Real-time effects

SK-04-0389

Using real-time effects

When you perform or record using real-time effects, each note can have a quality and loudness slightly different from the one preceding it and the one following it.

Expression input controllers

You control the real-time effects of the keyboard timbre using **expression input controllers.** Some of these controllers are external, such as a pedal or the mod wheel. Some are internal, such as the velocity controller which responds to the speed of your keyboard attack. All controllers are used to control dynamics and other timbre qualities on a note-by-note basis. Buttons for each controller are located in the fifth panel of the keyboard control panel under EXPRESSION INPUTS.

The PITCH WHEEL is a special controller which is always patched to partial tuning and to all partial timbres. It does not have a button.

controller	keyboard effect
velocity	Timbre affected by the speed of your keyboard attack.
pressure	Timbre affected by the amount of after-attack pressure applied.
pedal1 and **pedal2**	Timbre affected by how far the pedal is depressed.
mod wheel	Timbre affected by the rotation of the inside wheel at the left of the keyboard.
ribbon	Timbre affected by the position of your finger on the black felt ribbon just above the keyboard.
keyboard control voltage	Timbre affected by where you are playing on the keyboard. The higher you play the more voltage produced.
breath controller	Timbre affected by amount of breath blown into breath controller.
pitch wheel	Timbre affected by the rotation of the outside wheel at the left of the keyboard.

Using real-time effects (con't)

Patching controllers to parameters and partial timbres

You program a timbre for real-time effects by making a three-way "patch" between a controller, one or more timbre parameters and one or more partial timbres of the keyboard timbre. Patching real-time effects is similar to using patch cords to connect different pieces of equipment.

You can also add real-time effects to the keyboard timbre in the inverted mode. For example, if you patch PRESSURE to PARTIAL VOLUME in the normal fashion, then the harder you press the keys, the louder the sound. If you patch PRESSURE to PARTIAL VOLUME in the inverted fashion, then the harder you press the keys, the softer the sound will be.

Many timbres are already programmed for real-time effects. When you recall a timbre, any controller that has already been patched to a timbre parameter lights up. When you press the lit controller button, the **timbre parameter** button(s) to which that controller is patched lights up and remains lit so long as the controller button is held. The **partial timbre** button(s) to which it is patched blinks and remains blinking so long as the controller button is lit.

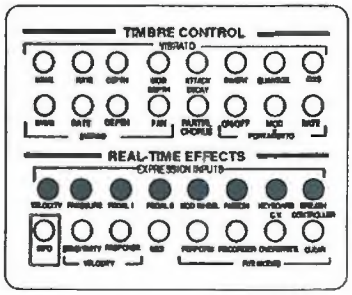
If the parameter has been patched to the controller in the inverted mode, then the parameter button blinks.

Whenever you press a controller button, whether or not it has been previously patched, all of the parameter buttons which are available for patching flicker. The buttons for these parameters are marked with a small white dot immediately to the right of the button.

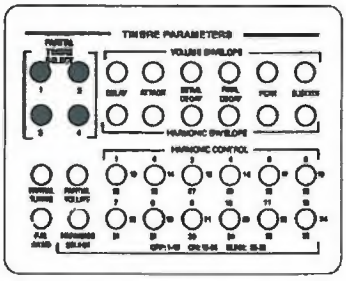
Parameter button states when a controller button is pressed

button state	meaning
on-steady	The controller is already routed to the parameter in the normal fashion.
blinking	The controller is routed to the parameter in the inverted mode.
flickering	The parameter is available for patching.

Using real-time effects (con't)



EXPRESSION INPUT CONTROLLER BUTTONS panel 5



PARTIAL TIMBRE SELECT buttons panel 1

Adding real-time effects to the keyboard timbre

1. Press the desired controller button and hold it down.

   The button lights and the display window shows:

   PRESS BUTTONS
   FOR RTE PATCHING

   One or more PARTIAL TIMBRE buttons starts blinking. The parameter buttons are on, blinking or flickering.

2. Press one or more PARTIAL TIMBRE button(s) to select the partial timbre(s) you want the real-time effects patched to.

3. Continue to hold down the controller button while you select the desired parameter. Press the button once for a normal patch or twice for an inverted one.

Removing real-time effects from the keyboard timbre

To remove a single controller, parameter or PARTIAL TIMBRE from a patch:

1. Press and hold the CLEAR button.

   All patched controller, parameter and PARTIAL TIMBRE buttons light.

2. Press the controller, parameter or PARTIAL TIMBRE button(s) you want to clear.

   The patch connecting that controller, parameter or PARTIAL TIMBRE is no longer in effect. Other patches and all parameter settings remain in effect.

To remove all controller patches simultaneously:

1. Press and hold the CLEAR button.

2. Run a finger across all eight controller buttons.

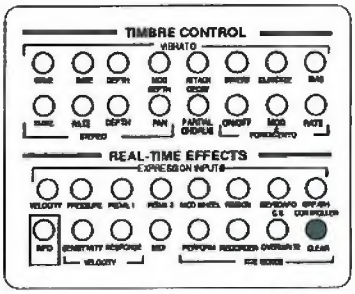
   All controller patches are cleared. Patches between the partial timbres and parameters remain in effect.

To remove only the partial timbre patches:

1. Press and hold the CLEAR button.

2. Press all four PARTIAL TIMBRE buttons (one at a time, simultaneously or in any fashion).

   All partial timbres are cleared of real-time effects patches. Patches between the controllers and parameters remain in effect.



CLEAR panel 5

Using real-time effects (con't)

Recording controller movements

When you record a sequence using real-time effects, you are recording the precise movements of the controllers. The speed of your attack, each movement of the pitch or mod wheel, each change in pressure of your after-attack touch is recorded with the sequence.

Since it is the controller movements rather than the actual changes in sound that you are recording, you may find unexpected changes in sound when you merge track timbres recorded with different controllers.

When a track containing real-time effects is bounced to an empty track, all real-time effects patching and controller movement is copied to the new track.

When a track containing real-time effects is bounced to a track containing the same patching, controller movements are averaged.

When a track containing real-time effects is bounced to a track containing different patching, patches and controller movement found only on the source track are added to the destination track. Controller movements present on both tracks are averaged.

Adding real-time effects to a previously recorded track

You can add real-time effects to a track recorded previously, whether or not the track timbre was programmed for real-time effects.

1. Make sure the keyboard timbre is the same as the track timbre. If it is not, press SKT and the appropriate TRACK SELECT button to bring the track timbre to the keyboard.

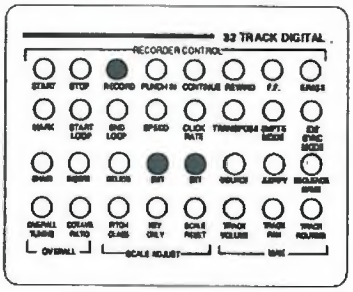
2. Patch one of the continuous controllers (pedal, mod wheel, ribbon or breath) to the desired parameter and partial timbre using the procedure described above.

3. SMT the keyboard timbre back to the track.

4. Press RECORD.

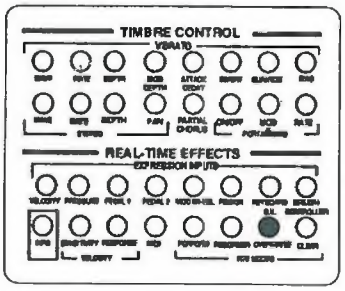
5. As the sequence plays, add real-time effects by moving the selected controller.

   If the track was recorded previously without the selected controller, then the controller movements are recorded as you make them. If the track was recorded previously with the same input controller, then the controller movements are averaged with the original controller movements unless you use the overwrite feature (see below). In either case, you hear the changes in the real-time effects as the sequence plays.



RECORD, SMT, SKT panel 2

Using real-time effects (con't)



OVERWRITE panel 5

Overwriting real-time effects

The OVERWRITE button is used to overwrite previously recorded controller movements. It can be patched to PARTIAL TUNING for PITCH WHEEL movements and any of the following expression input controllers:

PEDAL 1
PEDAL 2
MOD WHEEL
RIBBON
BREATH CONTROLLER

Note that these controllers are all continuous in nature and are not related to key location in any way. VELOCITY, PRESSURE and KEYBOARD CONTROL VOLTAGE are not overwritten using this function.

Overwriting previously recorded real-time effects

When you add notes to a track that already has real-time effects, the real-time effects of the new notes are averaged with the ones previously recorded. You can overwrite the recorded real-time effects so that only the last recorded real-time effects are added to the track.

1. Make sure the keyboard timbre is the same as the track timbre. If it is not, press SKT and the appropriate TRACK SELECT button to bring the track timbre to the keyboard.

2. Press and hold the OVERWRITE button.

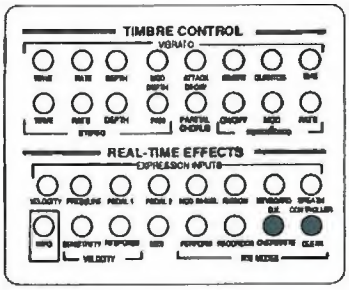
   The button lights, and the available controller buttons begin flickering.

3. Press the desired controller button.

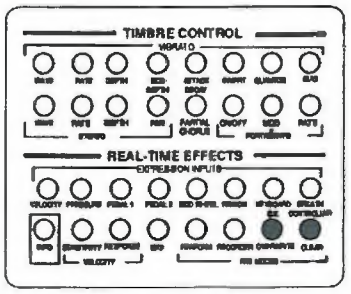
   The button lights.

4. Press RECORD and add the new notes.

   As you record, the new controller movements overwrite the previously recorded ones.



OVERWRITE, CLEAR
panel 5



OVERWRITE, CLEAR panel 5

Clearing overwrite assignments

To clear individual overwrite assignments:

1. Press and hold the OVERWRITE button.

   The selected controller buttons light.

2. Press the buttons of the controllers you want to clear.

   The selected buttons begin flickering and are no longer assigned for overwriting.

To clear all overwrite assignments:

1. Press and hold the CLEAR button.

2. Press the OVERWRITE button.

   The OVERWRITE button goes out and all assigned controllers are cleared.