

Derek LeRoy

PROGAP ULTRA™

MIDI Programmable Guitar Preamp

OWNER'S MANUAL

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May be covered by one or more of the following:
U.S. Patents #4538297, 4647876, 4696044,
4745309, 4881047, 4893099 and 5124657.
Other patents pending.
Foreign patents pending.

ROCKTRON
GUITAR RACK TECHNOLOGY

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1. Introduction

The Rocktron PROGAP Ultra™ is a completely new version of the popular MIDI programmable PROGAP™ guitar preamp. The PROGAP Ultra™ provides a combination of features not found on any other commercially-available preamp:

- **New "Rectifier" parameter replicates various tube rectifiers found in vintage amplifiers. This produces a spongy feel that's controlled by your attack of the strings. The harder the strings are attacked, the more bite and harmonics are produced. Lessening your attack brings back a simpler, cleaner tone.**
- **New "Variac" parameter allows the user to dial in a sparkling clean tone or a full-bodied clean tone like that produced by vintage tube amplifiers.**
- **HUSH Systems' V.I.R. (Variable Integrated Release) circuitry provides noise reduction while playing and silence when not. This advanced noise reduction system for guitar assures that long sustained notes create a very slow release time, while fast, muted notes achieve a very quick release.**
- **MIDI Transmit channel allows you to send a MIDI program change messages to other MIDI-compatible devices in your rack whenever a preset is recalled on the Ultra™.**
- **Advanced speaker simulation circuitry, accessed via the "Shape" parameter, provides a realistic approximation of a miked guitar cabinet at line level for direct mixer input.**
- **Fixed Wah function allows the player to simulate the sound of a wah-wah pedal set at a fixed position.**
- **Stereo effects returns with wet/dry mix control.**
- **Simultaneous use of amplifier outputs and direct outputs.**
- **Global EQ allows the user to quickly fine tune the EQ from the front panel without having to enter preset parameter lists.**

These and many more new features and parameters make the PROGAP Ultra™ more versatile and functional than ever. The PROGAP Ultra™ also incorporates a new user-friendly operating interface utilizing a 16 character vacuum florescent tube display, as well as individual controls for Parameter Select, Parameter Adjust and Preset Select.

This operating manual will introduce you to the PROGAP Ultra™ and its various functions and features. After carefully reading this manual, keep it for future reference.

After removing the PROGAP Ultra™ from the box, save all the packing materials in case it becomes necessary to ship the unit.

PRECAUTIONS

NOTE: IT IS VERY IMPORTANT THAT YOU READ THIS SECTION TO PROVIDE YEARS OF TROUBLE FREE USE. THIS UNIT REQUIRES CAREFUL HANDLING.

All warnings on this equipment and in the operating instructions should be adhered to and all operating instructions should be followed.

Do not use this equipment near water. Care should be taken so that objects do not fall and liquids are not spilled into the unit through any openings.

The power cord should be unplugged from the outlet when left unused for a long period of time.

DO NOT ATTEMPT TO SERVICE THIS EQUIPMENT. THIS EQUIPMENT SHOULD BE SERVICED BY QUALIFIED SERVICE PERSONNEL ONLY. DO NOT MAKE ANY INTERNAL ADJUSTMENTS OR ADDITIONS TO THIS EQUIPMENT AT ANY TIME. DO NOT TAMPER WITH INTERNAL ELECTRONIC COMPONENTS AT ANY TIME. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY VOID THE WARRANTY OF THIS EQUIPMENT, AS WELL AS CAUSING SHOCK HAZARD.

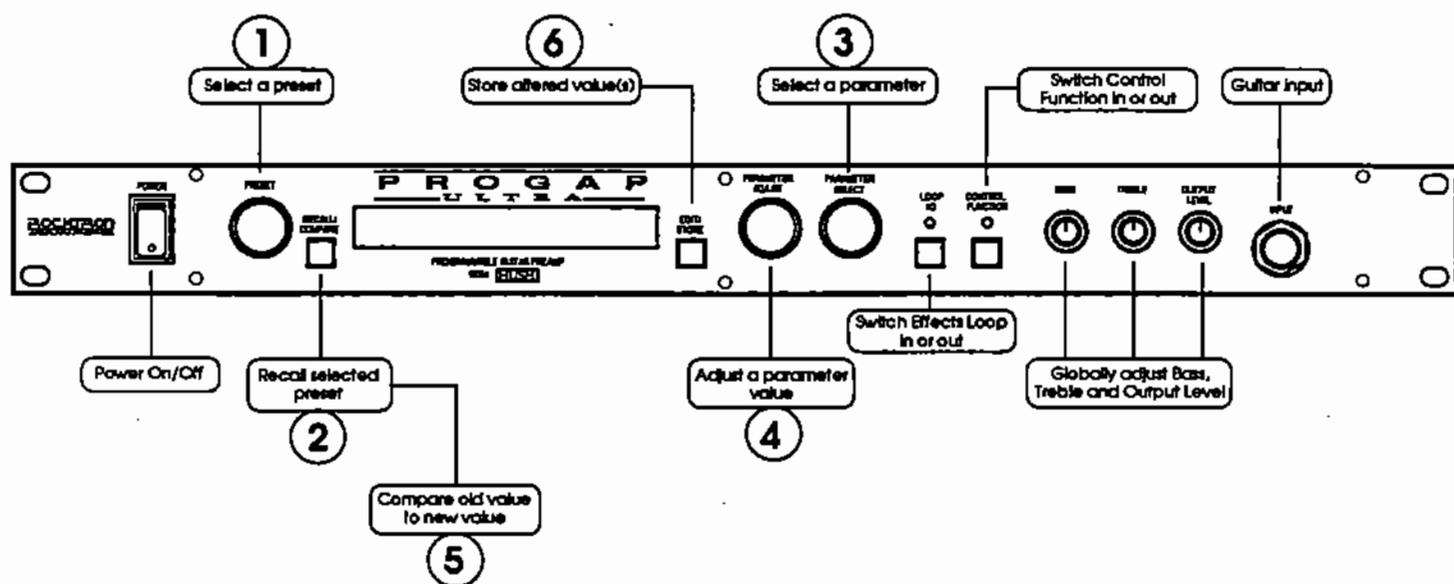
POWER REQUIREMENTS

The unit accepts power from the 9VAC/2 amp adaptor supplied with the unit. The 9V RMS AC voltage is internally processed by a voltage doubler, thus generating a bipolar $\pm 15V$ to maintain the headroom and sound quality of professional, studio quality equipment. Using an external power source such as this minimizes excessive noise and hum problems often associated with internal transformers, providing optimal performance for the user.

OPERATING TEMPERATURE

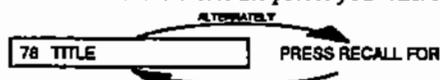
Do not expose this unit to excessive heat. This unit is designed to operate between 32 F and 104 F (0 C and 40 C). This unit may not function properly under extreme temperatures.

2. Quick Reference



PRESET/PARAMETER ACCESS

- 1 Turn the PRESET control to select the preset you wish to recall.



- 2 Press the RECALL/COMPARE button to recall the preset you have selected.

78 TITLE

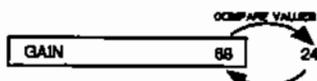
- 3 Turn the PARAMETER SELECT control to choose a parameter you wish to alter.

GAIN 88

- 4 Turn the PARAMETER ADJUST control to modify the parameter value.

GAIN 24

- 5 The RECALL/COMPARE button may be used at this time to alternate between the stored parameter value and the altered value.



- 6 Press the EDIT/STORE button to initiate the storing procedure. The display will now flash the current preset number and "STORE TO PRESET" alternately.

STORE TO PRESET

STORING PROCEDURE

- A Turn the PRESET SELECT control to select the preset number you wish to store the edited preset into. (Note: If you wish to store the edited preset into the currently recalled preset number, this step is not necessary).



- B Press the EDIT/STORE button a second time to store the edited preset parameters into the selected preset number.

STORED

- C After storing the altered parameters, the display will next ask "COPY TITLE TOO?" This will only be displayed when storing into a new preset number and allows the user to copy the title from the altered preset into the new preset also, if desired. To copy the title from an altered preset, press the STORE button a third time and the display will again flash "STORED".

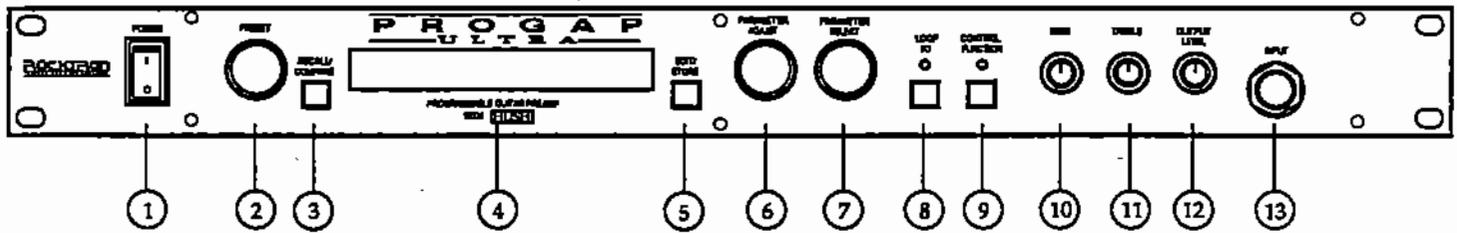
STORED

Note 1: If it is not desired to save the title of the altered preset, simply turn the PRESET or PARAMETER SELECT control to exit the store procedure. The edited parameter values will still be stored into the new preset number.

Note 2: If preset values are edited and the store procedure is exited before the STORE button is pressed a second time, "CANCEL" will flash on the display and all edited preset values will be lost the next time that preset is recalled.

CANCEL

3. Front Panel



- 1 **POWER switch**
- 2 **PRESET control:**

Turning the PRESET control will exit the current PROGAP Ultra™ function and scroll through the successive presets stored in memory. When viewing MIDI options, this control is also used to scroll through the available MIDI Controller Mapping parameters, as well as select a MIDI program number when in the "Program Mapping" menu.
- 3 **RECALL/COMPARE button:**

This button is used to recall the preset currently displayed. This button is also used to compare an altered parameter value to the stored parameter value. When viewing MIDI options, this button is used to recall the preset currently displayed when in the "Program Change" parameter menu.
- 4 **DISPLAY panel:**

The DISPLAY panel consists of 16 characters of 14 segments each.
- 5 **EDIT/STORE button:**

The EDIT/STORE button is used to store altered parameter values within a given preset. This button is also used to store altered MIDI information when viewing MIDI options.
- 6 **PARAMETER ADJUST control:**

This control is used to alter the currently displayed parameter value after that parameter has been selected. When viewing MIDI options, this control is used to edit the information displayed on the right side of the display.
- 7 **PARAMETER SELECT control:**

This control is used to select a preset parameter or system function.
- 8 **LOOP I/O button:**

This button is used to switch the effects loop IN or OUT of the signal path. When the LED above this button is lit, devices patched in the effects loop are active in the signal path.

9 CONTROL FUNCTION button:

This button is used to manually activate or bypass any device connected to the rear panel CONTROL FUNCTION jack via its own "Footswitch Bypass" jack. This control function can also be switched on or off via a MIDI control change (see the OPERATION section concerning MIDI control changes for more information). The control function is a latched switch.

The status of the control function is "off" for all factory presets, but may be stored "ON" in user-created presets (if a preset is stored with the control function "ON", it will be turned "ON" each time that preset is recalled).

10 BASS control:

This control allows the user to globally increase or decrease the amount of low frequency information at the output of the PROGAP Ultra™, and operates independantly from any bass parameter within each preset.

This control is provided for instant access to the current bass level without the need for searching for the proper parameters in each preset. This is especially useful in live situations where the playing environment requires more (or less) bass in all presets, or if a quick, timely change must be made .

11 TREBLE control:

This control allows the user to globally increase or decrease the amount of high frequency information at the output of the PROGAP Ultra™, and operates independantly from any treble parameter within each preset.

This control is provided for instant access to the current treble level without the need for searching for the proper parameters in each preset. This is especially useful in live situations where the playing environment requires more (or less) treble in all presets, or if a quick, timely change must be made .

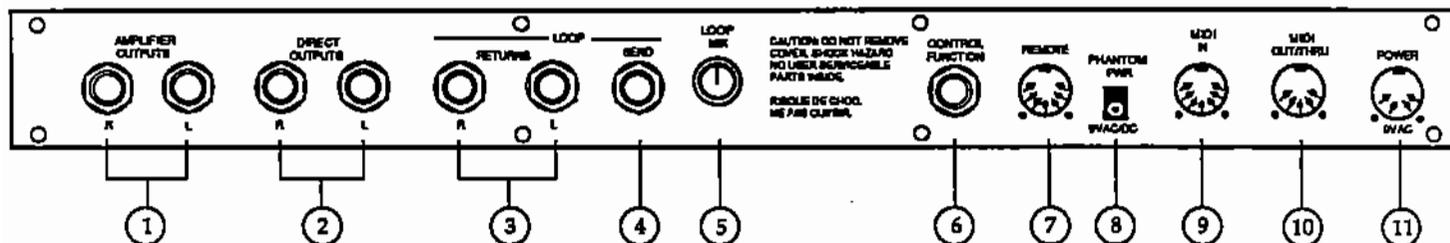
12 OUTPUT control:

The OUTPUT control globally increases or decreases the overall output level of the PROGAP Ultra™ independant of the Output parameter within each preset. The OUTPUT control does not affect the output levels for the Direct Outputs.

13 INPUT jack:

This standard unbalanced mono 1/4" jack is used to provide input to the unit. It is front panel mounted for easy access.

4. Rear Panel



- 1 **Left and Right AMPLIFIER OUTPUT jacks:**
These standard 1/4" mono jacks provide outputs for the PROGAP Ultra™ which are intended to be used with a power amplifier and guitar cabinets.
- 2 **Left and Right DIRECT OUTPUT jacks:**
These standard 1/4" mono jacks provide outputs for the PROGAP Ultra™ which are intended to be used directly into a mixing board, recording system or other full range system.
- 3 **Left and Right LOOP RETURN jacks:**
These standard 1/4" mono jacks accept the left and right outputs, respectively, from the last device in the effects chain.
- 4 **LOOP SEND jack:**
This standard 1/4" mono jack provides a post-distort output to the input of the first device in the effects chain.
- 5 **LOOP MIX control:**
This control determines the amount that the effected signal is mixed with the dry signal. It can be set from 100% dry (no effect signal) to 100% wet (no dry signal).
- 6 **CONTROL FUNCTION jack:**
This standard 1/4" mono jack accepts its input from the "Footswitch Bypass" jack of another device - allowing the user to activate or bypass another unit via the front panel CONTROL FUNCTION button or a MIDI control change. The Control Function is a latched switch.
- 7 **REMOTE jack:**
This 7-pin DIN connector is provided for the connection of a dedicated remote footswitch for the PROGAP Ultra™ to be released by Rocktron in the future. This remote footswitch will allow the user to access and control functions and features of the Ultra™ by remote means.
- 8 **PHANTOM POWER jack:**
This 2.5mm PIN jack offers the ability to power Rocktron MIDI foot controllers from a 7-pin MIDI cable which connects from the Rocktron MIDI foot controller to the MIDI IN jack on the rear panel of the PROGAP Ultra™. This eliminates the need to find an AC outlet near where the footpedal would be placed during a performance, or the need to run an extension cord out to the footswitch. Instead of inserting the AC adaptor

into the "Power" jack of the footswitch as normal, plug it into the PHANTOM POWER jack on the PROGAP Ultra™. This will power the Rocktron MIDI foot controller through pins 6 and 7 of the MIDI cable connecting the two units. A 7-pin MIDI cable must be used and is available from your Rocktron dealer.

9 MIDI IN jack:

This 7-pin DIN connector must be connected to the "MIDI Out" connector of the transmitting MIDI device via a standard MIDI cable, or to the "MIDI Thru" connector of the preceding device (if the PROGAP Ultra™ is within a chain of MIDI devices).

Pins 6 and 7 of this connector carry the phantom power to power a Rocktron MIDI foot controller when a 7-pin MIDI cable is used.

10 MIDI THRU/OUT jack:

This standard 5-pin DIN connector can be connected to the "MIDI In" connector of another device via a standard MIDI cable. There are limitations to the number of devices that can be chained (series connected) in this fashion.

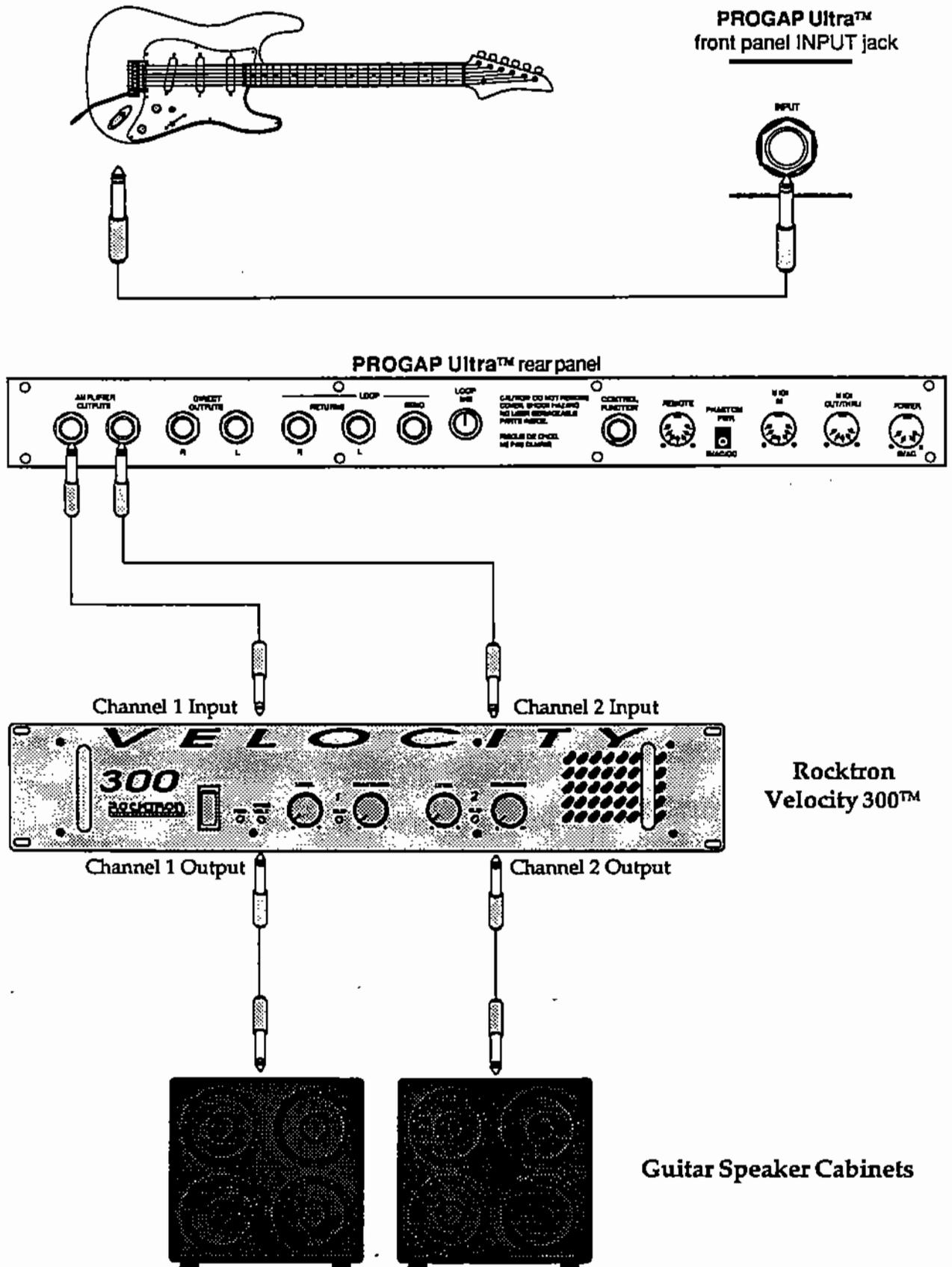
Note: Inherently in MIDI there is a limit to the number of devices which can be chained together (series connected). With more than 3 devices, a slight distortion of the MIDI signal can occur, due to signal degradation, which can cause an error in MIDI signal transmission. Should this problem arise, a MIDI Thru box can be used which connects directly to the MIDI device which transmits MIDI information and has multiple connectors for the multiple devices receiving MIDI. MIDI cables should not exceed 50 feet (15 meters) in length.

11 POWER jack

This 4-pin DIN connector accepts power from the 9VAC adaptor supplied with the unit.

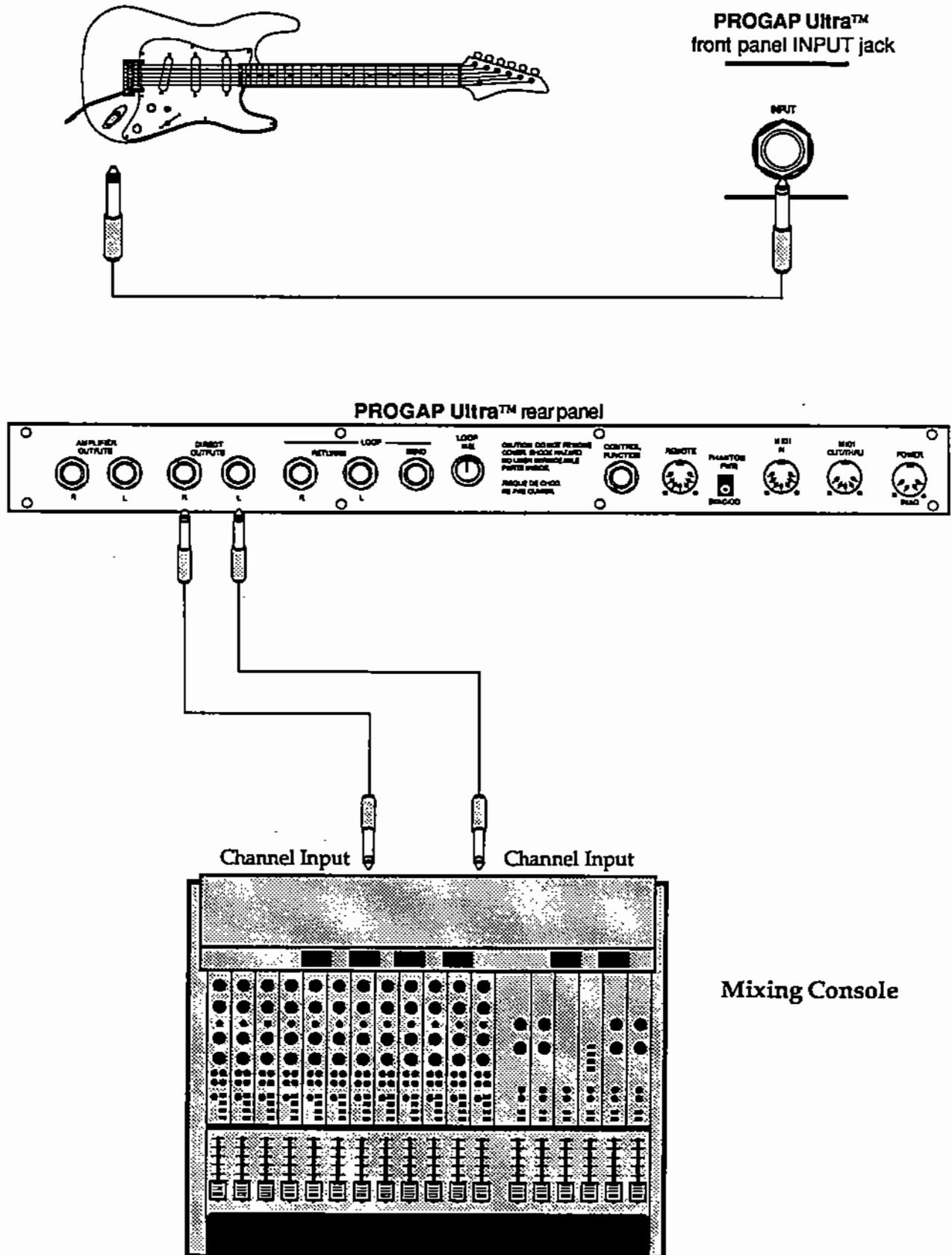
5. Connections

A. Using the Ultra™ with a guitar amplifier:



B. Using the Ultra™ direct into a mixing console:

Note: Presets 80 thru 99 were written for direct input to a mixing console.



6. Basic Format

The PROGAP Ultra™ contains 128 individually stored sounds called **presets**. Each preset of the PROGAP Ultra™ is made up of the same 17 tonal parameters, as well as parameters for the Loop and Control Function. Each of the 17 tonal parameters allow you to alter a specific aspect of the overall sound of the Ultra™. The overall sound of each preset is dependant upon how all of the parameters for that preset are set. Each of the 14 MIDI parameters allow you to alter a specific MIDI function.

Each Ultra™ preset contains the following parameters (note: **BOLD** type denotes displayed parameter title):

Tonal Parameters

Pre-distortion EQ section

- **PRE-distortion TREBLE** boost on/off
- **PRE-distortion BASS CUT** level
- **PRE-distortion MIDBAND** level
- **PRE-distortion MIDband FREquency**
- **PRE-distortion MIDBAND Q**

Gain Section

- **GAIN**
- **VARIAC ADJUST**
- **RECTIFIER** type select

Post-distortion EQ section

- **POST-distortion BASS** level
- **POST-distortion TREBLE** level
- **POST-distortion MIDBAND** level
- **POST-distortion MIDband FREquency**
- **POST-distortion MIDBAND Q**

Output section

- **OUTPUT LEVEL**

HUSH™ section

- **HUSH™ THRESHOLD** level

Output section

- **SHAPE** on/off

Fixed Wah section

- **FIXED WAH** on/off

Utility Functions

- **TITLE EDIT**

- **CONTROLLER ASSIGNment**

Turn either the PRESET or ADJUST control to access these parameters:

XXXXXXX (Parameter) **TO** XX (Controller#)
XXXXXXX (Parameter) **UPper limit** XX (Value)
XXXXXXX (Parameter) **LoWER limit** XX (Value)

- **PROGRAM MAPPING**

Turn either the PRESET or ADJUST control to access these parameters:

PROGRAM MAPPING on/tbl/off
MAP X (Program #) **TO** X (Preset #)

- **MIDI REceiVe CHannel**
- **MIDI TRAnSMit CHannel**

MIDI Dump/Load parameters

- **XX PRESET DUMP**
- **XX PRESET LOAD**
- **DUMP USER DATA**
- **LOAD USER DATA**

Reinitialization parameters

- **ALL RESTORE**
- **PRESET RESTore**

A. Pre-distortion EQ Section:

PARAMETERS

PRE-distortion TREBLE boost
PRE-distortion BASS CUT
PRE-distortion MIDBAND level
PRE-distortion MIDband FREQUENCY
PRE-distortion MIDBAND Q

The pre-distortion EQ section shapes the tone prior to the distortion stage. Considerable tone variations can be achieved by manipulating these parameters.

■ PRE TREBLE – 2 settings (ON - OFF)

This allows the user to boost the treble before the distortion stage to produce a brighter clean or distorted tone.

■ PRE BASS CUT – 2 settings (OFF-2)

This allows the user to decrease the low frequency information before the distortion stage. With no bass roll-off, the distortion tone will be noticeably "muddier" sounding in high gain applications.

■ PRE MIDBAND – 61 values (-15.0 - +15.0)

■ PR MID FRQ – 53 values (200Hz - 6KHz)

■ PRE MIDBAND Q – 4 settings (0 - 3)

These parameters work together to shape the pre-distortion tone. The "PRE MIDBAND" level parameter allows the user to cut or boost the frequency at which the "PR MID FRQ" is set. The "MIDBAND Q" parameter determines the bandwidth of the selected "PR MID FRQ".

B. Gain section:

PARAMETERS

GAIN
VARIAC ADJ
RECTIFIER type select

■ GAIN – 101 values (0-100)

The "GAIN" parameter determines the gain value in the distortion stage.

■ VARIAC ADJ – 51 values (0 - 100)

The "VARIAC ADJ" adjusts the level at which the PROGAP Ultra™ begins to distort. A Variac is a voltage-attenuating device that plugs into an AC wall outlet and adjusts the voltage level to any device which is plugged into it. For years many guitarists have plugged their amplifier heads into a Variac and reduced the voltage coming into the amplifier from the AC wall outlet. This allows the amplifier tubes to reach saturation at a lower input level and increases the gain produced. The "VARIAC ADJ" parameter operates in the same manner as a conventional Variac - lowering the parameter value in turn lowers the level at which saturation will take place.

■ RECTIFIER – 4 settings (S. State - 5AR4)

The "RECTIFIER" parameter is provided to replicate the effect of the tube rectifiers used in the power amp section of vintage tube amplifiers. This circuit dynamically controls the saturation point of the gain stage. This produces a more "squashed" feel in high gain settings, and also allows you to turn down your guitar when in a high gain preset to get a much cleaner tone. This parameter provides 4 settings, including "Solid State" and 3 of the most popular tube rectifiers ("5Y3", "5U4" and "5AR4").

NOTE: The amount of saturation works in conjunction with the "VARIAC ADJ" parameter. Setting the "VARIAC ADJ" too low while using one of the tube rectifier settings may cause over-saturation. When the "Solid State" setting is selected, no "squashed" feel will take place.

C. Post-distortion EQ section:



■ **POST BASS** – 61 values (-15.0 - +15.0)

■ **POST TREBLE** – 61 values (-15.0 - +15.0)

The "POST BASS" and "POST TREBLE" level parameters adjust the amount of low and high frequency information at the output of each preset. These post-distortion parameters have a more dramatic effect on the overall sound than the pre-distortion bass and treble controls.

The front panel "BASS" and "TREBLE" controls allow for global adjustments of the post-distortion low and high frequency information at the output of the Ultra™. This feature was included for live situations when a quick adjustment is necessary and there is no time to scroll through parameters. It is also useful when a particular venue requires more or less bass or treble from all presets.

Because these controls provide global adjustment, they operate independent of the "POST BASS" and "POST TREBLE" parameters of each preset. For example, if the front panel **BASS** control is turned up 5dB, the post-distortion bass content will increase 5dB for all presets but the "POST BASS" parameter for each preset will remain unchanged.

■ **POST MIDBAND** – 61 values (-15.0 - +15.0)

■ **PS MID FRQ** – 53 values (200Hz - 6.0KHz)

■ **PST MIDBAND Q** – 4 settings (0 - 3)

These parameters also work together, as the "POST MIDBAND" level parameter adjusts the selected "PS MID FRQ" and the "PST MIDBAND Q" parameter determines the bandwidth of the selected midband frequency.

D. Output section:



■ **OUTPUT LEVEL** – 51 values (0 - 100)

The PROGAP Ultra™ features two output level controls. The "OUTPUT LEVEL" parameter is a programmable level for each individual preset. The front panel "OUTPUT LEVEL" control operates globally (like the front panel "BASS" and "TREBLE" controls) and acts as a master output level control. The front panel "OUTPUT LEVEL" control allows for quick volume adjustment.

■ **SHAPE – 2 settings (ON-OFF)**

The "SHAPE" parameter allows the user to switch in or out a fixed frequency response at the output of the Ultra™. This EQ curve is extremely useful in full range applications (such as recording direct into a mixing console) and is intended to replicate the sound of a miked 4x12 speaker cabinet. This parameter can be stored as "ON" or "OFF" in all Ultra™ presets.

E. HUSH™ section:

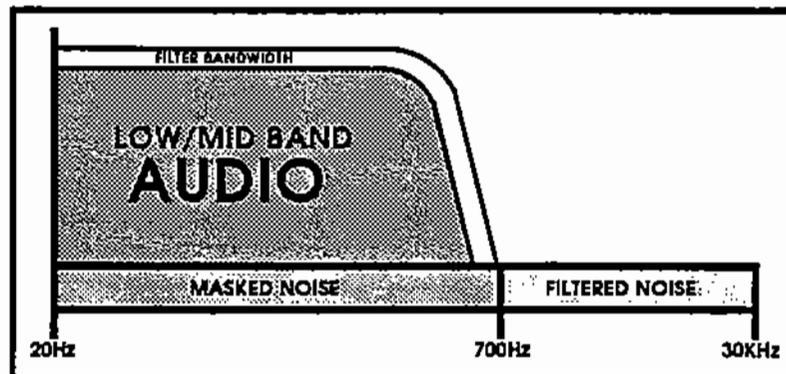
PARAMETER

HUSH THRESHLD

Hush Systems' patented HUSH™ noise reduction is a single-ended system that combines the principles of dynamic filtering and low-level downward expansion.

Dynamic Filtering consists of a dynamically-controlled low pass filter which opens and closes the bandwidth of the signal, depending upon how much mid and high band information is contained in the input signal. The filter bandwidth will only open far enough to pass the highest frequency information in the input signal while reducing the high frequency noise above it. For example, if the highest frequency present is 8KHz, the filter will open to pass up to 8KHz while the noise from 8KHz to 20KHz would be reduced. If a signal with frequency components up to 20KHz appears at the input, the dynamic filter will open to its full extreme (40KHz). In simple terms, this means that if a signal is present at the input which is primarily bass components, the dynamic filter will reduce any mid or high band noise. However, if the input signal has high frequency components present, the dynamic filter will open to its full extreme to pass the signal and eliminate the possibility of a loss of high end frequency response. When no mid or high band information is present, the filter will close down to a pre-set cut-off point of 700Hz (allowing only frequencies of 700Hz and below to pass).

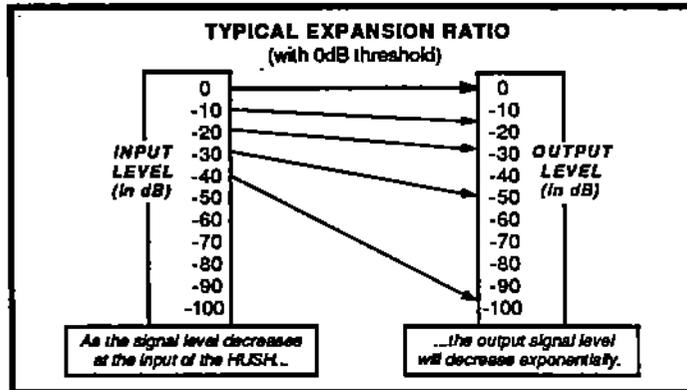
Dynamic Filter



The Downward Expander operates like an electronic volume control. The design utilizes a voltage controlled amplifier (VCA) circuit which can control the gain between the input and output from unity to 30, 40, or even 50dB of gain reduction. When the input signal is above the user pre-set threshold point the VCA circuit is at unity gain. As the input signal amplitude drops below the user pre-set threshold point, downward expansion begins.

When downward expansion begins the VCA operates like an electronic volume control and gradually begins to decrease the output signal level relative to the input signal. For example, if the input signal were to drop below the threshold point by 10dB, the output would drop approximately 12dB. As the input signal drops further below the threshold point, downward expansion increases exponentially. For example, if the input signal dropped 20dB below the threshold point, the output level would drop by approximately 30dB. A drop in the input level by 30dB would cause the output to drop by approximately 60dB (30dB of gain reduction). In the absence of any input signal, the expander circuit will reduce the gain so that the noise floor becomes inaudible.

Downward Expander



The HUSH™ circuitry included in the PROGAP Ultra™ includes the latest advancements in noise reduction, including V.I.R. (Variable Integrated Release) technology.

■ **HUSH THRESHLD** – 71 values (-70 - 0)

This parameter controls both the dynamic filter and downward expander. If any high frequency information or sustain is lost when the HUSH™ is operating, this parameter is set too high. If there is noise present when you are not playing the "HUSH THRESHLD" is set too low.

F. Fixed Wah

PARAMETER

FIXED WAH on/off

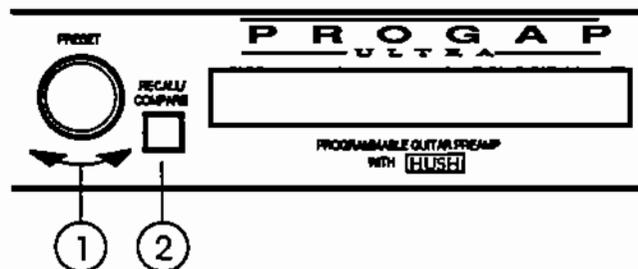
■ **FIXED WAH** – 2 settings (ON-OFF)

When this parameter is switched "ON", the Ultra™'s "PRE MIDBAND Q" parameter becomes pre-set to a narrow Q (parameter setting "3") like that found in a vintage wah-wah pedal. The "PRE MIDBAND" parameter is also automatically set to its highest parameter value (+15.0). These parameters can NOT be adjusted when the "FIXED WAH" parameter is "ON". The "FIXED WAH" parameter allows you to simulate the sound of a wah-wah pedal set at a fixed position.

The "PR MID FRQ" parameter may be adjusted between 400Hz and 2KHz (this is the same as setting a wah-wah pedal at a particular position).

7. Operation

A. Selecting a preset:



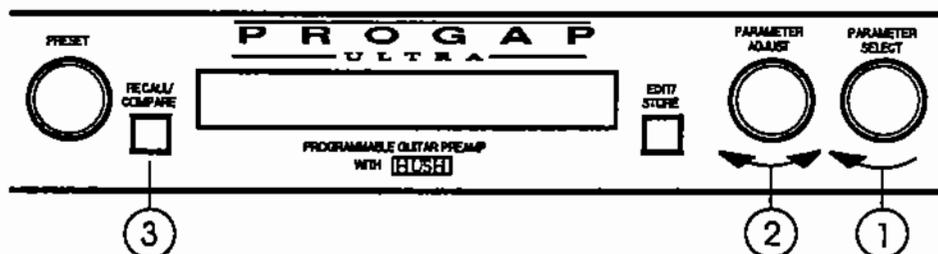
- Step 1** Turn the PRESET control to the desired preset you wish to recall. The display will flash the selected preset number and "PRESS RECALL FOR" alternately.

DISPLAY:
PRESS RECALL FOR

- Step 2** Press the RECALL/COMPARE button to recall the preset you have selected.

DISPLAY:
76 DAFFY QUACK

B. Changing preset parameters:



- Step 1** Turn the PARAMETER SELECT control to choose the parameter you wish to alter.

DISPLAY:
GAIN 68

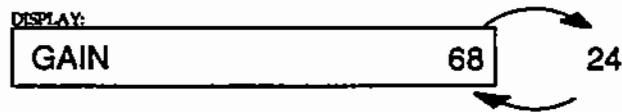
- Step 2** Turn the PARAMETER ADJUST control to immediately modify the parameter value.

DISPLAY:
G.AIN 24

The decimal point of the first character will light whenever a parameter value is altered.

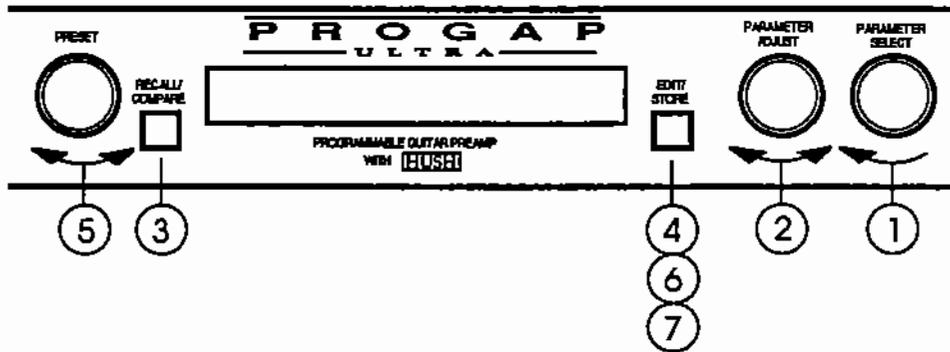
Step 3

The RECALL/COMPARE button may be pressed at this time to alternate between the stored parameter value (no decimal point) and the altered parameter value (decimal point lit).



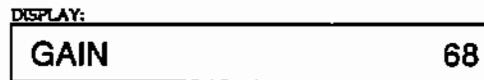
Note: Only one (1) parameter can be compared at a time. If two (2) parameters have been changed from their stored value, pressing RECALL/COMPARE will only compare the altered and stored values of the displayed parameter.

C. Storing changed parameters:



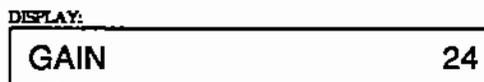
Step 1

Turn the PARAMETER SELECT control to choose the parameter you wish to alter.



Step 2

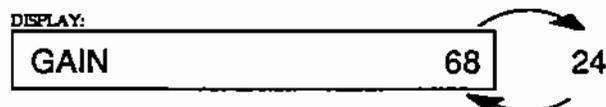
Turn the PARAMETER ADJUST control to modify the parameter value.



Other parameters may be altered at this time by repeating steps 1 and 2.

Step 3

The RECALL/COMPARE button may be pressed at this time to alternate between the stored parameter value and the altered parameter value.



Step 4

Press the EDIT/STORE button to initiate the storing procedure. The display will now flash the current preset number and "STORE TO PRESET" alternately.

DISPLAY

STORE TO PRESET

Step 5

Turn the PRESET control to select the preset number you wish to store the edited preset into. (Note: If you wish to store the edited preset into the currently recalled preset number, Step 5 is not necessary).

DISPLAY

34 TITLE

Step 6

Press the EDIT/STORE button a second time to store the edited preset parameters into the selected preset number.

DISPLAY

STORED

Step 7

After storing the altered parameters, the display will next ask "COPY TITLE TOO?" This will only be displayed when storing into a new preset number and allows the user to copy the title from the altered preset into the new preset also, if desired. To copy the title from an altered preset, press the STORE button a third time and the display will again flash "STORED".

DISPLAY

STORED

Note 1

If it is not desired to save the title of the altered preset, simply turn the PARAMETER SELECT control to exit the store procedure. The edited parameter values will still be stored into the new preset number.

Note 2

If preset values are edited and the store procedure is exited (by turning the PARAMETER SELECT control) before the STORE button is pressed a second time, "CANCEL" will flash on the display and all edited preset values will be lost the next time that preset is recalled.

DISPLAY

CANCEL

D. Editing a preset title:



Step 1 To edit a preset title, recall the preset title you wish to alter.

DISPLAY:
18 BLOWN *****

Step 2 Turn the PARAMETER SELECT control until "TITLE EDIT" is displayed.

DISPLAY:
TITLE EDIT

Step 3 Turn the PRESET or PARAMETER ADJUST control one step to display the current title. A flashing decimal point will follow the first character (This denotes which character may currently be edited).

DISPLAY:
18 T.ITLE
Flashing

Step 4 Use the PARAMETER ADJUST control to edit the current character.

DISPLAY:
18 N.ITLE
Flashing

Step 5 Press the EDIT/STORE button to store the altered character and advance the flashing decimal to the next character. EDIT/STORE must be pressed to store each character.

DISPLAY:
18 NI.TLE
Flashing

Step 6 Repeat steps 4 and 5 until the title has been edited as desired.

DISPLAY:
18 NEW TITLE
Flashing

Note

After storing the new characters for the current preset title, you may now either (a) turn the PRESET control to display and edit other preset titles without having to exit the Title Edit mode or, (b) turn the PARAMETER SELECT control to exit the Title Edit mode.



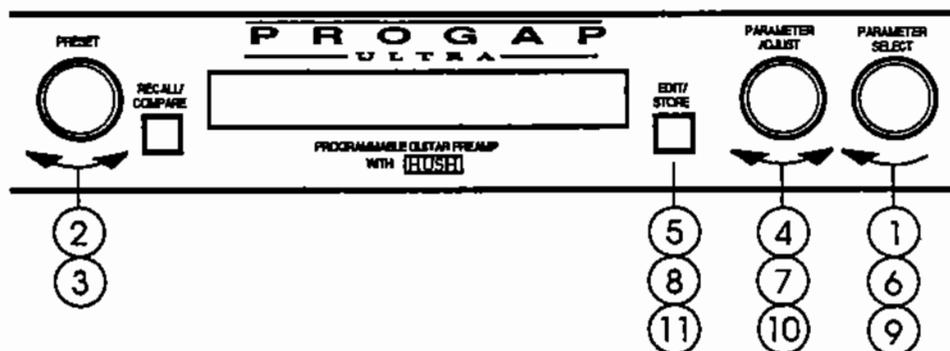
Turn the PARAMETER SELECT control to exit the "Title Edit" mode.

8. MIDI

A. Controller Mapping:

Controller Mapping allows for specific Ultra™ adjustable parameters to be mapped (or assigned) to a MIDI controller for real-time control by an expression pedal or other MIDI continuous controlling device.

The Controller Mapping option also lets you store an upper and lower parameter value limit which the controller cannot exceed. For example, if you are using an expression pedal with a MIDI Mate™ sending continuous control changes to control the "POST TREBLE" parameter, you can set an upper limit of +10.0 and a lower limit of -8.5, even though the parameter range is from +15.0 to -15.0. Now when your pedal is at its heel position, the "POST TREBLE" parameter will be at -8.5, and at the toe position it will be at +10.0. See Section 11 ("MIDI System Exclusive Format") for Parameter Look-Up tables.



- Step 1** To access the Controller Assign function, turn the PARAMETER SELECT control clockwise to "CONTROLLER ASSIG".

DISPLAY:

CONTROLLER ASSIG

- Step 2** Turn the PRESET (or PARAMETER ADJUST) control one step clockwise to access the first Controller Assign parameter.

DISPLAY:

PRE TREB BST TO OFF

- Step 3** The parameter displayed on the left is mapped to the control number displayed on the right. Select the parameter to be assigned a controller number by turning the PRESET control.

DISPLAY:

PST BASS TO OFF

Step 4

Select the controller number for the selected parameter using the **PARAMETER ADJUST** control. Below, the "PST BASS" parameter is mapping to MIDI controller #5.

DISPLAY:

PST BASS	TO	5
----------	----	---

Step 5

Press the **EDIT/STORE** button to store the new Controller number. "STORED" will flash briefly on the display.

DISPLAY:

STORED

Step 6

Turn the **PARAMETER SELECT** control one step clockwise to access the Upper Limit setting for the current adjustable parameter. See Section 11 for the parameter Look-Up tables.

DISPLAY:

PST BASS	UL	XXX
----------	----	-----

Note: ON/OFF parameters do not have Upper and Lower Limits.

Step 7

The Upper Limit value may be selected by turning the **PARAMETER ADJUST** control. See Section 11 for the parameter Look-Up tables.

DISPLAY:

PST BASS	UP	10
----------	----	----

Step 8

Press the **EDIT/STORE** button to store the new Upper Limit value. "STORED" will flash briefly on the display.

DISPLAY:

STORED

Step 9

Turn the **PARAMETER SELECT** control one step further clockwise to access the Lower Limit setting for the current adjustable parameter. See Section 11 for the parameter Look-Up tables.

DISPLAY:

PST BASS	LL	0
----------	----	---

Step 10

The lower limit value can be selected by turning the PARAMETER ADJUST control.

DISPLAY:
PST BASS LL 5

Step 11

Press the EDIT/STORE button to store the new Lower Limit value. "STORED" will flash briefly on the display.

DISPLAY:
STORED

Step 12

You may access other adjustable parameters to assign a controller number to by turning the PRESET control. Repeat steps 4 - 11.

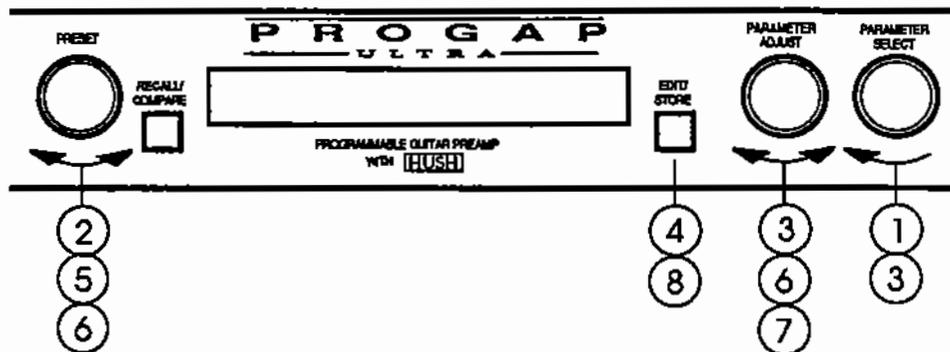
Note: Reversing the Upper and Lower Limit values (i.e. selecting a greater Lower Limit value than Upper Limit value) will result in the Ultra responding inversely to MIDI controller values. For example, the toe position of an expression pedal will now provide the minimum value while the heel position will provide the maximum value.

To exit the MIDI Controller Mapping function, turn the PARAMETER SELECT control.

B. MIDI Program Mapping:

MIDI Program Mapping allows for an Ultra™ preset to be mapped (or assigned) to a different MIDI program number. For example, MIDI program #58 can be mapped to Ultra™ preset #34. Then, when program #58 is selected from a MIDI transmitting device (such as the Rocktron MIDI Mate™ footcontroller), preset #34 will be recalled on the Ultra™.

The Program Mapping Table is shipped from Rocktron at a one to one correspondence (preset 1 is mapped to MIDI program number 1, 2 to 2, 3 to 3, etc.).



- Step 1** Turn the PARAMETER SELECT control clockwise to "PROGRAM CHANGE".

DISPLAY:
PROGRAM CHANGE

- Step 2** Turn the PARAMETER ADJUST or PRESET control one step clockwise to display the current Program Mapping ON/TBL/OFF status.

DISPLAY:
PROG CHANGE ON

Mapping Status selections:
ON - Execute MIDI program changes.
TBL - Use Mapping Table when program change is received.
OFF - Do not execute MIDI program changes.

- Step 3** Turn the PARAMETER ADJUST control to select "ON".

DISPLAY:
PROG CHANGE ON

TBL

- Step 4** Press the EDIT/STORE button store the current ON/TBL/OFF status. "STORED" will flash briefly on the display.

DISPLAY:
STORED

- Step 5** Turn the PRESET control one step further clockwise to display the Program Mapping assignments.

DISPLAY:
MAP XXX TO XXX

- Step 6** The number on the left of the display is the MIDI program number (or the number sent via a MIDI footswitch or other MIDI transmitter). Turn the PRESET control to select the MIDI program number that you wish to map to a preset.

DISPLAY:
MAP 58 TO 58
 |
 MIDI Program Number

- Step 7** The number on the right of the display is the preset number to map to (or the preset number that will be recalled when the MIDI program number on the left is sent). Turn the PARAMETER ADJUST control to select the preset number.

DISPLAY:
MAP 58 TO 34
 |
 Ultra™ Preset Number

Note: The Ultra™ preset number shown at the right side of the display can be recalled while in the Program Mapping mode by pressing the RECALL/COMPARE button.

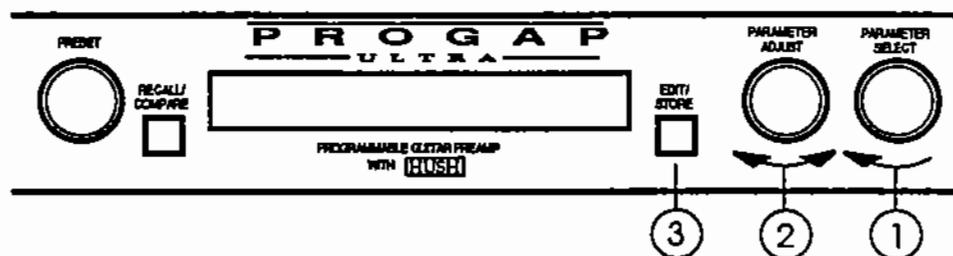
- Step 8** After selecting both the MIDI program number and preset number, press the EDIT/STORE button to save the change for each altered mapping. "STORED" will flash briefly on the display.

DISPLAY:
STORED

To exit the MIDI Program Mapping function, turn the PARAMETER SELECT control.

C. MIDI Receive Channel

The **MIDI Receive Channel** is the channel that the PROGAP Ultra™ receives MIDI Program Changes and Controller Changes on from a MIDI transmitter (such as a MIDI footswitch).



Step 1

To set the MIDI Receive channel, turn the **PARAMETER SELECT** control clockwise until "MIDI REV CH" is displayed.

DISPLAY:

MIDI REV CH OFF

Step 2

Select the MIDI Receive Channel by turning the **PARAMETER ADJUST** control. You may select channels 1 - 16, OMNI (all channels) or OFF (will not receive MIDI commands).

DISPLAY:

MIDI REV CH OMNI

Step 3

Press the **EDIT/STORE** button to save the new MIDI Channel Receive Channel. "STORED" will flash briefly on the display.

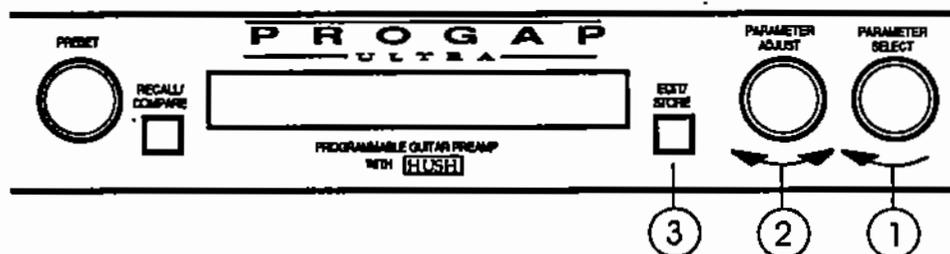
DISPLAY:

STORED

To exit the MIDI Channel Receive function, turn the **PARAMETER SELECT** control.

D. MIDI Transmit Channel

The MIDI Transmit Channel is the channel that the PROGAP Ultra™ transmits MIDI program changes. Whenever a preset is recalled on the Ultra™, a MIDI program change is sent to other units in your rack, if desired.



Step 1

To set the MIDI Transmit channel, turn the PARAMETER SELECT control clockwise until "MIDI TR CH" is displayed.

DISPLAY:

MIDI TRNS CH OFF

Step 2

Select the MIDI Transmit Channel by turning the PARAMETER ADJUST control. You may select channels 1 - 16 or OFF (will not transmit MIDI program change commands). Below - when a preset is recalled, the program change is transmitted on MIDI channel 1.

DISPLAY:

MIDI TRNS CH 1

Step 3

Press the EDIT/STORE button to save the new MIDI Channel Transmit Channel. "STORED" will flash briefly on the display.

DISPLAY:

STORED

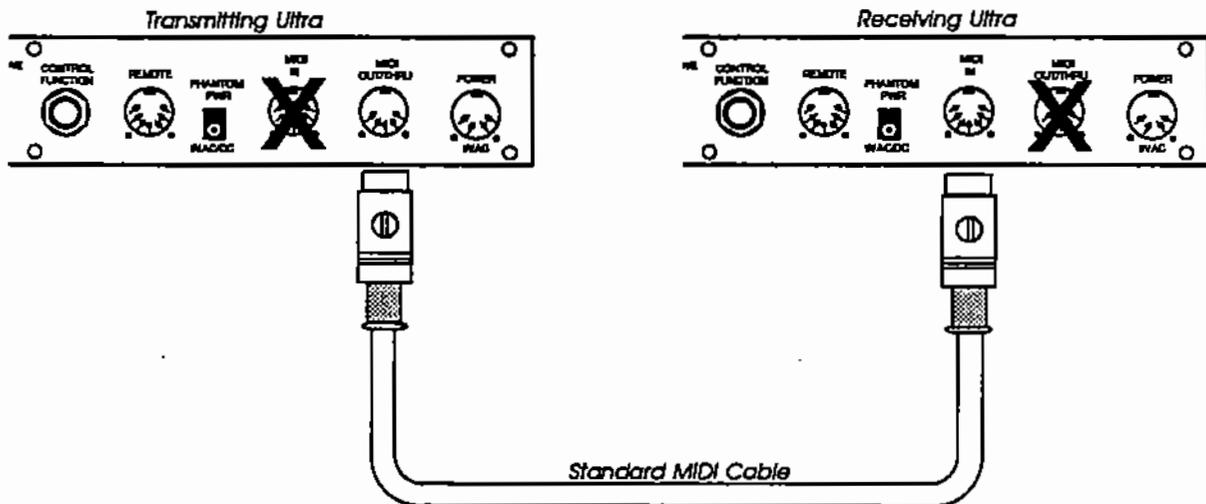
To exit the MIDI Channel Transmit function, turn the PARAMETER SELECT control.

E. MIDI Dump/Load

Any or all of the PROGAP Ultra™ presets may be dumped to a sequencer or another Ultra™ via system exclusive messages. The information exchanged when performing a MIDI dump consists of parameter values, title characters and controller assignment/limit information. When dumping a single Ultra™ preset into another Ultra™, the preset being dumped may be loaded into any preset location on the receiving Ultra™.

To dump a single Ultra™ preset into another Ultra™:

- Step 1** Using a standard MIDI cable, connect the MIDI OUT of the transmitting Ultra™ to the MIDI IN on the receiving Ultra™.



- Step 2** Turn the PARAMETER SELECT control on the transmitting Ultra™ clockwise to "PRESET DUMP" (the current preset number will be displayed also).

TRANSMITTING ULTRA™ DISPLAY:

14 PRESET DUMP

- Step 3** Use the PRESET control on the transmitting Ultra™ to select the preset you wish to dump. As the PRESET control is turned the preset number will be displayed in the first three characters of the display.

TRANSMITTING ULTRA™ DISPLAY:

22 PRESET DUMP

Note: The RECALL/COMPARE button can be pressed at this time to recall and listen to the preset you have just selected.

Step 4

Turn the PARAMETER SELECT control on the receiving Ultra™ to "PRESET DUMP" (the current preset number will be displayed also).

RECEIVING ULTRA™ DISPLAY:

56 PRESET DUMP

Step 5

Turn the PARAMETER ADJUST control on the receiving Ultra™ until "PRESET LOAD" is displayed.

RECEIVING ULTRA™ DISPLAY:

56 PRESET DUMP

Step 6

Use the PRESET control on the receiving Ultra™ to select the preset location to store the received preset. The preset currently at this location will be lost, therefore caution should be used when selecting a preset location.

RECEIVING ULTRA™ DISPLAY:

86 PRESET LOAD

Note: The RECALL/COMPARE button can be pressed at this time to recall and listen to the preset you have just selected.

Step 7

To initiate the dump, press the EDIT/STORE button on the transmitting Ultra™. The transmitting Ultra™ will display the the preset number dumped and "PRESET DUMPED". The receiving Ultra™ will display the preset location to store to and the word "RECEIVING..." while it receives and stores the preset parameters and title.

After all information for that preset is stored, the receiving Ultra™ will display "LOAD COMPLETE". The receiving Ultra™ also recalls the loaded preset at this time so that it may be verified.

TRANSMITTING ULTRA™ DISPLAY:

PRESET DUMPED

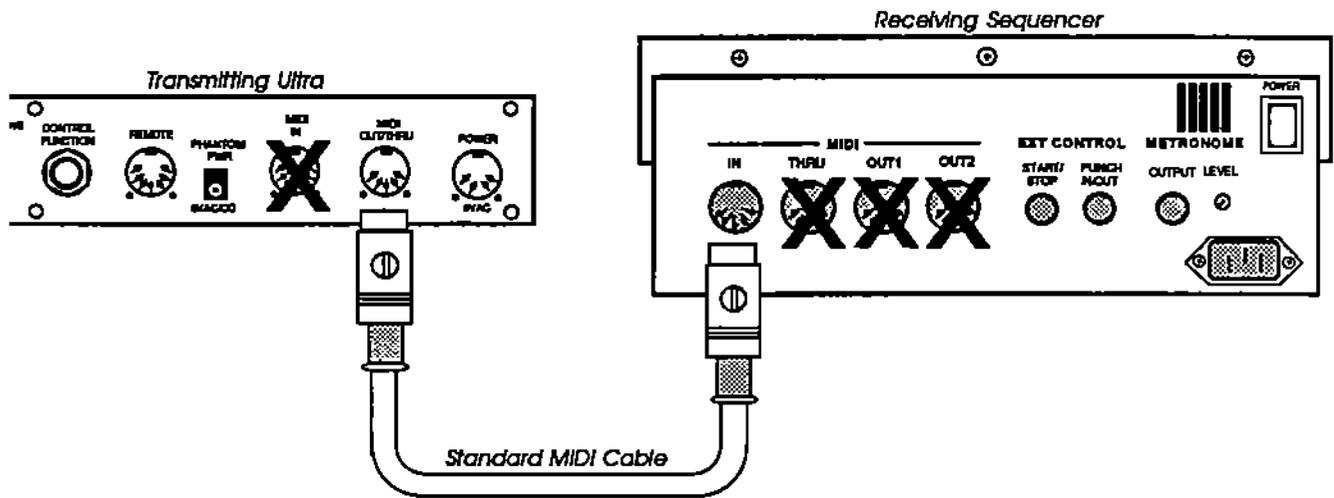
RECEIVING ULTRA™ DISPLAY:

LOAD COMPLETE

Note: If there is an error in transmission, the unit will display "LOAD ERRORS". Should this occur, check connections and try again.

To dump the Ultra™ memory into a sequencer:

- Step 1** Using a standard MIDI cable, connect the MIDI OUT of the Ultra™ to the MIDI IN on the sequencer.



- Step 2** Turn the **PARAMETER SELECT** control on the transmitting Ultra™ to "MIDI BULK DUMP".

ULTRA™ DISPLAY:
MIDI BULK DUMP

- Step 3** Start the sequencer recording.

RECORD

- Step 4** Press the **EDIT/STORE** button on the Ultra™ to initiate the data dump. As the Ultra™ performs the dump it will display "XX TRANSMITTING" (where XX is the number of the string currently transmitting, i.e. strings 0-127 are presets and titles, string 128 is controller information, strings 129-131 contain program mapping information and string 132 contains miscellaneous information).

ULTRA™ DISPLAY:
XX TRANSMITTING

- Step 5** After the Ultra™ displays "TRANS COMPLETE", stop the sequencer. The sequencer should have recorded all of the data. Keep the data stored on a disk in a safe place. Turn the **PRESET** control to continue.

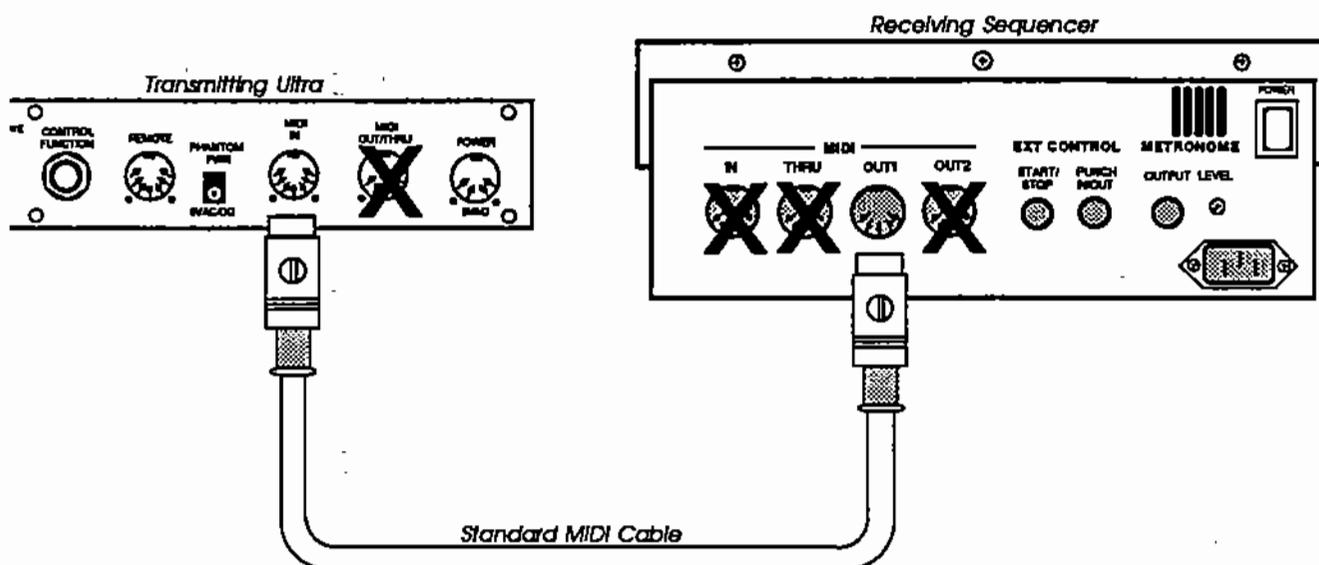
STOP

Bulk Dump can be stopped by pressing and holding the **RECALL/COMPARE button until "CANCEL" is displayed.*

To reload the user data from a sequencer:

Step 1

Using a standard MIDI cable, connect the MIDI OUT of the sequencer to the MIDI IN on the Ultra™.



Step 2

Turn the PARAMETER SELECT control on the Ultra™ to "MIDI BULK DUMP".

ULTRA™ DISPLAY:
MIDI BULK DUMP

Step 3

Turn the PARAMETER ADJUST control until "MIDI BULK LOAD" is displayed.

ULTRA™ DISPLAY:
MIDI BULK LOAD

Step 4

Play back the data stored on the sequencer. The Ultra™ will display the data strings as it is storing them. Each data string will appear with the word "LOADED". After all the user data has been loaded the Ultra™ will display "LOAD COMPLETE". Do not play back the data from the sequencer faster than it was loaded, as errors may occur (Errors may also occur if any knob is turned or any button is pressed before the message "USER DATA LOADED" appears).

ULTRA™ DISPLAY:
LOAD COMPLETE

** If errors occur during transmission, the unit will display "RECEIVE ERROR" for transmission errors and "XMEM ERROR" for internal hardware errors. Errors occurring in transmission does not mean that all the received data is corrupted. Only the transmission string where the error occurred is corrupted.*

F. All Restore

The All Restore feature allows you to restore the original PROGAP Ultra™ memory to its original condition as it was shipped from Rocktron.

!! CAUTION !!

This procedure will permanently erase all user presets (1-128), controller mappings and program mappings, and replace them with the original factory presets. If you have written and stored presets which you do not want to erase, DO NOT perform this procedure.

Step 1 Turn the PARAMETER SELECT control to "ALL RESTORE".

ULTRA™ DISPLAY:

ALL RESTORE 0

Step 2 The only number which can be entered here to perform the restore function is 119. Entering any other number will immediately exit this mode and return to the previously recalled preset number and title. Turn the PARAMETER ADJUST control to "119".

ULTRA™ DISPLAY:

ALL RESTORE 119

!! CAUTION !!

Pressing the EDIT/STORE button at this time will permanently erase all user presets (1-128) and replace them with the original factory presets. If you have written and stored presets which you do not want to erase, DO NOT perform this procedure.

Step 3 Pressing the EDIT/STORE button at this time will erase all current Ultra™ presets and replace them with the factory presets. Press the EDIT/STORE button to initiate the All Restore procedure. The Ultra™ will display "INITIALIZING".

ULTRA™ DISPLAY:

INITIALIZING

Step 4 After the All Restore process is complete, the display will read "ERRORS 0". This is the number of bytes that the Ultra™ found did not initialize properly. Any number of errors other than "0" means that the Ultra™ may not have initialized properly and the process should be repeated.

ULTRA™ DISPLAY:

ERRORS 0

The Ultra™ will remain in this condition until the PRESET control is turned. The currently recalled preset at this time will be preset #1.

G. Preset Restore

The Preset Restore feature allows for any single original factory preset to be restored into any preset location.

Step 1

After recalling the preset number to be copied over, turn the PARAMETER SELECT control to "PRESET RESTORE". The original factory preset number that will be written in the current location will be shown at the left.

ULTRA™ DISPLAY:

PRESET RESTORE

Step 2

Use the PRESET control to choose the factory preset to restore into the current location.

ULTRA™ DISPLAY:

RESTR 21 TO XX

Factory preset
to restore

Step 3

Use the PARAMETER ADJUST control to select the preset location to store the factory preset into.

ULTRA™ DISPLAY:

RESTR XX TO 52

Preset location
to store into

CAUTION:

Pressing the EDIT/STORE button will overwrite the current preset with the factory preset displayed.

Step 4

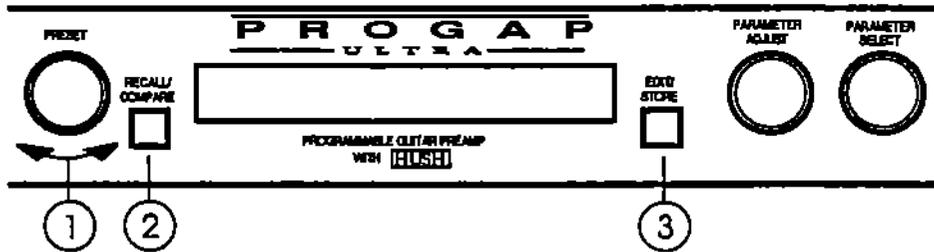
Press the EDIT/STORE button to start "Preset Restore". The display will read "STORED".

ULTRA™ DISPLAY:

STORED

H. Selecting a Power On Preset:

The PROGAP Ultra™ allows you to store a Power On Preset which will always be recalled when the unit is turned on.



- Step 1** Turn the PRESET control to the preset number you wish to be recalled each time the unit is turned on.

DISPLAY:

18 TITLE

- Step 2** Recall the selected preset by pressing the RECALL/COMPARE button.

DISPLAY:

18 TITLE

- Step 3** Press the EDIT/STORE button while the preset number and title are displayed to save it as the Power On Preset.

DISPLAY:

PWR ON PR STORED

9. Factory Presets

1	BEAM SCOTTY	44	MAPLE/NECK	87	D/I INYOFACE
2	TUMBLE DRY	45	METAL SHRED	88	D/I RHYTHM 2
3	MSG LEAD	46	BLUEGRASS	89	D/I ROCKMEN
4	PLANKY TWIN	47	RATTLESNAKE	90	D/I BUZZSAW
5	CHUNGE	48	DIRTY BALLAD	91	D/I KNOCKOUT
6	NECK/MIDDLE	49	MUFF	92	D/I WARM
7	SINGLE SWING	50	PICK N GRIN	93	D/I GRUNGE
8	FAT WAH-WAH	51	MID - TWANG	94	D/I ROLL-OFF
9	DEATH SCOOP	52	PLANET TELE	95	D/I NECK P-U
10	BASS MAN	53	RESURRECTION	96	D/I EDGE
11	MODER	54	POST CLEAN	97	D/I WYLDE
12	FUNKSTER	55	BOOGIE MAN	98	D/I WAH WAH
13	SMOOTH LEAD	56	PRE CLEAN	99	D/I WARM WAH
14	FAT CLEAN	57	THICK JAM	100	HUMANOID
15	CRANKIN TWIN	58	SUNSETS	101	TUMBLEWEEDS
16	PLANKY CLEAN	59	YOU SHOOK ME	102	LOUD SHOTS
17	NECK CRUNCH	60	RHYTHM STICK	103	MR ED LIVES
18	BLOWN*****	61	PARALLELS	104	PLANKWALKER
19	OVERDRIVE 1	62	PLUCK THIS	105	GRUNGEE
20	BREAK UP	63	OVER MY HEAD	106	MIDDLE P-UP
21	R - STRATMORE	64	CLEAN PAUL	107	SINGLE COILS
22	ROCK CANDY	65	DIRT BAG	108	HEAVY DUTY
23	CHUNK/DRIVE	66	ANGEL	109	SILENCE DUDE
24	CLEAN/DRIVE	67	TOTALLY PAUL	110	VINTAGE
25	PEDAL - METAL	68	FAT/CRUNCH	111	SCOOPA
26	PUNCH DRUNK	69	LESTER PAUL	112	FUNKSTER 2
27	LOUDNESS	70	LEAN PAUL	113	PRODIGY****
28	CLEAN\BRIDGE	71	DIAMOND - D	114	CAT CLEAN
29	RETRO LEAD	72	STRAT - CLEAN	115	CRANKY MAN
30	PLANKY TELE	73	BLADE BLAST	116	OVERDRIVE 2
31	MELLO SOLO	74	NECK/BUCKER	117	LITTLE EDGE
32	WHAT DA FUNK	75	ROCK BOTTOM	118	STRATLY
33	TURBODRIVE	76	DAFFY QUACK	119	TEXAS FLOOD
34	DIRTY EDGE	77	TEA FOR TWO	120	BLADE BUSTER
35	SHRED HEAD	78	P - FUNK	121	COOL JAZZ
36	COMP/CLEAN	79	BONES/CRUNCH	122	BOOGIE MAN 2
37	TUBBY RHYTHM	80	D/I CRUNCH	123	YOSEMITE SAM
38	MODERN JAZZ	81	D/I CRUNCH 2	124	THE QUEST
39	MILK E LEAD	82	D/I SHARP	125	FUZZZZZ
40	CLEAN WAH	83	D/I CLEAN	126	MONEY HONEY
41	THE TRUTH	84	D/I LEAD	127	CLEAN * UP
42	WIND CRIES	85	D/I CLEAN 2	128	FLAT
43	BOOM-BOOM	86	D/I RHYTHM		

10. MIDI Implementation Chart

PROGAP Ultra™

Date: January 14, 1993

Version 1.0

	<u>FUNCTION</u>	<u>TRANSMITTED</u>	<u>RECOGNIZED</u>	<u>REMARKS</u>
BASIC CHANNEL	DEFAULT CHANGED	1-16 1-16	1-16 1-16	May be saved in non-volatile memory.
MODE	DEFAULT MESSAGES ALTERED	X X X	X X X	
NOTE NUMBER	TRUE VOICE	X	X	
VELOCITY	NOTE ON NOTE OFF	X X	X X	
AFTER TOUCH	KEY'S CHANNEL	X X	X X	
PITCH BEND		X	X	
CONTROL CHANGE		X	O	
PROGRAM CHANGE	TRUE NUMBER	O	O	
SYSTEM EXCLUSIVE		O	O	For Bulk Dump/Load and Preset Dump/Load.
SYSTEM COMMON	SONG POSITION SONG SELECT TRUE REQUEST	X X X	X X X	
SYSTEM REAL TIME	CLOCK COMMANDS	X X	X X	
AUXILIARY MESSAGES	LOCAL ON/OFF ALL NOTES OFF ACTIVE SENSING SYSTEM RESET	X X X X	X X X X	

O = YES

X = NO

11. MIDI System Exclusive Format

PROGAP ULTRA™ V1.0 PRESET MIDI DUMP/LOAD FORMAT

A SINGLE MIDI DUMP/LOAD WILL DUMP/LOAD ALL OF THE DATA ASSOCIATED WITH A SINGLE PRESET. THE FOLLOWING IS THE TRANSMISSION FORMAT USED TO TRANSMIT OR RECEIVE DATA. THE DATA ASSOCIATED WITH A PRESET ARE: (17) ADJUSTABLE PARAMETERS, THE LOOP AND CONTROL FUNCTION STATUS, AND (12) CHARACTERS OF THE PRESET TITLE.

BYTE NUMBER	VALUE (DECIMAL)	DESCRIPTION	
** START OF EXCLUSIVE BYTES **			
1	240	START OF EXCLUSIVE BYTE	
2	0	MANUFACTURER ID BYTE 1	
3	0	MANUFACTURER ID BYTE 2	
4	41	MANUFACTURER ID BYTE 3	
5	5	PRODUCT ID BYTE	
6	40	COMMAND BYTE FOR PRESET DUMP	
** DATA BYTES **			
7	0-1	PRE TREBLE	0=ON, 1=OFF
8	0-2	PRE BASS CUT	DISPLAY VALUE
9	0-60	PRE MIDBAND	TABLE 1
10	0-52	PR MID FRQ	TABLE 2
11	0-3	PRE MIDBAND Q	DISPLAY VALUE
12	0-100	GAIN	DISPLAY VALUE
13	0-50	VARIAC ADJ	TABLE 3
14	0-3	RECTIFIER	TABLE 4
15	0-60	POST BASS	TABLE 1
16	0-60	POST TREBLE	TABLE 1
17	0-60	POST MIDBAND	TABLE 1
18	0-52	PS MID FRQ	TABLE 2
19	0-3	PST MIDBAND Q	DISPLAY VALUE
20	0-50	OUTPUT LEVEL	TABLE 4
21	0-70	HUSH THRESHLD	TABLE 5
22	0-1	SHAPE	0=ON, 1=OFF
23	0-1	FXED WAH	0=ON, 1=OFF
24	0-3	LOOP/CONTROL FUNCTION	TABLE 6
** TITLE CHARACTERS **			
25	32-91	CHARACTER 1	TABLE 7
26	32-91	CHARACTER 2	
27	32-91	CHARACTER 3	
28	32-91	CHARACTER 4	
29	32-91	CHARACTER 5	
30	32-91	CHARACTER 6	
31	32-91	CHARACTER 7	
32	32-91	CHARACTER 8	
33	32-91	CHARACTER 9	
34	32-91	CHARACTER 10	
35	32-91	CHARACTER 11	
36	32-91	CHARACTER 12	
** END OF EXCLUSIVE BYTES **			
37	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)	
38	247	END OF EXCLUSIVE	

PROGAP ULTRA™ V1.0 BULK MIDI DUMP/LOAD FORMAT

A MIDI BULK DUMP/LOAD CONSISTS OF 134 SYSTEM EXCLUSIVE DATA STRINGS. THE FIRST 128 ARE THE PRESET DATA: PARAMETERS VALUE AND TITLE CHARACTERS. DATA STRING 129 CONTAINS THE CONTROLLER MAPPINGS AND VALUE LIMITS INFORMATION. DATA STRINGS 130-133 CONTAINS PROGRAM MAPPING INFORMATION, AND DATA STRING 134 CONTAINS MISC. INFORMATION. THE MIDI BULK DUMP/LOAD IS SIMILAR TO THE PRESET DUMP/LOAD FORMAT - THE DIFFERENCE BEING THE COMMAND BYTE IN EVERY DATA STRING. A COMMAND BYTE VALUE OF 42 (DECIMAL) INDICATES THE FIRST DATA STRING OF THE BULK DUMP/LOAD. A VALUE OF 43 (DECIMAL) IS USED FOR DATA STRINGS 2-134. THE FORMAT FOR EACH DATA STRING IS DEFINED IN THE FOLLOWING PAGES.

**** FORMAT FOR DATA STRINGS 1 THRU 128, PRESET INFORMATION ****

BYTE NUMBER	VALUE (DECIMAL)	DESCRIPTION	
** START OF EXCLUSIVE BYTES **			
1	240	START OF EXCLUSIVE BYTE	
2	0	MANUFACTURER ID BYTE 1	
3	0	MANUFACTURER ID BYTE 2	
4	41	MANUFACTURER ID BYTE 3	
5	5	PRODUCT ID BYTE 6	
6	42	COMMAND BYTE FOR PRESET DUMP (1ST STRING)	
	-OR-		
	43	COMMAND BYTE FOR CONTINUED BULK DUMP (2-134 STRING)	
** DATA BYTES **			
7	0-1	PRE TREBLE	0=ON, 1=OFF
8	0-2	PRE BASS CUT	DISPLAY VALUE
9	0-60	PRE MIDBAND	TABLE 1
10	0-52	PR MID FRQ	TABLE 2
11	0-3	PRE MIDBAND Q	DISPLAY VALUE
12	0-100	GAIN	DISPLAY VALUE
13	0-50	VARIAC ADJ	TABLE 3
14	0-3	RECTIFIER	TABLE 4
15	0-60	POST BASS	TABLE 1
16	0-60	POST TREBLE	TABLE 1
17	0-60	POST MIDBAND	TABLE 1
18	0-52	PS MID FRQ	TABLE 2
19	0-3	PST MIDBAND Q	DISPLAY VALUE
20	0-50	OUTPUT LEVEL	TABLE 4
21	0-70	HUSH THRESHLD	TABLE 5
22	0-1	SHAPE	0=ON, 1=OFF
23	0-1	FXED WAH	0=ON, 1=OFF
24	0-3	LOOP/CONTROL FUNCTION	TABLE 6
** TITLE CHARACTERS **			
25	32-91	CHARACTER 1	TABLE 7
26	32-91	CHARACTER 2	
27	32-91	CHARACTER 3	
28	32-91	CHARACTER 4	
29	32-91	CHARACTER 5	
30	32-91	CHARACTER 6	
31	32-91	CHARACTER 7	
32	32-91	CHARACTER 8	
33	32-91	CHARACTER 9	
34	32-91	CHARACTER 10	
35	32-91	CHARACTER 11	
36	32-91	CHARACTER 12	
** END OF EXCLUSIVE BYTES **			
37	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)	
38	247	END OF EXCLUSIVE	

PROGAP ULTRA™ V1.0 BULK MIDI DUMP/LOAD FORMAT

**** FORMAT FOR DATA STRING 129, CONTROLLER MAPPINGS AND LIMITS ****

BYTE NUMBER	VALUE (DECIMAL)	DESCRIPTION	
** START OF EXCLUSIVE BYTES **			
1	240	START OF EXCLUSIVE BYTE	
2	0	MANUFACTURER ID BYTE 1	
3	0	MANUFACTURER ID BYTE 2	
4	41	MANUFACTURER ID BYTE 3	
5	5	PRODUCT ID BYTE 6	
6	43	COMMAND BYTE FOR BULK DUMP CONTINUE	
** DATA BYTES **			
7	0-120	PRE TREBLE CONTROL NUMBER	
8	0-120	PRE BASS CUT CONTROL NUMBER	
9	0-2	PRE BASS CUT UPPER LIMIT	DISPLAY VALUE
10	0-2	PREBASS CUT LOWER LIMIT	DISPLAY VALUE
11	0-120	PRE MIDBAND CONTROL NUMBER	
12	0-60	PRE MIDBAND UPPER LIMIT	TABLE 1
13	0-60	PRE MIDBAND LOWER LIMIT	TABLE 1
14	0-120	PR MID FRQ CONTROL NUMBER	
15	0-52	PR MID FRQ UPPER LIMIT	TABLE 2
16	0-52	PR MID FRQ LOWER LIMIT	TABLE 2
17	0-120	PRE MIDBAND Q CONTROL NUMBER	
18	0-3	PRE MIDBAND Q UPPER LIMIT	DISPLAY VALUE
19	0-3	PRE MIDBAND Q LOWER LIMIT	DISPLAY VALUE
20	0-120	GAIN CONTROL NUMBER	
21	0-100	GAIN UPPER LIMIT	DISPLAY VALUE
22	0-100	GAIN LOWER LIMIT	DISPLAY VALUE
23	0-120	VARIAC ADJ CONTROL NUMBER	
24	0-50	VARIAC ADJ UPPER LIMIT	TABLE 3
25	0-50	VARIAC ADJ LOWER LIMIT	TABLE 3
26	0-120	RECTIFIER CONTROL NUMBER	
27	0-3	RECTIFIER UPPER LIMIT	TABLE 4
28	0-3	RECTIFIER LOWER LIMIT	TABLE 4
29	0-120	POST BASS CONTROL NUMBER	
30	0-60	POST BASS UPPER LIMIT	TABLE 1
31	0-60	POST BASS LOWER LIMIT	TABLE 1
32	0-120	POST TREBLE CONTROL NUMBER	
33	0-60	POST TREBLE UPPER LIMIT	TABLE 1
34	0-60	POST TREBLE LOWER LIMIT	TABLE 1
35	0-120	POST MIDBAND CONTROL NUMBER	
36	0-60	POST MIDBAND UPPER LIMIT	TABLE 1
37	0-60	POST MIDBAND LOWER LIMIT	TABLE 1
38	0-120	PS MID FRQ CONTROL NUMBER	
39	0-52	PS MID FRQ UPPER LIMIT	TABLE 2
40	0-52	PS MID FRQ LOWER LIMIT	TABLE 2
41	0-120	PST MIDBAND Q CONTROL NUMBER	
42	0-3	PST MIDBAND Q UPPER LIMIT	DISPLAY VALUE
43	0-3	PST MIDBAND Q LOWER LIMIT	DISPLAY VALUE
44	0-120	OUTPUT LEVEL CONTROL NUMBER	
45	0-50	OUTPUT LEVEL UPPER LIMIT	TABLE 4
46	0-50	OUTPUT LEVEL LOWER LIMIT	TABLE 4
47	0-120	HUSH THRESHLD CONTROL NUMBER	
48	0-70	HUSH THRESHLD UPPER LIMIT	TABLE 5
49	0-70	HUSH THRESHLD LOWER LIMIT	TABLE 5
50	0-1	SHAPE CONTROL NUMBER	
51	0-120	FIXED WAH CONTROL NUMBER	
52	0-120	LOOP CONTROL NUMBER	
53	0-120	CONTROL FUNCTION CONTROL NUMBER	
** END OF EXCLUSIVE BYTES **			
54	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)	
55	247	END OF EXCLUSIVE	

PROGAP ULTRA™ V1.0 BULK MIDI DUMP/LOAD FORMAT

****** FORMAT FOR DATA STRING 130, PROGRAM MAPPINGS ******

BYTE NUMBER	VALUE (DECIMAL)	DESCRIPTION
** START OF EXCLUSIVE BYTES **		
1	240	START OF EXCLUSIVE BYTE
2	0	MANUFACTURER ID BYTE 1
3	0	MANUFACTURER ID BYTE 2
4	41	MANUFACTURER ID BYTE 3
5	5	PRODUCT ID BYTE
6	43	COMMAND BYTE FOR BULK DUMP CONTINUE
** DATA BYTES **		
7	0-127	PROGRAM MAPPING FOR PRESET #1
8	0-127	PROGRAM MAPPING FOR PRESET #2
9	0-127	PROGRAM MAPPING FOR PRESET #3
"	"	"
"	"	"
"	"	"
39	0-127	PROGRAM MAPPING FOR PRESET #32
** END OF EXCLUSIVE BYTES **		
40	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)
41	247	END OF EXCLUSIVE

****** FORMAT FOR DATA STRING 131, PROGRAM MAPPINGS ******

BYTE NUMBER	VALUE (DECIMAL)	DESCRIPTION
1	240	START OF EXCLUSIVE BYTE
2	0	MANUFACTURER ID BYTE 1
3	0	MANUFACTURER ID BYTE 2
4	41	MANUFACTURER ID BYTE 3
5	5	PRODUCT ID BYTE
6	43	COMMAND BYTE FOR BULK DUMP CONTINUE
7	0-127	PROGRAM MAPPING FOR PRESET #33
8	0-127	PROGRAM MAPPING FOR PRESET #34
9	0-127	PROGRAM MAPPING FOR PRESET #35
"	"	"
"	"	"
"	"	"
39	0-127	PROGRAM MAPPING FOR PRESET #64
40	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)
41	247	END OF EXCLUSIVE

PROGAP ULTRA™ V1.0 BULK MIDI DUMP/LOAD FORMAT

**** FORMAT FOR DATA STRING 132, PROGRAM MAPPINGS ****

<u>BYTE NUMBER</u>	<u>VALUE (DECIMAL)</u>	<u>DESCRIPTION</u>
** START OF EXCLUSIVE BYTES **		
1	240	START OF EXCLUSIVE BYTE
2	0	MANUFACTURER ID BYTE 1
3	0	MANUFACTURER ID BYTE 2
4	41	MANUFACTURER ID BYTE 3
5	5	PRODUCT ID BYTE
6	43	COMMAND BYTE FOR BULK DUMP CONTINUE
** DATA BYTES **		
7	0-127	PROGRAM MAPPING FOR PRESET #65
8	0-127	PROGRAM MAPPING FOR PRESET #66
9	0-127	PROGRAM MAPPING FOR PRESET #67
"	"	"
"	"	"
"	"	"
39	0-127	PROGRAM MAPPING FOR PRESET #96
** END OF EXCLUSIVE BYTES **		
40	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)
41	247	END OF EXCLUSIVE

**** FORMAT FOR DATA STRING 133, PROGRAM MAPPINGS ****

<u>BYTE NUMBER</u>	<u>VALUE (DECIMAL)</u>	<u>DESCRIPTION</u>
1	240	START OF EXCLUSIVE BYTE
2	0	MANUFACTURER ID BYTE 1
3	0	MANUFACTURER ID BYTE 2
4	41	MANUFACTURER ID BYTE 3
5	5	PRODUCT ID BYTE
6	43	COMMAND BYTE FOR BULK DUMP CONTINUE
7	0-127	PROGRAM MAPPING FOR PRESET #97
8	0-127	PROGRAM MAPPING FOR PRESET #98
9	0-127	PROGRAM MAPPING FOR PRESET #99
"	"	"
"	"	"
"	"	"
39	0-127	PROGRAM MAPPING FOR PRESET #128
40	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)
41	247	END OF EXCLUSIVE

PROGAP ULTRA™ V1.0 BULK MIDI DUMP/LOAD FORMAT

**** FORMAT FOR DATA STRING 134, MISC. DATA ****

BYTE NUMBER	VALUE (DECIMAL)	DESCRIPTION
** START OF EXCLUSIVE BYTES **		
1	240	START OF EXCLUSIVE BYTE
2	0	MANUFACTURER ID BYTE 1
3	0	MANUFACTURER ID BYTE 2
4	41	MANUFACTURER ID BYTE 3
5	5	PRODUCT ID BYTE
6	43	COMMAND BYTE FOR BULK DUMP CONTINUE
** DATA BYTES **		
7	0-126	POWER ON PRESET
8	0-2	PROGRAM CHANGES
9	0-17	MIDI RECEIVE CHANNEL
10	0-16	MIDI TRANSMIT CHANNEL
11	1207	CODE BYTE
** END OF EXCLUSIVE BYTES **		
12	0-127	CHECK SUM BYTE ("EXCLUSIVE OR" OPERATION)
13	247	END OF EXCLUSIVE

LOOK-UP TABLES

TABLE 1

VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE
0	-15	21	-4.5	42	6
1	-14.5	22	-4	43	6.5
2	-14	23	-3.5	44	7
3	-13.5	24	-3	45	7.5
4	-13	25	-2.5	46	8
5	-12.5	26	-2	47	8.5
6	-12	27	-1.5	48	9
7	-11.5	28	-1	49	9.5
8	-11	29	-0.5	50	10
9	-10.5	30	0	51	10.5
10	-10	31	0.5	52	11
11	-9.5	32	1	53	11.5
12	-9	33	1.5	54	12
13	-8.5	34	2	55	12.5
14	-8	35	2.5	56	13
15	-7.5	36	3	57	13.5
16	-7	37	3.5	58	14
17	-6.5	38	4	59	14.5
18	-6	39	4.5	60	15
19	-5.5	40	5		
20	-5	41	5.5		

TABLE 2

VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE
0	200 HZ	18	650 HZ	36	2 KHZ
1	225 HZ	19	675 HZ	37	2.2 KHZ
2	250 HZ	20	700 HZ	38	2.5 KHZ
3	275 HZ	21	725 HZ	39	2.7 KHZ
4	300 HZ	22	750 HZ	40	3 KHZ
5	325 HZ	23	775 HZ	41	3.2 KHZ
6	350 HZ	24	800 HZ	42	3.5 KHZ
7	375 HZ	25	825 HZ	43	3.7 KHZ
8	400 HZ	26	850 HZ	44	4 KHZ
9	425 HZ	27	875 HZ	45	4.2 KHZ
10	450 HZ	28	900 HZ	46	4.5 KHZ
11	475 HZ	29	925 HZ	47	4.7 KHZ
12	500 HZ	30	950 HZ	48	5 KHZ
13	525 HZ	31	975 HZ	49	5.2 KHZ
14	550 HZ	32	1 KHZ	50	5.5 KHZ
15	575 HZ	33	1.2 KHZ	51	5.7 KHZ
16	600 HZ	34	1.5 KHZ	52	6 KHZ
17	625 HZ	35	1.7 KHZ		

TABLE 3

VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE
0	0	18	36	36	72
1	2	19	38	37	74
2	4	20	40	38	76
3	6	21	42	39	78
4	8	22	44	40	80
5	10	23	46	41	82
6	12	24	48	42	84
7	14	25	50	43	86
8	16	26	52	44	88
9	18	27	54	45	90
10	20	28	56	46	92
11	22	29	58	47	94
12	24	30	60	48	96
13	26	31	62	49	98
14	28	32	64	50	100
15	30	33	66		
16	32	34	68		
17	34	35	70		

TABLE 5

VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE
0	-70	25	-45	50	-20
1	-69	26	-44	51	-19
2	-68	27	-43	52	-18
3	-67	28	-42	53	-17
4	-66	29	-41	54	-16
5	-65	30	-40	55	-15
6	-64	31	-39	56	-14
7	-63	32	-38	57	-13
8	-62	33	-37	58	-12
9	-61	34	-36	59	-11
10	-60	35	-35	60	-10
11	-59	36	-34	61	-9
12	-58	37	-33	62	-8
13	-57	38	-32	63	-7
14	-56	39	-31	64	-6
15	-55	40	-30	65	-5
16	-54	41	-29	66	-4
17	-53	42	-28	67	-3
18	-52	43	-27	68	-2
19	-51	44	-26	69	-1
20	-50	45	-25	70	0
21	-49	46	-24		
22	-48	47	-23		
23	-47	48	-22		
24	-46	49	-21		

TABLE 4

VALUE	DISPLAY VALUE
0	S. STATE
1	5Y3
2	5U4
3	5AR4

TABLE 6

VALUE	BUTTON STATUS
0	LOOP - OFF CONTROL FUNCTION - OFF
1	LOOP - ON CONTROL FUNCTION - OFF
2	LOOP - OFF CONTROL FUNCTION - ON
3	LOOP - ON CONTROL FUNCTION - ON

TABLE 7

VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE	VALUE	DISPLAY VALUE
32	BLANK	52	4	72	H
33	BLANK	53	5	73	I
34	"	54	6	74	J
35	#	55	7	75	K
36	\$	56	8	76	L
37	%	57	9	77	M
38	&	58	\	78	N
39	'	59	BLANK	780	O
40	<	60	<	81	P
41	>	61	=	82	Q
42	*	62	>	83	R
43	+	63	?	84	S
44	,	64	@	85	T
45	-	65	A	86	U
46	BLANK	66	B	87	V
47	/	67	C	88	W
48	0	68	D	89	X
49	1	69	E	90	Y
50	2	70	F	91	Z
51	3	71	G		

TABLE 8

VALUE	DISPLAY VALUE
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10
10	11
11	12
12	13
13	14
14	15
15	16
16	OMNI
17	OFF

TABLE 9

VALUE	DISPLAY VALUE
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10
10	11
11	12
12	13
13	14
14	15
15	16
16	OFF

11. Specifications

INPUT IMPEDANCE	470K Ω
MAXIMUM INPUT LEVEL	+20dBu
INPUT JACK	1/4" mono
MAXIMUM OUTPUT LEVEL	+20dBu
OUTPUT IMPEDANCE	less than 150 Ω
AMPLIFIER OUTPUT JACKS	1/4" mono
DIRECT OUTPUT JACKS	1/4" mono
MIDI IN	7 pin DIN
MIDI OUT	5 pin DIN
POWER REQUIREMENTS	9VAC/2A
DIMENSIONS	19" x 7" x 1 3/4"

