Keyboard control panel
button summary

Button summary, panel 1

The buttons on the first panel of the keyboard control panel govern partial timbre parameters. Instructions for using these buttons are in the manual *FM Synthesis*.

partial timbre select buttons

Press until lit to select a partial timbre for modification.

Press until blinking to solo and select a partial timbre.

Press and hold, then recall a timbre. Only the selected partial timbre is recalled from the new timbre.

Press once after pressing **bounce** to select a partial timbre as a source for moving or copying.

Press once after pressing **bounce** and another **partial timbre** button to select a partial timbre as destination for moving or copying.

Press once while holding down an **expression input** button to patch the expression input controller to the partial timbre.

Press twice while holding down an **expression input** button to patch the expression input controller to the **partial timbre in** the inverted mode.
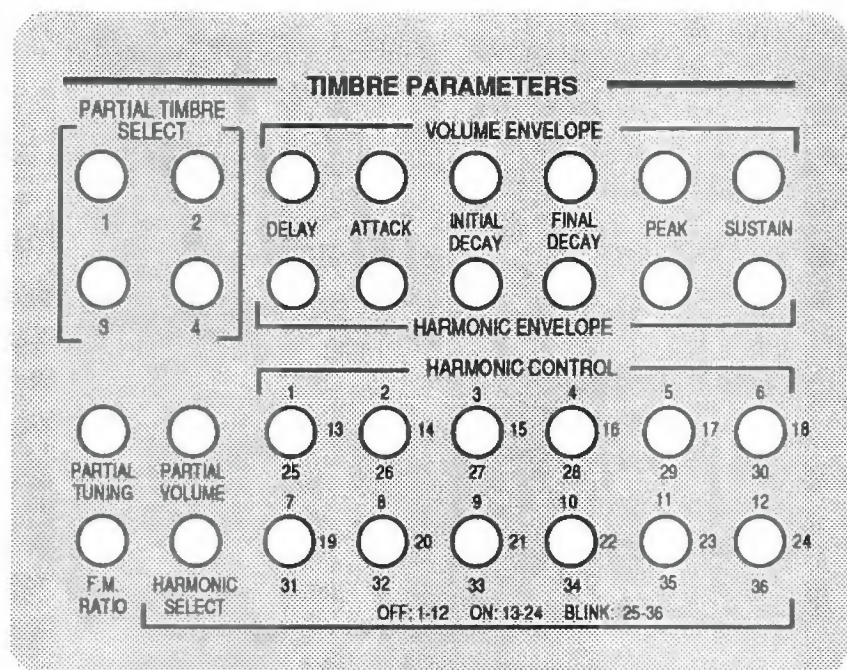
Hold down one or more buttons and press **start** to insert a timbre frame on the selected partial timbre(s).

Hold down one or more buttons and turn the control knob to select a timbre frame for programming on selected partial timbre(s).

Hold down one or more buttons and press **stop** to delete a selected timbre frame on selected partial timbre(s).

Hold down one or more buttons; press **bounce** followed by **start** to create a new timbre frame with the same parameters as the previous one.

TIMBRE PARAMETERS

PARTIAL TIMBRE SELECT

1 2

3 4

VOLUME ENVELOPE

DELAY ATTACK INITIAL DECAY FINAL DECAY PEAK SUSTAIN

HARMONIC ENVELOPE

HARMONIC CONTROL

1	2	3	4	5	6
13	14	15	16	17	18
25	26	27	28	29	30
7	8	9	10	11	12
19	20	21	22	23	24
31	32	33	34	35	36

PARTIAL TUNING PARTIAL VOLUME

F.M. RATIO HARMONIC SELECT

OFF: 1-12   ON: 13-24   BLINK: 25-36

Button summary, panel 1 (con't)

delay (volume envelope)

> Press once and turn the control knob to set the delay time for attack.

> Select a timbre frame, press once, then turn the control knob to set timbre frame delay time.

delay (harmonic envelope)

> Press once and turn the control knob to set FM delay time.

attack (volume envelope)

> Press once and turn the control knob to set attack time.

> Select a timbre frame, press once and turn the control knob to set timbre frame splice time.

attack (harmonic envelope)

> Press once and turn the control knob to set FM attack time.

Initial decay (volume envelope)

> Press once and turn the control knob to set an initial decay time.

> Select a timbre frame, press once and turn the control knob to set timbre frame splice type.

Initial decay (harmonic envelope)

> Press once and turn the control knob to set an FM initial decay time.

final decay (volume envelope)

Press once and turn the control knob to set final decay time.

Select timbre frame, press once, then turn the control knob to set a range for pitch randomness.

With **ve sustain** set to 0, press once and dial in a value larger than the total of all timbre frame splice times. The non-sustaining timbre function is turned on for continued timbre frame splicing.

final decay (harmonic envelope)

Press once and turn the control knob to set FM final decay time.

peak (volume envelope)

Press once and turn the control knob to set peak volume.

Select a timbre frame, press once and turn the control knob to set timbre frame peak volume level.

peak (harmonic envelope)

Press once and turn the control knob to program FM peak volume level.

Select a timbre frame, press once and turn the control knob to set pitch offset for a timbre frame.

sustain (volume envelope)

Press once and turn the control knob to set sustain volume.

Select a timbre frame other than frame 0, press once and turn the control knob to change the volume for all timbre frames.

Button summary, panel 1 (con't)

sustain (harmonic envelope)

> Press once and turn the control knob to set FM sustain volume level.

> Select a timbre frame and press once to turn on the timbre frame looping function.

partial tuning

> Press once and turn the control knob, or press repeatedly to change the tuning of selected partial timbre(s).

partial volume

> Press once and turn the control knob to change the volume of selected partial timbre(s).

fm ratio

> Press once and turn the control knob or press repeatedly. A positive value sets the modulator-to-carrier frequency ratio; a negative value sets a fixed modulator frequency.

harmonic select

> Press once and turn the control knob or press repeatedly to select harmonics 1 to 12, or 13 to 24.

> Press once to restore harmonic coefficient function to **harmonic control** buttons after use for scale adjust function.

harmonic control numbered buttons

> Hold one or more buttons and press **harmonic select** to toggle **harmonic control** buttons between lit and blinking modes.

> When **harmonic control** buttons are lit, press one or more buttons and turn the control knob to set the relative volume level of the selected harmonic(s).

> When **harmonic control** buttons are blinking, press one or more buttons and turn the control knob to set the phase of the selected harmonic(s).

> Press once and turn the control knob with the **harmonic control** buttons either lit or blinking and the **pitch class** button lit. The pitch of all notes of the selected pitch class is changed (**harmonic control** button 1 changes all of the Cs, button 2 all of the C sharps, etc.).

harmonic control button 1

> While a sound file is active on the keyboard, press once and turn the control knob to set total length of sound file.

> After setting total length, press and hold, then press **start** to begin an overall automatic search for sound file loop points.

harmonic control button 2

> While a sound file is active on the keyboard, press once and turn the control knob to set sound file loop length.

harmonic control button 3

> Press once and turn the control knob to set a window length for automatic searches.

harmonic control buttons 1 or 2

> After setting total length and loop length, press andhold, then press **continue** to begin a local automatic loop search.

Button summary, panel 2

The buttons on panel 2 of the keyboard control panel govern, for the most part, sequence recording and editing. Instructions for using these buttons are in the manual *Sequence Editing from the Keyboard*.

start

Press once to start sequence playback at the first click of the sequence.

Press twice to start sequence playback at the first note of the sequence.

Press twice after soloing track(s) to start sequence playback at the first note of the soloed track(s).

Press once while holding **harmonic control** button 1 after setting a total length. An overall automatic search for a loop point in a sound file is begun.

stop

Press once to stop sequence playback, rewind, fast forward or recording.

Press once to abort an automatic search, bounce, smt, chain, split, or sound file loading.

Press once to turn off transpose and info functions.

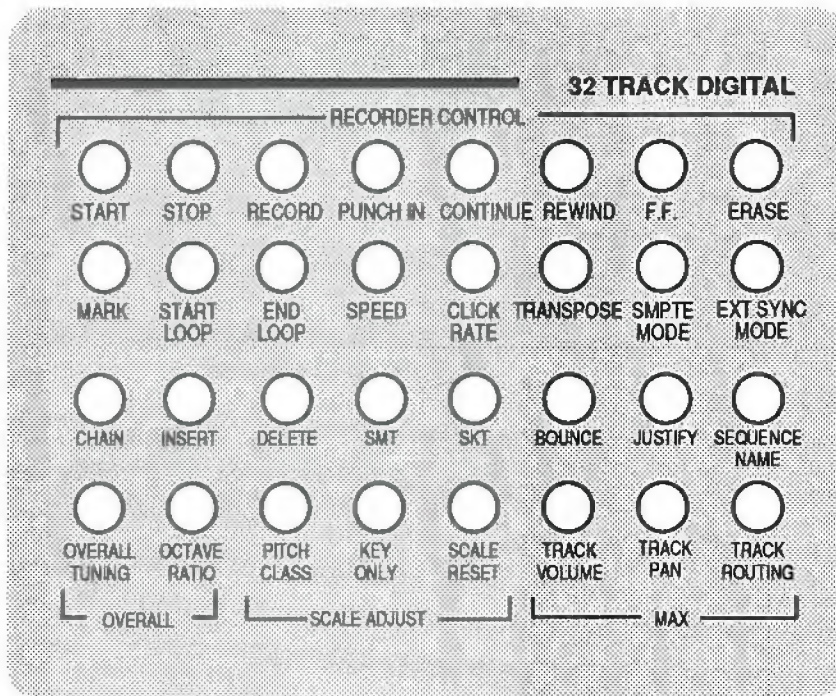Press once to send a MIDI "all notes off" message.

record

Press once to start recording on the blinking track. If none are soloed, the system selects the first track with the same timbre as the keyboard timbre. If none are the same, it selects the first empty track.

Press while holding a track select button. The status of a Direct-to-Disk track toggles between Safe and Ready.

32 TRACK DIGITAL

RECORDER CONTROL

START   STOP   RECORD   PUNCH IN   CONTINUE   REWIND   F.F.   ERASE

MARK   START LOOP   END LOOP   SPEED   CLICK RATE   TRANSPOSE   SMPTE MODE   EXT SYNC MODE

CHAIN   INSERT   DELETE   SMT   SKT   BOUNCE   JUSTIFY   SEQUENCE NAME

OVERALL TUNING   OCTAVE RATIO   PITCH CLASS   KEY ONLY   SCALE RESET   TRACK VOLUME   TRACK PAN   TRACK ROUTING

OVERALL   SCALE ADJUST   MAX

punch in

Press once to begin recording at beginning, current location or current mark point. All recorded information on the selected track is overwritten.

Press again to exit the punch in mode.

continue

Press once to play a sequence from previous stop point.

Press once while holding down the **mark** button to set a mark point while the sequence is playing or stopped.

Press once while holding **harmonic control** buttons 1 or 2 after setting sound file length and loop length. A local automatic loop search of a sound file begins (keyboard looping process).

rewind

Press once to play the sequence backward at 2 times normal speed.

Press twice to play a sequence backward at 8 times normal speed.

Press three times to play a sequence backward at 32 times normal speed.

ff

Press once to play a sequence forward at 2 times normal speed.

Press twice to play a sequence forward at 8 times normal speed.

Press three times to play a sequence forward at 32 times normal speed.

erase

Press twice to erase a sequence and display the maximum number of notes available.

Press twice after soloing selected tracks to erase only the tracks selected.

mark

Press once and turn the control knob to set a mark point.

Press and hold while the sequence is playing, then press **continue** and release both buttons to set a mark point at the current click.

Press and hold, then press **start** to turn on the mark start function.

Press and hold, then press **stop** to turn off the mark start function.

Press and hold, then press a **track select** button. A mark point is set at the first recorded note on the selected track.

Press and hold, then press the **track select** button of an empty track. The mark point is cleared.

Press and hold, then press **start** with MIDI sync on and a mark point set. A MIDI song pointer message is sent though the selected MIDI output.

start loop

Press repeatedly to select loop parameters (start, end or length) and turn the control knob to set values. If the justify mode is on, values are incremented in beats.

Press and hold, then press **click rate** repeatedly to change the loop value display format to measures and beats, seconds, or smpte.

start loop *(con't)*

> Press and hold, press **end loop** or **a track select** button to recall
> the parameters of an existing loop.

end loop

> Press once after loop parameters have been set. An overall
> loop is placed on the current sequence.

> Press once while holding down a **track select** button after
> setting loop parameters. An independent loop is placed on the
> selected track.

> Press a lighted **end loop** button to remove an overall loop.

> Press a lighted **end loop** button while holding down a **track
> select** button to remove an independent loop.

speed

> Press once and turn the control knob to set the speed of the
> memory recorder.

> Press twice, then press **click rate** to express the click in frames-
> per-beat.

click rate

> Press once and turn the control knob to set a click track rate in
> beats-per-minute.

> Press once after pressing **speed** twice to express the click in
> frames-per-beat.

> Press twice and turn the control knob to set a click track rate in
> click period mode.

> Press three times to turn off the click track.

click rate *(con't)*

> Press while holding down **mark, start loop, insert, delete,** or any **track select** button to toggle time format between measures and beats, seconds, or SMPTE time code.

> Press and hold, press **speed** and turn the control knob to select a measure length in beats.

> Press and hold while you press a **track select** button. The track selected becomes the click track. Repeat to return to the digital metronome.

transpose

> Press once and play a note above or below middle C. The sequence is transposed up or down by the interval of the note played to middle C. If a track is soloed, only that track is transposed.

smpte mode

> Press and hold, then press **ext sync mode** to turn **smpte mode** on and off.

ext sync mode

> Press once to select 50 Hz external synchronization mode.

> Press twice to select beat sync external synchronization mode.

> Press twice and turn the control knob to set sync delay.

> Press twice, then press **transpose** to establish the step mode. (To turn it off, see **transpose**.)

> Press while holding **smpte mode** to turn SMPTE mode on or off.

> Press repeatedly while **smpte mode** is lit to select a SMPTE format.

ext sync mode *(con't)*

Press and hold repeatedly until the display window shows INTERNAL SYNC. Continue to hold **ext sync mode** while you press **midi**. MIDI synchronization is turned on.

Press and hold, then press **midi**. MIDI synchronization is turned off.

chain

Press once, then press source and destination **track select** buttons to chain the source track to the end of the destination track.

Press once and turn the control knob, or press repeatedly to set the number of repetitions for chaining.

insert

Press repeatedly to select length or end time, then turn the control knob to set length or end time for insert.

Press and hold, then press **start** to perform an insert at the mark point on soloed tracks according to values previously set.

delete

Press repeatedly to select delete length or end time, and turn the control knob. A length or end time for the delete is set.

Press and hold, then press **start** to delete notes on soloed tracks from mark point to specified end time or length.

smt

Press once, press a **track select** button and then press **skt**. The timbre on the selected track is replaced with the keyboard timbre.

Press once, press a **track select** button and then press another **track select** button. The timbre on the first track selected is replaced by the timbre from the second track selected.

smt *(con't)*

Press once, press a track select button and then press entry and a numbered timbre sequence storage button. The timbre on the selected track is replaced by the timbre entry from the current timbre bank.

skt

Press once, then press a track select button to place the selected track timbre on the keyboard.

Press once, then press a track select button while holding a partial timbre select button. The partial timbre from the memory recorder track is copied to the same partial timbre on the keyboard timbre.

bounce

Press once, then press the originating track select button followed by a destination track select button. The originating track is moved to the destination track and the originating track is erased.

Press once, then press the originating partial timbre button followed by a destination partial timbre button. The originating partial timbre is copied to the destination partial timbre and the originating partial timbre is not erased.

Press once, then press the originating track select button twice followed by a destination track select button. The originating track is copied to the destination track and the originating track is not erased.

justify

Press once to place the recorder in justified mode.

Press once and turn the control knob to set a click rate multiplier for justification.

Button summary, panel 2 (con't)

sequence name

> Not currently used.

overall tuning

> Press once and turn the control knob to change overall pitch of the keyboard in 0.1 Hz increments.

> Press repeatedly to make octave jumps in tuning.

octave ratio

> Press once and turn the control knob to change octave ratio

> Press twice to reset octave ratio to normal scale.

pitch class

> Press once to assign the scale adjust function to the **harmonic control** buttons.

key only

> Not currently used.

scale reset

> Press twice to restore equal tempered tuning for all pitch classes.

> Press repeatedly to increment the pitch bend range in semi-tone intervals.

> Hold down and turn the control knob to set pitch bend range.

track volume

Press and hold, press a **track select** button, then release both and turn the control knob to adjust the volume of a selected track.

Press and hold, press a keyboard key, then release both and turn the control knob. to adjust the volume of the keyboard timbre.

track pan

Not currently used.

track routing

Press and hold, press a **track select** button, then turn the control knob. The selected track is routed to the selected channel of the multichannel distributor.

Press and hold, press a keyboard key, then turn the control knob. The keyboard is routed to the selected channel of the multichannel distributor.

Press and hold, press a track select button or any key on the keyboard, then press timbre/sequence storage button 1 or 2. Poly bin 1 or 2 is assigned to the selected track or to the keyboard.

Button summary, panel 3

The buttons on panel 3 of the keyboard control panel govern sequence tracks. Instructions for using these buttons are in the manual *Sequence Editing from the Keyboard.*

track select numbered buttons

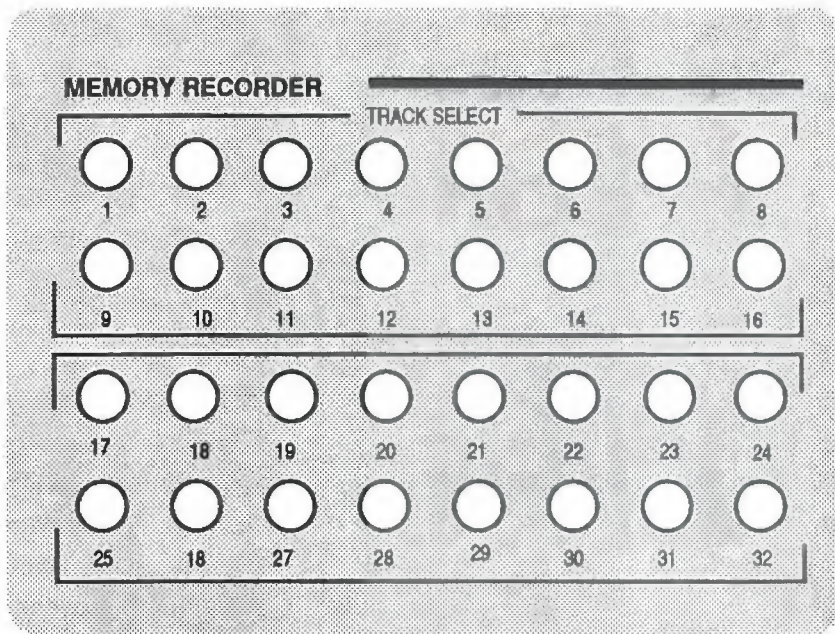Press once to solo a selected track for recording or playback.

Press again to unsolo the selected track.

Press and hold, then turn the control knob to slide all notes on the selected track forward or backward. If the recorder is in the justified mode, notes slide in one beat increments. If the recorder is in the unjustified mode, notes slide in one millisecond increments.

Press and hold, then press **record.** The status of a Direct-to-Disk track toggles between Safe and Ready.

Use the **multichannel, midi** or **Direct-to-Disk track display** to assign different banks of tracks to the control buttons.

MEMORY RECORDER

TRACK SELECT

○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8
○ 9	○ 10	○ 11	○ 12	○ 13	○ 14	○ 15	○ 16
○ 17	○ 18	○ 19	○ 20	○ 21	○ 22	○ 23	○ 24
○ 25	○ 18	○ 27	○ 28	○ 29	○ 30	○ 31	○ 32

Button summary, panel 4

The buttons on the top half of panel 4 of the keyboard control panel govern timbre and sequence storage. The buttons on the bottom half control timbre parameters. Instructions for using these buttons are in the manuals *Sequence Editing, Sequence Editing from the Keyboard* and *FM Synthesis*.

library (timbre)

> Press and hold to select the F0: drive for timbre recall or storage.

bank

> Press once to assign the bank select function to the **timbre/sequence storage** buttons.

entry

> Press once to assign the entry function to the **timbre/sequence storage** buttons.

library (sequence)

> Press and hold to select the **F0:** drive for sequence recall or storage.

sequence

> Press once, then press **timbre/sequence storage** buttons 1-8 to recall a sequence to the memory recorder.

split

> Press once, then recall a timbre from a bank or track. A split keyboard is established with selected timbre on the upper part.

> Press twice, then recall a timbre from a bank or track. A split keyboard is established and the timbre selected is placed on the lower part.

> Press once or twice, press a keyboard key and then recall a timbre from a bank or track. A split keyboard is established with a new split point.
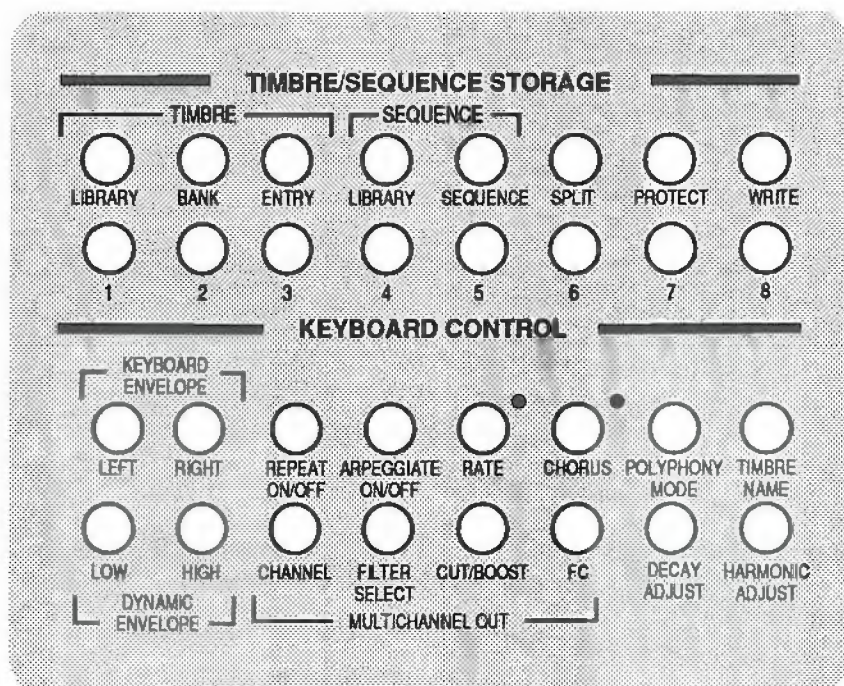
> Press once or twice, press a keyboard key and then press stop. A new split point is set with the same timbres.

protect

> Not currently used.

TIMBRE/SEQUENCE STORAGE

TIMBRE — SEQUENCE

LIBRARY BANK ENTRY LIBRARY SEQUENCE SPLIT PROTECT WRITE

1 2 3 4 5 6 7 8

KEYBOARD CONTROL

KEYBOARD ENVELOPE

LEFT RIGHT REPEAT ON/OFF ARPEGGIATE ON/OFF RATE CHORUS POLYPHONY MODE TIMBRE NAME

LOW HIGH CHANNEL FILTER SELECT CUT/BOOST FC DECAY ADJUST HARMONIC ADJUST

DYNAMIC ENVELOPE MULTICHANNEL OUT

write

> Press and hold after selecting bank, entry or sequence, then press **timbre/sequence storage** buttons 1-8 to write current bank, timbre or sequence to the specified location.

timbre/sequence storage numbered buttons

> Press once to select a sequence, timbre bank or entry for storage or recall.

> Press once while holding the **midi** button after pressing **bank, entry,** or **library** and **entry** to send MIDI program change.

> Press button 1 or 2 after pressing a keyboard key or track select button while holding the **track routing** button. Poly bin 1 or 2 is assigned to the keyboard or to the selected track.

left (keyboard envelope)

> Hold down, then press two keyboard keys to set the lower end and fade region for the selected partial timbre(s).

right (keyboard envelope)

> Hold down, then press two keyboard keys to set the upper end and the fade region for selected partial timbre(s).

repeat on/off

> Press once to turn the repeat mode on or off.

arpeggiate on/off

> Press once to turn arpeggiate mode on or off

rate (repeat/arpeggiate)

> Press once and turn the control knob to set repeat and/or arpeggiate rate.

chorus

> Press once and turn the control knob to activate and detune the chorus effect (adds another voice to each partial timbre).

polyphony mode

Press once and turn the control knob to specify the number of notes a timbre may play simultaneously.

timbre name

Press and hold, then turn the control knob, or press repeatedly to select a letter of the timbre name to be changed. Selected letter flashes.

Turn the control knob when the button is lit to select a character for the timbre name.

low (dynamic envelope)

Press once and turn the control knob to set the lower limit of the dynamic envelope.

high (dynamic envelope)

Press once and turn the control knob to set the upper limit of a dynamic envelope.

channel

Not currently used.

filter select

Not currently used.

cut/boost

Not currently used.

decay adjust

Press once and turn the control knob to adjust final decay on lower notes.

fc

Not currently used.

harmonic adjust

Press once and turn the control knob to adjust FM brilliance on the upper versus lower notes.

Button summary, panel 5

The buttons on the top half of the fifth panel of the keyboard control panel govern partial timbre parameters. The buttons on the lower half govern real-time effects. Instructions for using these buttons are in the manual FM Synthesis.

wave (vibrato)

> Press once and turn the control knob, or press repeatedly to change the vibrato wave shape.

rate (vibrato)

> Press once and turn the control knob to change vibrato rate.

depth (vibrato)

> Press once and turn the control knob to set vibrato depth.

mod depth

> Press once and turn the control knob to set FM vibrato depth on selected partial timbre(s).
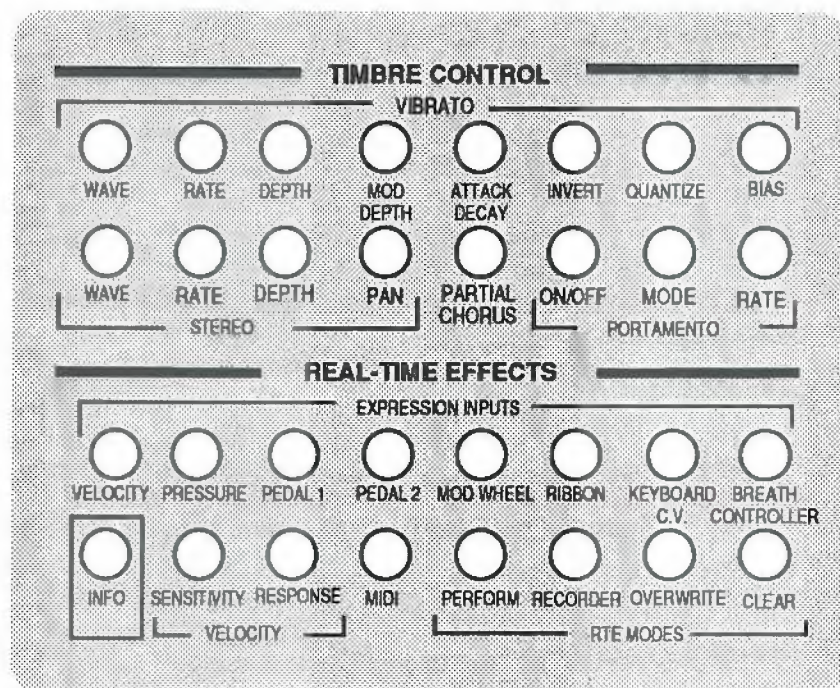
attack decay

> Press once and turn the control knob to set vibrato attack time between 0 and 10000 milliseconds.

invert

> Press once to turn vibrato invert function on or off.

quantize

> Press once to turn the vibrato quantize function on or off.

TIMBRE CONTROL

VIBRATO

WAVE RATE DEPTH MOD DEPTH ATTACK DECAY INVERT QUANTIZE BIAS

WAVE RATE DEPTH PAN PARTIAL CHORUS ON/OFF MODE RATE

STEREO   PORTAMENTO

REAL-TIME EFFECTS

EXPRESSION INPUTS

VELOCITY PRESSURE PEDAL 1 PEDAL 2 MOD WHEEL RIBBON KEYBOARD C.V. BREATH CONTROLLER

INFO SENSITIVITY RESPONSE MIDI PERFORM RECORDER OVERWRITE CLEAR

VELOCITY   RTE MODES

Button summary, panel 5 (con't)

bias

> Press once to toggle vibrato bias on or off.

wave (stereo)

> Press once and turn the control knob, or press repeatedly to select a stereo panning mode or waveform. Modes 21 through 24 select amplitude modulation waveforms.

rate (stereo)

> Press once and turn the control knob to change stereo panning or AM (tremolo) rate.

depth (stereo)

> Press once once and turn the control knob to set stereo panning or AM (tremolo) depth.

pan (stereo)

> Press once and turn the control knob to locate a partial timbre in stereo image. A positive value is right; a negative value is left.

> Press twice to set partial timbre pan to center.

partial chorus

> Press once and turn the control knob to establish and tune the chorus effect for selected partial timbre(s).

on/off (portamento)

> Press once to turn portamento on or off.

mode (portamento)

> Press once to toggle between logarithmic or linear mode.

rate (portamento)

> Press once and turn the control knob to set portamento rate.

velocity

> Press and hold, then select partial timbre(s) and timbre parameter(s). Keyboard key velocity is patched to the selected partial timbre(s) and timbre parameter(s).

pressure

> Press and hold, then select partial timbre(s) and timbre parameter(s) to set up patching of pressure input.
>
> Press and turn the control knob to set the response filter.

pedal1

> Press and hold, then select partial timbre(s) and timbre parameter(s). Pedal1 is patched to the selected partial timbre(s) and timbre parameter(s).

pedal2

> Press and hold, then select partial timbre(s) and timbre parameter(s). Pedal2 is patched to the selected partial timbre(s) and timbre parameter(s).

Button summary, panel 5 (con't)

mod wheel

> Press and hold, then select partial timbre(s) and timbre parameter(s). The mod wheel is patched to the selected partial timbre(s) and timbre parameter(s).

ribbon

> Press and hold, then select partial timbre(s) and timbre parameter(s) to patch ribbon controller to selected partial timbre(s) and timbre parameter(s).

keyboard c.v.

> Press and hold, then select partial timbre(s) and timbre parameter(s). Keyboard control voltage input is patched to selected partial timbre(s) and timbre parameter(s).
>
> Press and hold, then press two keyboard keys to set lower and upper limits for the range of keyboard control voltage.

breath controller

> Press and hold, then select partial timbre(s) and timbre parameter(s) for patching to the breath controller.

Info

Press once, then press a **track select** button. The first note of the selected track sounds and the display window shows the timbre and number of notes on that track.

Press once, then press a **partial timbre** button. The number of voices and number of frames in that partial timbre are displayed.

Press once, then press the **start** button. The number of notes remaining in the memory recorder is displayed.

Press again so that the **info** button light goes out to exit the info mode.

sensitivity (velocity)

Press once and turn the control knob to change velocity sensitivity.

response (velocity)

Press once, then press repeatedly or turn the control knob to set keyboard response for velocity input.

midi

Press once to display the keyboard midi routing/status

Press twice and turn the control knob to set keyboard routings.

Press and hold, then press flickering **expression input button(s)**. Selected expression inputs are activated for the transmission or reception of **midi** messages.

Press and hold, then press lit **expression input button(s)**. Selected expression inputs are deactivated for transmission or reception of **midi** messages.

Press and hold, press **bank** and a numbered button, then **entry** and a numbered button. A program change between 1 and 64 is sent to the selected **midi** device. If the **record** button is lit, the program change is also recorded by the memory recorder.

Press and hold, press **bank** and a numbered button, then **entry**, **library** and a numbered button. A program change between 65 and 128 is sent to the selected **midi** device. If the **record** button is lit, the program change is also recorded by the memory recorder.

Press and hold **ext sync mode** repeatedly until the display window shows INTERNAL SYNC. Continue to hold **ext sync mode** while you press **midi**. MIDI synchronization is turned on.

Press and hold **ext sync mode**, then press **midi**. MIDI synchronization is turned off.

perform

Not currently used.

recorder

Not currently used.

overwrite

Press and hold, then press any or all flickering expression input buttons. Any subsequent recording overwrites previous controller movements of selected inputs.

Press and hold, then press any or all lighted expression input buttons. Controller movements of selected inputs are no longer overwritten.

clear

Press once to turn off lighted parameter buttons.

Press and hold while pressing **partial timbre select** buttons to remove real-time effects patching from selected partial timbres.

Press and hold while pressing **expression input** buttons to remove real-time effects patching from selected expression inputs.

Press and hold while pressing **timbre parameter** buttons to remove real-time effects patching from selected timbre parameters.