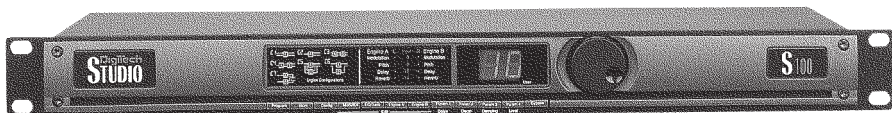


# S100

**Dual Engine Multi-Effects  
Processor**

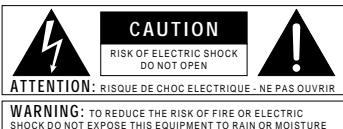
**Digitech  
STUDIO**



## ***User's Guide***

*Please visit Digitech Studio on the World Wide Web at <http://www.digitech.com>*

**H** A Harman International Company



The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself! Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

### U.K. MAINS PLUG WARNING

A moulded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable disposal facility. **NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAINS PLUG INTO A 13 AMP POWER SOCKET.** Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer. Replacement fuses are 13 amps and **MUST** be ASTA approved to BS1362.

## SAFETY INSTRUCTIONS

**NOTICE FOR CUSTOMERS IF YOUR UNIT IS EQUIPPED WITH A POWER CORD.**

**WARNING: THIS APPLIANCE MUST BE EARTHED.**

The cores in the mains lead are coloured in accordance with the following code:

GREEN and YELLOW - Earth BLUE - Neutral BROWN - Live

As colours of the cores in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The core which is coloured green and yellow must be connected to the terminal in the plug marked with the letter E, or with the earth symbol, coloured green, or green and yellow.
- The core which is coloured blue must be connected to the terminal marked N or coloured black.
- The core which is coloured brown must be connected to the terminal marked L or coloured red.

This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. If the attachment plug needs to be changed, refer servicing to qualified service personnel who should refer to the table below. The green/yellow wire shall be connected directly to the unit's chassis.

CONDUCTOR		WIRE COLOR	
L	Line	Brown	Black
N	Neutral	Blue	White
⊕	Earth Gmd.	Green/Yel.	Green

**WARNING:** If the ground is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and earth ground are touched simultaneously.

### WARNING FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

**WATER AND MOISTURE:** Appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

**POWER SOURCES:** The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

**GROUNDING OR POLARIZATION:** Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

**POWER CORD PROTECTION:** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

**SERVICING:** To reduce the risk of fire or electric shock, the user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

**FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE:** Replace fuse with same type and rating only.

### ELECTROMAGNETIC COMPATIBILITY

This unit conforms to the Product Specifications noted on the **Declaration of Conformity**. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
  - this device must accept any interference received, including interference that may cause undesired operation. Operation of this unit within significant electromagnetic fields should be avoided.
- use only shielded interconnecting cables.

### LITHIUM BATTERY WARNING

#### CAUTION!

This product may contain a lithium battery. There is danger of explosion if the battery is incorrectly replaced. Replace only with an Eveready CR 2032 or equivalent. Make sure the battery is installed with the correct polarity. Discard used batteries according to manufacturer's instructions.

#### ADVARSEL!

Lithiumbatteri - Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

#### ADVARSEL!

Lithiumbatteri - Eksplosjonsfare ved feilagtig håndtering. Utskiftning må kun ske med batteri av samme fabrikk og type. Lever det brukte batteri tilbake til leverandøren.

#### VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

#### VARNING!

Explosionsfara vid feilagtig batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparatillverkaren. Kassera använt batteri enligt fabrikkans instruktion.

**DECLARATION OF CONFORMITY**

Manufacturer's Name: ***Digitech Studio***  
Manufacturer's Address: 8760 S. Sandy Parkway  
Sandy, Utah 84070, USA

declares that the product:

Product Name: ***S-100***  
Product Options: All

conforms to the following Product Specifications:

Safety: EN 60065 (1993)  
IEC 65 (1985) with Amendments 1, 2 & 3

EMC: EN 55013 (1990)  
EN 55020 (1991)

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC as amended by Directive 93/68/EEC.

***Digitech Studio***  
President of Digitech Studio  
8760 S. Sandy Parkway  
Sandy, Utah 84070, USA  
Tel: 801.566.8800  
Fax: 801.566.7005

Effective December 1, 1997

European Contact: Your Local Digitech Sales and Service Office or

International Sales Office  
3 Overlook Drive #4  
Amherst, New Hampshire 03031, USA  
Tel: 603.672.4244  
Fax: 603.672.4246

## ***Table of Contents***

### Safety Information

Declaration of Conformity .....	1
Table of Contents .....	2

### ***Section 1 - Introduction***

Congratulations .....	3
Included Items .....	3
Product Features .....	3
Warranty .....	4
<b>A Quick Tour of the S-100 .....</b>	<b>5</b>
The Front Panel .....	5
The Rear Panel .....	7

### ***Section 2 - Operation and Editing***

Program Mode .....	8
Storing Changes .....	8
Selecting Effect Configurations .....	8
Adjusting Dry Path Global Mix .....	9
MIDI Channel Selection and CC Information .....	10
EQ and Noise Gate Adjustments .....	10
Editing Engine A and B Engines .....	12

### ***Section 3 - Effects and Parameters***

Modulation Effects .....	13
Pitch Shifters .....	14
Delay .....	14
Reverb .....	16
Other Effects (Vocoder, Ring Modulator and Compressor) .....	17

### ***Section 4 - Appendix***

Resetting the S-100 .....	18
Specifications .....	19
Program List .....	20

# Section-1 Introduction

## *Congratulations...*

... you are now the proud owner of a Digitech Studio S-100 Multi-Processor. The S-100 offers you Dual-Engine processing with five different effect configurations and a full palette of studio-quality effects. In addition, the S-100 has an easy-to-use interface that makes the S-100 an absolute necessity for use in studio or live applications.

This owner's manual is your key to understanding the powerful world of the S-100. Read it carefully. After you've had time to familiarize yourself with the unit, try experimenting with unusual effect combinations. You are certain to achieve sounds never thought possible before. Good luck, and thank you for choosing a Digitech Studio product.

Your S-100 was carefully assembled and packaged at the factory. Before you proceed any further, make sure the following items are included:

- (1) Owner's Manual
- (1) Digitech S-100 Multi-effects Processor
- (1) Power Supply
- (1) Digitech Studio warranty card

Please save all packing materials. They were designed to protect the unit from damage during shipping. In the unlikely event that the unit requires service, use only the factory supplied carton to return the unit.

## **S-100 Features:**

- Dual-Engine processing power
- Stereo Inputs and Outputs
- 20-bit A/D and D/A conversion
- Footswitch compatible
- Easy-to-use interface
- Studio Quality Reverbs
- 5 Effect configurations
- Full bandwidth effects (20-20kHz)
- MIDI program changes
- 96 dB signal-to-noise ratio
- 99 User Programs
- Vocoder and Ring Modulator Effects

We at **Digitech Studio** are very proud of our products and back-up each one we sell with the following warranty:

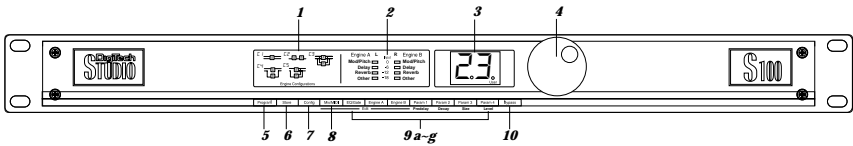
1. The warranty registration card must be mailed within ten days after purchase date to validate this warranty.
2. Digitech Studio warrants this product, when used solely within the U.S., to be free from defects in materials and workmanship under normal use and service.
3. Digitech Studio liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned to Digitech Studio WITH RETURN AUTHORIZATION, where all parts and labor will be covered up to a period of one year. A Return Authorization number may be obtained from Digitech Studio by telephone. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.
4. Proof-of-purchase is considered to be the burden of the consumer.
5. Digitech Studio reserves the right to make changes in design, or make additions to, or improvements upon this product without incurring any obligation to install the same on products previously manufactured.
6. The consumer forfeits the benefits of this warranty if the product's main assembly is opened and tampered with by anyone other than a certified Digitech Studio technician or, if the product is used with AC voltages outside of the range suggested by the manufacturer.
7. The foregoing is in lieu of all other warranties, expressed or implied, and Digitech Studio neither assumes nor authorizes any person to assume any obligation or liability in connection with the sale of this product. In no event shall Digitech Studio or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.

Digitech Studio™ and S-100 are registered trademarks of the Harman Music Group Incorporated.

**NOTE:** The information contained in this manual is subject to change at any time without notification. Some information contained in this manual may also be inaccurate due to undocumented changes in the product or operating system since this version of the manual was completed. The information contained in this version of the owner's manual supersedes all previous versions.

# A Quick Tour of the S-100

## The Front Panel



- 1) **Configuration Matrix** - This matrix shows the five different effect configurations available in the S-100.
- 2) **Input Meter/ Effect Display** - In Program mode, this meter displays the input signal entering the unit. In Edit mode, it will indicate which effect is being used.
- 3) **Number Display** - In Program mode, this number display will indicate program number (decimal point indicates a user program). In Edit mode, the display will indicate effects and parameter values.
- 4) **Program/Data Wheel** - In Program mode, this wheel is used to change programs and when the unit is in Edit mode it is used to select effects and change parameter.
- 5) **Program Button** - This button returns the S-100 to program mode when pressed.
- 6) **Store Button** - This button is used to store program modifications in the S-100.
- 7) **Configuration Button** - This button is used to select Configuration mode. Once pressed, use the <Program/Data> wheel to select a different effect configuration for the selected program.
- 8) **Mix/MIDI** - This button is used to turn the Dry signal path On and Off and select the MIDI channel that program change information is received on.
- 9 a ~ g) **Program Editing buttons** - These seven buttons are used to make key editing modifications to the S-100 and their functions are as follows:
  - 9-a) **EQ/Gate** - This button (in conjunction with the four parameter buttons) are used to adjust the three band EQ and Noise gate threshold and release. Press once to select the EQ and press twice to select the noise gate.
  - 9-b) **Engine A** - This button selects the Engine A effect module. Once this button is pressed, use the <Program/Data>

wheel to change the effect used in this module.

**9-c) Engine B** - This button selects the Engine B effect module. Once this button has been pressed, use the <Program/Data> wheel to change the effect used in the module.

**9-d) Parameter 1 / Predelay** - This button selects parameter 1 for editing in conjunction with the <Program/Data> wheel. It is also the Predelay parameter of the Reverb effect.

**9-e) Parameter 2 / Decay** - This button selects parameter 2 for editing in conjunction with the <Program/Data> wheel. It is also the Decay parameter of the Reverb effect.

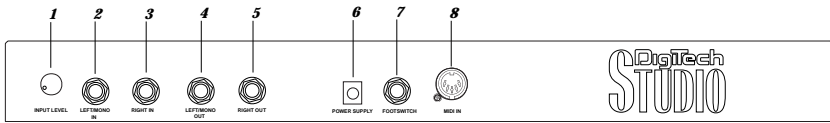
**9-f) Parameter 3 / Damping** - This button selects parameter 3 for editing in conjunction with the <Program/Data> wheel. It is also the Damping parameter of the Reverb effect.

**9-g) Parameter 4 / Level** - This selects parameter 4 (level) for editing in conjunction with the <Program/Data> wheel.

**10) Bypass** - This button is used to Bypass all of the digital effects in the S-100 and allow the original dry signal to pass through the S-100.



## The Rear Panel



- 1) **Input Level** - This knob controls the level of signal entering the S-100. For optimal performance, set this level so the Input level indicators (located on the front panel) occasionally light the red LEDs.
- 2) **Left/Mono Input** - This Input jack is used for the Left or Mono input. When only the Left input jack is used, the signal is sent to both Left and Right S-100 inputs.
- 3) **Right Input** - This is the Right Input jack for the S-100 that when used with Left input will preserve stereo imaging.
- 4) **Left/Mono Output** - This is the S-100's left audio output. This output must be used if a mono effect is desired.
- 5) **Right Output** - This is the S-100's right audio output. Use both left and right outputs to take advantage of stereo effects.
- 6) **AC Line Input** - This is the AC adapter receptacle. Use only the included PS 750 power supply.
- 7) **Footswitch Jack** - This jack is used for the insertion of the Digitech FS-300 footswitch that will control program changes and Bypass the digital effects of the S-100.
- 8) **MIDI IN** - This MIDI jack is used for receiving MIDI program change and CC information.

## Section-2 Operation and Editing

This section will provide you with all of the information necessary to get the most out of your S-100.

### *Program Mode*

When the S-100 is in program mode, you can move from one program to the next by either using the <Program/Data> wheel, the optional Digitech FS-300 footswitch or incoming MIDI program change commands from another device such as a sequencer or keyboard.

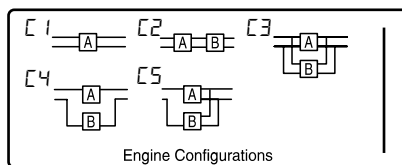
When the S-100 is in edit mode and you wish to abort and return to program mode, simply press the <Program> button.

### *Storing Changes*

When a program has been modified, the program number will blink in the number display when the unit is in program mode. To store changes, press the <Store> button once. The display alternates between  $\overline{SE}$  and the user program location to be stored to. This simply means that S-100 is now giving you the option to store this modified version of the program as a user program at any number from 1 to 99. At this point, you may use the <Program/Data> wheel to change the storing position to another program number. When the target preset location (shown in the display) is correct, press the <Store> button once again. The display will momentarily read: -- indicating that the modified program is being stored.

### *Selecting Effect Configurations*

The S-100 provides you with five different effect configurations that allow you ultimate flexibility and versatility in effect routing. The five configurations appear on the front panel as follows:



#### **Effect Module Size**

Effect Configuration 1 uses one effect module because both processing engines are combined for maximum processing power. This larger module allows you to have longer delay times and more dense sounding reverbs. Effect configurations 2-5 use Half size effect modules which allow you to use two effects per program

To select any one of these five different configurations, simply perform the following procedure:

- Press the <Config> button and the display will briefly read:  $\square F$  indicating that you are in the configuration select mode and now the display will appear something like this:



- Now turn the <Program/Data> wheel until the desired configuration appears ( $\square 1-5$ ) in the display.
- To exit the Effect configuration menu, simply press the <Program> button where the display will flash the program number until the program change is stored or until you change to the next program.

## Adjusting the Dry Path Global Mix

This editing procedure will allow you to globally turn a Dry signal path Off for use with a mixing consoles' effects sends or On for use with single instrument input signals (such as guitar, saxophone and others). The procedure is as follows:

- To edit the Dry signal within the effect configuration of the S-100 (turning it On or Off), press the <Mix/MIDI> button once and the display will briefly read:  $\square r$  indicating the dry path mix and then  $\square n$ , indicating that the Dry signal is on. If you wish to turn the dry path off, simply turn the <Program/Data> wheel counter clockwise and the display will now read:



- This now indicates that the Dry signal has been turned Off creating a 100% Wet signal globally in the S-100. To exit this mode, press the <Program> button.

*Note: The Dry path will automatically be turned off when either a Tremolo, Panner, Vocoder, Compressor, Rotary Speaker or Reverse Reverb effect is used in a program, since the dry signal is already included in these effects.*

## ***Selecting the MIDI Channel and MIDI CC Information***

- To select the MIDI channel in which the S-100 receives program change information, from Program mode, press the **<Mix/MIDI>** button twice and the display will briefly read:  $\square h$  (this indicates MIDI channel mode), followed by:



- Now turn the **<Program/Data>** wheel to select the desired MIDI channel. The options for the MIDI channel selection ranges from:  $1-16$ ,  $17$  and  $OFF$  (Off).

**MIDI program change numbers will be as follows:**

- 1-99 = Programs
- 100 = Effects Bypass
- 101 = Exit Effects Bypass
- 102 = Effect Bypass Toggle
- 103 = Selects User Program Bank
- 104 = Selects Factory Program Bank

- To exit the MIDI channel menu, press the **<Program>** button.

### ***MIDI CC Information***

The S-100 will also receive MIDI CC information for parameter control of the following parameter:

- Dry Level** - is turned On or Off by MIDI CC number - CC 7.

## ***EQ and Noise Gate Adjustments***

This editing function allows you to make key EQ and Noise gate modifications to custom tailor your sound for each program. The procedure for both is as follows:

### ***Adjusting the EQ***

The S-100 offers a three band EQ with Lo EQ, Parametric Frequency, Parametric Level and Hi EQ parameters. To adjust any one of these four, perform the following procedure:

- Press the <EQ/Gate> button once and the display will briefly read:



- Now to make adjustments to the four different EQ parameters use the <Parameter 1-4> buttons. Parameter and value range for each is listed below.

**Parameter 1** - L Q EQ - Range for the Low EQ is from -12 to +12 dB.

**Parameter 2** - F requency - Range for the Parametric Frequency is from 1 to 26.

**Parameter 3** - L evel - Range for the Parametric Level is from -12 to +12 dB.

**Parameter 4** - H i EQ - Range for the High EQ is from -12 to +12 dB.

- To modify any one these four parameters, simply press the respective <Parameter> button and then turn the <Program/Data> wheel.
- Once the modifications are done, remember to store any changes and press the <Program> button to return to Program mode.

## Adjusting the Noise Gate

The S-100 gives you the ability custom tailor the Noise gate parameters (Threshold and Release) for each program by performing the following procedure:

- Press the <EQ/Gate> button twice. The display will appear something like this, indicating that you are in Noise Gate edit mode:



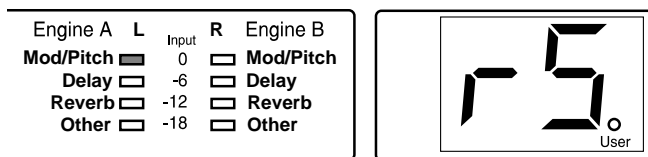
- Now press the <Parameter 1> button and Th will appear prompting you to adjust the Noise gate Threshold by turning the <Program/Data> wheel. The range for the Noise gate Threshold is from Off, 99 to 0.
- To adjust the Noise Gate Release, press the <Parameter 2 > and the display will read: rE, prompting you to use the <Program/Data> wheel to adjust the Noise Gate Release parameter. Release range is from 1 to 10.
- Once all Noise gate modifications have been made, remember to store the changes and press the <Program> button to return to program mode.

## Editing Engine A and B Modules

Because of its processing power, the S-100 gives you two Engine modules that are fully programmable. The following section explains the simple procedure for Engine A and B editing.

### Selecting and Editing Effects

- From Program mode, press either the **<Engine A>** or **<Engine B>** button. The current type of effect will light the corresponding LED in the effect display and it's two letter abbreviation will appear in the number display looking something like this:



**Note-** In order to edit Engine B, configurations 2-5 must be used.

- Now turn the **<Program/Data>** wheel to select the effect to be used. The effect display's LED and number display's abbreviation will change as the new effects are selected.
- Once the effect to be used has been selected, you can use the **<Parameter 1-4>** edit buttons to modify the parameters of the selected effect.

For a complete list of the effects available and their respective names, please see Section 3 on pages 13-16.

- Once all of the edits have been made to the selected program, make sure to store any changes and then press the **<Program>** button to return to the Program mode.

## Section - 3 Effects and Parameters

This section provides you with a detailed description of the Digital effects in the S-100 and their parameters and values. A complete list of these effects is also printed on the top of the S-100.

### ***Modulation Effects***

<b><i>Effect Name</i></b>	<b><i>Parameter 1</i></b>	<b><i>Parameter 2</i></b>	<b><i>Parameter 3</i></b>	<b><i>Parameter 4</i></b>
<b><i>Chorus - CH</i></b>	<b><i>Speed - SP</i></b>	<b><i>Depth - dE</i></b>	<b><i>Delay - dL</i></b>	<b><i>Level - L</i></b>
<b><i>Flange - FL</i></b>	<b><i>Speed - SP</i></b>	<b><i>Depth - dE</i></b>	<b><i>Feedback - FB</i></b>	<b><i>Level - L</i></b>
<b><i>Phaser - PH</i></b>	<b><i>Speed - SP</i></b>	<b><i>Depth - dE</i></b>	<b><i>Feedback - FB</i></b>	<b><i>Level - L</i></b>
<b><i>Tremolo - Tr</i></b>	<b><i>Speed - SP</i></b>	<b><i>Depth - dE</i></b>	<b><i>N/A</i></b>	<b><i>Level - L</i></b>
<b><i>Panner - Pn</i></b>	<b><i>Speed - SP</i></b>	<b><i>Depth - dE</i></b>	<b><i>N/A</i></b>	<b><i>Level - L</i></b>
<b><i>Rotary Speaker - rS</i></b>	<b><i>Speed - SP</i></b>	<b><i>Type - TY</i></b>	<b><i>X-over Freq - CF</i></b>	<b><i>Level - L</i></b>

The Modulation effects menu offers a vast list of modulating effects ranging from Chorus to a Rotary Speaker simulator.

These modulation effects are ideal producing lush sounding effects that can add dimension to any signal. The parameters and values for the modulation effects are as follows:

<b>Speed</b>	The Speed parameter controls the speed of the modulation in the effect. Range is from 0 to 99 or Slow to Fast.
<b>Depth</b>	This parameter controls the amount of depth of the modulation effect. Range is from 0 to 40.
<b>Delay</b>	This parameter controls the delay time within the modulation effect. Range is from 0 to 40 milliseconds.
<b>Feedback</b>	This parameter controls the amount of regeneration feedback in the modulation effect. Range is from 0 to 97%.
<b>Type</b>	This parameter selects between six different modulation extremes.
<b>Cross-over Frequency</b>	This parameter selects the frequency where the signal is split between the Rotor and the Horn. Settings are 1 - 4
<b>Level</b>	This parameter allows you to set the overall level of the selected effect. Range is from 0 to 99.

## Pitch Shifters

<b>Effect Name</b>	<b>Parameter 1</b>	<b>Parameter 2</b>	<b>Parameter 3</b>	<b>Parameter 4</b>
<b>Pitch Shift</b> - P5	<b>Shift</b> - 5h	<b>Tracking</b> - 5r	<i>N/A</i>	<b>Level</b> - L
<b>Detuner</b> - d7	<b>Detune Amt</b> - dA	<i>N/A</i>	<i>N/A</i>	<b>Level</b> - L

The Pitch Shifting effects menu includes a Pitch Shifting effect that allows you to shift the original signal to help produce Harmony effects, while the Detuner effect will help you thicken up any signal to add dimension to your sound. Parameters for the Pitch Shifting Effects are as follows:

<b>Shift</b>	This parameter sets how far the signal is shifted. Range is from -12 to +24 semi-tones.
<b>Tracking</b>	This lets you select the tracking level of the Pitch shifter effects. Range is from 1 to 3.
<b>Detune Amount</b>	This parameter sets the amount of Detune in the effect. Range is from -12 to +12 cents.
<b>Level</b>	This parameter allows you to set the overall level of the selected effect. Range is from 0 to 99.

## Delay

<b>Effect Name</b>	<b>Parameter 1</b>	<b>Parameter 2</b>	<b>Parameter 3</b>	<b>Parameter 4</b>
<b>Mono Delay</b> - d1	<b>Delay Coarse</b> - dC	<b>Delay Fine</b> - dF	<b>Feedback</b> - Fb	<b>Level</b> - L
<b>Stereo Delay</b> - d2	<b>Delay Coarse</b> - dC	<b>Delay Fine</b> - dF	<b>Feedback</b> - Fb	<b>Level</b> - L
<b>Ping Pong</b> - d3	<b>Delay Coarse</b> - dC	<b>Delay Fine</b> - dF	<b>Feedback</b> - Fb	<b>Level</b> - L
<b>Karaoke</b> - d4	<b>Delay Time</b> - dT	<i>N/A</i>	<b>Repeats</b> - rP	<b>Level</b> - L

The S-100 offers three different Delay effects including: Mono, Stereo and Ping Pong, offering ultimate flexibility in digital delay applications. The S-100 also offers a Karaoke delay effect. The parameters and their values are as follows:

*Note: When Delay effects are used in Effect Configuration 1 (which is a Whole effect module), longer delay times are available. These Delay time differences are marked W (Whole) and H(Half) in the Maximum delay time chart on the following page.*



**Maximum Delay times**

**D-1** (Half=1000 milliseconds and Whole=2000 milliseconds)

**D-2** (Half=700 milliseconds and Whole=1000 milliseconds)

**D-3** (Half=1000 milliseconds and Whole=2000 milliseconds)

<b>Delay Coarse</b>	This parameter controls the length of the Delay Coarse time Range is from .1 (which equals 100 milliseconds) to 2.0 (which equals 2 seconds).
<b>Delay Fine</b>	This parameter controls the length of the Delay Fine time. Range is from 0 to 99 milliseconds.
<b>Delay Time</b>	This parameter controls the length of the Delay Time that is offered in the Karaoke. Delay Time settings are 1-5.
<b>Feedback</b>	This parameter controls the amount of delay repeats in the delay effect. Range is from 0 to 99% and repeat-hold (r-h).
<b>Repeat</b>	This parameter controls the amount of delay repeats in the D-4 Karaoke effect. Range is from 1 to 10.
<b>Level</b>	This parameter allows you to set the overall level of the selected effect. Range is from 0 to 99.

## Reverb

<b>Effect Name</b>	<b>Parameter 1</b>	<b>Parameter 2</b>	<b>Parameter 3</b>	<b>Parameter 4</b>
<b>Stage</b> - St	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Damping</b> - dR	<b>Level</b> - L
<b>Room</b> - rO	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Damping</b> - dR	<b>Level</b> - L
<b>Hall</b> - HR	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Damping</b> - dR	<b>Level</b> - L
<b>Plate</b> - PL	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Damping</b> - dR	<b>Level</b> - L
<b>Chamber</b> - Ch	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Damping</b> - dR	<b>Level</b> - L
<b>Cathedral</b> - CR	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Damping</b> - dR	<b>Level</b> - L
<b>Arena</b> - Ar	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Damping</b> - dR	<b>Level</b> - L
<b>Gated</b> - GR	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Diffusion</b> - dI	<b>Level</b> - L
<b>Reverse</b> - RE	<b>Predelay</b> - Pd	<b>Decay</b> - dC	<b>Diffusion</b> - dI	<b>Level</b> - L

Reverb is the perfect effect for adding dimension to any recording or live application where you need to emulate the size and shapes of different types of rooms. The following explains the parameters that are available in the Reverb effects.

*Note: When Reverb effects are used in Effect Configuration 1 (which is a Whole effect module) larger and more dense sounding Reverbs can be attained.*

### Pre Delay

This parameter controls the length of time before the reverb reflections are heard. Range is from 0 to 99 ms.

### Decay

This parameter controls the decay length (reverb time) of the reverberation. Range is from 1 to 10.

### Damping

This parameter controls the high frequency decay of the reverb effect and ranges from 1 to 10.

### Diffusion

This parameter controls the reverb smoothness and ranges from 1 to 10.

### Level

This parameter allows you to set the overall level of the selected effect. Range is from 0 to 99.

## Other Effects

<b>Effect Name</b>	<b>Parameter 1</b>	<b>Parameter 2</b>	<b>Parameter 3</b>	<b>Parameter 4</b>
<b>Ring Modulator</b> - r 9	<b>Frequency</b> - Fr	<i>N/A</i>	<i>N/A</i>	<b>Level</b> - L
<b>Compressor</b> - c 0	<b>Threshold</b> - th	<b>Ratio</b> - r t	<b>Attack</b> - At	<b>Gain</b> - 9R
<b>Vocoder</b> - c d	<b>Sibilance</b> - Si	<b>Type</b> - t P	<i>N/A</i>	<b>Level</b> - L

The S-100 also offers an additional menu of hard to find effects including: a **Vocoder** effect which takes a vocal signal (using the Left input) and superimposes it onto another input signal such as a keyboard (using the Right input) to produce a vocal effect that sounds more robotic than human. This menu also provides you with a **Ring modulator** that can produce mathematically-based harmonic effects. And last but not least, we have also included a state-of-the-art **Compressor** that is ideal for making any signal stand out with the right amount of compression. The parameters for these effects are as follows:

<b>Frequency</b>	This parameter sets the modulation frequency of the Ring Modulator effect. Range is from 1 to 99.
<b>Threshold</b>	This parameter sets threshold level of the compressor. Range is 60 to 0.
<b>Ratio</b>	This parameter sets the compressor ratio. Range is from 1 to 19 and ∞.
<b>Attack</b>	This parameter controls the attack time of the compressor. Range is from 1 to 10.
<b>Gain</b>	This parameter allows you to set the overall gain of the selected effect. Range is from -19 to 20.
<b>Type</b>	This parameter allows you to select the different types of Vocoder effect setting in the S-100. Types include: 1-5.
<b>Sibilance</b>	This parameter allows you to set the amount of Essing that is passed through the Vocoder effect. Range is from 0 to 99.
<b>Level</b>	This parameter allows you to set the overall level of the selected effect. Range is from 0 to 100.

## *Section - 4 Appendix*

This section provides you with information to Factory Reset the S-100, a Specification page and a Program list

### *Resetting the S-100*

This procedure will allow you to perform a complete factory reset on the S-100.

**Warning-** All previous program information will be deleted when the reset is performed

To perform a factory reset on the S-100, simply press and hold the **<Program>** button while applying power to the unit and the display will briefly read: -- and then appear like this:



Now release the **<Program>** button and immediately press the **<Config>** button and the S-100 will proceed to reset. In the process of resetting, the S-100 will briefly display the current software version number and then return to program mode.

## Specifications

<b>Frequency Response:</b>	20-20kHz +/-0.5dB
<b>Signal-to-Noise Ratio:</b>	96dB (A-Weighted ref=Max signal 22kHz measurement bandwidth)
<b>THD:</b>	Less than 0.008%
<b>Memory Allocations:</b>	99 User - 99 Factory Programs
<b>Sampling Rate:</b>	46.875kHz
<b>A/D Converter:</b>	20 bit, 128 oversampled
<b>D/A Converter:</b>	20 bit, 128 oversampled
<b>External Signal Path Width:</b>	24 bits
<b>Internal Signal Path Width:</b>	24 bits
<b>Multiplier Size:</b>	24 bits x 24 bits
<b>Inputs:</b>	Stereo (2) 1/4" Unbalanced - Max In + 18 dBu
<b>Outputs:</b>	Stereo (2) 1/4" Impedance Balanced - Max + 18 dBu
<b>MIDI:</b>	MIDI In Program Changes
<b>Power Consumption:</b>	5 watts
<b>Power Requirements:</b>	Included external power supply (PS 750)
<b>Net Weight:</b>	4.2lbs (1.91kg)

## Program List

The following is a list of all the factory Programs in the S-100

### Showcase

- 1 Stereo Large Hall
- 2 Deep Phaser and Delay
- 3 Deep Chorus and Reverb Parallel
- 4 Gold Foil Plate
- 5 Octave Down Pitch & Parallel Detune
- 6 4 Voice Chorus
- 7 Stereo Karaoke Delay
- 8 Panning Detune
- 9 Deep Space

### Reverbs

- 10 Bright Mid-Size Hall
- 11 Stereo Dark Hall
- 12 Extra Thick Hall
- 13 Large Empty Arena
- 14 Sold Out Arena
- 15 Forever In Reverb
- 16 High Vaulted Cathedral
- 17 Vocal Cathedral
- 18 Small Bright Room
- 19 Split Vocal Room
- 20 Wood Recording Studio
- 21 Thick Studio with Slow Modulation
- 22 Sparse Vocal Chamber
- 23 Warm Chamber
- 24 Percussion Plate
- 25 Industrial Plate
- 26 100ms Gated Reverb
- 27 300ms Gated Reverb
- 28 600ms Gated Reverb
- 29 Stereo Reverse Reverb 400ms

### Delays

- 30 Stereo Doubling Delay
- 31 Stereo Slapback Delay
- 32 Stereo Slap Right/Left Delay
- 33 Stereo 300ms Echo
- 34 Stereo 400ms 30% Feedback
- 35 2 Second 2 Tap Delay
- 36 Stereo 500ms 25% Feedback Delay
- 37 Stereo 800ms 20% Feedback Delay
- 38 Ping-Pong 1500ms 20% Feedback Delay
- 39 Mono 2 Second Delay Loop

### Modulation

- 40 Medium Chorus
- 41 Deep Chorus
- 42 4 Voice Medium Chorus
- 43 Deep Depth Chorus
- 44 Shimmery Chorus
- 45 Flange Hi Sweep 40%
- 46 Flange Hi Sweep 70%
- 47 Slow Shallow Phaser
- 48 Medium Phaser
- 49 Deep Phaser

- 50 Deep Slow Tremolo
- 51 Fast Shallow Tremolo
- 52 Wide Mid-Speed Panner
- 53 Slow Wide Panner
- 54 Leslie Slow to Fast
- 55 5th Up Pitch Shift
- 56 4th Down Pitch Shift
- 57 Octave Down Pitch Shift
- 58 Octave Up Pitch Shift
- 59 Mild Detune
- 60 Heavy Detune
- 61 Vocoder 1
- 62 Vocoder 2
- 63 Compressor
- 64 Ring Modulator

### Multi-Effects

- 65 Medium Chorus and Arena Reverb
- 66 Shallow Chorus with Delay
- 67 Deep Chorus Hall
- 68 Bright Panning Chorus
- 69 Panning Shimmery Chorus
- 70 Warm Flanger and Hall Reverb
- 71 Deep Flange and 1 Second Echo
- 72 Shallow Phaser and Plate
- 73 Deep Phase and Pong Delay
- 74 Tremolo and Chamber
- 75 Tremolo and Echo
- 76 Panner and Cathedral
- 77 Panning Arena
- 78 Panning Delay
- 79 Pitch 5th Up and Plate Reverb
- 80 Pitch Octave Down and Ping Pong Delay
- 81 Detune and Room Reverb
- 82 Deep Detune and Echo
- 83 1/2 Sec Delay and Hall Reverb
- 84 Delay and Plate Reverb
- 85 Delayed Reverb
- 86 Compressed Hall Reverb
- 87 Compressed Delay
- 88 Compressed Chorus
- 89 Ping Pong Gated Reverb

### Split Effects

- 90 Chorus Left - Reverb Right Summed
- 91 Phaser Left - Pitch Right Split
- 92 Delay Left - Gated Reverb Right Summed
- 93 2 Tap Room Delay
- 94 Short Plate Left - Hall Right Summed
- 95 Panner Left - Compressor Right Summed
- 96 Reverse Reverb Left - Ring Modulator Right Split
- 97 Slap Delay Left - Room Reverb Right Split
- 98 Octave Up Left - Octave Down Right Summed
- 99 Fast Phase Left - Arena Reverb Right Split



# **Digitech STUDIO**

*8760 South Sandy Parkway  
Sandy, Utah, 84070*

*Telephone 801.566.8800  
FAX 801.566.7005*

*International Distribution:  
3 Overlook Drive, Unit 4  
Amherst, New Hampshire 03031 U.S.A.  
FAX 603.672.4246*

*Digitech Studio™, S-100 are registered trademarks  
of the Harman Music Group Incorporated*

*Copyright © 1997  
the Harman Music Group Incorporated*

*Printed In U.S.A. 4/98  
Manufactured in the U.S.A.*

*S-100 18-2208-B*

*Please Visit Digitech Studio on the World Wide Web at:*

*<http://digitech.com>*