



# **REALPIANO EXPANDER**

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***OWNER'S MANUAL***

***English***

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# General safety instructions

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## **Power source**

- Be sure that you are using a Generalmusic approved power adaptor to power the instrument

## **Handling the power cord**

- Never touch the power adaptor or its plug with wet hands.
- Never pull on the cord to remove it from the wall socket, always pull the plug.
- Never forcibly bend the power adaptor's cord.
- If the power adaptor or its cord is scarred, cut or broken, or has a bad contact, it will be a potential fire hazard or source of serious electric shock. NEVER use a damaged power adaptor; replace it immediately with the correct replacement type.

## **If water gets into the instrument**

- Remove the adaptor from the wall socket at once, and contact the store where the unit was purchased.
- The top surface of your instrument should never be used as a shelf for flower vases and other containers which hold liquids.

## **Metal items etc. inside the unit**

- Do not allow metal items or other materials to fall inside the unit.

## **Metal items may result in electric shock or damage**

- Be especially careful with regards to this point when children are near the unit. They should be warned never to try to put anything inside, and never to slide a hand into the unit while you or other persons are playing.
- If articles do fall inside, remove the power adaptor from the wall socket at once and, if necessary, contact the store where the unit was purchased.
- As a general precaution, never open the unit and touch or tamper with the internal circuitry.

## **If the instrument does not seem to be working correctly**

- Turn off the power immediately, remove the power adaptor from the mains outlet and contact the store where the instrument was purchased.
- Discontinue using the unit at once. Failure to do so may result in additional damage or other unexpected damage or accident.

## **General user maintenance**

- Clean the outer surface of your instrument using a soft, clean, slightly damp cloth and polish with a soft, dry cloth.
- Never use industrial cleaners, detergents, abrasive cleansers, waxes, solvents or polishes as they may damage the instrument finish.
- Always turn off the power supply after use and never turn the unit on and off repeatedly in quick succession as this places an undue load on the electronic components.

Generalmusic on Internet: <http://www.generalmusic.com>

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*Make sure that all internal electronic options are installed by an authorized Generalmusic service technician. Check with an authorized Generalmusic dealer for information on the closest service centre.*

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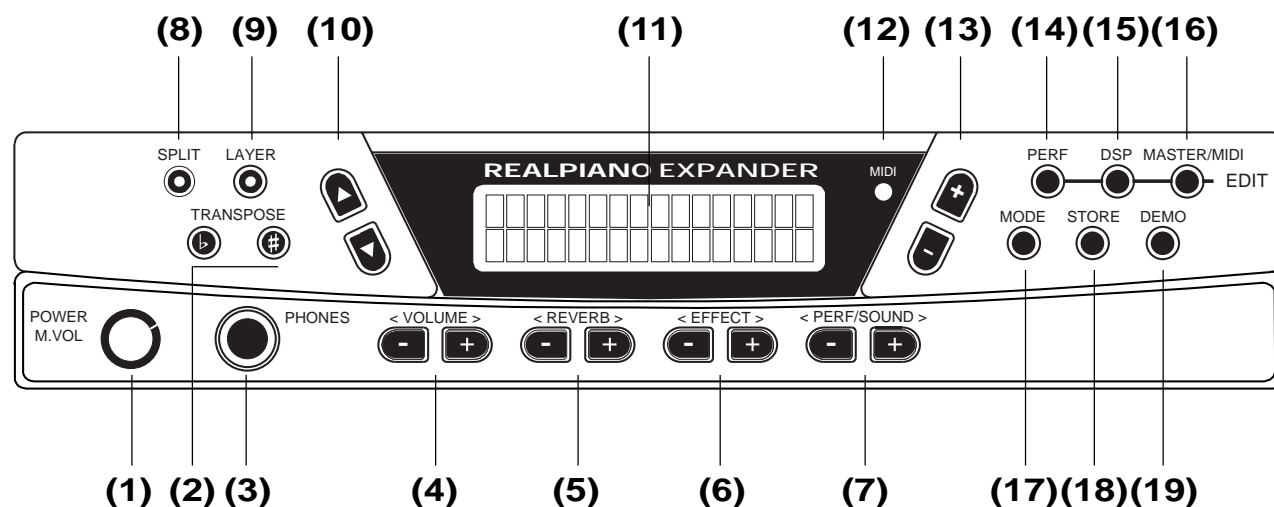
# *Section 1*

## **Instrument Layout**

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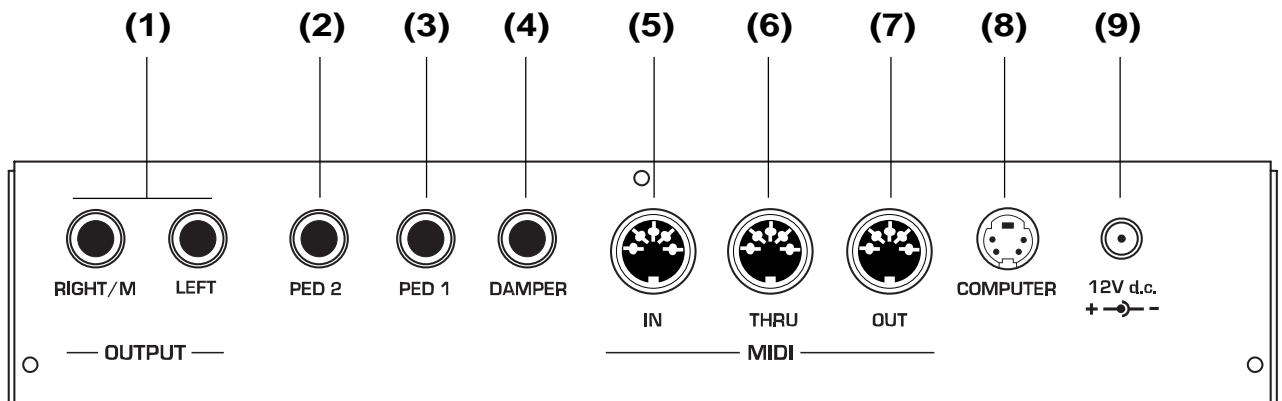
# Front and rear panel

## Front panel - RealPiano Expander



- (1) **POWER M/VOL.** Power On/Off button and Master volume control.
- (2) **TRANSPOSE b & #** Increases or decreases the overall pitch of the instrument in half-step (semitone) increments.
- (3) **PHONES** Jack for stereo headphones.
- (4) **VOLUME -/+** Raises or lowers the volume of the selected sound.
- (5) **REVERB** Use this button to select a reverb type.
- (6) **EFFECT** Use this button to select an effect type.
- (7) **PERF/SOUND** These buttons select Sounds or Performances, depending on the current mode selected.
- (8) **SPLIT** This button activates two tracks divided by a split point. The current Sound is assigned to the right split while a Bass sound is assigned to the left. Holding the button pressed allows you to change the Split point by playing a note on the connected MIDI keyboard.
- (9) **LAYER** Activates two layered tracks which play at the same time across the entire range of the connected MIDI keyboard.
- (10) **PAGE UP/DOWN**  
BUTTONS ▲▼ These buttons step through the various functions in the PERF EDIT, DSP EDIT and MASTER/MIDI menus.
- (11) **LCD DISPLAY** Liquid Crystal Display.
- (12) **MIDI LED** LED which turns on during MIDI message reception.
- (13) **DATA ENTRY -/+**  
BUTTONS Buttons to adjust the value of the currently selected parameter in edit situations.
- (14) **PERF EDIT** Allows you to edit a variety of performance parameters. Any changes made here will be memorized when the performance is saved.
- (15) **DSP EDIT** Allows you to edit the DSP parameters. Any changes made here will be memorized when the performance is saved.
- (16) **MASTER/MIDI** Gains access to the various MIDI functions of the instrument plus some additional Master features such as "Restore Performances" and "Display Contrast".
- (17) **MODE** Button which toggles between SOUNDS and PERFORMANCE mode.
- (18) **STORE** Allows you to memorize the modifications made to the Performances and to choose the destination (Bank A-H and location 1-8).
- (19) **DEMO** Activates the factory programmed demonstration song of the internal sounds.

## Back panel - RealPiano Expander



**(1) OUTPUT RIGHT/M  
LEFT**

Stereo outputs to connect the instrument to an amplifier, mixer or recording device. If you are connecting to mono equipment, (e.g. a guitar amplifier) use only the Right/Mono jack.

**(2) DAMPER**

You can connect either a standard footswitch or the special Real Piano Continuous Damper Pedal, (available from your Generalmusic dealer) to simulate the right pedal of a piano.

**(3) PEDAL 1**

**(4) PEDAL 2**

Each socket can accept either a footswitch or a continuous, (volume) type pedal. The function to assign to each pedal can be selected in the PERF EDIT section.

**(5) MIDI IN**

Allows the sounds of the RealPiano Expander to be played by an external controlling device e.g. a controller keyboard or a sequencer.

**(6) MIDI THRU**

Transmits a copy of the information being received by the MIDI IN. Use MIDI THRU when connecting a number of different instruments together.

**(7) MIDI OUT**

Sends MIDI information from the RealPiano Expander to other MIDI external equipment.

**(8) COMPUTER JACK**

Allows direct connection of the instrument to an IBM or Macintosh computer by means of a single serial cable without the need to use a MIDI interface.

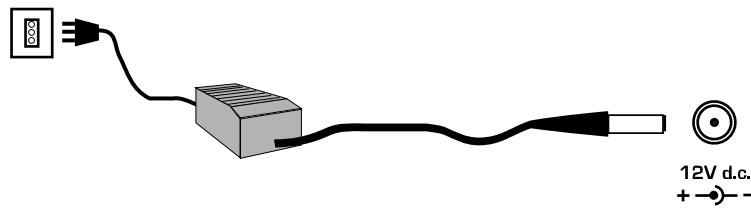
**(9) D.C. POWER JACK**

Connection for the power supply unit. Use only the unit supplied with your instrument.

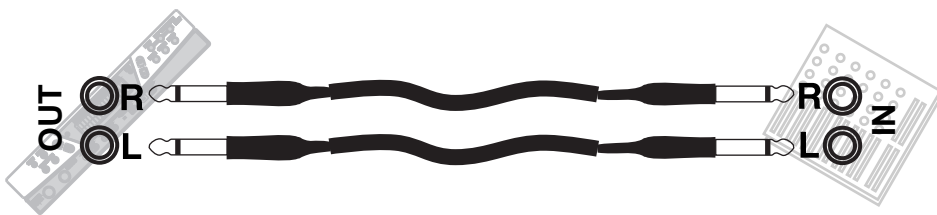
# Installation, Power switch, Master Volume and headphones, Demo

## Installation

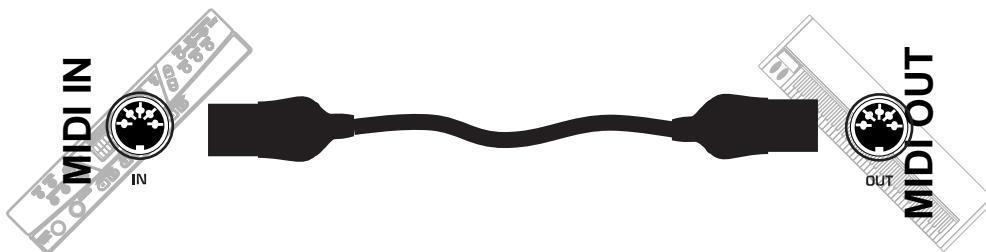
**Connect the power supply:** Connect the Generalmusic power supply unit to the 12V. d.c. jack.



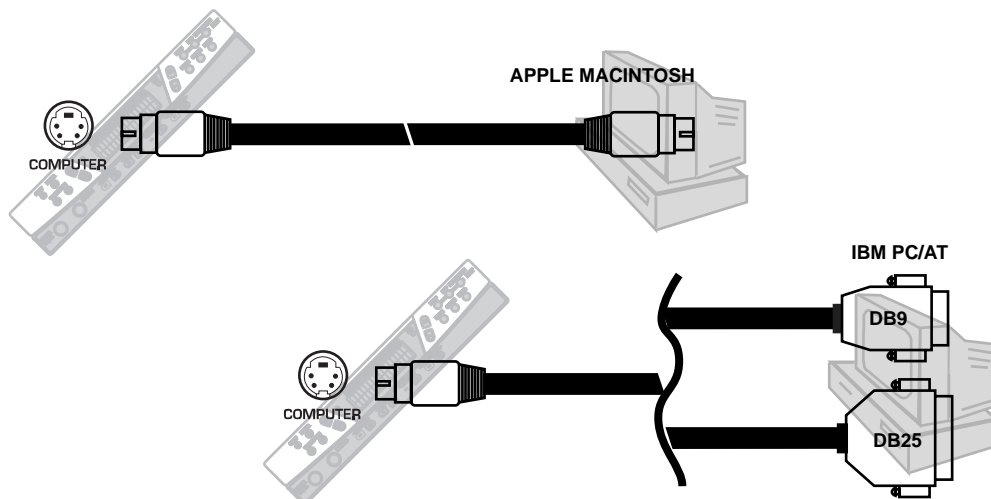
**Connect the audio cables:** Connect the audio outputs to your amp. system (mixer, powered speakers, etc.) using audio cables with standard 1/4" jacks. Use RCA jacks to connect to domestic stereo units. For mono reproduction, connect to the Right/M jack.



**MIDI connection:** The RealPiano Expander is a sound generator which must be connected to a MIDI controlling device, such as a master keyboard, computer, wind controller, etc.). Connect the MIDI OUT port of the controlling device to the Expander's MIDI IN port.



**Direct connection to a computer:** If your computer is not fitted with a MIDI interface, you can connect directly to the RealPiano Expander via the COMPUTER port. Use standard serial cables which are specific for the type of computer being used (Apple Macintosh, IBM or Atari). The RealPiano Expander needs to be set for this type of connection. (PC1, PC2 or Apple - See page 30 for details).



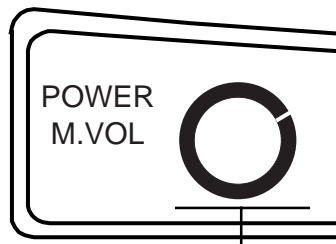


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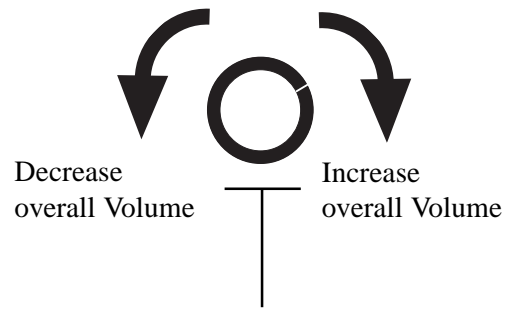
## Power/Master Volume

The Power/M.VOL control has two functions:

- Power on/off button:** Press the button to turn on the instrument. Press again to turn off.
- Master Volume control:** Rotate in a clockwise direction to increase the overall volume and anti-clockwise to decrease it.



Power On/Off button



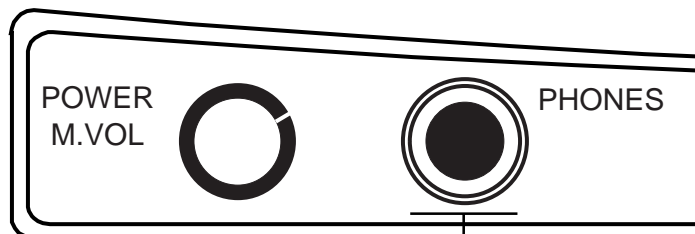
Decrease  
overall Volume

Increase  
overall Volume

Overall Volume control knob

## Phones

The headphone jack is located on the front panel, next to the Power/M.Vol control. Inserting the headphones into this jack allows you to play without disturbing others in the same room. Use a mini jack 1/4" adapter for Walkman or MidiDisc headphone sets.



Headphones jack

## Demo

This button triggers the playback of a demonstration song permanently memorized in the expander's ROM (read only memory).

When it reaches the end, the song loops back to the beginning and repeats continually until stopped. Press the DEMO button to stop the demo at any time.

DEMO



## Pedal connections

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There are three pedal jacks on the back panel of the RealPiano Expander.

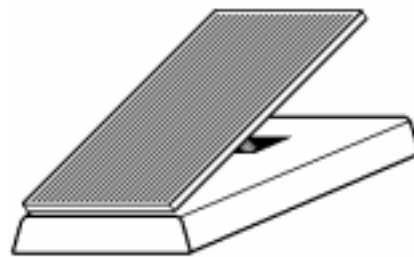
The DAMPER pedal jack can accept any type of generic footswitch to provide a "sustain pedal" effect. This jack can also accept a special "continuous damper pedal", (available from your Generalmusic dealer), which more faithfully replicates the action of an acoustic piano's damper pedal. When this continuous type of pedal is used, the amount of damping will vary according to the position of the pedal.

The other two pedal jacks, PED1 and PED2, can accept either a pedal switch or a continuous type pedal.

These pedals, when connected can be used for a variety of different functions. These functions are detailed in section 4 of this manual - PERF EDIT, Pedal 1 Function/Pedal 2 Function.



Switch pedal



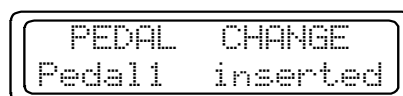
Continuous pedal

### A note about pedals and footswitches

There are four types of pedals which may be connected to the RealPiano Expander;

1. Footswitch - normal polarity, (or "normally open")
2. Footswitch - reverse polarity, (or "normally closed")
3. Continuous volume pedal
4. Generalmusic continuous damper pedal

Whenever one of the above pedal types is connected to either the DAMPER, PED 1 or PED 2 jacks, the instrument will automatically detect which type of pedal is inserted. This "auto detect" procedure normally takes about 1-2 seconds. In order for the system to correctly evaluate the pedal type, it is important not to press or move the pedal until the pedal change screen, (Fig. 1) has disappeared.



*Fig. 1: Pedal "Auto-detect" screen*

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# *Section 2*

## **Quick Study Guide**

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For those of you who don't like to read manuals, or wish to read the manual in detail later, here is everything you need to get started.

## Basic Functions

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This instrument follows a simple and logical design so you should be able to use and understand many of the features without exhaustive description. If you need more explanation of a particular feature, you will find a comprehensive description of each function further on in this manual.

### Operating Modes

There are two different ways of using the instrument;

1: SOUNDS mode

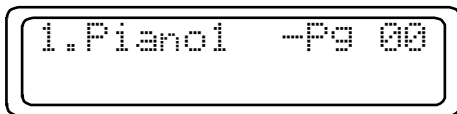
2: PERF mode, (“Performance” mode)

MODE

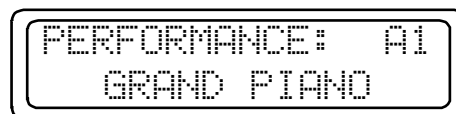


Sound or Perf mode selector

Either mode can be selected by use of the MODE button to the right of the display, under the groups of EDIT buttons. Pressing the Mode button repeatedly toggles between the two selection modes. When SOUNDS mode is selected, the display shows the name(s) of the sound(s) and corresponding Program Change number(s). In PERF mode, the display shows the PERFORMANCE bank and location and the Performance name.



*SOUND mode display*



*PERF mode display*

Every time the instrument is turned on, it defaults to SOUNDS mode. You can scroll through the sounds by using the PERF/SOUND -/+ buttons.

< PERF/SOUND >

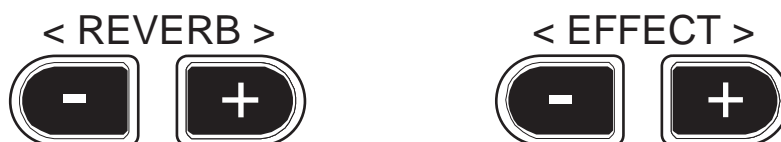


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You can control the volume of the selected Sound with the VOLUME -/+ buttons located under the display.



You can easily add effects to the selected sound by using the REVERB-/+ and EFFECTS-/+ buttons.



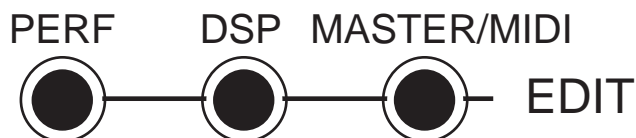
If you want to mix two sounds together, this can be achieved by simply pressing the LAYER button located to the left of the display. You may also split the connected keyboard by pressing SPLIT. If you select a sound while holding the split button, this assigns that sound to the left side of the keyboard. If you press a note on the connected keyboard while holding the split button, the note you pressed will become the new split point, (it actually becomes the lowest note of the right or upper section).

**NOTE: These functions will only work if your controller keyboard is transmitting on the expander's "COMMON CHANNEL". See page 28 for more details.**



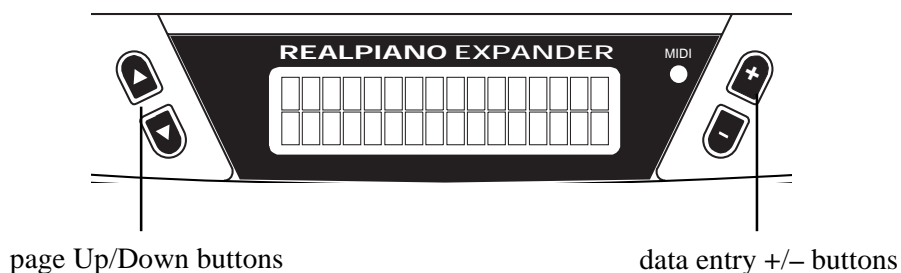
If you are playing either in Layer or Split mode, you can control the volume of each sound independently by selecting the sound whose volume you wish to change using the page Up/Down buttons, then using the Volume -/+ buttons.

If you wish to further edit the sound combination you are making, for example, transpose a sound or change the effect sends, you can find the necessary functions under the buttons in the EDIT section.



---

Pressing, for example, PERF will display the first edit page that allows you to change some aspect of the current sound combination. The data entry  $-/+$  buttons located to the right of the display are used to adjust the value of whatever is currently displayed. Other screens can be selected by pressing the page Up/Down buttons located to the left of the display.



The number of features available in the EDIT section will be different depending on whether you have one sound or two sounds currently active. When you have two sounds selected, (either layered or split), you will see several duplicated screens. For example; if you have layered, the first PERF EDIT screen allows you to transpose Sound 1 with the data entry  $-/+$  buttons. When you page forward to the next screen you can now transpose Sound 2 in the same way. If you had selected only one sound you would not see this second screen.

After you have spent some time adjusting things like the effect levels, mixing, pedal assignments and other features contained in the EDIT section, you will have created what is called a PERFORMANCE. In simple terms, a PERFORMANCE is just the end result of some tweaking and editing where the instrument now sounds the way you want it to. At this stage your PERFORMANCE can be saved in memory so that you can instantly recall it the next time you need to use it.

## Storing a Performance

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There are 64 PERFORMANCE memories on-board the RealPiano Expander, arranged in eight banks from A to H. Each bank contains eight Performances numbered 1 - 8. The PERF/SOUND  $-/+$  button selects the Performances in decreasing or increasing order when the instrument is set to PERF mode. Each Performance has both an alpha-numeric reference, (e.g. C5 or F2), and an actual text name which is shown in the display.

Although the procedure for saving and naming a Performance is described in detail elsewhere in this manual, the basic steps are very simple. After creating a performance which you want to store, press the STORE button.

STORE



Next, if you hold one of the PERF/SOUND  $-/+$  buttons pressed, you can scroll continually through all the Performances available in memory. Pressing repeatedly selects the Performances one at a time. The  $-$  button selects in reverse order while the  $+$  button selects in forward order. Once you have selected a Performance, press STORE. The display prompts you with the message “Stor Perf? YES”. At this point, you can also change the name (see the example which follows). Select NO or YES with the data entry  $-/+$  button: YES to memorize or NO to cancel the operation. Press STORE once again to confirm the store Performance operation. The new Performance is now memorized to the selected location. You can recall your Performance at any time by selecting PERF mode and using the PERF/SOUND  $-/+$  buttons.

### **EXAMPLE: Saving the current sound settings into Performance “E6”**

With the instrument in SOUNDS mode and a performance ready to be saved;

1. **Press STORE.**
2. **Hold the PERF/SOUND+ button pressed until the first Performance of bank E is displayed (WURLYTZ1).**
3. **Press the PERF/SOUND + button repeatedly and select Performance “E6” (WURLY/STACK4).**
4. **At this stage, if desired, you can write a different name for the Performance. Use the data entry  $-/+$  buttons to select letters and symbols and the page Up/Down buttons to move the cursor.**
5. **Press STORE again. The display shows the message “Storing Perf? YES”.**
6. **Press STORE once again to memorize the Performance. (If you confirm with “NO” showing, the modifications will not be memorized).**

You have now stored this sound setting into Performance E6.

Your RealPiano Expander leaves the factory with pre-programmed Performances to let you hear some of the possibilities of the instrument. The first of these is a basic piano setting which has been stored in Performance A1. You can listen to some of the instrument’s powerful capabilities by recalling the combinations stored in A2, A3, A4 etc. Even if you have erased or overwritten some of these factory performances, they can be fully restored at any time by turning the power on while holding the PERF EDIT button, or by using the RESTORE PERF function in the MASTER/MIDI section. This function will erase any Performances you had previously saved.

**NOTE: To hear these Performances accurately, your controller keyboard must be transmitting on the Expander’s “COMMON CHANNEL”. See page 28 for more details.**

## Creating a new Performance from scratch

---

Lets try a complete step by step example.

The aim is to create a combination of Electric Grand 1 (p02) and Atk Choir (p28). We need the Choir sound to be about half the volume of the ElGrand. We will add some hall reverb to the sound but we need to have much more reverb on the AtkChoir than on the ElGrand. When we have finished making this sound combination, we will store it in Performance B1.

1. **Switch the instrument on or, if it is already on, select Sound mode**
2. **Select the sound ElGrand 1 (p02) with the Perf/Sound+ button.**
3. **Press LAYER and select sound 2 with the page Down button (sound 2 will be shown selected by a small arrow).**
4. **Assign AtkChoir (p28) to sound 2 using the Perf/Sound +/- buttons.**

This mixes the ElGrand 1 sound with the AtkChoir sound.

Now let's balance the Volumes.

5. **Move the arrow to sound 1 with the page Up button and press the Volume + button.**
6. **The display shows a new page with the current Volume setting (127) - adjust the setting to "100" with the Volume - button.**
7. **After a few seconds, the display returns to the previous situation. Now select sound 2 (AtkChoir) with the page Down button and set the volume to "64" with the Volume - button.**

Now let's add the reverb effect.

8. **Use the REVERB +/- buttons to select "HALL".**
9. **Press the DSP EDIT button.**
10. **The display shows the effect send parameter for the reverb effect of sound 1. Set the value to about 40 or 50 with the data entry +/- buttons.**
11. **Now use the page Up button to select the REV SEND parameter for sound 2 (page 1b).**
12. **Assign a value (e.g. 100) with the data entry +/- buttons.**

This completes the editing.

Let's now store this sound combination into performance B1.

13. **Press STORE.**
14. **Press the Perf/Sound+ button repeatedly to select Performance B1 (Piano/Pad1)**
15. **Press STORE again. The display shows the message "Store Perf? YES".**
16. **Press STORE a third time to memorize the modifications to the Performance destination B1.**

That's it. To recall this sound combination at any time, simply switch to PERFORMANCE mode and scroll to the Performance B1 with the Perf/Sound +/- buttons.

*Note: A quicker and more direct method of selecting the Sounds or Performances is to send appropriate Program change messages to the Expander from the connected MIDI Controller. See page 28 of this manual for more information.*



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# *Section 3*

## **Basic Features**

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This section will explain how to approach the instrument for the first time in a simple fashion. It will help you to get quickly acquainted with the most important features of the instrument.

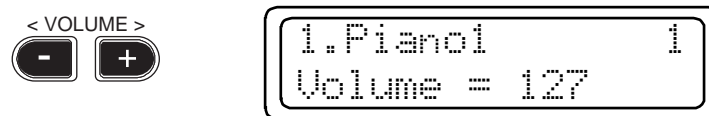
## Selecting sounds

### Single mode

After turning the instrument on, you can select single sounds by pressing the Perf/Sound  $-/+$  buttons. The name of the selected Sound appears in the display together with the corresponding Program Change number.



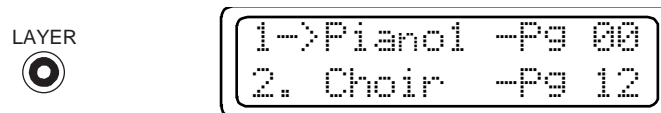
**Changing the Volume:** The Volume of the sound can be controlled with the Volume  $-/+$  buttons. When you press the Volume buttons, the volume setting appears in the display. Pressing these buttons repeatedly changes the setting in steps of one unit at a time. Holding these buttons down causes the Volume to scroll at high speed and stops when you release the button. A few seconds after release, the Volume display disappears and the screen returns to the Sound view mode.



### Layer mode

To mix or “layer” two sounds together, simply press the LAYER button. By default, the sound layered to the first is Piano 2 (p01), but you can change sound 2 as you wish.

**NOTE:** *This function will only work if your controller keyboard must be transmitting on the Expander’s “COMMON CHANNEL”. See page 28 for more details.*

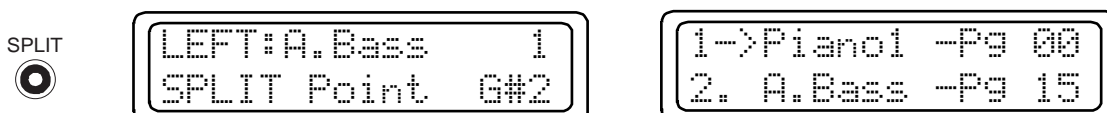


Although the volume levels of the two sounds can be adjusted separately using the Volume  $-/+$  buttons, there is a simple method of volume control which can be applied without any editing. When you press LAYER, the sound that was selected before pressing Layer will have the higher volume setting compared with the second sound.

### Split Mode

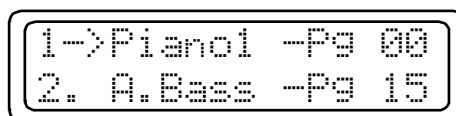
This button divides the connected keyboard into separate left and right sections with a different sound on each side. For an instant, the display shows the sound assigned to the left split and the current Split point setting. Shortly after, the display returns to the sound mode situation showing two sounds.

**NOTE:** *This function will only work if your controller keyboard must be transmitting on the Expander’s “COMMON CHANNEL”. See page 28 for more details.*



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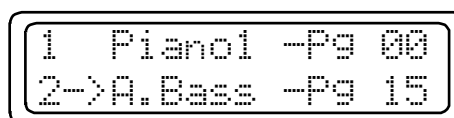
After pressing SPLIT, any sound you select will affect only the sound on the right side of this split. The small arrow in the display shows which sound is selected for a sound change.



*Selected sound shown by the arrow*

If you want to change the sound on the left side of the split, simply select a sound while holding the SPLIT button down. Also, while holding down the SPLIT button, you can also press a key on the connected MIDI keyboard to define a new split point.

An alternative way of assigning a different sound to the left split is as follows: select sound 2 with the page Down button, so that the arrow points to sound 2. Now, use the Perf/Sound +/- buttons to assign a different sound.



If you use this method of assigning sounds to sound 2, it is also possible to control the sound 2 volume. This method works for both Split and Layer Modes.

In all the above examples, these volume settings will be memorized when the Performance is saved.

## Performances

---

### What is a performance ?

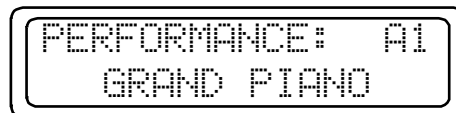
A Performance is simply a memory location in which a sound or combination of sounds has been stored. Usually, when you use an instrument like the RealPiano Expander, you will spend some time experimenting with different single sounds or combinations of sounds, different effects etc., until you really get the instrument sounding the way you want. At this stage, the instrument allows you to store all of the settings and changes which you have made into a memory called a PERFORMANCE.

The RealPiano Expander contains 64 programmable Performances. All of these have been programmed at the factory in order to provide you with various examples of sound combinations. You can also re-program these Performances to your liking in order to obtain custom sound combinations.

### Selecting the Performances

While the procedure for making and storing a performance is covered in the "Quick study guide" section of this manual, you might be interested in listening to some of those which we have created for you (default Perfs).

To recall these performances you need to switch from SOUNDS mode to PERF mode using the MODE button.



Once in PERF mode, you can select the factory performances by either using the PERF/SOUND  $-/+$  buttons (direct panel selection method), or by transmitting Program Change messages to RealPiano Expander from the controlling device on the Expander's Common channel. The 64 performances are stored in 8 banks A - H. Each bank contains 8 performances 1-8.

To return to SOUNDS mode, press MODE again.

## Changing the pitch of the instrument

---

### Transpose

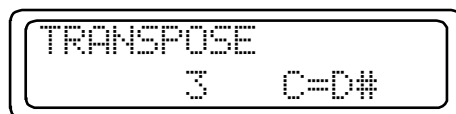
The TRANSPOSE b/# buttons are located to the left of the page Up/Down buttons.



Pressing either button will adjust the pitch of the instrument in half-step (semitone) increments, up to a maximum of  $\pm 12$  semitones (1 octave). Each press of the Transpose b (flat) button will reduce the pitch of the instrument by one half step. Each press of the Transpose # (sharp) button will increase the pitch of the instrument by one half step. In this way it is possible to play a piece in one particular key and transpose the instrument to sound in a different key.

When you use the Transpose buttons, the amount of transposition is displayed in the screen. For example, if you were to press the Transpose # button three times, the display would show a transpose value of “3” together with the note symbol showing the new value (C=D#).

This indicates that each note played would be pitch shifted up by three half steps. If you now play in the key of C, the instrument would sound in the key of D# (Eb). If you play in F, the instrument would sound in G# (Ab) and so on....

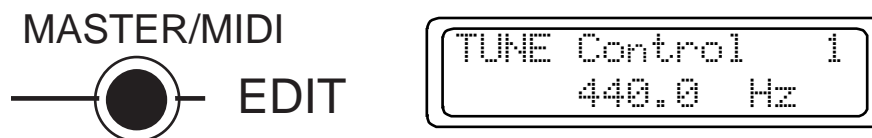


The current Transpose setting can be cancelled by pressing both TRANSPOSE buttons together.

This feature is most useful for “octave shifting” one of the sounds being used in layer or split situations. For one octave up, set the transpose value to +12. For one octave down set the value to -12.

### Tune

The TUNE function is in the first page of the MASTER/MIDI section. Press MASTER/MIDI to gain access to the TUNE function.



The TUNE feature allows the entire instrument to be fine tuned to match another instrument or backing track which may be slightly out of tune. With the TUNE function selected, press the data entry  $-/+$  button to decrease or increase the pitch.

The TUNE display uses a standard reference for the pitch of concert A = 440Hz. The available range is 427.5 - 452.5 in steps of 0.5 Hz. You can reset the tuning to A=440Hz by pressing both data entry  $-/+$  buttons together.

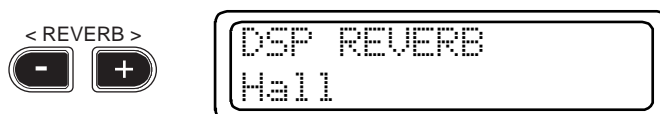
## Adding effects

---

### Reverb

#### Room, Stage, Hall

The RealPiano Expander offers three reverb presets. These can be selected by repeatedly pressing the REVERB +/- buttons until the reverb required appears in the display. The first position recalled by the button is the “no effect” display, which cancels the reverb effect. The amount and depth of these effects can be fully edited using the REVERB SEND and REVERB TIME functions under the DSP EDIT button. Once you enter DSP Edit, the parameters are selected with the page Up/Down buttons and modified with the data entry +/- buttons.

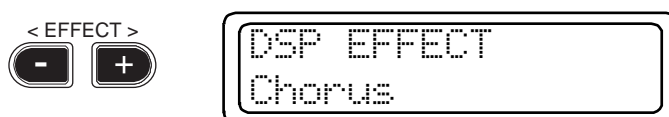


### Effects

#### Chorus, Tremolo, Phaser

The RealPiano Expander offers three effects presets. These can be selected by repeatedly pressing the EFFECTS +/- buttons until the desired effect appears in the display. The first position recalled by the button is the “no effect” display, which cancels the effect. The depth and rate of these effects can be fully edited using the EFFECT DEPTH and EFFECT RATE functions under the DSP EDIT button. Once you enter DSP Edit, the parameters are selected with the page Up/Down buttons and modified with the data entry +/- buttons.

**NOTE: The Tremolo effect has two modes - one for Stereo and another for Mono. If you are not hearing the Tremolo effect then you may need to switch modes. See “EFFECT RATE” on page 26 for more details.**



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# *Section 4*

## **Performance Edit**

---

When you construct a combination of sounds there are many powerful features available under the PERF EDIT button which may help you to tailor the sound combinations to your needs.

## Editing your Performance

---

The functions available under PERF EDIT are divided into a series of individual numbered screens. Pressing the PERF EDIT button the first time after powering up, you will see the first screen - "Transpose". For each PERF EDIT function, you will see the screen number in the top right corner of the display. You can select the next or previous screen by using the page Up/Down buttons. When you escape PERF EDIT, the RealPiano Expander memorizes the last page selected.

### Screens for layered and split Sounds

In most cases, each screen contains only one variable parameter which is modified with the data entry -/+ buttons. In some cases you will see duplicated screens. This occurs when two sounds are being used in either split or layer mode. For example, the Transpose screen will appear twice - first for sound 1 and then again for sound 2. When this occurs, the second instance of each screen displays the same screen number but with the addition of a "b".



## Perf Edit functions

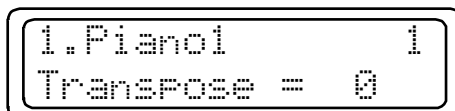
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Following is a list of the PERF EDIT screens in numeric order. If you see “(b)” by a screen number it indicates that there will be two instances of this screen when a split or layer is being used.

### Transposing the Sounds

#### 1(b). Transpose

In the top line of the screen you will see the name of the sound currently selected.



The pitch of the currently displayed sound can be transposed by simply using either the TRANSPOSE b/# buttons to the left of the display or the data entry +/- buttons to the right of the display. This function is useful to apply any kind of transposition in split or layered situations. An octave shift can be achieved by setting the transpose value to -12, (one octave lower than normal) or +12, (one octave higher than normal). If only one sound is being used, page 1b will not appear.

### Assigning pedal functions

#### 2. Pedal 1 Function

#### 3. Pedal 2 Function

When a foot pedal is connected to the Pedal 1 or Pedal 2 jack, it can perform a number of different functions. These screens are used to select the function of your choice for each pedal respectively. Each jack can accept either a switch type pedal or a continuous type (volume) pedal. Whenever a pedal is inserted into one of the available jacks, the instrument performs an “auto-detect” routine and automatically figures out which type of pedal has been inserted. Therefore the functions available in these menus will depend upon which type of pedal has been detected in each jack. The available functions are as follows;

#### ***IF A SWITCH TYPE PEDAL HAS BEEN CONNECTED;***

<b>OFF</b>	The pedal has no function.
<b>DAMPER</b>	The pedal functions like the “right pedal” of a piano - providing a sustain effect to the notes being played.
<b>SOSTENUTO</b>	The pedal functions like the centre pedal of a grand piano - sustaining only those notes which were being held down while the pedal was pressed.
<b>SOFT</b>	The pedal functions like the “left pedal” of a piano - softening the tone of the instrument
<b>START/STOP</b>	Duplicates the PLAY/STOP button of a sequencer connected to the expander.
<b>PERF +</b>	When the pedal is pressed the next PERFORMANCE is selected.
<b>PERF -</b>	When the pedal is pressed the previous PERFORMANCE is selected.

#### ***IF A CONTINUOUS (VOLUME) TYPE PEDAL HAS BEEN CONNECTED;***

<b>OFF</b>	The pedal has no function.
------------	----------------------------

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**VOLUME** The pedal controls the overall volume of the assigned sound with a range of 0 - 127.

**EXPRESSION** The pedal controls the overall volume of the assigned sound but the maximum level available will be equal to the volume level set for that sound. For example; if piano and strings are mixed with the strings level set at 75, the expression pedal will sweep from 0 to 75.

#### **4. Pedal 1 Assign**

#### **5. Pedal 2 Assign**

#### **6. Damper Assign**

Using these functions, you can choose which of the selected sounds the pedals will affect. In each menu you can assign the pedal to Sound 1, Sound 2 or Sound 1 & 2. For example, if you mixed Piano and Strings and you wanted the damper pedal to sustain the piano but not to affect the strings, you would set the DAMPER ASSIGN screen to “Sound 1” using the data entry +/- buttons.

#### **7. Auto Wah-Wah**

Auto Wah-Wah is a classic effect from the vintage keyboard era. The effect can be applied to a single sound or to either of the two sounds in a layer or split. Use the data entry +/- buttons to assign the effect. The “Auto Wah-Wah” effect is particularly effective on CLAVI and E. PIANO sounds.

#### **8. Microtuning**

This feature allows you to select from a variety of alternative tunings (also called ‘Scales’ or ‘Temperaments’). The selection available is as follows;

**EQUAL** Equal temperament tuning.

**PIANO 1** Preferred Stretch tuning method adopted by piano tuners.

**PIANO 2** Another popular tuning method favoured by piano tuners.

**MEANTONE** Actually, “Meantone C”. A mathematically accurate tuning to optimize the notes of the C scale.

**KIRNBERGER** Popular alternate classical tuning.

**TARTINI-VALOTTI** Popular alternate classical tuning.

#### **9. Detune**

*NOTE: This function is only available when a layered or split sound is being used.*

Increasing the DETUNE value with the data entry +/- buttons will detune sound #1 by the number of cents displayed. Lower values are useful for creating a natural chorus effect between two sounds. At higher values a “Honky Tonk” effect can be achieved.

#### **10. Delay Snd 2**

*NOTE: This function is only available when a layered sound is being used.*

This feature allows you to apply a delay to the second sound in a layer. In this way, some useful delay effects can be achieved without having to use the effects section, (leaving that section free to apply another effect).

Choose the desired value with the data entry +/- buttons. The value shown represents the number of milliseconds which will elapse before the second sound is heard.

---

# *Section 5*

## **DSP Edit Functions**

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The DSP EDIT button allows you to the effects parameters of the two Digital Effects units: Reverb and Effects.

## DSP Edit functions

---

### 1(b). Reverb Send Level

If a reverb effect has been selected, this function can be used to control how much reverb is applied to each sound being used. It works in the same way as an “Effect Send” control on a mixer board. Use the data entry  $-/+$  buttons to change the value of the parameter.

When two sounds are being used, either in split or layer mode, screen 1 controls the reverb amount for Sound 1 and screen 1b controls the reverb amount for Sound 2. If only one sound is being used then screen 1b is not displayed.

### 2. Reverb Time

If a reverb effect has been selected, this function can be used to control the “reverb time” or the delay amount for the particular reverb preset. Basically this allows you to make the overall effect larger or smaller than the factory programmed settings. Use the data entry  $-/+$  buttons to change the value of the parameter.

For example, if you select “HALL” in the reverb section, adjusting the reverb time allows you to create the effect of a larger hall or a smaller hall according to your preference.

### 3(b). Effect Send Level

This function works in exactly the same way as Reverb Send. If an effect has been chosen from the EFFECT group, you can use this function to control how much of the effect is applied to each sound being used. Use the data entry  $-/+$  buttons to change the value of the parameter.

When two sounds are being used, either in split or layer mode, screen 3 controls the reverb amount for Sound 1 and screen 3b controls the reverb amount for Sound 2. If only one sound is being used then screen 3b is not displayed.

### 4. Effect Depth

This function allows you to control the maximum amount of effect available. If you find, for example, that when you adjust the EFFECT SEND for a particular sound you are still not hearing enough of the effect, you need increase the overall effect depth in this screen. Use the data entry  $-/+$  buttons to change the value of the parameter.

### 5. Effect Rate

This function allows you to adjust the speed at which the selected effect “moves” or modulates. The setting is a general parameter which affects a single sound as well as split or layered sounds in the same manner. Use the data entry  $-/+$  buttons to change the value of the parameter.

*Note: The Tremolo effect has two different modes for Stereo and Mono situations, allowing you to adapt the RealPiano Expander to different amplification systems.*

*When you select this effect and enter the EF. RATE page, the display shows the word “STEREO”; the modulation speed can be modified with the data entry  $+/-$  button within the range 0 ... 11. After the value 11, the display shows “MONO”; at this point you can change the modulation speed (within the range 0 - 11), but the effect will be optimized for mono systems.*

### 6. Brilliance

In this page you can adjust the brightness of the sounds selected in the Performance. Using the data entry  $+/-$  buttons, you can choose between three different settings:

- **Normal:** linear response (flat)
- **Mellow:** Moderate enhancement of the bass frequencies and a slight cut of the high frequencies; “soft” response (Loudness).
- **Sharp:** Enhances the high frequencies, useful when you need a sound to “cut through” the mix.

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# *Section 6*

## **MASTER/MIDI Functions**

The MASTER/MIDI button contains the MIDI controls of the instrument plus a number of important "Master Control Features".

## MIDI functions

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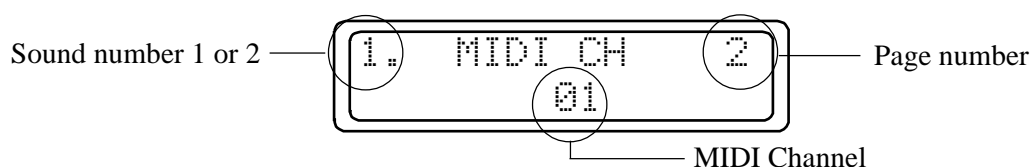
### 1. Tune control

This function allows the entire instrument to be tuned to match another instrument or backing track which may be slightly out of tune. The tuning display uses a standard reference for the pitch of concert A = 440Hz. The available range is 427.5 - 452.5.

### 2. 1. Midi Channel

This allows you to change the “primary MIDI channel” for the instrument. This is both the send and receive channel for the instrument when only one sound is being used across the entire keyboard.

In LAYER mode, this becomes the MIDI channel of Sound #1 and in SPLIT mode it becomes the MIDI channel of the right hand or upper sound.



### 3. 2. Midi Channel

This allows you to change the “secondary MIDI channel”. This channel is only in effect when more than one sound is being used - in LAYER or SPLIT modes. The selected channel will be both the send and receive channel for sound #2 - the second sound of a layer or the left hand or lower sound of a split.

### 4. MIDI Common Channel

This channel must be used for the correct operation of Layer and Split modes. By setting your controller keyboard to this channel you can use all three modes - Single, Split and Layer -, without needing to change any other MIDI settings. If you do not use the Common Channel, the Expander will operate only in normal “Multi-Timbral” mode where Splits and Layers can be achieved only by mapping the MIDI zones of your controller keyboard appropriately.

This channel is also used for the sending and receiving of PERFORMANCE messages. A program change message received on the common channel will not change one of the individual sounds on the expander. Instead, it will be interpreted as a PERFORMANCE CHANGE message. The messages that travel on the Common channel override the MIDI channels of the single sounds in order to select them via the Performances.

---

## 5. Midi IN Filters

This function allows you to block the reception of certain MIDI messages which might be unwanted on some occasions.

For example; if you were playing a midi file from an external sequencer using the ELECTRIC PIANO 2 sound on the RealPiano Expander, you might find that every time you start playback of the sequence, it switches to PIANO 1. This happens because the sequence includes a Program Change message at the beginning of the song. To overcome this problem, you would select the MIDI IN FILTER for “Program” messages. This means that the instrument would then ignore any Program Change messages that it receives. These messages are said to have been “filtered out” of the incoming MIDI data stream.

The messages that can be filtered are as follows;

<b>Program</b>	-	Midi program change messages
<b>Volume</b>	-	Midi volume message
<b>All Cont.</b>	-	All midi controller functions, (volume, modulation, pan etc.)
<b>Prog + Vol</b>	-	Program change and volume
<b>Pedals</b>	-	Hold, sustain, sostenuto, soft
<b>Pitch</b>	-	Pitch bend

## 6. Midi OUT Filters

This function is used to stop the instrument from transmitting certain MIDI messages which might be unwanted on some occasions.

The messages that can be filtered are as follows;

<b>Program</b>	-	Midi program change messages
<b>Volume</b>	-	Midi volume message
<b>All Cont.</b>	-	All midi controller functions, (volume, modulation, pan etc.)
<b>Prog + Vol</b>	-	Program change and volume
<b>Pedals</b>	-	Hold, sustain, sostenuto, soft

## Master functions

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### 7. Computer

Here you can set the operating mode for the computer serial port on the instrument's back panel. This port allows two-way communication between the instrument and a PC without the need for a MIDI interface. A cable to connect the instrument to your IBM or Macintosh serial port can be obtained from your Generalmusic dealer.

There are three modes which can be selected from this screen. Select the one which is most compatible with your type of computer.

- |                           |   |                                    |
|---------------------------|---|------------------------------------|
| <b>1. Apple Macintosh</b> | - | Any Macintosh computer             |
| <b>2. PC Fast</b>         | - | 80486, Pentium or faster processor |
| <b>3. PC Slow</b>         | - | 80386 or earlier model             |

### 8. Lock MIDI

This feature allows you to "lock" the MIDI settings of the instrument. Normally, the MIDI channels and MIDI filters are memorized for each performance. This means that, as you recall different performances, the instrument's MIDI settings will change according to the way they were set when that performance was stored.

This function allows you to disable these changes, permitting you to select any performance without changing the current MIDI settings. After you have switched this function on, you may adjust the MIDI settings as you wish. Any subsequent changes that you make to the MIDI settings will remain in effect until you change them again or until you turn off the "Lock MIDI" function.

### 9. Lock Pedals

This feature allows you to "lock" the functions of the three foot pedals. Normally, these pedal functions are memorized for each performance. This means that, as you recall different performances, the pedal functions will change according to the way they were set when that performance was stored.

This function allows you to disable these changes, permitting you to select any performance without changing the pedal settings. After you have switched this function on, you may adjust the pedal settings as you wish. Any subsequent changes that you make to the pedal settings will remain in effect until you change them again or until you turn off the "Lock Pedals" function.

### 10. Display Contrast

Use this function to improve the visibility of the display screen under different lighting conditions. A higher value will give a stronger contrast.

### 11. Restore Perfs

This feature allows you to restore all of the factory pre-programmed performances.

*NOTE: Doing this will destroy any performances which you have saved into the instrument yourself.*

To activate the function, press the data entry + button to show the "All Performances" message on the screen. Then press the Page up button. Respond to the "Press ^ to restore" prompt by pressing the Page up button once more.



---

## 12. Midi Dump

Using the MIDI dump feature, you can send all of the information currently held in the instrument's memory to an external storage device such as a MIDI sequencer, data filer, librarian etc. Refer to the instructions of your MIDI software, sequencer or data filer for instructions on how to receive MIDI dumps from other equipment. Here is the procedure for sending and capturing a MIDI dump;

1. **Connect a MIDI cable between the RealPiano Expander MIDI OUT and the storage device's MIDI IN.**
2. **Access the MIDI dump feature from the MASTER/MIDI button and use the data entry +/- buttons to select "On".**
3. **Press the page Up button. The screen should show as below;**



```
Ready for Dump!  
Press ^ to start
```

4. **Prepare the storage device to receive a MIDI dump.**
5. **Respond to the "Ready for dump - press ^ to start" by pressing the page Up button once more.**

You will see the dump progress screen until the dump is complete. The time taken for a MIDI dump depends on the amount of data being transferred.

### To receive a Dump

When you want to send the dumped data back into the RealPiano Expander, it is not necessary to select any special function. Simply connect a cable between the storage device's MIDI OUT and the instrument's MIDI IN and begin sending the data. The screen of the RealPiano Expander will not change while a dump is being received. After the dump is completed you will immediately be able to use your performances, etc. which were transferred during the dump.

## 13. Numbering

This function allows you to select your preferred program numbering system for programs 0-127 or 1-128, to adapt the RealPiano expander to the two principal systems used for Program change numbers.

(In some sound modules and keyboards, the first sound is referred to as program #1 and the last sound as #128. Other systems use the numbering system from #0 - #127).



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# *Section 7*

**Reference section**

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## Technical specifications - RealPiano Expander

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<b>Operating modes</b>	Single Split (programmable), Layer - max. 2 sounds Demo
<b>Sound generation</b>	64 oscillators + Dynamic Filter Polyphony: 64 notes max., 32 notes min.
<b>Sounds</b>	32 sounds
<b>Performances</b>	64 Programmable Performances
<b>Digital Effects Processors</b>	Reverb (Room, Stage, Hall) Effects (Chorus, Tremolo, Phaser)
<b>Edit</b>	Performance DSP Master/MIDI
<b>Connections</b>	Midi In/Out/Thru, Output: Left, Right/M Programmable pedals: Ped1, Ped2, Damper, Phones, Computer, 12V dc in.
<b>Display</b>	2 x 16 backlit
<b>Dimensions</b> <b>Weight</b>	220 x 45 x 245 mm 1,5 Kg
<b>Accessories (supplied)</b> <b>Accessories (optional)</b>	Power supply unit (12 Volt) Rack adapter; triple pedal unit.

## Technology

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The RealPiano Expander features three unique applications of sound design technology including “physical modeling” to simulate the internal characteristics of a piano soundboard.

### Natural string resonance

The first physical modeling technology, patented by Generalmusic as “*Natural String Resonance*”, allows all of the complex harmonics normally produced by the piano soundboard to be faithfully reproduced. This means that a note’s individual sound will always be slightly different depending upon which other notes are currently being held, (and consequently which strings are un-damped and free to resonate in sympathy). If you hold a low “C” and let the note decay, the strings for that note are still un-damped for as long as the key remains depressed. If you now strike another “C” higher up the keyboard, (staccato), you will hear the sympathetic resonance of the low “C” strings in response to the new note played. This natural effect replicates exactly what happens on a grand piano. If you experiment with different combinations of notes you will hear harmonic colors particular to each. Because this effect is produced by physical modeling and not by samples or DSP effects, the result is a musically and technically accurate simulation of a piano’s soundboard and virtually infinite combinations of harmonics can be produced.

### Damper physical model

The second technology, patented by Generalmusic is “*Damper Physical Model*”. Although it looks like an ordinary damper footswitch, the special continuous damper pedal for the RealPiano Expander is not a switch but, instead, a continuous pedal which accurately simulates the effect of the dampers being moved closer to or further away from the strings of the piano. Because of this, effects such as partial or half damping can be achieved. The dampers can even be slowly “squeezed” back against the strings. When the damper pedal is depressed, the damper physical model will simulate the effect of sympathetic resonances being produced by the un-damped strings. Even if you are using a standard switch type pedal, you can hear the effect of the Damper Physical Model by comparing the sounds of notes played in the highest octave of the instrument with and without the damper pedal depressed.

### Advanced release technology

The third and final technology applied to the piano sounds in the RealPiano Expander is “*Advanced Release Technology*”, (patent pending). Sample based electronic pianos traditionally use envelope generators to control what happens when a key is released. This simply allows the sample loop to continue for a set period of time until it’s amplitude is reduced to zero by the envelope generator. In an acoustic piano, vibrating strings are silenced by the action of a damper making contact with the string. When this happens, depending on the velocity with which the key was struck and the length of the string itself, certain frequencies are damped earlier than others producing a distinctive harmonic “ring” as the different frequencies in the string’s tone dissipate throughout the piano soundboard. The Key Release Model in the RealPiano Expander simulates exactly this feature with complete accuracy throughout the note range.



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## V

Volume 24, 29  
Volume +/- buttons 11

## W

Wah-Wah 24  
What is a Performance ? 18



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# *Appendix*

# *Appendix*

# *Apéndice*

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The Appendix contains all information regarding MIDI implementation for REAL PIANO EXPANDER.

L'Appendix contient des informations relatives aux implémentations MIDI de REAL PIANO EXPANDER.

El Apéndice contiene información relativa a las implementaciones MIDI para REAL PIANO EXPANDER.

# MIDI Implementation Chart

MANUFACTURER: GENERALMUSIC s.p.a.

MODEL: PRO EXP

Date:07/03/97  
Version: 1.00

FUNCTION	Transmitted	Recognized	Remarks
<b>Basic</b> Default	1	1	
<b>Channel</b> Changed	1-16	1-16	
<b>Mode</b> Default	Mode 3	Mode 3	
Messages Altered	X *****	X X	
<b>Note</b> Number True Voice	9-120 *****	9-120 9-120	
<b>Velocity</b> Note ON	x	o	
Note OFF	x	o	
<b>After</b> Key's	x	x	
<b>Touch</b> Ch's	x	x	
<b>Pitch</b> Bender	x	o	
<b>Control</b> Change	0 Bank select MSB 7 Volume 11 Expression 64 Damper pedal 66 Sostenuto 67 Soft pedal	6 Data Entry 7 Volume 11 Expression 12 Effect Control 1 13 Effect Control 2 64 Damper pedal 66 Sostenuto 67 Soft pedal 91 Effects 1 92 Effects 2 93 Effects 3 117 ( key on ) 118 ( key off ) 120 All sound off 121 Reset all controllers	Reverb type Effect type  (1) (2) (3) (4) (4)
<b>Program</b> Change True number	0-31 *****	0-31 0-31	(1)
<b>System</b> Exclusive	o	o	
<b>System</b> Song Position	x	x	
Song Select	x	x	
<b>Common</b> Tune	x	x	
<b>System</b> Clock	x	x	
<b>Real Time</b> Commands	o	x	
<b>Aux</b> Local On/Off	x	x	
<b>Messages</b> All notes Off	o	o	
Active Sensing	o	o	
Reset	x	x	
<b>NOTES</b>	(1) On common MIDI channel is interpreted as <i>reverb depth</i> . On section MIDI channel is interpreted as <i>reverb send</i> . (2) On common MIDI channel is interpreted as <i>effect rate</i> . (3) On common MIDI channel is interpreted as <i>effect depth</i> . On section MIDI channel is interpreted as <i>effect send</i> . (4) On common MIDI channel are interpreted as GENERALMUSIC special Control Changes. See following table. (5) Cn xx (0 ≤ 'xx' ≤ 31) is recognized on section MIDI channels 'n' as program change. Cn xx (0 ≤ 'xx' ≤ 63) is recognized on common MIDI channel 'n' as performance change.		

o: Yes x: No

# GENERALMUSIC Special Control Changes

## PRO EXP KEYS selection

Bn 75 00	Push key SPLIT	Bn 76 00	Release key SPLIT
Bn 75 01	Push key LAYER	Bn 76 01	Release key LAYER
Bn 75 02	Push key TRANSPOSE b	Bn 76 02	Release key TRANSPOSE b
Bn 75 03	Push key TRANSPOSE #	Bn 76 03	Release key TRANSPOSE #
Bn 75 04	Push key D	Bn 76 04	Release key D
Bn 75 05	Push key —	Bn 76 05	Release key —
Bn 75 06	Push key VOLUME -	Bn 76 06	Release key VOLUME -
Bn 75 07	Push key VOLUME +	Bn 76 07	Release key VOLUME +
Bn 75 08	Push key REVERB -	Bn 76 08	Release key REVERB -
Bn 75 09	Push key REVERB +	Bn 76 09	Release key REVERB +
Bn 75 0A	Push key EFFECT -	Bn 76 0A	Release key EFFECT -
Bn 75 0B	Push key EFFECT +	Bn 76 0B	Release key EFFECT +
Bn 75 0C	Push key PERF/SOUND -	Bn 76 0C	Release key PERF/SOUND -
Bn 75 0D	Push key PERF/SOUND +	Bn 76 0D	Release key PERF/SOUND +
Bn 75 0E	Push key +	Bn 76 0E	Release key +
Bn 75 0F	Push key -	Bn 76 0F	Release key -
Bn 75 10	Push key PERF	Bn 76 10	Release key PERF
Bn 75 11	Push key MODE	Bn 76 11	Release key MODE
Bn 75 12	Push key DSP	Bn 76 12	Release key DSP
Bn 75 13	Push key STORE	Bn 76 13	Release key STORE
Bn 75 14	Push key MASTER/MIDI	Bn 76 14	Release key MASTER/MIDI
Bn 75 15	Push key DEMO	Bn 76 15	Release key DEMO

## PRO EXP EFFECTS selection

Bn 0C 00	Reverb OFF	Bn 0D 00	DSP Effects OFF
Bn 0C 01	Reverb ROOM	Bn 0D 01	DSP Effects CHORUS
Bn 0C 02	Reverb STAGE	Bn 0D 02	DSP Effects TREMOLO
Bn 0C 03	Reverb HALL	Bn 0D 03	DSP Effects PHASER

---

## Sound table

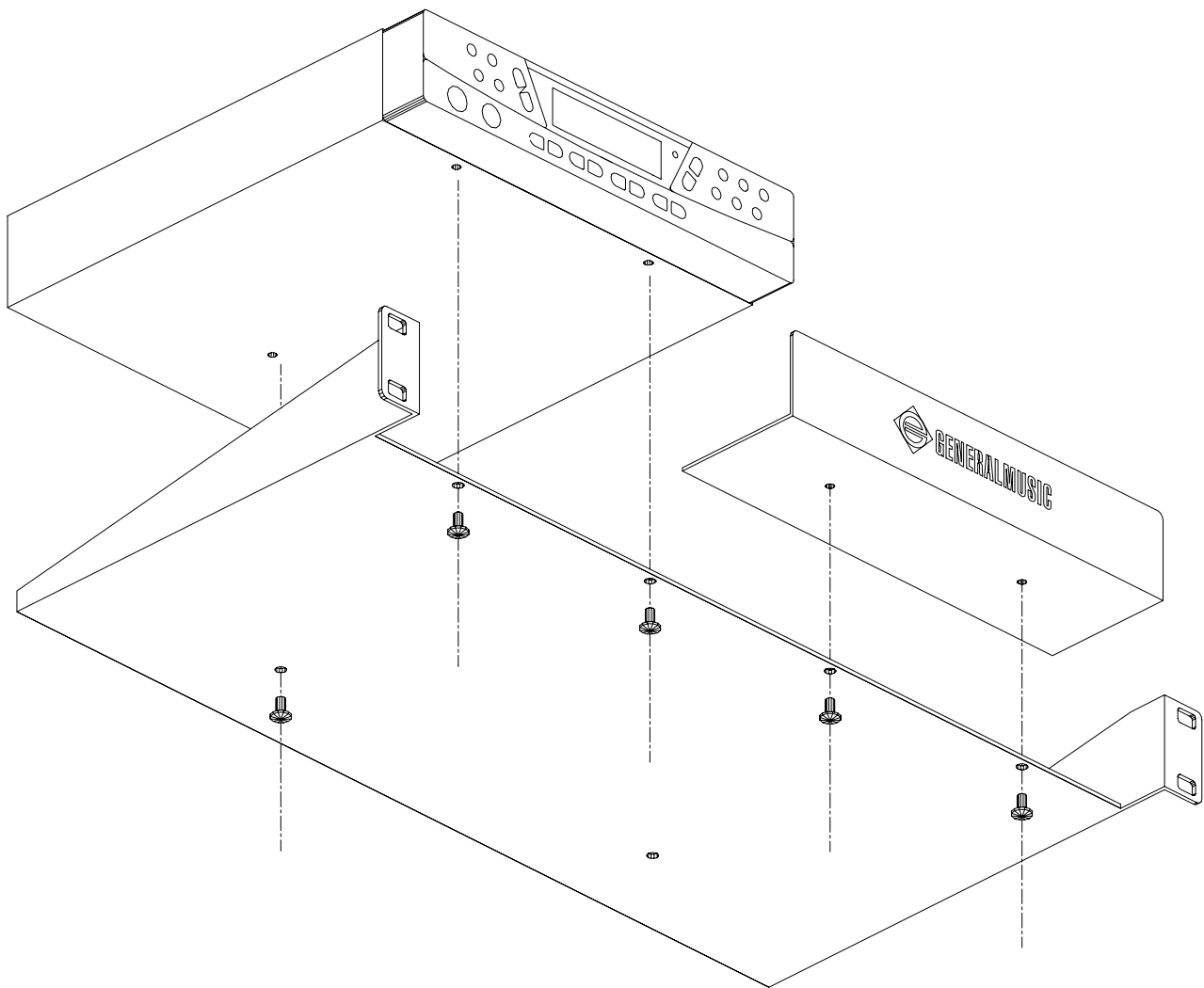
<b>PC</b>	<b>Sound</b>		
00	Piano1	16	RockPian
01	Piano2	17	HonkyTnk
02	ElGrand1	18	ElGrand2
03	Rhodex1	19	Rhodex2
04	Wurlitz1	20	Wurlitz2
05	DxPiano1	21	DxPiano2
06	Clavin.1	22	SynClavi
07	Vibes	23	Marimb
08	Harpsi1	24	Harpsi2
09	Organ1	25	Organ2
10	Pipe1	26	Pipe2
11	Strings	27	AtkStrin
12	Choir	28	AtkChoir
13	MuteSynt	29	SlowSynt
14	StrBell	30	SlowBell
15	A.Bass	31	E.Bass

## Performance table

Performance	Bank/N.	PC	Sound comb.	Mode	Performance	Bank/N.	PC	Sound comb.	Mode
GrandP	A1	00	Piano1	Single	Wurlytz1	E1	32	Wurlitz1	Single
Shepherd Moods	A2	01	Piano1, Choir	Layer	Wurlytz2	E2	33	Wurlitz1	Single
Scrap Metal	A3	02	EIGrand1, Rhodex2	Layer	Wurly/Stack1	E3	34	Wurlitz1, DxPiano2	Layer
Tone Grit	A4	03	Clavin1, Clavin1	Layer	Wurly/Stack2	E4	35	Wurlitz1, Rhodex1	Layer
80's Ballad	A5	04	DxPiano, EIGrand1	Layer	Wurly/Stack3	E5	36	Wurlitz1, Rhodex2	Layer
Pop Piano	A6	05	EIGrand1, StrBell	Layer	Wurly/Stack4	E6	37	Wurlitz2, EIGrand1	Layer
Early 70's	A7	06	Rhodex2, Wurlitz1	Layer	Wurly/Stack5	E7	38	Wurlitz2, DxPiano2	Layer
Lounge Lizard	A8	07	Piano2, A.Bass	Split	Wurly/Stack6	E8	39	Wurlitz1, E.Bass	Layer
Piano/Pad1	B1	08	Piano1, MuteSynt	Layer	Dx/ThinPiano1	F1	40	DxPiano1	Single
Piano/Pad2	B2	09	Piano1, StrBell	Layer	Dx/ThinPiano2	F2	41	DxPiano1, DxPiano1	Layer
Piano/Pad3	B3	10	Piano1, SlowSynt	Layer	Dx/ThinPiano3	F3	42	DxPiano1, DxPiano2	Layer
Piano/Pad4	B4	11	Piano1, SlowBell	Layer	Dx/ThinPiano4	F4	43	DxPiano2, Rhodex2	Layer
Piano/Strings1	B5	12	Piano1, Strings	Layer	Dx/Layer1	F5	44	DxPiano1, MuteSynt	Layer
Piano/Strings2	B6	13	Piano1, AtkStri	Layer	Dx/Layer2	F6	45	DxPiano1, Strings	Layer
Piano/Choir1	B7	14	Piano1, Choir	Layer	Dx/Layer3	F7	46	DxPiano1, Choir	Layer
Piano/Choir2	B8	15	Piano1, AtkChoir	Layer	MixedThin	F8	47	DxPiano2, Vibes	Layer
Electric Grand	C1	16	EIGrand2	Single	Clavinet	G1	48	Clavin1	Single
Electric/Stack2	C2	17	EIGrand1, Clavin1	Layer	Clavinet/Phase	G2	49	Clavin1	Single
Electric/Stack3	C3	18	EIGrand2, Rhodex1	Layer	Clavinet/Stack1	G3	50	Clavin1, Harpsi1	Layer
Electric/Stack4	C4	19	EIGrand2, DxPiano1	Layer	Clavinet/Stack3	G4	51	Clavin1, SynClavi	Layer
Electric/Stack5	C5	20	EIGrand1, DxPiano2	Layer	Strings	G5	52	Strings, MuteSynt	Layer
Electric/Stack6	C6	21	EIGrand2, Wurlitz1	Layer	Barock	G6	53	Harpsi2, Strings	Layer
Electric/Stack7	C7	22	EIGrand1, SlowBell	Layer	Chiffer Pad	G7	54	StrBell, Choir	Layer
Electric/Stack8	C8	23	EIGrand1, Vibes	Layer	Warm Pad	G8	55	SlowSynt, Strings	Layer
Rhodex1	D1	24	Rhodex1	Single	BigPad1	H1	56	Choir, StrBell	Layer
Rhodex2	D2	25	Rhodex1	Single	BigPad2	H2	57	SlowBell, Strings	Layer
Rhodex3	D3	26	Rhodex2	Single	BigPad3	H3	58	Pipe1, SlowBell	Layer
Rhodex4	D4	27	Rhodex1	Single	Hammond1	H4	59	Organ1	Single
Rhodex5	D5	28	DxPiano1, Rhodex1	Layer	Hammond2	H5	60	Organ1, Organ2	Layer
Thin/Choir	D6	29	Rhodex2, Choir	Layer	Hammond3	H6	61	Organ1, Pipe	Layer
Rhodex/Pad	D7	30	Rhodex1, MuteSynt	Layer	Church1	H7	62	Pipe1, ExtBk	Layer
Super Rhodex	D8	31	Rhodex1, Rhodex2	Layer	Church21	H8	63	Pipe1, Pipe2	Layer

# RACK ASSEMBLY

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

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

**CAUTION:** *Changes or modifications to this product not expressly approved by the manufacturer could void the user's authority to operate this product.*

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