

SECTION 6

APPENDIX

QuadraVerb PAGE CHART

| REVERB | | |
|--|---|--|
| Page | Options | Description |
| Type | Plate 1 Room 1 Chamber 1 Hall 1 Reverse 1 ----- Plate 2 Room 2 Chamber 2 Hall 2 Reverse 2 | Selects the type of Reverb in QuadMode™ and Leslie configurations Selects the type of Reverb in 3 Band EQ→Reverb configuration |
| Reverb Input 1 | Pre-EQ Post-EQ Pitch Output Delay Mix Input ----- Pre-Lezlie Lezlie Output | Selects the signal source for Reverb Input #1. <i>Appears in Leslie Configuration only</i> <i>Appears in Leslie Configuration only</i> |
| Reverb Input 2 | Delay Output Pitch Output ----- Lezlie Output | Selects either a delayed signal or a pitch shifted signal at Reverb Input #2 <i>Appears in Leslie Configuration only</i> |
| Reverb Input Mix | 1 <00 to 99> 2 | Determines the Reverb Input levels and balance of the 2 Reverb inputs. |
| Reverb PreDelay | 000 to 140 milliseconds | Allows a slight delaying of the Reverb so that the Direct signal is more easily distinguished from the Reverb. |
| PreDelay Mix | Pre <00 to 99> Post | Allows an amount of Pre-Delay to be mixed into the Reverb signal path. |
| Reverb Decay Reverb Reverse Time | 00 to 99 | Determines the length of time before the Reverb dies. <i>Appears instead of Decay when Reverse type Reverb is selected.</i> |

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| Reverb Diffusion | 1 to 9 | Controls the time between the Reverb reflections, causing the Reverb to become "thicker". |
| Reverb Density | 1 to 9 | Controls the time between the initial "First Reflection" of the reverb and subsequent reflections, causing the Reverb to become "smoother". |
| Low Frequency Decay | -00 to -60 | Controls the amount of low frequencies heard in the Reverb |
| High Frequency Decay | -00 to -60 | Controls the amount of high frequencies heard in the Reverb |
| Reverb Gate | ON OFF | Turns the Reverb Gate either ON or OFF. |
| Reverb Gate Hold Time | 00 to 99 | Controls how long the Reverb Gate stays open. |
| Reverb Gate Release | 00 to 99 | Controls the length of time that it takes the Reverb Gate to close |
| Reverb Gated Level | 00 to 99% | Controls how low in level that the Reverb Gate falls to. |

| DELAY | | |
|-------------------|---|---|
| Page | Options | Description |
| DELAY TYPE | Ping Pong Delay Stereo Delay Mono Delay | The output bounces from side to side (left to right) when in stereo with the speed determined by the delay time. Two separate delays which can be individually varied. A single delay that has twice the available delay time as the above. |
| Delay Input 1 | Pre-EQ Post-EQ | The input to the Delay section may be taken either from the output of the EQ section, if an equalized signal is desired, or from before the equalizer. |
| Delay Input Mix | 1 < 00 to 99 > Pitch ----- In< 00 to 99 >Lezlie | Allows a mixed signal from either the output of the pitch section or the input of the previous page (Pre or Post EQ) to be applied to the input of the Delay section. <i>Appears in Lezlie Configuration only</i> |
| Delay Time (Left) | Mono 000 to 800 ms | Precisely adjusts the Delay Time in 1 millisecond increments. QuadMode™ and Lezlie Configurations |

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|-----------------------|---|---|
| | 000 to 1500 ms ----- Stereo/Ping Pong 000 to 400 ms 000 to 750 ms | Graphic EQ and 5 Band EQ Configurations QuadMode™ and Lezlie Configurations Graphic EQ and 5 Band EQ Configurations |
| Delay Feedback (Left) | 00 to 99% | A portion of the delay signal output is "fed back" into the input which results in the delay repeating itself. The more feedback; the more repeats. |
| Right Delay Time | Stereo/Ping Pong 000 to 400 ms 000 to 750 ms | Available in STEREO mode only; same as Delay Time(Left) QuadMode™ and Lezlie Configurations Graphic EQ and 5 Band EQ Configurations |
| Delay Feedback Right | 00 to 99% | Available in STEREO mode only; same as Delay Feedback (Left) |

| PITCH | | |
|----------------|------------------------|--|
| Page | Options | Description |
| PITCH MODE | <u>Mono Chorus</u> | |
| Pitch Input | Pre-EQ Post-EQ | Selects the signal from either before (Pre-EQ) or after (Post-EQ) the Equalizer section for input to the Pitch Section. |
| LFO Waveshape | Triangle Square | Selects either LFO Waveshape. The Triangle V waveshape will sound smoother while the Square Waveshape will be more dramatic. |
| LFO Speed | 00 to 99 | Adjusts the speed of the Chorus. |
| LFO Depth | 00 to 99 | Controls how much the signal will be detuned. |
| Pitch Feedback | 00 to 99% | Causes the effect to be more pronounced and tonal. |
| | <u>Stereo Chorus</u> | |
| Pitch Input | Pre-EQ Post-EQ | Selects the signal from either before (Pre-EQ) or after (Post-EQ) the Equalizer section for input to the Pitch Section. |
| LFO Waveshape | Triangle Square | Selects either LFO Waveshape. The Triangle Waveshape will sound smoother while the Square Waveshape will be more dramatic. |

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|----------------|--------------------------------|---|
| LFO Speed | 00 to 99 | Adjusts the speed of the Chorus |
| LFO Depth | 00 to 99 | Controls how much the signal will be detuned |
| Pitch Feedback | 00 to 99% | Causes the effect to be more pronounced and tonal. |
| Pitch Input | Mono Flange Pre-EQ | Selects the signal from either before (Pre-EQ) or after (Post-EQ) the Equalizer section for input to the Pitch Section. |
| | Post-EQ | |
| LFO Speed | 00 to 99 | Adjusts the speed of the Flanging. |
| LFO Depth | 00 to 99 | Controls the amount of Flanging. |
| Pitch Feedback | 00 to 99% | Causes the Flange to become more pronounced and tonal. |
| Trigger Flange | ON OFF | Controls the Flange by the level of the input signal. |
| Pitch Input | Stereo Flange Pre-EQ | Selects the signal from either before (Pre-EQ) or after (Post-EQ) the Equalizer section for input to the Pitch Section. |
| | Post-EQ | |
| LFO Speed | 00 to 99 | Adjusts the speed of the Flanging. |
| LFO Depth | 00 to 99 | Controls the amount of Flanging. |
| Pitch Feedback | 00 to 99% | Causes the Flange to become more pronounced and tonal. |
| Trigger Flange | ON OFF | Controls the Flange by the level of the input signal. |
| Pitch Input | Pitch Detune Pre-EQ | Selects the signal from either before (Pre-EQ) or after (Post-EQ) the Equalizer section for input to the Pitch Section. |
| | Post-EQ | |
| Detune Amount | -99 to +99 | Controls the amount of Detuning. Negative is flat; positive is sharp. |

| Phase Shift | | |
|--------------------------|---------------------------|---|
| Pitch Input | Pre-EQ | Selects the signal from either before (Pre-EQ) or after (Post-EQ) the Equalizer section for input to the Pitch Section. |
| | Post-EQ | |
| LFO Speed | 00 to 99 | Adjusts the speed of the Phase Shifting. |
| LFO Depth | 00 to 99 | Controls the amount of Phase Shifting. |
| Lezlie Stereo Separation | Lezlie 00 to 99 | <i>Available in Lezlie Configuration only</i> Adjusts the spread of bass and treble across the stereo image. |
| | | |
| Lezlie Motor Control | ON | Selects the rotating speakers of the Lezlie simulator to turn on or off . |
| | OFF | |
| Lezlie Speed | SLOW | Selects the rotating speakers of the Lezlie simulator to spin slow or fast. |
| | FAST | |

| EQ | | |
|------------------------|---------------------|--|
| Page | Options | Description |
| 3 and 5 Band EQ | | |
| Low EQ Frequency | 020 to 999Hz | Selects the Low EQ Frequency. |
| Low EQ Amplitude | +14 to -14dB | Controls the amount of Low EQ Frequency boost or cut. |
| Low Mid EQ Frequency | 020 to 500Hz | Selects the Low-Mid EQ Frequency. <i>5 Band EQ only</i> |
| Low Mid EQ Bandwidth | .20 to 2.55 Octaves | Selects the number of Low-Mid EQ Frequencies acted upon. <i>5 Band EQ only</i> |
| Low Mid EQ Amplitude | +14 to -14dB | Controls the amount of Low-Mid EQ Frequency boost or cut. <i>5 Band EQ only</i> |
| Mid EQ Frequency | 0200 to 9999Hz | Selects the Mid EQ Frequency. |
| Mid EQ Bandwidth | .20 to 2.55 Octaves | Selects the number of Mid EQ Frequencies acted upon. |
| Mid EQ Amplitude | +14 to -14dB | Controls the amount of Mid EQ Frequency boost or cut. |
| High Mid EQ Frequency | 2000 to 18000Hz | Selects the High-Mid EQ Frequency. <i>5 Band EQ only</i> |
| High Mid EQ Bandwidth | .20 to 2.55 Octaves | Selects the number of High-Mid EQ Frequencies acted upon. <i>5 Band EQ only</i> |
| High Mid EQ Amplitude | +14 to -14dB | Controls the amount of High-Mid EQ Frequency boost or cut. <i>5 Band EQ only</i> |

| | | |
|--|---|---|
| Hi EQ Frequency | 02000 to 18000Hz | Selects the High EQ Frequency. |
| Hi EQ Amplitude | +14 to -14dB | Controls the amount of High EQ Frequency boost or cut. |
| High Rotor Level | Leslie -20 to +06dB | Adjusts the output of the high frequency speaker in the Leslie Simulator. |
| 16Hz 32Hz 62Hz 126Hz 250Hz 500Hz 1KHz 2KHz 4KHz 8KHz 16KHz | Graphic +14 to -14dB | Adjusts the amount of gain in selected frequency band |

| MIDI | | |
|---------------------|------------------------------------|---|
| Page | Options | Description |
| MIDI Channel | 1 through 16 Omni | Selects the receive channel for MIDI operation |
| MIDI Program Change | OFF ON TABLE | Enables remote change of program via MIDI |
| Program Table | 000 = 00 127 = 99 | Allows MIDI program numbers to be transposed to QuadraVerb program numbers |
| MIDI Echo | OFF ON | Retransmits MIDI information received by QuadraVerb out the THRU jack |
| SYSEX Enable | OFF ON | Enables QuadraVerb System Exclusive info to be transmitted or received. |
| MIDI Data Dump | 00 to 99 ALL | Selects a program for offloading or saving |
| Footswitch Range | 00 through 00 99 through 99 | Selects the programs affected by the PROGRAM ADVANCE footswitch |

| MIX | | |
|----------------------|-------------------|---|
| Page | Options | Description |
| Direct Signal Select | Pre-EQ Post-EQ | Selects the Direct Signal from either before (Pre-EQ) or after (Post-EQ) the equalizer section. |
| Direct Signal Level | +00 to +99 | Adjusts the level of the Direct Signal only (Not active in Post-EQ mode). |
| Master Effects Level | +00 to +99 | Adjusts the Master level for all effects. |
| EQ Output Level | +00 to +99 | Adjusts the output of the EQ (Not active in Pre-EQ mode). |
| Pitch Output Level | +00 to +99 | Adjusts only the Pitch level. |
| Delay Output Level | +00 to +99 | Adjusts only the Delay level. |
| Reverb Output Level | +00 to +99 | Adjusts only the Reverb level. |
| Leslie Output Level | +00 to +99 | Adjusts only the Leslie level. Available in <i>Leslie Configuration</i> only. |

| MOD | | |
|---|--|--|
| Page | Options | Description |
| Mod 1 Source through Mod 8 Source | Pitch Bend After Touch Note Number Note Velocity Controller # | Selects the type of MIDI controller to be used as a modifier source. |
| Mod 1 Target through Mod 8 Target | QUAD Rev Input Mix Rev PreDelay Rev PreDelay Mix Rev Decay Rev Reverse Time Rev Diffusion Rev Density Rev Lo Decay Rev Hi Decay Delay Input Mix Left Delay Time Left Delay Feedback Right Delay Time Right Delay Feedback LFO Speed LFO Depth Pitch Feedback Lo EQ Freq Lo EQ Boost/Cut Mid EQ Freq Mid EQ BndWidth Mid EQ Boost/Cut Hi EQ Freq Hi Eq Boost/Cut Direct Mix Level Effect Mix Level EQ Mix Level Pitch Mix Level Delay Mix Level Reverb Mix Level | Selects the parameter that will be controlled by the source. |
| | LEZLIE | |

Lezlie Stereo Lezlie Motor
 Lezlie Speed Lezlie High Level
 Lezlie Mix Level

These parameters appear only in this configuration

GRAPHIC

16Hz Boost/Cut 32Hz Boost/Cut
 62Hz Boost/Cut 126Hz Boost/Cut
 250Hz Boost/Cut 500Hz Boost/Cut
 1KHz Boost/Cut 2KHz Boost/Cut
 4KHz Boost/Cut 8KHz Boost/Cut
 16KHz Boost/Cut

These parameters appear only in this configuration

5 BAND EQ

Low Mid EQ Freq Low Mid EQ Width
 Low Mid EQ Amp High Mid EQ Freq
 High Mid EQ Width High Mid EQ Amp

These parameters appear only in this configuration

3 BAND EQ>REVERB

Phaser Speed Phaser Depth

These parameters appear only in this configuration.

Mod 1
 through
 Mod 8
 Amplitude

-99 to +99

Selects the amount of modification by the controller.

CONFIG

| Page | Options | Description |
|---------------|--|---|
| Configuration | EQ>PCH>DL>REVERB LEZLIE>DL>REVERB GRAPHIC EQ>DELAY 5BAND EQ>PCH>DLY 3 BAND EQ>REVERB | Selects the signal flow path and internal configuration of the four effects |

MIDI CONTROLLER NUMBER CHART

MIDI CONTROLLER NUMBER REFERENCE CHART

| | |
|----------|---|
| 0 | Undefined |
| 1 | Modulation Wheel or Lever |
| 2 | Breath Controller |
| 3 | Undefined |
| 4 | Foot Controller |
| 5 | Portamento Time |
| 6 | Data Entry MSB |
| 7 | Main Volume |
| 8 | Balance |
| 9 | Undefined |
| 10 | Pan |
| 11 | Expression Controller |
| 12 to 15 | Undefined |
| 16 to 19 | General Purpose Controllers (#'s 1 through 4) |
| 20 to 31 | Undefined |
| 32 to 63 | LSB for Values 0 to 31 |
| 64 | Damper Pedal (Sustain) |
| 65 | Portamento |
| 66 | Sostenuto |
| 67 | Soft Pedal |
| 68 | Undefined |
| 69 | Hold 2 |
| 70 to 79 | Undefined |
| 80 to 83 | General Purpose Controllers (#'s 5 through 8) |
| 84 to 90 | Undefined |
| 91 | External Effects Depth |
| 92 | Tremolo Depth |
| 93 | Chorus Depth |
| 94 | Detune Depth |

| | |
|------------|-------------------------------------|
| 95 | Phaser Depth |
| 96 | Data Increment |
| 97 | Data Increment |
| 98 | Non-Registered Parameter Number LSB |
| 99 | Non-Registered Parameter Number MSB |
| 100 | Registered Parameter Number LSB |
| 101 | Registered Parameter Number MSB |
| 102 to 120 | Undefined |
| 121 to 127 | Reserved for Channel Mode Messages |

PARAMETER DEFAULT CHART

PARAMETER DEFAULT VALUE CHART

| REVERB | PLATE |
|-------------------------|------------------|
| Reverb Type | PLATE |
| Reverb Input 1 | DELAY MIX INPUT |
| Reverb Input 2 | DELAY OUTPUT |
| Reverb Input Mix | 1 ←00→ 2 |
| Reverb PreDelay | 040 milliseconds |
| PreDelay Mix | PRE 99→ POST |
| Reverb Decay | 50 |
| Reverb Diffusion Amount | 8 |
| Reverb Density | 8 |
| Low Frequency Decay | -00 |
| High Frequency Decay | -20 |
| Reverb Gate | OFF |
| Reverb Gate Hold Time | 00 |

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|--------------------------|------------------|
| Reverb Gate Release Time | 80 |
| Reverb Gated Level | 00% |
| DELAY | |
| Delay Type | STEREO DELAY |
| Delay Input 1 | POST-EQ |
| Delay Input Mix | 1 <00> PITCH |
| Left Delay Time | 100 milliseconds |
| Delay Feedback Left | 00% |
| Right Delay Time | 100 milliseconds |
| Delay Feedback Right | 00% |
| PITCH | |
| Pitch Mode | STEREO CHORUS |
| Pitch Input | POST-EQ |
| LFO Waveshape | TRIANGLE |
| LFO Speed | 20 |
| LFO Depth | 50 |
| Pitch Feedback | 00% |
| EQ | |
| Low EQ Frequency | 200Hz |
| Low EQ Amplitude | +00.00dB |
| Mid EQ Frequency | 2000Hz |
| Mid EQ Bandwidth | 1.00 OCTAVES |
| Mid EQ Amplitude | +00.00dB |
| Hi EQ Frequency | 08000Hz |
| Hi EQ Amplitude | +00.00dB |
| MIDI | |
| MIDI Channel | 01 |
| MIDI Program Change | ON |
| Program Table | 000 = 00 |
| MIDI Thru | ON |

| | |
|--|----------------------------------|
| Sysex Enable | OFF |
| Send MIDI Program | ALL DATA |
| Footswitch Range | 00 THROUGH 99 |
| CONFIGURATION | EQ>PCH>DL>REVERB |
| MIX | |
| Direct Signal | PRE-EQ |
| Direct Signal Level | +50 |
| Master Effects Level | +50 |
| Pitch Output Level | +50 |
| Delay Output Level | +50 |
| Reverb Output Level | +99 |
| MOD | |
| Mod 1 Source | PITCH BEND |
| Mod 1 Target | REVERB INPUT MIX |
| Mod 1 Amplitude | +00 |
| ADDITIONAL DEFAULTS IN OTHER CONFIGURATIONS | |
| LEZLIE CONFIG | LEZLIE OUTPUT |
| Reverb Input 1 | |
| Delay Input Mix | IN < 00 > LEZLIE |
| Lezlie Stereo Separation | 99 |
| Lezlie Motor Control | ON |
| Lezlie Speed | SLOW |
| High Rotor Level | +00dB |
| Lezlie Output Level | +50 |
| GRAPHIC EQ>DELAY | |
| Left Delay Time | 300 milliseconds |
| Right Delay Time | 300 milliseconds |
| EQ Output Level | +99 |
| Mod 1 Target | LEFT DELAY TIME |
| 5 BAND EQ>PITCH>DELAY | |

| | |
|----------------------------|-----------------|
| Low Mid EQ Frequency | 100Hz |
| Low Mid EQ Bandwidth | 1.00 OCTAVES |
| Low Mid EQ Amplitude | +00.00dB |
| High Mid EQ Frequency | 06000Hz |
| High Mid EQ Bandwidth | 1.00 OCTAVES |
| High Mid EQ Amplitude | +00.00dB |
| Mod 1 Target | DELAY INPUT MIX |
| 3 BAND EQ>REVERB | |
| Reverb Type | PLATE 2 |
| Reverb Chorus | ON |

QuadraVerb SPECIFICATIONS

FREQUENCY RESPONSE: 16 Hz to 20KHz

DYNAMIC RANGE: 85dB

DISTORTION: .1% typical with 1KHz signal applied at 0dB

SIGNAL LEVELS: Nominal Input Level -10 to +4
 Peak Input Level +20dBv
 Peak Output Level/Wet +14dBV
 Peak Output Level/Dry +20dBV

INPUT IMPEDANCE: 1 Meg Ohm Per Channel in Stereo
 500K Ohm in Mono

PROCESSOR SPEED: 24 Million Instructions Per Second

CONVERSION SCHEME: 16 Bit Linear PCM

USER PROGRAMS (RAM): 100

FACTORY PROGRAMS (ROM): 90