Algorithm Guide

Each algorithm is composed of a selection of effects used in combination. Each of these effects provides a number of parameters (individual elements which create a sound). New sounds can be created by selecting an algorithm and then editing its parameters. All the algorithms contained within the SE-70 are introduced in the pages that follow. The information is organized to allow you to quickly find information on all the parameters that are available within a given algorithm. By referring to this information you should be able to gain an understanding of how each individual parameter functions in producing the overall effect.

* Refer to “2Editing Patches” in the Owner’s Manual for instructions on how new effects are created.

The following information pertains to the algorithms in the Preset Area (Patch Numbers 101 to 145):

• Characteristics of the Algorithms
  This information should help you to better employ the various algorithms.

• Program Diagrams
  These diagrams show how the algorithms are configured. The symbols used are described below.

<table>
<thead>
<tr>
<th>Effector</th>
<th>Parameters for the Same Effect (linked)</th>
<th>Audio Signal</th>
<th>Control Signal</th>
</tr>
</thead>
</table>

• Parameters
  All the parameters that make up an algorithm are listed (including their type and range).

* Parameters which can be targeted for Real-time Control and MIDI Control are indicated with an asterisk.

For details on how each parameter functions, refer to “How Each of the Parameters Works” in this manual.

List of Abbreviations Used for Indications in the Display

B Bass  Bal Balance  Inv Inverse
Char Character  Kb Keyboard
Cho Chorus  Lev Level
Comp Compressor  Lo Low
Dist Distortion  LPF Low Pass Filter
Dly Delay  LP Filter Low Pass Filter
DS Distortion  M. Main
Duck Ducking  Mod Modulation
ER Early Reflection  NS Noise Suppressor
f Frequency  N Suppressor
FB Feedback  Oct octave
Freq Frequency  OD Overdrive
Gt Guitar  P Pitch
Hi High  Pre
HPF High Pass Filter  Pan Panning
PS Pitch Shifter  Rec Recording
Rep Repeat  Res Resonance
Rev Reverb  S. Sub
Sim Simulator  St Stereo
SY Synth  Thresh Threshold
Trg Trigger  Trig Trigger
VC Vocoder  Vib Vibrato
Vo Vocal  Vx
# How Each of the Parameters Works

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Simulates the reverberation of a hall.

### Reverb
- **Reverb Time**: 0.1 to 60.0s
- **Pre Delay**: 0 to 300ms
- **Early Reflection Delay**: 0 to 300ms
- **Early Reflection Mix Level**: 0 to 100
- **HF Damp**: -10 to 0
- **Diffusion**: 0 to 10
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

### Equalizer
- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

### Assign 1 to 4
- **Target**: For parameters marked with an asterisk, 
  Overall Effect On/Off for the algorithm, 
  Metronome On/Off, Metronome Level, 
  Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119

### Assign Mode
- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/
  FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119**: Momentary/Latch

### Master
- **Level**: 0 to 100
**Reverb**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverb Time</td>
<td>0.1 to 60.0s</td>
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<td>Bass</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level *</td>
<td>0 to 100</td>
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**Equalizer**

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</tr>
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**Assign 1 to 4**

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<tr>
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<tr>
<td></td>
<td>Metronome On/Off, Metronome Level,</td>
</tr>
<tr>
<td></td>
<td>Tuner On/Off</td>
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<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

| Control 1 | Momentary/Latch          |
| Control 1&2/1&3/2/3 | FS-5U Momentary/FS-5U Latch/  |
|             | FS-5L Latch              |
|             | MIDI After Touch/MIDI Pitch Bend/  |
|             | MIDI CC#0 to 31, 64 to 119  |
|             | Momentary/Latch           |

**Master**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
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</thead>
<tbody>
<tr>
<td>Level</td>
<td>0 to 100</td>
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</tbody>
</table>
Simulates the reverberation obtained in a room that is smaller than Room 1.

### Reverb
- **Reverb Time**: 0.1 to 5.0s
- **Pre Delay**: 0 to 300ms
- **HF Damp**: -10 to 0
- **Diffusion**: 0 to 10
- **Density**: 0 to 10
- **Attack**: 0
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB
- **Early Reflection Delay L 1 to 3**: 0 to 300ms
- **Early Reflection Mix Level L 1 to 3**: 0 to 100
- **Early Reflection Delay R 1 to 3**: 0 to 300ms
- **Early Reflection Mix Level R 1 to 3**: 0 to 100
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

### Equalizer*
- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

### Master
- **Level**: 0 to 100

### Assign 1 to 4
- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off
- **Min**
- **Max**
- **Source**: Control 1 to 3/Exp Pedal/
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119
- **Assign Mode**
  - Control 1: Momentary/Latch
  - Control 1&2/1&3/2/3:
    - FS-5U Momentary/FS-5U Latch/
    - FS-5L Latch
    - MIDI After Touch/MIDI Pitch Bend/
    - MIDI CC#0 to 31, 64 to 119: Momentary/Latch
104 Plate

Simulates the sound obtained with a "plate echo." (A unit employing the vibrations of a metal plate to produce reverb.) Provides a metallic luster.

**Reverb**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
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<tbody>
<tr>
<td>Reverb Time</td>
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</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 300ms</td>
</tr>
<tr>
<td>HF Damp</td>
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</tr>
<tr>
<td>Diffusion</td>
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</tr>
<tr>
<td>Bass</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Direct Level</td>
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</tr>
<tr>
<td>Effect Level*</td>
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</table>

**Equalizer*  

<table>
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<th>Range</th>
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<tbody>
<tr>
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<tr>
<td>Low-Mid Q</td>
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</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
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</table>

**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Target</th>
<th>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>-</td>
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<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

<table>
<thead>
<tr>
<th>Control 1</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
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</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
<td>Momentary/Latch</td>
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**Master**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
A reverb that is processed in stereo.

**Reverb**
- **Reverb Time**: 0.1 to 20.0sec
- **Pre Delay**: 0 to 100ms
- **HP FILTER**: Thru to 800Hz
- **LP FILTER**: 500Hz to Thru
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

**Equalizer**
- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

**Assign 1 to 4**
- **Target**: For parameters marked with an asterisk,
  - Overall Effect On/Off for the algorithm,
  - Metronome On/Off, Metronome Level,
  - Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119

**Assign Mode**
- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/
  - FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend**/
- **MIDI CC#0 to 31, 64 to 119**: Momentary/Latch
- **MIDI CC#0 to 31, 64 to 119**: Momentary/Latch

**Master**
- **Level**: 0 to 100
106 Gate Reverb

A reverb that is muted part way through. Provides total stereo processing. This effect can be made even more unique by adding Accent Delay, Accent Level.

![Diagram of Gate Reverb and Equalizer](image)

**Gate Reverb**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
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<tr>
<td>Pre Delay</td>
<td>0 to 300ms</td>
</tr>
<tr>
<td>Mode</td>
<td>Normal/Left→Right/Right→Left/Reverse 1/Reverse 2</td>
</tr>
<tr>
<td>Thickness</td>
<td>0 to 10</td>
</tr>
<tr>
<td>Density</td>
<td>0 to 10</td>
</tr>
<tr>
<td>Accent Delay</td>
<td>0 to 200ms</td>
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<tr>
<td>Accent Level</td>
<td>0 to 100</td>
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<tr>
<td>Bass</td>
<td>-12dB to +12dB</td>
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<tr>
<td>Treble</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
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**Equalizer**

<table>
<thead>
<tr>
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<th>Range</th>
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<tbody>
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<td>Low EQ</td>
<td>-20dB to +20dB</td>
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<tr>
<td>Low-Mid f</td>
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**Master**

<table>
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<tbody>
<tr>
<td>Level*</td>
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**Assign 1 to 4**

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<td></td>
<td>Tuner On/Off</td>
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<tr>
<td>Min</td>
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<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
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**Assign Mode**

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<th>Control 1</th>
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<tr>
<td></td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>
Simulates the effect obtained when using an “ambience microphone.” (A microphone used during recording that is placed at a distance from the sound source.) Provides a sense of spaciousness and depth similar to that obtained with reverb.

**Ambience**

- **Pre Delay**: 0 to 200ms
- **Early Reflection Delay**: 0 to 200ms
- **Early Reflection Mix Level**: 0 to 100
- **Diffusion**: 0 to 10
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

**Equalizer**

- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB

**Assign 1 to 4**

- **Target**: For parameters marked with an asterisk,
  Overall Effect On/Off for the algorithm,
  Metronome On/Off, Metronome Level,
  Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119

**Assign Mode**

- **Control 1**: Momentary/Latch
- **Control 12/1&2/3/2/3**: FS-5U Momentary/FS-5U Latch/
  FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/**: MIDI CC#0 to 31, 64 to 119
- **: Momentary/Latch**
108 Simple Delay

A conventional delay. The number of parameters used has been kept to a minimum to make it easy to use.

![Diagram of Simple Delay circuit]

### Delay

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
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<tbody>
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<td>Delay Time</td>
<td>0 to 680ms</td>
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<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>HF Damp</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>LF Damp</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>Direct Level</td>
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</tr>
<tr>
<td>Effect Level*</td>
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### Equalizer*

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<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

### Assign Mode

<table>
<thead>
<tr>
<th>Control</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Momentary/Latch</td>
</tr>
<tr>
<td>1&amp;2</td>
<td>FS-5U Momentary/FS-5U Latch</td>
</tr>
<tr>
<td>3/2/3</td>
<td>FS-5L Latch</td>
</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119</td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
**109 Mono Delay**

A conventional long delay.

---

**Delay**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time</td>
<td>0 to 2000ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>HF Damp</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>LF Damp</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>Bass</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Equalizer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
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<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

**Master**

<table>
<thead>
<tr>
<th>Parameter*</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

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**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

| Control 1       | Momentary/Latch  |
| Control 1&2/1&3/2/3 | FS-5U Momentary/FS-5U Latch/ FS-5L Latch |
| MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119 | Momentary/Latch |
**110 Modulation Delay**

A delay which allows “modulation” (change) to be applied to the delayed sound.

**Delay**

- **Delay Time**: 0 to 1600ms
- **Feedback**: 0 to 100
- **Modulation Wave**: Tri/Sin
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Polarity**: Inverse/Synchro
- **HF Damp**: -10 to 0
- **LF Damp**: -10 to 0
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

**Equalizer**

- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

**Master**

- **Level**: 0 to 100

---

**Assign 1 to 4**

- **Target**: For parameters marked with an asterisk:
  - Overall Effect On/Off for the algorithm,
  - Metronome On/Off, Metronome Level,
  - Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119

**Assign Mode**

- **Control 1**: Momentary/Latch
- **Control 1, 2/1, 3/2, 3**: FS-5U Momentary/FS-5U Latch/
  - FS-5L Latch
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119

  : Momentary/Latch


111 Stereo Delay

A delay which allows settings to be made independently for both the left and right channels.

---

Delay

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time L</td>
<td>0 to 1000ms</td>
</tr>
<tr>
<td>Feedback L</td>
<td>0 to 100</td>
</tr>
<tr>
<td>HF Damp L</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>LF Damp L</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>Bass L</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble L</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Pan L*</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Direct Level L</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level L*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time R</td>
<td>0 to 1000ms</td>
</tr>
<tr>
<td>Feedback R</td>
<td>0 to 100</td>
</tr>
<tr>
<td>HF Damp R</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>LF Damp R</td>
<td>-10 to 0</td>
</tr>
<tr>
<td>Bass R</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble R</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Pan R*</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Direct Level R</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level R*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Cross Feedback</td>
<td>0 to 100</td>
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</tbody>
</table>

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Equalizer L*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>
### Equalizer R*

<table>
<thead>
<tr>
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<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Assign 1 to 4

**Target**: For parameters marked with an asterisk,
Overall Effect On/Off for the algorithm,
Metronome On/Off, Metronome Level,
Tuner On/Off

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
</tbody>
</table>

**Source**:
Control 1 to 3/Exp Pedal/
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119

**Assign Mode**
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3 :
FS-5U Momentary/FS-5U Latch/
FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119 :
Momentary/Latch
20Tap Delay

A delay which allows independent settings to be made for 20 separate repeats.

**Delay**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time 1 to 20</td>
<td>0 to 2000ms</td>
</tr>
<tr>
<td>Pan 1 to 20</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Tap Level 1 to 20</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Feedback Delay</td>
<td>0 to 2000ms</td>
</tr>
<tr>
<td>Feedback Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Bass</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level L*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level R*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Equalizer***

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Effect On/Off for the algorithm</td>
<td></td>
</tr>
<tr>
<td>Metronome On/Off, Metronome Level, Tuner On/Off</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

<table>
<thead>
<tr>
<th>Control 1</th>
<th>Momentary/Latch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/ FS-5L Latch</td>
</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>

**Master**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
113 Stereo Chorus

**113 St Chorus** --- St Chorus ---

Adds fatness and a sense of expansiveness to the sound.

---

**Chorus**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 500.0ms</td>
</tr>
<tr>
<td>Bass</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Equalizer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
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</tr>
<tr>
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<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target*</td>
<td>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

<table>
<thead>
<tr>
<th>Control 1</th>
<th>Momentary/Latch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/ FS-5L Latch</td>
</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>

**Master**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
This chorus divides the sound into two bands (frequency ranges), and allows different settings to be made for each band.

**Chorus**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossover f</td>
<td>315Hz/400Hz/500Hz/630Hz/800Hz/1.00kHz/1.25kHz/1.60kHz/2.00kHz</td>
</tr>
<tr>
<td>Low Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Low Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Low Pre Delay</td>
<td>0 to 500.0ms</td>
</tr>
<tr>
<td>Low Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>High Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>High Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>High Pre Delay</td>
<td>0 to 500.0ms</td>
</tr>
<tr>
<td>High Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Bass</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Treble</td>
<td>-12dB to +12dB</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Equalizer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
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</tr>
<tr>
<td>Low-Mid f</td>
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<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
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<tr>
<td>High-Mid f</td>
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<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
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<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

**Master**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk,</td>
</tr>
<tr>
<td></td>
<td>Overall Effect On/Off for the algorithm,</td>
</tr>
<tr>
<td></td>
<td>Metronome On/Off, Metronome Level,</td>
</tr>
<tr>
<td></td>
<td>Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td>Assign Mode</td>
<td>Control 1 : Momentary/Latch</td>
</tr>
<tr>
<td></td>
<td>Control 1 &amp; 2 &amp; 3 &amp; 4 : FS-5U Momentary/FS-5U Latch/FS-5L Latch</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td></td>
<td>: Momentary/Latch</td>
</tr>
</tbody>
</table>
### 115 Wave Chorus

Allows a wide range of different choruses to be obtained by mixing in the LFO that determines the chorus effect.

![Diagram of Wave Chorus]  

#### Chorus

- **Tri Rate***: 0 to 100  
- **Tri Depth**: 0 to 100  
- **Sin Rate***: 0 to 100  
- **Sin Depth**: 0 to 100  
- **Exp Rate***: 0 to 100  
- **Exp Depth**: 0 to 100  
- **Pre Delay**: 0 to 500.0ms  
- **Bass**: -12dB to +12dB  
- **Treble**: -12dB to +12dB  
- **Direct Level**: 0 to 100  
- **Effect Level**: 0 to 100

#### Equalizer

- **Low EQ**: -20dB to +20dB  
- **Low-Mid f**: 100Hz to 10.0kHz  
- **Low-Mid Q**: 0.5 to 16  
- **Low-Mid EQ**: -20dB to +20dB  
- **High-Mid f**: 100Hz to 10.0kHz  
- **High-Mid Q**: 0.5 to 16  
- **High-Mid EQ**: -20dB to +20dB  
- **High EQ**: -20dB to +20dB  
- **Level**: -20dB to +20dB

#### Master

- **Level***: 0 to 100

#### Assign 1 to 4

- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off  
- **Min**: -  
- **Max**: -  
- **Source**: Control 1 to 3/Exp Pedal/  
  MIDI After Touch/MIDI Pitch Bend/  
  MIDI CC#0 to 31, 64 to 119

#### Assign Mode

- **Control 1**: Momentary/Latch  
- **Control 1&2/1&3/2/3**:  
  - FS-5U Momentary/FS-5U Latch/  
  - FS-5L Latch  
- **MIDI After Touch/MIDI Pitch Bend/**  
- **MIDI CC#0 to 31, 64 to 119**: Momentary/Latch
116 Super Chorus

This super chorus can simulate up to 16 chorus units.

**Chorus**

Rate* : 0 to 100
Mode : 2Stage/4Stage/8Stage/
16Stage/16Manual

<2/4/8/16Stage>
Depth : 0 to 100
Pre Delay : 0.0 to 500ms

<16Manual>
Depth 1 to 8 : 0 to 100
Pre Delay 1 to 8 : 0.0 to 500ms
Bass : -12dB to +12dB
Treble : -12dB to +12dB
Direct Level : 0 to 100
Effect Level : 0 to 100

**Equalizer**

Low EQ : -20dB to +20dB
Low-Mid f : 100Hz to 10.0kHz
Low-Mid Q : 0.5 to 16
Low-Mid EQ : -20dB to +20dB
High-Mid f : 100Hz to 10.0kHz
High-Mid Q : 0.5 to 16
High-Mid EQ : -20dB to +20dB
High EQ : -20dB to +20dB
Level : -20dB to +20dB

**Master**

Level* : 0 to 100

**Assign 1 to 4**

Target : For parameters marked with an asterisk,
Overall Effect On/Off for the algorithm,
Metronome On/Off, Metronome Level,
Tuner On/Off
Min : -
Max : -
Source : Control 1 to 3/Exp Pedal/
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119

Assign Mode
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3 : FS-5U Momentary/FS-5U Latch/
FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119 : Momentary/Latch
117 Pitch Shift

This Pitch Shifter can generate 12 pitches from a single input source.

Pitch Shifter

Voice: 1 to 12
Pitch Shifter 1 to 12 Mode: 1/2/3/4/5/Inv1/Inv2
Pitch Shifter 1 to 12 Pitch*: -24 to +24
Pitch Shifter 1 to 12 Fine: -50 to +50
Pitch Shifter 1 to 12 Pre Delay: 0 to 1500ms
Pitch Shifter 1 Feedback: 0 to 100
Pitch Shifter 1 to 12 Pan: L100 R0 to L0 R100
Pitch Shifter 1 to 12 Level: 0 to 100
Bass: -12dB to +12dB
Treble: -12dB to +12dB
Direct Delay: 0 to 15ms
Direct Level: 0 to 100
Effect Level*: 0 to 100

Master

Level*: 0 to 100

Assign 1 to 4

Target: For parameters marked with an asterisk,
Overall Effect On/Off for the algorithm,
Metronome On/Off, Metronome Level,
Tuner On/Off
Min: -
Max: -
Source: Control 1 to 3/Exp Pedal/
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119

Assign Mode
Control 1: Momentary/Latch
Control 1&B/1&3/2&3:
FS-SU Momentary/FS-SU Latch/
FS-SL Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119:
Momentary/Latch

Equalizer*

Low EQ: -20dB to +20dB
Low-Mid f: 100Hz to 10.0kHz
Low-Mid Q: 0.5 to 16
Low-Mid EQ: -20dB to +20dB
High-Mid f: 100Hz to 10.0kHz
High-Mid Q: 0.5 to 16
High-Mid EQ: -20dB to +20dB
High EQ: -20dB to +20dB
Level: -20dB to +20dB
118 Stereo Pitch Shift

This pitch shifter supports stereo processing.

**Pitch Shifter**

- **Stereo Link**: On/Off
- **Pitch Shifter 1 to 3 Mode L**: 1/2/3/4/5,
  - Inv1/Inv2
- **Pitch Shifter 1 to 3 Pitch L**: -24 to +24
- **Pitch Shifter 1 to 3 Fine L**: -50 to +50
- **Pitch Shifter 1 to 3 Pre Delay L**: 0 to 320ms
- **Pitch Shifter 1 Feedback L**: 0 to 100
- **Pitch Shifter 1 to 3 Level L**: 0 to 100
- **Effect Level L**: 0 to 100
- **Direct Delay L**: 0 to 20ms
- **Direct Level L**: 0 to 100
- **Pitch Shifter 1 to 3 Mode R**: 1/2/3/4/5,
  - Inv1/Inv2
- **Pitch Shifter 1 to 3 Pitch R**: -24 to +24
- **Pitch Shifter 1 to 3 Fine R**: -50 to +50
- **Pitch Shifter 1 to 3 Pre Delay R**: 0 to 320ms
- **Pitch Shifter 1 Feedback R**: 0 to 100
- **Pitch Shifter 1 to 3 Level R**: 0 to 100
- **Direct Delay R**: 0 to 20ms
- **Direct Level R**: 0 to 100
- **Effect Level R**: 0 to 100
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB

**Equalizer**

- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 10Hz to 10kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

**Master**

- **Level**: 0 to 100
Assign 1 to 4

Target : For parameters marked with an asterisk,
Overall Effect On/Off for the algorithm,
Metronome On/Off, Metronome Level,
Tuner On/Off

Min : -
Max : -

Source : Control 1 to 3/Exp Pedal/
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119

Assign Mode
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3
FS-5U Momentary/FS-5U Latch/
FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119
Momentary/Latch
119 Stereo Phaser

Produces a phased effect that offers a more spacious sound by adding to the direct sound other portions which have been shifted in phase. Since it supports stereo, the phaser effect is obtained without losing any of the localization information for the stereo image.

**Phaser**
- **Mode**: 4/8/12/16/20/24/28/32/36/40stage
- **Bi-Phase**: 4/8/12/16/20
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Manual**: 0 to 100
- **Resonance**: 0 to 100
- **Separation**: 0 to 100
- **Step**: On/Off
- **Step Rate**: 0 to 100
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB
- **Effect Level**: 0 to 100

**Delay**
- **Delay Time**: 0 to 680ms
- **Feedback**: 0 to 100
- **Level**: 0 to 100

**Equalizer**
- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: 0 to 100

**Master**
- **Level**: 0 to 100

**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
<td></td>
</tr>
</tbody>
</table>

| Min | - |
| Max | - |

**Source**
- Control 1 to 3/Exp Pedal/
- MIDI After Touch/MIDI Pitch Bend/
- MIDI CC#0 to 31, 64 to 119

**Assign Mode**
- Control 1: Momentary/Latch
- Control 1&2/1&3/2/3: FS-5U Momentary/FS-5U Latch/
- FS-5L Latch
- MIDI After Touch/MIDI Pitch Bend/
- MIDI CC#0 to 31, 64 to 119: Momentary/Latch
A flanging effect that is fully stereo-compatible. In addition to the standard flanging effect, other types of effects (Step, Gate 1, Gate 2, Gate 3) can be obtained by altering the "Mode" setting.

### Flanger
- **Rate***: 0 to 100
- **Depth**: 0 to 100
- **Manual**: 0 to 100
- **Resonance**: 0 to 100
- **Separation**: 0 to 100
- **Step Mode**: Off/Step/Gate1/Gate2/Gate3
- **Step Rate***: 0 to 100
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB
- **Effect Level**: 0 to 100

### Equalizer*
- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

### Assign 1 to 4
- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119

### Assign Mode
- **Control 1**: Momentary/Latch
- **Control 1&2/3/4**: FS-5U Momentary/FS-5U Latch/
  - FS-5L Latch
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119
  - Momentary/Latch

### Master
- **Level***: 0 to 100
A 10-band vocoder. After dividing the sound (from a synthesizer or other instrument) from the L input channel into 10 frequency bands, it is processed so it takes on a correlative relationship with the frequency content of the vocal sounds that have been input to the R channel using a microphone. As a result, vocals seem as if they were produced using the instrument's sound.

*We recommend the microphone should be pre-amplified (by a mixer, etc)

### Vocoder

<table>
<thead>
<tr>
<th>Setting</th>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Distortion</td>
<td>On/Off</td>
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</tr>
<tr>
<td>Drive</td>
<td>0 to 100</td>
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</tr>
<tr>
<td>Distortion Level</td>
<td>0 to 100</td>
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</tr>
<tr>
<td>Mic Limiter</td>
<td>On/Off</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
<td></td>
</tr>
<tr>
<td>Limiter Level</td>
<td>0 to 100</td>
<td></td>
</tr>
<tr>
<td>Mic EQ</td>
<td>On/Off</td>
<td></td>
</tr>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
<td></td>
</tr>
<tr>
<td>Mid f</td>
<td>100Hz to 10.0kHz</td>
<td></td>
</tr>
<tr>
<td>Mid Q</td>
<td>0.5 to 16</td>
<td></td>
</tr>
<tr>
<td>Mid EQ</td>
<td>-20dB to +20dB</td>
<td></td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
<td></td>
</tr>
<tr>
<td>EQ Level</td>
<td>-20dB to +20dB</td>
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</tr>
<tr>
<td>Mode</td>
<td>Sharp/Soft</td>
<td></td>
</tr>
<tr>
<td>Sens</td>
<td>0 to 100</td>
<td></td>
</tr>
<tr>
<td>Voice Character 1 to 10</td>
<td>0 to 100</td>
<td></td>
</tr>
<tr>
<td>Gate Threshold</td>
<td>0 to 100</td>
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</tr>
<tr>
<td>Mic HPF</td>
<td>Thru/</td>
<td>90Hz to 12kHz</td>
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<tr>
<td>Mic Mix</td>
<td>0 to 100</td>
<td></td>
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<tr>
<td>Noise Suppress Threshold</td>
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<td></td>
</tr>
<tr>
<td>Vocoder Level*</td>
<td>0 to 100</td>
<td></td>
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</tbody>
</table>

### Equalizer

<table>
<thead>
<tr>
<th>Setting</th>
<th>Parameter</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
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</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
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</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
<td></td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
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<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
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<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
<td></td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
<td></td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
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<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
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### Delay

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<tr>
<th>Setting</th>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Delay Time C</td>
<td>0 to 1200ms</td>
<td></td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
<td></td>
</tr>
<tr>
<td>Level C*</td>
<td>0 to 100</td>
<td></td>
</tr>
<tr>
<td>Delay Time L</td>
<td>0 to 1200ms</td>
<td></td>
</tr>
<tr>
<td>Level L*</td>
<td>0 to 100</td>
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</tr>
<tr>
<td>Delay Time R</td>
<td>0 to 1200ms</td>
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</tr>
<tr>
<td>Level R*</td>
<td>0 to 100</td>
<td></td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
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</tr>
</tbody>
</table>
### Chorus*

<table>
<thead>
<tr>
<th>Setting</th>
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</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo</td>
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<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 50.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Level</td>
<td>0 to 100</td>
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### Reverb*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
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<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/Hall1/</td>
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<tr>
<td></td>
<td>Hall2/Plate</td>
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<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
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<tr>
<td>Pre Delay</td>
<td>0 to 100ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
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### Master

<table>
<thead>
<tr>
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<tbody>
<tr>
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### Assign 1 to 4

<table>
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<th>Value</th>
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<tbody>
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<tr>
<td></td>
<td>Overall Effect On/Off for the algorithm,</td>
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<tr>
<td></td>
<td>Metronome On/Off, Metronome Level,</td>
</tr>
<tr>
<td></td>
<td>Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
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<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
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<tr>
<td>Assign Mode</td>
<td>Control 1 : Momentary/Latch</td>
</tr>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/</td>
</tr>
<tr>
<td></td>
<td>FS-5L Latch</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td></td>
<td>: Momentary/Latch</td>
</tr>
</tbody>
</table>
A 21-band vocoder. After dividing the sound (from a synthesizer or other instrument) from the L input channel into 21 frequency bands, the sound is processed so it takes on a correlative relationship with the frequency content of the vocal sounds that have been input to the R channel using a microphone. As a result, vocals seem as if they were produced using the instrument’s sound.

*We recommend the microphone should be pre-amplified (by a mixer, etc)
Assign 1 to 4

Target: For parameters marked with an asterisk,
- Overall Effect On/Off for the algorithm,
- Metronome On/Off, Metronome Level,
- Tuner On/Off

Min: -
Max: -

Source: Control 1 to 3/Exp Pedal/
- MIDI After Touch/MIDI Pitch Bend/
- MIDI CC#0 to 31, 64 to 119

Assign Mode:
- Control 1: Momentary/Latch
- Control 1&2/1&3/2/3:
  - FS-5U Momentary/FS-5U Latch/
  - FS-5L Latch
- MIDI After Touch/MIDI Pitch Bend/
- MIDI CC#0 to 31, 64 to 119:
  - Momentary/Latch
A selection of multiple effects geared perfectly towards keyboards.

### Ring Modulator
- **Modulation f**: 0 to 100
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

### Equalizer
- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Level**: -20dB to +20dB

### Noise Suppressor
- **Threshold**: 0 to 100
- **Release**: 0 to 100
- **Level**: 0 to 100

### Pitch Shifter
- **Mode**: 1/2/3/4
- **Pitch**: -24 to +24
- **Fine**: -50 to +50
- **Pre Delay**: 0 to 100ms
- **Feedback**: 0 to 100
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

### Phaser
- **Mode**: 4stage/8stage
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Manual**: 0 to 100
- **Resonance**: 0 to 100
- **Step**: On/Off
- **Step Rate**: 0 to 100

### Delay
- **Delay Time C**: 0 to 400ms
- **Feedback**: 0 to 100
- **Level C**: 0 to 100
- **Delay Time L**: 0 to 400ms
- **Level L**: 0 to 100
- **Delay Time R**: 0 to 400ms
- **Level R**: 0 to 100
- **LP Filter**: 500Hz to Thru
### Chorus*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo1/Stereo2</td>
</tr>
<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
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<tr>
<td>Pre Delay</td>
<td>0.0 to 50.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Reverb*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/</td>
</tr>
<tr>
<td></td>
<td>Hall1/Hall2/Plate</td>
</tr>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 100ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
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### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
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### Assign 1 to 4

<table>
<thead>
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<th>Parameter</th>
<th>Description</th>
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<tbody>
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<tr>
<td></td>
<td>Overall Effect On/Off for the algorithm,</td>
</tr>
<tr>
<td></td>
<td>Metronome On/Off, Metronome Level,</td>
</tr>
<tr>
<td></td>
<td>Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

#### Assign Mode

- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/
  - FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/**: MIDI CC#0 to 31, 64 to 119
  - Momentary/Latch
Multiple effects which focus mainly on the simulation of rotary speakers.

- This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.
- If using the SE-70's internal tuner with this algorithm, be sure to set the Input Level knobs so the R knob is at the same position as the L knob.

**Overdrive/Distortion**
- Mode: Overdrive/Distortion
- Drive*: 0 to 100
- Level: 0 to 100

**Equalizer**
- Low EQ: -20dB to +20dB
- Low-Mid f: 100Hz to 10kHz
- Low-Mid Q: 0.5 to 16
- Low-Mid EQ: -20dB to +20dB
- High-Mid f: 100Hz to 10kHz
- High-Mid Q: 0.5 to 16
- High-Mid EQ: -20dB to +20dB
- High EQ: -20dB to +20dB
- Level: 0 to 100

**Rotary**
- Speed*: Fast/Slow
- Low Rate Fast*: 0 to 100
- Low Rate Slow*: 0 to 100
- Low Rise Time: 0 to 100
- Low Fall Time: 0 to 100
- Low Level: 0 to 100
- High Rate Fast*: 0 to 100
- High Rate Slow*: 0 to 100
- High Rise Time: 0 to 100
- High Fall Time: 0 to 100
- High Level: 0 to 100
- Separation: 0 to 100

**Noise Suppressor**
- Threshold: 0 to 100
- Release: 0 to 100
- Level*: 0 to 100
### Reverb

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 100ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Assign 1 to 4

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>For parameters marked with an asterisk,</td>
<td>Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level,</td>
</tr>
<tr>
<td></td>
<td>Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/
  FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/**
- **MIDI CC#0 to 31, 64 to 119**: Momentary/Latch
125 Rhodes Multi

Produces a Rhodes-like sound. Ideal for use with electric piano.

**Equalizer***

- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Level**: -20dB to +20dB

**Enhancer***

- **Sens**: 0 to 100
- **Frequency**: 1.00kHz to 10.00kHz
- **Mix Level**: 0 to 100
- **Low Mix Level**: 0 to 100
- **Level**: 0 to 100

**Noise Suppressor**

- **Threshold**: 0 to 100
- **Release**: 0 to 100
- **Level***: 0 to 100

**Phaser***

- **Mode**: 4stage/8stage
- **Rate***: 0 to 100
- **Depth**: 0 to 100
- **Manual**: 0 to 100
- **Resonance**: 0 to 100
- **Step**: On/Off
- **Step Rate**: 0 to 100

**Delay***

- **Delay Time C**: 0 to 600ms
- **Feedback**: 0 to 100
- **Level C***: 0 to 100
- **Delay Time L**: 0 to 600ms
- **Level L***: 0 to 100
- **Delay Time R**: 0 to 600ms
- **Level R***: 0 to 100
- **LP Filter**: 500Hz to Thru

**Chorus***

- **Mode**: Mono/Stereo
- **Rate***: 0 to 100
- **Depth**: 0 to 100
- **Pre Delay**: 0.0 to 50.0ms
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100
Panning/Tremolo*

Mode : Pan/Tremolo
Modulation Wave : Tri/Square
Rate* : 0 to 100
Depth : 0 to 100
Balance* : L100 R0 to L0 R100

Reverb*

Mode : Room1/Room2/
       Hall1/Hall2/Plate
Reverb Time : 0.1 to 20.0s
Pre Delay : 0 to 100ms
HP Filter : Thru to 800Hz
LP Filter : 500Hz to Thru
Direct Level : 0 to 100
Effect Level* : 0 to 100

Master

Level* : 0 to 100

Assign 1 to 4

Target : For parameters marked with an asterisk,
         Overall Effect On/Off for the algorithm,
         Metronome On/Off, Metronome Level,
         Tuner On/Off
Min : -
Max : -
Source : Control 1 to 3/Exp Pedal/
        MIDI After Touch/MIDI Pitch Bend/
        MIDI CC#0 to 31, 64 to 119
Assign Mode
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3
            : FS-5U Momentary/FS-5U Latch/
            FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119
            : Momentary/Latch
A selection of multiple effects geared towards guitars. Makes it easy to create sounds suitable for most any type of music, since it allows for up to 16 effects to be used simultaneously. Also ideal for acoustic guitars with pickups.

* This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.

* If using the SE-70’s internal tuner with this algorithm, be sure to set the Input Level knobs so the R knob is at the same position as the L knob.

---

**Slow Gear**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Auto/Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Trigger*</td>
<td>On/Off</td>
</tr>
</tbody>
</table>

---

**Compressor/Limiter**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Comp/Limiter</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Compressor&gt;</td>
<td></td>
</tr>
<tr>
<td>Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>&lt;Limiter&gt;</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.5: 1/2: 1/4: 1/100: 1</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

---

**Auto Wah**

<table>
<thead>
<tr>
<th>Mode</th>
<th>BPF/LPF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polarity</td>
<td>Up/Down</td>
</tr>
<tr>
<td>Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Manual*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Peak</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Rate</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

---

**Overdrive/Distortion**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Natural OD/Vintage OD/ Turbo OD/Crunch/ Distortion/Metal 1/ Metal 2/Fuzz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>High/Low</td>
</tr>
<tr>
<td>Drive*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

---

**Equalizer**

| Low EQ   | -20dB to +20dB |
| Low-Mid f | 100Hz to 10.0kHz |
| Low-Mid Q | 0.5 to 16 |
| Low-Mid EQ | -20dB to +20dB |
| High-Mid f | 100Hz to 10.0kHz |
| High-Mid Q | 0.5 to 16 |
| High-Mid EQ | -20dB to +20dB |
| High EQ   | -20dB to +20dB |
| Level     | -20dB to +20dB |

---

**Enhancer**

<table>
<thead>
<tr>
<th>Sens</th>
<th>0 to 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>1.00kHz to 10.00kHz</td>
</tr>
<tr>
<td>Mix Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

---
Guitar Amp Simulator*

Mode* : Small/Built In/2Stack/3stack

Noise Suppressor

Threshold : 0 to 100
Release : 0 to 100
Level* : 0 to 100

Pitch Shifter*

Mode : 1/2/3/4
Pitch* : -24 to +24
Fine : -50 to +50
Pre Delay : 0 to 300ms
Feedback : 0 to 100
Direct Level : 0 to 100
Effect Level : 0 to 100

Vibrato*

Trigger* : On/Off
Rate* : 0 to 100
Depth : 0 to 100
Rise Time : 0 to 100

Phaser*

Mode : 4Stage/8Stage
Rate* : 0 to 100
Depth : 0 to 100
Manual : 0 to 100
Resonance : 0 to 100
Step : On/Off
Step Rate : 0 to 100

Flanger*

Rate* : 0 to 100
Depth : 0 to 100
Manual : 0 to 100
Resonance : 0 to 100

Delay*

Delay Time C : 0 to 800ms
Feedback : 0 to 100
Level C* : 0 to 100
Delay Time L : 0 to 800ms
Level L* : 0 to 100
Delay Time R : 0 to 800ms
Level R* : 0 to 100
LP Filter : 500Hz to Thru

Chorus*

Mode : Mono/Stereo
Rate* : 0 to 100
Depth : 0 to 100
Pre Delay : 0.0 to 50.0ms
LP Filter : 500Hz to Thru
Effect Level : 0 to 100

Panning/Tremolo*

Mode : Pan/Tremolo
Modulation Wave : Tri/Square
Rate* : 0 to 100
Depth : 0 to 100
Balance* : L100 R0 to L0 R100

Reverb*

Mode : Room1/Room2/
Hall1/Hall2/Plate
Reverb Time : 0.1 to 20.0s
Pre Delay : 0 to 100ms
HP Filter : Thru to 800Hz
LP Filter : 500Hz to Thru
Direct Level : 0 to 100
Effect Level* : 0 to 100

Master

Level* : 0 to 100

Assign 1 to 4

Target : For parameters marked with an asterisk,
Overall Effect On/Off for the algorithm,
Metronome On/Off, Metronome Level,
Tuner On/Off
Min : -
Max : -
Source : Control 1 to 3/Exp Pedal/
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119
Assign Mode
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3 : FS-5U Momentary/FS-5U Latch/
FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119 : Momentary/Latch
Another selection of multiple effects for use with guitars. Includes a four-voice pitch shifter and a feedbacker. In addition, it allows some really distorted sounds to be created since it provides pitch shifting and EQ before the distortion effect.

* This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.

* If using the SE-70's internal tuner with this algorithm, be sure to set the Input Level knobs so the R knob is at the same position as the L knob.

---

### Feedbacker

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rise Time</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Vibrato Rate</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Vibrato Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>+1oct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Trigger*</td>
<td>On/Off</td>
</tr>
</tbody>
</table>

### Compressor/Limiter*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Comp/Limiter</td>
</tr>
<tr>
<td>Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.5: 1/2: 1/4: 1/100: 1</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Pitch Shifter 1*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>1 to 3</td>
</tr>
<tr>
<td>Pitch*</td>
<td>-24 to +24</td>
</tr>
<tr>
<td>Fine</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Pre Equalizer*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Mid f</td>
<td>100Hz to 10kHz</td>
</tr>
<tr>
<td>Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

### Overdrive/Distortion*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Natural OD/Vintage OD/Turbo OD/ Crunch/Distortion/Metal 1/ Metal 2/Fuzz</td>
</tr>
<tr>
<td>Gain</td>
<td>High/Low</td>
</tr>
<tr>
<td>Drive*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
### Equalizer*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

### Chorus*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo</td>
</tr>
<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0.0 to 10.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Reverb*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/</td>
</tr>
<tr>
<td></td>
<td>Hall1/Hall2/Plate</td>
</tr>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 25ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Pitch Shifter 2*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch Shifter 1 to 4 Mode</td>
<td>1/2/3/4/5/</td>
</tr>
<tr>
<td></td>
<td>Inv1/inv2</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Pitch*</td>
<td>-24 to +24</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Fine</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Pre Delay</td>
<td>0 to 400ms</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Pan</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Direct Delay</td>
<td>0 to 20ms</td>
</tr>
<tr>
<td>Direct Pan</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Assign 1 to 4

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td>Assign Mode</td>
<td>Control 1</td>
</tr>
<tr>
<td></td>
<td>: Momentary/Latch</td>
</tr>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>: FS-5U Momentary/FS-5U Latch/ FS-5L Latch</td>
</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend</td>
<td>: Momentary/Latch</td>
</tr>
<tr>
<td>MIDI CC#0 to 31, 64 to 119</td>
<td></td>
</tr>
</tbody>
</table>

### Delay*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time C</td>
<td>0 to 400ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level C*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time L</td>
<td>0 to 400ms</td>
</tr>
<tr>
<td>Level L*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time R</td>
<td>0 to 400ms</td>
</tr>
<tr>
<td>Level R*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
</tbody>
</table>
Another selection of multiple effects for use with guitars. Includes a four-tap delay capable of a maximum of 1800 ms.

* This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.
* Note that noise could be produced when using the SE-70’s internal tuner with this algorithm if the R Input Level knob is set too high.

**Compressor/Limiter**
- Mode: Comp/Limiter
- **<Compressor>**
  - Sustain: 0 to 100
  - Attack: 0 to 100
- **<Limiter>**
  - Threshold: 0 to 100
  - Release: 0 to 100
  - Ratio: 1.5: 1/2: 1/4: 1/100: 1
  - Tone: -50 to +50
  - Level*: 0 to 100

**Auto Wah**
- Mode: BPF/LPF
- Polarity: Up/Down
- Sens: 0 to 100
- Manual*: 0 to 100
- Peak: 0 to 100
- Rate: 0 to 100
- Depth: 0 to 100
- Level: 0 to 100

**Overdrive/Distortion**
- Mode: Natural OD/Vintage OD/
  - Turbo OD/Crunch/
  - Distortion/Metal 1/
  - Metal 2/Fuzz
- Gain: High/Low
- Drive*: 0 to 100
- Tone: -50 to +50
- Level: 0 to 100

**Equalizer**
- Low EQ: -20dB to +20dB
- Low-Mid f: 100Hz to 10.0kHz
- Low-Mid Q: 0.5 to 16
- Low-Mid EQ: -20dB to +20dB
- High-Mid f: 100Hz to 10.0kHz
- High-Mid Q: 0.5 to 16
- High-Mid EQ: -20dB to +20dB
- High EQ: -20dB to +20dB
- Level: -20dB to +20dB
### Guitar Amp Simulator*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Small/Built In/2Stack/3Stack</td>
</tr>
</tbody>
</table>

#### Noise Suppressor

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

#### Delay*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time 1 to 4</td>
<td>0 to 1800ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pan 1 to 4</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Tap Level 1 to 4*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Ducking</td>
<td>On/Off</td>
</tr>
<tr>
<td>Ducking Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Ducking Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Rise Time</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Direct Pan</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

#### Chorus*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo</td>
</tr>
<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0.0 to 10.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

#### Reverb*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 25ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

#### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

---

### Assign 1 to 4

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

#### Assign Mode

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control 1</td>
<td>Momentary/Latch</td>
</tr>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/ FS-5L Latch</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td></td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>
129 Guitar Multi 4

More multiple effects designed for use with guitars. Ch 1 (clean) and Ch 2 (drive) are processed independently. A completely new creation can be produced by altering the mix.

* This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.

* If using the SE-70's internal tuner with this algorithm, be sure to set the Input Level knobs so the R knob is at the same position as the L knob.

Ch1 Compressor/Limiter*

<table>
<thead>
<tr>
<th>Mode</th>
<th>Comp/Limiter</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Compressor&gt;</td>
<td></td>
</tr>
<tr>
<td>Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>&lt;Limiter&gt;</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.5: 1/2: 1/4: 1/100: 1</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

Ch1 Equalizer*

| Low EQ     | -20dB to +20dB                |
| Low-Mid f  | 100Hz to 10.0kHz              |
| Low-Mid Q  | 0.5 to 16                     |
| Low-Mid EQ | -20dB to +20dB                |
| High-Mid f | 100Hz to 10.0kHz              |
| High-Mid Q | 0.5 to 16                     |
| High-Mid EQ| -20dB to +20dB                |
| High EQ    | -20dB to +20dB                |
| Level      | -20dB to +20dB                |

Ch1 Noise Suppressor

| Threshold  | 0 to 100                      |
| Release    | 0 to 100                      |
| Level*     | 0 to 100                      |

Ch1 Delay*

| Delay Time C | 0 to 600ms                    |
| Feedback    | 0 to 100                      |
| Level C*    | 0 to 100                      |
| Delay Time L | 0 to 600ms                   |
| Level L*    | 0 to 100                      |
| Delay Time R | 0 to 600ms                   |
| Level R*    | 0 to 100                      |
| LP Filter   | 500Hz to Thru                 |

Ch1 Chorus*

| Mode       | Mono/Stereo                   |
| Rate*      | 0 to 100                      |
| Depth      | 0 to 100                      |
| Pre Delay  | 0.0 to 50.0ms                 |
| LP Filter  | 500Hz to Thru                 |
| Effect Level | 0 to 100                  |

Ch1 Guitar Amp Simulator*

| Mode       | Small/Built In/2Stack/3Stack   |
### Ch1 Reverb*
- **Reverb Time**: 0.1 to 20.0s
- **Pre Delay**: 0 to 50ms
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

### Ch2 Chorus*
- **Mode**: Mono/Stereo
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Pre Delay**: 0.0 to 50.0ms
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100

### Ch2 Overdrive/Distortion*
- **Mode**: Natural OD/Vintage OD/Turbo OD/ Crunch/Distortion/Metal 1/ Metal 2/Fuzz
- **Gain**: High/Low
- **Drive**: 0 to 100
- **Tone**: -50 to +50
- **Level**: 0 to 100

### Ch2 Equalizer*
- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10.0kHz
- **Low-Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10.0kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

### Ch2 Guitar Amp Simulator*
- **Mode**: Small/Built In/2Stack/3Stack

### Ch2 Noise Suppressor
- **Threshold**: 0 to 100
- **Release**: 0 to 100
- **Level**: 0 to 100

### Ch2 Delay*
- **Delay Time C**: 0 to 600ms
- **Feedback**: 0 to 100
- **Level C**: 0 to 100
- **Delay Time L**: 0 to 600ms
- **Level L**: 0 to 100
- **Delay Time R**: 0 to 600ms
- **Level R**: 0 to 100
- **LP Filter**: 500Hz to Thru

### Mixer
- **Ch1 Pan**: L100 R0 to L0 R100
- **Ch1 Level**: 0 to 100
- **Ch2 Pan**: L100 R0 to L0 R100
- **Ch2 Level**: 0 to 100

### Master
- **Level**: 0 to 100

### Assign 1 to 4
- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119

Assign Mode
- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/ FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/**: MIDI CC#0 to 31, 64 to 119
  - **Momentary/Latch**
A selection of multiple effects configured to work well with electric basses.

* This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.

* If using the SE-70's internal tuner with this algorithm, be sure to set the Input Level knobs so the R knob is at the same position as the L knob.

---

**Slow Gear**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Auto/Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Trigger*</td>
<td>On/Off</td>
</tr>
</tbody>
</table>

**Compressor/Limiter**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Comp/Limiter</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Compressor&gt;</td>
<td></td>
</tr>
<tr>
<td>Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>&lt;Limiter&gt;</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.5: 1/2: 1/4: 1/100: 1</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Auto Wah**

<table>
<thead>
<tr>
<th>Mode</th>
<th>BPF/LPF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polarity</td>
<td>Up/Down</td>
</tr>
<tr>
<td>Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Manual*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Peak</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Rate</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Overdrive/Distortion**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Overdrive/Distortion/Metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>High/Low</td>
</tr>
<tr>
<td>Drive*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Equalizer**

| Low EQ                | -20dB to +20dB               |
| Low-Mid f             | 100Hz to 10.0kHz             |
| Low-Mid Q             | 0.5 to 16                    |
| Low-Mid EQ            | -20dB to +20dB               |
| High-Mid f            | 100Hz to 10.0kHz             |
| High-Mid Q            | 0.5 to 16                    |
| High-Mid EQ           | -20dB to +20dB               |
| High EQ               | -20dB to +20dB               |
| Level                 | -20dB to +20dB               |

**Enhancer**

| Sens      | 0 to 100 |
| Frequency | 1kHz to 10.0kHz |
| Mix Level | 0 to 100   |
| Low Mix Level | 0 to 100 |
| Level     | 0 to 100   |
### Bass Amp Simulator
- **Mode**: Small/Built In/Stack

### Noise Suppressor
- **Threshold**: 0 to 100
- **Release**: 0 to 100
- **Level**: 0 to 100

### Pitch Shifter
- **Mode**: 1/2/3/4
- **Pitch**: -24 to +24
- **Fine**: -50 to +50
- **Pre Delay**: 0 to 300ms
- **Feedback**: 0 to 100
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

### Vibrato
- **Trigger**: On/Off
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Rise Time**: 0 to 100

### Phaser
- **Mode**: 4stage/8stage
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Manual**: 0 to 100
- **Resonance**: 0 to 100
- **Step**: On/Off
- **Step Rate**: 0 to 100

### Chorus
- **Mode**: Mono/Stereo
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Pre Delay**: 0.0 to 50.0ms
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100

### Panning/Tremolo
- **Mode**: Pan/Tremolo
- **Modulation Wave**: Tri/Square
- **Rate**: 0 to 100
- **Depth**: 0 to 100
- **Balance**: L100 R0 to L0 R100

### Reverb
- **Mode**: Room1/Room2/Hall1/Hall2/Plate
- **Reverb Time**: 0.1 to 20.0s
- **Pre Delay**: 0 to 100ms
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

### Master
- **Level**: 0 to 100

### Assign 1 to 4
- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119
- **Assign Mode**: Momentary/Latch
- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119**: Momentary/Latch

### Delay
- **Delay Time C**: 0 to 800ms
- **Feedback**: 0 to 100
- **Level C**: 0 to 100
- **Delay Time L**: 0 to 800ms
- **Level L**: 0 to 100
- **Delay Time R**: 0 to 800ms
- **Level R**: 0 to 100
- **LP Filter**: 500Hz to Thru
131 Vocal Multi

An algorithm providing effects that are suitable for vocals.

**Limiter**
- Threshold: 0 to 100
- Release: 0 to 100
- Ratio: 1.5: 1/2: 1/4: 1/100: 1
- Level: 0 to 100

**De-esser**
- Sens: 0 to 100
- Frequency: 1.00kHz to 10.00kHz

**Equalizer**
- Low EQ: -20dB to +20dB
- Low-Mid f: 100Hz to 10.0kHz
- Low-Mid Q: 0.5 to 16
- Low-Mid EQ: -20dB to +20dB
- High-Mid f: 100Hz to 10.0kHz
- High-Mid Q: 0.5 to 16
- High-Mid EQ: -20dB to +20dB
- High EQ: -20dB to +20dB
- HP Filter: Thru to 800Hz
- LP Filter: 500Hz to Thru
- Level: -20dB to +20dB

**Enhancer**
- Sens: 0 to 100
- Frequency: 1.00kHz to 10.00kHz
- Mix Level: 0 to 100
- Low Mix Level: 0 to 100
- Level: 0 to 100

**Noise Suppressor**
- Threshold: 0 to 100
- Release: 0 to 100
- Level*: 0 to 100

**Pitch Shifter**
- Pitch Shifter 1 to 4 Mode: 1/2/3/4/5
- Pitch Shifter 1 to 4 Pitch*: -24 to +24
- Pitch Shifter 1 to 4 Fine: -50 to +50
- Pitch Shifter 1 to 4 Pre Delay: 0 to 100ms
- Pitch Shifter 1 Feedback: 0 to 100
- Pitch Shifter 1 to 4 Pan: L100 R0 to L0 R100
- Pitch Shifter 1 to 4 Level: 0 to 100
- Direct Delay: 0 to 40ms
- Direct Pan: L100 R0 to L0 R100
- Direct Level: 0 to 100
### Delay

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time C</td>
<td>0 to 800ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level C*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time L</td>
<td>0 to 800ms</td>
</tr>
<tr>
<td>Level L*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time R</td>
<td>0 to 800ms</td>
</tr>
<tr>
<td>Level R*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
</tbody>
</table>

### Chorus

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo</td>
</tr>
<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0.0 to 50.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Reverb

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/Hall1/Hall2/Plate</td>
</tr>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 200ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Assign 1 to 4

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

<table>
<thead>
<tr>
<th>Control</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control 1</td>
<td>Momentary/Latch</td>
</tr>
<tr>
<td>Control 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td>FS-5U Momentary/FS-5U Latch / FS-5L Latch</td>
</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>
A guitar synthesizer algorithm. The synthesized sound and the guitar sound can be mixed for output.

* This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.

* If using the SE-70's internal tuner with this algorithm, be sure to set the Input Level knobs so the R knob is at the same position as the L knob.

### Guitar Synth*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sens</td>
<td>0 to 50</td>
</tr>
<tr>
<td>Chromatic</td>
<td>On/Off</td>
</tr>
<tr>
<td>Wave</td>
<td>Saw/Square</td>
</tr>
<tr>
<td>Oct Shift</td>
<td>-2/-1/0/+1</td>
</tr>
<tr>
<td>Sub OSC Pitch*</td>
<td>-1200 to +100</td>
</tr>
<tr>
<td>Main OSC Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Sub OSC Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>-1oct Mix</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Portamento</td>
<td>On/Off</td>
</tr>
<tr>
<td>Portamento Time</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Vibrato Rate</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Vibrato Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Cutoff f*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Resonance</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Depth</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>TVF Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Decay</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Decay</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Hold*</td>
<td>On/Off</td>
</tr>
</tbody>
</table>

### Synth Equalizer*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

### Compressor/Limiter*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Comp/Limiter</td>
</tr>
<tr>
<td>&lt;Compressor&gt;</td>
<td></td>
</tr>
<tr>
<td>Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>&lt;Limiter&gt;</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.5: 1/2: 1/4: 1/100: 1</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
### Overdrive/Distortion*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Natural OD/Vintage OD/Turbo OD/ Crunch/Distortion/Metal 1/ Metal 2/Fuzz</td>
</tr>
<tr>
<td>Gain</td>
<td>High/Low</td>
</tr>
<tr>
<td>Drive*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Equalizer*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
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</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

### Guitar Amp Simulator*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Small/Build In/2Stack/3Stack</td>
</tr>
</tbody>
</table>

### Noise Suppressor

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Synth Mixer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synth Pan*</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Synth Level*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Guitar Pan*</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Guitar Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Delay*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time C</td>
<td>0 to 1200ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level C*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time L</td>
<td>0 to 1200ms</td>
</tr>
<tr>
<td>Level L*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time R</td>
<td>0 to 1200ms</td>
</tr>
<tr>
<td>Level R*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
</tbody>
</table>

### Chorus*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo</td>
</tr>
<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0.0 to 50.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Reverb*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/ Hall1/Hall2/Plate</td>
</tr>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 100ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Direct Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Assign 1 to 4

Target : For parameters marked with an asterisk, Overall Effect On/Off for the algorithm...

Min : -
Max : -
Source : Control 1 to 3/Exp Pedal/

Assign Mode
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3 : FS-5U Momentary/FS-5U Latch/ FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119
Assign Mode
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3 : FS-5U Momentary/FS-5U Latch/ FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119
 Assign Mode
Control 1 : Momentary/Latch
Control 1&2/1&3/2/3 : FS-5U Momentary/FS-5U Latch/ FS-5L Latch
MIDI After Touch/MIDI Pitch Bend/
MIDI CC#0 to 31, 64 to 119
A bass synthesizer algorithm. The synthesized sound and the bass sound can be mixed for output.

- This algorithm is designed to accept input on the L channel only. Be sure to connect your instrument to the L (MONO) jack.
- If using the SE-70's internal tuner with this algorithm, be sure to set the Input Level knobs so the R knob is at the same position as the L knob.

### Bass Synth

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sens</td>
<td>0 to 50</td>
</tr>
<tr>
<td>Chromatic</td>
<td>On/Off</td>
</tr>
<tr>
<td>Wave</td>
<td>Saw/Square</td>
</tr>
<tr>
<td>Oct Shift</td>
<td>-2/-1/0/+1</td>
</tr>
<tr>
<td>Sub OSC Pitch*</td>
<td>-1200 to +100</td>
</tr>
<tr>
<td>Main OSC Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Sub OSC Level</td>
<td>0 to 100</td>
</tr>
<tr>
<td>-1oct Mix</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Portamento</td>
<td>On/Off</td>
</tr>
<tr>
<td>Portamento Time</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Vibrate Rate</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Vbartio Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Cutoff f*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Resonance</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Depth</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>TVF Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Decay</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVF Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Sens</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Decay</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>TVA Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Hold*</td>
<td>On/Off</td>
</tr>
</tbody>
</table>

### Synth Equalizer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level*</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

### Compressor/Limiter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Comp/Limiter</td>
</tr>
<tr>
<td>&lt;Compressor&gt;</td>
<td></td>
</tr>
<tr>
<td>Sustain</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>&lt;Limiter&gt;</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Release</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.5: 1/2: 1/4: 1/100: 1</td>
</tr>
<tr>
<td>Tone</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
**Overdrive/Distortion***

- **Mode**: Overdrive/Distortion/Metal
- **Gain**: High/Low
- **Drive***: 0 to 100
- **Tone**: -50 to +50
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

**Equalizer***

- **Low EQ**: -20dB to +20dB
- **Low-Mid f**: 100Hz to 10kHz
- **Low-Mid Q**: 0.5 to 16
- **Low-Mid EQ**: -20dB to +20dB
- **High-Mid f**: 100Hz to 10kHz
- **High-Mid Q**: 0.5 to 16
- **High-Mid EQ**: -20dB to +20dB
- **High EQ**: -20dB to +20dB
- **Level**: -20dB to +20dB

**Bass Amp Simulator***

- **Mode**: Small/Built In/Stack

**Chorus***

- **Mode**: Mono/Stereo
- **Rate***: 0 to 100
- **Depth**: 0 to 100
- **Pre Delay**: 0.0 to 50.0ms
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100

**Reverb***

- **Mode**: Room1/Room2/Hall1/Hall2/Plate
- **Reverb Time**: 0.1 to 20.0s
- **Pre Delay**: 0 to 100ms
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Direct Level**: 0 to 100
- **Effect Level***: 0 to 100

**Master***

- **Level***: 0 to 100

**Assign 1 to 4***

- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119

**Assign Mode***

- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119**: Momentary/Latch

**Noise Suppressor***

- **Threshold**: 0 to 100
- **Release**: 0 to 100
- **Level***: 0 to 100

**Synth Mixer***

- **Synth Pan***: L100 R0 to L0 R100
- **Synth Level***: 0 to 100
- **Bass Pan***: L100 R0 to L0 R100
- **Bass Level***: 0 to 100

**Delay***

- **Delay Time C**: 0 to 1200ms
- **Feedback**: 0 to 100
- **Level C***: 0 to 100
- **Delay Time L**: 0 to 1200ms
- **Level L***: 0 to 100
- **Delay Time R**: 0 to 1200ms
- **Level R***: 0 to 100
- **LP Filter**: 500Hz to Thru
A mixer that processes two channels. It provides for use of EQ and noise suppression for each channel. At the next stage, it allows reverb, delay, and chorus to be applied.

**Ch1 Equalizer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

**Ch1**

- Noise Suppressor Threshold: 0 to 100
- Noise Suppressor Release: 0 to 100
- Delay Level (SEND)*: 0 to 100
- Chorus Level (SEND)*: 0 to 100
- Reverb Level (SEND)*: 0 to 100
- Pan*: L100 R0 to L0 R100
- Level*: 0 to 100

**Ch2 Equalizer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

**Ch2**

- Noise Suppressor Threshold: 0 to 100
- Noise Suppressor Release: 0 to 100
- Delay Level (SEND)*: 0 to 100
- Chorus Level (SEND)*: 0 to 100
- Reverb Level (SEND)*: 0 to 100
- Pan*: L100 R0 to L0 R100
- Level*: 0 to 100
**Delay**
- Delay Time C: 0 to 600ms
- Feedback: 0 to 100
- Level C: 0 to 100
- Delay Time L: 0 to 600ms
- Level L: 0 to 100
- Delay Time R: 0 to 600ms
- Level R: 0 to 100
- LP Filter: 500Hz to Thru

**Chorus**
- Mode: Mono/Stereo
- Rate*: 0 to 100
- Depth: 0 to 100
- Pre Delay: 0 to 50.0ms
- LP Filter: 500Hz to Thru
- Effect Level: 0 to 100

**Reverb**
- Mode: Room1/Room2/
  Hall1/Hall2/Plate
- Reverb Time: 0.1 to 20.0s
- Pre Delay: 0 to 100ms
- HP Filter: Thru to 800Hz
- LP Filter: 500Hz to Thru
- Effect Level: 0 to 100

**Master**
- Level*: 0 to 100

**Assign 1 to 4**
- Target: For parameters marked with an asterisk,
  Overall Effect On/Off for the algorithm,
  Metronome On/Off, Metronome Level,
  Tuner On/Off
- Min: -
- Max: -
- Source: Control 1 to 3/Exp Pedal/
  MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119

Assign Mode
- Control 1: Momentary/Latch
- Control 1&2/1&3/2/3
  - FS-SU Momentary/FS-SU Latch/
    FS-SL Latch
- MIDI After Touch/MIDI Pitch Bend/
- MIDI CC#0 to 31, 64 to 119
  - Momentary/Latch
135 Hum Canceler

*Used to remove hum.*

**Hum Canceler**

- **Threshold**: 0 to 100
- **Frequency**: 40.0 to 80.0Hz

**Noise Suppressor**

- **Threshold**: 0 to 100
- **Release**: 0 to 100

**Master**

- **Level**: 0 to 100

**Assign 1 to 4**

- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119

**Assign Mode**

- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/
  FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend**/
  MIDI CC#0 to 31, 64 to 119
  : Momentary/Latch
**136 Vocal Canceler**

Allows for audio signals that originally were localized in the center of the stereo field to be eliminated. This allows you to remove the vocals from audio sources that you input (such as from a CD) and obtain a “minus-one” effect.

---

**Vocal Canceler**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance</td>
<td>L100 R0 to L0 R100</td>
</tr>
</tbody>
</table>

**Equalizer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Low-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>Low-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>Low-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High-Mid f</td>
<td>100Hz to 10.0kHz</td>
</tr>
<tr>
<td>High-Mid Q</td>
<td>0.5 to 16</td>
</tr>
<tr>
<td>High-Mid EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>High EQ</td>
<td>-20dB to +20dB</td>
</tr>
<tr>
<td>Level</td>
<td>-20dB to +20dB</td>
</tr>
</tbody>
</table>

**Key Changer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>1/2/3/4</td>
</tr>
<tr>
<td>Key*</td>
<td>-12 to +12</td>
</tr>
<tr>
<td>Fine</td>
<td>-50 to +50</td>
</tr>
</tbody>
</table>

**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Target</th>
<th>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

**Assign Mode**

<table>
<thead>
<tr>
<th>Control 1</th>
<th>Momentary/Latch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/ FS-5L Latch</td>
</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>

**Master**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
### Sampler 1

**Provides for up to 2,000 ms of sampling time.**

#### Sampler

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording</td>
<td>--</td>
</tr>
<tr>
<td>Trigger Level</td>
<td>0 to 80</td>
</tr>
<tr>
<td>Trigger Mode</td>
<td>Auto/Manual</td>
</tr>
<tr>
<td>Pre Trigger</td>
<td>0 to 300ms</td>
</tr>
<tr>
<td>Pitch</td>
<td>-12 to +12</td>
</tr>
<tr>
<td>Fine</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Play Mode</td>
<td>Trig/Gate</td>
</tr>
<tr>
<td>Play Time</td>
<td>100 to 2000ms</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Decay</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Original Key</td>
<td>Off/C1 to C7</td>
</tr>
</tbody>
</table>

#### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

#### Assign 1 to 4

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>Trigger, Master Level, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/ MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

#### Assign Mode

<table>
<thead>
<tr>
<th>Control 1</th>
<th>Momentary/Latch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/ FS-5L Latch</td>
</tr>
<tr>
<td>MIDI After Touch/MIDI Pitch Bend/ MIDI CC#0 to 31, 64 to 119</td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>
This sampler specializes in reverse playback.

### Sampler

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording</td>
<td>-</td>
</tr>
<tr>
<td>Trigger Level</td>
<td>0 to 80</td>
</tr>
<tr>
<td>Trigger Mode</td>
<td>Auto/Manual</td>
</tr>
<tr>
<td>Pre Trigger</td>
<td>0 to 300ms</td>
</tr>
<tr>
<td>Pitch</td>
<td>-12 to +12</td>
</tr>
<tr>
<td>Fine</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Play Mode</td>
<td>Trig/Gate</td>
</tr>
<tr>
<td>Play Time</td>
<td>100 to 2000ms</td>
</tr>
<tr>
<td>Attack</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Decay</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Original Key</td>
<td>Off/C1 to C7</td>
</tr>
</tbody>
</table>

### Assign 1 to 4

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>Trigger, Master Level</td>
</tr>
<tr>
<td></td>
<td>Overall Effect On/Off for the algorithm</td>
</tr>
<tr>
<td></td>
<td>Metronome On/Off, Metronome Level,</td>
</tr>
<tr>
<td></td>
<td>Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Assign Mode

- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/**: MIDI CC#0 to 31, 64 to 119
- **Momentary/Latch**: Momentary/Latch
Repeat Play

This sampler is designed to be used in real time.

```
Repeat Play
```

--- Repeat Play ---

```
INPUT L

REPEAT PLAY

INPUT R

MASTER LEVEL

OUTPUT L

MASTER LEVEL

OUTPUT R
```

**Repeat Play**

- **Monitor**: –
- **Trigger Level**: 0 to 80
- **Trigger Mode**: Auto/Manual
- **Reverse Play**: On/Off
- **Play Time**: 100 to 2000ms
- **Interval**: 0.02ms to 20.000sec
- **Repeat Count**: 1 to 20/∞
- **Attack**: 0 to 100
- **Decay**: 0 to 100
- **Bass**: -12dB to +12dB
- **Treble**: -12dB to +12dB
- **Direct Level**: 0 to 100
- **Effect Level**: 0 to 100

**Master**

- **Level**: 0 to 100

**Assign 1 to 4**

- **Target**: Trigger, Master Level,
  Overall Effect On/Off for the algorithm,
  Metronome On/Off, Metronome Level,
  Tuner On/Off
- **Min**: –
- **Max**: –
- **Source**: Control 1 to 3/Exp Pedal/
  MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119

**Assign Mode**

- **Control 1**: Momentary/Latch
- **Control 1&2/3/3/3/3**: FS-5U Momentary/FS-SU Latch/
  FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119**: Momentary/Latch
Algorithms Geared for Use With a Mixer

Since the SE-70 processes input in stereo, separate effects can be applied independently to the left and right channels. This makes the unit quite effective when connected with a mixer that is equipped with two or more send/returns.

Output Mode
The algorithms numbered from 140 to 145 carry a parameter known as the “Output Mode.” This parameter allows you to select the mode of output you wish to use with respect to each of the channels.

Mono+Mono: The effect sound will be in mono on each channel and output independently.

Stereo Mix: The effect sound for each channel will be preserved in stereo and mixed before being output.

Make the connections in accord with either of the examples shown below, depending on the Output Mode you have selected.

Always choose the Output Mode which is appropriate to your application.
Allows hall reverb and room reverb to be applied independently to each channel.

**Hall Reverb**

- **Reverb Time**: 0.1 to 20.0s
- **Pre Delay**: 0 to 400ms
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100

**Room Reverb**

- **Reverb Time**: 0.1 to 20.0s
- **Pre Delay**: 0 to 100ms
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100

**Output Mode**

- **Stereo Mix/Mono+Mono**

**Direct**

- **Level L**: 0 to 100
- **Level R**: 0 to 100

**Master**

- **Level**: 0 to 100

**Assign 1 to 4**

- **Target**: For parameters marked with an asterisk,
  - Overall Effect On/Off for the algorithm,
  - Metronome On/Off, Metronome Level,
  - Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119
- **Assign Mode**
  - Control 1: Momentary/Latch
  - Control 1&2/1&3/2/3: FS-5U Momentary/FS-5U Latch/
    - FS-5L Latch
  - MIDI After Touch/MIDI Pitch Bend/
  - MIDI CC#0 to 31, 64 to 119: Momentary/Latch
## 141 Reverb + Delay

Allows reverb and delay to be applied independently to each channel.

![Diagram of Reverb and Delay](image)

### Reverb*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/Hall1/Hall2/Plate</td>
</tr>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 100ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Delay*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay Time C</td>
<td>0 to 400ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level C*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time L</td>
<td>0 to 400ms</td>
</tr>
<tr>
<td>Level L*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time R</td>
<td>0 to 400ms</td>
</tr>
<tr>
<td>Level R*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
</tbody>
</table>

### Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

### Assign 1 to 4

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td>Assign Mode</td>
<td>Control 1 : Momentary/Latch Control 1&amp;2/1&amp;3/2/3 : FS-5U Momentary/FS-5U Latch/FS-5L Latch MIDI After Touch/MIDI Pitch Bend/MIDI CC#0 to 31, 64 to 119 : Momentary/Latch</td>
</tr>
</tbody>
</table>

### Output Mode

<table>
<thead>
<tr>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>: Stereo Mix/Mono+Mono</td>
</tr>
</tbody>
</table>

### Direct

<table>
<thead>
<tr>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level L</td>
</tr>
<tr>
<td>Level R</td>
</tr>
</tbody>
</table>
142 Reverb + Chorus

Allows reverb and chorus to be applied independently to each channel.

---

**Reverb**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/Hall1/Hall2/Plate</td>
</tr>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 100ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Chorus**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo1/Stereo2</td>
</tr>
<tr>
<td>Rate*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 50.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Output Mode**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stereo Mix/Mono+Mono</td>
</tr>
</tbody>
</table>

**Direct**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level L</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level R</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Master**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**Assign 1 to 4**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk,</td>
</tr>
<tr>
<td></td>
<td>Overall Effect On/Off for the algorithm,</td>
</tr>
<tr>
<td></td>
<td>Metronome On/Off, Metronome Level,</td>
</tr>
<tr>
<td></td>
<td>Tuner On/Off</td>
</tr>
<tr>
<td>Min</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>-</td>
</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td>Assign Mode</td>
<td></td>
</tr>
<tr>
<td>Control 1</td>
<td>Momentary/Latch</td>
</tr>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/</td>
</tr>
<tr>
<td></td>
<td>FS-5L Latch</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
</tr>
<tr>
<td></td>
<td>Momentary/Latch</td>
</tr>
</tbody>
</table>
143 Reverb + Pitch Shift

Allows reverb and pitch shifting to be applied independently to each channel.

Reverb*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Room1/Room2/ Hall1/Hall2/Plate</td>
</tr>
<tr>
<td>Reverb Time</td>
<td>0.1 to 20.0s</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 100ms</td>
</tr>
<tr>
<td>HP Filter</td>
<td>Thru to 800Hz</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level*</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

Pitch Shifter*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch Shifter 1 to 4 Mode</td>
<td>1/2/3/4/5/ Inv1/Inv2</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Pitch*</td>
<td>-24 to +24</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Fine</td>
<td>-50 to +50</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Pre Delay</td>
<td>0 to 300ms</td>
</tr>
<tr>
<td>Pitch Shifter 1 Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Pan</td>
<td>L100 R0 to L0 R100</td>
</tr>
<tr>
<td>Pitch Shifter 1 to 4 Level</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>

Output Mode

<table>
<thead>
<tr>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereo Mix/Mono+Mono</td>
</tr>
</tbody>
</table>

Master

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level*</td>
<td>0 to 100</td>
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</tbody>
</table>

Assign 1 to 4

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
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<tbody>
<tr>
<td>Target</td>
<td>For parameters marked with an asterisk,</td>
</tr>
<tr>
<td>Overall Effect On/Off</td>
<td>For the algorithm,</td>
</tr>
<tr>
<td>Metronome On/Off</td>
<td>Metronome Level,</td>
</tr>
<tr>
<td>Tuner On/Off</td>
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</tr>
<tr>
<td>Min</td>
<td>-</td>
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<tr>
<td>Max</td>
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</tr>
<tr>
<td>Source</td>
<td>Control 1 to 3/Exp Pedal/</td>
</tr>
<tr>
<td></td>
<td>MIDI After Touch/MIDI Pitch Bend/</td>
</tr>
<tr>
<td></td>
<td>MIDI CC#0 to 31, 64 to 119</td>
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<tr>
<td>Assign Mode</td>
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<tr>
<td>Control 1</td>
<td>Momentary/Latch</td>
</tr>
<tr>
<td>Control 1&amp;2/1&amp;3/2/3</td>
<td>FS-5U Momentary/FS-5U Latch/</td>
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<td>FS-5L Latch</td>
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Direct

<table>
<thead>
<tr>
<th>Setting</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Level L</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level R</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
Reverb + Gate Reverb

**Reverb**
- **Mode**: Room1/Room2/Hall1/Hall2/Plate
- **Reverb Time**: 0.1 to 20.0s
- **Pre Delay**: 0 to 100ms
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100

**Gate Reverb**
- **Gate Time**: 0 to 500ms
- **Pre Delay**: 0 to 100ms
- **HP Filter**: Thru to 800Hz
- **LP Filter**: 500Hz to Thru
- **Effect Level**: 0 to 100

**Output Mode**
- **Stereo Mix/Mono+Mono

**Direct**
- **Level L**: 0 to 100
- **Level R**: 0 to 100

**Master**
- **Level**: 0 to 100

**Assign 1 to 4**
- **Target**: For parameters marked with an asterisk, Overall Effect On/Off for the algorithm, Metronome On/Off, Metronome Level, Tuner On/Off
- **Min**: -
- **Max**: -
- **Source**: Control 1 to 3/Exp Pedal/
  MIDI After Touch/MIDI Pitch Bend/
  MIDI CC#0 to 31, 64 to 119

**Assign Mode**
- **Control 1**: Momentary/Latch
- **Control 1&2/1&3/2/3**: FS-5U Momentary/FS-5U Latch/
  FS-5L Latch
- **MIDI After Touch/MIDI Pitch Bend**/
  **MIDI CC#0 to 31, 64 to 119**: Momentary/Latch

Allows reverb and gate reverb to be applied independently to each channel.
145 Delay + Chorus

Allows delay and chorus to be applied independently to each channel.

**Delay***

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Delay Time C</td>
<td>0 to 1200ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Level C*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time L</td>
<td>0 to 1200ms</td>
</tr>
<tr>
<td>Level L*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Delay Time R</td>
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<tr>
<td>Level R*</td>
<td>0 to 100</td>
</tr>
<tr>
<td>LP Filter</td>
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**Chorus***

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Mono/Stereo1/Stereo2</td>
</tr>
<tr>
<td>Rate*</td>
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</tr>
<tr>
<td>Depth</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>0 to 50.0ms</td>
</tr>
<tr>
<td>LP Filter</td>
<td>500Hz to Thru</td>
</tr>
<tr>
<td>Effect Level</td>
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**Output Mode**

- Stereo Mix/Mono+Mono

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| Min   | - |
| Max   | - |

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<tr>
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| : Momentary/Latch                           |                        |
On the SE-70, new sounds are created by supplying values for the parameters that go with each effect. This section explains what is produced by each effect, as well as how the individual parameters work.

* Note that “Direct Sound” refers to the original input signal. “Effect Sound” refers to the sound after it has been processed by the effects.
Reverb and Delay

Reverb

Reverberation is produced as the result of a combination of numerous reflected sounds. For example, if you clap your hands in a large enclosed space (such as a gymnasium), you will hear the sound ‘bounce around’ for a short while and then die away. Reverberation refers to sound which lingers on for a while in this way.

A number of factors determine the character of a particular reverberation. These include the size (hall, room, etc.) and shape of the space in which it is produced, as well as the type of material making up the reflective surfaces (walls, etc.). The SE-70 is equipped with the ability to digitally simulate all these factors.

Now let's take a closer look at reverberation.

Types of Reflected Sounds

In analyzing everyday sounds we find that they can be divided into three portions: Direct Sound, Early Reflections, and Late Reflections. The direct sound is the sound which travels in a straight line from the source to reach the listener. Early reflections are the sounds which have been reflected back one or more times from walls, etc. Late reflections are diffused sounds which have been reflected numerous times before reaching the listener.

The listener will hear sound in this order:

Direct sound, early reflections, then late reflections.

Relationship Between Reflections and Time

Reflected sounds reach the listener in this manner:
The early reflection delay is the amount of time it takes for the early reflections to arrive, calculated from the instant the direct sound has begun. The pre delay is the amount of time it takes after the direct sound has been produced before the late reflections become apparent. The reverb time is the time it takes for the sound to fade away.
Reverberation consists of a complex mixture of all these elements.

Other Factors
In addition to the factors explained above, the character of a sound is also influenced by the type of material that the reflecting surfaces are made of (HF Damp, LF Damp). The application of a filter to the late reflections also affects the sound.

HF Damp
As a result of differences in the material of reflecting surfaces, the manner in which upper frequencies are attenuated (cut) also changes. The HF Damp parameter controls the manner in which this attenuation will occur. The more the value is decreased, the more intense the damping effect becomes.

LF Damp
Due to differences in the material of reflecting surfaces, the lower frequencies will also be attenuated differently. The LF Damp parameter controls this attenuation. The more the value is decreased, the more intense the damping effect becomes.

High Pass Filter
Cuts the lower frequency content while allowing the higher frequencies to pass through.

Low Pass Filter
Cuts the higher frequency content while allowing the lower frequencies to pass through.
Mode
Provides selection of the type of reverb. This parameter is available only with compound algorithms.
Room 1: A standard room reverb.
Room 2: A room reverb providing a softer tone than Room 1.
Hall 1: A standard hall reverb.
Hall 2: A hall reverb providing a softer tone than Hall 1.
Plate: Simulates a ‘plate’ reverb.

* As a general guideline, when the reverb time required is less than 2 seconds, a room reverb is recommended. When it is greater than 2 seconds, a hall or plate are more effective.

Reverb Time
Adjusts the length of the reverb sound.

Pre Delay
Adjusts the amount of time occurring before the reverb sound is heard.

Early Reflection Delay
Adjusts the delay for the early reflected sounds.

Early Reflection Mix Level
Adjusts the volume of the early reflected sounds.

HF Damp
Adjusts the degree to which HF damping will be applied. The more the value is decreased, the more intense the damping becomes. At ‘0’ there will be no damping.

LF Damp
Adjusts the degree to which LF damping will be applied. The more the value is decreased, the more intense the damping becomes. At ‘0’ there will be no damping.

High Pass Filter
Adjusts the frequency at which the high pass filter begins to work. When set to Thru, the high pass filter is inactive.

Low Pass Filter
Adjusts the frequency at which the low pass filter begins to work. When set to Thru, the low pass filter is inactive.

Diffusion
Adjusts the diffusion of the reverb sound.

Density
Attack
Adjusts the prominence of the attack of the reverb sound.

Bass
Adjusts the tone of the lower range of the reverb sound.

Treble
Adjusts the tone of the upper range of the reverb sound.

Direct Level
Adjusts the volume of the direct sound.

Effect Level
Adjusts the volume of the reverb sound.

* When using Room 2, independent settings can be made for each of the early reflections (1, 2, 3) (for both channels) for the Early Reflection Delay and Early Reflection Mix Level. The symbols representing these settings (L1, L2, L3, R1, R2, R3) will appear along with the parameter name.

Gate Reverb

This algorithm mutes the reverberating sounds part way through the natural decay. It supports full stereo processing. The effect can be made even more unique by adding Accent Delay, Accent Level.

Gate Time
Adjusts the amount of time from when the reverb sound begins to appear until it is muted.

Pre Delay
Mode (Gate Mode)
Selection for the manner in which the gate reverb is to be applied.
Normal: A standard gate reverb.
Left → Right: The gate reverb sound moves from the left to the right.
Right → Left: The gate reverb sound moves from the right to the left.
Reverse 1: A standard reverse gate.
Reverse 2: A reverse gate in which the reverb sound falls in the middle.
* When using the “Left → Right” or “Right → Left” mode, you must input an identical signal to both the L and R channels.

Thickness
Adjusts the thickness of the reverb sound.

Density
Adjusts the density of the reverb sound.

Accent Delay
Adjusts the amount of time from when the reverb sound is muted until the accent sound is output.

Accent Level
Adjusts the volume of the accent sound.

Bass
Adjusts the tone of the lower range.

Treble
Adjusts the tone of the upper range.

Direct Level
Adjusts the volume of the direct sound.

Effect Level
Adjusts the volume of the reverb sound (including accent).

Ambiance
Simulates the effect obtained when using an “ambience microphone.” (A microphone used during recording that is placed at a distance from the sound source.) This reverb focuses on spaciousness and depth, rather than being concerned only with the reverberant sounds.

Pre Delay
Adjusts the amount of time to pass before the reverb sound is output.
**Early Reflection Delay**
Adjusts the delay of the early reflected sound.

**Early Reflection Mix Level**
Adjusts the volume of the early reflected sound.

**Diffusion**
Adjusts the diffusion. The diffusion increases as the value increases.

**Bass**
Adjusts the tone of the lower range for the ambient sound.

**Treble**
Adjusts the tone of the upper range ambient sound.

**Direct Level**
Adjusts the volume of the direct sound.

**Effect Level**
Adjusts the volume of ambient sound.

---

**Delay**

Produces a specialized effect by adding delayed portions of the direct sound back into the direct sound.

**Delay Time**
Adjusts the delay time.

**Feedback, FB Level (Feedback Level)**
Feedback involves sending the delayed signals back into the effect input for further delay. This setting controls the signal level that is returned. As the value is increased, there will be a greater number of delay repetitions.

*If feedback is set too high, oscillation may occur.*

**Feedback Delay**
Adjusts the rate of repetition for the 20Tap Delay algorithm.

**Modulation Wave**
Selects the waveform for the LFO used for applying modulation with the Modulation Delay algorithm.
Tri (triangular wave): A smooth modulation is applied.
Sin (sine wave): A unique modulation is applied.
Rate
Adjusts the rate at which the delay will be modulated for the Modulation Delay algorithm.

Depth
Adjusts the depth at which the delay will be modulated for the Modulation Delay algorithm.

Polarity
Selects the phase of the modulation (LFO) for left and right channels with the Modulation Delay algorithm.

Inverse: The phase for left and right channels is inverted, producing an expansive effect.

Synchro: The phase of left and right channels output an equal sound.

Ducking
Turns the Ducking effect On/Off for the Guitar Multi 3 algorithm. When ON, the volume of the delay is altered to correspond with the volume of the direct sound. When the input level is high, the delay sound is low. When the input level decreases, the delay sound level increases. This is known as the ‘ducking’ effect.

Ducking Sens
Adjusts the sensitivity of the ducking effect relative to the input for the Guitar Multi 3 algorithm.

Ducking Depth
Adjusts the amount by which the delay sound will be altered as a result of the ducking effect for the Guitar Multi 3 algorithm. The greater the value, the more the delay sound will decrease while the ducking effect is being used.

Rise Time (Ducking Rise Time)
Adjusts the amount of time it takes for the delay sound to reach the specified amplitude after it has begun to be produced for the Guitar Multi 3 algorithm.

HF Damp
Adjusts the degree to which HF damping will be applied. The more the value is decreased, the more intense the damping becomes. At ‘0’ there will be no damping.

* This parameter will be effective even when Feedback is set to “0.”

LF Damp
Adjusts the degree to which LF damping will be applied. The more the value is decreased, the more intense the damping becomes. At ‘0’ there will be no damping.

* This parameter will be effective even when Feedback is set to “0.”
**Bass**
Adjusts the tone of the lower range of the delay sound.

**Treble**
Adjusts the tone of the upper range of the delay sound.

**Low Pass Filter**
Adjusts the frequency at which the low pass filter begins to work. When set to Thru, the low pass filter is inactive.

**Pan**
Adjusts the localization of the sound image for the delay sound.

**Direct Pan**
Adjusts the localization of the sound image for the direct sound.

**Tap Level**
Adjusts the volume of the output from each tap for the 20Tap Delay algorithm.

**Direct Level**
Adjusts the volume of the direct sound.

**Effect Level, Level**
Adjusts the volume of the delay.

**Cross Feedback**
The delay signal can also be fed back into the other channel. This setting adjusts the feedback level.

*If cross feedback is set too high, oscillation may occur.*

*Certain algorithms provide parameters which allow settings to be made independently for the left and right channels and the center of the sound field. The letters L, R, C appear for such parameters.*

L: Left
R: Right
C: Center

*With 20Tap Delay, settings for Delay Time, Pan, and Tap Level can be made for each delay line.*

*For these three parameters, the line number will be indicated as a number from 1 to 20.*
Modulation Type Effects

Chorus

An effect that adds ‘diffusion’ and thickness to a sound.

Mode
Selection for the chorus mode.
Note the following when 2 Stage /4 Stage /8 Stage /16 Stage or 16 Manual has been selected (Super Chorus):
When 2 Stage /4 Stage /8 Stage /16 Stage is selected, the Pre Delay and Depth for all stages will be set to the same value. The 16 Manual mode, however, allows for a complete range of precision settings. It accepts settings for Pre Delay and Depth (comprised of 8 sets of data) which can be made with respect to 2 stages which have a 180 degree phase differential.

Mono: Monophonic chorus.
Stereo, Stereo 1: 2-stage stereo chorus.
Stereo 2: 4-stage stereo chorus.

Rate
Adjusts the rate of chorus modulation.

Depth
Adjusts the depth of chorus modulation.

Pre Delay
Adjusts the length of time between the start of the direct sound and the beginning of the chorus sound.

Crossover f (Crossover Frequency)
Sets the dividing frequency between the high and low bands of the Band Chorus algorithm.

Low Rate
Adjusts the rate at which the low band of the Band Chorus algorithm is modulated.

Low Depth
Adjusts the depth at which the low band of the Band Chorus algorithm is modulated.

Low Pre Delay
Adjusts the length of time between the start of the direct sound and the beginning of the low band chorus sound for the Band Chorus algorithm.

Low Level
Adjusts the volume of the low band chorus sound of the Band Chorus algorithm.

High Rate
High Depth
Adjusts the depth to which the high band of the Band Chorus algorithm is modulated.

High Pre Delay
Adjusts the length of time between the start of the direct sound and the beginning of the high band chorus sound for the Band Chorus algorithm.

High Level
Adjusts the volume of the high band chorus sound of the Band Chorus algorithm.

Tri Rate
Adjusts the rate at which a triangular wave will be used for modulation in the Wave Chorus algorithm.

Tri Depth
Adjusts the depth at which a triangular wave will be used for modulation in the Wave Chorus algorithm.

Sin Rate (Sine Rate)
Adjusts the rate at which a sine wave will be used for modulation in the Wave Chorus algorithm.

Sin Depth (Sine Depth)
Adjusts the depth to which a sine wave will be used for modulation in the Wave Chorus algorithm.

Exp Rate (Exponential Rate)
Adjusts the rate at which an exponential curve will be used for modulation in the Wave Chorus algorithm.

Exp Depth (Exponential Depth)
Adjusts the depth to which an exponential curve will be used for modulation in the Wave Chorus algorithm.

* With the Wave Chorus algorithm, the various settings for depth for tri, sine, and exponential determine the LFO level. The chorus which is actually applied will use a waveform which reflects a mixture of these factors.

Tri: Provides a chorus with a minimum of undulations. (Standard chorus uses Tri.)
Sin: Provides a chorus with a greater number of undulations than Tri.
Exp: Provides a flanger-like chorus.

Bass
Adjusts the tone of the lower range of the chorus sound.
**Low Pass Filter**
Adjusts the frequency at which the low pass filter begins to work. When set to Thru, the low pass filter is inactive.

**Direct Level**
Adjusts the volume of the direct sound.

**Effect Level**
Adjusts the volume of the chorus sound.

**Pitch Shifter**

This effect alters the pitch of the original sound. The SE-70 can raise or lower the pitch by 2 octaves.

**Stereo Link**
When Stereo Link is turned ON in the Stereo Pitch Shift algorithm, and a setting is made for the L channel, the pitch shifting for both the L & R channels will be synchronized, while the localization of the stereo field will be preserved. In this case, the R channel settings will be ignored.

**Voice**
Select the number of sounds that are to be produced.

* **When the number of voices becomes excessive, distortion could be produced.**
  * Should this occur, you will need to adjust the Master Level.

**Pitch Shifter 1, 2, 3... Mode, Mode**
Selects the pitch shifter mode for each voice.

* **The contents of the modes are as follows:**
  1, 2, 3, 4... As the mode number increases, the response gradually becomes slower (but there will be fewer fluctuations in the sound).
  Inverse: Provides reverse sound.
  Inverse 1: Response is fast; reverse time is short.
  Inverse 2: Response is slow; reverse time is long.
* **If you want to change the pitch drastically, set the Mode to “3,” “4” or higher.**

**Pitch Shifter 1, 2, 3... Pitch, Pitch**
Adjusts the amount of pitch change (in semitone units) for each voice.

**Pitch Shifter 1, 2, 3... Fine, Fine**
Provides for the fine adjustment of pitch change for each voice.

* **100 for “fine” corresponds to “1” for pitch.**
Pitch Shifter 1, 2, 3... Pre Delay, Pre Delay
Adjusts the time interval between the start of the direct sound and when the pitch
shift sound of each line is produced. Ordinarily set at “0 ms.”

Pitch Shifter 1 Feedback, Feedback
Adjusts the amount of pitch shift sound that is to be fed back into the effect input.
* Only pitch 1 is fed back and mixed with the input signal.

Pitch Shifter 1, 2, 3... Pan
Adjusts the localization of the sound image for each pitch shifted sound.

Pitch Shifter 1, 2, 3... Level
Adjusts the volume of each pitch shifted sound.

Bass
Adjusts the tone of the lower range of the pitch shifted sound.

Treble
Adjusts the tone of the upper range of the pitch shifted sound.

Effect Level
Adjusts the overall volume of the pitch shifted sound.

Direct Delay
Adjusted when you wish output of the direct sound to be matched with the delay of
the effect sound.

Direct Pan
Adjusts the localization of the sound image of the direct sound.

Direct Level
Adjusts the volume of the direct sound.

* Stereo Pitch Shift provides a parameter that allows for independent settings for
the left and right channels. L and R are added to such parameters.
  L: Left
  R: Right
Phaser

Produces a ‘phased’ effect that adds more dimension to the sound by adding phase-shifted signals to the original.

Mode
Allows you to select the type of phase effect to be applied.
4 stage: Phaser using 4-stage phase shift circuitry.
8 stage: Phaser using 8-stage phase shift circuitry.
Bi-Phase: Phaser that links two phase shift circuits in series.
* The order in which the stages occur in the Stereo Phaser are as follows. Those with the least number of taps (stages) come first, with the others (those having increasingly larger numbers of taps) occurring afterwards. Next, come those for Bi-Phase, also ordered so those with the least number of taps come first.

Rate
Adjusts the rate at which the phase effect is applied.

Depth
Adjusts the depth to which the phase effect is applied.

Manual
Adjusts the center frequency around which the effect will be applied.

Resonance
Adjusts the amount of resonance. The higher the value, the more unique the sound becomes.
* If resonance is increased too much, distortion could be produced. Should this occur, you will need to adjust the Master Level until you eliminate the distortion. Additionally, if resonance is increased when there are numerous taps, oscillation could be produced.

Separation
Adjusts the amount of diffusion for the sound. When you raise the value, the diffusion is increased.

Step
Turns ‘stepped’ processing On/Off. When ON, the phase effect provides step-like transitions.

Step Rate
Adjusts the time interval for the stepped transitions in rate and depth. The higher the value, the smaller the steps become.

Bass
Adjusts the tone of the lower range phaser sound.

Treble
Adjusts the tone of the upper range phaser sound.

Effect Level
Adjusts the volume of the phaser sound.
Flanger

This effect provides a sound which is similar to that produced by jet planes when ascending and descending.

Rate
Adjusts the rate that the flanger uses for modulation.

Depth
Adjusts the depth that the flanger uses for modulation.

Manual
Adjusts the center frequency for the flanging effect.

Resonance
Adjusts the amount of resonance for the flanger. The higher the value, the more unusual the sound.
* If resonance is increased too much, oscillation could be produced.

Separation
Adjusts the diffusion. The diffusion increases as the value increases.

Step Mode
Selection for the type of flanging effect to be applied.
Off: Standard flanger. Step and gate are inactive.
Step: Alterations in the flanging effect (pitch changes) are applied in steps.
Gate1: Output is periodically switched On/Off
Gate2: Output is periodically panned to extremes.
Gate3: Output is periodically panned smoothly.

Step Rate
Adjusts the rate of the selected mode.
The higher the value, the finer the steps become when “Step” has been selected at Step Mode.
In the case of Gate1, 2, or 3 the rate is made faster.

Bass
Adjusts the tone of the lower range for the flanger sound.

Treble
Adjusts the tone of the upper range for the flanger sound.

Effect Level
Adjusts the volume of the flanged sound.
Effects Contained In Multi-Type Algorithms

Ring Modulator

Produces a bell-like sound by applying amplitude modulation (AM) to the input signals.

Modulation f (Modulation Frequency)
Determines the frequency used for the modulation.

Direct Level
Adjusts the volume of the direct sound.

Effect Level
Adjusts the volume of the effect sound.

Noise Suppressor

Cuts only the noise during otherwise silent periods (without affecting the original sound).

Threshold
Adjusts the level at which the noise suppressor begins to work. Signals below the level that has been set are muted.

Release
Adjusts the time it will take from the moment the noise suppressor begins to work until the volume reaches “0.”

Level
Adjusts the volume the sound is to have after passing through the noise suppressor when it is inactive.

Overdrive/Distortion

Adds distortion to the sound.

Mode
Selects the type of distortion. When an overdrive type effect is selected, the sound will be like that generated by a distorting tube amplifier. A distortion type effect will produce an even more powerful distortion.

(Guitar Multi 1/2/3/4, Guitar Synth)

Natural Overdrive: A natural distortion simulating an over-driven vacuum tube amplifier.

Vintage Overdrive: Distortion from the renowned BOSS OD-1 compact effects unit.

Turbo Overdrive: A full-bodied distortion combined with the subtle nuances typical of overdrive.

Crunch: A light distortion.

Distortion: Provides a standard distortion sound.

Metal 1: A distortion geared for metal sounds.

Metal 2: A distortion for metal sounds with a distinctively unique touch added to the middle range.
(Bass Multi, Bass Synth, Rotary)
  Overdrive : A standard overdrive sound.
  Distortion : A standard distortion.
  Metal : A metal sound distortion for bass.

**Gain**
Selection for the degree of distortion (High/Low). When a hard distortion is necessary, select High.

**Drive**
Adjusts the amount of distortion.

**Tone**
Adjusts the tone.

**Direct Level**
Adjusts the volume of the direct sound.

**Level, Effect Level**
Adjusts the volume of the effect sound.

---

**Rotary**

Simulates rotary speakers. The unique effect is produced by the fluctuations that occur when two speakers (Low/High) are rotated.

**Speed**
Provides selection for the speed (Fast/Slow) at which the sound undulates.

**Low Rate Fast**
When Fast is selected for Speed, it adjusts the rate of the lower range.

**Low Rate Slow**
When Slow is selected for Speed, it adjusts the rate of the lower range.

**Low Rise Time**
Allows you to set the time it will take for the lower range’s revolution speed to reach Fast when switching Speed from Slow to Fast.

**Low Fall Time**
Allows you to set the time it will take for the lower range’s revolution speed to reach Slow when switching Speed from Fast to Slow.

**Low Level**
Adjusts the volume of the lower range.
**High Rate Fast**
When Fast is selected for Speed, it adjusts the rate of the upper range.

**High Rate Slow**
When Slow is selected for Speed, it adjusts the rate of the upper range.

**High Rise Time**
Allows you to set the time it will take for the upper range's revolution speed to reach Fast when switching Speed from Slow to Fast.

**High Fall Time**
Allows you to set the time it will take for the upper range's revolution speed to reach Slow when switching Speed from Fast to Slow.

**High Level**
Adjusts the volume of the upper range.

**Separation**
Adjusts the amount of diffusion for the sound. When you raise the value, the diffusion is increased.

---

**Enhancer**

By adding sounds which are out-of-phase with the direct sound, this effect enhances the definition of the sound, and pushes it to the forefront.

**Sens**
Adjusts the manner in which the enhancer will be applied relative to the input signals.

**Frequency**
Sets the frequency at which the enhancer effect will begin to be applied. The effect will be made apparent in the frequencies above the frequency set here.

**Mix Level**
Adjusts the amount of phase-shifted sound of the range set by “Frequency” that is to be mixed with the input.

**Low Mix Level**
Adjusts the amount of phase-shifted sound of the lower range that is to be mixed with the input.

**Level**
Adjusts the volume of the enhanced sound.
Panning/Tremolo

When the input is in stereo, panning can cause sound to ‘fly’ right and left automatically. Tremolo allows you to obtain periodic changes in the volume.

Mode
Offers selection for panning or tremolo.

Modulation Wave
The manner in which the effect is applied is selected by choosing a waveform.
Tri: Provides smooth transitions.
Square: Provides abrupt changes.

Rate
Adjusts the rate at which the effect is applied.

Depth
Adjusts the depth to which the effect will be applied.

Balance
With panning, it adjusts the span over which the sound shifts left and right.
In the case of tremolo, it adjusts the localization of the sound.

Slow Gear

This effect makes it possible to automatically obtain a ‘volume swell’ technique. The volume of the attack portion of the input signal is lowered, then raised gradually.

Mode
Selection for Auto or Manual. When Auto is selected, slow gear will be applied continuously. When set to Manual, it can be turned On/Off using an external switch.

Sens
Adjusts the manner Slow Gear is to be applied. With Sens set to a low value, the effect will be applied only when the input level is quite high. With higher values, the effect will be applied to low-level input signals.

Attack
Adjusts the attack of the sound.

Trigger
When the Manual mode is selected, Slow Gear can be switched On/Off using an external switch.

* This parameter is used to carry out real-time parameter control.
Compressor/Limiter

The Compressor attenuates high input signals and boosts low input signals. This ensures a signal of reduced dynamic range.

The Limiter sets a ‘limit’ on high–level input signals in order to prevent distortion.

Mode
Selection for Compressor or Limiter.

Sustain
When the Compressor is selected, this adjustment controls the amount of time over which low-level signals will be boosted and kept at a predetermined volume level.

Attack
When the Compressor is selected, this setting adjusts the strength of the attack when signals are input.

Threshold
When the Limiter is selected, this setting adjusts the level at which the effect will be made apparent. When a signal greater than the level set here is input, it is attenuated.

Release
When the Limiter is selected, this adjustment controls the amount of time it takes for the effect to disengage after the signal has dropped below the threshold level.

Ratio
Selects the extent to which the signal will be compressed (compression ratio) while the Limiter is working.

Tone
Adjusts the tone.

Level
Adjusts the volume.
Auto Wah

This effect produces its unique sound (Wah) by applying time-based changes to the frequency response of the filter. Auto Wah allows for cyclic changes to be applied to the filter, or for the alterations to be applied in correlation with changes in the volume level of the input in order to obtain the Wah effect automatically. In addition, pedal control can be obtained for the Wah effect by using an expression pedal for real-time control over parameters.

Mode
Selection for BPF (Band Pass Filter) or Low Pass Filter. BPF provides the Wah effect over a narrow frequency range, whereas LPF provides it for a broad frequency range.

Polarity
When alterations are to be applied to the filter to correspond with changes in the input, this allows you to have the filter shift toward the upper frequencies (Up) or toward the lower frequencies (Down).

Sens
Adjusts the sensitivity with respect to the input which will prevail over filter alterations. The response is increased with higher values, while at ‘0’ no effect will be obtained.
* This value should be set to ‘0’ when using a pedal for the Wah effect.

Manual
Adjusts the base frequency (frequency at which the effect begins to work) for the Wah effect.
* Make this parameter the target when using a pedal for the Wah effect.
Refer to “Real-time Control Over Parameters” (see the Owner's Manual P.32).

Peak
Adjusts the manner in which the Wah effect will work with respect to the base frequency. With lower values, the Wah effect will be obtained though a wider range in the vicinity of the base frequency. With higher values, there will be a narrower range around the base frequency in which the Wah effect will be obtained.

Rate
Adjusts the rate at which Wah will be modulated automatically.

Depth
Adjusts the depth at which Wah will be modulated automatically. At ‘0’ there will be no automatic changes.
* This value should be set to ‘0’ when using a pedal for the Wah effect.

Level
Adjusts the volume.
Guitar Amp Simulator

Simulates the response of a guitar amplifier. This effect allows you to obtain a more robust sound even when using line input.

**Mode**
Selects the mode for the guitar amplifier simulator.
Small: Simulates a small amplifier.
Built In: Simulates an integrated (amp + speaker) amplifier.
2Stack: Simulates a large-scale two-tiered amplifier.
3Stack: Simulates a large-scale 3-tiered amplifier.

Vibrato

Applies subtle undulations to the pitch of the direct sound.
* This effect is designed to be turned On/Off using an external switch.

**Trigger**
Switches Vibrato On/Off using an external switch.
* This parameter is used to carry out real-time parameter control.
  Refer to “Real-time Control Over Parameters” (see the Owner's Manual P.32).

**Rate**
Adjusts the rate of the vibrato.

**Depth**
Adjusts the depth of the vibrato.

**Rise Time**
Adjusts the time interval from when the trigger is turned ON until the vibrato effect is applied.

Feedbacker

Allows a feedback effect to be easily obtained (without depending on an amplifier or other special settings).
* This effect is designed to be turned On/Off using an external switch.
To create feedback, input a single note. After the sound becomes stable, switch on the trigger.
* Connect the instrument (guitar, etc.) directly to the SE-70. Errors (such as feedback pitch) could be produced if the instrument signal has been routed through some other effects unit.
* Errors can result when playing harmonics or chords, or when playing too softly, or also when the sound of an adjacent string has been mixed in.
* Even during moments of silence, if the trigger is switched on, some sound could be produced. (This does not indicate an abnormality.)
**Trigger**
Switches feedback On/Off using an external switch.
*This parameter is used to carry out real-time parameter control.*
*Refer to “Real-time Control Over Parameters” (see the Owner’s Manual P.32).*

**Rise Time**
Adjusts the time interval from trigger On to when the feedback effect is applied.

**Vibrato Rate**
Adjusts the rate of vibrato when feedback is active.

**Vibrato Depth**
Adjusts the depth of vibrato when feedback is active.

**Level**
Adjusts the output volume for the feedbacker.

**+1oct Level**
Adjusts the volume of the sound one octave above the input sound. (Added when feedback is active.)

---

**Bass Amp Simulator**
Simulates the response of a bass amplifier. This effect allows you to obtain a more robust sound even when using line input.

**Mode**
Selects the mode for the bass amplifier simulator.
Small: Simulates a small amplifier.
Built In: Simulates an integrated (amp + speaker) amplifier.
Stack: Simulates a stacked, large-scale amplifier.

---

**De-esser**
Useful for reducing ‘sibilant’ or ‘S’ sounds produced by a vocalist.

**Sens**
Adjusts the sensitivity relative to the input volume, which controls how the effect is applied.

**Frequency**
Sets the frequency at which the de-esser effect will be applied. The effect will be made apparent in the frequencies above the frequency set here.
Other Effects

Equalizer (EQ), Pre Equalizer, Synth Equalizer

Used to adjust the tone. Parametric EQ is provided for the High-Mid, Mid, and Low-Mid frequency ranges.

Low EQ
Adapts the tone of the Low range.

Low-Mid f (Low-Mid Frequency)
Sets the center frequency to be used for Low-Mid EQ adjustments.

Low-Mid Q
Adapts the range covered by the EQ, centered on the frequency that was set for Low-Mid f. The greater the value, the narrower the Range becomes.

Low-Mid EQ
Adjusts the tone of the Low-Mid range.

Mid f (mid frequency)
Sets the center frequency to be used for Mid EQ adjustments.

Mid Q
Adjusts the range covered by the EQ, centered on the frequency that was set for Mid f. The greater the value, the narrower the Range becomes.

Mid EQ
Adjusts the tone of the Mid range.

High-Mid f (High Mid Frequency)
Sets the center frequency to be used for High-Mid EQ adjustments.

High-Mid Q
Adjusts the range covered by the EQ, centered on the frequency that was set for High-Mid f. The greater the value, the narrower the Range becomes.

High-Mid EQ
Adjusts the tone of High-Mid range.

High EQ
Adjusts the tone of the High range.

High Pass Filter
Adjusts the frequency at which the high pass filter begins to work. When set to Thru, the high pass filter is inactive.

Low Pass Filter
Adjusts the frequency at which the low pass filter begins to work. When set to Thru, the low pass filter is inactive.

Level
Adjusts the volume after it has passed through the equalizer.
Vocoder

After dividing the sound (from a synthesizer or other instrument) from the L input channel into the relative frequency bands, it is processed so it takes on a correlative relationship with the frequency content of the vocal sounds that have been input to the R channel using a microphone. As a result, vocals seem as if they were produced using the instrument's sound.

* We recommend the microphone should be pre-amplified (by a mixer, etc.).

Distortion
Selects whether distortion is to be On or Off.

Drive
Adjusts the degree to which distortion is to be applied.

Distortion Level
Adjusts the volume after passing through distortion.

Mic Limiter (Microphone Limiter)
Selects whether the microphone limiter is to be On or Off. When a signal greater than the level set for Threshold is input, the signal is attenuated.

Threshold
Adjusts the level at which the limiter will begin to operate.

Limiter Level
Adjusts the volume after passing through the limiter.

Mic EQ (Microphone EQ)
On/Off selection for Mic EQ.

Low EQ
Adjusts the tone of the lower range for the microphone sound.

Mid f (Mid Frequency)
Sets the center frequency to be used for Mid EQ adjustments.
**Mid Q**
Adjusts the range covered by the EQ, centered on the frequency that was set for Mid f. The greater the value, the narrower the range becomes.

**Mid EQ**
Adjusts the tone of the mid range for the microphone sound.

**High EQ**
Adjusts the tone of the upper range for the microphone sound.

**EQ Level**
Adjusts the volume after passing through microphone EQ.

**Mode**
Selection for Sharp or Soft. When set to Sharp, the human voice is emphasized. When set to Soft, musical instrument sounds are emphasized.

**Sens**
Adjusts the input sensitivity of the microphone. The greater the value, the greater the sensitivity.

**Voice Character 1, 2, 3...**
Allow for adjustment of the volume for each frequency band. These adjustments allow the tone of the vocoder to be determined.

**Gate Threshold**
Adjusts the level at which the noise gate will begin to be applied to the microphone input. Whenever the input signal from the microphone falls below the set level, the signal is muted.

**Mic HPF (Microphone HPF)**
Sets the frequency at which the High Pass Filter (HPF) applied to the microphone input during Mic Mix will begin to be applied. When set to a high value, only the consonants will be included in the mix. When set to Thru, the HPF is inactive.

**Mic Mix**
Adjusts the amount of microphone signal (R channel input) to be added to the vocoder output.

**Noise Suppressor Threshold**
Adjusts the level at which the noise suppressor will begin to be applied to the musical instrument input (L channel).

**Vocoder Level**
Adjusts the volume of the vocoder.
Guitar Synth, Bass Synth

Applies extremely rapid pitch conversions to the electric guitar or bass signals input to the L channel and produces a synthesizer sound.

In order to obtain the correct pitches while playing, you will need to make the settings properly and play in an appropriate manner.

Since this algorithm is designed for use with electric guitars and electric basses, unexpected results could occur if you connect other kinds of instruments.

Guitar Synth: For use with electric guitar only.
Bass Synth: For use with electric bass only (4 string bass).

**Important**
Set the Input Level and Sens to appropriate values.
Play only single notes, muting the previous one before playing the next.
Connect the guitar or bass directly to the SE-70.

* Errors could be produced when playing harmonics or chords, or when an adjacent string has inadvertently been played. If the Input Level and Sens have not been set appropriately, sound might not be produced, or errors in the timing of notes could occur.*

* The pitch of the Main OSC and Tuner are identical.

**Sens**
Adjusts the sensitivity with respect to the input. While viewing the Sens Level Meter, adjust it so the meter’s fluctuation remains within the “▼” range for the minimum and maximum input.

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<th>Sens Level Meter</th>
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**Chromatic**
Selects whether the Chromatic function is to be On or Off. When On, the pitch changes in the synthesizer sound will occur in semitone steps. It will not respond to bending and vibrato pitch changes since these intervals are smaller than a semitone. Convenient for reproducing instruments with fixed pitch increments (the semitone steps of a piano, for example).

**Wave**
Selects whether Square or Saw is to be used as the waveform (OSC).

**Oct Shift**
The output can be shifted relative to the input signals by +1, 0, -1, or -2 octaves.

**Sub OSC Pitch**
Adjusts the pitch of the sub oscillator. Subtle undulations and fattness can be added by shifting the pitch relative to the main oscillator.
Main OSC Level
Adjusts the volume of the main oscillator.

Sub OSC Level
Adjusts the volume of the sub oscillator.

-1 Oct Mix
Adjusts the amount of synth sound (main + sub oscillator) one octave below the original sound that is to be mixed in.

Portamento
Selects whether Portamento is to be On or Off. When On, a smooth transition in the pitch is made between one note and the next.

Portamento Time
Adjusts the portamento speed.

Vibrato Rate
Adjusts the speed of the vibrato.

Vibrato Depth
Adjusts the depth of the vibrato.

TVF Cutoff f (TVF Cutoff Frequency)
Adjusts the frequency at which the TVF begins to work.

TVF Resonance
Adjusts the resonance of the TVF. With increased values for the setting, frequencies in the vicinity of the cut off frequency are emphasized.

TVF Depth
Adjusts the TVF depth. The higher the value for the setting, the more pronounced the filter’s effect. Plus and minus determine the filter’s polarity.

TVF Sens
Adjusts the sensitivity of the filter relative to the level of the input. When the value is at ‘0’ the TVF envelope* will remain fixed, regardless of the strength used when playing. When the sensitivity is raised, the filter’s effect will become more pronounced when playing strength increases.

TVF Attack
TVF Decay
TVF Sustain
TVF Release
Time-based alterations can be applied to the tone using the four parameters above.
* TVF (Time Variant Filter): In order to control a tone, this filter alters the way it produces its effect over time. The TVF envelope (manner change takes place) is illustrated below.
Depending on the value for the TVF depth, the TVF envelope will be changed as shown below.

**TVA Sens**
Adjusts the sensitivity that will apply to the changes that are made in the synth volume relative to the level of the input. When the value is at “0” the TVA envelope* will remain fixed, regardless of the strength used when playing. When the sensitivity is raised, the filter’s effect will become more pronounced when playing strength increases.

**TVA Attack**
**TVA Decay**
**TVA Sustain**
**TVA Release**
Time-based alterations in the volume can be applied using the four parameters above.

* **TVA (Time Variant Amplifier):** A device that produces time-based alterations in the volume. The TVA envelope (manner change takes place) is illustrated below.

**Hold**
While on, sounds can be sustained.

* **This parameter is used to carry out real-time parameter control.**
**Synth Mixer**

**Synth Pan**
Adjusts the localization of the sound image for the synthesizer.

**Synth Level**
Adjusts the volume of the synthesizer.

**Guitar Pan, Bass Pan**
Adjusts the localization of the sound image for a guitar or bass.

**Guitar Level, Bass Level**
Adjusts the volume of a guitar or bass.

**Mixer**

**Noise Suppressor Threshold**
Adjusts the level at which the noise suppressor begins to work. Whenever the signals fall below the set level, they are muted.

**Noise Suppressor Release**
Adjusts the time it will take from the moment the noise suppressor begins to work until the volume reaches “0.”

**Reverb Level**
Adjusts the volume that is passed on to reverb.

**Delay Level**
Adjusts the volume that is passed on to delay.

**Chorus Level**
Adjusts the volume that is passed on to chorus.

**Pan, Ch 1 Pan, Ch 2 Pan**
Adjusts the localization of the sound image.

**Level, Ch 1 Level, Ch 2 Level**
Adjusts the volume.

**Hum Canceler**
Used to cancel hum noise.

**Threshold**
Adjusts the level at which the hum canceler begins to work. Signals below the level that has been set will have any hum noise removed.

**Frequency**
Sets the frequencies that are to be canceled.
Vocal Canceler

Allows you to remove vocals localized in the center of the field from stereo music sources that you input.

NOTE
With certain music sources you may not obtain the result you desire, since sounds other than those you intend to erase could be erased as well. Do not expect this feature to provide a satisfactory result if the source material has a lot of reverb, or the sound you intend to erase is not located in the center of the stereo field.

Balance
When the sound you intend to erase is not located in the center, this control allows you to find the point at which most of the vocal content can be removed.

Key Changer

Allows you to change the pitch of sound sources that are input.

Mode
Provides selection for the key changer mode.
1, 2, 3, 4: The response becomes slower as you move from 1 to 4, but the fluctuations become fewer.

Key
Adjusts the amount of change in pitch, in semitone units.

Fine
Provides for the fine adjustment of the amount of change in pitch.

* "100" for Fine corresponds to "1" for Key.
**Sampler 1, Sampler 2**

Sound which has previously been recorded (sampled) by the unit can be played back using an external switch or MIDI messages. The SE-70 is equipped with two types of samplers capable of recording up to 2,000 milliseconds of sound. Sampler 1 is designed for normal playback, while Sampler 2 performs reverse playback.

In using the samplers, the following steps are involved:
1) Preparation
2) Recording
3) Playback

---

**Begin Making Settings**

Press [PARAMETER] button

**Recording Mode Settings**

Auto
Press [PARAMETER] button
Adjust Trigger Level
Press [PARAMETER] button
Adjust Pre-Trigger
Press CONTROL knob
Rec Screen <Standby>
Start Recording <Start>
Press CONTROL knob
Auto Trigger
No
Display Shows "Standby"
Yes
Playback Trigger
Real-time Parameter Control
MIDI Note Messages Received

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1) Preparation

**Recording Mode**

Auto: Upon sensing an input signal, the unit begins recording automatically.

Manual: In this mode, an external switch is used to begin recording.

With the factory defaults, Manual mode recording operations are set so they are under the control of the Control 1 button. Should you wish to use a control other than the Control 1 button, use the real-time parameter control feature to assign recording to an external switch or other controller.
Ex. Assigning to Control 2
To be able to use an external switch (FS-5U; connected to the Control 2 jack) to begin recording, make the following settings:
Utility : Control 2 Select : Assignable
Parameter : Assign 1 Target : Trigger
Assign 1 Min : Off
Assign 1 Max : On
Assign 1 Source : Control 2
Assign 1 Mode : FS-5U Momentary
* See “Real-Time Control Over Parameters” (see the Owner’s Manual P.32).
* MIDI can also be used for this operation. Refer to “MIDI Control” (see the Owner’s Manual P.42).
* Use an (optional) FS-5U foot switch to trigger the sampler. The Assign Mode setting for real-time parameter control should be set to FS-5U Momentary.

Trigger Level
Recording will start when the input level exceeds the trigger level. While playing your instrument and viewing the meter, adjust the CONTROL knob until you have it set so the trigger will function at the appropriate level. This adjustment needs to be made only when Auto has been selected as the recording mode. (With Manual there is no Trigger level adjustment.)

* Use Pre-Trigger for recording the portion indicated with slanted lines.

Pre-Trigger
Adjusts the pre trigger. By using the pre-trigger, you will be able to also record the data that occurs before the moment the trigger is engaged. This conveniently allows you to avoid losing the important beginning portions of sounds which may have a gently rising, relatively long attack.
* This feature is effective for both the Auto and Manual recording modes.

2) Recording
Select the recording screen (the first screen for the parameter) and carry out the recording.

Auto Recording
This screen appears only when Auto has been selected as the recording mode.
Push the CONTROL knob and confirm that the unit displays “Ready” instead of “Standby”. It is now ready for recording.

Rec: Ready
Auto [====] 

From the “Ready” state, recording will begin automatically as soon as you play something on the instrument connected to the SE-70.

**Manual Recording**
This screen appears only when Manual has been selected as the recording mode.

Rec: Standby
Manual [====] 

Push the CONTROL knob and confirm that the unit displays “Ready” instead of “Standby”. This means it is ready for recording.

Rec: Ready
Manual [====] 

From this state, recording will begin when you operate the external switch or other assigned control.

The amount of time that has elapsed during recording is indicated in the display by the increasing number of asterisks that appear. (Applies to both Auto and Manual.)

**Auto Recording**
Rec: Start**
Auto [====] 

**Manual Recording**
Rec: Start**
Manual [====] 

Once recording has been completed, “Standby” will automatically reappear in the display. Up to 2,000 ms of sound can be recorded. (Applies to both Auto and Manual.)

* To do the recording over again, press the CONTROL knob and start over from where the unit displays “Ready.”
* The SE-70 is not capable of storing the data it has recorded. All sampled data will be discarded as soon as the power is turned off.

3) Playback
After recording (sampling) has been completed, and “Standby” appears in the display, you can play back what was recorded. Ordinarily, you should press EXIT to go to the Play screen where you can carry out playback. The playback time, pitch, and other factors can be altered using the parameters explained in the following.

* If you press the CONTROL knob while “Standby” appears in the display, the unit will switch to “Ready” (ready to begin recording), and what was already sampled will be discarded. Once you have entered “Ready” in this manner, you will not
There are two ways in which playback can be carried out:
1. MIDI Note messages (keyboard messages) are received, causing the unit to play the sample at various pitches.
2. An external trigger (external switch) is used for control over playback at a predetermined pitch.

* * * When using MIDI messages for playback, set the MIDI channel so it matches the channel used by the transmitting unit.
Refer to “Settings for the MIDI Channel and Omni Mode” (see the Owner’s Manual P.39).
* * * In the case of 2, you need to assign the external switch to the Trigger parameter.
(See “Recording Mode.”) If using Manual recording, you use the same switch used for recording. This is because the same “Trigger” needs to be used for control of recording and playback. With the factory defaults, playback operations are set so they can be carried out under the control of the Control 1 button.

The method of playback is set using the following parameters.

Pitch
Sets, in semitone units, the pitch used when an external trigger is used for playback.

Fine
Provides for the fine tuning of the pitch used when an external trigger is used for playback.
* “100” for Fine corresponds to 1 for Pitch.

Play Time
Adjusts the playback time.
* This parameter sets the Playback Time and Recording Time simultaneously.

Play Mode
Selects the playback mode.
Trigger : When it receives the trigger for playback (switch or MIDI messages), the unit carries out playback for the amount of time specified for Play Time.

Gate : The unit carries out playback when the trigger is switched on. If the trigger is turned off part way through playback, then is turned on again, playback will start again from the beginning of the sample.
Attack
Adjusts the attack of the sound.

Decay
Adjusts the way in which the sound decays.

Original Key
This setting specifies the Key Number (location on a keyboard) that corresponds to the original pitch of the sampled sound. When set to “Off”, MIDI Note messages will be ignored.

Master Level.
Adjusts the overall volume that will be output.

* The settings you make will be discarded if you turn the power off, or press EXIT, and then switch to different Patch Number. After you have completed making your setting changes you must perform a “Write” if you wish to have them remain in memory. See “The Write Procedure” (see the Owner’s Manual P.23).

Repeat Play

This function is comprised of a sampler supplied with automatic playback capabilities. It easily allows you to sample in real-time while performing, then obtain automatic, repetitive playback. Possible settings can accommodate reverse playback and very long interval playback (up to a max. of 20 seconds). A maximum of 2,000 ms of material can be sampled.

Repeat Play differs from Sampler 1 and Sampler 2 in that it can carry out playback automatically once the recording has been made. By making the settings for the type of playback desired, you can have playback start the moment the recording finishes.

* The [PARAMETER] button is pressed for each of the settings.

Instructions are provided in the following order:
1) Settings for the trigger (signal for starting Repeat Play).
2) Settings for the various types of playback.
1) Settings for the Trigger

Trigger Mode
There are two ways in which this feature can be controlled:
Auto: Upon sensing an input signal, the unit begins recording/playback automatically.
Manual: In this mode, an external switch is used for control, allowing recording to be started whenever desired.

With the factory defaults, Manual mode trigger operations are set so they are under the control of Control 1. Should you wish to use a control other than Control 1, use the real-time parameter control feature to assign recording to an external switch or another controller.

Ex. Assigning to MIDI control messages.

To be able to use MIDI Control Change #46 as the trigger signal (Example: An FS-5U connected to CTL1 on the FC-50), set the following:
Parameters:
Assign 1 Target : Trigger
Assign 1 Min     : Off
Assign 1 Max     : On
Assign 1 Source  : MIDI CC# 46
Assign 1 Mode    : FS-5U Momentary

* Refer to “Real-time Control Over Parameters” (see the Owner’s Manual P.32).
* Refer to “MIDI Control” (see the Owner’s Manual P.42).
* Use an (optional) FS-5U to trigger the recording. The Assign Mode setting for real-time parameter control should be set to FS-5U Momentary.

Trigger Level
Recording will start when the input level exceeds the trigger level. While playing your instrument and viewing the meter, adjust the CONTROL knob until you have it set so the trigger will function at the appropriate level.
This adjustment can be made only when Auto has been selected as the recording mode.

* The screen at this time also serves as a monitor. See “3) Playback."
* In order to achieve the optimum trigger level, it is a good idea to set the Repeat Count to around 3 to 4, then make the adjustments while monitoring the sample.
2) Settings for the Various Types of Playback.

Reverse Play
On/Off selection for reverse playback. Reverse playback is obtained when ON.

Play Time
Sets the playback time. Adjusted when Auto has been selected as the trigger mode.
* This parameter sets the Playback Time and Recording Time simultaneously.

Interval
Adjusts the interval between repetitions of the playback.

Repeat Count
Selects the number of times playback is to be repeated.

Attack
Adjusts the attack of the sound.

Decay
Adjusts the degree of attenuation for the sound.

Bass
Adjusts the tone of the lower range of the repeated sound.

Treble
Adjusts the tone of the upper range of the repeated sound.

Direct Level
Adjusts the volume of the direct sound.

Effect Level
Adjusts the volume of the repeated sound.

Master Level
Adjusts the volume of the output.

* The settings you make will be discarded if you turn the power off, or press EXIT, and then Switch to different Patch Number. After you have completed making your setting changes you must perform a “Write” if you wish to have them remain in memory. See “The Write Procedure” (see Owner's Manual P.23).
3) Playback

The manner in which playback takes place will depend on the Trigger Mode:

Auto: No further sampling can be carried out until the number of repetitions specified for Repeat Count have been completed.

Manual: New samples can be made by operating the trigger, even while the unit is still progressing with the playback of the repetitions specified for Repeat Count. Any sampling time can be obtained simply by switching on the external switch for the length desired (up to a maximum of 2,000 ms).

* When “∞” is selected for Repeat Count, you need to turn the effect off in order to stop playback.

Once the settings have been completed, you can return to the Play screen.

Monitor
The Monitor screen (the first screen for parameters) can be selected to allow you to monitor the status while sampling.

Auto Recording

<table>
<thead>
<tr>
<th>Ready</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trg: 10</td>
</tr>
</tbody>
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Manual Recording

<table>
<thead>
<tr>
<th>Ready</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
</tr>
</tbody>
</table>
The amount of time that has elapsed since sampling began is indicated in the display by the increasing number of asterisks that appear.

Auto Recording

Start:*

Trg:10

Manual Recording

Start:*

Manual

When sampling comes to an end, “Ready” will once again appear in the display.

* With the factory defaults, Manual mode trigger operations are set so they are under the control of Control 1.
* Use an (optional) FS-5U foot switch as the trigger. The Assign Mode setting for real-time parameter control should be set to FS-5U Momentary.

Direct

Level
Adjusts the volume of the direct sound.

* Certain algorithms allow settings to be made independently for the left and right channels. The letters L and R appear for such parameters.

Master

Level
Adjusts the overall volume that is output by the SE-70.

Output Mode

Output Mode
Allows you to select the output mode.

Mono+Mono: All effects will be in monaural, and will be output on the relevant channel.

Stereo Mix: All effects will be preserved in stereo and mixed before being output.
## Algorithm List

<table>
<thead>
<tr>
<th>Patch Number</th>
<th>Name displayed</th>
<th>Effect Name</th>
<th>Sampling Frequency (Hz)</th>
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<td>Plate</td>
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<tr>
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<td>20 Tap Delay+EQ</td>
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<td>Stereo Chorus+EQ</td>
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<td>Band Chorus</td>
<td>Stereo 2 Band Chorus+EQ</td>
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<td>Wave Chorus</td>
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<td>RH: EQ+NS +DLY+CE+RV</td>
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<td>Hum Canceler+NS</td>
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<tr>
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<td>Vocal Canceler+EQ+Key Changer</td>
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On the SE-70, different sampling frequencies are used depending on the algorithm.

- **When the sampling frequency changes, the frequency response will change as follows:**
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<th>No.</th>
<th>Preset Name</th>
<th>Algorithm</th>
<th>No.</th>
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<td>Kb Multi 3</td>
<td>Kb Multi</td>
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<td>St P Shift</td>
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<td>Vocoder 1</td>
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<td>Hall</td>
<td>66</td>
<td>Double Voice</td>
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<td>Mid Room</td>
<td>Room 1</td>
<td>68</td>
<td>Radio Voice</td>
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<td>Room 1</td>
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<td>Room 2</td>
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<td>Repeat Play</td>
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<td>Repeat Play</td>
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