

ABCadabra

OWNER'S MANUAL

Document OMABC0905



2 Year Limited Warranty

Sound Sculpture Musical Instrument Products (Sound Sculpture) warrants the ABCadabra to the original purchaser to be free of defects in material and workmanship under normal use for a period of 2 year from the date of purchase from an authorized Sound Sculpture dealer or directly from Sound Sculpture Musical Instrument Products.

Sound Sculpture's liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, and only if the product is returned for repair directly to Sound Sculpture or to the authorized Sound Sculpture dealer from which the unit was purchased.

Sound Sculpture reserves the right to make changes in design or make additions or improvements on the product without incurring any obligation to install the same on products previously manufactured.

Sound Sculpture shall not be liable for any consequential damage or loss of profits as a result of the use of this product even if Sound Sculpture is advised of the possibility of such damages or loss. In no event will Sound Sculpture's liability exceed the price paid for the product.

No other warranties are expressed or implied and Sound Sculpture neither assumes nor authorizes any person to assume for it any obligation or liability in connection with the sale of this product. In no event shall Sound Sculpture or its dealers be liable for special or consequential damages due to the use of this product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions or limitations may not apply to you.

In Case of Difficulty

In the unlikely event that you experience problems with the ABCadabra, please refer to the section in this manual pertaining to the operation you are having difficulty with. Very often the difficulty is simply a result of improper setup or programming and can be resolved by studying this manual.

If, after reading this manual, you are unable to resolve the problem email us at info@soundsculpture.com or call Sound Sculpture at the number shown below during normal business hours. If we are unable to resolve your problem over the phone and determine that the unit needs repair, you will be given a return authorization number and further procedures for returning the unit. **UNAUTHORIZED REPAIR OF THE ABCadabra BY ANYONE OTHER THAN THE FACTORY VOIDS THE WARRANTY. NO UNITS WILL BE ACCEPTED FOR REPAIR WITHOUT FIRST CONTACTING THE FACTORY FOR A RETURN AUTHORIZATION NUMBER.**

Precautions and safety notes

To reduce the risk of fire or electric shock, do not expose this unit to rain or operate this unit in a wet environment.

Use only the power module supplied with the unit unless you are qualified to use a substitute power supply. Use of another module or supply with incompatible specifications will void the warranty if damage occurs.

If the unit becomes physically damaged due to dropping or for other reasons, it should be returned to the factory for repair to avoid the risk of further damage to the unit or to attached units.

To avoid damage due to lightning, the power supply should be unplugged during an electrical storm.

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Table of Contents

INTRODUCTION	2
PANEL FEATURES.....	2
SETUP COMMON TO ALL USES	3
SETTING THE ABCADABRA MIDI CHANNEL.....	3
CONNECTING MIDI TO THE ABCADABRA.....	3
CONNECTING POWER TO THE ABCADABRA	3
PROGRAMMING YOUR FOOT PEDAL TO OPERATE THE ABCADABRA	3
SETUPS UNIQUE TO YOUR USE	4
SETUP FOR SWITCHING BETWEEN TWO AMPLIFIERS	4
<i>Programs for toggling using only one foot switch</i>	<i>4</i>
<i>Programs where separate switches are used.....</i>	<i>4</i>
<i>Programs for individual control over Amps</i>	<i>4</i>
<i>Programs for individual control using separate switches.....</i>	<i>5</i>
SETUP FOR EFFECT INSERT/BYPASS.....	5
<i>Commands for toggling insert/bypass using only one switch</i>	<i>5</i>
<i>Programs for insert/bypass using separate switches</i>	<i>5</i>
SETUP FOR ROUTING TWO INSTRUMENTS OR TWO EFFECTS TO A SINGLE AMP.....	6
<i>To select an instrument or effect using a single switch.....</i>	<i>6</i>
<i>To select an instrument or effect using a two switches</i>	<i>6</i>
APPENDIX A - COMPLETE LISTINGS OF ALL AVAILABLE PROGRAMS AND CONTROLLERS.....	7

Introduction

The ABCadabra A/B Box and Effect Insert is a versatile accessory for MIDI equipped electric musicians and offers 3 main uses.

- Route a single instrument signal to two amplifiers and switch among amplifiers under MIDI control.
- Route two signal processors to a single amplifier and switch between processors under MIDI control.
- Insert/Bypass a signal processor in the main signal path under MIDI control.

The ABCadabra is a relay based device, which is to say that the audio signals only go through relays for the greatest signal integrity.

The ABCadabra functions are controlled using either pre-assigned MIDI Program Change commands or Controller commands. For example by repeatedly sending Program 0, the ABCadabra will alternately route your instrument signal to either of two amplifiers. Additional Programs are used to toggle between 3 states (A/B/Both), to only turn on or turn off a function (as opposed to toggling), to insert/bypass an effect and more. Or using Controller information, you can select A or B by transmitting controller data 0 or 127 from an Instant Access Switch available on most foot controllers.

Panel Features

The back panel of the ABCadabra has a MIDI IN jack, a MIDI THRU jack, and power connector. The front panel has two mono (tip-ring) 1/4" jacks labeled "IN" and "A", one stereo (tip-ring-sleeve) 1/4" jack labeled "B/FX", and 2 indicators. The "PWR" indicator illuminates whenever power is applied to the unit. The "B/FX" indicator serves two purposes. It will blink rapidly for a moment whenever the unit receives MIDI information that it can respond to. It then illuminates solid if either the "B" channel is active, or if a signal is being sent to an effect device attached to the "B/FX" jack.

Setup common to all uses

Setting the ABCadabra MIDI Channel

The ABCadabra is factory set to MIDI channel 16. If this is an acceptable MIDI channel for your use than you do not need to do anything more. If you wish to set the unit to respond to another MIDI channel, then you will need to change the switch setting inside the unit.

To access the switch use a Philip's head screwdriver to remove the 2 screws on the front panel. Slide the insides partially out by pulling the front panel away from the case. Inside you will find a 4 position switch that can be used to set the channel. If the switch is turned on (moved toward the center of the board) then this indicates a "1" otherwise it indicates a "0". Use the following chart to determine the switch setting for the channel you need.

CHANNEL	SWITCH	CHANNEL	SWITCH	CHANNEL	SWITCH	CHANNEL	SWITCH
1	0000	5	0100	9	1000	13	1100
2	0001	6	0101	10	1001	14	1101
3	0010	7	0110	11	1010	15	1110
4	0011	8	0111	12	1011	16	1111

After you have selected the MIDI channel slide the board back inside the case taking care that the board slides all the way in (you may need to push the bottom of the plastic bezel on the rear panel downward a slight amount while pushing the board in so the board goes all the way in). When the board is all the way in, attach the screws and lightly tighten.

Connecting MIDI to the ABCadabra

Connect a standard MIDI cable between your MIDI foot controller MIDI OUT jack and the ABCadabra MIDI IN jack. Connect an additional cable between the MIDI THRU jack on the ABCadabra and the MIDI IN jack of the next MIDI device in your chain as you normally would. The ABCadabra does not interfere with the MIDI signal and simply passes through all data seen on the MIDI IN jack directly to the MIDI THRU jack. Power must be applied to the ABCadabra in order for MIDI data to pass through to the next device.

Connecting Power to the ABCadabra

Attach the supplied modular power supply to the power input on the ABCadabra. If you will be using a power substitute then it should supply 9V DC at 100ma using a 2.1mm connector with center pin positive. You can operate the unit safely with up to 12V DC supplies without damage. Operation beyond this voltage may cause damage to the unit and void the warranty if damage occurs. If you are unfamiliar with power supply substitutes then only use the supplied module.

Programming your foot pedal to operate the ABCadabra

To control the ABCadabra, you will need to program your MIDI foot pedal to send out either Program Change commands or Control Change commands when you press a switch on the pedal. Whether you use Program Change commands or Controller commands will depend on the foot pedal that you use and what you are trying to achieve. Every operation in the ABCadabra has a pre-assigned Program Change number and Controller number associated with it. There are a total of 16 Program Change commands and 5 Controller numbers that the unit will respond to, but in actual use you will only select a few of these to achieve the desired result.

If your foot pedal only transmits Program Change commands, then these commands are what you will use to control the ABCadabra. You can have a single switch toggle the unit or separate switches to go to definite states. If your foot pedal has additional switches that send out two value Controller commands, sometimes referred to as "Instant Access" switches, you may use these switches as well to control the ABCadabra. Refer to the charts in the next sections to determine which Program Change commands or Controller numbers to use for your setup.

Setups unique to your use

How you attach the audio cables, what type of cables you will need to use, and what MIDI commands to program into your foot controller depend on your intended use of the ABCadabra.

If you intend to switch a single instrument between two amplifiers, then refer to “**Setup for Switching Between Two Amplifiers.**”

If you intend to insert/bypass a signal processor in your main signal path under MIDI control then refer to “**Setup for Effect Insert/Bypass**”.

If you intend to route either of two signal processors to a single amp or to the input of another signal processor, then refer to “**Setup for Routing Processors to a Single Amp**”.

Setup for Switching Between Two Amplifiers

This setup is for routing a single instrument such as a guitar to two amplifiers. Under MIDI control you can direct the ABCadabra to route the guitar to the first amp, the second amp, both amps, or neither amp (mute).

There are a total of 12 Program commands that can be used in this setup to give you the freedom to operate the unit that is most convenient for you. One thing of note is that when an amplifier is muted, the input to that amp is shorted to ground to insure complete silence from the muted amp.

For this setup, attach the instrument to the “IN” jack using a standard instrument cable. Attach the two amplifiers to the “A” and the “B/FX” jacks also using standard instrument cables. Then program your foot pedal referring to the following sections.

Programs for toggling using only one foot switch

If you wish to use just a single switch on your foot controller to toggle between amps then program either of the two programs shown in the chart to a single switch on your foot pedal or program an Instant Access switch with the Controller number shown in the chart.

Function	Program (0-127 range)
Toggle between A or B only using a single switch (mute unused amp)	0
Three way toggle between A only, B only, and Both using a single switch	1

Function	Controller Number
Toggle between A or B only (0=A only 127=B only)	0

Programs where separate switches are used

If you wish to have separate switches on your foot pedal to switch between A, B, Both, or Mute, then you can do so by assigning programs 4-7 to the 4 switches as shown in the chart.

Function	Program (0-127 range)
A only (mute B)	4
B only (mute A)	5
Both A and B	6
Mute both amps	7

Programs for individual control over Amps

If you wish to have 2 switches assigned such that each switch toggles an individual amp without affecting the state of the other amp you can do so by using these commands.

Function	Program (0-127 range)
Toggle A on/mute without changing B	2
Toggle B on/mute without changing A	3

Function	Controller Number
Toggle A on/mute without changing B (0=A mute 127=A on)	1
Toggle B on/mute without changing A (0=B mute 127=B on)	2

Programs for individual control using separate switches

You can also control individual amps using separate switches for on and mute. This requires 4 switches on your foot pedal to be programmed with separate commands.

Function	Program (0-127 range)
A on (no change to B)	8
A mute (no change to B)	9
B on (no change to A)	10
B mute (no change to A)	11

Setup for Effect Insert/Bypass

The ABCadabra can be used to insert an effect into your signal path under MIDI control. When the effect is bypassed, the instrument signal completely bypasses the effect by removing the effect entirely from the signal path. In other words it is exactly the same as just plugging your instrument directly into your amp. This is a real treat for purists that like to connect their guitar or other instrument directly to their amp, but still require the option of going through an effect for certain situations.

In addition to completely disconnecting the effect (both input and output), you also have the option of disconnecting only the output to the effect but leaving the input connected. This is useful in a situation where you want to “load up” an effect such as a delay without actually hearing the delay until you switch over to the effect. Such a situation might be useful at the end of a song where you want to kick in an echo after you stop playing just to hear echoes.

To use the ABCadabra as an effect insert/bypass the “B/FX” jack is used as both the send and return to the effect. In order to do this you will need a special Y type cable that has a stereo (tip-ring-sleeve) plug on one end and two mono (tip-sleeve) plugs on the other end. These cables are readily available from your local music dealer. Connect the stereo end into the “B/FX” jack on the ABCadabra, then identify the mono jack that is attached to the tip of the stereo jack and insert it into the input of the effect. Attach the other mono jack to the output of the effect.

Connect the instrument to the “IN” jack using a regular instrument cable and connect the amplifier to the “A” jack also using a regular instrument cable. Then program your foot pedal with the programs shown in the charts.

Commands for toggling insert/bypass using only one switch

Use one or both of these Programs or Controllers assigned to one or two switches to toggle the insert/bypass function. Note that if you intend to hear an echo from your effect, then you must press the switch assigned to “bleed” when turning off the effect, in order to hear the effect when you turn it back on. But when turning it back on you can use either switch (depending if you are going to go into another bleed).

Function	Program (0-127 range)
Toggle insert/bypass with no bleed to the effect	0
Toggle insert/bypass with signal always bleeding to the effect	12

Function	Controller number
Toggle insert/bypass with no bleed to the effect (0=bypass 127=insert)	0
Toggle insert/bypass with bleed to the effect (0=bypass 127=insert)	3

Programs for insert/bypass using separate switches

Use the programs shown here if you wish to have separate switches to bypass or insert the effect rather than toggling between the two.

Function	Program (0-127 range)
Bypass with no bleed to effect	4
Bypass with signal bleeding to effect	6
Insert effect	5

Setup for Routing Two Instruments or Two Effects to a Single Amp

With the ABCadabra you can select among two instruments or among two processors and route them to a single amp. When used in this fashion the ABCadabra is used “backwards” where the “IN” jack is the output and the “A” and “B/FX” are the inputs to be selected. The programs are different than the A/B amp functions in that the unselected jacks are not shorted to ground as they are when muting amps. This is not relevant when selecting passive instruments but is important if selecting between active instruments or between processors where it is not desirable to short the outputs of the devices to ground.

To select among two instruments or effects, plug the first instrument or effect output into “A” and the second instrument or effect output into “B/FX” using standard instrument cables. Plug the amplifier into the “IN” jack also using a standard instrument cable. If using two effects then you will need to drive the two inputs from the effects from a single instrument. You can use a common Y cord (with mono plugs on all 3 sides) to connect your instrument to the inputs of the two signal processors. Program your foot pedal with the appropriate programs from the charts.

To select an instrument or effect using a single switch

Use this program if you wish to select your instrument using just a single switch on your pedal

Function	Program (0-127 range)
Toggle between devices (doesn't ground unused device)	13

Function	Controller number
Toggle between devices (doesn't ground unused device) (0=A 127=B)	4

To select an instrument or effect using a two switches

Use these programs if you wish to select your instrument or effect using two switches on your foot pedal. This is preferred if you always want to know which instrument or effect is selected when a switch is pressed. Program the first switch with the first program and the second switch with the second program.

Function	Program (0-127 range)
Select the “A” device (doesn't ground B side)	14
Select the “B” device (doesn't ground A side)	15

APPENDIX A - Complete listings of all available Programs and Controllers.

The following 6 charts shows all the available commands for the ABCadabra for the 3 uses referred in the text. Note that the Program numbers refer to controllers that use the 0-127 range when programmed. If your controller uses the range 1-128 then just add 1 to the value shown in the chart.

Listing for A/B amp use

Function	Program (0-127 range)
Toggle between A or B only using a single switch (mute unused amp)	0
Three way toggle between A only, B only, and Both using a single switch	1
Toggle A on/mute without changing B	2
Toggle B on/mute without changing A	3
A only (mute B)	4
B only (mute A)	5
Both A and B	6
Mute both amps	7
A on (no change to B)	8
A mute (no change to B)	9
B on (no change to A)	10
B mute (no change to A)	11

Function	Controller Number
Toggle between A or B only (0=A only 127=B only)	0
Toggle A on/mute without changing B (0=A mute 127=A on)	1
Toggle B on/mute without changing A (0=B mute 127=B on)	2

Listing for Effect Loop Insert/Bypass

Function	Program (0-127 range)
Toggle insert/bypass with no bleed to effect	0
Toggle insert/bypass with signal always bleeding to the effect	12
Bypass effect with no bleed (complete bypass)	4
Bypass effect with bleed to effect	6
Insert effect	5

Function	Controller number
Toggle insert/bypass with no bleed to the effect (0=bypass 127=insert)	0
Toggle insert/bypass with bleed to the effect (0=bypass 127=insert)	3

Listing for Selecting Between Two Instruments or Effects

Function	Program (0-127 range)
Toggle between two instruments or effects (doesn't ground unused instrument)	13
Select the "A" instrument or effect (doesn't ground B side)	14
Select the "B" instrument or effect (doesn't ground A side)	15

Function	Controller number
Toggle between devices (doesn't ground unused device) (0=A 127=B)	4