split function mentioned above is included as one of the Zone functions.

3. The INSTRUMENT Functions

These functions are used to govern the Slave(s) with another set of MIDI controls that are used in conjunction with the Zone. The INSTRUMENT functions include the transmitting of Patch Change commands to the Slave(s), their initial

Volume settings, Pitch Bend Range, OMNI Mode on or off, Fine Tune and key Transpose amounts, and MIDI Controller enables.

4. MIDI Functions Section

This group of functions are used to set up the overall MIDI operation of the **Systemizer**. Basic Channel select, MIDI Echo (on or off) and bypass (on or off) functions are operated from this section.

When using the **Systemizer** to switch or crossfade between Slaves, this section is used to determine which MIDI controller on the Master unit will be used. The MIDI section is also used to program the Voice Limit (maximum number of Voices per MIDI Channel), the Patch Limit (highest Patch Number per MIDI Channel) and Bank Limit (highest Bank Number per MIDI Channel).

5. MASTER

The Master section of the **Systemizer** performs the overall data handling functions of the unit. The programmable functions of the **Systemizer** are stored into memory or copied to another memory location in this mode, as well as the ability to send data via MIDI or the unit's optional RAM card.

Also included in the Master section is the defining of basic Pedal functions plus an Auto-Edit function that actually initiates a random programming of the unit's functions.

HOW IT WORKS

MIDI is a simple yet powerful communication network that links musical instruments and other electronic devices that have a MIDI interface together . MIDI data primarily represents the performance characteristics of one unit and sends this information to one or more receiving devices. A MIDI "system" is comprised mainly of a transmitting unit (the "Master Controller") and one or more receiving units (the "Slaves").

Anyone who has used MIDI-based instruments knows that not all MIDI devices are created equal. This is due in part to manufacturers' insight into customers' needs, time constraints in design and manufacture and cost limitations. However, no matter what the reason, if what we want to do musically is not within the capabilities of our equipment, we are faced with serious setbacks and the frustrations that come with them.

The Oberheim **Systemizer** is designed to fill the all-too-often wide gap in the design limitations of the MIDI products currently available. In addition, MIDI products designed three or four years ago before MIDI developed into the technology that it is today can be "updated" simply with the addition of a **Systemizer** to the rig.

In its simplest definition, MIDI information is a series of data bytes that let you control one or more Slave units remotely. This data can be processed by any receiving unit according to how it is set up to receive. Certain MIDI data can be used as is, it can be ignored, or it can be transformed into another type of command. The **Systemizer** does all three of these functions plus much more.

For one, the **Systemizer** can "Channelize" the data. This means that when information is sent to it on one MIDI Channel, it can generate the same information on another Channel, or many Channels. The Channel identification data that precedes the Voice Messages can be altered so that when the **Systemizer** transmits, it sends on a Channel or Channels different from what it receives on if you want.

The **Systemizer** can also take the performance information and manipulate this data as well. Split Points that cannot be created from the Master can be generated by the **Systemizer** simply by grouping a range of MIDI Notes that define the lower keyboard and a range of MIDI Notes that define the upper keyboard. MIDI Notes that come in from the Master are examined and determined which group they belong in. Note data that is in a particular Note group is then transmitted to the proper Slave. This is done internally in the **Systemizer** and actually allows to create Keyboard Splits on Master instruments that do not have this ability at all on their own.

Layering is one of the easiest MIDI functions to accomplish. Simply connect the Master to one or more Slaves, set all the MIDI Channels to the same Number (or enable OMNI Mode on the Slaves) and play. But what if you want to make each Slave do something different than what the Master is doing? The **Systemizer** utilizes a set of INSTRUMENT functions, titled INSTRUMENT on the front panel that allow you to customize the activity of each Slave if you want. Each can be sent

its own Patch Number, on its own Channel, and in its own Transposition. This is accomplished by either altering the data bytes as they are recognized from the Master, or creating new data altogether when certain data from the Master is received as a "cue".

And this is where the second phase of **Systemizer** operation comes in. In addition to the MIDI data it receives and processes for the Slaves, the **Systemizer** can generate its <u>own</u> MIDI data. It gives you the ability to cross-fade or switch between or among the Slaves, either automatically as you play up and down the keyboard, or manually by using the Vibrato Wheel, Sustain Pedal or even the Data Entry slider.

The **Systemizer** also generates other performance data that "re-configures" (makes several important system changes to) the Slaves. When a new SETUP is recalled, the **Systemizer** can create performance data such as:

...a pre-determined MIDI Volume value, so that a preset "mix" of the Slaves is initiated

...turning the Local Control of the Slaves on or off

...a preset Bend Range for all the Slaves, so that the same amount of Pitch Bend affects all units in the system

...a different Fine Tune amount for each Slave to either compensate for center tune differences or to create an effect

...even the ability to turn OMNI Mode or Poly Mode/MIDI Mono Modes on or off

The **Systemizer** is <u>the</u> MIDI Control Station for some of the most powerful MIDI setups you'll be ever likely to need. Its ability to not only manipulate incoming MIDI data from the Master — whether it is a keyboard, synthesizer, guitar or wind controller, drum machine or sequencer — but to generate its own MIDI data, make it an important and necessary tool in any MIDI system. Now there is no need to scrap that old synth just because it only transmits on Channel 1.

Chapter 3

Systemizer Operation

INTRODUCTION

When programming or performing with the **Systemizer**, its many functions can be most easily operated if you think of them in terms of a "multi-layered operating system". What we mean by "multi-layered" is that each of the presets within the unit contains a number of functions that are all related in some way. It is your programming of each of these functions that will give each of the **Systemizer's** 32 presets, called a **SETUP** on the front panel, its own performance characteristics.

Some functions also have <u>sub</u>-functions within them as well. As you become familiar with the basic layout of the **Systemizer**, you will notice that several of the main functions offer you a number of selections as to how it will affect its designated slave. When you see a function title followed by a "..." (as in "ASSIGN MODES..." for example), this indicates that you must select one of its sub-functions from a "list" of options. In all cases, pressing the **ENTER** button on the front panel accesses this list for you to make a choice.

All of these functions within a SETUP are logically grouped into one of two main headings: the <u>Zone</u> (titled **ZONE #** on the front panel) and the <u>INSTRUMENT</u> section (titled **INST #** on the panel). These are the two sections that are programmable for each one of the 32 SETUPs.

The **Systemizer** also makes extensive use of what we call "global" functions: those functions not programmable per SETUP but are set for the unit and hold true for each SETUP. There are two of these sections: four groups of <u>MIDI</u> functions (CHAN LIMITS..., CTRL ASSIGN..., ECHO/BYPASS and BASIC CHAN) and <u>MASTER</u> functions which access basic memory operations (STORE/COPY, AUTO-EDIT and DUMP/LOAD) and allow you to set up your PEDALS.

With this brief introduction in mind, let's take a deeper look into the programming and operation of the **Systemizer**.

OPERATION OUTLINE

1. The **Systemizer** uses memory from any one of 32 SETUPs plus Global information in the way your Master is able to control your Slave Instruments.

   Think of a SETUP as being like a "snapshot" of how your Master is connected to the Slaves.

2. Every SETUP consists of four independent ZONEs. There are three numbered ZONES (1, 2 and 3) that allow you to play Slave Instruments, and one ZONE (called "SP") that sends all MIDI data except Notes and Controllers.

3. Each ZONE consists of four Slave Instruments. You decide what MIDI Channel the ZONE will be listening to and the range of MIDI Notes it will play from.

4. The ZONE is used to determine:
   a) What data from the Master is going to be used for the instruments that it is controlling.
   b) How to divide this information up.

   In other words, you tell the ZONE what MIDI data it will recognize from the Master and then you tell it which of this incoming data to send to each of the Slave Instruments ("which Slave Instruments get what data from the Master and how to combine them").

   The ZONE also selects and scales MIDI Controller information coming from the Master and passes this information along to the Slaves.

5. In the INSTRUMENT Section, you are able to decide which of the Slaves will be played and how they will be played. This section provides a Slave Number ("INST #") that corresponds to each of the Slaves that you connect to the **Systemizer**.

   You then program each instrument to play a certain way in each SETUP. Everytime a new SETUP is recalled from memory, the INSTRUMENT Section tells all the Slaves how to "line up". As an example, if you have three MIDI Slaves

connected to your **Systemizer** but only want to play two of them, you can turn any one of them off from the INSTRUMENT Section. So you can connect a bunch of MIDI Slaves to the **Systemizer** and pick which ones you want to play for a particular SETUP and how you want to play them.

In summary, the ZONE lets you decide where the MIDI data comes from and which of this MIDI data will be used, the INSTRUMENT Section allows you to determine where the MIDI data will go, and the SETUP takes a picture of all of the settings.

LAYOUT

Another way of understanding the **Systemizer** can be illustrated by block diagrams. The first one we'll use describes the unit's overall block scheme.
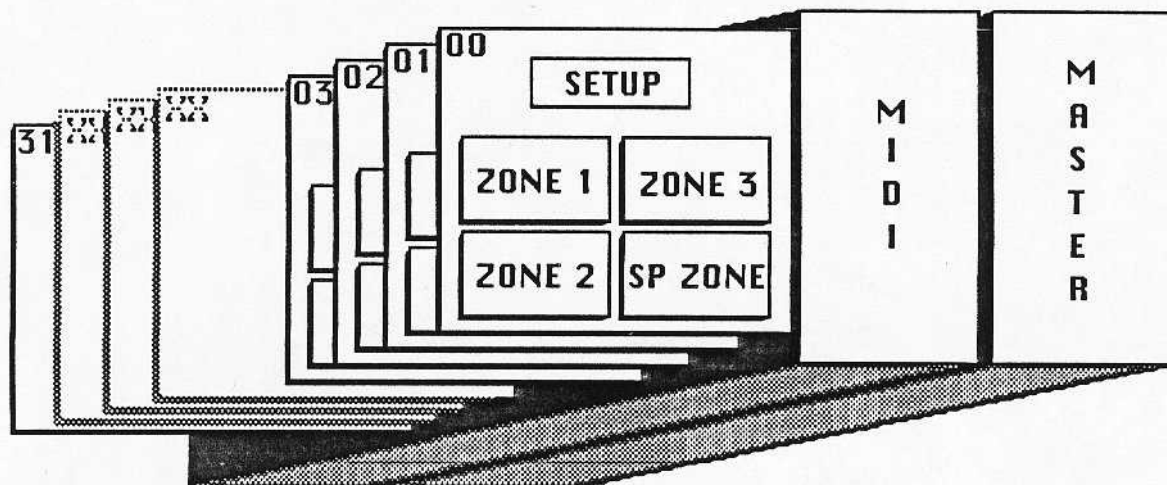
Notice that there are only one MIDI section and one MASTER section depicted in the illustration. They are programmed globally and affect all SETUPs the same.

SETUP

The SETUP is the **Systemizer's** programmable memory. Any one of the 32 SETUPs may be selected from the front panel or remotely via a MIDI Patch Select command from the Master. Let's take a closer look at what comprises a SETUP. The following illustration "zooms in" on the SETUP in order to detail its components:
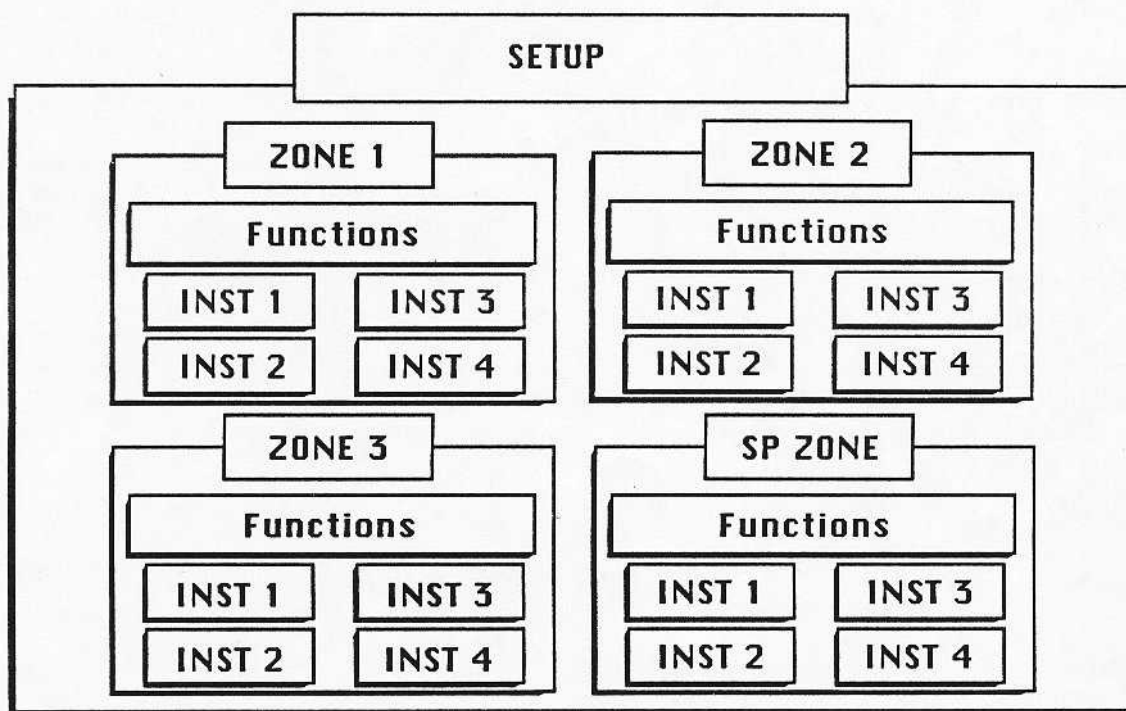
Also notice that each of the 32 SETUPs contains four ZONEs numbered 1, 2 and 3 plus "SP" which is the "Special Patch" Zone (more about that later). Each ZONE makes use of six primary functions which determine the ZONE's operation. But before we go any further, let's understand what a ZONE does and how it is used.

The ZONE

The ZONE is the section of the **Systemizer** that determines how your Master Controller will operate. It is the **Systemizer's** input section that tailors MIDI information coming into it from the Master.

```
┌─────────────────────────────────────┐
│                ZONE                  │
├─────────────────────────────────────┴──────────────────┐
│                                                         │
│  ┌──────────────────────────────────────────────────┐  │
│  │  ┌──────────────┐  ┌──────────────┐  ┌─────────┐  │  │
│  │  │  FIX / FLOAT │  │ASSIGN MODES..│  │ KYBD... │  │  │
│  │  └──────────────┘  └──────────────┘  └─────────┘  │  │
│  │  ┌──────────────┐  ┌──────────────┐  ┌─────────────┐│  │
│  │  │ SPLIT POINT  │  │  ZONE TYPE   │  │INPUT CHANNEL││  │
│  │  └──────────────┘  └──────────────┘  └─────────────┘│  │
│  └──────────────────────────────────────────────────┘  │
│                                                         │
│  ┌──────────────────────┬──────────────────────┐       │
│  │       INST 1         │       INST 3         │       │
│  ├──────────────────────┼──────────────────────┤       │
│  │       INST 2         │       INST 4         │       │
│  └──────────────────────┴──────────────────────┘       │
│                                                         │
└─────────────────────────────────────────────────────────┘
```
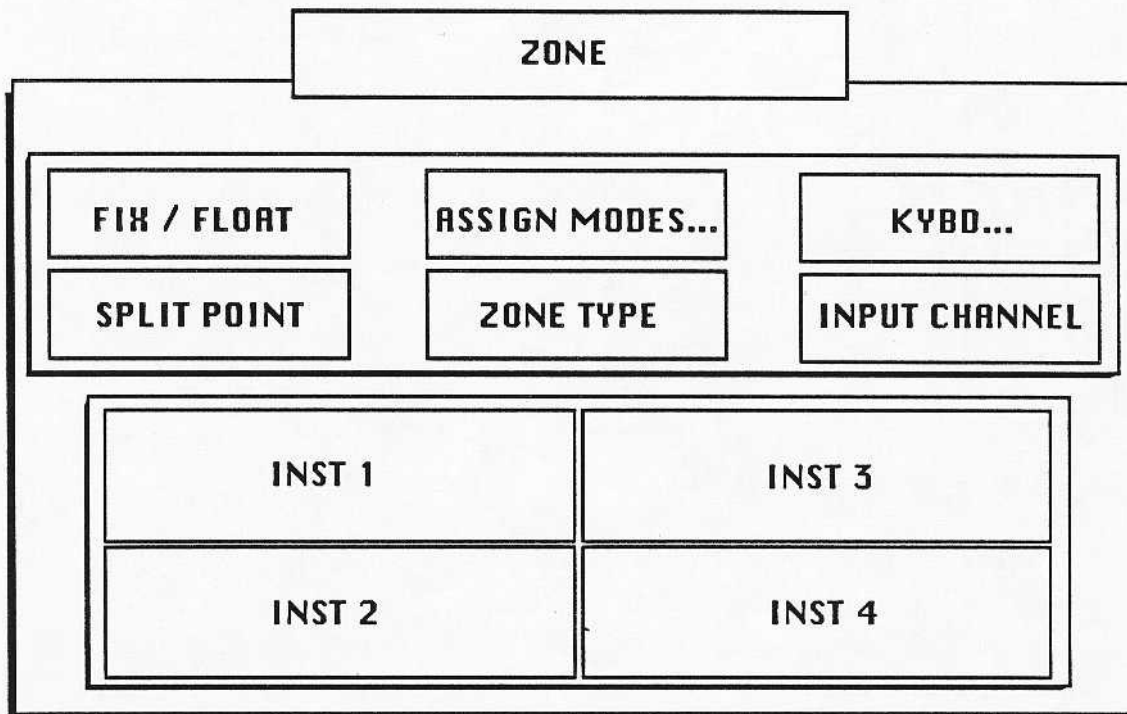
As shown in the illustration, the **Systemizer** contains four ZONEs numbered 1, 2 & 3 plus "SP" ZONE. The basic elements of a ZONE are:

1. The numbered ZONEs are used to split up a Master controller up to three ways with each ZONE covering one area of the keyboard.

    ZONE 1 covers the area of the keyboard from the lowest MIDI Note up to its Split Point. If its Split Point is the highest MIDI Note, it will cover the entire range of the keyboard and effectively turns ZONEs 2 and 3 off.

    If ZONE 1's Split Point is somewhere in the the range of the Master keyboard, ZONE 2 will start one note higher and continue up to its own Split Point.

    ZONE 3 starts one note higher than ZONE 2's Split Point and continues up to its own Split Point or the highest MIDI Note. Just as with ZONE 1, if ZONE 2's Split Point is the highest MIDI Note, ZONE 2 will cover the remainder of the keyboard range and effectively turn ZONE 3 off.

2. Each ZONE can control up to four Slave Instruments, which is its own unique set of four instruments. The specifics of each of these Instruments are set in the INSTRUMENT Section.

3. A ZONE listens to MIDI data on its INPUT CHANNEL. A ZONE will only pass along data to its instruments that came in on that Channel.

4. A ZONE determines (by the way you set it up) where to send the data that came in on its INPUT CHANNEL based upon ZONE TYPE and the other sub-functions in the ZONE Section.

If the ZONE TYPE is "LAYER", then all of that ZONE's instruments get all of the data just as if they were set to the same MIDI Channel, even though they have been set to their own MIDI Channel. In other ZONE types, only some of the instruments will get the data, and their relative Volumes can be adjusted as you play.

5. The instruments of a ZONE can be grouped together so that they effectively play as one large instrument. The ZONE's "GROUP TYPE" specifies how notes should be shared among the instruments in the Group.

6. Some of the MIDI Controllers transmitted by the Master controller can be modified by the **Systemizer** before being sent to the instruments. After-Touch and Velocity can be scaled, and the effect of the Sustain Pedal can be altered as well.

It is in the ZONE that the Master can be made to do things that it may not be able to do on its own. As an example, let's take the SPLIT POINT function. Your Master may not have a split keyboard capability built in (many do not as a result of the manufacturer's design). The SPLIT POINT function can allow your Master's keyboard to be split anywhere (programmable) and have the lower section play Slave #1 and the upper play Slave #2. They can be on the same MIDI Channel or different MIDI Channels.

As shown by the diagram, each of the ZONEs can control up to **four** instruments or Slaves. That means that up to 16 different MIDI slave units can be configured (programmed) and controlled in each SETUP.

The SP ZONE

The "Special Patch" (displayed as "*SP*") ZONE, sends all MIDI data except Notes and Controllers. Why would you want to do that? Well, one application of this is when you want to set up any synthesizer with new MIDI data, but not actually play it from the Master. We've included this Special Patch ZONE just for that purpose. The MIDI information in the SP ZONE is transmitted on the BASIC CHANNEL selected in the MIDI section.

The SP ZONE, like ZONEs 1, 2 and 3, is programmable but several functions — those that have to do with transmitting Notes and Controllers — have been removed: SPLIT POINT, FIX/FLOAT, ZONE TYPE, ASSIGN MODES..., INPUT CHANNEL and KEYBOARD are not available in the ZONE section and display a "– –" when selected; GROUP, INITIAL MESSAGES..., TRANSPOSE and CONTROLLER ENABLES are not available in the INSTRUMENT section and display a "– –" when selected.

Like ZONEs 1, 2 and 3, SP ZONE can control up to four Slave Instruments. So you can see that each SETUP in the **Systemizer** can control up to 16 MIDI instruments independently, on all 16 MIDI Channels at the same time.

Note: When "SP" Zone goes into SPLIT POINT you will notice that a SPLIT POINT does exist. This mode enables you to raise the low note of ZONE 1 up. More about this function in SPLIT POINT Chapter 5.

INSTRUMENT
Each of the four INSTRUMENT sections in the ZONE determines how each of your slave devices (called an "instrument") will be affected by the **Systemizer**.
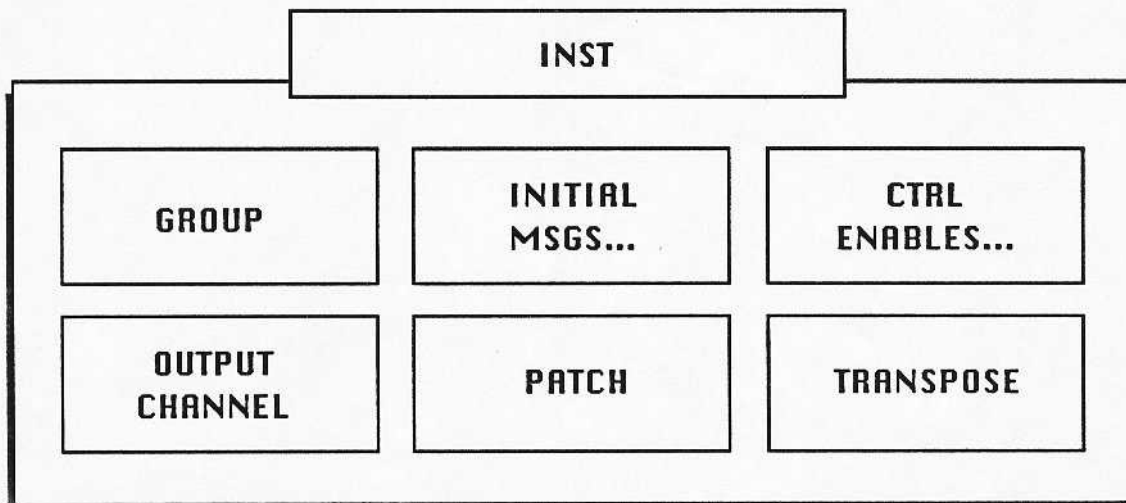
Here are the the basic elements of an instrument:

1. Each of the ZONE's instruments has its own OUTPUT CHANNEL that can be set to any one of the 16 MIDI Channels as desired. This corresponds to the MIDI Channel of the Slave Instrument you want to actually play.

   In practice, you will want to set each of your Slaves to its own Channel. Then when you want to include a particular Slave Instrument in a SETUP, you just set one of the INST #'s OUTPUT CHANNELs to match that Slave.

2. Each instrument allows you to select several INITIAL MESSAGES that can be sent to the Slave Instruments when you first recall a SETUP from memory. Since there are four ZONEs to a SETUP and four instruments to a ZONE, this allows you to select a single SETUP and have each of the 16 instruments that it controls set to a different MIDI Patch Number and its own Volume level, for example.

3. Each instrument has a GROUP ENABLE function that allows it to be played with other instruments in the Group as if they were one large polyphonic instrument. How the group is used is determined in the ZONE.

4. Different kinds of MIDI Controllers can be enabled or disabled for individual instruments in the ZONE. For example, you can send Sustain Pedal to all but one instrument in the ZONE.

So as you control several MIDI slaves from the **Systemizer,** each of these slaves are customized by these six sub-sections. Remember — up to four individual MIDI slaves can be operated independently from each ZONE using the functions in the INSTRUMENT section.

Chapter 4

Getting Around
the Front Panel

Now that we have covered the basic layout of the **Systemizer**, we'll tie it all together in this Chapter by showing you how the Front Panel controls are used. Once you have made the proper connections as outlined in Chapter 1, we are ready to proceed.

MODE SELECTING

You may have noticed by now that when you first pull the **Systemizer** out of the box and turn it on, the display reads *00* and the LED above **SETUP #** lights. This indicates that SETUP #00 has been selected and that the unit is in SETUP Select Mode. The first three LEDs in the vertical column above the MODE button are used to select the operating mode: **SETUP #**, **ZONE #** and **INST #**. Pressing the MODE button at this point will advances to ZONE Select Mode; pressing MODE again activates INSTRUMENT Select Mode.

Pressing MODE again returns the unit to SETUP Select. This is a basic operation of the **Systemizer** in that pressing any of the column buttons (the MODE button and all those to the right of it) will loop around the functions available in that section. That means that in some cases, only two functions may be involved and pressing the respective column button simply "toggles" (switches back and forth) between the two.

INCREMENT / DECREMENT and ENTER

Return to SETUP Select Mode (the **SETUP #** LED will be lit). Pressing the **>** button advances the display to the next SETUP (pressing **<** reverses) and a flashing dot in the display will appear indicating that a change has been made. Pressing ENTER confirms the selection and the dot disappears.

As a side note, several select operations do not utilize the flashing dot so there is no need to be concerned. The flashing dot appears only when the selection you've made will make an important change to the memory. This is similar to the "ARE YOU SURE?" prompts in other products.

The ZONE Section

Go to ZONE Select Mode (the **ZONE #** LED will be lit). The **Systemizer** is now in ZONE Select Mode and pressing the **<** or **>** buttons will select one of the four ZONEs (1, 2 or 3, or SP) in the selected SETUP.

During the time a ZONE is selected, the three column select buttons to the immediate right of the MODE button will allow you to toggle between the two function headings directly above them. As an example, the first column button to the right of MODE toggles between "FIX/FLOAT" and "SPLIT POINT". The next column button selects between "ASSIGN MODES..." and "ZONE TYPE". The third button to the right of MODE toggles between "KYBD..." and "INPUT CHANNEL".

The INSTRUMENT Section

Go to INSTRUMENT Select Mode (the **INST #** LED will be lit). The **Systemizer** is now in INSTRUMENT (the instrument slave) Select Mode and pressing the **<** or **>** buttons will select one of the four instruments (1, 2 , 3, or 4) in the selected ZONE. Be careful — before you enter INSTRUMENT Mode, make note of the ZONE that the **Systemizer** is addressing. The instruments that you will be working with will be the ones assigned to the last ZONE selected.

Just like ZONE Mode, the three column select buttons to the immediate right of the MODE button will allow you to toggle between the two function headings directly above them in INSTRUMENT Mode. As an example, the first column button to the right of MODE toggles between "GROUP" and "CHANNEL OUTPUT". The next column button selects between "INITIAL MSGS..." and "PATCH". The third button to the right of MODE toggles between "CTRL ENABLES..." and "TRANSPOSE".

MIDI

MIDI Mode is selected by pressing the fourth column button to the right of MODE. Pressing this button repeatedly loops among the four MIDI functions from bottom to top. ON or OFF status ("ECHO/ BYPASS") as well as multiple options within a function ("BASIC CHANNEL", "CTRL ASSIGN..." and "CHAN LIMITS...") are selected by the < or > buttons and ENTER (when appropriate).

MASTER

MASTER Mode is selected by pressing the fifth column button to the right of MODE. Pressing this button repeatedly loops among the four MASTER functions from bottom to top. Multiple options are used within all functions and are selected by the < or > buttons and ENTER (when appropriate).

Chapter 5

MIDI and ZONE
Function Descriptions

In this Chapter, we will examine and describe the functions of the **Systemizer**'s MIDI and ZONE sections in detail and will use brief examples when necessary.

The first section of the **Systemizer** that we will cover is the MIDI Mode. Once the MIDI Mode is configured the way you want, the rest of the unit's operation will be easy. It is important also to set up the MIDI section first so as to avoid confusion later as you create and use your own custom SETUPs.

Programming the MIDI Mode

The four functions of the MIDI section are those that are concerned with the way the **Systemizer** responds to MIDI information <u>received</u> from the Master Controller. As you use the **Systemizer** in performance, each ZONE section in use will further tailor this incoming MIDI data as required for the specific operation of that ZONE. MIDI information to be <u>transmitted</u> from the unit to your Slaves is handled by the INSTRUMENT functions, covered later in this Chapter.

BASIC CHANNEL

The BASIC CHANNEL function selects the MIDI Channel, either one of the Channels 1 though 16 BASIC CHANNELS or OMNI Mode, that the **Systemizer** will use to receive MIDI data. Now since each numbered ZONE 1, 2 or 3 can have its own MIDI Channel as well for receiving MIDI Notes and Controllers, the BASIC CHANNEL is used primarily as the Channel to:

> ...receive Patch ("SETUP") Change commands from the Master
> ...recognize MIDI PEDAL information that is used to control several of the unit's functions
> ...transmit data from the SP ZONE
> ...perform data DUMP/LOAD functions via MIDI

As an example, you can set the BASIC CHANNEL to a Channel Number that is different from the one the Master is transmitting on and the **Systemizer** will still play the Slave(s) as expected. But the unit itself will not respond to Patch Change commands coming from the Master (making a Patch Change and transmitting it from the Master will not affect the **Systemizer**) and any special Pedal commands that you may want to use to manipulate the unit remotely from the Master will not be recognized.

Operation:

When this function is selected, the currently selected MIDI Channel will be displayed. Pressing the < or > buttons changes the BASIC CHANNEL to any of the MIDI Channels 1 through 16. The Channel Number displayed is the one that is active.

ECHO/BYPASS

MIDI Echo — not to be confused with other types of "echo" as we know them — is simply a provision in the MIDI design of an instrument that permits its MIDI OUT port to act as a MIDI THRU or a MIDI OUT/THRU port when necessary. This function determines how the MIDI IN and MIDI OUT ports on the **Systemizer's** Rear Panel operate:

Function	Displayed as...	Description
ECHO off	*OF*	The **Systemizer** will transmit MIDI data received on Channels that correspond to the BASIC CHANNEL and the ZONEs' INPUT CHANNEL settings <u>only</u>. It will not pass any MIDI data to the Slaves that come from other Channels.
ECHO on	*On*	The **Systemizer** will pass all MIDI data received, regardless of its MIDI Channel, plus its own MIDI information to the Slaves.
Bypass	*b.P*	The **Systemizer** will pass all received MIDI data but will not transmit its own MIDI data. Thus, the unit is effectively "bypassed".

Operation:

When this function is selected, the currently selected Mode will be displayed. Pressing the < or > buttons will change to display the two other Modes. The Mode that is displayed is the one that is active.

CTLR ("Controller") ASSIGN...

As discussed later in this Chapter, the **Systemizer** allows you to use MIDI Controllers — a Modulation ("vibrato") Wheel or Lever, Channel Pressure (After-Touch), Volume Pedal, Sustain Pedal, Breath Controller, etc. — to control Cross-fading and Switching in a ZONE between the instruments assigned to that same ZONE. This function permits you to determine the MIDI Controller Number of the controller type that will be used for Cross-fading and Switching during performance.

The table below lists the common MIDI Controllers and their corresponding Controller Numbers for your convenience:

MIDI Controller	Controller Type	MIDI Controller #	Application
Modulation Wheel or Lever	Continuous	1	Cross-fade
Breath Controller	"	2	"
Foot Controller	"	4	"
Portamento Time	"	5	"
Data Entry Slider or Knob	"	6	"
Volume Pedal	"	7	"
Balance Control	"	8	"
Pan Control	"	10	"
Expression Pedal	"	11	"
Pitch Bend	"	see Note 1	"
Pressure / After-Touch	"	see Note 2	"
Sustain Pedal	Discrete	64	Switch
Portamento On/Off	"	65	"
Sostenuto Pedal	"	66	"
Soft Pedal	"	67	"
Hold 2 Pedal	"	69	"
External Effects Depth	"	91	"
Tremolo Depth	"	92	"
Chorus Depth	"	93	"
Celeste (Detune) Depth	"	94	"
Phaser Depth	"	95	"

Note 1: "Channel Pitch Bend" uses a dedicated (and therefore not displayed) Controller Number and cannot be assigned to control cross-fading or switching.

Note 2: "Channel Pressure" also uses a dedicated Controller Number and cannot be assigned as a cross-fade or switch controller in the CTLR ASSIGN function. However, Pressure / After-Touch can be used to cross-fade (only) by selecting "AC" ("After-Touch Cross-fade") in the ZONE TYPE function in the ZONE section.

When assigning MIDI Controller Numbers in this function, any number from 0 to 95 can be used for cross-fading or switching between or among your slaves. Keep in mind, however, that if a switch-type controller is used to fade, the Slaves will in reality switch instead of actually fading. This is because switches, being "on/off" devices, do not provide the variable "in-between" positions that continuous controllers do.

Also, if a continuous-type controller is used to switch, the Slaves will switch only when the controller reaches its half maximum position. As an example, if a volume pedal (MIDI Controller 7) is assigned to "SC" (the Switch Controller), the switching will actually take place when you depress the pedal more than half way.

Note: The MIDI instrument must be able to recognize MIDI Volume (Controller 7) information to work in any Cross Fade mode.

Operation
When this function is selected:

Pressing the < or > buttons toggles between *C.C* ("Continuous Controller") and *S.C* ("Switch Controller").

Pressing ENTER will display the current MIDI Controller Number assigned to that function. The < or > buttons can now be used to select any MIDI Controller Number from 00 to 95.

When the desired Controller Number appears in the display, pressing ENTER confirms the selection and the display reverts to reading *C.C* or *S.C* .

CHAN ("Channel") LIMITS

The **Systemizer** provides a rather uncommon but useful function that allows you to customize the amount of MIDI information that will be transmitted on each of the Channels:

Display	Translation	Value Range	Definition
C.H	MIDI Channel	1 ⋯ 16	Select the MIDI Channel you want to edit.
U.L	Voice Limit	0 ⋯ 32	Select polyphony: sets the maximum number of notes that can be played polyphonically on that Channel to the Slave Instrument(s).
P.L	Patch Limit	0 ⋯ 127	Select the highest MIDI Patch Number that can be transmitted to the destination Slave Instrument(s) on that Channel.
b.L	Bank Limit	0 ⋯ 127	Select the highest MIDI Bank Number that can be transmitted to the destination Slave Instrument(s) on that Channel.

Operation

When this function is selected, the current CHAN LIMITS Mode is displayed:

Pressing the < or > buttons selects among the *C.H*, *U.L* , *P.L* and *b.L* Modes.

Pressing ENTER will display the current value assigned to that function. The < or > buttons can now be used to select a new value.

When the desired new value appears in the display, pressing ENTER confirms the selection and the display reverts to showing the selected Mode.

ZONE

The ZONE is the set of functions that customizes the MIDI information received from the Master Controller and thus determines how the Master will be used to control the Slave Instruments. Used in conjunction with the INSTRUMENT section, the ZONE can be thought of as a "module" that contains the performance characteristics of the Master.

This part of the Chapter is devoted to explaining the various functions, and the options within them, of the **Systemizer's** ZONEs. After you have made the initial settings in the MIDI section of the unit, the ZONE is next in line to be programmed.

The **Systemizer** contains four ZONEs numbered 1, 2 and 3 plus one called SP — the "Special Patch" Zone described a little later. Each of the ZONEs are identical and share some common characteristics that you should consider when programming the unit:

1. Each ZONE can control up to four Slave Instruments. The ZONE will treat these instruments assigned to it separately from the other ZONEs.

2. The ZONE can be used to cover all or just part of the Master Controller's keyboard range by selectively using/ignoring incoming MIDI Notes. The SPLIT POINT, described next, is used to determine the key range.

3. The operation of a ZONE may, in some cases, be dependent upon what the other ZONEs are doing. This interaction, specifically if a Split is being used, may limit a ZONE's capability unexpectedly. If this is the case, don't panic — simply retrace your steps and find the function that is causing the **Systemizer** to get hung up. The following discussions on the ZONE and INSTRUMENT sections will provide you with a thorough working knowledge of all functions.

SPLIT POINT

This function is used to determine the range of keys that the Master Controller will use to play the instruments assigned to the ZONE:

When only <u>one</u> ZONE is being used and the SPLIT POINT is set to its maximum value, the range will cover the entire MIDI Note range and thus the entire range of the Master's keyboard. The highest MIDI Note Number is 127 and is displayed as *G8* .

When two or more ZONEs are in use, the SPLIT POINT value does two things: 1. it determines the highest note value of the ZONE, and 2. the lowest note of the next ZONE. Here's an example: if the SPLIT POINT of ZONE 1 is set to *b3*, the lowest note of ZONE 2 automatically becomes *C4* , one note higher.

This is how a Split is created. But you should be careful when setting Splits because if ZONE 1's SPLIT POINT is set to *C8* (the highest note), ZONE 2 (and ZONE 3 for that matter) will be set "one note higher" which is out of the MIDI range. This effectively shuts ZONEs 2 and 3 <u>off</u> and the instruments assigned to these ZONEs will not play.

The same holds true if you attempt to set the SPLIT POINT of a ZONE to a value <u>less</u> than that of the previous ZONE. There's a safety feature here in that the **Systemizer** will not permit you to do that.

You should also be careful not to set the SPLIT POINT lower than the lowest note of your Master. Otherwise, it will exist out of the Master's low range and will not be able to be played. By the same token, the lower Split ZONE should not have its SPLIT POINT set higher than the high note of the Master — if so, the next ZONE will be off the keyboard as well and not be played.

Operation:
Setting the SPLIT POINT
The SPLIT POINT can be set using either of two methods:

1. In the current SETUP, enter ZONE # Select mode with the MODE button. Use the **<** or **>** buttons to select the desired ZONE.

   Use the first button to the right of MODE to select SPLIT POINT Select mode.

   The current SPLIT POINT for the current ZONE will be displayed. Use the **<** or **>** buttons to change the SPLIT POINT to the desired note value. Display abbreviations for actual note values are listed in Chapter 7.

2. In the current SETUP, enter ZONE # Select mode with the MODE button.

   Use the first button to the right of MODE to select SPLIT POINT Select mode.

   Press and hold the ENTER button. While ENTER is being held, play the desired note on the Master that you want to be the SPLIT POINT. The display will change to read the new SPLIT POINT note value. For display abbreviations for actual note values, see Chapter 7.

Note: The low note on ZONE # 1 may be raised. Press MODE button twice to enter ZONE #.

   Use **<** or **>** buttons to access "SP" special patch zone.

   Press first button to the right of the MODE button.. You should be in split point. The display reads C=.

   Hold the ENTER button and now press the desired note on your master keyboard in which you wish to change the low note value to. You may also use the **<** or **>** buttons to select low note and then press ENTER.

FIX/FLOAT
When the **Systemizer** is used to create a Split Keyboard situation on the Master, this function permits the SPLIT POINT to be either "fixed" or "floating":

When FIXED, the SPLIT POINT selected for that ZONE remains stationary. Playing out of the key range of that ZONE will play the Slave Instruments assigned to the adjacent ZONE.

When set to FLOAT, the SPLIT POINT selected for that ZONE moves up and down the key range overriding other ZONEs.

Operation

In the current SETUP, enter ZONE # Select mode with the MODE button. Using the < or > buttons, select the ZONE whose SPLIT POINT you want to either FIX or FLOAT.

Use the first button to the right of MODE to select the FIX/FLOAT function. The < or > buttons are used to select the status of the ZONE's SPLIT POINT:

Fi	FIXED	*FL*	FLOAT

ZONE TYPE

Instruments assigned to a ZONE can be played from the Master in a number of different ways. The ZONE TYPE function allows you to select seven different performance characteristics for the instruments of a ZONE. For example, if two or more Slave Instruments are assigned to one ZONE, they can be Layered (all instruments play simultaneously from the Master Controller), Cross-faded (the instruments outputs will fade in volume level between each other) or Switched (the instruments outputs will switch between each other).

Operation

1. In the current SETUP, enter ZONE # Select mode with the MODE button. Using the < or > buttons, select the ZONE whose ZONE TYPE you want to edit.

   Press the second button to the right of MODE to select the ZONE TYPE function. The current ZONE TYPE will be displayed.

   Using the < or > buttons, select the ZONE TYPE.

   If you selected any of the Cross-fade or Switch ZONE TYPEs:

2. Enter INST # Select mode with the MODE button. Using the < or > buttons, select the INST #you want to edit.

   Use the third button to the right of MODE to select the CTLR ENABLES... function.

   Using the < or > buttons, select *CS* (Cross Switch). Press ENTER. Using the < or > buttons, turn this function On . "Cross Switch" must be enabled for each instrument you want to be included in Cross-fading or Switching. Repeat this step for each INST # to be Cross-faded or Switched.

   ZONE TYPE performance descriptions are as follows:
   Note:To Cross Fade instrument must respond to MIDI Volume (Controller 7).

Display	Translation	Characteristics
LA	Layered	All instruments assigned to the ZONE will play simultaneously from the Master Controller.

For all Switch and Cross-fade applications, be sure that your Master and Slave Instruments have their MIDI Controllers, especially MIDI Volume control, enabled:

Switch Control:

U S	Velocity Switch	Instruments assigned to the ZONE will switch in the INST # order (1, then 2 ,then 3, then 4) with the amount of MIDI Velocity used. Soft playing plays INST #s 1 then 2; harder playing switches to INST #s 3 then 4.
C S	Controller Switch	Instruments assigned to the ZONE will switch in the INST # order (1, then 2 ,then 3, then 4) with the amount of the Switch Controller used. The Switch Controller is selected in the MIDI section's CTLR ASSIGN... function. When CTRL value is less than 64, only INST # 1 is played. When CTRL value is greater than 64, the last enabled instrument is played. For example if INST #1, 2 and 3 are being used, CS will switch between INST #1 and 3. INST # 2 will not be played. For best results, this ZONE type should be used with INST # 1 and 2. Default for CTRL SW is 64

Cross-fade Control:

P C	Positional X-fade	Instruments assigned to the ZONE will fade from one to another in the INST # order (1, then 2 ,then 3, then 4) across the keyboard from the low end to the high end.
		The effect of this function is dependent upon the MIDI Note range of the Master, the SPLIT POINT and the number of Instruments assigned to the ZONE. To start, set the SPLIT POINT of the ZONE to match the highest note of your Master. Turn off any INST # not being used (set its OUTPUT CHANNEL to "– –"). When Positional Cross-fade is selected, the **Systemizer** will divide the active keyboard range equally between or among the instruments assigned to the ZONE.
U C	Velocity X-fade	Similar to Velocity Switching, instruments assigned to the ZONE will <u>fade</u> from one to another in the INST # order (1, then 2 , then 3, then 4) with the amount of MIDI Velocity used.
A C	After-Tch X-Fade	Instruments assigned to the ZONE will fade from one to another in the INST # order (1, then 2 ,then 3, then 4) with the amount of After-Touch (MIDI Channel Pressure) used.
C C	Controller X-fade	Instruments assigned to the ZONE will fade from one to another in the INST # order (1, then 2 ,then 3, then 4) with the amount of the MIDI Controller assigned to cross-fade used.
Remember:		An instrument assigned to the ZONE will only switch or cross-fade if its MIDI Controllers are enabled and if turned on in the INSTRUMENT Function's "CTLR ENABLES..." section.
		MIDI Controller Numbers that will be used to switch and cross-fade are selected in the MIDI Functions "CTLR ASSIGN..." section. This must be done so that switching and cross-fading will take place as expected.

ASSIGN MODES...

The "ASSIGN MODES..." function contains two sub-functions that determine how the Slave Instruments will respond to MIDI Notes:

The first one is "Assign Type", displayed as *A.t* . Assign Type provides four selections of MIDI Note transmitting from the ZONE — two monophonic performances and two polyphonic performances.

The second is "Group Type", displayed as *G.t* . The four instruments assigned to a ZONE can be considered as a "grouping" of these four devices within the ZONE. In addition the **Systemizer** permits you to further group the

instruments, located in the INST # Functions, into one or two more groups for some interesting effects. We'll cover the operation of Group Assignments in the next Chapter, but for now we will explain how the Group Type function assigns MIDI Notes to the grouped instruments.

Assign Type — A.t
Even if your Master is sending MIDI notes polyphonically, this mode permits you to change that if desired. Use the following procedure:

Operation:
In the current SETUP, enter ZONE # Select mode with the MODE button. Use the < or > buttons to select the desired ZONE.

Press the second button to the right of MODE to select the "ASSIGN MODES..." function.

If necessary, press the < or > buttons to display *A.t* .

Press ENTER. The currently selected Assign Type will be displayed.

Use the < or > buttons to select the desired Assign Type from among the following four options:

Display	Translation	Characteristic
0 0	Unison	All "voices" (the number of polyphonic notes) in the instruments assigned to that ZONE will play with one key depression on the Master. Essentially, one MIDI Note transmitted from the Master will be converted by the **Systemizer** to the number of Voices selected in *UL* ("Voice Limits") in the "CHAN LIMITS..." function of the MIDI section.
0 1	Monophonic	Regardless of the number of keys played on the Master Controller, the **Systemizer** will only transmit one MIDI Note to the Slave Instruments assigned to the ZONE.

The Unison and Monophonic modes play the Slave Instruments with with is called "Last Note Priority". This means that if more than one key is depressed on the Master at once (whether a chord is played or a single-note line is played legato), only the lowest key — the lowest MIDI Note Number — will be played on the Slave Instruments.

Display	Translation	Characteristic
0 2	Normal Polyphonic	The Slave Instruments will play MIDI Notes polyphonically from the Master exactly as transmitted. The maximum number of notes is selected in *UL* ("Voice Limits") in the "CHAN LIMITS..." function of the MIDI section.
0 3	Polyphonic + "Rob"	The Slave Instruments will play MIDI Notes polyphonically from the Master exactly as transmitted, but the maximum number of notes selected in *UL* ("Voice Limits") in the "CHAN LIMITS..." function of the MIDI section will be overridden if more notes are played. This guarantees that all notes played on the Master will be transmitted to the Slave Instruments as necessary. Make sure and set Voice Limits to the amount of voices in synth.

Group Type — G.t
If your instruments assigned to the current ZONE are Grouped (see next Chapter on how to enable/disable INSTRUMENT Grouping), this mode permits you to determine how the grouped instruments will play. Use the following procedure:

Operation:
In the current SETUP, enter ZONE # Select mode with the MODE button. Use the < or > buttons to select the desired ZONE.

Press the second button to the right of MODE to select the "ASSIGN MODES..." function.

If necessary, press the < or > buttons to display *G.t* .

Press ENTER. The currently selected Group Type will be displayed.

Use the < or > buttons to select the desired Group Type from among the following four options:

Display	Translation	Characteristic
ro	Rotate	When playing the Master, all Slave Instruments in the Group will play, one after another, in numerical order — INST #1, then INST #2, etc. Each Slave Instrument will be played with the maximum number of Voices as selected in *UL* ("Voice Limits") before the next instrument in the Group is played.
		For example, if all Channels are set to have a Voice Limit of 8, eight notes will play on INST #1 then the next eight notes played will go to INST #2, and so forth.
rr	Rotate / Reassign	A variation of Rotate, all Slave Instruments in the Group will play in numerical order, but each new MIDI Note will be assigned to the next available Voice in the next available instrument. When a given note is played again, it will be transmitted to the Slave Instrument that it was played on before.
A L	Alternate	Each new MIDI Note will be transmitted to the next Slave Instrument. Where "Rotate" mode rotates Voices within a Slave Instrument, "Alternate" rotates among the Slave Instruments in the Group.
Ar	Alternate / Rotate	A variation of Alternate, each successive MIDI Note will be assigned to a particular Slave Instrument. When that note is played again, it will be transmitted to that instrument that played it previously.

INPUT CHANNEL

The INPUT CHANNEL of the ZONE selects the MIDI Channel that it will receive MIDI data on from the Master. All three numbered ZONEs can be set to receive on the BASIC CHANNEL or on <u>different</u> MIDI Channels. This is to accommodate Master Controllers that are able to transmit on more than one MIDI Channel (Split or Dual modes for example on many Master Controllers or, like the Oberheim Matrix-12™ that can transmit on six MIDI Channels at once).

Display	Translation	Characteristic
– –	Disable	The ZONE's MIDI input is disabled and will ignore MIDI data altogether. This effectively turns the ZONE off.
1 –16	MIDI Channels 1 through 16	Selects any of the standard MIDI Channels 1 through 16.
b C	Basic Channel	The ZONE will recognize MIDI data on the same Channel selected as the **Systemizer**'s BASIC CHANNEL.

Operation

In the current SETUP, enter ZONE # Select mode with the MODE button. Press the < or > buttons to select the desired ZONE.

Use the third button to the right of MODE to select the "INPUT CHANNEL" function.

The current status of the INPUT CHANNEL will be displayed. Use the < or > buttons to select the desired MIDI Channel or to disable the ZONE.

KYBD...

The "KYBD..." function of the **Systemizer** permits customizing the way MIDI keyboard data (Velocity, Pressure/After-Touch and Split Release) and MIDI Sustain Pedal data is processed by the ZONE.

Operation

In the current SETUP, enter ZONE # Select mode with the MODE button. Press the < or > buttons to select the desired ZONE.

Use the third button to the right of MODE to select the "KYBD..." function.

The sub-function last recalled will be displayed. Press the < or > buttons to select the desired "KYBD..." sub-function.

Press ENTER. The current status or value of the selected sub-function will be displayed. Use the < or > buttons to select a new value or status.

Display	Translation	Value Range/ Status Option	Description
U.S	Velocity Sensitivity	00 ··· 32 ··· 64	Sets the maximum sensitivity to Velocity from the Master: 00 ignores Velocity, 64 is the maximum.

Note: Velocity Sensitivity on minimum to maximum curves. Closer to 00 it is more sensitive at the lower end. Closer to 64 it is more sensitive at the upper end.

Display	Translation	Value Range/ Status Option	Description
P.S	Pressure Sensitivity	00 ··· 32 ··· 64	Sets the maximum sensitivity of the ZONE to Pressure/After-Touch from the Master: 00 ignores Pressure, 64 is the maximum.
U.i	Velocity Invert	**On** or **OF**	Inverts the effect of MIDI Velocity from the Master: harder playing results in less Velocity, softer playing produces high Velocity levels. This function provides an interesting effect when using Velocity Cross-fade.

LOCAL HOLD sub-function:
Selects how the ZONE interprets MIDI Controller 64 (the normal Controller Number for MIDI Sustain Pedal).

Display	Translation	Value Range/ Status Option	Description
L.H	Local Hold	**OF**	Passes Controller 64 as normal.
		SU	Works as a Hold Function. Notes that are gated remain held until Pedal is released. No notes can be gated.
		So	"Sostenuto": MIDI Sustain Pedal data is translated to perform as a Sostenuto Pedal (MIDI Controller 66).
Sr	Split Release	**On** or **OF**	When on, allows the ZONEs to overlap while a Split Keyboard is in use. The current SPLIT POINT is moved to double that of the next ZONE without overriding it. ZONE #3's SPLIT POINT releases to maximum (C7, MIDI Note 127).

The SP ZONE

As we covered briefly in Chapter 3, the "Special Patch" (displayed as "**SP**") ZONE, permits the **Systemizer** to send MIDI Patch and Bank data only. That means that MIDI Note data (Note On + Velocity, Note Off + Release Velocity), and MIDI Controllers (Pitch Bend, Vibrato, Sustain Pedal, Volume Pedal, Breath Controller, etc.) are not available in the SP ZONE. And as a result, those functions in the **Systemizer** that pertain to the processing of Notes and Controllers — such as SPLIT POINT, ZONE TYPE, GROUP and TRANSPOSE, etc. — have been removed from the SP ZONE.

This might seem strange at first because why would anyone want to only have Patch Changes being transmitted to the Slave Instruments? Well, one application of this is when you want to set up any synthesizer with a new Patch, but not actually play it from the Master. It's possible that you may have one or more MIDI keyboards in addition to the numerous

keyboard-less modules available. The keyboard units (up to four) can be set up remotely from the **Systemizer** with new Patch Change commands. Then when you go to play them, they have already been set up by the **Systemizer** with a new Patch. We've included this Special Patch ZONE just for that purpose.

In addition, numerous MIDI Processing devices — MIDI reverbs, switch boxes, MIDI programmable EQs, etc. — primarily respond to Patch Change and Bank Change commands as their only recognized Channel Voice messages. You can use the SP Zone to send Patch Changes to your other MIDI devices (up to four) without having to sacrifice any of the numbered ZONEs (the "performance" ZONEs) to do so.

The SP ZONE, like ZONEs 1, 2 and 3, is programmable. When programming the SP ZONE, you will notice that the ZONE Function section is disabled and its functions (SPLIT POINT, FIX/FLOAT, ZONE TYPE, ASSIGN MODES..., INPUT CHANNEL and KYBD...) display a "– –" when selected; GROUP, TRANSPOSE and CTLR ENABLES... are not available in the INSTRUMENT Function section and display a "– –" when selected. The INITIAL MSGS... function allows you to select the Bank Number to be transmitted to the Slave Instruments (if appropriate), but all other functions in INITIAL MSGS... are disabled.

Operation

In the current SETUP, enter ZONE # Select mode with the MODE button. Using the < or > buttons, select the SP ZONE.

Press the MODE button again. This puts the **Systemizer** into INST # Select mode. Use the < or > buttons to select the INST # that will control the desired MIDI device (1 - 4).

Use the first button to the right of MODE to select the OUTPUT CHANNEL function. The < or > buttons are used to select the MIDI Channel of the receiving MIDI unit.

Use the second button to the right of MODE to select the PATCH function. The < or > buttons are used to select the Patch Number of the receiving MIDI unit.

If your Slave Instrument divides its memories into Patch Banks, you can have the **Systemizer** change Banks as well:

Use the second button to the right of MODE to select the INITIAL MSGS... function. The < or > buttons are used to enter Bank Select mode ("*b.S* " will be displayed).

Press ENTER. The < or > buttons are used to select the correct Bank Number of the receiving MIDI unit.

Like ZONEs 1, 2 and 3, SP ZONE can control up to four Slave Instruments. So you can see that each SETUP in the **Systemizer** can control up to 16 MIDI instruments independently, on all 16 MIDI Channels at the same time.

Chapter 6

INSTRUMENT and MASTER
Function Descriptions

In this Chapter, we will examine and describe the functions of the **Systemizer**'s INSTRUMENT and MASTER sections in detail. As mentioned previously, once you have set up the **Systemizer**'s MIDI section and have proceeded to program the ZONE functions, you have completed the programming that deals with the way the Master Controller's MIDI information is recognized and processed. In this Chapter, we'll cover the programming of the INSTRUMENT section which determines what MIDI information transmitted to the Slave(s).

The second part of this Chapter will explain the **Systemizer**'s MASTER section — the section that is used to perform Memory operations (STORE/COPY..., AUTO-EDIT... and DUMP/LOAD...) plus the programming of PEDALS.... And, like in the last Chapter, we will use brief examples throughout this Chapter when appropriate.

Programming the INSTRUMENT Mode

When the INSTRUMENT section is selected using the MODE button, the INST # that was last selected in the current ZONE will be displayed. Pressing the MODE button repeatedly allows you to see the current SETUP #, then the selected ZONE, then the currently active INST #. This helps to avoid confusion should you forget what SETUP # or ZONE # the **Systemizer** is in at the moment.

As we mentioned earlier in the manual, the four ZONEs are capable is sending specialized MIDI information to up to four Slave Instruments <u>each</u>. As a result, if all four ZONEs are active and all four instruments have been programmed in the ZONEs, each SETUP will control 16 individual MIDI Slaves.

If necessary, each of the 16 Slaves can be on their own MIDI Channel as well. In some cases, this is necessary so that different instrument data is not sent on the same Channel, causing a conflict in the Slaves' operation. Some care must be taken so as to avoid this potentially frustrating situation. One suggestion would be to plan the SETUP in advance whenever possible.

INST # Select Operation:
> In the current SETUP, enter ZONE # Select mode with the MODE button. Select the desired ZONE with the < or > buttons.
>
> Press the MODE button again to enter INST # Select mode. Use the < or > buttons to select the desired INST #, numbered *01 ··· 04* to edit.

INSTRUMENT Section Functions

OUTPUT CHANNEL
The OUTPUT CHANNEL function selects the MIDI Channel 1 through 16 that the **Systemizer** will use to transmit MIDI data to the designated Slave Instrument in that ZONE.

Operation:
In the currently selected instrument, press the first button to the right of MODE to select the OUTPUT CHANNEL sub-function.

When this sub-function is selected, the current MIDI Channel status will be displayed.

Pressing the **<** or **>** buttons changes the OUTPUT CHANNEL display to:

... " – –" signifies off status. The **Systemizer** will not transmit to the designated instrument.

... MIDI Channels 1 ⋯ 16. The Channel Number displayed is the one that is active.

... "in " indicates that the designated instrument will receive MIDI information on the same Channel that the ZONE is receiving on (the ZONE's "in" or "input" Channel).

GROUP
The GROUP function puts the selected Slave Instrument into one of two identical "Instrument Groups". This provides some interesting performance tricks you can do to the Slaves when playing from the Master. Refer to the description of GROUP Type in the "ASSIGN MODES..."function in the previous Chapter for the possible GROUP performance characteristics.

Please note that it is in GROUP TYPE of the ZONE section that the actual GROUP mode is selected. Here in the GROUP sub-function of INSTRUMENT is where you determine which GROUP the Slave will be assigned, or if it will not be GROUPed at all.

Operation:
In the currently selected instrument, press the first button to the right of MODE twice to select the GROUP sub-function.

When this sub-function is selected, the current GROUP status will be displayed.

Pressing the **<** or **>** buttons changes the GROUP display to:

... "*OF*" which indicates that the selected instrument will not be GROUPed.

... "*G1* " — the selected instrument is assigned to GROUP 1.

... "*G2*" — the selected instrument is assigned to GROUP 2.

One important item to note is that for GROUP Mode to operate properly, two or more instruments in the same ZONE must be assigned to the same GROUP. Otherwise a GROUP does not exist and the expected GROUP operation will not occur.

PATCH

The **Systemizer** is able to transmit a MIDI Patch Change command to each instrument on its MIDI Channel. This transmission occurs when a new SETUP is selected on the **Systemizer** or when the **Systemizer** receives a Patch (SETUP) Change command form the Master.

Operation:

In the currently selected instrument, press the second button to the right of MODE to select the PATCH sub-function.

When this sub-function is selected, the current MIDI Patch Number that will be transmitted to the designated Slave Instrument will be displayed.

Pressing the < or > buttons changes the Patch Number, or Transmit Off status. When the current Patch Number is changed, a dot will flash in the display. Press ENTER and the dot will disappear, confirming your selection. If the Slave Instrument assigned to that INST # is on, its Patch Number will change when ENTER is pressed.

The display operates as follows:

... "– –" indicates that the current instrument will not be sent a MIDI Patch Change command when this SETUP is selected.

... *"00 "* through *"C7 "* is the range of MIDI Patch Numbers. 00 through 99 are displayed normally. However, since the display cannot show three characters Patch Numbers 100 through 127 are displayed as follows:

MIDI Patch	Number Display
100	*A 0*
101	*A 1*
102	*A 2*
103	*A 3*
104	*A 4*
105	*A 5*
106	*A 6*
107	*A 7*
108	*A 8*
109	*A 9*
110	*b 0*
111	*b 1*
112	*b 2*
113	*b 3*
114	*b 4*
115	*b 5*
116	*b 6*
117	*b 7*
118	*b 8*
119	*b 9*
120	*C 0*
121	*C 1*
122	*C 2*
123	*C 3*
124	*C 4*
125	*C 5*
126	*C 6*
127	*C 7*

INITIAL MSGS... ("Messages")

As with PATCH sub-function, the values set in the INITIAL MSGS... sub-function are also transmitted to the designated Slave Instrument when a new SETUP is selected, or when the **Systemizer** receives a MIDI Patch Change command from the Master Controller.

INITIAL MSGS are seven MIDI settings that determine the the basic performing status of the Slave Instrument.

Operation:

In the currently selected instrument, press the second button to the right of MODE twice to select the INITIAL MSGS... sub-function.

When this sub-function is selected, the current Initial Message that will be transmitted to the designated Slave Instrument will be displayed as an abbreviation.

Press ENTER. Pressing the < or > buttons changes the Message value or status. When the current Message status or value is changed, a dot will flash in the display. Press ENTER and the dot will disappear, confirming your selection. If the Slave Instrument assigned to that INST # is on, the selected MIDI function will change on the Slave when ENTER is pressed.

For all of the following sub-functions, a display of "– –" indicates Transmit Off, or that the selected Message is disabled. In this mode, the display operates as follows:

Display	Translation	Range	Definition
b.S	Bank Select	*00 ··· C7*	Select Patch Bank 00 through 127. If the designated Slave Instrument does not group its Patch or Voice memories into Banks, this sub-function should be turned off.
L.d	Loudness	*00 ··· C7*	Set initial loudness of the Slave Instrument. This function transmits a MIDI Volume setting to the designated Slave Instrument (Slave Instrument. must be able to receive MIDI Volume commands).
F.t	Fine Tune	*01 ··· 50 ··· 99*	Sets the initial Fine Tune amount for the designated Slave Instrument: 00 ··· 49 = flat tunings 51 ··· 99 = sharp tunings 50 = center tuning
b.r	Bend Range	*00 ··· C7*	Sets the range of the Slave Instrument's Pitch Bend lever or wheel. The display numbers indicate increment of one semitone. The setting of C7 gives the Slave Instrument a Bend Range of a whopping 10 1/2 octaves up and down.
L.c	Local Control	*00 ··· 01*	*00* = Off status *01* = On status "Local Control" is a general MIDI function that allows you to turn the Slave Instrument's Pitch Bend lever or wheel, Vibrato lever or wheel, Sustain Pedal, Volume Pedal and the like on or off (all of its "local" or on-board controllers.
O.n	MIDI OMNI Mode	*00 ··· 01*	*00* = Off status *01* = On status When turned On, the Slave Instrument will receive MIDI data on all Channels.

When turned Off, the Slave Instrument will receive MIDI data on the MIDI Channel selected in the OUTPUT CHANNEL function.

P.o	Poly/Mono Modes	*0 0*	Poly Mode on.
		01 ⋯ 16	Number of channels

When Poly Mode is selected, the designated Slave Instrument will receive MIDI Notes from the Master polyphonically on the selected MIDI Channel.

When Mono Mode is selected, the Slave Instrument will receive MIDI Notes from the Master monophonically on successive MIDI Channels, starting with the selected MIDI Channel.

TRANSPOSE

One of the more exciting and useful features of the **Systemizer** is its ability to transpose each of the Slave Instruments to another key signature. This is accomplished in the TRANSPOSE function of INST #.

Operation:

In the currently selected instrument, press the third button to the right of MODE to select the TRANSPOSE sub-function.

When this sub-function is selected, the current Initial TRANSPOSE value that will be transmitted to the designated Slave Instrument will be displayed.

Pressing the **<** or **>** buttons changes the current TRANSPOSE value. When the current TRANSPOSE value is changed, the Slave Instrument assigned to that INST # will be transposed by the amount selected.

The TRANSPOSE range is displayed as a range of *00 ⋯ 99* in semi-tones. This range of 100 semi-tones gives you the ability to TRANSPOSE the designated Slave Instrument up or down by over eight octaves: 50 = no TRANSPOSE value.

CTLR ("Controller") Enables...

Used in conjunction with the INITIAL MSGS..., CTLR ENABLES... sends MIDI on or off status to certain MIDI Controllers on the designated Slave Instrument. This function allows you to selectively enable or disable whatever MIDI Controller on the Slave Instrument you want.

The Cross-switch function allows you to enable or disable the Slave Instrument from being Cross-faded or Switched.

Operation:

In the currently selected instrument, press the third button to the right of MODE twice to select the CTLR ENABLES... sub-function.

When this sub-function is selected, the current MIDI Controller that will be enabled or disabled on the designated Slave Instrument will be displayed as an abbreviation.

Press ENTER and the current Controller on or off status will be displayed. Pressing the **<** or **>** buttons changes the Controller status. When the current status is changed, the selected MIDI function will change on the Slave.

Display	Translation
P.b	Pitch Bend
C.P	Channel Pressure
P.P	Poly Pressure
C.C	Continuous Controllers (00 - 63)
d.C	Discrete Controllers (64 -127)
C.S	Cross-Switch

Using the MASTER Mode

The MASTER section of the **Systemizer** allows you to perform the unit's various memory operations. In addition, this section also provides a set of sub-function that set up your MIDI and Local Pedals.

STORE/COPY

The STORE function saves the currently selected SETUP — ZONE and INSTRUMENT information — to memory. The SETUP can be STOREd to the same SETUP # or you can COPY it to a different SETUP location in memory. ZONES and INSTRUMENTS can also be copied to different SETUPS.

Operation: STORE

To STORE to a SETUP, press the < > to select the current SETUP #. Be careful - selecting another SETUP # by mistake will erase all the edits you've done to the current SETUP.

Press the button beneath MASTER to access STORE/COPY Mode. The display will read ST with a flashing dot.

Press ENTER. The display shows you the current SETUP you are storing to.

Press ENTER. The display says GO. This is similar to the, Are you sure? message used on computers.

Press ENTER. SETUP is now STORED in the SETUP # displayed.

Pressing the MODE button, or any button to the right of it at any time to abort the STORE/COPY function.

Operation: COPY
Copy SETUP # to SETUP

SETUP *00* to *31*

Press MODE Button to select SETUP #.

Use < > buttons to assign SETUP # you wish to copy. Press ENTER.

Press STORE/COPY button. Display reads ST fo store. Press ENTER.

Use < > buttons to assign SETUP # destination. Press ENTER.

Display reads *Go*. Press ENTER. SETUP # *00* is now copied to SETUP *#31*

Copy ZONE # to ZONE

Select ZONE # you wish to copy.

Press STORE/COPY. Display reads ST. Press ENTER.

Use < > buttons to pick ZONE # you wish to copy to. Press ENTER. Notice the LED is flashing in ZONE #.

Use < > buttons to pick SETUP # you wish to copy to . Press ENTER. Notice the LED is flashing in SETUP #.

Display reads *Go*. Press ENTER. ZONE # and SETUP # are now stored.

Copy INST # to INST

Select INST # you wish to copy.

Press STORE/COPY. Display reads *ST*. Press ENTER.

Use < > buttons to pick which INST # you wish to copy to. Press ENTER. Notice LED is flashing in ZONE #.

Use < > buttons to pick which ZONE # you wish to copy to. Press ENTER. Notice LED is flashing in SETUP #.

Use < > buttons to pick which SETUP you wish to copy to. Press ENTER.

Display reads *Go*. Press ENTER. INST # Zone and SETUP # are now stored.

Note: Any ZONE # or INST # can be stored into any SETUP#.

AUTO EDIT...

Would you like to have the **Systemizer** create a complete SETUP, or an individual ZONE or instrument for you, automatically? Or would you like to initialize or clear a certain SETUP and start editing from scratch? The AUTO EDIT... function does just that:

Operation #1 — "DROID":

Press the MASTER button twice to select AUTO EDIT... mode. The first of two AUTO EDIT... sub-functions is "DROID", displayed as "*dr.*" which randomly edits the last Function Block of the current SETUP:

If DROID was entered from a SETUP #, all 16 instruments in the SETUP will be randomized.

If DROID was entered from a ZONE, all four instruments in that ZONE will be randomized.

If DROID was entered from an instrument, only that instrument will be randomized.

Press ENTER to execute the DROID routine.

Operation #2 — "CLEAR":

Press the MASTER button twice to select AUTO EDIT... mode. Use the < or > button to select CLEAR function, displayed as "*CL* ".

Press ENTER.

There are three (3) choices to Clear and Reinitialize the **Systemizer**:

1)	*LA*	=	LAYER
2)	*SP*	=	SPLIT
3)	*3S*	=	3 WAY SPLIT

Use < or > buttons to select which one you wish to initialize.

Press ENTER.

Current SETUP # is now initialized.

ZONE
CLEAR Defaults.

	ZONE #	INST #	MIDI CH	SPLIT POINT
LA =	1	1	1	none
SP =	1	1	1	B2
	2	1	2	G8
3S =	1	1	1	B2
	2	1	2	F4
	3	1	3	G8

PEDALS

One of the most exciting performance features of the **Systemizer** is its programmable pedals. In all there are eight pedals, four local pedals and four externally controlled pedals via MIDI. These eight pedals can be assigned to any parameter or switch on the **Systemizer's** front panel. For example, say we are plating one sound across the entire keyboard. For the verse of a song but in the chorus we want our keyboard to split at C3 with different sounds playing on the lower and upper half of the keyboard. No problem. Just assign one of the pedals to change the split point from no split to C3. Press the pedal and the split point is now C3. Press the pedal again and there is no split point.

Operation:

Press the button under MASTER until you reach PEDALS. *P.1* shows in display. *P.1* means we are working Pedal 1 now. Use < or > buttons to choose Pedals other than *P.1*.

Press ENTER button. for this example use < or > to select *LE* in the display.

Press and hold pedal down. Select which function you wish to assign pedal to. Lets use an example of transposition up an octave. While still holding the pedal down, press MODE button. You are now in SETUP # instead of pedal. Press MODE button two more times to reach INST #. Now press the third button to the right of MODE to place us into the transposition option. Use the < or > buttons to go to *62* which is an octave above no transpose. Now lift up on the pedal. The pedal is now assigned to change transposition up one octave. Use the < or > buttons to go back to the original value (*50*).

Press the pedal. You will notice that with each depression on the pedal the transposition changes from *50* (no transpose) to *62* (one octave higher).

Display	Translation	Definition
P.1	Pedal 1	Programmable local Pedal 1
P.2	Pedal 2	Programmable Local Pedal 2
P.3	Pedal 3	Programmable Local Pedal 3
P.4	Pedal 4	Programmable Local Pedal 4
E.1	External Pedal 1	Programmable External Pedal 1
E.2	External Pedal 2	Programmable External Pedal 2
E.3	External Pedal 3	Programmable External Pedal 3
E.4	External Pedal 4	Programmable External Pedal 4
C.1	Controller #1	Controller number assigned to External Pedal #1 (00-95)
C.2	Controller #2	Controller number assigned to External Pedal #2 (00-95)
C.3	Controller #3	Controller number assigned to External Pedal #3 (00-95)
C.4	Controller #4	Controller number assigned to External Pedal #4 (00-95)
CH	Chains	Every SETUP # in the Systemizer has an alternate SETUP #. We designed this feature to allow the flexibility of being able to switch around to different SETUP# instead of having to program all your SETUP # in order of which you want to use.

Operation:

First lets assign an alternate SETUP #. Use the < or > buttons to reach SETUP #*00*.

Press ENTER to execute the set up. Display reads *00*. Now press and hold ENTER.

Use the < or > buttons to select the alternate SETUP # for SETUP #*00*. Lets say we want the alternate to be *05*. Press the > button until *05* shows in the display, then release the ENTER button. SETUP #*05* is now the alternate patch for SETUP #*00*. Set up any other alternates you need now.

Second, we need to assign one of the eight pedals to CHAIN MODE. Lets use Pedal 1 (*P.1*)

Press the button under MASTER until you reach PEDALS... Let's use Pedal 2 (*P.2*). Use the < or > buttons until you reach *P.2*.

Press ENTER. Use the < or > buttons to select *CH* in the display.

Press ENTER. Pedal #2 is now assigned to CHAIN SELECT.

How It Works:

Everytime the pedal is depressed the alternate SETUP # for the patch is selected. Example: If you are on SETUP #21 and its alternate patch is 07, when the pedal is depressed SETUP #07 will be selected. If then SETUP #07's alternate patch is 09, if the pedal is depressed again SETUP #09 will be selected.

SS   Single Switch   Used to control any button on the **Systemizer's** front panel in other words instead of control buttons from the keypad, a pedal can be assigned to act as the button. When the pedal is depressed the simulation of the button it was assigned to occurs. Nothing occurs when pedal is released.

DS   Double Switch   Used to control any button on the **Systemizer's** front panel. Similar to Single Switch except when a pedal is depressed simulation of the button occurs and when the pedal is released simulation of the button occurs.

Operation:

Press button under MASTER to get to PEDALS... Use the < or > buttons to select which pedal you want to use.

Press ENTER. Use the < or > button to select either **SS** (Single Switch) or **DS** (Double Switch).

Depress and hold the pedal down. Now press and hold the button you want the pedal to simulate.

Release the pedal (display will show **SS** or **DS** depending on which one you selected). Release the button. Pedal is now assigned to the button.

IC   Increment   Used to increment the value of the parameter selected.

DC   Decrement   Used to decrement the value of the parameter selected.

OE   One-Shot Edit   Depressing the pedal caused EDIT value to change. The value and EDIT is user changeable.

LE   Latched Edit   Depressing the pedal caused EDIT value to change depressing the pedal a second time causes value to change back to its original state.

HE   Hold Edit   Depressing the pedal caused EDIT value to change. Value stays changed until you release the pedal. When you release the pedal the original value returns.

Note: All internal pedal jacks are for switch type pedals. Polarity of pedal does not matter.

DUMP/LOAD

The **Systemizer** permits you to save its memory externally. This means that you are able to dump the contents of the unit's 32 SETUPs to a computer equipped with a MIDI interface and Oberheim **Systemizer** System Exclusive data, or another **Systemizer**. The MIDI implementation codes for the unit are printed in the back of this manual.

You are also able to load SETUPs from an external source into the **Systemizer**. This DUMP/LOAD capability provides a way of backing up your work in the likely event that you create more than 32 SETUPs or in the unlikely event of a malfunction.

Operation:

Press the MASTER button four times to enter DUMP/LOAD mode.

Use the the < or > buttons to select the desired memory sub-function.

Press ENTER. The display will switch to read "**Go**" with a flashing dot.

Press ENTER again to execute the sub-function. During the time it takes to complete the routine, the display will continue to read "**Go**" but the flashing dot will disappear. Note that some functions take less than one second. When the process is completed, the display will revert back to the sub-function abbreviation.

Display	Translation	Description
S O	Send One	The **Systemizer** will transmit the last selected SETUP to the receiving device.
S G	Send Global	The **Systemizer** will transmit the data stored in MIDI and MASTER to the receiving device.
S A	Send All	The **Systemizer** will transmit all SETUPs, MIDI data and MASTER data to the receiving device.
S E	Send Edit	The **Systemizer** will transmit any edits made to the last selected SETUP to the receiving device.

Note: The **Systemizer** will <u>receive</u> any MIDI data sent to it regardless of what operating mode it is in.

d C	Dump to Card	The **Systemizer** will save all SETUPs, MIDI data and MASTER data to the optional Data Card.
L C	Load from Card	The **Systemizer** will load in all SETUPs, MIDI data and MASTER data from the optional Data Card.
F C	Format Card	The **Systemizer** will format the Data Card. This must be done before a new card can be used to save data, or can be executed to erase a card.

Note: The optional Data Card requires the internal installation of a receptacle and is available from your nearest Oberheim Authorized Service Center. Contact your nearest Service Center for prices and availability.

MUTE

In the event that MIDI notes get locked on (one or more of the Slave Instruments do not receive a Note Off command for one reason or another), pressing and holding the MASTER column button for three seconds will mute any Slaves that are locked.

The muting function takes advantage of the MIDI Specification's "All Notes Off" provision. During the time the MASTER button is held, the following MIDI messages are transmitted from the **Systemizer** on each Channel in this order:

1. All Notes Off
2. Sustain Pedal Off
3. 128 Individual Notes Off

Chapter 7

Summary of Functions and Display Abbreviations

SECTION	SUB-SECTION	DISPLAY SYMBOL	DESCRIPTION or FUNCTION		VALUE(S)
SETUP #		00 ⋯ 31	**Systemizer** Memories		SETUP #s 1 to 32
ZONE #		SP	Special Patch ZONE		
		1 ⋯ 3	Performance ZONE		
	SPLIT PT.	C.= ... G8	MIDI Notes 01 – 127		$C\#^0 \cdots G^8$

Hold ENTER to input from MIDI keyboard; right decimal point in display indicates Sharp (#).

	SUB-SECTION	DISPLAY SYMBOL	DESCRIPTION or FUNCTION		VALUE(S)
	FIX / FLOAT	Fi	Fixed split point		
		FL	Floating split point		
	ZONE TYPE	LA	Layer		
		US	Velocity Switch		
		CS	Controller Switch		
		PC	Positional Crossfade		
		UC	Velocity Crossfade		
		AC	Aftertouch Crossfade		
		CC	Controller Crossfade		
	ASSIGN MODES...	At	Assign Type	0	Unison
				1	Monophonic
				2	Polyphonic
				3	Poly with Robbing
		Gt	Group Type	ro	Rotate
				rr	Rotate + Reassign
				AL	Alternate
	INPUT CHANNEL			--	disabled
				1 ⋯ 16	selected MIDI Ch.
				bc	same as Basic Ch.
	KYBD...	US	Velocity Sensitivity		0 ⋯ 32 ⋯ 64
		PS	Pressure Sensitivity		0 ⋯ 32 ⋯ 64
		Ui	Velocity Invert	OF	disabled
				On	enabled
	KYBD... (cont.)	LH	Local Hold	OF	disabled
				su	sustain
				so	sostenuto
		Sr	Split Release	OF	disabled
				On	enabled

SECTION	SUB-SECTION	DISPLAY SYMBOL	DESCRIPTION or FUNCTION	VALUE(S)	
INST #			Slaves' ID Numbers	1 ··· 4	
	OUTPUT CHANNEL		Slaves' MIDI Channels	--	unit disabled
				1 ··· 16	selected MIDI Ch.
				in	same as Zone Ch.
	GROUP			OF	disabled
				G1	Group 1
				G2	Group 2
	PATCH		transmit Patch Changes	--	transmit off
			range: 0 ··· 127	0 ··· C7	transmit patch
	INITIAL MSGS...	bs	Bank Select	0 ··· C7	Bank 0 ··· 127
	"--" = Transmit off	Ld	Loudness	0 ··· C7	Volume 0 ··· 127
		Ft	Fine Tune amount 0 ··· 50 ··· 99		-50 ··· +49 cents

"0" = flat limit, "50" = no detune, "99" = sharp limit

		br	Bend Range	0 ··· C7	0 ··· 127 semitones
		LC	Local Control	0 ··· 1	0 = off, 1 = on
		On	OMNI Mode	0 ··· 1	0 = off, 1 = on
		Po	Poly/Mono	0	Poly Mode on
				1 ··· 16	Mono Ch. #
	TRANSPOSE		Semitone range 0 ··· 50 ··· 99		-50 ··· +49

"0" = flat limit, "50" = no transpose, "99" = sharp limit

	CTRL	Pb	Pitch Bend		OF or On
	ENABLES...	CP	Channel Pressure		OF or On
		PP	Poly Pressure		OF or On
		CC	Continuous Controllers	0 ··· 63	OF or On
		dC	Discrete Controllers	64 ··· 95	OF or On
		CS	Cross Switch		OF or On

If *CS* is turned off, the current instrument will be excluded from a Zone Crossfade or Switch.

MIDI					
	BASIC CHANNEL	On	OMNI Mode enabled	1 ··· 16	Selected Basic Ch.
	ECHO/BYPASS	OF	MIDI Echo off		
		On	MIDI Echo on		
		bP	Systemizer bypassed		
	CTRL ASSIGN	CC	Crossfade Controller #	0 ··· 95	
		SC	Switch Controller #	0 ··· 95	

Identifies which MIDI Controller you want to use with either "Controller Crossfade" or "Controller Switch" Zone types.

	CHANNEL LIMITS	Ch	Channel select	1 ··· 16	MIDI Ch. to edit
		UL	Voice Limit	1 ··· 32	Max. # voices/Ch.
		PL	Patch Limit	0 ··· 127	Max. Patch #/ Ch.
		bL	Bank Limit	0 ··· 127	Max Bank #/Ch.

SECTION	SUB-SECTION	DISPLAY SYMBOL	DESCRIPTION or FUNCTION	VALUE(S)
MASTER	STORE/COPY	Procedure:	"St." + ENTER ⟶ "xx" + ENTER ⟶ "Go." + ENTER	

Store current setup, or Copy current Zone or Instrument. Flashing SETUP, ZONE or INSTRUMENT panel LED indicates what the Display # refers to. Press any button, except ENTER, to abort.

SUB-SECTION	DISPLAY SYMBOL	DESCRIPTION or FUNCTION	VALUE(S)
AUTO-EDIT	CL	Clear current SETUP	LA 1 Instrument Layer
			SP Split
			3S 3-way Split
	dr	Droid (randomize) current SETUP, ZONE or INSTRUMENT	
PEDALS	Pedal types:		CH chain Patch
			SS single switch
	P1 ⋯ P4	Local Pedals	dS double switch
			IC increment
	E1 ⋯ E4	MIDI Pedals	dc decrement
			OE one-shot Edit
			LE latched Edit
			HE held Edit
	C1 ⋯ C4	MIDI Pedals	0 ⋯ 127 Controller # select
DUMP/LOAD	SO	Send One	
	SG	Send Global	
	SA	Send All	
	SE	Send Edit	
	dC	Dump to Card	
	LC	Load from Card	
	FC	Format Card	

Note Value Displays

Display Symbol	Musical Notation	Octave Number	MIDI Note Value	Display Symbol	Musical Notation	Octave Number	MIDI Note Value
C =.	C# / Db	0	01	C 1	C	3	36
d =	D	0	02	C 1.	C# / Db	3	37
d =.	D# / Eb	0	03	d 1	D	3	38
E =	E	0	04	d 1.	D# / Eb	3	39
F =	F	0	05	E 1	E	3	40
F =.	F# / Gb	0	06	F 1	F	3	41
G =	G	0	07	F 1.	F# / Gb	3	42
G =.	G# / Ab	0	08	G 1	G	3	43
A =	A	0	09	G 1.	G# / Ab	3	44
A =.	A# / Bb	0	10	A 1	A	3	45
b =	B	0	11	A 1.	A# / Bb	3	46
				b 1	B	3	47
C–	C	1	12	C 2	C	4	48
C –.	C# / Db	1	13	C 2.	C# / Db	4	49
d –	D	1	14	d 2	D	4	50
d –.	D# / Eb	1	15	d 2.	D# / Eb	4	51
E –	E	1	16	E 2	E	4	52
F –	F	1	17	F 2	F	4	53
F –.	F# / Gb	1	18	F 2.	F# / Gb	4	54
G –	G	1	19	G 2	G	4	55
G –.	G# / Ab	1	20	G 2.	G# / Ab	4	56
A –	A	1	21	A 2	A	4	57
A –.	A# / Bb	1	22	A 2.	A# / Bb	4	58
b –	B	1	23	b 2	B	4	59
C 0	C	2	24	C 3	Middle C	5	60
C 0.	C# / Db	2	25	C 3.	C# / Db	5	61
d 0	D	2	26	d 3	D	5	62
d 0.	D# / Eb	2	27	d 3.	D# / Eb	5	63
E 0	E	2	28	E 3	E	5	64
F 0	F	2	29	F 3	F	5	65
F 0.	F# / Gb	2	30	F 3.	F# / Gb	5	66
G 0	G	2	31	G 3	G	5	67
G 0.	G# / Ab	2	32	G 3.	G# / Ab	5	68
A 0	A	2	33	A 3	A	5	69
A 0.	A# / Bb	2	34	A 3.	A# / Bb	5	70
b 0	B	2	35	b 3	B	5	71
C 4	C	6	72	C 7	C	9	108
C 4.	C# / Db	6	73	C 7.	C# / Db	9	109
d 4	D	6	74	d 7	D	9	110
d 4.	D# / Eb	6	75	d 7.	D# / Eb	9	111
E 4	E	6	76	E 7	E	9	112
F 4	F	6	77	F 7	F	9	113
F 4.	F# / Gb	6	78	F 7.	F# / Gb	9	114
G 4	G	6	79	G 7	G	9	115
G 4.	G# / Ab	6	80	G 7.	G# / Ab	9	116
A 4	A	6	81	A 7	A	9	117
A 4.	A# / Bb	6	82	A 7.	A# / Bb	9	118
b 4	B	6	83	b 7	B	9	119

Display Symbol	Musical Notation	Octave Number	MIDI Note Value	Display Symbol	Musical Notation	Octave Number	MIDI Note Value
C 5	C	7	84	C 8	C	10	120
C 5.	C# / Db	7	85	C 8.	C# / Db	10	121
d 5	D	7	86	d 8	D	10	122
d 5.	D# / Eb	7	87	d 8.	D# / Eb	10	123
E 5	E	7	88	E 8	E	10	124
F 5	F	7	89	F 8	F	10	125
F 5.	F# / Gb	7	90	F 8	F# / Gb	10	126
G 5	G	7	91	G 8	G	10	127
G 5.	G# / Ab	7	92				
A 5	A	7	93				
A 5.	A# / Bb	7	94				
b 5	B	7	95				
C 6	C	8	96				
C 6.	C# / Db	8	97				
d 6	D	8	98				
D 6.	D# / Eb	8	99				
E 6	E	8	100				
F 6	F	8	101				
F 6.	F# / Gb	8	102				
G 6	G	8	103				
G 6.	G# / Ab	8	104				
A 6	A	8	105				
A 6.	A# / Bb	8	106				
b 6	B	8	107				

Chapter 8
Systemizer MIDI Implementation

SYSEX   MESSAGES

F0H	Sysex Status
10H	Oberheim ID
08H	Perf/X ID
<prod id>	0 = Systemizer, 1 = Cyclone, 2 = Vector, etc.
<opcode>	
<data bytes>	sent: lo nibble, hi nibble
<checksum>	sum of all data bytes
F7	EOX

OPCODE

01H   Single Patch
                                          (directly from/to Patch Storage — packed form)

                                          F0H
                                          10H
                                          08H
                                          <prod id>
                                          01H
                                          <dest Patch>
                                          <data bytes>
                                          <checksum>
                                          F7

02H   Global Parameters

                                          F0H
                                          10H
                                          08H
                                          <prod id>
                                          02H
                                          <data bytes>
                                          <checksum>
                                          F7

03H   All data
                                          (all Patches + Global parameters)

                                          F0H
                                          10H
                                          08H
                                          <prod id>
                                          03H
                                          <mem type>
                                                  0 = 8k
                                                  1 = 32k
                                          <data bytes>
                                          <checksum>
                                          F7

04H

Single Edit Buffer Patch
(from/to edit buffer — unpacked form)

F0H
10H
08H
<prod id>
04H
<data bytes>
<checksum>
F7

05H

Store Edit Buffer

F0H
10H
08H
<prod id>
05H
<dest Patch>
<data bytes>
<checksum>
F7

06H

Remote Edit
(to edit buffer)

F0H
10H
08H
<prod id>
06H
<parm #> (See MIDI Editing Parameters Chart)
<zone #>
<inst #>
<value>
F7

07H

Request Data

F0H
10H
08H
<prod id>
07H
<type>
            0 = Single Patch
            1 = Global Parameters
            2 = All data
            3 = Edit Buffer Patch
<dest Patch>
F7

MIDI Editing Parameters

Parameter #		Value Range
Setup Block:		
00H:	Setup #	0..n where n=31 for 8k or n=164 for 32k
Zone Block:		
01H:	Zone #	0..2
02H:	Split point	0..7FH (MIDI note #)
03H:	Split type	0 = fixed
		1 = float
04H:	Zone type	0 = layer
		1 = velocity switch
		2 = controller switch
		3 = position crossfade
		4 = velocity crossfade
		5 = pressure crossfade
		6= controller crossfade
05H:	Assign type	0 = unison
		1 = mono
		2 = no ro
		3 = rob
06H:	Group type	0 = rotate
		1 = reassign / rotate
		2 = alternate
07H:	Input channel	0..0FH
08H	Velocity sensitivity	0..40H
09H:	Pressure sensitivity	0..40H
0AH:	Velocity inversion	0 = off
		1 = on
0BH:	Hold	0 = off
		1 = sustain
		2 = sostenuto
0CH:	Split Release	0 = off
		1 = on

Instrument block:

0DH:	Instrument #	0..3
0EH:	Output channel	0..0FH
		10H = same as input
0FH:	Group enable	0 = off
		1 = group 1
		2 = group 2
10H:	Initial patch	0..7FH
11H:	Initial bank	0..7FH
12H:	Initial volume	0..7FH
13H:	Initial fine tune	0..32H..63H (0 = -50 cents..63H=49 cents)
14H:	Initial bend range	0..7FH
15H	Initial local control	0 = off
		1 = on
16H:	Initial omni	0 = off
		1 = on
17H:	Initial poly / mono	0 = poly
		1..10H = # mono channels
18H:	Transpose	1..32H..63H (1..50..99)
19H:	Pitch bend enable	
1AH:	Channel pressure enable	
1BH:	Poly pressure enable	
1CH:	Continuous controller enable	0 = off
		1 = on
1DH:	Discrete controllers enable	
1EH:	Cross-switch enable	

MIDI Block:

1FH:	Basic channel	0..0FH
20H:	Echo / bypass	0 = echo on
		1 = bypass
21H:	Crossfade controller	0..5FH
22H:	Switch controller	0..5FH
23H:	Channel select	0..0FH
24H:	Voice limit	1..20H
25H:	Patch limit	0..7FH
26H:	Bank limit	0..7FH

Chapter 9:
WARRANTY

IF YOU HAVE A PROBLEM

The staff at ECC/Oberheim wish to thank-you for purchasing an Oberheim product and hope that you will remain a long-time Oberheim player. We are confident that your instrument will provide you with years of excellent service as each unit is thoroughly tested and inspected before it leaves the factory. The Owner's Manual was written to be logical and comprehensive so that you will be able to get the most out of your Oberheim.

Although we have taken great care in manufacturing your Oberheim instrument and preparing thorough documentation in the manual, products at this level of technology may require servicing. The following Warranty Policy outlines your rights and responsibilities, and also lists several limitations of coverage and important exclusions. We strongly recommend that you read the following policy statements carefully and refer to the procedure at the end in obtaining service for your Oberheim product should it ever be needed.

OBERHEIM LIMITED CUSTOMER WARRANTY
(Non-Transferable)

Oberheim, a Division of ECC Development Corporation, warrants its products, when purchased in the United States of America from an Authorized Oberheim Dealer, to be free from defects in materials or workmanship for a period of 90 days from the date of purchase. Warranty service is effective and available to the original purchaser **ONLY**, and only upon completion and return of the Oberheim Warranty Registration card within 14 days of the date of purchase.

Warranty coverage is valid for Factory-Authorized updates to Oberheim products when their installation is performed by an ECC/Oberheim Authorized Service Center and a properly completed Warranty Certificate is returned to the factory within 14 days of installation.

To obtain service under this Warranty, the product must, upon discovery of the defect, be properly packed and shipped to the nearest Oberheim Authorized Service Center. The party requesting Warranty service must provide proof of original ownership and date of purchase of the product, or date of installation of the update, by supplying to the Oberheim Authorized Service Center the sales receipt/ installation receipt. In the event that both have been lost or misplaced, the Service Center shall, at the Service Center's or owner's expense, contact Oberheim to verify the Warranty status of the product.

If the Warranty has been verified, Oberheim will, without charge for parts or labor, either repair or replace the defective part(s). If the Warranty cannot be verified, the entire cost of the repair in parts and labor is the responsibility of the product's owner.

PRICES AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

WHAT IS COVERED

ECC/Oberheim warrants that it will make all necessary adjustments, repairs or replacements at no cost to the original owner within the first 90 days from the purchase date if:

1. The product fails to perform its specified functions due to failure of one or more of its components.

2. The product fails to perform its specified functions due to defects in workmanship.

3. The product is maintained and operated by the owner in strict accordance with the written instructions for proper maintenance and use as specified in the Owner's Manual.

WHAT IS NOT COVERED

Before purchasing and using, the owner shall determine the suitability of the product for his/her intended use, and the owner assumes all risk and liability whatsoever in connection therewith. Oberheim shall not be liable for any injury, loss or damage, direct or consequential, arising out of the product owner's use or inability to use the product.

The Warranty provides only the benefits specified and does not cover defects or repairs needed as a result of acts beyond the control of Oberheim including but not limited to:

1. Damage caused by abuse, accident or negligence.

2. Any tampering, alteration or modification of the product's mechanical or electronic components.

3. Failure to operate the product in strict accordance with the procedures written in the Owner's Manual.

4. Repairs performed by unauthorized persons.

5. Damage caused by fire, smoke, falling objects, water or liquids etc. or natural events such as rain, earthquakes, floods, lightning, tornadoes, storms, etc.

6. Damage caused by operation on improper voltages.

IMPORTANT NOTICE: The warranty is VOID if the product is electronically or mechanically modified, altered or tampered with in any way.

Oberheim shall not be liable for costs involved in packing or preparing the product for shipping with regards to time, telephone call charges, labor or materials, shipping and freight costs, or time and expenses involved in transporting the product to and from an Oberheim Authorized Service Center, an Oberheim Authorized Dealer or the Oberheim Factory. If a suitable shipping container is unavailable, a replacement carton may be purchased from Oberheim.

ECC/Oberheim will not cover under Warranty an apparent malfunction that is determined to be in fact user error, or the owner's inability to use the product.

ECC/Oberheim will not cover under Warranty an apparent malfunction that is inaccurately or inadequately described by the owner to the Service Center at the time of repair.

THE DURATION OF ANY OTHER WARRANTIES, WHETHER IMPLIED OR EXPRESS, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

ECC/Oberheim hereby excludes incidental and consequential damages, including but not limited to:

1. Loss of time
2. Inconvenience
3. Delay in performance of the Warranty
4. The loss of use of the product
5. Commercial loss
6. Breach of any express or implied warranty, including the Implied Warranty of Merchantability, applicable to this product.

Oberheim shall not be liable for damage or loss resulting from the negligent or intentional acts of the shipper or his contract affiliates. The owner of the product should contact the shipper for proper claims procedures in the event of damage or loss resulting from shipment.

HOW TO OBTAIN WARRANTY SERVICE

If you have reason to believe that your Oberheim product is malfunctioning or otherwise not operating properly, do the following:

STEP 1:   **CONTACT YOUR NEAREST ECC/OBERHEIM AUTHORIZED SERVICE CENTER**
Telephone them as soon as the problem is discovered. Be prepared to discuss the problem as completely and accurately as possible. A current roster of Authorized Service Centers is included with the Owner's Manual.

The Service Center will let you know when the repair can be scheduled, the approximate number of days it will take to complete the repair and if the required parts are in stock or if they need to be ordered.

Take the failed unit to the Service Center along with the sales receipt as the Service Center will need to verify the Warranty.

The Service Center will then inspect the product and take the necessary steps to complete the repair.

If the product continues to malfunction or another problem different from the original problem occurs, contact the service center IMMEDIATELY so that the problem can be resolved without delay or further complications.

STEP 2. **CONTACT YOUR ECC/OBERHEIM DEALER**
If you feel that your problem has not been resolved, contact the Oberheim Dealer where the product was purchased. It will be most expedient if you discuss the matter personally with the sales person who sold you the instrument. By making the sales person aware of your situation, they will be in a better position to assist you in getting the problem resolved.

STEP 3: **WRITE TO THE ECC/OBERHEIM NATIONAL OFFICES**
If you believe that the problem is still unresolved after you have contacted the Service Center and Dealer, contact the ECC/Oberheim National Offices. In an attempt to resolve your problem, we will work with your local Service Center or Dealer to review and verify the information and facts. Based on these facts, we will advise or consult with the Service Center or Dealer as appropriate.

Written correspondence should be addressed to:

OBERHEIM
A Division of ECC Development Corporation
Customer Services Department
2015 Davie Ave.
City of Commerce, CA 90040-1704

Every attempt will be made to respond to your letter as quickly as possible.

Warranty

For your records.
Model: _____
Date of Purchase: _____
Date Warranty Sent In: _____
Dealer Name: _____
Dealer Address: _____
City: _____ State: _____ Zip: _____

Why it's important to send in your warranty card.

Oberheim is proud of its research and development effort and we feel it is both innovative and the technological leader in its field. We are continually working to develop new products as well as improve and update our present products.

Every Oberheim product is subjected to rigorous testing and inspection to insure the highest quality and reliability. Nevertheless, products as complex and sophisticated as ours may incur problems. Therefore, you must return your warranty card to insure prompt service and to be advised of the latest improvements and updates. To be sure of your coverage, see the "Limited Customer Warranty" on the back of this sheet.

Warranty is valid only if the Warranty Registration Form is returned. Please complete this form, printing one character per box. Cut out and return within 14 days of purchase.

Limited Customer Warranty (Non-Transferable)

Oberheim, A Division of ECC Development Corporation warrants this Product, when purchased at an Authorized Oberheim Dealer, to be free of defects in materials or workmanship for a period of 90 days from the date of purchase. Warranty service is effective and available to the original purchaser only upon completion and return of the Oberheim Warranty Registration form within 14 days from the date of purchase. To obtain service under this Warranty, the product must, upon discovery of the defect, be properly packed and shipped to the nearest Oberheim Authorized Service Center. Oberheim will without charge for parts or labor either repair or replace the defective part(s). Shipping costs are not covered by this warranty.

This Warranty provides only the benefits specified and does not cover defects or repairs needed as a result of acts beyond the control of Oberheim including but not limited to: abuse, damage by accident, negligence, modification, alteration, improper use, unauthorized servicing, tampering, or failure to operate in accordance with the procedures outlined in the Owner's Manual; nor for acts of God such as flooding, lightning, tornados, etc...

The duration of any other warranties, whether implied or express, including but not limited to the implied warranty of merchantability, is limited to the duration of the express warranty herein. Oberheim hereby excludes incidental and consequential damages, including but not limited to: loss of time, inconvenience, delay in performance of the warranty, the loss of use of the product or commercial loss, and for breach of any express or implied warranty, including the implied warranty of merchantability, applicable to this product.

The party requesting warranty service must provide proof of the date of purchase of the product, by supplying the Oberheim Authorized Service Center either the warranty card or sales receipt. In the event both have been misplaced, the service center shall contact Oberheim to verify the warranty status of the product.

Oberheim shall not be liable for damage or loss resulting from the negligent or intentional act of the shipper or his contract affiliates. The customer should contact the shipper for proper claims procedures in the event of damage or loss resulting from shipment.

Warranty Card

Model: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Serial No: |_|_|_|_|_|_|_|_| Date of Purchase: |_|_|_|_|_|_|_|_|_|_|

Your Name: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Your Address: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

City: |_|_|_|_|_|_|_|_|_|_|_|_| State: |_|_|_| Zip: |_|_|_|_|_|_|

Dealer Name (Name of Business): |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Dealer Address: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

City: |_|_|_|_|_|_|_|_|_|_|_|_|_| State: |_|_|_| Zip: |_|_|_|_|_|_|

Optional information for our marketing and research department

1. ☐ Male   ☐ Female
2. Your Age: ☐ 18 and under ☐ 19-24   ☐ 25-29   ☐ 30-40   ☐ 40 and over
3. Marital Status: ☐ Single   ☐ Married
4. Education Completed: ☐ High School ☐ Jr. College ☐ College ☐ Graduate
5. What kind of music do you play? ☐ Rock ☐ Heavy Metal ☐ Jazz ☐ R&B/Soul
   ☐ Top 40/Pop ☐ Gospel ☐ Country ☐ New Age ☐ Classical ☐ Other _____
6. How many years have you been playing?
   ☐ 1 year or less ☐ 1-4 years ☐ 5-9 years ☐ More than 10 years
7. Is music your primary source of income? ☐ Yes ☐ No
8. Employment: ☐ Pro musician ☐ Engineer ☐ Technician ☐ Sales
   ☐ Semi-Pro musician ☐ Producer ☐ Music Educator ☐ Other _____
9. Do you own a computer? ☐ Yes ☐ No
10. What type? ☐ Macintosh ☐ IBM ☐ Atari ☐ Amiga
    ☐ Apple II ☐ Commodore 64 ☐ Other _____
11. What magazines do you regularly read?
    ☐ BAM ___   ☐ Music, Computers & Software __ ☐ Billboard ___
    ☐ Keyboard ___   ☐ Electronic Musician ___   ☐ Musician ___
    ☐ International Musician ___ ☐ Music & Sound Output ___ ☐ Rolling Stone ___
    ☐ Music Technology ___ ☐ Mix ___ ☐ Other ___ _____
12. In the space provided to the right of the magazine please rank the magazines you read regularly which you like the most as #1, second most as #2 and so on.
13. Where do you most often use your Oberheim equipment? ☐ Club ☐ Concert
    ☐ Home ☐ Home Recording ☐ Recording Studio ☐ Other _____
14. Why did you choose this product? (Check all that apply)
    ☐ Features ☐ Sound ☐ Price ☐ Salesperson ☐ Other _____
15. How much do you expect to spend on electronic musical equipment this year?
    ☐ $100 or less ☐ $100-$300 ☐ $300-$500 ☐ $500-$1,000 ☐ $1,000-$2,000
    ☐ $2,000-$5,000 ☐ $5,000 to $10,000 ☐ $10,000 or more
16. What is you next musical purchase going to be?
    ☐ Keyboard Synthesizer ☐ Signal Processing ☐ MIDI Processing
    ☐ Rack Synthesizer ☐ Recording Equipment ☐ Computer
    ☐ Sequencer ☐ Drum Machine ☐ Software
    ☐ Other _____
17. In the space provided to the right of the piece of equipment please write how much you expect it to cost?
18. How much do you have invested in musical equipment?
    ☐ $1,000 or less ☐ $1,000-$2,000 ☐ $2,000-$5,000 ☐ $5,000-$10,000 ☐ $10,000-$20,000
    ☐ $20,000-$50,000 ☐ $50,000 or more
19. What products would you like to see Oberheim produce in the future? _____
    _____
20. Remarks _____
    _____

(Remove Warranty Card from manual, fold in half, tape closed and mail.)

(Fold)

(Remove from manual, fold, tape and mail)
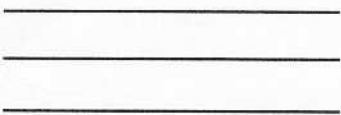
BUSINESS REPLY MAIL

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Oberheim

A Division of ECC Development Corporation
2015 Davie Ave.
Box 91-1142
Commerce, CA 90091