

This manual is a quite accurate copy of the original manual. A guy from Waldorf was so kind to send it to me before Waldorf left the market. I scanned, OCR'd and worked it over. I tried to reproduce everything as original as possible. I only corrected some minor mistakes in writing, left out the blank pages and so on.

I did it without any financial interest. If you're happy that you've found it please think about if there is something that you can do for the rest of the world. ;-)

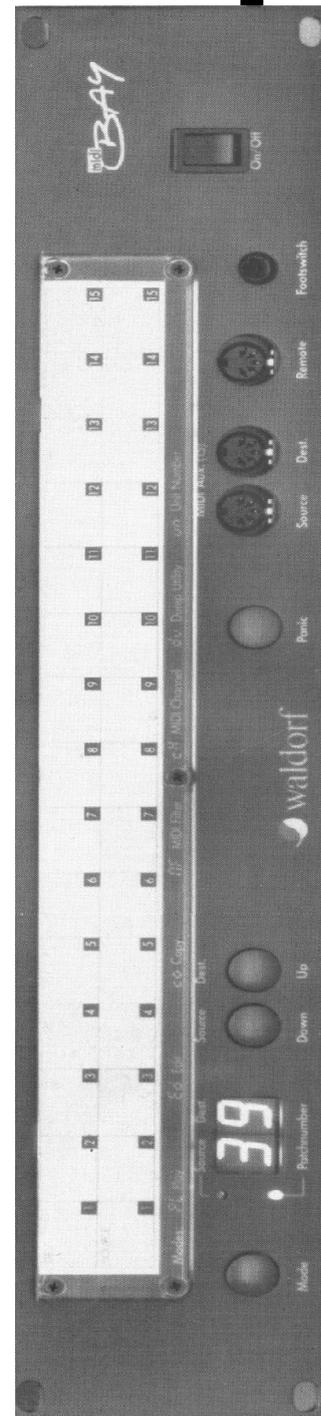
Regards,

Lars

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12/13/04

MIDI BAY



Manual

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1. General

Warranty

Waldorf Electronics warrants the MIDI BAY for a period of 6 months. This applies solely to flaws in material. Any claims can be made within this period only. Damages, consequential damages and cost directly or indirectly resulting from use of this product or product failure are not covered by the warranty.

Scope of Supply

Prior to initial operation of the unit, please check the contents of this package for completeness and perfect condition.

MIDI BAY Owner's
Manual

Technical Remarks

Only high-grade and tested components have been used for the construction of the MIDI BAY. When putting the unit into operation, the general guidelines for operating electrical or electronical devices must always be observed. In order to avoid lengthy and expensive repairs you should give the MIDI BAY the same care and attention you give the remaining components of your MIDI system.

In particular, you should ensure that...

- the MIDI BAY is never exposed to strong vibrations, dust or extreme humidity.
- the correct mains voltage is selected and that nothing but the power cords and MIDI cables intended for this application are used.



4. Preface

Dear Customer,

thank you for purchasing the MIDI BAY. This product from Waldorf Electronics is an extremely powerful and easy-to-use MIDI processor which will facilitate the use of your MIDI system and will considerably enhance the system's efficiency.

Perhaps you are already familiar with patchbay concepts from audio systems. Here, mechanical patchbays and - recently - also larger. MIDIfied units make life easier for sound engineers and musicians. Probably, you have never worked with a patchbay before. If so, we recommend you to read the entire manual *thoroughly* - since the MIDI BAY offers a greater scope of possibilities than a conventional audio patchbay.

Specific information in this manual is always presented in the same way.

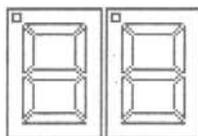
- whenever we refer to the MIDI BAY's controls or connectors, the corresponding designations are given in square brackets:

Connector [Source 1], [Mode] key

- designations on the front of the MIDI BAY and display messages are given in "arrow" brackets:

<MIDI AUX>, <Ed>

- the MIDI BAY's display is represented as follows:



4. Preface

- "step-by-step" instructions appear as follows:
 - take the owner's manual.
 - read one word after the other.
 - additional remarks or remarks of special importance are marked by an arrow.
- "maybe you should turn the unit on before using it!"

Please enjoy working with the MIDI BAY.



5. How It Works

How It Works

If you own several MIDI devices - probably some of them sending and receiving data on several MIDI channels - you're probably vexed regularly because the connection cables have to be rearranged all the time: when controlling several sound expanders from one keyboard, you would like to control the same expanders by the sequencer and play along on a second keyboard. Maybe you would like to trigger your sampler from a MIDI drum kit and subsequently load sample data into your computer...

All of these jobs require different cabling - this needs a lot of time and stresses the mechanically unsafe 5-pin DIN connectors excessively. And it is even more frustrating to leave the MIDI cabling as it is, thus possibly restricting both performance and potential of the instruments.

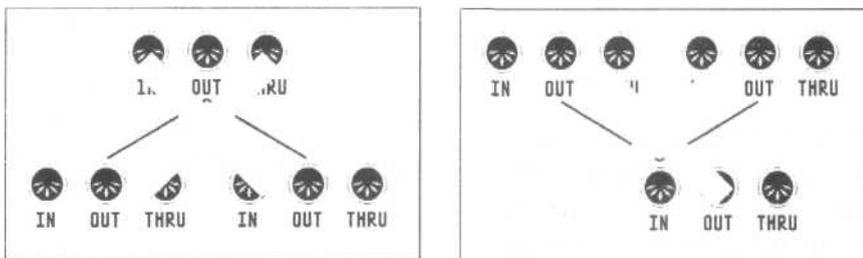
Today, with even small homerecording studios integrating several keyboards, possibly MIDI drum pads and various sound generators, these problems multiply - the system becomes badly arranged and unreliable.

In such a situation, the MIDI BAY is the optimum solution. It enables you to quickly set up even a complex MIDI system and to get it reliably under control. Flexibility is not restricted anymore: 15 freely programmable inputs and outputs each allow for individual solutions. Furthermore, a merge function provides mixing of two MIDI data packages, thus multiplying the system's capabilities both live on stage as well as if operated with a sequencer.

Let's take a closer look at how the MIDI BAY works:

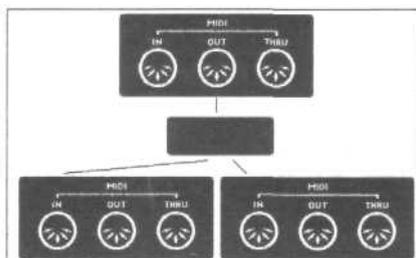


5. How It Works

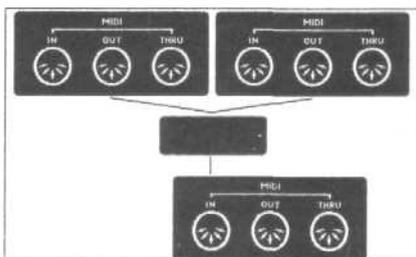


The MIDI specification determines that one MIDI OUT is assigned to each MIDI IN. However, if you want to transmit one MIDI signal to several instruments, there are exactly two ways to do so:

either you connect these instruments to each other via their MIDI THRU connectors (already with three units this might lead to signal delay and deformation), or you use a device that is able to split up a MIDI signal and send it to several MIDI OUT connectors at the same time.



Now, if you want to have one MIDI device controlled by two instruments simultaneously, you need a device that is able to mix two MIDI signal packages. A simple two-way adapter, as is often used for audio connections, cannot be used here because MIDI signals are digital signals and for merging them a special processor is required.



5. How It Works

The MIDI BAY integrates both functions - copying and merging MIDI signals - and additionally offers the possibility of programming any "set" of inputs and outputs, and of selecting them at the touch of a key or with a MIDI instruction, at any time.



6. Controls

Controls

The MIDI BAY features the following controls and female connectors:

The upper portion of the front panel is reserved for the *assignment list*. The two notches on the plexiglass frame serve for pulling out the assignment list. Entering the connected units in that list will facilitate setting up of MIDI BAY programs.

Below the frame there is the *[Mode]* key which selects one of the seven operation modes the MIDI BAY provides. These operation modes will be dealt with in the next chapter.

Close to the Mode key you will find a double-digit *display* which indicates current data and information. Since the MIDI BAY features such a clearly arranged design and concept, and since you will mostly call up patch programs, a double-digit display will provide enough information and allow for convenient working with the unit.

The two *LEDs* close to the display tell you whether the MIDI BAY is in Play Mode or Edit Mode.

The *[Up]* and *[Down]* keys increase or decrease the value currently indicated by the display. This will be either the program number, the MIDI channel or the Unit-ID.

In case of hanging notes or seriously "detuned" instruments, the *[Panic]* key - as the name implies - serves for muting the connected units and setting them to a defined starting point. Anybody who has been tormented by hanging notes in a critical situation will appreciate this function.

→ normally, you will communicate with the MIDI BAY via the controls described above. However, the unit may also be programmed using an editor program for the ATARI ST computer or the remote control available as a separate accessory.



6. Controls

The front panel of the MIDI BAY also accomodates four connectors:

<MIDI Aux.> offers two *MIDI connectors* that are identical to the connectors [Source 15] and [Destination 15] on the rear. The MIDI IN connector on the front has priority: as soon as you hook up a MIDI instrument here, the corresponding MIDI IN connector on the rear is switched off. Thus, you may "loop in" additional units (for instance, your friend's remote keyboard and/or a new sound expander) into your system without having to use the connectors on the rear of the MIDI BAY.

The *[Remote] jack* is for connecting of the optional remote control **MBR-1** With this unit all functions of the MIDI BAY can be performed even over greater distances - an advantage not to be underestimated, especially in the studio or on stage. Although this is a 5-pos. connector, this is not a MIDI connector and you should never try to insert a MIDI cable here!

Connect a conventional foot switch via the *[footswitch] jack*. With this switch you can switch over between MIDI BAY programs which will also facilitate your work -especially in live situations where two different setups must be rapidly accessible!

Before we forget... of course an *[On/Off] switch* can be found as well!

→ While we're at it, we would like to mention that you have to switch on the MIDI BAY before you turn on the receiving units connected.

On the rear of the MIDI BAY you will find a fairly high number of inputs and outputs: on the whole, 75 *[Source]* and 15 *[Destination] connectors* are waiting for you to hook up your instruments, computer(s) and controllers.

Furthermore, the *fuse holder* can be found on the rear.

→ if the fuse has blown, only replace it by a fuse of the same type and rating! Otherwise, you run the risk of damaging your MIDI BAY badly ... additionally, this will void the warranty!



7. Installation

Installation

- set up the MIDI BAY at a place where it is not exposed to strong vibrations, dust or extreme humidity. Connect the unit to the mains.
 - the MIDI BAY may also be installed within a 19" rack. The required bolts are not enclosed.
- now connect the MIDI OUT jacks of all units transmitting MIDI signals (master keyboards, MIDI drum pads and guitar controllers, synthesizers, samplers, etc.) to the [Source] connectors of the MIDI BAY.

Please observe the following:

If you use the merge function, the signals from [Source 1] and from an additional, freely selectable [Source] connector will be mixed. Furthermore, you can send program change instructions to the MIDI BAY via [Source 1]. Therefore, your master instrument, or your computer respectively, the data of which you want to merge with the data coming from other MIDI units, must be connected to [Source 1].

- now connect the [Destination] jack of the MIDI BAY to the MIDI IN connectors of all units/instruments you want to control. For reasons of clearness, we recommend you to connect all units that communicate in both directions with the MIDI BAY to connectors with identical numbers.

Now you may start "patching", i.e. start programming the MIDI connections.



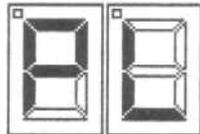
8. Operation Modes

Operation Modes

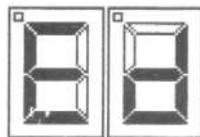
The MIDI BAY places seven different operation modes, or function levels, at your disposal. Switch over between the individual modes using the [Mode] key. At each key press the unit changes to the level "next in rank".

- the selected operation modes after each key press will be temporarily indicated by two letters appearing in the display.

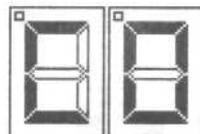
In *Play Mode* you can call up the stored MIDI BAY programs.



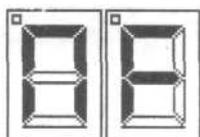
In *Edit Mode* you can modify one of the 99 programs.



The *Copy Mode* allows for copying programs from one memory location to another.

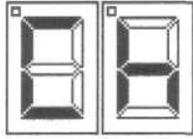


The *Merge Filter Mode* serves for programming the 5 data filter which may be placed in front of the inputs when using the merge function.

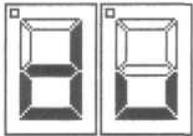


8. Operation Modes

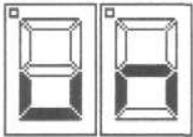
In *Channel Mode*, the MIDI channel on which the MIDI BAY receives program change instructions can be adjusted.



Activate the *DUMP Mode* to send the MIDI BAY's entire memory contents (the 99 programs) via MIDI - at the simple touch of a button.



Finally, in *Unit Mode*, you can determine the MIDI BAY's unit number in order to ensure correct sending and receiving of program data.



(In the following, we will not keep to the order above, but present you the individual functions and function levels just as you are most likely to need them).



9. Creating Programs

Creating and Editing Programs

- switch on the MIDI BAY.

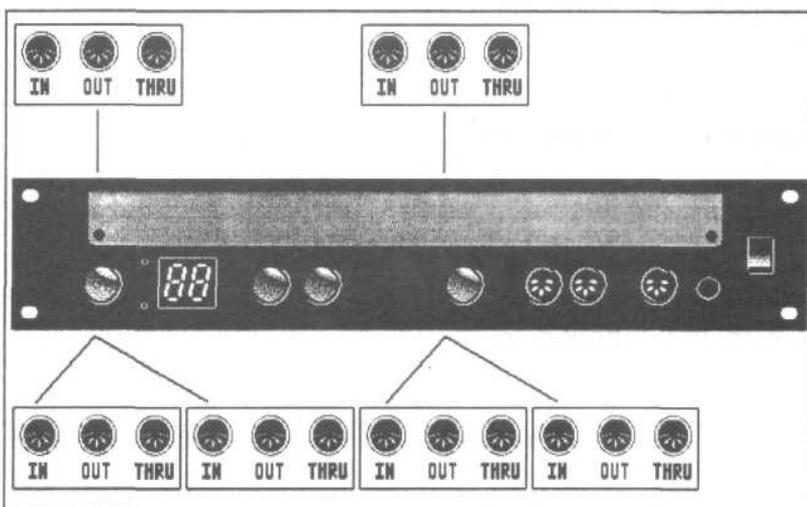
Now the unit is in PLAY Mode: the display indicates the number of the selected program memory location, the green "Play Mode" LED is lit.

- using the [Up] and [Down] keys, select the program memory location on which you want to store your new program.

The program memory locations are numbered 1 through 99.

- having selected the desired memory location, change to the EDIT mode by depressing the MODE key once. The display temporarily indicates the message <Ed> to inform you about the operation mode change, now the red "EDIT Mode" LED is lit instead of the green one.

Creating MIDI BAY programs is really easy: you just have to assign a [Source] connector to each [Destination] connector. This procedure has the advantage that any [Source] connector (i.e., a signal) can be assigned to several outputs without any difficulties. By assigning two or more outputs each to the same input, you can thus set up the MIDI BAY in such a way that it acts like several "distributors", independently of each other.

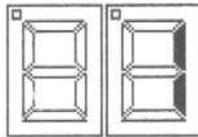


9. Creating Programs

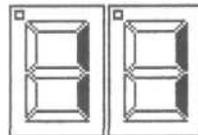
However, it will be most useful to program a simple standard configuration before.

- select memory location #1 - as described above - and activate the EDIT Mode.

The display changes from



to



When using this kind of representation, the *right* display half shows the selected [Destination] connector and the *left* display half the assigned [Source] connector.

- now, first of all, use the [Up] key to select the desired [Destination] connector. A small dot in the right upper corner of the display indicates the tens, i.e., MIDI connectors #1 to #9 are represented as usual, connector #10 is displayed as <.O>, connector #11 as <.1>, etc. You will soon get familiar with this kind of representation.
- using the [Down] key, select the [Source] connector you want to assign to this output.
- then change to the next (used) [Destination] connector and repeat the procedure.

Apart from the messages for connectors 1 through 15, there is the message "M" which serves for programming the merge function. We will deal with this function in chapter 9.1.



9. Creating Programs

- all changes are accepted immediately. So you can check - while running the sequencer or playing on your master keyboard - whether the desired connection has actually been established. Of course, you should also observe that both sending and receiving units are set to the same MIDI channel.
- having finished a program, briefly hit the [Mode] key once. The new program will be stored automatically and the MIDI BAY will return to the PLAY Mode.

Please note that the MIDI BAY does not feature a separate STORE function. As soon as you leave the EDIT Mode (via the [Mode] key), the modifications made will be stored, the original program will be overwritten, i.e. deleted. If you do not want to store the changes you made, i.e., retain the original program, leave the EDIT mode by depressing the [Panic] key once.



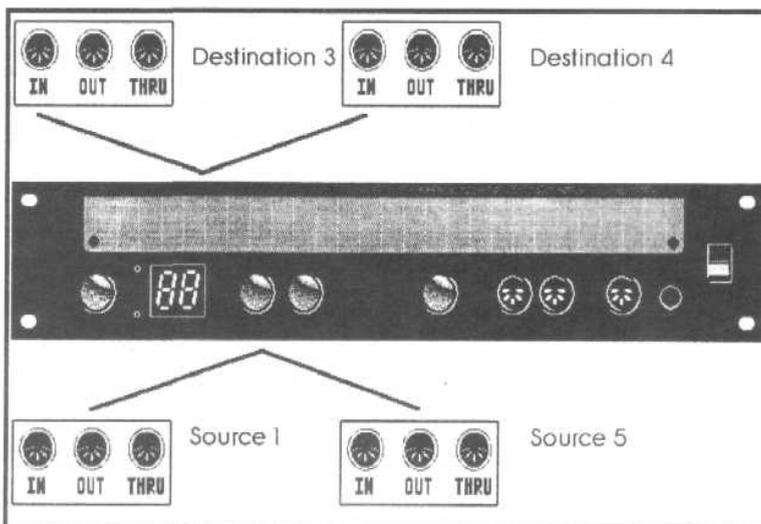
9.1 The Merge Function

The Merge Function

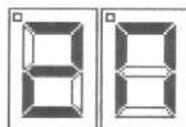
As you have already noticed, you may not only send one MIDI data package to several connectors simultaneously, but you may also combine two data packages and subsequently send them to one or several outputs. This is called *merging*, the function is called *merge function* or *merger*.

Generally, the MIDI BAY's merger always combines the data from the unit connected to [Source 1] and the data from another unit. Therefore, when programming the merge function, you just have to determine the second <Source> connector.

Supposed you want to merge the data from [Source 1] and [Source 5], and output them via [Destination 3] and [Destination 4].

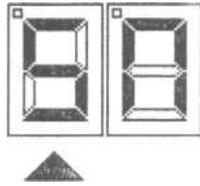


- depress the [Up] key until the second digit of the display reads an <M> (which stands for "Merge").



9.1 The Merge Function

- using the [Down] key, select connector [Source 5].



Thus, [Source 5] is defined as second merger input.

Now, you just have to determine to which [Destination] connector(s) the data shall be routed. Proceed as follows:

- using the [Up] key, select connector [Destination 3].
- depress the [Down] key until the first display digit reads <M>.
- repeat this procedure for connector [Destination 4].

As you can see, this function opens up enormous possibilities: for instance, MIDI information can be recorded simultaneously by a computer and can be sent to the desired expanders without having to use the "Soft Thru" function of the sequencer.

Additional flexibility can be achieved by assigning the original data of the two merger inputs to separate [Destination] connectors. For instance - to continue the example mentioned above - two keyboard players could control one expander rack, but only the information coming from one keyboard would be recorded by the sequencer.

→ if you own a lot of different controllers, you might wish to freely select both merger inputs. With a little trick, this can be accomplished as follows:

Connect the [Destination] jack you currently do not need to [Source 1].

Now the signal routed to this [Destination] connector is led to the merger's input #1. To merge the signals



9.1 The Merge Function

coming from any two [Sources], simply change this connector's assignment.

The only disadvantage of this procedure is that now you only have 14 inputs and outputs at your disposal.

Another example to clarify the facts:

- connect [Destination 15] to [Source 1] via a short MIDI cable.

Supposed you want to merge [Source 6] and [Source 7] and route them to [Destination 2].

- change to EDIT mode by depressing the [Mode] key.
- using the [Up] key, select [Destination 15]. Assign input [Source 7] to this output.
- depress the [Up] key once again, the second display digit reads <M>. Depress the [Down] key until the first display digit reads <6>.

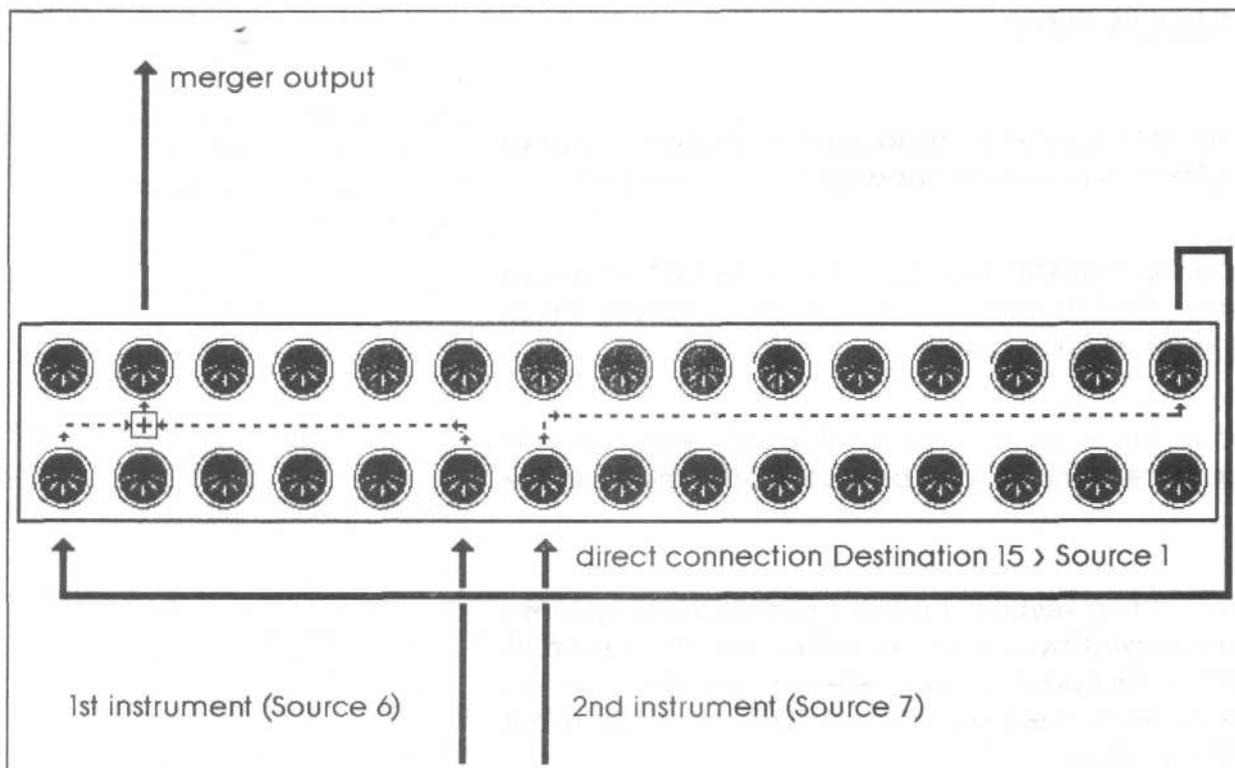
What the MIDI BAY doesn't see, the processor won't grieve over... by connecting [Destination 15] to [Source 1], the data will be rerouted from [Source 7] to [Source 1]. From there, it can be merged with the data coming from [Source 6] without any problems.

- depress the [Up] key until the second display digit reads <2>. Select <M> with the [Down] key, thus, you have defined [Destination 2] as output for the merged data. That's it...

The following illustration will clarify this fairly sophisticated configuration.



9.1 The Merge Function



9.2 The Merge Filter

The Merge Filter

Merging MIDI signals leads to specific problems, above all if "system overlapping" messages are concerned.

For instance, ROLAND keyboards send the MIDI message "All Notes Off" as soon as all keys are released, which switches off all notes played.

Normally, this is to be welcomed, or at least it doesn't matter, since all notes must be muted after releasing the keys.

However, if two keyboard players control one expander, all notes played by one player will be cut off as soon as the other keyboard player releases the keys on his keyboard. Also merging different types of data might lead to problems.

Therefore, the MIDI BAY uses a merge filter which fades out critical data types - individually for both merger inputs.

The various filters are programmed in the Merge Filter Mode which can be activated by depressing the [Mode] key three times.

Using the [Down] key you may now select the individual filters. The display reads the corresponding abbreviations while the two decimal points indicate the filter status of the two merger inputs. This means: if the decimal point is lit, the MIDI data can pass through the filter without restriction. If the decimal point is not lit, the data is filtered out. The left decimal point is effective on the first merger input (i.e., connector [Source 1]), the right decimal point refers to the second merger input.

Use the [Up] key to activate the filter for the desired input(s).



9.2 The Merge Filter

The following types of data may be filtered out:

- <cM> Channel Mode Messages are special controller messages and are used to set MIDI instruments to certain operation modes. Furthermore, they mute all voices sounding at the moment. To avoid unpleasant results - described at the beginning of this section - they should be filtered out.
- <Ao> Controller #123 is the "famous" All-Notes-Off message. Normally, it will be sufficient to filter out this mode message.
- <Sr> System Real-Time Messages are used to synchronize the entire MIDI system. It will hardly happen that two MIDI devices send contradicting Real-Time Messages, however, this might occur - for instance, if the data from a sequencer and from a drum computer is merged. If so, at least the Real-Time Messages sent by one unit should be filtered out.
- <cL> The MIDI Clock is one portion of the real-time messages mentionend above; like a metronome it determines the tempo of the sequencer, drum computer, arpeggiators. etc. hooked up to the system. Of course, only one tempo can be used. Therefore, you should use the MIDI clock filter to prevent anything but the master's tempo information (in general, this is your sequencer) from reaching the merger output.
- <rS> This filter differs from the remaining filter types in that it does not filter incoming data but influences outputting of the already merged data.

The Running Status is a process used for compact transmission of MIDI data, for several consecutive notes, the "Note On" status byte is sent only once.

However, this process has not been part of the original MIDI standard. Therefore, if you are encountering problems with older synthesizers,



9.2 The Merge Filter

switch off the Running Status for the merger output. Simply depress the [Up] key.

Having effected all settings as desired, you may return to the Play Mode by depressing the [Mode] key. However, if you do not want to store the changes you made, leave the Merge Filter Mode by hitting the [Panic] key.

- the Merge Filter parameters may be set individually for each patch.



10. Selecting Programs

Selecting Programs

There are three ways to switch over between the programs of the MIDI BAY. The unit must always be in PLAY Mode.

Changing programs on the unit:

use the [Up] and [Down] keys to select a MIDI BAY program.

Changing programs via foot switch:

especially in live situations, you often need a "third hand" to select a new program. With the help of a simple foot switch - also used as sustain pedal on most synthesizers -you may advance the MIDI BAY from one program to the next one.

Connect such a foot switch to the [Footswitch] jack of the MIDI BAY and place it in such a way that you will not get it confused with the sustain pedal. It would be exasperating if you want to keep a chord but would 'choke off your entire MIDI system.

- use the MIDI BAY's COPY function (see chapter 12) to arrange the individual programs in a reasonable order for live performances.

Changing programs via MIDI:

you may also send a program change instruction from another MIDI device to the MIDI BAY. For this purpose, set the MIDI BAY to the channel on which these instructions are sent.

- depress the [Mode] key four times to activate the CHANNEL Mode.
- using the [Up] and [Down] keys, you can then adjust the receive channel for the program change instructions. Apart from channels 1 through 16 you may also use the <0F> setting which will block any program change instruction.



10. Selecting Programs

- please note that when changing the configuration while playing, you might also change the assignment of a certain [Destination] connector, even if notes are still played. To avoid hanging notes, an "All Notes Off" message is sent to all connectors when changing programs. So, always remember that you will mute all currently played notes when switching over to another patch.



11. The Panic Key

The PANIC Key

Hanging notes are not as usual as you would suppose when reading relevant articles, leaflets and brochures, however, if they occur they are always good for a large-scale panic.

There are two reasons for hanging notes: due to a (mechanical) interruption of the MIDI connection while some notes are still on, or due to a certain instrument 'swallowing' a Note Off message.

In the former case, even the most sophisticated panic function is no help: a cable leading to nowhere will not effectively transmit reasonable instructions. However, hanging notes of this kind are blocked on many instruments by means of an "Active Sensing" function which "recognizes" the interrupted connection and sends an All-Notes-Off instructions of its own.

In the latter case - which is more likely to happen - the [Panic] key of the MIDI BAY is an effective remedy. Such an error occurs if...

- the sending unit transmits less Note-Off than Note-On messages (for instance, sequencer malfunction).
- the MIDI interface is overloaded, or if
- the receiving unit does not "pay attention", i.e., produces a failure due to its own processor being overloaded.

It is no less annoying if controller data are lost due to this error, for instance, if the connected expander "believes" that the Pitch Bend or Modulation Wheels are still used, although they have been returned to their center or starting positions. Extremely detuned sounds and absurd modulation effects are the result.

In any of these cases, the MIDI BAY's [Panic] key sorts everything out. Two different "panic levels" are at your disposal, to be reached by depressing the key



11. The Panic Key

If you just hit the [Panic] key, the following instructions are sent to all [Destination] jacks;

- All Notes Off
- Sustain Pedal Off
- Mod Wheel Off
- Pitch Wheel 64 (center position)

If you depress the [Panic] key for more than one second, the *HyperPanic* function will be triggered. The MIDI BAY transmits:

- Reset All Controllers
- After Touch 0
- Note Off (for all 127 notes on all 16 MIDI channels)
- Note On with velocity 0 (for all 127 notes on all 16 MIDI channels)

As you can easily figure out, this function triggers more than 30,000 MIDI instructions - which, of course, needs some time. The display will read the currently processed MIDI channel.



12. Copying Programs

Copying Programs

Every now and then, you might wish to copy a MIDI BAY program from one memory location to another. Especially, if you need an already existing program a second time, in a slightly changed version, this function will be very useful.

Copying programs is very easy:

- first of all, select in PLAY Mode the program you want to copy - as described in chapter 10.
- activate the COPY mode by depressing the [Mode] key twice.
- now determine the memory location you want to copy the program to. Use the [Up] and [Down] keys. The green "PLAY" Mode LED will start blinking: remember that the original program stored at the target memory location will be deleted by this function.
- depressing the Mode key once again will start the copy process, the unit returns to the PLAY mode.

After copying is completed, the copied program will be recalled automatically. Thus, you can instantly start editing it in the EDIT Mode.

- if you want to *cancel* the copy process, leave this mode by hitting the [Panic] key.



13. The Dump Function

The Dump Function

Like any other advanced MIDI device, the MIDI BAY offers the possibility of transmitting your program data as a so-called *Sys Ex Dump* via MIDI, of course, Sys Ex data may also be received.

On the one hand, this means that you can also program the MIDI BAY via an external *editor*.

On the other hand, this means that individual programs or the entire memory contents can be exchanged between two MIDI BAYs or one MIDI BAY and a computer. Thus, you can, for instance, store the required MIDI BAY configuration as part of a sequencer song.

There are two ways to transmit Sys Ex dumps: either...

- another MIDI device sends a so-called request instruction which requests the required data. Normally, this device is a computer with the corresponding software - for example, STEINBERG'S *Satellite* which is included in the CUBASE sequencer and is well suited for this job. Or...
- you trigger the data dump on the MIDI BAY yourself. Proceed as follows:
 - depress the [Mode] key five times to activate the DUMP mode.
 - with the [Down] key, you can determine whether the MIDI BAY is to send the data of all programs (display reads <Ad> meaning "All Dump") or the data of the currently activated program (display reads <Pd> meaning "Patch Dump").
 - depress the [Up] key and the Sys Ex data will be sent via all [Destination] connectors.



13.1 Changing The Unit ID

Changing the Unit ID

If you own a VERY extensive MIDI system you might also have two or even more MIDI BAYs. In this case, it will also be possible to send Sys Ex data to one of these MIDI BAYs only. This is done with the "Unit ID" feature. This is a designation to be adjusted in the UNIT mode. The MIDI BAY will place this designation before each Sys Ex dump and will only receive and process Sys Ex data that have the same designation.

- depress the [Mode] key six times to activate the UNIT mode.
 - using the [Up] and [Down] keys, adjust the desired Unit ID. Any value from 1 to 16 and <of> can be used. On selecting <of> the Sys Ex dump will be given the Global ID (\$7F) in Dump mode. Incoming Sys Ex dumps will be accepted only if they have this Global ID.
- it will be useful to consecutively number the MIDI BAYs. However, if a Sys Ex dump is meant for both units, they must have the same ID.



14. Assignment List

This list will be your note-pad when creating and using MIDI BAY programs. Enter the units and instruments used and draw the programmed connections by hand or with a ruler.

<i>Program:</i> _____	<i>Date:</i> _____
Instrument	Instrument
(merge in 1)	
Source 1 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 1 _____
Source 2 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 2 _____
Source 3 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 3 _____
Source 4 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 4 _____
Source 5 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 5 _____
Source 6 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 6 _____
Source 7 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 7 _____
Source 8 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 8 _____
Source 9 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 9 _____
Source 10 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 10 _____
Source 11 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 11 _____
Source 12 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 12 _____
Source 13 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 13 _____
Source 14 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 14 _____
Source 15 _____ <input type="checkbox"/>	<input type="checkbox"/> Destination 15 _____
Merge Out _____ <input type="checkbox"/>	<input type="checkbox"/> Merge In 2

Merger

<i>Filter</i>	<i>IN A</i>	<i>IN B</i>
Channel Mode Messages	<input type="checkbox"/>	<input type="checkbox"/>
All Notes Off-Message	<input type="checkbox"/>	<input type="checkbox"/>
System Real Time Messages	<input type="checkbox"/>	<input type="checkbox"/>
MIDI Clock Messages	<input type="checkbox"/>	<input type="checkbox"/>
<i>Output</i>		
Running Status	<input type="checkbox"/>	



15. MIDI Implementation

Complete MIDI Implementation

Data Reception (Source 1 only)

Program Change Instruction:

Status	Data		
1100nnnn	Oppppppp		
	nnnn = 0-15		MIDI channel
	ppppppp = 0-98		Program Number

Data Transmission (Destination 1 – 15)

On briefly hitting the [Panic] key:

Status	Data		
1011nnnn	01111011	00000000	Controller 1 23 (All Notes Off)
1011nnnn	01000000	00000000	Sustain Pedal Off
1011nnnn	00000001	00000000	Modulation Wheel 0
1110nnnn	00000000	01000000	Pitch Wheel 0

On depressing the [Panic] key longer:

Status	Data		
1000nnnn	Oppppppp	00000000	Note On - Velocity 0
10010000	Oppppppp	00000000	Note Off
1011nnnn	01111001	00000000	Reset All Controllers
1101nnnn	00000000		Channel Pressure 0

each for nnnn = 0-15 (MIDI channel)
and ppppppp 0 - 127 (Note Number)



15. MIDI Implementation

Sys Ex-Communication

Header-Format:

\$F0	Status
\$3E	Waldorf Electronics-ID
\$01	MIDI BAY Equipment-ID
\$00-0F	UNIT-ID (7F = Global)
Onnnnnn	Request- or Dump-ID
(Odddddd ...)	Data (dumps only)
Osssssss	Checksum (in case of request always 0)
\$F7	EOX

Request-ID's:

\$00	All Dump
\$01	Current program & number
\$02	Current MIDI channel
\$03	Current program number
\$04	Status (software version and date)



15. MIDI Implementation

All Dump-Format:

\$F0	Status
\$3E	Waldorf Electronics-ID
\$01	MIDI BAY Equipment-ID
\$00-0F	UNIT-ID (7F = Global)
\$40	Dump All-ID
Oppppppp	Current program number
O000nnnn	MIDI channel
O000iii	Source for Destination 1 Program 1
O000iii	" Destination 2 "
O000iii	" Destination 3 "
.....	
etc.	
.....	
O000iii	Source for Destination 16 Program 1
O000wxyz	
	w - Channel Mode Messages Filter Status for Merger input A
	x - Channel Mode Messages Filter Status for Merger input B
	y = All Notes Off Message Filter Status for Merger input A
	z = All Notes Off Message Filter Status for Merger input B
O000wxyz	
	w = System Real Time Messages Filter Status for Merger input A
	x = System Real Time Messages Filter Status for Merger input B
	y = MIDI Clock Filter Status for Merger input A
	z = MIDI Clock Filter Status for Merger input B
	w, x, y, z - 0: filter active
O00000x	x = Running Status for Merger output
	x = 1 : Running Status active
0000000	not assigned
000iii	Source for Destination 1 Program 2
etc.	- Program 99



15. MIDI Implementation

Dump-Format for current program:

\$F0	Status
\$3E	Waldorf Electronics-ID
\$01	MIDI BAY Equipment-ID
\$00-0F	UNIT-ID (7F = Global)
\$41	ID for current program
Oppppppp	Program number
O000iii	Source for Destination 1
O000iii	" Destination 2
O000iii	" Destination 3
....	
etc.	
....	
O000iii	Source for Destination 16
O000wxyz	
	w = Channel Mode Messages Filter Status for Merger input A
	x = Channel Mode Messages Filter Status for Merger input B
	y = All Notes Off Message Filter Status for Merger input A
	z = All Notes Off Message Filter Status for Merger input B
O000wxyz	
	w = System Real Time Messages Filter Status for Merger input A
	x = System Real Time Messages Filter Status for Merger input B
	y = MIDI Clock Filter Status for Merger input A
	z = MIDI Clock Filter Status for Merger input B
	w, x, y, z = 0 : filter active
O00000x	x = Running Status for Merger output
	x = 1 : Running Status active
O000000	not assigned



15. MIDI Implementation

MIDI Channel-Dump-Format:

\$F0	Status
\$3E	Waldorf Electronics-ID
\$01	MIDI BAY Equipment-ID
\$00-0F	UNIT-ID (7F = Global)
\$42	MIDI Channel Dump-ID
OOOxxxxc	

cccc = MIDI channel
x = 0: programchange instructions are accepted

Program Change Dump Format

\$F0	Status
\$3E	Waldorf Electronics-ID
\$01	MIDI BAY Equipment-ID
\$00-0F	UNIT-ID (7F = Global)
\$43	Program Change Dump ID
Occccccc	

ccccccc - program number

Status-Dump-Format

\$F0	Status
\$3E	Waldorf Electronics-ID
\$01	MIDI BAY Equipment-ID
\$00-0F	UNIT-ID (7F=Global)
\$44	Status-Dump-ID
Oxxxxxxx	1 st Byte Version
Oxxxxxxx	2nd Byte Version
Oxxxxxxx	1 st Byte Revision
Oxxxxxxx	2nd Byte Revision
Oxxxxxxx	1 st Byte Year
Oxxxxxxx	2nd Byte Year
Oxxxxxxx	1 st Byte Month
Oxxxxxxx	2nd Byte Month
Oxxxxxxx	1 st Byte Day
Oxxxxxxx	2nd Byte Day

all bytes in ASCII



16. Specifications

Specifications

MIDI BAY programmable MIDI patch bay
 with merge function

RAM memory locations: 99

Controls:

Front: 4 keys
 display
 2 LED's
 1 phone jack for foot switch
 (program change)
 1 DIN connector for remote control

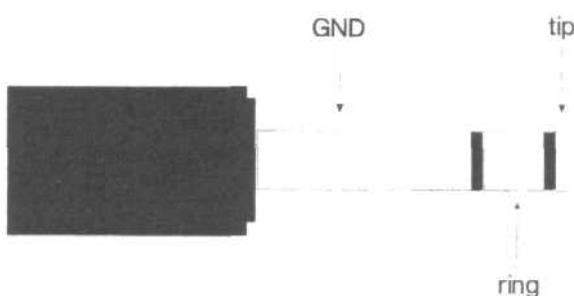
 MBR-1 (optional)

 1 [Source] connector
 1 [Destination] connector
 power switch

Rear: 15 [Destination] connectors
 15 [Source] connectors
 fuse holder

Phone Plug Connection:

Foot switch: tip: Up function
 ring: Down function



The respective function will be activated by connecting the corresponding contact to GND.



MIDI Implementation Chart

MODEL: **Midibay MB-15**

Date: Jun, 05, 1990
Version: 1.0

Function		Transmitted	Recieved	Remarks
Basic Channel	Default Changed	1-16 X	1 1 . .16	
Mode	Default Messages	X X	X X	
	Altered	X	X	
Note Number	True Voice	1-127 X	X X	2)
Velocity	Note ON Note OFF	o o	X X	
After Touch	Key's Ch's	X o	X X	2)
Pitch Bender		o		1)
Control Change		o	X	1) Mod Wheel Sust.Pedal 2) Reset all controllers
Program Change	True #	X X	o, 0..98 0. .98	Receive on source 1 only
System Exclusive		o	o	
System Common	Song Pos Song Sel Tune	X X X	X X X	
System Clock Real Time Commands		X X	X X	3) 3)
Aux Mes- sages	Local on/off	X	X	3)
	All Notes Off	o	X	1) 3)
	Active Sense	X	X	3)
	Reset	X	X	3)
Notes		1) Datas send by Panic on all channels 2) Datas send by Hyper-Panic on all channels 3) can be disables in the merger-data stream		

o : yes
x : no

