Digitech

GSP 21 LEGEND

Owner's Manual

H A Harman International Company

18-1658

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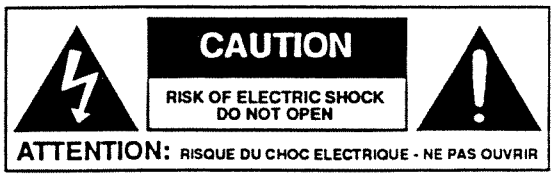


EXPLANATION OF GRAPHICAL SYMBOLS

IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

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 owners manual.

These symbols warn that there are no user serviceable parts inside the unit, and that there are hazardous voltages present within the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel.

INTRODUCTION

DigiTech's versatile GSP-21 LEGEND is the last word in guitar processors. It's the only one with a choice of 24 different effects, up to 10 at the same time. With 234 programs. Plus presets written exclusively for the Legend by 30 guitar superstars and legends. Using the full-function foot controller provided with the LEGEND, it is possible to switch programs, patches and effects while you play – without taking your hands off your instrument.

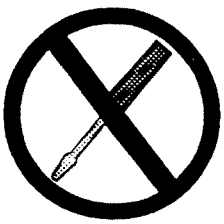
The LEGEND provides nine digitally-controlled analog effects:

* Compression
* Rock tube Distortion
* Metal tube Distortion
* Over-drive Distortion
* Heavy Sustain Distortion
* 7-band Graphic Equalizer
* Enhancer
* Noise gate
* Speaker Simulator

There are also fifteen digital effects and functions:

* Stereo Chorus
* Stereo Flanger
* Stereo Delay
* Ping-pong Delay
* Slapback Delay
* Multi-tap Delay
* Delay Modulation
* Large Room Reverb
* Small Room Reverb
* Gated Reverb
* Reverse Reverb
* Ultimate Reverb
* Comb Filter
* Digital Mixer
* Stereo Imaging

DigiTech's HISC 20-bit VLSI engine produces non-stop dynamic effects with maximum frequency response, creating the world's most advanced guitar signal processor — the GSP 21 LEGEND.



SAFETY PRECAUTIONS

Use only standard AC voltage. Unprotected dangerous voltages are present within the product enclosure. Opening the chassis for any reason will void the manufacturer's warranty.

QUICK-START

For best performance from the LEGEND, follow the instructions below. See "Making Connections" (page 7) and related sections for detailed instructions.

INSTALL Mount the LEGEND in a rack with the provided screws. Rubber feet have also been affixed to the unit for free-standing use.

APPLY POWER Route the power cord away from audio lines to prevent interference.

CONNECT CABLES Connect audio input and output cables to the rear jacks. Either balanced (tip-ring-sleeve) or unbalanced (tip-sleeve) cables may be used. The rear-panel headphone jack permits using the LEGEND without an amplifier. See "Making Connections" (pg 6).

CONNECT FOOT CONTROLLER Plug in the provided foot controller to the rear jack. See "Foot Controller" (page 30).

ADJUST INPUT Turn on the LEGEND. Set the instrument, amp, and/or mixer to loudest operation that will be used. Adjust the GSP-21 LEGEND input level until the red headroom LED comes on occasionally.

ADJUST OUTPUT Set the LEGEND output level to the desired volume.

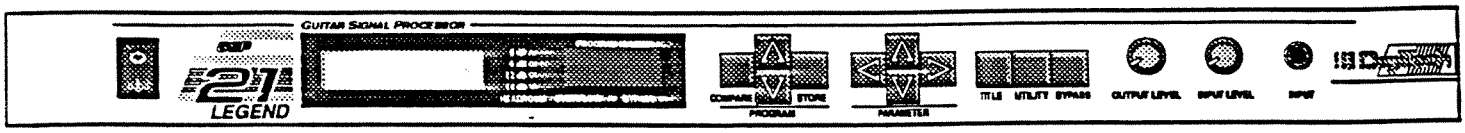
EFFECTS LOOPS Connect any external effects devices to the LEGEND effects send and return jacks. NOTE: external devices must be unity gain, such as the DigiTech IPS-33B Intelligent Harmony Machine. See "External Effects Loops" (Page 8, 32)

CONNECT MIDI CONTROLLER Plug in a MIDI controller, sequencer or synthesizer to the rear MIDI IN jack, if desired. See "Utility Menu" (page 21).

SELECT PROGRAM Start playing your guitar and choose any preset program or user-defined program by using the UP and DOWN PROGRAM buttons. Presets 1 - 73 have been programmed by a group of great rock guitar players. See the Factory Preset Program sheet on page 47 - 48 and check out some of their sounds.

Do not get the LEGEND wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Use of a surge protector is recommended to decrease chances of equipment damage from voltage surges or spikes. The LEGEND may also be damaged during electrical storms if connected to an AC outlet. Disconnect the equipment during storms to prevent damage.

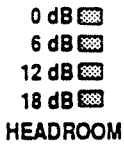
FRONT PANEL



POWER Turns the LEGEND on and off. When turned on, the unit returns to the same program as when it was shut off.

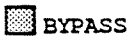
DISPLAY MODE OPTION Press the COMPARE button when turning on, and the LEGEND goes into display mode. It will stay in this mode until any button is pressed.

LCD 16-character, two-line liquid crystal display shows the current program title, configuration, or effect and utility parameters.

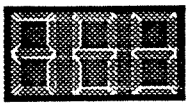


HEADROOM Four LEDs display the input signal level. The best signal level is when the green LEDs light and the red LED peaks occasionally. See "Making Connections" (page 7).

OVERFLOW Single LED indicates too much internal gain, overloading the HISC processor. Turn down the programmable mix and effects levels.



BYPASS LED Single LED shows effects are muted and a dry input signal is being sent directly to the output.



PROGRAM NUMBER LED Three-digit Light Emitting Diode displays the selected program number.

COMPARE Compares current program being edited to the original program.

PROGRAM Increments and decrements program numbers. Wraps around from 1 to 234.

STORE Saves new effect configurations to a selected program number, and is used to copy to another preset location. See "Store" (page 11).

PARAMETER LEFT and RIGHT buttons select the next effects parameter, pull up the next utility function, or move to next title letter.

UP and DOWN buttons change effect parameter values, utility parameters, or title letter. See "Programming" (page 9) and "Utility Menu" (page 19).

TITLE Allows the name of the current program to be edited. See "Title" (page 12).

UTILITY Displays the utility menu on the LCD. Includes MIDI channel select, continuous controller links, MIDI mapping, program transmitting, footswitch programming, and restoring factory presets. See "Utility Menu" (page 19).

BYPASS BUTTON Shuts off effects and sends a dry signal direct to the output.

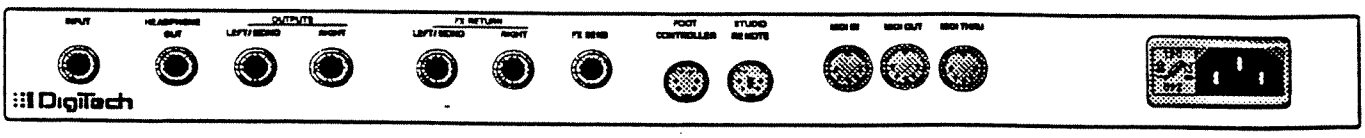
OUTPUT LEVEL Adjusts the output signal to the desired level. See "Making Connections" (page 7).

Individual effect output levels can also be programmed internally. See "Effects and Their Parameters" (page 14).

INPUT LEVEL Adjusts the strength of the received mono signal to an optimum level. See "Making Connections (page 7).

INPUT JACK Standard 1/4-inch T-R-S jack for guitar or line-level signals. Rear INPUT is bypassed when front INPUT is used. See "Making Connections" (page 7).

REAR PANEL



INPUT JACK — Single ¼- inch Tip-Ring-Sleeve (T-R-S) jack for balanced or unbalanced instrument or line signals. Mono input signal only.

HEADPHONE JACK — ¼ -inch T-R-S jack for stereo headphones ONLY. Permits using the LEGEND without an amplifier. **WARNING: Plugging a mono plug into the headphone jack will damage the LEGEND.**

EFFECTS SEND — ¼ -inch T-R-S jack to send signals from the LEGEND to external effects devices.

Stereo EFFECTS RETURN — Two ¼ -inch T-R-S jacks to return signals from external effects devices to the LEGEND.

OUTPUT JACKS — Two ¼ -inch T-R-S jacks for stereo output to amplifier or mixing console. Use the left (mono) jack for mono only, or a mix of both left and right for best mono sound.

REMOTE JACK — Five-pin DIN jack to connect DigiTech's optional studio remote controller.

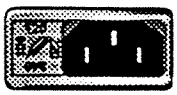
FOOTSWITCH JACK — Six-pin DIN jack to connect the provided DigiTech foot controller. Pedal functions can be programmed. See "Utility Menu" (page 19).

MIDI IN JACK — Five-pin DIN for standard MIDI cable. Receives MIDI control data. See "Utility Menu" (page 19).

MIDI OUT JACK — Five-pin DIN for standard MIDI cable. Sends MIDI control data. See "Utility Menu" (page 19).

MIDI THRU JACK — Five-pin DIN for standard MIDI cable. Passes MIDI control data between devices. See "Utility Menu" (page 19).

FUSE — Accessible from the rear panel. Use only the fuse value indicated on the rear panel.

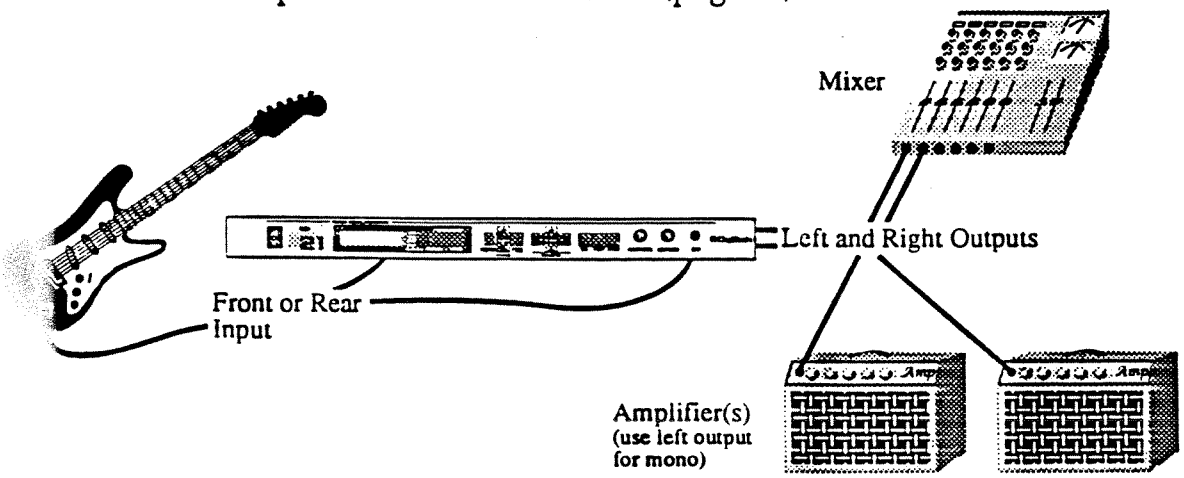


MAKING CONNECTIONS

The LEGEND creates the ultimate in stereo or mono sound effects from instruments or line signals.

DIRECT NECTIONS For direct connections, configure the instrument, LEGEND and amplifier as follows:

Mon Stereo Out Connect the instrument to the LEGEND front or rear input jack. Connect the left and right outputs to the amplifier or mixer inputs. To match the sound of any speaker or amplifier, use the speaker simulator function (page 20).

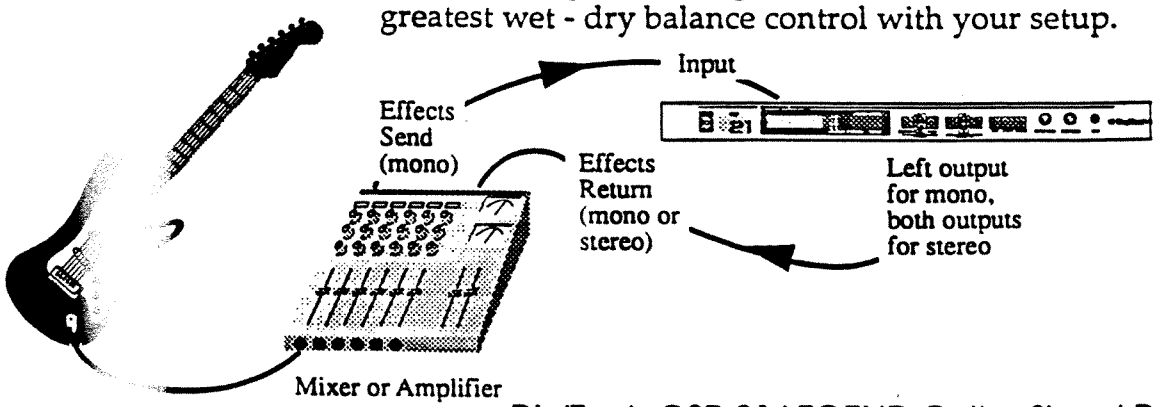


EXTERNAL CTS LOOPS The LEGEND can be used in a loop-through with amplifiers, mixers, or consoles. Use the following configurations:

Usir ono Send & Return Connect the instrument to the mixer or amp input. Connect the mixer effects send to the LEGEND input, then from the LEGEND left output to the mixer effects return.

Using A y Output & Inputs (to Stereo) Connect a mono mixer auxiliary output to the LEGEND input. Connect both LEGEND outputs to the mixer's input channels or auxiliary returns.

Numerous configurations can be made with multiple mixers and amps. Try experimenting with the connections to achieve the greatest wet - dry balance control with your setup.



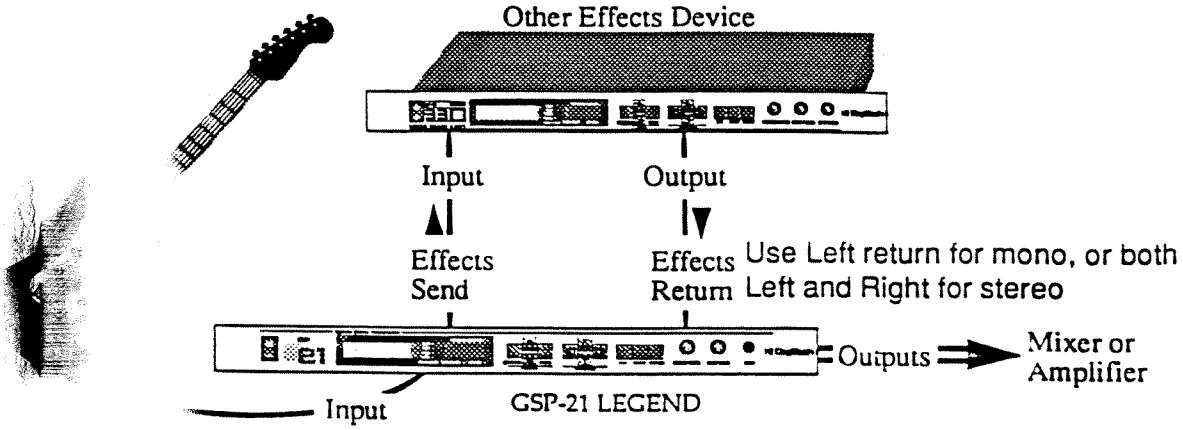
GSP

LEGEND EFFECTS LOOPS

With its own effects send and stereo return, the LEGEND can be set up to use other effects devices in a programmable effects loop .

Connect the instrument to the LEGEND input. Connect the LEGEND mono effects send to the external device, then back to the LEGEND mono or stereo effects return.

The effects send and return operate at line level only, so the external device must be set for unity gain at a line level output.



JST

D

JT

INPUT L

ut After connecting the LEGEND inputs and outputs, set the instrument, amp, and/or mixer to loudest operation that will be used. Adjust the LEGEND INPUT LEVEL so the red headroom LED only occasionally comes on. The red LED comes on just before the signal is clipped.

OUTPUT

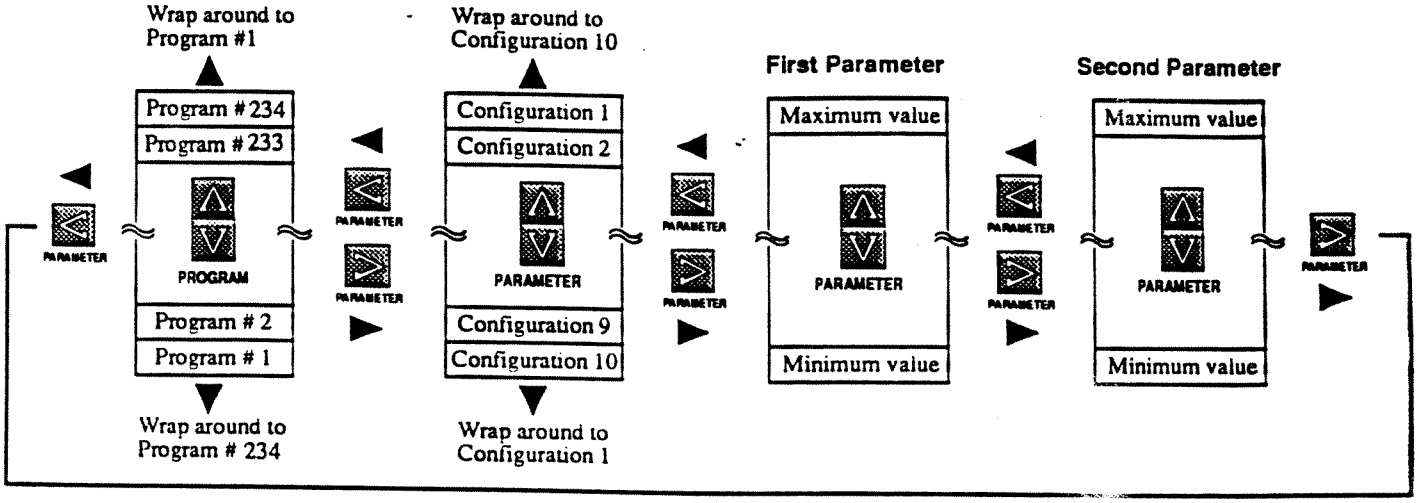
ut Turn up the OUTPUT LEVEL to the optimum level for the amplifier or mixer, being careful to avoid overload.

PROGRAMMING

SELECTING PROGRAMS

While reading this section, you may refer to this Programming Map.

Programming Map



Press the up or down program buttons on the front panel to change programs. Program numbers will appear on the red program LED, and program names and configurations will appear on the LCD.

The program numbers will wrap around from program 1 to program 234 when using the PROGRAM DOWN button, and from 234 to 1 when using the PROGRAM UP button.

The first 73 slots (programs 1 through 73) can be user-programmed to create custom sounds or variations on the factory preset programs. When shipped from the factory, these slots contain copies of the preset programs.

DigiTech has provided161 preset effects (programs 74 through 234) which represent a wide range of versatile configurations designed and named by a panel of rock stars, studio musicians and technicians.

CREATING PROGRAMS

To customize a program, start by selecting one of the first 73 slots. Modify the preset as desired, change the name, then store it.

Metal Marshmello
Cmp Dst Ch 4TD

Notice the LCD display – the effects types that are available in this preset are shown, and those in capital letters are currently on, those with lower case letters are currently off.

Select a Preset Program

Each program is unique with different effects and parameters. Choose any program and begin experimenting to create distinctive sounds.

Changing Parameters

Press the LEFT or RIGHT PARAMETER buttons to select an effect parameter to be changed. The display will read:

PARAMETER

Compressor (On)

(example)

Parenthesis appear around the original effect parameters so they can be reset if a modified effect doesn't sound right. Each effect can also be bypassed. If bypassed, the effect's options will not be displayed.

Push the PARAMETER UP and DOWN buttons and the value of the selected parameter changes. Set the effect parameter to the desired value.

While adjusting the effect parameter value, play the instrument to hear what happens as the value is changed. The COMPARE button can also be used to see how the new parameters sound as compared to the original un-edited program. See "Compare" (page 12).

Changing Configurations

A configuration consists of a pre-defined combination of effects. Changing the configuration can drastically change the sound.

Push the right button on the front panel and the display reads:

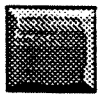
Cmp+ Dst+ EQ+ NG+ E+ L+ Ch+ 4TD+ Mx+ SS

(example)

The LEGEND is now in the editing mode, where new effects configurations can be selected and effect parameters changed. Use the up and down parameter buttons to choose a configuration.
See Appendix A: "Effect Configurations" (page 35).

Changing the Name

After creating a new effect configuration, give it a name. Press the TITLE button and a cursor appears under the first character in the program title. Move the cursor through the title using the LEFT and RIGHT PARAMETER buttons. Change characters with the PARAMETER UP and DOWN buttons. Press the TITLE button again when finished. See "Title" (page 12).



STORE

Store After editing the effect parameters and changing the title, press the STORE button to save the changes. The display will read:

```
Save Changes to
12
```

The current program number will be shown if a user slot (1-73) is being edited. The new program can be stored to a different number by pressing the PROGRAM UP or DOWN buttons.

If a preset slot (74 - 234) is being edited, the corresponding user slot number in the first bank (between 1 and 73) will be shown when the STORE button is pressed. This number can also be changed by pressing the PROGRAM UP or DOWN buttons.

Each user slot comes from the factory with a copy of the preset 73 slots higher. For example, user slot 12 is a copy of program 85.

To save to the displayed program number, press the STORE button again. The display will read:

```
. . . . Storing . . . .
```

Cancelling Store If the store button was accidentally pressed, do not press STORE again, but escape back to the editing mode by pressing the COMPARE button.

Aborting Changes If the program has been edited but not stored, the LEGEND will cancel the changes when the PROGRAM button is pushed. To prevent losing edited programs, the display will read:

```
To save changes
press (STORE)
```

At this point there are three options:

1. Save the changes by pressing the STORE button.
2. Abort the changes by pressing the UP or DOWN PROGRAM buttons.
3. Escape from the warning display by pressing the COMPARE button. The display returns to the editing mode.

When new programs are stored, make photocopies of the "User Programs" chart (Appendix B) and write your programs down on the copies. This will help keep track of all the programs and sounds that are stored on the LEGEND.


TITLE

Title Program titles can be changed by pressing the TITLE button. The display will read:

Edit Title
Euro-Rock

A cursor appears under the first character in the title. Move the cursor through the title using the LEFT and RIGHT PARAMETER buttons.

To change characters in the title name, press the UP or DOWN PARAMETER buttons. Up to 16 characters can be used in each name using the following letters and symbols:

space ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789 ! " # $ % & ' ( ) * + , - . / :
←, → ; < = > ? @ [ ] ^ _ ' { | }

After changing the title, press the TITLE button again. The LEGEND will return to the mode it was in before the title button was pressed. To save the title and the new program, press the STORE button.


COMPARE

Compare The COMPARE button is used while editing to contrast the new effect configuration against the original un-edited program.

While editing a program, push the COMPARE button. If nothing happens, no changes have been made to the program. If changes have been made, the display will read:

Comparing

Play the instrument to hear the sound of the original program. Press the COMPARE button again and the display returns to the edited version to hear its sound and make changes.

Using the COMPARE button, toggle back and forth between the original program and the modified version, making changes until the sound is just right.

Press Compare to Escape

The COMPARE button is also used as an escape button when the STORE button is accidentally pushed. Press COMPARE to escape back to editing mode.

Bypass

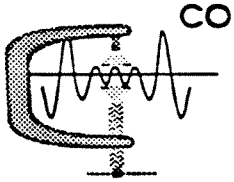
When the BYPASS button is pressed, all effects are shut off and a dry signal is relayed. This is great during performances, where effects can be turned on or off with the push of a button.

Press the BYPASS button again to toggle effects back on. See Foot Controller operation (page 30) for a description of the Footswitch Bypass action.

BYPASS

EFFECTS & THEIR PARAMETERS

The GSP-21 LEGEND is a highly-complex processor which converts analog signals (from your pickups) into digital code. Computer circuitry manipulates this digital code to create unlimited sound effects, then converts the output signal back to analog. Up to four digital effects can be used simultaneously.



COMPRESSION Compression is an effect which adjusts the source's dynamic range (the difference between the loudest and quietest sounds). By compressing the range, notes can be sustained longer and the sound will be tighter.

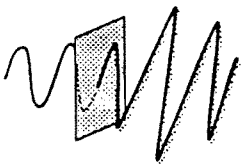
Compression Bypass — Enables and disables the compression

Compression Amount — Varies the amount of compression. A low setting gives a full, natural-sounding dynamic range. A high setting provides a tight heavy metal sound.

Compression Level — Varies the overall level from the compressor

DISTORTION EFFECTS

Rock Tube — Emulates the warm, rich sound created by tube amplifiers.



Metal Tube — Creates the heavy metal sound used by many popular groups.

Overdrive — Similar to tube distortion with an added over-driven, high-gain punch.

Heavy Sustain — The ultimate in crunchy sustain

DISTORTION PARAMETERS

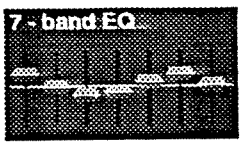
Distortion Bypass — Enables and disables the distortion.

Distortion Type — Selects between Rock Tube, Metal Tube, Overdrive and Heavy Sustain distortions.

Balls — Controls the amount of gain (overdrive) of the distortion.

EQUALIZATION Equalization is used to compensate for frequency deficiencies and to control an instrument's tonal qualities.

EQ Bypass — Enables and disables the equalizer.



The LEGEND provides a seven-band programmable equalizer. Each of the seven bands is adjustable in 1 dB steps from 12 dB of cut to 12 dB of boost.

MASTER VOLUME Controls the overall level of the LEGEND.

ENHANCER Adds more "edge" to the sound.

Enhancer amount Sets the amount of enhancing added to your signal.

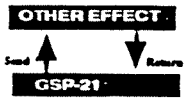
NOISE GATE Gates, or shuts off, the output when the input signal falls below a certain level. Eliminates noises when you're not playing.

NOISE GATE PARAMETERS

Gate Enable Turns the noise gate on or off.

Gate Threshold Sets the threshold (signal level) below which the noise gate "kicks in" and attenuates the signal. The lower the threshold, the longer a sustain will hold, but the more noise might get through while you're not playing. The Gate can also be shut off.

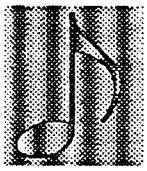
Gate Attenuation Controls how much the gate cuts the signal.



EFFECTS LOOP (see also pg 34) The LEGEND Effects loop allows you to add an external effect into the LEGEND effects chain. It operates in 4 different modes: Off, Inline, Summed, Inline + Summed. If nothing is plugged into the FX Send or Returns, the LEGEND ignores the FX loop.

MODULATION Pitch is the vibration frequency of a tone. For example, a tone can be high- or low-pitched. The LEGEND has nine programmable pitch parameters. Pitch can altered in two ways:

Chorusing Simulates a chorus of instruments playing at different tones. Created by splitting the signal, detuning and using delay on one, then joining it with the original.



Flanging The LEGEND creates flanging by splitting the signal, using feedback and a small delay on one portion, then re-joining it with the original.

MODULATION PARAMETERS

Speed Low Frequency Oscillator (LFO) sweeping speed of the delay tap across the set delay time. Adjusts the amount of pitch shifting in both chorus and flange effects.

Depth Amount of LFO delay time travelled by the delay tap. Adjusts the depth of pitch alteration.

Chorus Delay Time delay of the chorus effect.

Chorus Level Relative internal level of the chorus effect, INPUT and OUTPUT.

LFO Waveform Changes the delay time in a regular, repeating wave. Can be set to one of three shapes: Sawtooth, Sine Wave, or Logarithmic.

Flange Feedback — Amount of flange effect fed back into the original signal. More feedback will give a sharper, more metallic flanging sound.

Flange Feedback Phase — Feedback can be set to sum with positive or negative phase.

Flange DelayTime — Time delay of the flange effect.

Flange Level — Relative internal level of the flange effect.

DELAY — Delay is the time between the original signal and an echo. The LEGEND has 5 programmable delay parameters:

DELAY PARAMETERS
Delay Range — Amount of delay time between echoes. Shortest delays provide a double or quick slap effect. Longer delays create an echo effect. There are three ranges:

0 - 40 msec	1 ms steps
45 - 400 msec	5 ms steps
410 - 750 msec	10 ms steps

Delay Level — Relative internal strength of the delay effect.

Feedback — Feedback determines the number of times the echo repeats.

Repeat Hold — Allows a button on the Foot Controller to hold and repeat an echo from when the button is pressed until it is pressed again.

Multi-Tap Delay Time — Amount of time between multi-tap delay taps.

Multi-Tap Feedback Delay — Tap delay time that is fed back in the multiple-delay effects.

Doubling — 20 to 60 milliseconds of delay, with no modulation
Chorus — 20 to 60 milliseconds of delay with modulation
Slapback — 60 to 200 milliseconds of delay
Echo — 200 milliseconds and longer

Comb Filter and Flange — A comb filter is simply a delay time of 2 to 15 milliseconds. The reason that it's called a comb filter is that as you change the delay time, certain frequencies are notched out by phase cancellation, and a graph of the frequency response looks like the teeth of a comb. This causes a metallic, resonant type sound. A flanger is simply a sweeping comb filter.

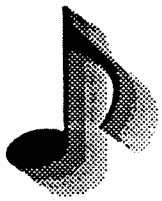
DELAY MODULATION — Modulates the pitch of the echoes after the original signal.

DELAY MOD PARAMETERS
Delay Enable — Turns the Delay Modulation on or off.

Delay Time — Amount of time between echoes, variable from 0 to 750 ms.

Delay Rolloff — Gradually rolls off upper frequencies in the later echoes.

Delay Diffusion	Determines how much the later echoes "smear" or diffuse. Similar to the diffusion of the later echoes in an old tape delay.
LFO Sweep Speed	Adjusts the speed of the modulation effect.
LFO Sweep Depth	Adjusts the depth of pitch alteration.
LFO Wave Form	Choose one of 3 shapes: Sawtooth, Sine Wave, or Logarithmic
Delay Feedback	Determines the number of times the delay repeats.



REVERB Reverberation is the repeated reflection of sound off surfaces in an enclosed space. The LEGEND has 15 programmable reverb parameters, which have been preset to create four sounds:

Reverb Effects Rev1 (Room)	Imitates the feel of being in a room, directly opposite the sound source. The reverb has a short decay time.
Rev2 (Hall)	Simulates the acoustic environment of a large room or hall. A large room has more diffusion and a longer decay time than smaller rooms because the sound travels farther.
Gated Reverb	Reverb effect that decays for a determined length of time, then cuts off abruptly; like an electronic gate that closes quickly when the signal falls below an adjustable level.
Reverse Reverb	Normal reverb is loud following the initial sound, then decays. With reverse reverb, the decay is heard after the initial sound, then reverb builds and cuts off.
Ultimate Reverb	Has 11 parameters that give you the ability to tailor any aspect of the reverberation or simulate any reverberant space.
REVERB PARAMETERS	(note: Not all Reverbs contain all parameters)
Reverb Decay Time	Amount of time for the reverb effect to decay 60 dB (RT60).
Reverb Pre-Delay Time	Time between the original sound and the first delayed sound.
Reverb Level	Relative internal level of the reverb effect.
Early Reflection Diffusion	Amount of diffusion of the early reverb, which dissipates and becomes subsequent reverb. This parameter affects the Subsequent Reverb Diffusion.
Early Reflection Delay	Amount of pre-delay for the early reverb. Generally set from 0-20 msec and always less than the Subsequent Reverb Delay for natural sound.

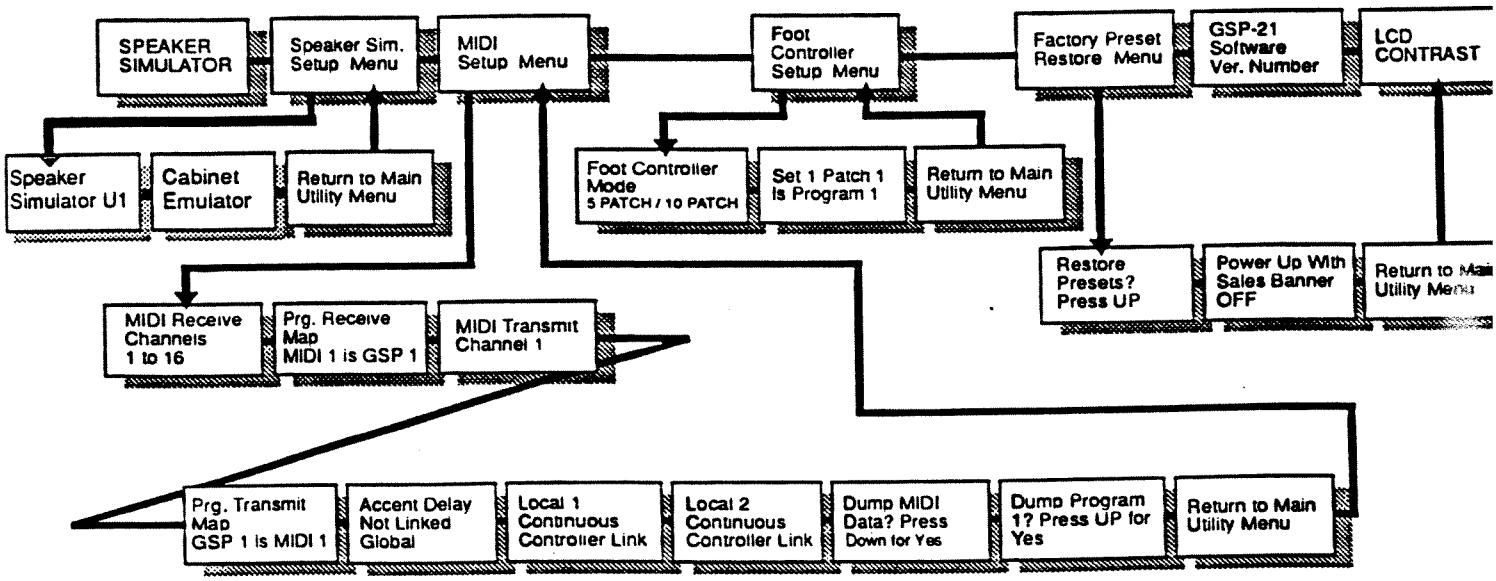
Early Reflection Level	Relative internal amplitude of the early reverb. Set two or three levels above the Subsequent Reverb Level to simulate being near the sound source. Set it lower to give the impression of being far from the sound source.
Subsequent Reverb Diffusion	Amount of diffusion in the subsequent reverb. Set high for longer decay times to smooth a grainy or fluttery sound. Set low for short decay times to avoid a metallic ringing.
Subsequent Reverb Delay	Amount of pre-delay for the subsequent reverb only. Generally a higher value than the Early Reflection Delay.
Subsequent Reverb Level	Relative internal level of the subsequent reverb. Use with the Early Reflection Level to give a near or far sound.
Envelopment	Width and depth of the stereo image. Set high for a wide, surrounding stereo image. Set low for a tight image that sounds like it's in front of the listener.
Damping	Amount of high frequency absorption in the subsequent reverb. As sound is diffused by reflection, the high frequencies are lost faster than the low ones. Set high to simulate soft absorptive surfaces, such as drapes and carpet. Set low to simulate hard reflective surfaces such as concrete or steel.
Accent Envelope	Places the end accent of the gated or reverse reverb effect before, at or after the end of the gated or reverse reverb decay.
Accent Amplitude	Strength of the delayed accent at the end of the gated or reverse reverb effect.
Normalized Reflectivity	Reflectivity of surfaces in the simulated listening environment. Set high for reflective surfaces; low for absorptive surfaces. Different from Damping because it controls reflection at all frequencies. Damping controls only high frequencies.
Normalized Room Volume	Volume of the simulated listening environment. Set low (0.1) for a bathroom sound; high (1.0) for a huge train station. The reverb decay time (RT60) can be calculated by multiplying with the Normalized Reflectivity. For example, if Normalized Volume is set to 0.7 and Normalized Reflectivity is 3.4, then: RT60 = 0.7 x 3.4 = 2.38 secs.

UTILITY MENU

Press the UTILITY button to access the Utility Menu:

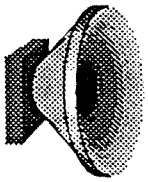
1. Speaker Simulator selection
2. Speaker Simulator Setup Menu
   A. Simulator User programmable settings U-1 — U-5
   B. Cabinet Emulator enable/disable
   C. Return to Utility Menu
3. MIDI Setup Menu
   A Select MIDI Receive channel
   B. Set Program Receive Map
   C. Select MIDI Transmit Channel
   D. Set MIDI Program Transmit Map
   E. Change Global MIDI continuous controller (CC) links
   F. Change first Local MIDI Continuous Controller link
   G. Change second Local MIDI CC link
   H. Dump MIDI Data (Send all LEGEND data to a MIDI computer, MIDI recorder or another LEGEND)
   I. Dump Current Program (Send a single program)
   J. Return to Utility Menu.
4. Foot Controller Setup Menu
   A. Foot Controller Mode (Five Patch or Ten Patch)
   B. Programming SETs and PATCHes
   C. Return to Utility Menu
5. Factory Preset Restore Menu
   A. Restore unit to factory preset condition
   B. Return to Utility Menu
6. Show software version number
7. Change the LCD contrast

MAIN UTILITY MENU BLOCK DIAGRAM



After pressing the utility button, move through the utility functions by pressing the right or left parameter buttons. Exit the utility mode by pressing the UTILITY button again.

SPEAKER SIMULATOR



An important part of a good guitar sound is the way that both the amplifier and speaker "color" the sound going through them. The Speaker Simulator electronically emulates different types of speaker /amplifier combinations. This allows you to play the LEGEND directly into the mixer board or tape input, and retain the desirable miked-amplifier sound for recording.

Use the PARAMETER UP and DOWN buttons to select among the 5 different Speaker Simulator presets and the 5 User Programmable Speaker Simulator presets. Press PARAMETER RIGHT to go to the next Utility item, or UTILITY to exit.

Speaker Simulator presets

The 5 Speaker Simulator presets are configured as follows:

Speaker simulator 1
Gtr, Pwr Amp + Cab

For use with guitar power amps and guitar speaker cabinets.

Speaker Simulator 2
Direct to Board

For going direct into a mixing board.

Speaker Simulator 3
Ref Pwr Amp + Cab

For use with a reference power amp (i.e., full bandwidth amp) and guitar speaker cabinets.

Speaker Simulator 4
Combo Amp w/10" Spkrs

For use with combo amps with 10" speakers (or smaller).

Speaker Simulator 5
Combo Amp w/12" Spkrs

For use with combo amps with 12" speakers (or larger).

Speaker Simulator User Definable Positions and Cabinet Emulator

The 5 Speaker Simulator User positions are user-programmable, 6-band graphic EQ formats with 12dB cut/boost per band. These bands are: 100 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, and 6.3 kHz. The new Speaker Simulator parameter, "Cabinet Emulator", is unique to the GSP 21 Legend. It accurately emulates the frequency response of a guitar speaker cabinet and is particularly useful when sending the output signal of the GSP 21 Legend into a mixing board. It can be used alone or in conjunction with the Speaker Simulator. When the Cabinet Emulator is off, the LCD displays "cab em" in lower case letters. When the Cabinet Emulator is on, the LCD displays "CAB EM" in upper case letters.

example for all 5 user positions with Cabinet Emulator off

```
Speakr Sim
U1  cab em  - - - - - -
```

with Cabinet Emulator on

```
Speakr Sim
U5  CAB EM  - - - - - -
```

Speaker Simulator and Cabinet Emulator Setup Menu

This utility allows you to program your own Speaker Simulator response curves, and store them in User Presets U-1 through U-5. To enter this menu, press PARAMETER DOWN. The cursor will start under the User preset number. Press PARAMETER UP or DOWN to go to the desired preset number. Press PARAMETER RIGHT, and the Cabinet Emulator parameter will be shown. Select on or off by pressing parameter up or down. Press parameter right and the cursor will be under the first simulator band. Pressing PARAMETER UP or DOWN will increase or decrease the band response, shaping the low response of the simulated speaker. Press PARAMETER RIGHT to go to each of the other Simulator Bands, which each adjust higher speaker response bands. Listen to the changes in the sound. These changes will affect all programs. Press PARAMETER RIGHT after the last Band, and the display will read:

Return to Main Utility Menu ⇑

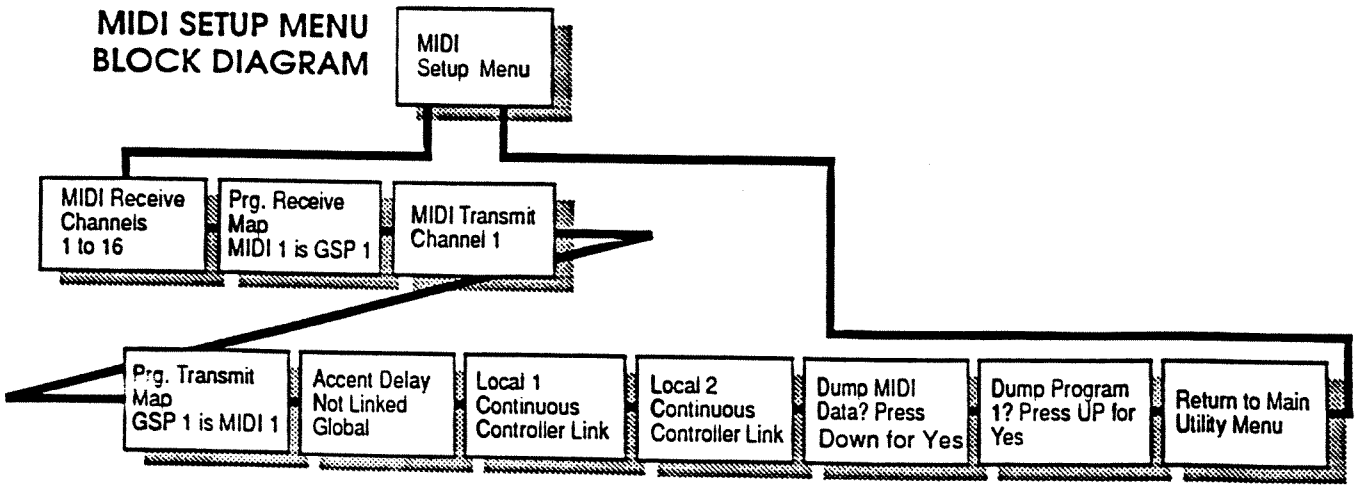
Press PARAMETER UP to return to the Utility Menu, or PARAMETER RIGHT to continue editing User Presets. The changes to the Speaker Simulator User Presets are saved automatically.

MIDI

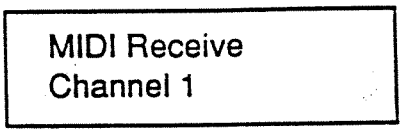
MIDI is used by music equipment manufacturers to allow different components to communicate with each other. For example, a synthesizer, MIDI controller or MIDI computer could be used to change the volume or program number of all components on the same MIDI channel, including the LEGEND.

There are 128 MIDI functions, called continuous controllers, which can be used to externally control most functions of the LEGEND. See Appendix D, "Standard MIDI Continuous Controllers"

MIDI SETUP MENU BLOCK DIAGRAM



This sub-menu contains all of the functions for setting external communications for the LEGEND; Continuous control pedals, MIDI in and out, and Program parameter exporting. Press PARAMETER DOWN to enter the first sub-menu item:



(example)

Select MIDI Receive Channel

The LEGEND can receive data from 16 MIDI channels coming through the MIDI input jack from devices which send MIDI data.

Press the PARAMETER UP or DOWN button to select channel 1 through 16, or channels 1 to 16 simultaneously (omni), or "Disabled". MIDI data is received on the indicated channels at all times unless "Disabled" is selected.

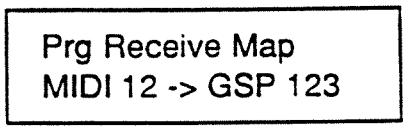
Press the RIGHT PARAMETER button to go to the next utility function, or LEFT PARAMETER button to go to the previous utility function.

MIDI Program Receive Map

The LEGEND can respond to Program Change instructions from keyboards, sequencers, or other MIDI controller. Programs on the LEGEND are changed at the same time program changes are made on the MIDI controller.

Use this utility to select which LEGEND program is called up when the MIDI program number is received.

For example, the keyboard may use program 12 for a trumpet sound, but the effects that go with this sound are on program 123 of the LEGEND. Set the MIDI link table to read:



Set this way, whenever the LEGEND receives a MIDI Program 12 on the selected MIDI receive channel, the LEGEND will change to program number 123.

When the cursor is under the number immediately following "MIDI" on the bottom line, the PARAMETER UP and DOWN buttons change the MIDI program numbers and look at the LEGEND program number that is linked to each one.

From the factory, all linkages are set so MIDI programs 1 through 128 are linked to LEGEND programs 1 through 128.

To change a linkage, push the PARAMETER RIGHT button. The cursor moves to the LEGEND program number on the bottom line. Change the program number using the PARAMETER UP and DOWN buttons.

After creating the desired linkages, press the RIGHT PARAMETER button to go to the next utility function, or UTILITY to exit.

Select MIDI Transmit Channel

The LEGEND can transmit MIDI data on one of the 16 MIDI channels through its MIDI Out port. Upon selecting this utility, the display will show "MIDI Transmit Channel 1".
Press the PARAMETER UP or DOWN button to select channels 1 through 16, or "Disabled". MIDI data will be transmitted on the selected channel whenever a program change is made from either the LEGEND Foot Controller or the optional Studio Remote controller, unless "Disabled" is selected.
Press the PARAMETER RIGHT or LEFT button to go to the next or previous Utility function, or press UTILITY to exit the Utility mode.

MIDI Program Transmit Map

Use this utility to select which MIDI Program is sent when a LEGEND program is selected from MIDI, the LEGEND Foot Controller, or the optional Studio Remote Controller. Data will be sent on the selected MIDI Transmit channel
For example if the link is set as follows:

Prg Transmit Map GSP 114 -> MIDI 28

(example)

then whenever the LEGEND program 114 is selected with either of the available remote controllers, a MIDI Program Change 28 will be sent on the selected MIDI Transmit channel.

When this utility is selected, the cursor is under the number immediately following "GSP" on the bottom line of the display. Press PARAMETER UP or DOWN to select the program number on the LEGEND which you want to link to a MIDI Program number for transmitting. Then press PARAMETER RIGHT to move the cursor to the number next to "MIDI" on the display, and use PARAMETER UP or DOWN to select the MIDI Program number that will be sent when the LEGEND program is selected.

Press the PARAMETER RIGHT or LEFT button to go to the next or previous Utility function, or press UTILITY to exit the Utility mode.

Change Global MIDI CC (Continuous Controller) Links

This function links any one LEGEND effect parameter to a MIDI continuous controller (CC). For example, if the volume (normally CC 7) on the MIDI controller is increased, the LEGEND can be programmed to automatically increase the reverb level. Here, "Global" means that the link is valid in all programs.

When this utility is selected, the display reads:

```
Accent Delay
Not Linked Global
```

This shows that the accent delay is not linked to any CC. With the cursor on the top line, under the A, press the UP or DOWN PARAMETER button to show other effect parameters and their links. The parameters are listed in alphabetic order. The LEGEND comes from the factory with the following CC links made for effects On or Off:

71 – Compression
72 – Distortion
73 – EQ
74 – Noise Gate
75 – Digital Reverb
76 – Digital Delay
78 – Chorus and Flange
79 – FX Loop

To link effect parameters to CC's, decide which effect should be linked to which CC. A list of standard MIDI CCs is in Appendix E.

Press the UP or DOWN PARAMETER button to select the desired effect parameter. Press the RIGHT button and the cursor moves to the bottom line, under "Not Linked". Press the UP or DOWN PARAMETER button to select a CC.

There are 128 CCs, plus channel pressure (ChP). Channel pressure is like a trumpet player or drummer playing harder or softer.

After creating the desired linkages, press the RIGHT PARAMETER button to go to the next utility function, or UTILITY to exit.

Change First and Second Local MIDI CC Links

Two local CC links (First and Second) are possible **per program.** These are links which are only valid in a specific program.

Linking continuous controllers to certain parameters gives you the ability to control the sound without having to change programs. As an example, imagine that you are setting up for a live performance, and would like to control the overall volume on all programs, but also the distortion and chorus level on one certain program.
To do this, you would enter the Utility menu and link the Global CC to the Master Level. Exit the Utility menu, and go to the program you wish to link the distortion and the chorus level to. Enter the Utility menu again and link the Balls parameter to one local controller (Local 1 CC) and the Chorus Level to the other (Local 2 CC). Now, for all songs and all presets, you can control your overall volume — and for one particular song, you can use this preset and control the amount of distortion and level of chorus.

Setup of these Local links is similar to the Global Links described in the previous section. The following differences should be noted:

1. The linkable parameters are listed in the order in which they appear in the program selected. Depending on which program you were in when you entered the Utility mode, the parameters will be different for the local link.

2. After you set up the first local link, pressing PARAMETER RIGHT will move you to the second link setup menu.

3. Remember, these links are valid only for the program number shown at the bottom right of the display. For links valid for **all** programs, set up the Global CC Link as described in the previous section.

Press the PARAMETER RIGHT button at the end of the Second Local CC Link to go to the next or previous Utility function, or press UTILITY to exit the Utility mode.

Dump MIDI Data (All Programs)

This utility sends all the LEGEND programs to a MIDI computer, a MIDI recorder or to another LEGEND.

When selected, the display reads:

```
Dump MIDI Data?
Press ⇓  for Yes
```

Make sure the receiving device is properly connected to the LEGEND MIDI Out jack and both devices are using the same MIDI channel, then press the PARAMETER DOWN button. The display will show the message "Transmitting".

To skip this utility, press the RIGHT PARAMETER button.

Dump a Single Program

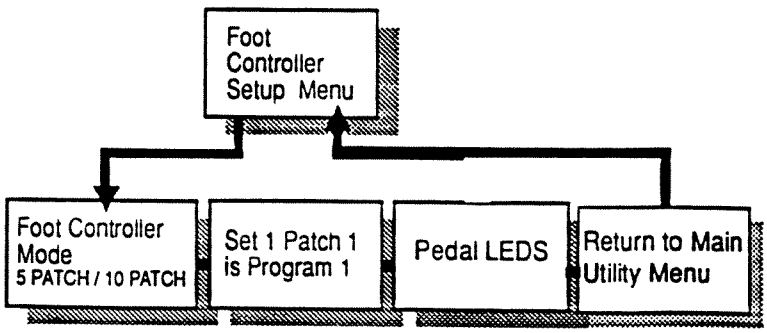
This utility sends the current LEGEND program to a MIDI computer, a MIDI recorder or to another LEGEND. This is a great way to copy a user program off someone else's LEGEND.

When selected, the display will ask if it should dump MIDI data. Make sure the receiving device is properly connected to the LEGEND MIDI Out jack and both devices are using the same MIDI channel, then press the PARAMETER UP button. The display will show the message "Transmitting".

To skip or exit this utility, press the RIGHT PARAMETER button, then UP to return to the Utility Menu.

Foot Controller Menu

The LEGEND can be used alone or with the foot controller (included).



Setting FC Mode (Five Patch or Ten Patch)

Press PARAMETER DOWN at the Foot Controller Setup Menu to reach this utility, which sets the Foot Controller Modes between the Five Patch mode and the Ten Patch mode. When in Ten Patch Mode, the Effects Bypass Switches (6 through 0) will be used for patch selection, and not for effects bypass. Press PARAMETER UP or DOWN to change between the two modes, and press PARAMETER RIGHT.

Programming Sets and Patches

To set up the foot controller Sets and Patches, enter this utility and the display will show:

```
Set 1  Patch 1 is
Program 1
```

(example)

This means that when the Patch 1 numbered switch is pushed on the Foot Controller, if Set 1 is selected, the LEGEND will change to Program 1.

With the cursor under the "1" following "Set", press PARAMETER UP or DOWN to select one of the 10 Sets. Notice as you cycle through the Set numbers, the programs assigned to Patch 1 in that Set are shown on the bottom line of the display.

Once the Set is selected, press PARAMETER UP or DOWN to select one of the five or ten Patches. As the Patches are cycled through, notice that the Program number assigned to that Patch in the current Set is shown.

Once the Patch is selected, press PARAMETER RIGHT to move the cursor to the Program number. Now use PARAMETER UP or DOWN to choose a LEGEND Program number for the Patch. Since there are ten Sets of five to ten Patches each, up to one hundred Patches are available for one-button remote selection.

Instead of being assigned to a Program number, any one of the numbered switches can be programmed to activate the Compressor, Distortion, EQ, Noise Gate, Effects Loop, Modulation, Delay, Reverb, or the Repeat Hold (infinite echo) function. Choose these Patch settings just like you would choose a Program number, but use the PARAMETER UP button to scroll past Program number 234.

After setting the Foot Controller configuration, press the RIGHT and then UP PARAMETER buttons to go to the next Utility Menu function or UTILITY to exit.

Repeat Hold setup

The Repeat Hold function will hold and repeat a delay (echo) from when the assigned Foot Controller switch is pressed until it is pressed again. To assign a switch on the Foot Controller the Repeat Hold function for a particular Set and Patch #:

Press the UTILITY Button
Scroll across until you reach "Footcontroller Setup Menu", then press the PARAMETER DOWN button.
Move the cursor across until it is under "Program #".
Press the UP or DOWN PARAMETER button until "Program #" changes to "Repeat Hold".

The displayed Set # and Patch # now has the Repeat Hold function assigned to it. Remember that the Delay effect must be on in order to use the Repeat Hold.

SETS AND PATCHES FACTORY SETTINGS TABLE

5 Patch Mode

Switch	1	2	3	4	5
Set 1	1	2	3	4	5
Set 2	6	7	8	9	10
Set 3	11	12	13	14	15
Set 4	16	17	18	19	20
Set 5	21	22	23	24	25
Set 6	26	27	28	29	30
Set 7	31	32	33	34	35
Set 8	36	37	38	39	HLD
Set 9	40	41	42	43	44
Set 10	45	46	47	48	49

Program Numbers

10 Patch Mode

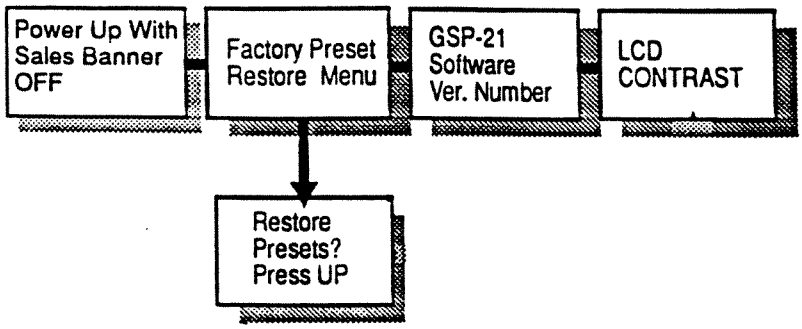
Switch	1	2	3	4	5	6	7	8	9	10
Set 1	1	2	3	4	5	51	52	53	54	55
Set 2	6	7	8	9	10	56	57	58	59	60
Set 3	11	12	13	14	15	61	62	63	64	65
Set 4	16	17	18	19	20	66	67	68	69	70
Set 5	21	22	23	24	25	71	72	73	74	75
Set 6	26	27	28	29	30	76	77	78	79	80
Set 7	31	32	33	34	35	81	82	83	84	85
Set 8	36	37	38	39	HLD	86	87	88	89	90
Set 9	40	41	42	43	44	91	92	93	94	95
Set 10	45	46	47	48	49	96	97	98	99	100

Program Numbers

HLD = Repeat Hold (Must have Delay ON)
FXL = FX Loop Bypass (When FX Loop is used)

Factory Preset Restore Menu

This utility restores all factory MIDI linkages, deletes all user programs and clears out all footswitch patches.



When selected, the display reads:

Restore Presets? Press ⇧ for Yes

If the PARAMETER UP button is pressed, the display gives the following warning:

OK to destroy all data?

Press PARAMETER UP to confirm, or press any other front pan button to cancel the restore command.

SOFTWARE VERSION

This function displays the software version installed on the C 21 LEGEND. The display will read:

DigiTech GSP-21 LEGEND Version 1.0

This is mostly for servicing information. DigiTech reserves tl right to upgrade software at any time without incurring any obligation to install the same upgrades on products previous manufactured. See "Warranty".

Change LCD Contrast

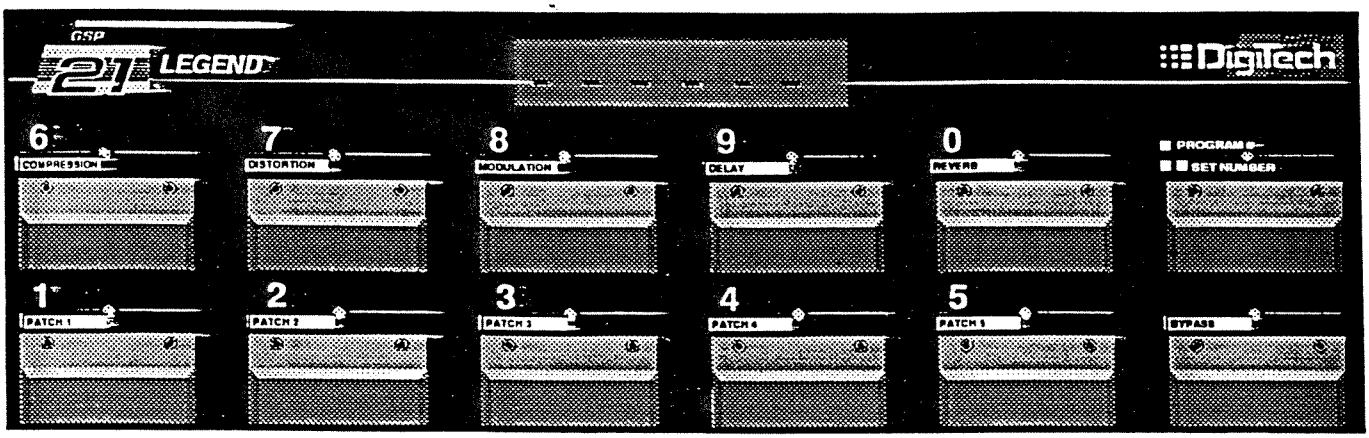
This utility changes the contrast on the liquid crystal display When selected, the display reads:

LCD Contrast 1

(example)

Press the PARAMETER UP or DOWN buttons to change the contrast from 1 to 10. When finished, press the RIGHT PARAMETER button to go to the next utility function.

THE FOOT CONTROLLER



Display The 20 character vacuum fluorescent display is divided into two areas: the first three characters display the program number of the current patch, and the right-most sixteen characters display the title of the patch. The title mirrors the title that is stored in the main unit. In some modes, the display will issue prompts to the user rather than the program title.
(Due to incompatibilities of the display types, certain characters look different on the Foot Controller display than on the front panel of the LEGEND).

Bypass The right-most switch in the lower row bypasses the entire unit, the same way as the front panel BYPASS switch. The BYPASS LED will light while the unit is bypassed.

OPERATING MODES

The LEGEND Foot Controller operates in two modes, Five Patch and Ten Patch modes. A Patch is the relationship between a Foot Controller button and a LEGEND Preset (page 27). The function of most of the pedal switches depends on the current mode of operation. Choosing the mode that you want to use is done through the Utility Menu (page 19).

Five Patch Mode Numbered Switches 1 — 5 (Patch 1 — Patch 5) These switches access any of five pre-programmed Patches from the current SET. The LED above the selected switch will light to indicate the current Patch. If a PATCH switch is pressed when the corresponding Patch is already selected, the last Patch used will become the current Patch. In addition to choosing specific Program numbers, PATCH switches may be programmed to perform the repeat hold and effects loop bypass functions.

There are 10 SETS of Patches available. To change to a different SET number, press the PROGRAM #/ SET NUMBER switch **twice**, then select a SET number with one of the numbered switches 1 to 0 (zero is equivalent to #10)

Lower Row Switches (Individual Effects Bypass)

When in Five Patch mode, the upper five numbered switches enable and disable the indicated effect if that effect is available in the current Patch. The LED above the EFFECT switch will ligh if the effect is active. If an effect is selected which is not available in the current Patch, the LED will flash to indicate that the effect is not available.

Ten Patch mode Numbered Switches 1 - 0

In this mode, each of the ten numbered switches becomes a PATCH (the switch numbered 0 corresponds to the tenth Patch) The rest of the functioning is the same as described in the Patcl 1 - Patch 5 section, except that the Effects Bypass function is no available on the upper switches.

Program Number Random Access Numbered Switches 1 - 0

To randomly access any program in the LEGEND, press the PROGRAM # / SET NUMBER switch once. The display will show:

Program number?

Enter the number of the program you wish to select.

For example, to choose program 36:

- Press PROGRAM #/ SET NUMBER once
- Display reads "Program number?"
- Press numbered switches, in order, 0–3–6

The LEGEND will go to program 36, then automatically return the current Patch mode.

Examples: For program 128, press 1–2–8. For program 45, pre: 0–4–5 or 4–5. For programs starting with 0, 1or 2, such as 12 o: 23, press 0–1–2 or 1–2 and wait two seconds, or 1–2–PROGRAM #/SET #.

Programming

All programming for the LEGEND Foot Controller is done through the LEGEND front panel programming buttons in the Utility mode. The Foot Controller menu in the Utility Menu allows the user to assign any program, the repeat hold functic or effects loop bypass to any of the five or ten Patches in each the ten Sets, giving a total of fifty or one hundred patches. Se the Utility Menu section of the manual (page 19) for details o programming in the Utility mode.

Note:

If you choose a SET with ten Patches, and then change to Five Patch Mode, Patches 6 through 0 (10) will still be there, but y won't be able to access them via the numbered switches until you change back to Ten Patch Mode.

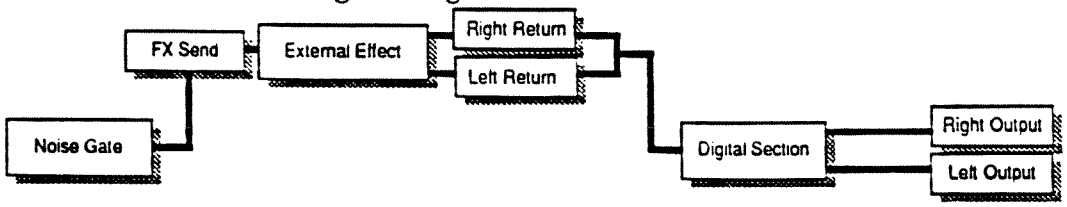
THE EFFECTS LOOP

The effects loop is located after the analog effects, and before the digital effects, that is, between the noise gate and the modulation effects. If nothing is plugged into the FX loop, the FX loop display will read:

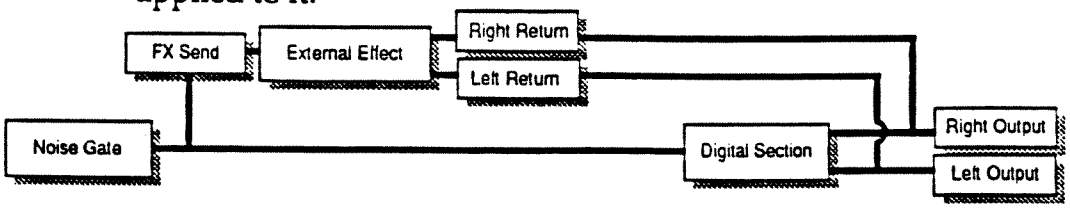
Effects Loop Not Used

If the an external effect is plugged into the Send and one or both of the Returns, then there are four options; OFF, INLINE, STEREO SUMMED, and INLINE + SUMMED.

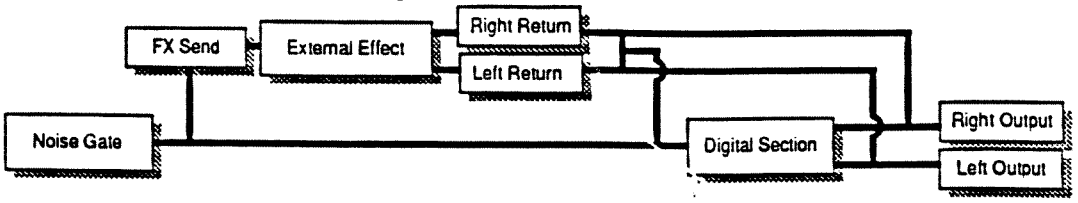
Inline When this option is chosen, the whole signal comes from the Noise Gate, flows through the external effect(s), and is returned to the digital section of the LEGEND. Note that if both the Right and Left Returns are used, the signal will be summed to mono before entering the digital effects section of the LEGEND.



Stereo Summed In this option, the signal is sent to the external effect(s), and both the Right and Left Returns are sent directly to the Right and Left Outputs, bypassing the digital effects section. This means that whatever is processed through the external effect(s) will not have the digital effects like chorus, flanging, reverb and delay applied to it.

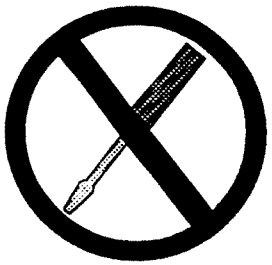


Inline + Summed If this option is chosen, the signal goes out the Send to the external effect(s) and returns both before the digital section **and** goes to the Right and Left Output. This means that your external effects are mixed to mono and processed through the digital effects of the LEGEND and are also sent with their full stereo quality to the Outputs.



MAINTENANCE AND SERVICE

Keep the GSP-21 LEGEND clean by occasionally dusting the cover and wiping the front panel with a dry cloth. Periodically check the wires and connectors on the back of the unit to make sure they are not crimped or frayed.



There are no user-serviceable parts inside the LEGEND. Opening the chassis for any reason will void the warranty.

The LEGEND is equipped with a battery which keeps all user-defined programs in memory when the unit is unplugged and transported. This battery should last about six years. If the unit is turned on and the user programs are gone, take it to the dealer for battery replacement.

All service and repair must be performed by the factory for the warranty to remain in effect. Should a problem arise with the LEGEND, contact a DigiTech dealer for repair procedures.

Call or write DigiTech at:
5639 South Riley Lane, Salt Lake City, Utah 84107
(801) 268-8400 FAX (801) 262-4966
for the name of your nearest dealer.

ACRONYMS AND ABBREVIATIONS

A-D	Analog-to-Digital
CC	Continuous Controller
ChP	Channel Pressure
GSP	Guitar Signal Processor
EQ	Equalization
FCC	Federal Communications Commission
HISC	Happenin' Instruction Set Computer
LCD	Liquid Crystal Display
LED	Light-Emitting Diode
LFO	Low-Frequency Oscillator
MIDI	Musical Instrument Digital Interface
msec	milliseconds
rms	root mean square
RT60	Reverb Time 60 dB attenuation
SNR	Signal-to-Noise Ratio
THD	Total Harmonic Distortion
T-R-S	Tip-Ring-Sleeve
VLSI	Very-Large-Scale Integrated chip

FCC COMPLIANCE

This equipment has been tested and found to comply with the limits of a Class B computing device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limits applicables aux appareils numeriques de Classe B prescrites dans le réglement sur le brouillage radioélectrique édicté par le Ministére des Communications du Canada.

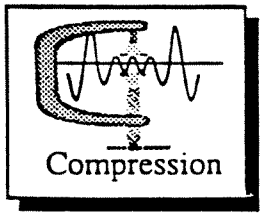
SPECIFICATIONS

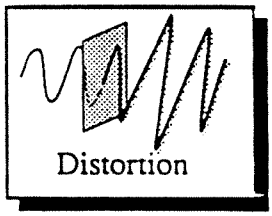
Maximum Input:	+18 dBv (ref 0.775vrms)
Maximum Output:	+18 dBv (ref 0.775vrms)
Input Control:	+12 dB from center , +4 to -20 dBv nominal level
Output Control:	+12 dB from center , +4 to -20 dBv nominal level
Input Impedance:	20k ohm mono
Output Impedance:	51 ohm
THD:	Less than 0.08% at 1 kHz
Resolution:	16-bit linear PCM conversion
SNR:	88 dB nominal
Dry Freq. Resp:	20 Hz to 20 kHz +0.5 dB
Wet Freq. Resp:	20 Hz to 20 kHz +0, -3 dB
A-D Converter:	16-bit
Dimensions:	1.75" H x 19" W x 8.5" D (44mm x 483mm x 216mm)
Weight:	5.5 lbs (2.5 kg)

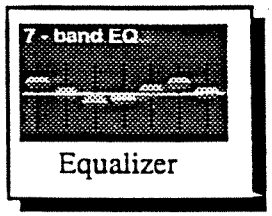
APPENDIX A EFFECT CONFIGURATIONS

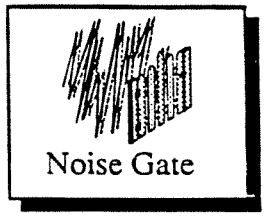
The GSP-21 LEGEND has eleven programmable effects configurations, using different combinations of 24 unique effects. The effects configurations are graphically depicted in the illustrations above each. By altering the parameters of the configurations, 73 preset programs have been created (see Appendix B). The parameters can also be modified to create 73 additional user programs, which can be logged in Appendix C.

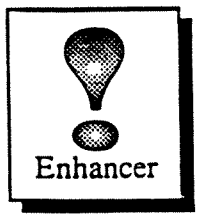
Cmp + Ds + Eq + NG + E + L + SS

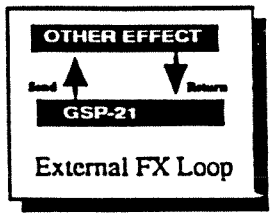


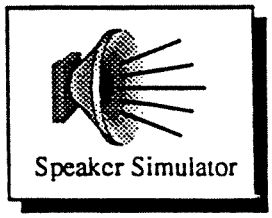






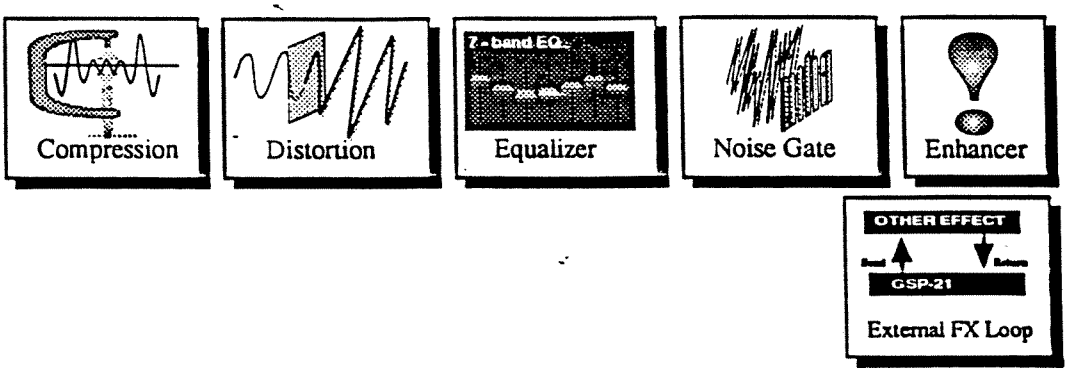






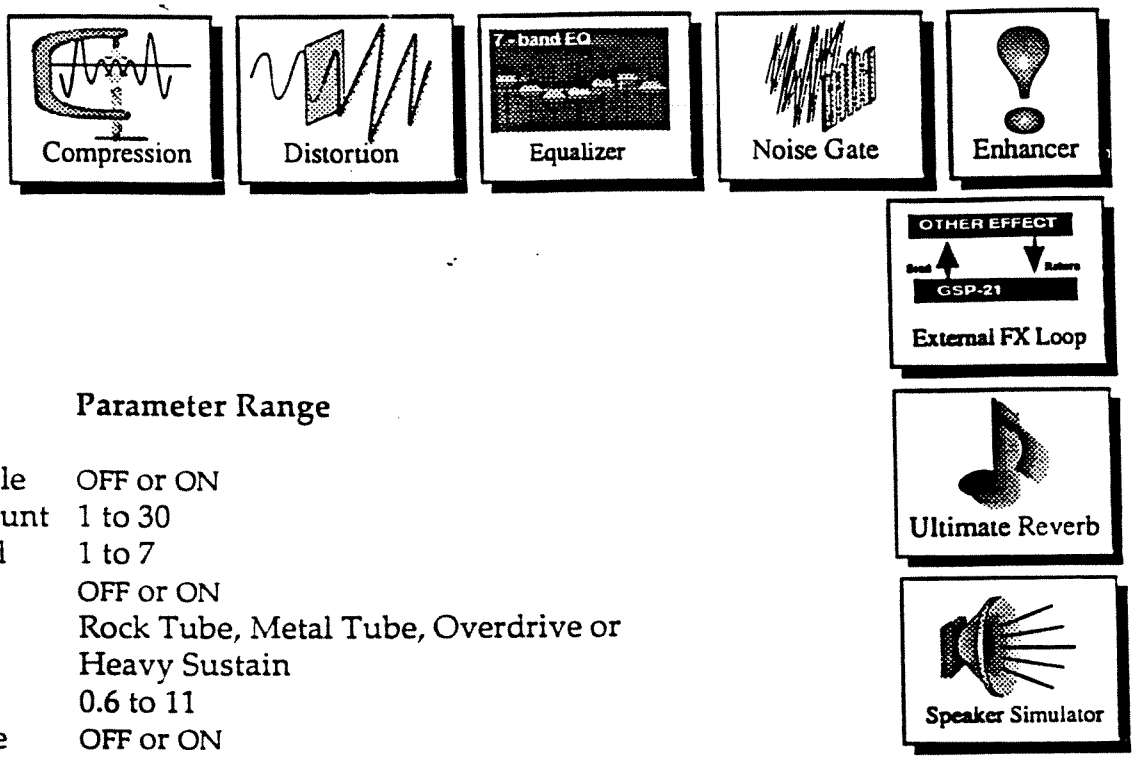
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED

Cmp + Ds + Eq + NG + E + L + ModDly + Mx + SS



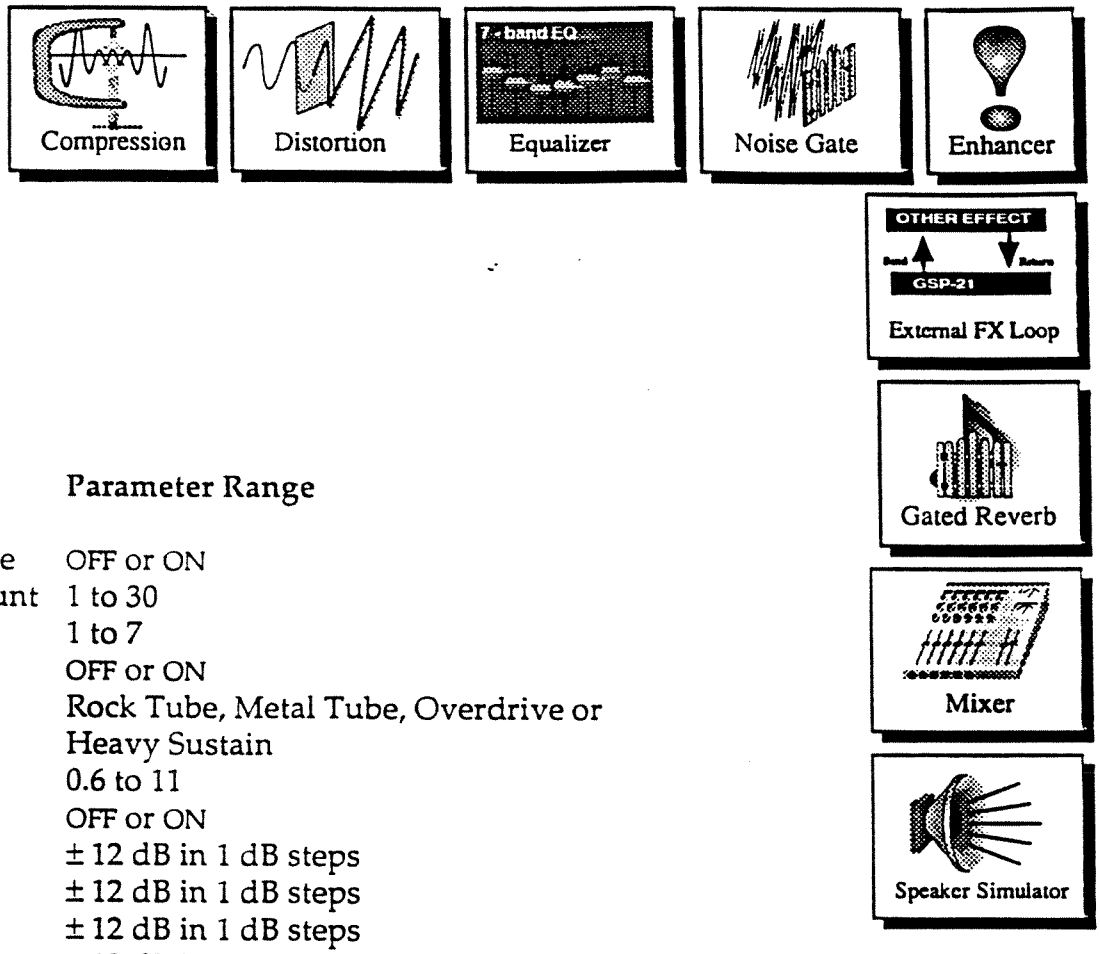
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Delay Enable	OFF or ON
Delay Time	0 to 750 ms
Delay Rolloff	0 to 5
Delay Diffusion	OFF, 1 to 10
LFO Sweep Speed	0.0 to 5.00 Hz
LFO Sweep Depth	0 to 6.35 ms
LFO Wave Form	Saw Tooth, Sine Wave, Logarithmic
Delay Feedback	OFF, 10 to 99%
Mix: Dry R Level	0 to 10
Mix: Dry L Level	0 to 10
Mix: Delay R Level	0 to 10
Mix: Delay L Level	0 to 10

Cmp + Dst + Eq + NG + E + L + UltRv + SS



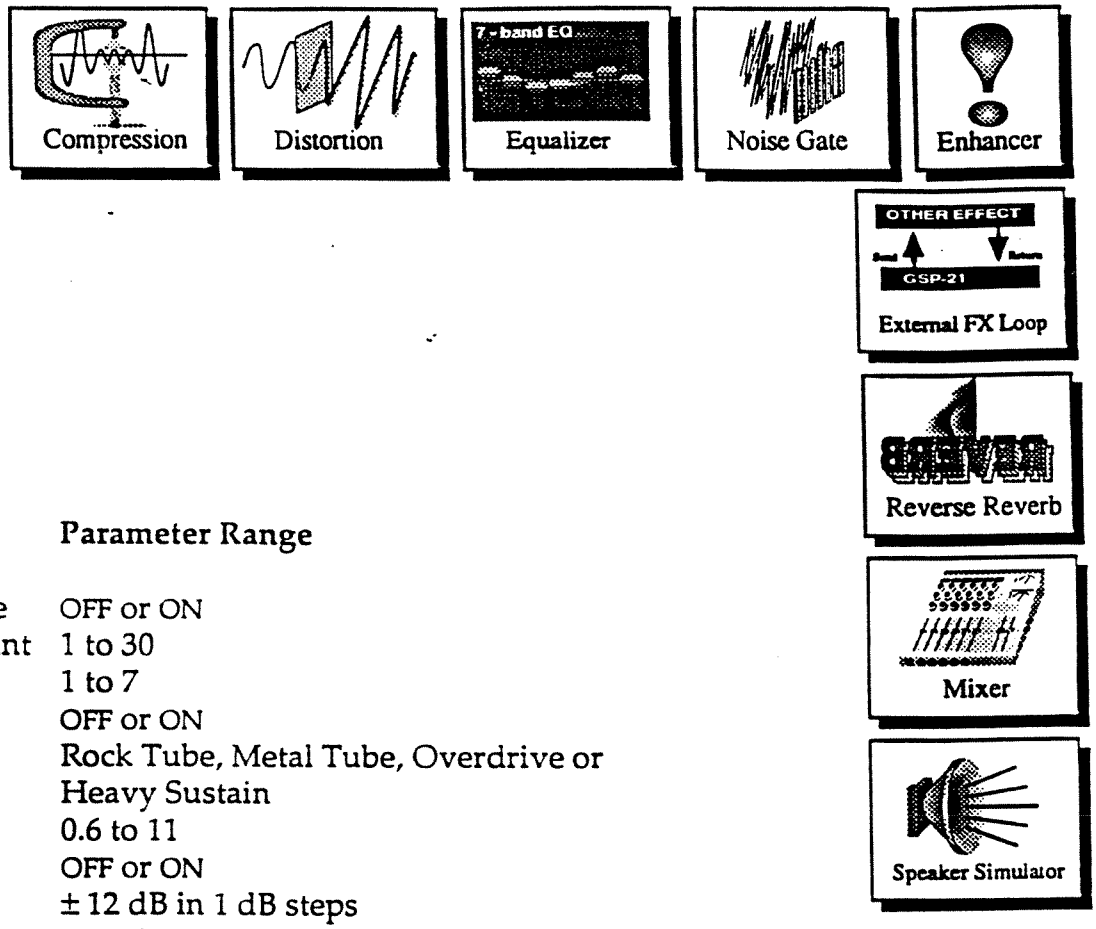
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Reverb Enable	OFF or ON
Early Reflect Level	1 to 10
Subsequent Level	1 to 10
Normal Reflectivity	1.0 to 99 seconds
Normal Room Volume	0.1 to 1.0
Damping Factor	1 to 10
Envelopment	1 to 10
Subsequent Delay	0 to 80 milliseconds
Subsequent Diffusion	1 to 10
Early Delay Time	0 to 80 milliseconds
Early Diffusion	1 to 10
Dry Level	1 to 10

Cmp + Dst + Eq + NG + E + L + GtRv + Mx + SS



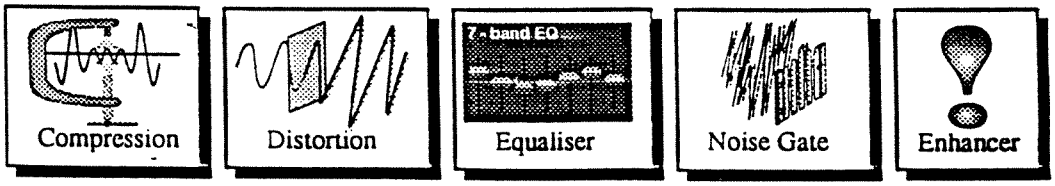
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Reverb Pre-Delay	0 to 80 milliseconds
Gate Envelope	Flat or Decaying
Gate Decay Time	50 to 600 milliseconds
Accent Delay Time	-50 to +50 milliseconds
Mix: Dry Right	0 to 10
Mix: Dry Left	0 to 10
Mix: Accent Right	0 to 10
Mix: Accent Left	0 to 10
Mix: Gate Right	0 to 10
Mix: Gate Left	0 to 10

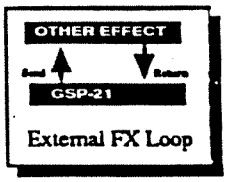
Cmp + Dst + Eq + NG + E + L + RvRv + Mx + SS

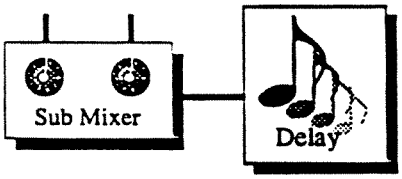


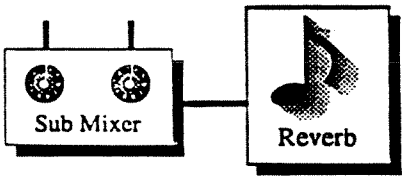
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Reverb Pre-Delay	0 to 80 milliseconds
Reverse Time	50 to 600 milliseconds
Accent Delay Time	-50 to +50 milliseconds
Mix: Dry Right	0 to 10
Mix: Dry Left	0 to 10
Mix: Accent Right	0 to 10
Mix: Accent Left	0 to 10
Mix: Reverse R Level	0 to 10
Mix: Reverse L Level	0 to 10

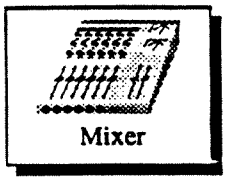
Cmp + Dst + Eq + NG + E + L + Ch + D + Rv1 + Mx + SS

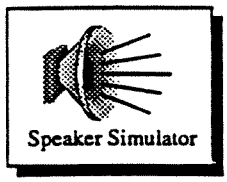








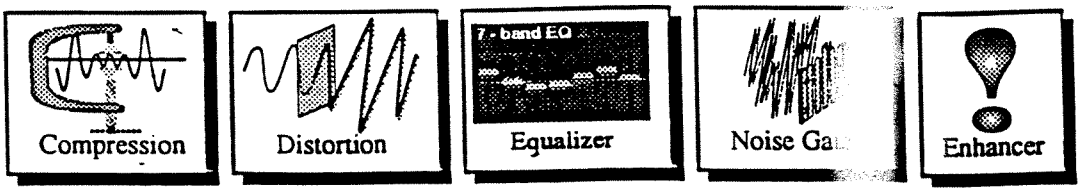


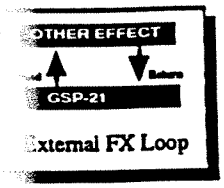


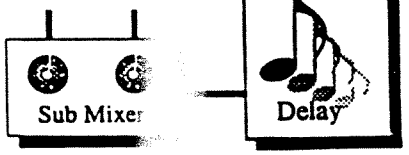
Eff	meter	Parameter Range
Cor	n Enable	OFF or ON
Cor	n Amount	1 to 30
Cor	n Level	1 to 7
Dis	nable	OFF or ON
Dis	ype	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Dis	alls	0.6 to 11
Gra	Enable	OFF or ON
63 I		± 12 dB in 1 dB steps
160	d	± 12 dB in 1 dB steps
400	d	± 12 dB in 1 dB steps
1 k		± 12 dB in 1 dB steps
2.5	d	± 12 dB in 1 dB steps
6.3	d	± 12 dB in 1 dB steps
16 k	d	± 12 dB in 1 dB steps
Mas	ume	± 12 dB in 1 dB steps
Enh	nt	OFF or 1 to 10
Noi	Enable	ON or OFF
Gat	old	1 to 15
Gat	ation	-10dB to -45dB
Exte	ects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Cho	ay	0 to 60 milliseconds
LFO	Speed	0.0 to 5.00 Hz
LFO	Depth	0 to 6.35 milliseconds
LFO	orm	Sine, Sawtooth, Logarithmic
Dela	y	0 to 10
Dela	horus	0 to 10
Dela		0 to .750 seconds
Dela	back	0 to 99 percent and Repeat Hold
Reve	Dry	0 to 10
Reve	Chorus	0 to 10
Reve	Delay	0 to 10
Reve	Delay	0 to 80 milliseconds
Reve	er	Bright, Soft or Warm
Reve	ay	100 to 1200 milliseconds

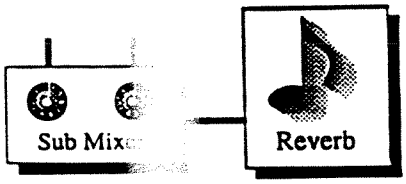
Mix: Dry Level	0 to 10
Mix: Chorus R Level	0 to 10
Mix: Chorus L Level	0 to 10
Mix: Delay R Level	0 to 10
Mix: Delay L Level	0 to 10
Mix: Reverb R Level	0 to 10
Mix: Reverb L Level	0 to 10

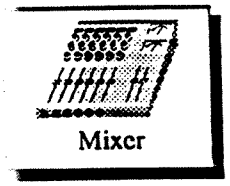
Cmp + Dst + Eq + NG + E + L + Fl + D + R + Mx + SS





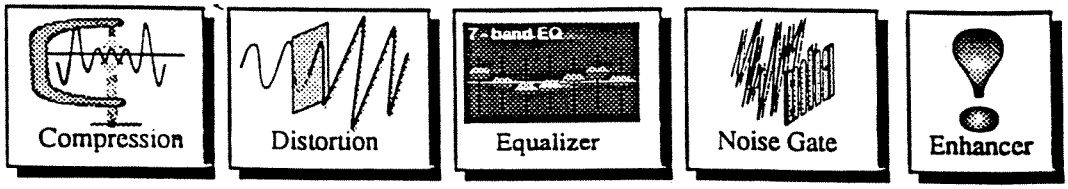




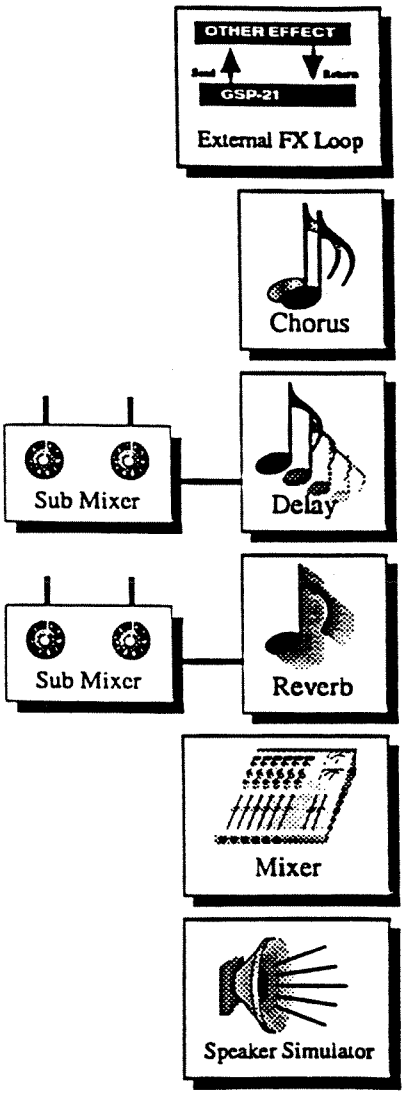


Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Flange Delay	0 to 10 milliseconds
LFO Sweep Speed	0.0 to 5.0 Hz
LFO Sweep Depth	0 to 6.35 milliseconds
Flange Feedback Phase	Negative or Positive
Flange Feedback	0 to 99 %
Delay in: Dry	0 to 10
Delay in: Flange	0 to 10
Delay Time	0 to .75 seconds
Delay Feedback	0 to 99 % and Repeat Hold
Reverb In: Dry	0 to 10
Reverb In: Flange	0 to 10
Reverb In: Delay	0 to 10
Reverb Pre-Delay	0 to 80 milliseconds
Reverb Filter	nt, Soft or Warm
Reverb Decay	o 1200
	seconds
Mix: Dry Level	0
Mix: Flange R Level	0
Mix: Flange L Level	0
Mix: Delay R Level	0
Mix: Delay L Level	0
Mix: Reverb R Level	0
Mix: Reverb L Level	0

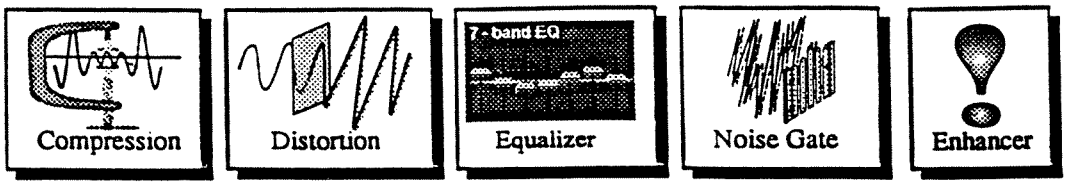
Cmp + Dst + Eq + NG + E + L + Ch + D + Rv2 + Mx + SS

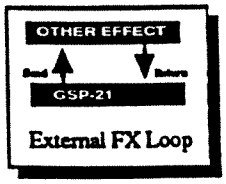


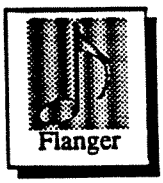
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Chorus Delay	0 to 60 milliseconds
LFO Sweep Speed	0.0 to 5.0 Hz
LFO Sweep Depth	0 to 6.35 milliseconds
LFO Waveform	Sine , Sawtooth , Logarithmic
Delay in: Dry	0 to 10
Delay in: Chorus	0 to 10
Delay Time	0 to .750 seconds
Delay Feedback	0 to 99 percent and Repeat Hold
Reverb In: Dry	0 to 10
Reverb In: Chorus	0 to 10
Reverb In: Delay	0 to 10
Reverb Pre-Delay	0 to 60 milliseconds
Reverb Filter	Bright, Soft or Warm
Reverb Decay	1 to 20 seconds
Mix: Dry Level	0 to 10
Mix: Chorus R Level	0 to 10
Mix: Chorus L Level	0 to 10
Mix: Delay R Level	0 to 10
Mix: Delay L Level	0 to 10
Mix: Reverb R Level	0 to 10
Mix: Reverb L Level	0 to 10

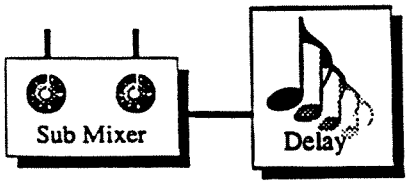


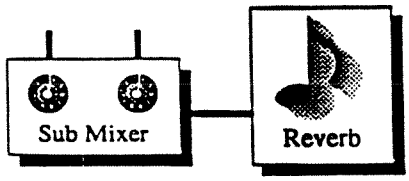
Cmp + Dst + Eq + NG + E + L + Fl + D + Rv2 + Mx + SS

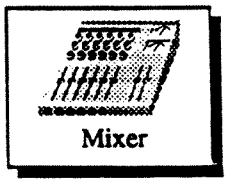


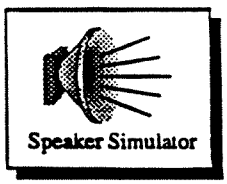








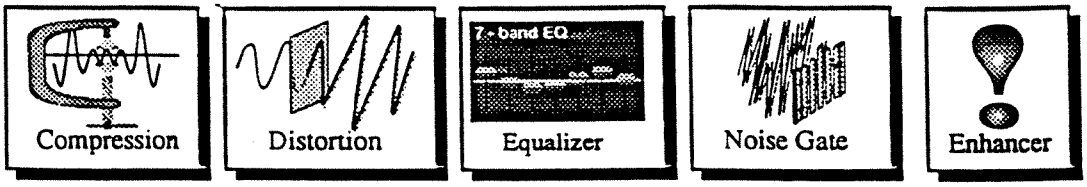


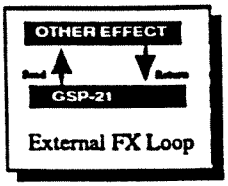


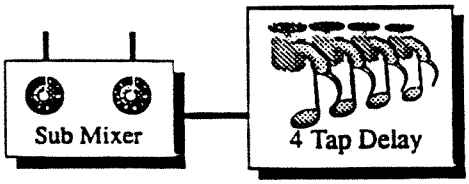
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Flange Delay	0 to 10 milliseconds
LFO Sweep Speed	0.0 to 5.00 Hz
LFO Sweep Depth	0 to 6.35 milliseconds
Flange Feedback Phase	Negative or Positive
Flange Feedback	0 to 99 %
Delay in: Dry	0 to 10
Delay in: Flange	0 to 10
Delay Time	0 to .75 seconds
Delay Feedback	0 to 99 % and Repeat Hold
Reverb In: Dry	0 to 10
Reverb In: Flange	0 to 10
Reverb In: Delay	0 to 10
Reverb Pre-Delay	0 to 60 milliseconds
Reverb Filter	Bright, Soft or Warm
Reverb Decay	1 to 20 seconds

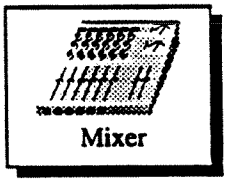
Mix: Dry Level	0 to 10
Mix: Flange R Level	0 to 10
Mix: Flange L Level	0 to 10
Mix: Delay R Level	0 to 10
Mix: Delay L Level	0 to 10
Mix: Reverb R Level	0 to 10
Mix: Reverb L Level	0 to 10

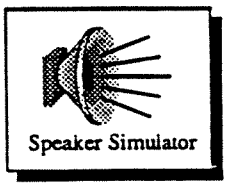
Cmp + Dst + Eq + NG + E + L + Ch + 4TD + Mx + SS





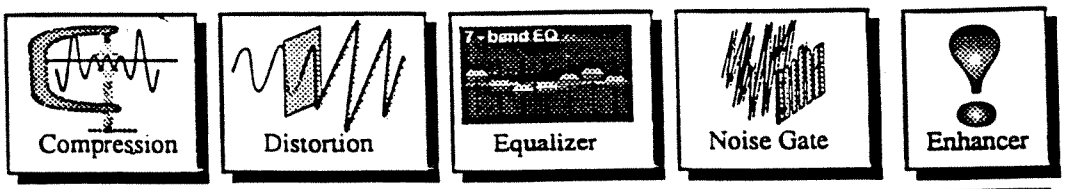


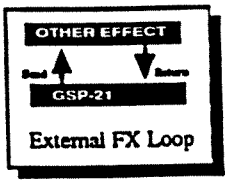


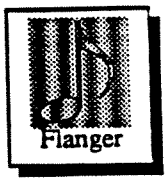


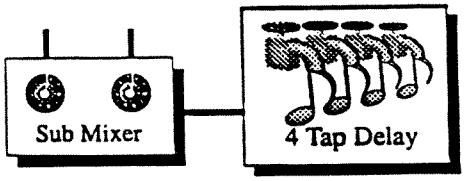
Effects Parameter	Parameter Range
Compression Enable	OFF or ON
Compression Amount	1 to 30
Compression Level	1 to 7
Distortion Enable	OFF or ON
Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
Distortion Balls	0.6 to 11
Graphic EQ Enable	OFF or ON
63 Hz Band	± 12 dB in 1 dB steps
160 Hz Band	± 12 dB in 1 dB steps
400 Hz Band	± 12 dB in 1 dB steps
1 kHz Band	± 12 dB in 1 dB steps
2.5 kHz Band	± 12 dB in 1 dB steps
6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Chorus Delay	0 to 60 milliseconds
LFO Sweep Speed	0.0 to 5.00 Hz
LFO Sweep Depth	0 to 6.35 milliseconds
LFO Waveform	Sine, Sawtooth, Logarithmic
Delay in: Dry	0 to 10
Delay in: Chorus	0 to 10
Delay Time: Tap1	0 to 1.50 seconds
Delay Time: Tap2	0 to 1.50 seconds
Delay Time: Tap3	0 to 1.50 seconds
Delay Time: Tap4	0 to 1.50 seconds
Delay Time: Feed	0 to 1.50 seconds
Delay Feedback	0 to 99 percent and Repeat Hold
Mix: Dry Level	0 to 10
Mix: Chorus Level	0 to 10
Mix: Tap1 R Level	0 to 10
Mix: Tap1 L Level	0 to 10
Mix: Tap2 R Level	0 to 10
Mix: Tap2 L Level	0 to 10
Mix: Tap3 R Level	0 to 10
Mix: Tap3 L Level	0 to 10
Mix: Tap4 R Level	0 to 10
Mix: Tap4 L Level	0 to 10

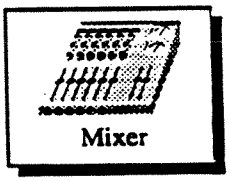
Cmp + Dst + Eq + NG + E + L + Fl + 4TD + Mx + SS

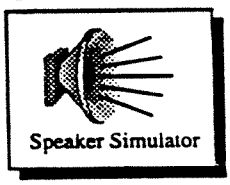












Effects Parameter	Parameter Range
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Distortion Type	Rock Tube, Metal Tube, Overdrive or Heavy Sustain
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6.3 kHz Band	± 12 dB in 1 dB steps
16 kHz Band	± 12 dB in 1 dB steps
Master Volume	± 12 dB in 1 dB steps
Enhancement	OFF or 1 to 10
Noise Gate Enable	ON or OFF
Gate Threshold	1 to 15
Gate Attenuation	-10dB to -45dB
External Effects Loop	NOT USED or BYPASSED / INLINE / SUMMED / INLINE + SUMMED
Flange Delay Time	0 to 10 milliseconds
LFO Sweep Speed	0.0 to 5.00 Hz
LFO Sweep Depth	0 to 6.35 milliseconds
Flange Feedback Phase	Negative or Positive
Flange Feedback	0 to 99 %
Delay in: Dry	0 to 10
Delay in: Flange	0 to 10
Delay Time: Tap1	0 to 1.50 seconds
Delay Time: Tap2	0 to 1.50 seconds
Delay Time: Tap3	0 to 1.50 seconds
Delay Time: Tap4	0 to 1.50 seconds
Delay Time: Feed	0 to 1.50 seconds
Delay Feedback	0 to 99 percent and Repeat Hold
Mix: Dry Level	0 to 10
Mix: Flange Level	0 to 10
Mix: Tap1 R Level	0 to 10
Mix: Tap1 L Level	0 to 10
Mix: Tap2 R Level	0 to 10
Mix: Tap2 L Level	0 to 10
Mix: Tap3 R Level	0 to 10
Mix: Tap3 L Level	0 to 10
Mix: Tap4 R Level	0 to 10
Mix: Tap4 L Level	0 to 10

APPENDIX B USER PROGRAM SHEETS

Photocopy this page and record your programs' parameters

Program Number: _____ Configuration: _____ Title: _____

Program Number: _____ Configuration: _____ Title: _____

Program Number: _____ Configuration: _____ Title: _____

APPENDIX C USER -DEFINABLE PROGRAMS

Presets 1 through 73 were specially programmed on the GSP-21 LEGEND by a stellar group of guitar professionals. Note: The patches in slots 1 through 73 are editable by the user. The factory presets in slots 74 through 234 are not editable.

#	Title (User Definable)
Tony Iommi	
1	Tony Iommi
Dave Murray	
2	Dave Murray #1
3	Dave Murray #2
4	Dave Murray #3
Larry Carlton	
5	Slow Rythmn
6	Canyon Chorus
7	Some Balls
Reeves Gabrels	
8	Full On R.G.
9	Herr Spray
Vernon Reid	
10	ReCiPe X
11	Lovecraft
Steve Morse	
12	Morse Warm Solo
13	Morse Chord
14	Morse Clean
Albert Lee	
15	Albert #1
16	Albert #2
17	Albert #3
Reeves Gabrels	
18	Elroyz
19	Max Bedroom
Ritchie Blackmore	
20	R.B. Chorus
21	R.B. Flange
Frank Gambale	
22	Sound Asweep
23	Me & My Crunch
24	Franks Dream
Dave "The Snake" Sabo	
25	Sportin' A Snake
26	Serpent Slither
27	Legless Lizard
Jerry Garcia	
28	Jerry Garcia
Joe Walsh	
29	Joe Walsh #1
30	Joe Walsh #2
31	Joe Walsh #3
Vernon Reid	
32	Moon Mountains
33	Strange Afterglow
34	Fortune Reversal
DigiTech Factory	
35	Monkey Flanger
36	Alligator Pan LR
37	Nice Fat Solo
38	Jammin Rep/Hold
39	Layer/Repeat Hold
40	Dry R Side Chorus
41	Blister Finger
42	The Bosman
43	Rick's Ripper
44	Like A Synth
45	Digitalis Rock
46	Rock Lead
47	Comp Hall
48	Rock It Man
49	Hot Rod Stack
50	Sweet Blue Notes
51	Top 40 Solo
52	Tight Chorus
53	Captain Crunch
54	Blues Hall
55	Classic Twin
56	Fast Leslie
57	Creamy Solo
58	Euro Rock
59	16th Sequencer
60	Daily Double
61	Lead Echo
62	Jazz Echo
63	Fat Smooth Solo
64	Swimming Triplet
65	Southern Rock
66	Rythmnic Multitap
67	Blues Rock
68	Clean Gate
69	Wait A Sec & 1/2
70	Backmask Guitar
71	In Chorus Country
72	Drivin The Blues
73	Bright Left to Right

NON-PROGRAMMABLE PRESETS

Title (Factory Preset)

Tony Iommi
74 Tony Iommi

Dave Murray
75 Dave Murray #1
76 Dave Murray #2
77 Dave Murray #3

Larry Carlton
78 Slow Rythm
79 Canyon Chorus
80 Some Balls

Reeves Gabrels
81 Full On R.G.
82 Herr Spray

Vernon Reid
83 ReCiPe X
84 Lovecraft

Steve Morse
85 Morse Warm Solo
86 Morse Chord
87 Morse Clean

Albert Lee
88 Albert #1
89 Albert #2
90 Albert #3

Reeves Gabrels
91 Elroyz
92 Max Bedroom

Ritchie Blackmore
93 R.B. Chorus
94 R.B. Flange

Frank Gambale
95 Sound Asweep
96 Me & My Crunch
97 Frank's Dream

Dave "The Snake" Sabo
98 Sportin' A Snake
99 Serpent Slither
100 Legless Lizard

Jerry Garcia
101 Jerry Garcia

Joe Walsh
102 Joe Walsh #1
103 Joe Walsh #2
104 Joe Walsh #3

Vernon Reid
105 Moon Mountains
106 Strange Afterglow
107 Fortune Reversal

DigiTech Factory
108 Monkey Flanger
109 Alligator Pan LR
110 Nice Fat Solo
111 Jammin Rep/Hold
112 Layer/Repeat Hold
113 Dry R Side Chorus
114 Blister Finger
115 The Bosman
116 Rick's Ripper

GSP 21 Pro Preset Writers

Michael Angelo
117 Hey Punk
118 Gettin' O.F.R.
119 G.C.W.S.S.

Ted Nugent
120 Ted Rhino Attack
121 Ted
122 More Rhino

Tommy Shaw
123 Rhythm Split
124 Mellow Chorus
125 High Enuff

Steve Lukather
126 Luke Lead
127 Luke Crunch
128 Luke Clean

Michael Fath
129 Brazilian Blast!
130 Transparency
131 Cream Sweep

Glenn Tipton
132 GT1
133 GT2
134 GT3

K.K. Downing
135 K.K. Deceiver
136 K.K. Rip n' Grind
137 K.K. Killer Lead

Steve Vai
138 Crystal Echoes
139 Unnatural
140 Follow

Brad Gillis
141 Brad Tube Solo
142 Lead Gilrock
143 Brad Chorus

Tim Kelly
144 Angels
145 Slaughter Lead
146 Rock the Nation

Alex Skolnick
147 Echosystem
148 Intimate Affair
149 Crunch Chamber 1

Bruce Kulick
150 NO NO NO Flange
151 KISS KLEEN Pickn
152 Zeptune Lead

Vito Bratta
153 Vito Blues Lead
154 Fat Rhythm
155 Classic Clean

Eric Peterson
156 Riffarama
157 FASD Rythm Crnch
158 Metal Cyloze

Neal Schon
159 Beefy Widener
160 Safe FX
161 Schonacide

Jennifer Batten
162 Ballad Slobber
163 Cathedral Vibe
164 Clean Machine

Bob Bradshaw
165 B.B. Lead
166 B.B. Crunch
167 B.B. Clean

George Lynch
168 Lynch Rhythm
169 Lynch Lead
170 Lynch Clean

DigiTech Factory
171 Like A Synth
172 Digitalis Rock
173 Rock Lead
174 Comp Hall
175 Rock It Man
176 Hot Rod Stack
177 Sweet Blue Notes
178 Top 40 Solo
179 Tight Chorus
180 Captain Chorus
181 Blues Hall
182 Classic Twin
183 Fast Leslie
184 Creamy Solo
185 Euro Rock
186 16th Sequencer
187 Daily Double
188 Lead Echo
189 Jazz Guitar
190 Fat Smooth Solo
191 Swimming Triplet
192 Southern Rock
193 Rythmic Multitap
194 Blues Rock
195 Clean Gate
196 Wait A Sec & 1/2
197 Back Mask Guitar
198 In Chorus Country
199 Drivin the Blues
200 Brite Left to Right
201 Are You Blues?
202 Mr. Clean
203 Ambient Chorus
204 Rhythm Crunch
205 Metal Flanger
206 Rock Flanger
207 Comp Chorus
208 The Abyss Up
209 Metal Head
210 Fat Tube Solo
211 Crunchy Chorus
212 Decay Madness
213 Metal Marshmellow
214 Balladeer Chorus
215 British Stack
216 Turbo Flange
217 Mars Hall
218 Chorus It Wide
219 Poisonous
220 Chunky Rhythm
221 Cool Crunchverb
221 Cool Crunchverb
222 Ambient Lead
223 Moshin Metalhead
224 Wet N Flangy
225 Rock Flange
226 Sweet Lil' Leslie
227 Chorus Talkback
228 Raw Rock-N-Roll
229 Sweet J.D. Blues
230 Rippin' Stadium
231 Rock Zipper
232 Feedback in 3rds
233 Tubular Overdrive
234 Metal Bandsaw

APPENDIX D STANDARD MIDI CONTINUOUS CONTROLLERS

CONTROLLER NUMBER	CONTROLLER FUNCTION
0	Undefined
1	Modulation wheel or lever
2	Breath controller
3	Undefined
4	Foot controller
5	Portamento time
6	Data entry MSB
7	Main volume
8	Balance
9	Undefined
10	Pan
11	Expression controller
12 through 15	Undefined
16 through 19	General purpose controllers 1 through 4
20 through 31	Undefined
32 through 63	LSB for values 0 through 31
64	Damper pedal (sustain)
65	Portamento
66	Sostenuto
67	Soft pedal
68	Undefined
69	Hold 2
70 through 79	Undefined
80 through 83	General purpose controllers 5 through 8
84 through 91	Undefined
92	Tremolo depth
93	Chorus depth
94	Celeste depth
95	Phaser depth
96	Data increment
97	Data decrement
98	Non-registered parameter number LSB
99	Non-registered parameter number MSB
100	Registered parameter number LSB
101	Registered parameter number MSB
102 through 121	Undefined
122 through 127	Channel mode messages

APPENDIX E DOD / DIGITECH ELECTRONICS SYSTEM EXCLUSIVE FORMAT

INTRODUCTION

The DOD/DigiTech Electronics System Exclusive Format facilitates use and control of various signal processing devices manufactured by DOD/DigiTech Electronics. The format allows different types of data transfer with capability for future expansion.

Currently, a DOD/DigiTech digital signal processor can receive machine-dependent microcode, and user-programmed parameters can be received from and dumped to external devices.

For further information write: DOD Electronics
74 West Vine Street
Salt Lake City, Utah 94107
Attention: Software Engineering

GSP-21 LEGEND
MIDI IMPLEMENTATION CHART

Date: Jan. 1992
Version: 1.0

DIGITECH GSP-21 LEGEND GUITAR SIGNAL PROCESSOR

FUNCTION		TRANSMITTED	RECOGNIZED	REMARKS
Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	Memorized
Mode	Default Messages Altered	Mode 3 x	Mode 3 x	Omni Off
Note Number	True Voice	x	x	
Velocity	Note on Note off			Not Recognized
After Touch	Keys Channels	x x	o o	
Pitch Bender				Not Recognized
Control Change		x	o	
Program Change	True #	0 -127	0 - 127 1 - 128	Internally mappable
System Exclusive		o	o	
System Common	Song Position Song Select Tune	x x x	x x x	
System Real-Time	Clock Commands	x x	x x	
Auxiliary Messages	Local ON/OFF All Notes OFF Active Sense Reset	x x x x	x x x x	

Mode 1: Omni On, Poly Mode 2: Omni On, Mono o = Yes
Mode 3: Omni Off, Poly Mode 4: Omni Off, Mono x = No

WARRANTY

1. The warranty registration card must be mailed within ten days after purchase date to validate this warranty.

2. DigiTech 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 liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned through the original dealer, where all parts and labor will be covered up to a period of one year. 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 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 foregoing is in lieu of all other warranties, expressed or implied, and DigiTech 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 DigiTech 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.

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GSP 21 LEGEND V1