PEAVEY®

PC™-1600 MIDI CONTROLLER

USER'S GUIDE

Intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION: Risks of electrical shock — DO NOT OPEN

CAUTION: To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer Servicing to qualified service personnel.

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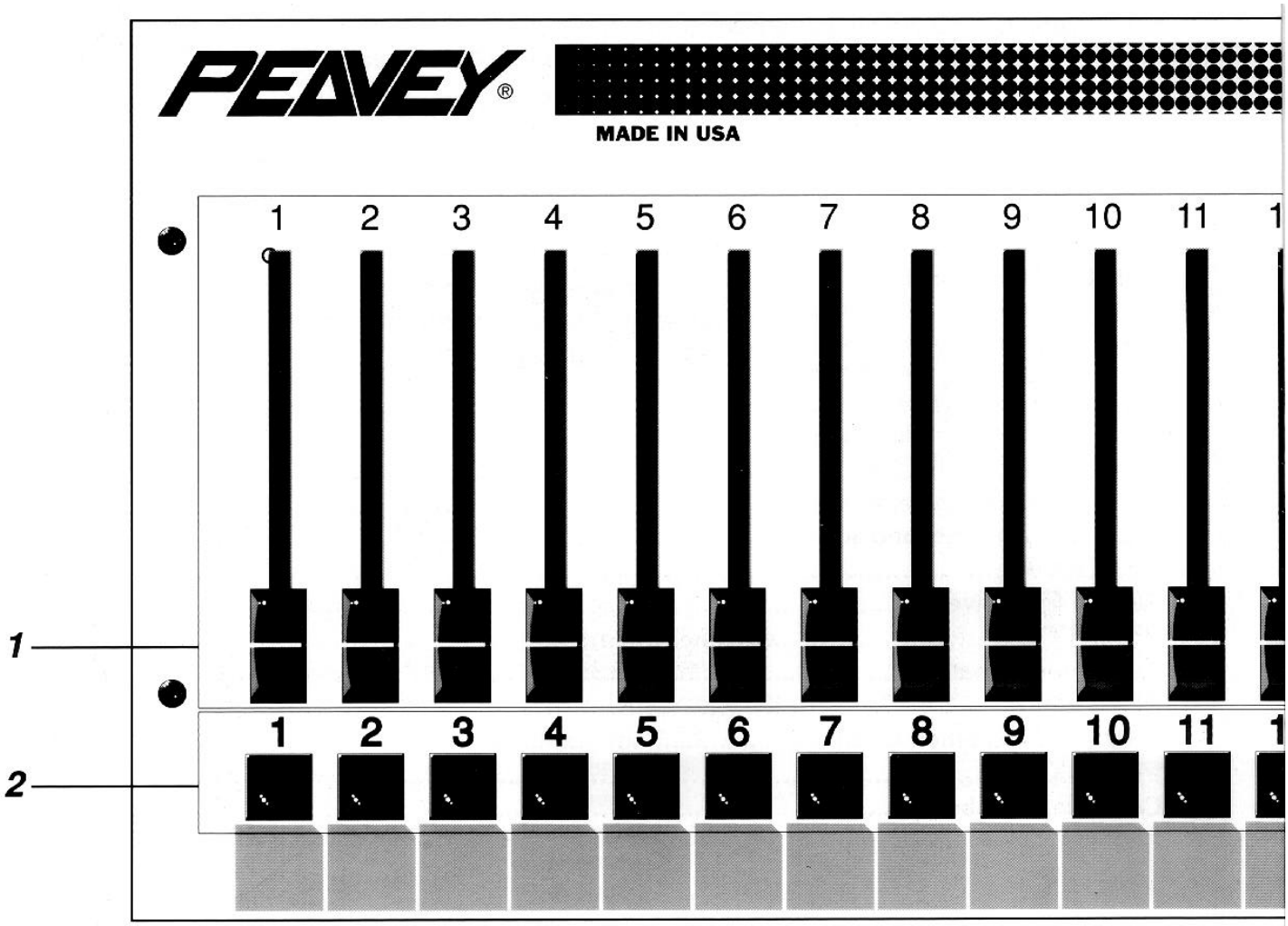
PEAVEY®
MADE IN USA
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CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE
AVIS: RIQUE DE CHOC ELECTRIQUE-NE PAS OUVIRIR.
PEAVEY®
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16 VAC
1 AMP
POWER
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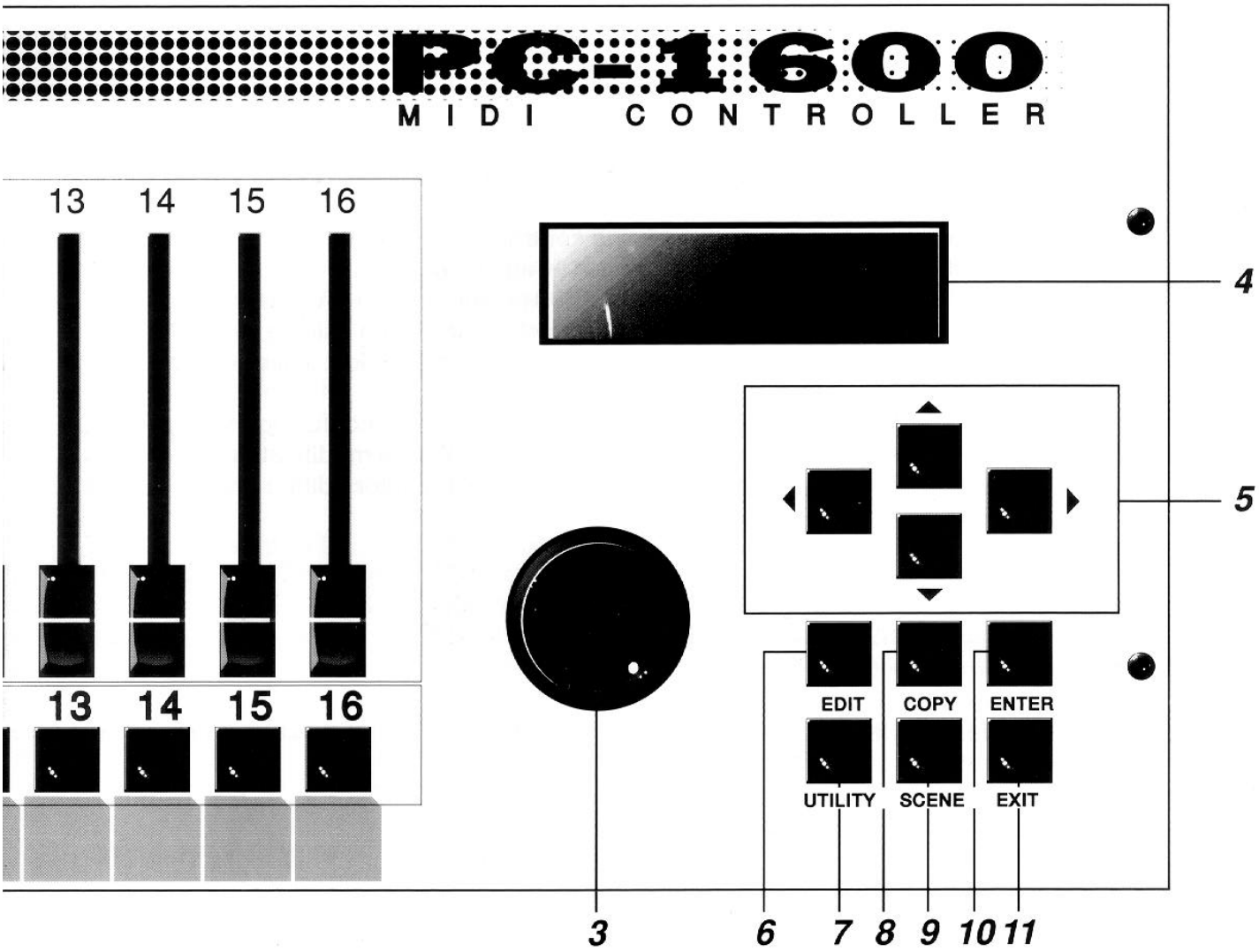
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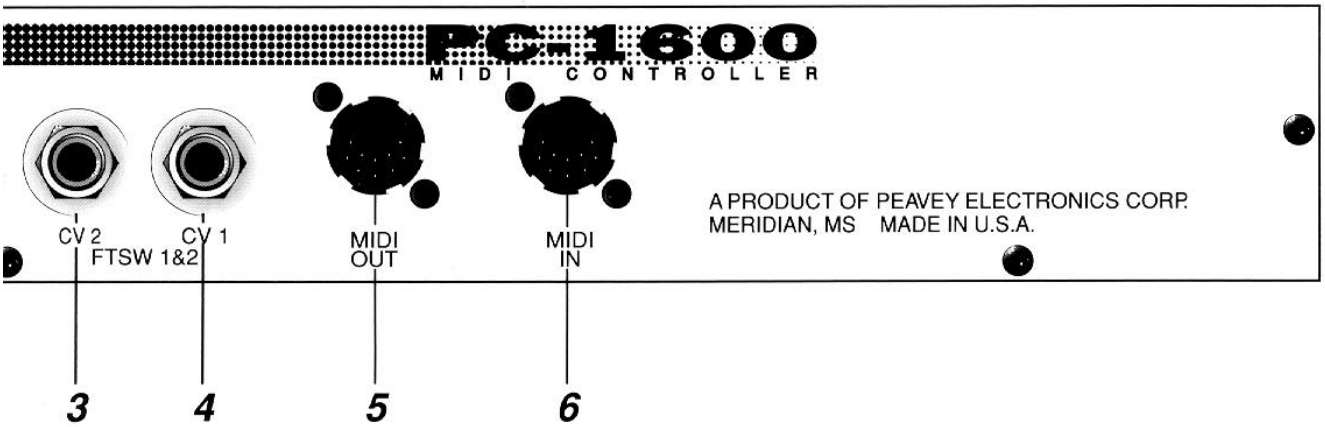
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1.0 PRODUCT PORTRAIT

1.1 Introduction

The PC 1600™ is a versatile, easy-to-use MIDI controller and universal editor designed to be used in both live and studio applications. Equipped with a variety of control devices, this unit provides an indispensable tool for trouble-free editing, quick on-stage adjustments, and precise studio mixing.

There are sixteen faders, sixteen buttons, two control voltage inputs, a data wheel, and a MIDI setup string, each of which may be programmed to transmit practically any MIDI command. All of these definitions can be stored together as a PC 1600 preset. Sixteen-character names allow presets to be referenced by an entire song title or product name. When using a preset, several "snapshots" of the slider positions can be saved using the SCENE function. These can be easily recalled later for precise mixdowns.

The features of the PC 1600 have not been buried under a slow, confusing user interface. The intuitive user interface allows the user to make quick and painless modifications to existing presets. The powerful copy function and extensive use of the faders for editing presets reduce most functions to just a few keystrokes.

1.2 Features

- 16 programmable 60 mm sliders
- 16 programmable buttons
- Two programmable control voltage inputs
- Two programmable footswitch inputs
- Programmable data wheel
- Programmable MIDI setup string sent upon preset recall
- MIDI thru with filter and merge with transmitted data
- Full system exclusive dump and load capability
- Grouping of sliders allows one slider to be a master of several others
- Fader position save and recall function allows saving of "scenes" to be used later during mixdown

1.3 Front panel descriptions

1. **16 Faders**
   Each of these is a programmable fader that can be assigned as: Continuous controller, Master fader, MIDI string.

2. **16 Buttons**
   Each of these is a programmable button that can be assigned as a: Fader mute, Fader solo, Program change, Note-on/Note-off, MIDI string , MIDI string on press and release, pair of alternating MIDI strings.

3. **Data Wheel**
   This is a fine-tuning device which allows precise adjustment of any fader or control voltage value.

4. **Display Window**
   This is a 20 character by 2 line Liquid Crystal Display (LCD) with adjustable contrast.

5. **Direction Buttons**
   The up, down, left, and right direction buttons are used to navigate through the user interface. The up and down buttons also serve as increment and decrement buttons to edit parameter values.

6. **Edit button**
   This button accesses all parameters stored within a preset.

7. **Utility button**
   This accesses all global functions of the PC 1600.

8. **Copy button**
   The Copy button is used to copy from one preset or scene to another. It is also used to copy into the edit buffer when editing a preset.

9. **Scene button**
   This button is used to save "snapshots" of the current fader positions as a scene. It is also used to send previously saved scenes.

10. **Enter button**
    This button is used to execute functions whenever [Enter] appears in the upper right hand corner of the display. When the main page is displayed, pressing this button sends the current message for each fader and CV input.

11. **Exit button**
    This button is used to escape from any menu. Pressing *Exit* several times will always return the user to the main page.

1.4 Rear panel descriptions

1. **Power supply input**
   Use only the 16-16.5 volt 1000 mA adaptor provided. (Peavey part #70900660)

Caution: *Use only the 16-16.5 volt power supply provided with this product. If the original power supply must be replaced, consult your Peavey dealer or the factory for the correct replacement. Failure to use the correct power supply could result in fire, shock hazard, extensive circuit damage, decreased performance, or non-operation.*

2. **Power Switch**

3. **CV 2 / Footswitch 1&2**
   This input accepts either a standard footpedal or a dual footswitch. The footpedal functions as a fader and is programmable per preset, while the dual footswitch is assigned globally.

4. **CV 1**
   This input accepts a standard footpedal which functions as a fader and is programmable per preset.

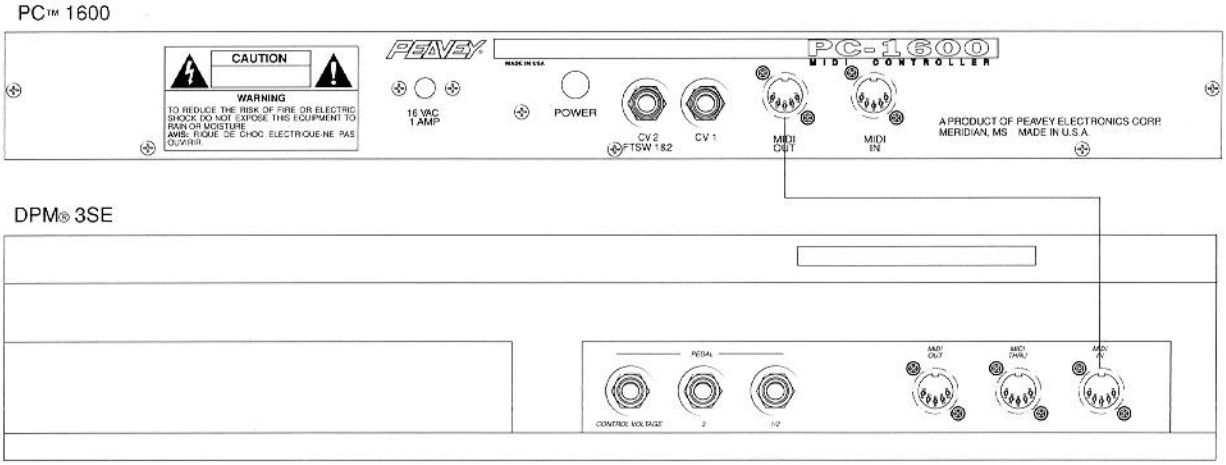
5. **MIDI Out**
   This transmits all data generated internally. This also acts as a MIDI Thru for all unfiltered messages.

6. **MIDI In**
   This accepts commands to be interpreted by the PC 1600. It also accepts data to be echoed to the MIDI Out jack.

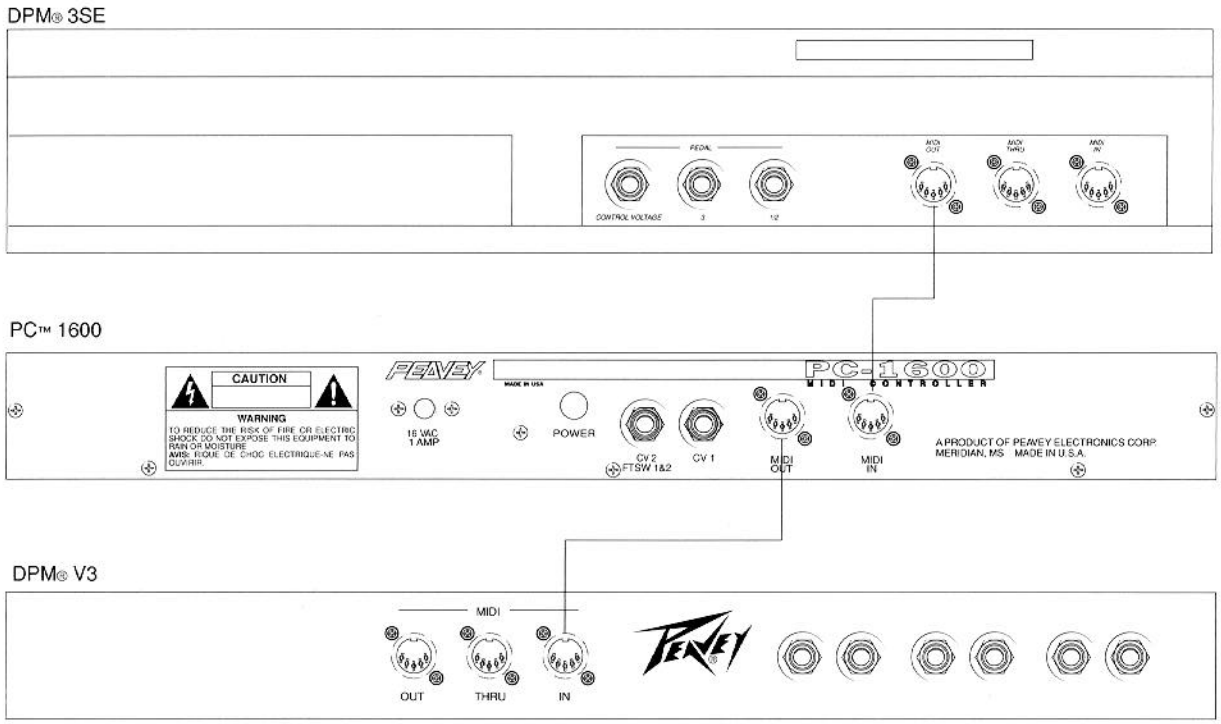
2.0 BASIC OPERATION

2.1 Hookup

The following diagram illustrates how the PC 1600 connects to a keyboard, such as the Peavey DPM® 3SE:



The following diagram illustrates how the PC 1600 connects to a keyboard and rack module, such as the Peavey DPM® 3SE and Peavey DPM® V3:



2.2 User interface basics

The user interface of the PC 1600 is very straightforward and simple to learn. Every feature of the PC 1600 can be programmed by understanding only a few basic concepts.

- The *Edit*, *Utility*, *Scene*, and *Copy* buttons are used to access various menus of the user interface. The menus under each of these buttons is described in detail in its own section.
- The *up* and *down* direction buttons serve two major functions. When no parameters are flashing, the *up* and *down* buttons select different pages within a menu. When a parameter is flashing on a particular page, the *up* and *down* buttons set the parameter's value. On all pages except the main page, the *data wheel* has the same function as the *up* and *down* buttons.
- The *left* and *right* direction buttons select the parameter to be adjusted for a given page. If other pages are available within the menu, scrolling past the left-most or right-most parameter causes all parameters to stop flashing.
- Pressing the *Exit* button while a parameter is flashing will always stop that parameter from flashing. Pressing the *Exit* button when no parameter is flashing will always leave the current menu. Several presses of the *Exit* button will always return to the main page.
- The *Enter* button is used in several places to cause a function to be executed. Except for the main page, "Enter" appears in the upper right-hand corner of the display if the *Enter* button is used.
- The faders and programmable buttons are used as edit devices whenever possible. Any parameter that selects faders and buttons can be entered by moving the fader or pressing the button desired.

2.3 Initialization

The PC 1600 comes from the factory with all presets defined. All factory presets can be restored as follows:

1. Turn power off.
2. Hold the *Utility* and *Enter* buttons while turning the power on.

2.4 Main page

```
00  Preset name here
      Fader01= 0
```

The display shown above is the main display of the PC 1600. Pressing the *EXIT* button several times will return to this page from any menu. Information shown on this page includes the current preset number, current preset name, and information about the last fader or switch moved.

2.4.1 Changing presets

The PC 1600 has 50 presets numbered 0-49. The current preset can be changed using the *up* and *down* buttons or by receiving a valid program change. A footswitch assigned to duplicate the *up* and *down* buttons can also be used to change presets while on this page.

2.4.2 Sending current values

Pressing the *Enter* button while on the main page will send the current message for each fader. This allows the PC 1600 to cancel a soloed fader or update external equipment.

Example:

Suppose the current preset is set up to send volumes on each channel. Pressing *Enter* from the main page at the start of a sequence allows all initial volumes of the sequence to be recorded. Simply set the position of all defined faders, start the sequencer recording, then press *Enter*. All following fader movements will track smoothly from this initial setting.

2.4.3 Resetting Replace or Update Mode

A fader defined as a continuous controller can be put in a mode that allows it to replace or update a matching controller message passing through the PC 1600. As soon as the fader moves and sends its message, the PC 1600 begins filtering matching incoming messages. Press the *Exit* button from the main display page to cancel this filtering allowing the incoming message to pass through the PC 1600.

3.0 UTILITIES

All global parameters for the PC 1600 are accessed using the *Utility* button. Navigating through the menus is straightforward:

1. Press the *Utility* button to access the utility pages.
2. Use the *up* and *down* direction buttons or the *data wheel* to scroll through the different utility pages.
3. When the correct utility page is displayed, use the *left* and *right* direction buttons to activate the desired parameter on this page. A parameter is active when the field blinks.
4. Use the *up* and *down* direction buttons to edit the value of the parameter while the parameter is blinking.
5. Press the *Exit* button once or use the *left* and *right* direction buttons to stop all fields from blinking. Now return to step 2 to edit a different parameter, or press the *Exit* button again to return to the main page.

3.1 View angle

The VIEW parameter adjusts the contrast of the display to allow for different lighting conditions or viewing angles. To adjust the view angle:

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
UTIL:View ChIn ChOut
       0    01    01
```

3. Cursor right once to activate the "View" field and use the *up* and *down* direction buttons or *data wheel* to edit the view angle.

3.2 MIDI channel

Separate MIDI channels can be set for incoming MIDI messages and transmitted MIDI messages. The "ChIn" parameter is used to set the receiving MIDI channel of the unit. The PC 1600 will only respond to incoming messages sent on this channel. The "ChOut" parameter is used to set the transmitting channel of the unit. Any messages set to transmit on the main channel use this parameter.

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
UTIL:View ChIn ChOut
       0    01    01
```

3. Cursor right to activate either the "ChIn" or "ChOut" field and use the *up* and *down* direction

buttons or *data wheel* to edit the channel number.

3.3 MIDI echo filter

Selecting which MIDI messages will pass from MIDI IN to MIDI OUT is handled by the MIDI filter utility. Individual messages or all MIDI messages can be filtered allowing only certain incoming messages to pass to the MIDI OUT. The following messages can be filtered:

- All Data
- All Notes
- Mod Wheel
- Footpedal
- Volume
- Sustain
- Reset controllers
- All notes off
- Program change
- Polyphonic aftertouch
- Channel aftertouch
- Pitch bend
- System Exclusive
- System common
- System real-time

To set the status of a filter:

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
UTIL:  Midi filter
       Notes=Pass
```

3. Press the *right* direction button once to edit the filter type. Use the *up* and *down* buttons or *data wheel* to display the different filter types. The field on the right displays whether the data is filtered or passed to the MIDI OUT jack.
4. To toggle between "pass" and "filter," simply press the *right* direction button while the filter type field is active. The filter type field remains active until the *left* direction button is pressed.

3.4 MIDI mapping

The PC 1600 supports MIDI program change messages using a MIDI mapping system. MIDI mapping allows each of the 128 MIDI program change messages (0-127) to recall any preset or send any scene. To select which preset is recalled or which scene is sent in response to a received program change message:

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
MAP1: Prog 000→prs00
     Preset name here
```

3. First cursor *right* to the digit after "MAP." Editing this value selects which MIDI map will be

edited. This should not be confused with the current MIDI map described below.

4. Cursor *right* again to the third field which displays a preset or scene number. This is the preset number recalled or scene sent when the program change value in the second field is received. If a preset is selected, the bottom line will display the preset name.

Note: Program change maps 1 and 2 default to recall presets 0-49 with received program changes 0-49. Program change map 3 defaults to send scenes 0-99 with received program changes 0-99.

3.5 Program change enable and Current MIDI map

There are three separate MIDI maps in the PC 1600. The current MIDI map parameter selects which map incoming program changes will use. Incoming program changes can be ignored completely by setting the current map number to "Off." To set the current map number:

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
MAP    Curr MIDI map
            Off
```

3. Cursor *right* once to activate the field and use the *up* and *down* direction buttons or *data wheel* to edit the map number.
4. To ignore all incoming program changes, decrement the current map number until "Off" is displayed.

3.6 Dumping internal data

All internal data can be transmitted over MIDI to be saved on an external device. The MIDI Dump page allows the following data to be transmitted:

- All presets
- All scenes
- All global variables
- The current preset
- Everything

To transmit this information:

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
UTIL:  Dump  [Enter]
       Everything
```

3. Cursor *right* once to activate the field and use the *up* and *down* direction buttons or *data wheel* to edit the type of data to be transmitted.
4. Press the *Enter* button to transmit the data.

3.7 Assigning footswitches

A dual footswitch can be assigned globally to duplicate most of the front panel buttons on the PC 1600. Examples of footswitch uses include:

- Changing presets on the PC 1600 by assigning the footswitches to "Inc" or "Dec."
- Saving and sending scenes by assigning a footswitch to copy the Enter button.
- Starting and stopping a sequencer by assigning a button to toggle between start and stop messages and assigning the footswitch to copy that button.
- Sending note messages to drum machines allow drum parts to be played with a footswitch. Assign a button to send a note message and assign a footswitch to copy that button.
- Muting an effect by copying a button that mutes a fader.

To assign a footswitch:

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
UTIL: Ftsw1    Ftsw2
        Off      Off
```

3. Select the correct footswitch field using the *left* and *right* direction buttons.
4. Use the *up* and *down* buttons or the *data wheel* to select which button the footswitch will emulate.

The polarity of the footswitch is automatically determined on power- up. If a footswitch is installed after the PC 1600 is powered-up, or if the footswitch is depressed during power-up, the polarity of the footswitch may be incorrect. Simply switch the power off, wait a few seconds, and turn the power back on with the footswitch installed but not pressed. This will correct the polarity.

Note: Assigning a footswitch will automatically disable the CV2 input.

3.8 Memory usage display

PC 1600 presets are dynamically allocated allowing a single preset to be very large when necessary. If too many large presets are created, the PC 1600 will run out of preset memory. When this occurs, some memory must be freed by removing or redefining preset. The memory usage display helps determine which presets to modify. To use the memory usage display:

1. Press the *Utility* button.
2. Use the *up* and *down* buttons or *data wheel* to access the following page:

```
UTIL:     Memory
          Free: 20904
```

3. Press the *left* or *right* button to activate the field.
4. Use the *up* and *down* buttons or the *data wheel* to view the amount of free memory and the amount of memory used by each preset.

4.0 SCENES

4.1 Description

A scene allows a "snapshot" to be taken of the current PC 1600 fader positions and saved in one of the 100 scene locations. Sending this scene will transmit the information for each fader just as it was saved. The scene will be sent referencing the preset that was active when the scene was saved, not the preset active when the scene is sent.

Example:
If the current preset is configured to control a lighting system, each fader can be used to set a specific set of lights. When all lights are set to a desired setting, save this as a scene. Continue to adjust the faders and save scenes as necessary. During a performance, the scenes saved can easily be sent to the lighting system even if a different PC 1600 preset is being used.

Press the *Scene* button to access the scene functions. Repeatedly pressing the *Scene* button will toggle between the scene save and scene send pages.

4.2 Saving a Scene

1. Recall the desired preset to be used.
2. Press the *SCENE* button until the following page is displayed.

```
SCENE: Store [Enter]
          00
```

3. Use the *up* and *down* direction buttons or the *data wheel* to select the scene number to save.
4. Set all faders and CV inputs to the correct positions.
5. Press the *Enter* button to save the scene. The scene number will automatically increment to the next scene, allowing several scenes to be stored quickly.

Note: A scene saves the current fader position of each enabled fader. Data wheel movements and soloing a fader have no effect on the data stored in a scene.

4.3 Sending a Scene

1. Press the *Scene* button until the following page is displayed.

```
SCENE:  Send [Enter]
          00
```

2. Use the *up* and *down* direction buttons or the *data wheel* to send.
3. Press the *Enter* button to send the scene. The scene will be sent using the preset which was current when the scene was saved. The scene number will automatically increment to the next scene, allowing several scenes to be sent quickly.

5.0 EDITING

5.1 Main edit page

Access the main edit page at any time by pressing the *Edit* button. The field on this page selects the item to be edited. The following choices are available:

- Fader01 - Fader16
- CV1, CV2
- Button01 - Button16
- Data wheel
- Setup string
- Name/Save preset

The *up* and *down* direction buttons or the *data wheel* can be used to scroll through the above choices. Moving any fader, CV input, or button will cause that item to be displayed. When the desired item is displayed, press the *Enter* button to access the parameters specific to that item.

Shortcut: For a time-saving shortcut, try moving a fader, CV input, button, or the data wheel while holding the edit button. Releasing the edit button will immediately access the selected item.

5.2 Defining and Naming a fader

When a fader is selected to be edited, the first page displayed selects the function of the fader. A fader can be assigned to the following functions:

- No message
- Continuous controller
- Master fader
- MIDI string

To set the function of a fader:

1. Access the following fader function display by pressing *Enter* on the main edit page when a fader number is displayed.

```
FDR16:Function
        No message
```

2. Cursor *right* to select the desired function for the fader.
3. Access the parameters and name for this fader by pressing the *up* direction button when the function field is not blinking.

After assiging a function to the fader, the fader can be named. To name the fader:

1. With no parameters flashing, press the *up* direction button until the following page is displayed:

```
FDR16:        Name
```

2. Use the left and right direction buttons to select the character in the fader name. Use the up and down direction buttons, data wheel, and the current fader to change (edit) the character.

5.2.1 No message

A fader can have its function set to "No message." With this option, moving the fader will have no action.

5.2.2 Continuous controller

A fader can be programmed to send a continuous controller message whenever the fader moves. The MIDI channel can be set to any specific channel, or to the main transmit channel set in the Utility section. The controller number can be set to any value from 1 to 120.

The "min" parameter determines the value sent when the fader is in its lower-most position next to the button. The "max" parameter determines the value sent when the fader is in its upper-most position. Simply exchange the values in these two parameters to reverse a fader.

The "mode" parameter determines how matching incoming controller messages will be handled. The three modes are as follows:

Merge:
Incoming controller messages that match a fader are always passed through the PC 1600.

Replace:
Incoming controller messages that match a fader are passed through the PC 1600 until the fader is moved. The matching incoming controller messsages are filtered until the *Exit* button is pressed while on the Main page. This mode allows direct replacement of data in an existing stream of controller messages.

Update:
Incoming controller messages that match a fader are passed through the PC 1600 until the fader is moved. The data sent when the fader first moves will always match the last value that passed through the PC 1600 regardless of the position of the fader. The matching incoming controller messages are filtered until the *Exit* button is pressed while on the Main page. This mode allows seamless modification of data in an existing stream of controller messages.

To define a fader as a continuous controller:

1. From the fader function page, press the up direction button when the function field is not blinking. The following page will be displayed:

```
FDR16:    Chnl    Num
           16     007
```

2. Cursor over to the "Chnl" field and set the MIDI channel for the program change message. Incrementing the channel number above 16 will display "ChOut." When "ChOut" is selected, the program change message will be transmitted on the main MIDI transmit channel.
3. Cursor over to the "Num" field to set the controller number to be transmitted.
4. With no parameters flashing, press the *up* direction button to access the following page:

```
FDR16:    Min     Max
          000     127
```

5. Cursor *left* or *right* to the min or max field and edit the value if necessary.

6. With no parameter flashing, press the up direction button to access the following page:

```
FDR16:     Mode
           Merge
```

7. Cursor *right* or *left* to access the "Mode" parameter. Select either "Merge," "Replace," or "Update" mode.

5.2.3 Master fader

Several faders can be grouped together and controlled by another fader. This is done by defining a master fader as shown:

1. From the function page, press the *up* direction button when the function field is not blinking. The following page will be displayed:

```
FDR16:    Master of
        Fader01 = No
```

2. Cursor *right* once to activate the "Master of" field. Set this field using the *up* and *down* direction buttons, the *data wheel*, or the current fader. Moving any other fader will select the fader moved.
3. The "Yes" or "No" on the right shows whether the fader in the "Master of" field is being controlled by the current master fader. To toggle between "Yes" and "No," simply press the *right* direction button. The "Master of" field will remain active.

5.2.4 MIDI String

Any MIDI message can be assigned to a fader by entering the message as a hexadecimal string. A flexible "parameter format" allows the current fader position to be inserted into the message in one of many different formats. A programmable minimum and maximum parameter value allows the parameter to span practically any range. To define a MIDI message string:

1. From the switch function page, press the *up* direction button when the function field is not blinking. The following page will be displayed:

```
FDR16: String
F0 00 F7
```

2. To edit the string, use the four direction buttons, the data wheel, and the current fader. The *left* and *right* direction buttons are used to select a specific byte, while the *up* and *down* direction button, the *data wheel*, and the current fader are used to edit a digit of the string. Pressing increment when between bytes inserts a byte and pressing decrement deletes a byte.
3. Replace with "pr" any byte that will be determined by the fader position. This is done by incrementing the byte until "pr" is displayed. When the string is finished, press *Exit*.
4. Access the minimum and maximum parameters by pressing the *up* direction button when no field is flashing. The minimum and maximum fields are displayed as shown:

```
FDR16:   Min     Max
         0       127
```

5. Cursor over to either parameter and edit the value. Use the fader to set the parameter to the approximate value necessary. Use the *data wheel* or the *up* and *down* buttons to enter the exact value.

6. When neither field is flashing, press the *up* direction button to access the parameter format page:

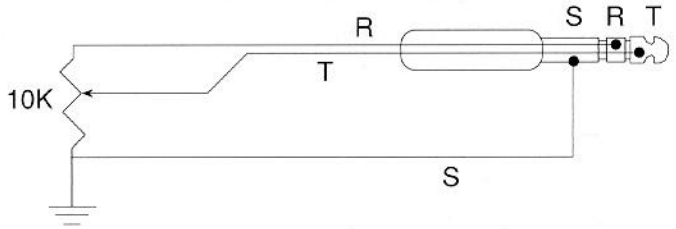
```
FDR16: Param format
        Single byte
```

7. The value selected here determines how the "pr" bytes will be filled with the parameter value. For a detailed description of the parameter formats **see Appendix B**.

Note: If a system exclusive message is received while a fader string is being edited, the PC 1600 will automatically replace the existing fader string with the system exclusive message received.

5.3 Editing CV1 and CV2

The CV1 and CV2 inputs can accept a standard footpedal, a 0 to +10V control signal (as generated by analog synthesizers), or a 10K potentiometer wired as shown below.



Control voltage inputs are always treated just like fader inputs. Refer to **section 5.1** describing how to define a fader for details.

Note: Both footswitches must be disabled for CV2 to work correctly.

5.4 Defining and Naming a button

When a button is selected to be edited, the first page displayed selects the function of the button. A button can be assigned to the following functions:

- No message
- Mute fader
- Solo fader
- Program change message
- Note on/off message
- MIDI string
- MIDI string with button press, MIDI string with button release
- Toggle between two MIDI strings

To set the function of a button:

1. Access the following button function display by pressing *Enter* on the main edit page when a button number is displayed.

```
BTN16:Function
        No message
```

2. Cursor *right* to select the desired function for the button.
3. Use the *up* direction button when the function field is not blinking to access other parameters.

After assigning a function to the button, the button can be named. To name the button:

1. With no parameter flashing, press the *up* direction button until the following page is displayed:

```
BTN16:        Name
```

2. Use the *left* and *right* direction buttons to select the character in the fader name and the *up* and *down* direction buttons, the *data wheel*, and the current fader to edit the character.

5.4.1 No message

A button can have its function set to "No message." With this option, pressing the button will have no action.

5.4.2 Mute fader

A button can be assigned to mute the associated fader. Pressing the button will mute the fader by sending the minimum value for the fader, and then disable the fader. When muted, moving the fader will have no effect. When the button is pressed again, the current fader message is sent, and the fader is enabled. To program a button to mute the associated fader, simply select "Mute fader" for the button function.

5.4.3 Solo fader

A button can be programmed to solo the associated fader by simply selecting the "Solo fader" function for the button. With this function, pressing the button will send the minimum value for each fader except the button's associated fader. To restore any fader, simply move the desired fader. To cancel the solo entirely, simply press the *Enter* button while the main page is displayed.

5.4.4 Program change

A button can be assigned to send a program change message each time the button is pressed. The MIDI channel can be set to any specific channel, or to the main transmit channel set in the Utility section. The program number can be any value from 000 to 127. To set these two parameters:

1. From the button function page, press the *up* direction button when the function field is not blinking. The following page will be displayed:

```
BTN16: Chnl   Program
         01      000
```

2. Cursor over to the "Chnl" field and set the MIDI channel for the program change message. Incrementing the channel number above 16 will display "ChOut." When "ChOut" is selected, the program change message will be transmitted on the main MIDI transmit channel.

3. Cursor over to the "Program" field to set the program number.

5.4.5 Note-on/off

A button can be assigned to send a note-on message when the button is pressed, and a note-off message when the button is released. The MIDI channel can be set to any specific channel, or to the main transmit channel set in the Utility section. The note number can be set to any note from C-1 to G9. The velocity can be set to any specific value, or determined by the current fader position. To set the parameters:

1. From the button function page, press the *up* direction button when the function field is not blinking. The following page will be displayed:

```
BTN16:Chnl   Note Vel
        01     C4  127
```

2. Cursor over to the "Chnl" field and set the MIDI channel for the note-on and note-off messages. Incrementing the channel number above 16 will display "ChOut." When "ChOut" is selected, the note messages will be transmitted on the main transmit channel.
3. Cursor over to the "Note" field to set the note number to be sent.
4. Cursor over to the "Vel" field to set the velocity value to be used in the note-on message. Incrementing the velocity value above 127 will display "Fdr." This option uses the current position of the fader to set the note-on velocity.

5.4.6 MIDI string

A button can be assigned to transmit any MIDI messages when pressed. These messages are entered in hexadecimal form. To define the MIDI string sent with a button press:

1. From the button function page, press the *up* direction button when the function field is not blinking. The following page will be displayed:

```
BTN16: String
F0 00 F7
```

2. Use the *left* and *right* direction buttons to select a byte to be edited. When the cursor is on a digit, the *up* and *down* direction buttons, *data wheel*, and associated fader will edit that digit. Pressing increment when between bytes inserts a byte, and pressing decrement between bytes deletes a byte.
3. Press Exit to quit editing the string when it is completed.

Note: If a system exclusive message is received while a button string is being edited, the PC 1600 will automatically replace the existing button string with the system exclusive message received.

5.4.7 String prs/rls

A button can be assigned to transmit any MIDI messages when pressed and any other MIDI messages when released. These messages are entered in hexadecimal form. To program the press and release string:

1. From the button function page, press the *up* direction button when the function field is not flashing. The following page will be displayed:

```
BTN16: Press String
F0 00 F7
```

2. Enter the string as described in section 5.4.6.
3. Exit from editing the press string and press the *up* direction button to edit the release string on the following page:

```
BTN16:    Rls String
F0 00 F7
```

4. Enter the release string as described in section 5.4.6.

Note: If a system exclusive message is received while a button string is being edited, the PC 1600 will automatically replace the existing button string with the system exclusive message received.

5.4.8 String toggle

A button can be assigned to toggle between any two MIDI message strings. These messages are entered in hexadecimal form. To program the two strings:

1. From the button function page, press the *up* direction button when the function field is not flashing. The following page will be displayed:

```
BTN16:        String 1
F0 00 F7
```

2. Enter the first string as described in section 5.4.6.
3. Exit from editing the first string and press the *up* direction button to edit the second string on the following page:

```
BTN16:        String 2
F0 00 F7
```

4. Edit the second string as described in section 5.4.6.

Note: If a system exclusive message is received while a button string is being edited, the PC 1600 will automatically replace the existing button string with the system exclusive message received.

5.5 Defining the data wheel

The data wheel is programmed by linking it to a fader or CV input. When the data wheel is linked to an input, it will adjust the parameter for that input using the current fader position as a starting point. The data wheel can also be set to always adjust the last fader that was moved instead of a specific fader.

1. Access the data wheel editing page by pressing *Enter* from the main edit page when the "data wheel" option is displayed. The following page will then be displayed:

```
WHEEL:          Link
              Fader 01
```

2. Use the *up* and *down* buttons or the *data wheel* to select a fader or CV input. Moving a fader or CV input will select the device moved.
3. Increment until "last moved" is displayed to make the *data wheel* always edit the last fader or CV input that was moved.

5.6 Defining the setup string

When a preset is recalled, each MIDI channel can send out an associated MIDI volume message, MIDI program change message, and MIDI bank select message. Additional messages can be sent in an 80 byte programmable string. To program these options:

1. Press *Enter* on the main edit page when the "setup string" option is displayed to access the two setup pages. The bank select, program change, and volume for each channel are available on this page:

```
SETUP: Bank Prog Vol
 Ch 01 Off  Off  Off
```

2. Cursor right to the "Ch" field. Changing this field causes the bank, program, and volume fields to display the information for the selected channel.
3. Cursor right to the "Bank" field. This field displays the bank number to be sent for this channel. Decrementing this field below zero causes no bank message to be sent.
4. Cursor right to the "Prog" field. This field displays the program number to be sent for this channel. Decrementing this field below zero causes no program message to be sent.
5. Cursor right to the "Vol" field. This field displays the volume to be sent for this channel. Decrementing this field below zero causes no volume message to be sent.
6. Repeat the above steps as necessary for each channel.
7. With no parameters flashing, press the *up* direction button to access the string on the following page:

```
BTN16: String
F0 00 F7
```

8. Edit the string just like a button string. The *left* and *right* direction buttons are used to select a specific byte while the *up* and *down* direction buttons and the *data wheel* are used to edit a digit of the string. Pressing increment when between bytes inserts a byte and pressing decrement deletes a byte. If no bytes are displayed, no string will be sent.

Note: If a system exclusive message is received while a setup string is being edited, the PC 1600 will automatically replace the existing setup string with the system exclusive message received.

5.7 Editing the preset name

Access the name edit page by pressing *Enter* on the main edit page when the "Name/Save prs" option is displayed. Use the *left* and *right* direction buttons to select the character in the name and the *up* and *down* buttons or *data wheel* to edit the character. To make editing faster, each fader edits a different character of the name. Pressing *Enter* from this page accesses the "save preset" page.

5.8 Saving the preset

Access the save preset page by pressing Enter twice on the main edit page when the "Name/Save prs" option is displayed. The bottom line of this page displays the number and name of the destination preset to be overwritten. Pressing the *Enter* button from this page will save the preset and return to the main page. Pressing the *Exit* button will return to the "Edit name" page.

5.9 Leaving the edit mode

To return to the main page at any time, press *Exit* several times until the main page is reached. If changes were made to the preset, the preset number will be replaced with "**." This is an indication that the preset in the edit buffer has been modified but not saved. Press *Edit* to return to the edit mode if the changes are to be saved. Press *up* or *down* from the main page to leave this preset. This will cause any changes that were made to be discarded.

Note: Edits which were discarded can be recovered from the main page. Increment the preset number above preset 49 and the preset number is replaced by "**." Pressing Edit returns to the edit mode with the edit buffer exactly as it was last time the edit mode was exited.

6.0 COPY FUNCTIONS

6.1 Copy into the edit buffer

When in the edit mode, any part of the edit buffer can be defined by copying from any existing preset or the current edit buffer. To perform a copy:

1. Press the *Edit* button to enter the edit mode.
2. Press the *Copy* button to access the following page:

```
COPY:          [Enter]
Fdr01 of Edbuf→Fdr02
```

3. Cursor *left* or *right* until the first field is active. Use the *up* and *down* direction buttons or the *data wheel* to set the source type. This can be a fader, CV input, button, data wheel, setup string, or preset name. Moving any fader or button selects that fader or button.
4. Cursor *right* to the second field. This selects the source preset for the copy. Any preset or the current edit buffer can be used as a source preset.
5. Cursor *right* to the third field. This field selects the destination within the current edit buffer.
6. Press the *Enter* button to perform the copy.

6.2 Copy presets and scenes

When not in the edit mode, the copy function is used to copy from one preset to another or from one scene to another. To perform a copy:

1. Press the *Copy* button from the main page to access the following page:

```
COPY:Prs00→01[Enter]
     Preset name here
```

2. Cursor *left* or *right* until the first field is active.
3. Use the *up* and *down* direction buttons or the *data wheel* to select the source preset or scene. When this field is active, the bottom line displays a preset name if a preset is selected.
4. Cursor *right* to select the destination preset or scene. If a preset is selected, the preset name will appear on the bottom line when this field is active.
5. Press the *Enter* button to perform the copy.

APPENDIX A

System Exclusive

Recall Preset
- F0 00 00 1B 0B ch 00 pp F7

When this is received, the PC 1600 will switch to the preset specified by pp regardless of the current MIDI mapping.

Send/Recv All presets
- F0 00 00 1B 0B ch 01 [data] F7

This message is sent and received by the PC 1600. It contains all preset data including the current edit buffer.

Send/Recv All scenes
- F0 00 00 1B 0B ch 02 [data] F7

This message is sent and received by the PC 1600. It contains all scene data.

Send/Recv All globals
- F0 00 00 1B 0B ch 03 [data] F7

This message is sent and received by the PC 1600. It contains all MIDI maps and all other global variables.

Send/Recv Current edit buffer
- F0 00 00 1B 0B ch 04 [data] F7

This message is sent and received by the PC 1600. It contains only the current edit buffer. This combined with the Recall preset SysEx command will allow any preset to be obtained from an outside source.

Request everything
- F0 00 00 1B 0B ch 10 F7

The PC 1600 will respond to this message with:
Send/Recv All presets
Send/Recv All scenes
Send/Recv All globals

Request All presets
- F0 00 00 1B 0B ch 11 F7

The PC 1600 will respond to this message with:
Send/Recv All presets

Request All scenes
- F0 00 00 1B 0B ch 12 F7

The PC 1600 will respond to this message with:
Send/Recv All scenes

Request All globals
- F0 00 00 1B 0B ch 13 F7

The PC 1600 will respond to this message with:
Send/Recv All globals

Request edit buffer
- F0 00 00 1B 0B ch 14 F7

The PC 1600 will respond to this message with:
Send/Recv Current edit buffer

Write edit buffer
- F0 00 00 1B 0B ch 20 pp F7

When the PC 1600 receives this message, it saves the current edit buffer to the preset specified by pp.

APPENDIX B

Parameter formats

This is the format for the "pr" variable used in a MIDI string assigned to a fader. This format must be the same as the format supported by the receiving device. Refer to the owner's manual for the receiving device for parameter format information. The following formats are supported by the PC 1600:

Single byte - This format requires only one "pr" byte and is used for numbers ranging from 0-127. This is the format used for most MIDI commands.

2byte, 7bits, hi to lo - This format requires two "pr" bytes. The first byte contains bits 7-13 of the parameter and the second byte contains bits 0-6 of the parameter.

2byte, 7bits, lo to hi - This format requires two "pr" bytes. The first byte contains bits 0-6 of the parameter and the second byte contains bits 7-13 of the parameter. This is the format used for a MIDI pitch bend command. The MIDI sample dump standard also specifies parameters in this format.

3byte, 7bits, hi to lo - This format requires three "pr" bytes. It is similar to the format "2byte, 7bits, hi to lo" except extended to three bytes. This is a rarely used format.

3byte, 7bits, lo to hi - This format requires three "pr" bytes. It is similar to the format "2byte, 7bits, lo to hi" except extended to three bytes. This is a rarely used format.

2byte, Nibs, hi to lo - This format requires two "pr" bytes. The first byte contains bits 4-7 of the parameter and the second byte contains bits 0-3 of the parameter. This is a common format used to send parameters ranging from 0-255 or -128 to 127.

2byte, Nibs, lo to hi - This format requires two "pr" bytes. The first byte contains bits 0-3 of the parameter and the second byte contains bits 4-7 of the parameter. This is a common format used to send parameters ranging from 0-255 or -128 to 127

3byte, Nibs, hi to lo - This format requires three "pr" bytes. The first byte contains bits 8-11, the second byte contains bits 4-7, and the third byte contains bits 0-3 of the parameter. This is a rarely used format.

3byte, Nibs, lo to hi - This format requires three "pr" bytes. The first byte contains bits 0-3, the second byte contains bits 4-7, and the third byte contains bits 8-11 of the parameter. This is a rarely used format.

4byte, Nibs, hi to lo - This format requires four "pr" bytes. The first byte contains bits 12-15, the second byte contains bits 8-11, the third byte contains bits 4-7, and the fourth byte contains bits 0-3 of the parameter.

4byte, Nibs, lo to hi - This format requires four "pr" bytes. The first byte contains bits 0-3, the second byte contains bits 4-7, the third byte contains bits 8-11, and the fourth byte contains bits 12-15 of the parameter.

2byte, BCD Nibs, hi to lo - This format requires two "pr" bytes. The first byte contains the value of the tens digit parameter while the second byte contains the ones digit of the parameter. This is sometimes used for parameters ranging from 0-99 or 0.0-9.9. This is a rarely used format.

2byte, BCD Nibs, lo to hi - This format requires two "pr" bytes. The first byte contains the value of the ones digit parameter while the second byte contains the tens digit of the parameter. This is sometimes used for parameters ranging from 0-99 or 0.0-9.9. This is a rarely used format.

Note: If a string has more "pr" bytes than a format requires, the extra "pr" bytes will cause the parameter to be repeated. This allows the parameter to appear several times in a single string.

APPENDIX C

MIDI Implementation Chart

Date: 9/93

Model: *PC 1600*

Version: 1.1

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 1-16	1 1-16	Memorized
Mode	Default Messages Altered	X O	X X X	
Note Number	True Voice	0-127	X X	
Velocity	Note On Note Off	O X	X X	
After Touch	Key's Ch's	O O	X X	
Pitch Bender		O	X	
Control Change		0, 32 Bank Select 1-120 Fader Assignable	X X	
Prog Change	True#	0-127	0-127 Presets0-49, Scenes 0-99	Mappable
System Exclusive		O	O	
System Common	: Songs Pos : Song Sel : Tune	O O O	X O X	Song select sends a scene
System Real Time	: Clock : Commands	X O	X X	
Aux Mes-sages	: Local ON/OFF : All Notes Off : Active Sense : Reset	O O X O	X X X X	
Notes				

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

APPENDIX D

Controller Numbers

Controller Number (2nd byte value)		Control Function
Decimal	Hex	
0	00H	Undefined
1	01H	Modulation wheel or lever
2	02H	Breath Controller
3	03H	Undefined
4	04H	Foot Controller
5	05H	Portamento time
6	06H	Data entry MSB
7	07H	Main volume
8	08H	Balance
9	09H	Undefined
10	0AH	Pan
11	0BH	Expression Controller
12-15	0C-0FH	Undefined
16-19	10-13H	General Purpose Controllers (#'s 1-4)
20-31	14-1FH	Undefined
32-63	20-3FH	LSB for values 0-31
64	40H	Damper pedal (sustain)
65	41H	Portamento
66	42H	Sostenuto
67	43H	Soft pedal
68	44H	Undefined
69	45H	Hold 2
70-79	46-4FH	Undefined
80-83	50-53H	General Purpose Controllers (#'s 5-8)
84-90	54-5AH	Undefined
91	5BH	Eternal Effects Depth
92	5CH	Tremolo Depth
93	5DH	Chorus Depth
94	5EH	Celeste (Detune) Depth
95	5FH	Phaser Depth
96	60H	Data increment
97	61H	Data decrement
98	62H	Non-Registered Paramenter Number LSB
99	63H	Non-Registered Paramenter Number MSB
100	64H	Registered Paramenter Number LSB
101	65H	Registered Paramenter Number MSB
102-120	66-78H	Undefined
121-127	79-7FH	Reserved for Channel Mode Messages

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PEAVEY ELECTRONICS CORPORATION ("PEAVEY") warrants this product, EXCEPT for covers, footswitches, patchcords, tubes and meters, to be free from defects in material and workmanship for a period of one (1) year from date of purchase, PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is subject to the conditions, exclusions, and limitations hereinafter set forth:

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b. The original retail purchase is not made from an AUTHORIZED PEAVEY DEALER; or
c. The product has been damaged by accident or unreasonable use, neglect, improper service or maintenance, or other causes not arising out of defects in material or workmanship; or
d. The serial number affixed to the product is altered, defaced, or removed.

In the event of a defect in material and/or workmanship covered by this limited warranty, Peavey will:

a. In the case of tubes or meters, replace the defective component without charge.
b. In other covered cases (i.e., cases involving anything other than covers, footswitches, patchcords, tubes or meters), repair the defect in material or workmanship or replace the product, at Peavey's option;
and provided, however, that, in any case, all costs of shipping, if necessary, are paid by you, the purchaser.

THE WARRANTY REGISTRATION CARD SHOULD BE ACCURATELY COMPLETED AND MAILED TO AND RECEIVED BY PEAVEY WITHIN FOURTEEN (14) DAYS FROM THE DATE OF YOUR PURCHASE.

In order to obtain service under these warranties, you must:

a. Bring the defective item to any PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER and present therewith the ORIGINAL PROOF OF PURCHASE supplied to you by the AUTHORIZED PEAVEY DEALER in connection with your purchase from him of this product.
If the DEALER or SERVICE CENTER is unable to provide the necessary warranty service you will be directed to the nearest other PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER which can provide such service.

OR

b. Ship the defective item, prepaid, to:

PEAVEY ELECTRONICS CORPORATION
International Service Center
Highway 80 East
MERIDIAN, MS 39301

including therewith a complete, detailed description of the problem, together with a legible copy of the original PROOF OF PURCHASE and a complete return address. Upon Peavey's receipt of these items:
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PEAVEY ELECTRONICS CORPORATION
POST OFFICE BOX 2898
MERIDIAN, MISSISSIPPI 39302-2898

a. Keep the PROOF OF PURCHASE. In the event warranty service is required during the warranty period, you will need this document. **There will be no identification card issued by Peavey Electronics Corporation.**

2. IMPORTANCE OF WARRANTY REGISTRATION CARDS AND NOTIFICATION OF CHANGES OF ADDRESSES:
   a. Completion and mailing of WARRANTY REGISTRATION CARDS — Should notification become necessary for any condition that may require correction, the REGISTRATION CARD will help ensure that you are contacted and properly notified.
   b. Notice of address changes — If you move from the address shown on the WARRANTY REGISTRATION CARD, you should notify Peavey of the change of address so as to facilitate your receipt of any bulletins or other forms of notification which may become necessary in connection with any condition that may require dissemination of information or correction.
3. You may contact Peavey directly by telephoning (601) 483-5365.

IMPORTANT SAFETY INSTRUCTIONS

WARNING When using electric products, basic cautions should always be followed, including the following.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e., a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does no interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, radiator, or another heat producing amplifier.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding, write for our free booklet "Shock Hazard and Grounding."
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.
13. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag, or an ammonia-based household cleaner if necessary. Disconnect unit from power supply before cleaning.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
15. This unit should be checked by a qualified service technician if
    a. The power supply cord or plug has been damaged.
    b. Anything has fallen or been spilled into the unit.
    c. The unit does not operate correctly.
    d. The unit has been dropped or the enclosure damaged.
16. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.
17. This product should be used only with a cart or stand that is recommended by Peavey Electronics.
18. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

    The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures.

Duration Per Day In Hours	Sound Level dBA, Slow Response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss.

Ear plugs or protectors in the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

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