YAMAHA
SY85 Music Synthesizer
Owner's Manual 2
- Feature Reference -

GENERAL EDITING PROCEDURE

PERFORMANCE EDIT MODE

VOICE EDIT MODE

DRUM VOICE EDIT MODE

SONG EDIT MODE

PATTERN EDIT MODE

UTILITY MODE

WAVE EDIT MODE

APPENDIX

CONTENTS

Drum Voice Edit Mode

Song Edit Mode

Pattern Edit Mode

Utility Mode

Wave Edit Mode

APPENDIX

GENERAL EDITING PROCEDURE

The SY85 makes editing easy by providing a consistent, logical control interface via which parameters can be located and edited. Once you've learned the general procedure, you can locate and edit any of the SY85's many parameters quickly and easily.

■ Mode Selection

All SY85 edit modes are selected via the MODE matrix keys. To select the VOICE EDIT mode, for example, press the VOICE mode key so that its indicator lights, than press the second SUB MODE key in the VOICE column (EDIT).

The illustrations here are not available.

■ Selecting Specific Edit Functions

Once you've selected an edit mode, one way to select the various edit screens and functions it contains is to use the PAGE [◄] and [►] keys. The [◄] and [►] keys step backward and forward through the available screens, respectively. Hold either of these keys for continuous stepping in the specified direction.
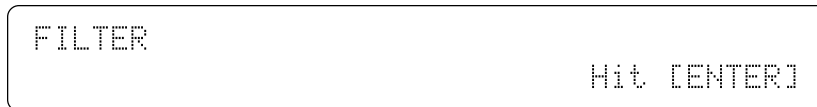
An alternative method is to use the [MENU] key. If you press the [MENU] key ion the VOICE EDIT mode, for example, you'll see a display something like this:

```
VOICE EDIT MENU  1~8
             1:Oscillator
```

From this display you can use either the data entry dial or the [-1] and [+1] keys to directly select any of the 8 available functions, then press the [ENTER/YES] key to actually select the specified function.

The illustrations here are not available.

In some cases the PAGE [◄] and [►] or [MENU] keys will take you to another entry screen. If you select "3: Filter" after pressing the [MENU] key in the VOICE EDIT mode, and then press [ENTER/YES], you'll see the following display:

```
FILTER
                              Hit [ENTER]
```

"Hit [ENTER]" will be flashing. In this case press [ENTER/YES] again to access the filter functions. Once in the filter "sub-mode" you can use the PAGE [◄] and [►] or [MENU] keys to select the various filter functions, as described above. When you have finished with the filter functions, press [EXIT/NO] to return to the normal VOICE EDIT mode.

■ Selecting & Editing Parameters

Most SY85 edit screens contain several parameters that can be selected and edited. In most cases you can simply operate the continuous slider immediately below the parameter you want to edit on the display. Operating a slider automatically moves the underline cursor to the corresponding parameter. In the example below, for example (this is the VOICE EDIT mode Oscillator screen), the [CS5] slider can be used to adjust the "Fine" parameter.

```
OSC  Wave        Mode Fine Note Rndm  Rvs
P001 Piano       norm  +0   +0    0  off
```

The parameters can also be edited by first moving the cursor to the required parameter by pressing the corresponding function key ([F7], for example, would select the "Rndm" parameter in the above display), and then by using either the data entry dial or the [-1] and [+1] keys to adjust the parameter's value.

The illustrations here are not available.

In some special cases you'll also use the function keys as parameter "switches," and the [SHIFT] key is sometimes called into play to access secondary functions. Such exceptions are described in the appropriate sections of the manual.

■ Controller Assignment Display

It is possible to assign a wide range of parameters to be controlled by the [CS1] through [CS4] sliders when playing in the VOICE or PERFORMANCE PLAY modes. Since it is easy to forget what parameters have been assigned to which sliders, the SY85 features a controller assignment display that can be selected temporarily by pressing the [SHIFT] key in the VOICE or PERFORM-ANCE PLAY mode.

● PERFORMANCE PLAY mode

```
CS      1(LFO):Ef1 Mix
ASSGIN 2(MW ):Ef2_Hi Gain
```

● VOICE PLAY mode

```
CS      1(LFO):Ef1 Mix      3:——————————
ASSGIN 2(MW ):Ef2_Hi Gain  4:——————————
```

● DRUM VOICE PLAY mode

```
CS      1(LFO):Ef1 Mix
ASSGIN 2(MW ):Ef2_Hi Gain
```

This display shows the names of the parameters assigned to sliders [CS1] through [CS4] for the current voice or performance combination, so you can take a quick peek to refresh your memory even while playing.

PERFORMANCE EDIT MODE

1: VOICE NUMBER

SY85 performance combinations can have up to four voices assigned to different "layers" — A, B, C and D. This screen lets you assign voices to the layers.

```
LAYER Voice Number            <InitVce >ABCD
    A=¾A1        B=¾A1        C=¾A1        D=¾A1
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
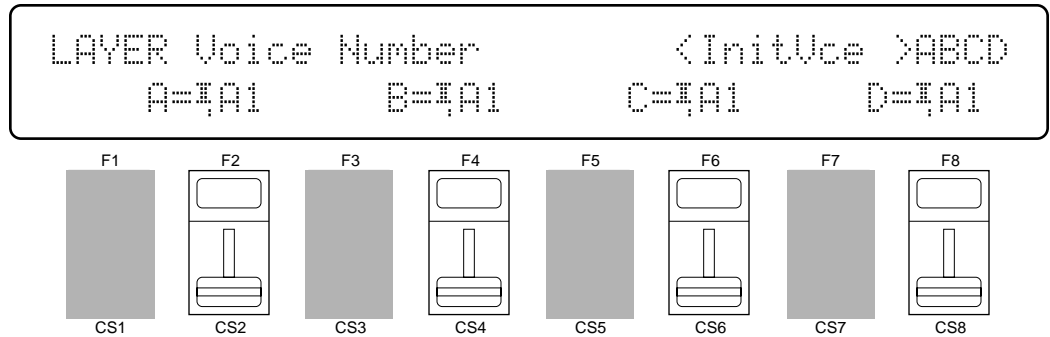
Voice Number A, B, C, D
Range: off, A1 … H7 (internal & card)
Controls: MEMORY, GROUP, PROGRAM, [CS2], [CS4], [CS6], [CS8], [-1] [+1], Dial

After moving the cursor to the layer you want to edit by pressing the [F2], [F4], [F6] or [F8] function key, use the [INTERNAL 1], [INTERNAL 2], and [CARD] keys to select the memory area from which the voice is to be selected, and then use the GROUP and PROGRAM keys to select the voice. Voices within the selected memory bank can also be selected directy for each layer by the [CS2], [CS4], [CS6], and [CS8] keys. Internal and card voices cannot be mixed.

The voices can individually turned on or off by using the [-] (off) and [+] (on) keys while holding the [SHIFT] key.

The name of the currently selected voice is shown in the upper right corner of the display. The characters "ABCD" to the right of the voice name indicate the status of each voice:

- Capital letter = voice on.
- Lower-case letter = voice muted.
- "-" = voice is off.

For example, "Ab-D" indicates that voices A and D are on, voice B is muted, and voice C is off.

2: VOLUME

For optimum balance between the voices in a performance combination, this screen allows the volume of each voice to be adjusted individually.

The name of the currently selected voice/layer is shown in the upper right corner of the display. The characters "ABCD" to the right of the voice name indicate the status of each voice: a capital letter if the voice is on, a lower-case letter if the voice is muted, and a dash if the voice is off.

Volume

Range: 0 … 127
Controls: [CS2], [CS4], [CS6], [CS8], [-1] [+1], Dial

Use the [CS2], [CS4], [CS6], and [CS8] sliders to adjust the volume levels of the A, B, C, and D layer voices, respectively. A setting of "0" produces no sound, while a setting of "127" produces maximum volume. The vertical bar graphs next to each parameter provide a visual indication of volume levels — the longer the bar the higher the volume. Voices that are turned off are indicated by "----" on the display.

3: PAN

In multi-layer performance combinations, interesting stereo effects can be produced by placing the output from different layers at different locations in the stereo sound field. The parameters in this screen determine the position in the stereo sound field in which the sound from each active layer will be heard (left to right).

```
LAYER Pan L......¦......R        <InitVce >ABCD
        +0              +0            +0        +0
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

The name of the currently selected voice/layer is shown in the upper right corner of the display. The characters "ABCD" to the right of the voice name indicate the status of each voice: a capital letter if the voice is on, a lower-case letter if the voice is muted, and a dash if the voice is off.

Pan

Range: -31 … +31
Controls: [CS2], [CS4], [CS6], [CS8], [-1] [+1], Dial

Use the [CS2], [CS4], [CS6], and [CS8] sliders to adjust the pan positions of the A, B, C, and D layer voices, respectively. Minus values represent panning to the left, and positive values represent panning to the right. "0" positions the sound of the selected layer in the center of the stereo sound field. Voices that are turned off are indicated by "---" on the display. The upper line of the display also shows a graphic representation of the stereo sound field with "L" representing "left" and "R" representing "right." As you change the pan value the vertical bar will appear at the corresponding position on the graphic display.

4: TUNE

More than just simple tuning, the note shift and fine tune parameters make it possible to create harmony and voice-thickening detune effects between layers.
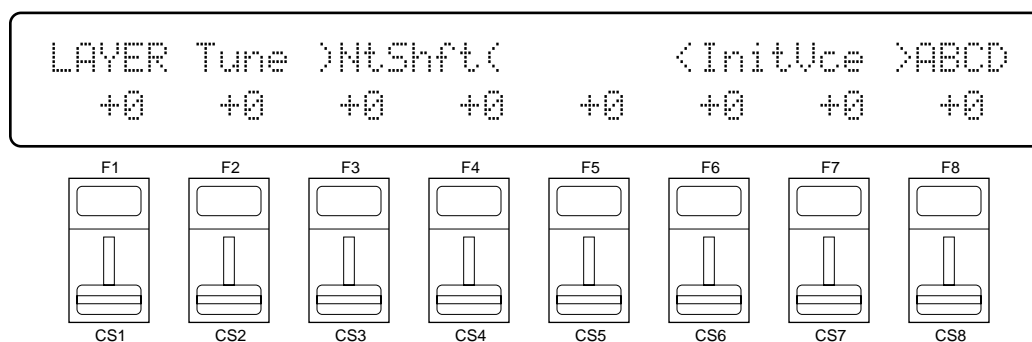
```
LAYER Tune )NtShft(        <InitVce >ABCD
     +0     +0     +0     +0     +0     +0     +0     +0
```

The name of the currently selected voice/layer is shown in the upper right corner of the display. The characters "ABCD" to the right of the voice name indicate the status of each voice: a capital letter if the voice is on, a lower-case letter if the voice is muted, and a dash if the voice is off.

NtShft (Note shift)
Range: -63 … +63
Controls: [CS1], [CS3], [CS5], [CS7], [-1] [+1], Dial

Individually shifts the pitch of each active element up or down in semitone steps.

Use the [CS1], [CS3], [CS5], and [CS7] sliders to shift the pitch of the A, B, C, and D layer voices, respectively. A setting of "-12," for example, shifts the pitch of the selected layer down by one octave; a setting of "+4" shifts the pitch up by a major third.

The Note Shift parameter can be used to transpose a voice to its most useful range, or to create harmony (intervals) between different layers in a performance combination.

Voices that are turned off are indicated by "---" on the display.

Fine (Fine tuning)
Range: -7 … +7
Controls: [CS2], [CS4], [CS6], [CS8], [-1] [+1], Dial

Allows slight upward or downward pitch adjustment of each active element.
Use the [CS2], [CS4], [CS6], and [CS8] sliders to fine tune the A, B, C, and D layer voices, respectively.

The maximum minus setting of "-7" produces a downward pitch shift of approximately 2 cents (a "cent" is 1/100th of a semitone), and the maximum plus setting of "+7" produces an upward pitch shift of approximately 2 cents. A setting of "0" produces no pitch change.

The Fine parameter allows different layers in a performance combination to be slightly detuned in relation to each other, thereby "thickening" the overall sound.

Voices that are turned off are indicated by "--" on the display.

5: NOTE LIMIT

The low and high note limit parameters make it possible to create a range of split keyboard effects using the performance layers. You could have two layers on either side of a single split point, a four-way split keyboard, or any other possible combination.
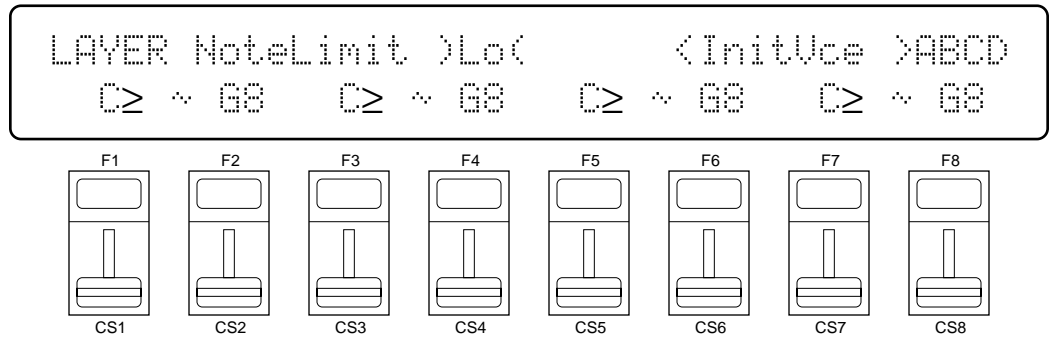
```
LAYER NoteLimit )Lo(      <InitVce )ABCD
     C≥ ~ G8     C≥ ~ G8     C≥ ~ G8     C≥ ~ G8
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8

The name of the currently selected voice/layer is shown in the upper right corner of the display. The characters "ABCD" to th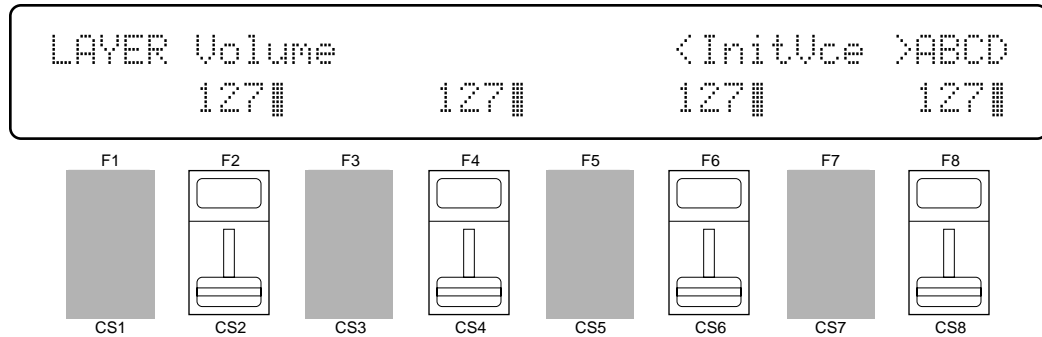e right of the voice name indicate the status of each voice: a capital letter if the voice is on, a lower-case letter if the voice is muted, and a dash if the voice is off.

Lo (Low note limit)
Range: C-2 ... G8
Controls: [CS1], [CS3], [CS5], [CS7], [-1] [+1], Dial,
[SHIFT]+keyboard

Individually sets the low note limit for each active layer (the lowest note that each layer will produce).

Use the [CS1], [CS3], [CS5], and [CS7] sliders to set the low note limits of the A, B, C, and D layer voices, respectively. It is also possible to press the desired note on the keyboard while holding the [SHIFT] key.

The C-2 to G8 range of this parameter covers a full 10-1/2 octaves. "C3" corresponds to "middle C" on a keyboard.

This parameter, in conjunction with the High Note Limit parameter described below, allows the sound from a layer to be limited to a specific region of the keyboard. If the Low Note Limit is set to C3 and the High Note Limit for the same layer is set to C4, for example, the sound from that layer will only be produced between C3 and C4 — the octave immediately above middle C. This makes it simple to produce split voices.

If the High Note Limit is set to a note that is <u>lower</u> than the Low Note Limit for the same layer, the notes between the high and low limits will not sound.

Voices that are turned off are indicated by "---" on the display.

Hi (High note limit)
Range: C-2 ... G8
**Controls: [CS2], [CS4], [CS6], [CS8], [-1] [+1], Dial,
[SHIFT]+keyboard**

Individually sets the high note limit for each active layer (the highest note that each layer will produce).

Use the [CS2], [CS4], [CS6], and [CS8] sliders to set the high note limits of the A, B, C, and D layer voices, respectively. It is also possible to press the desired note on the keyboard while holding the [SHIFT] key.

See the "Lo" parameter, above, for more details.

6: VELOCITY LIMIT

The high and low velocity limit parameters make it possible to produce a range of "velocity switching" effects in which different layers of a performance combination are set up to produce sound only when the keyboard is played at a certain velocity. You could, for example, produce a flute sound by playing softly, and a horn sound by playing harder.
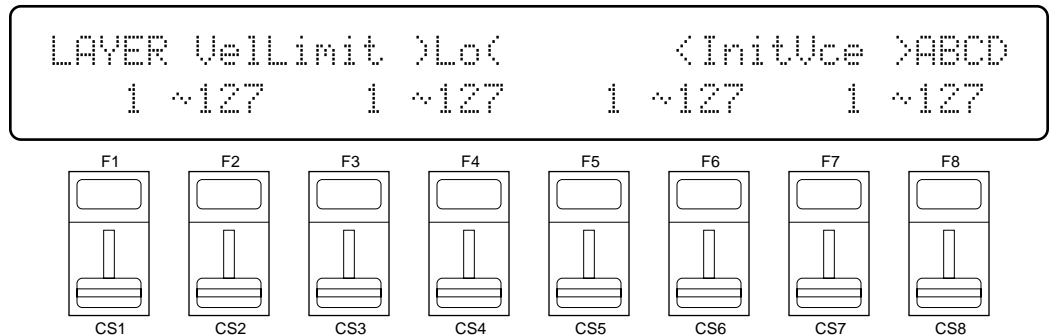
```
LAYER VelLimit )Lo(       <InitVce )ABCD
   1 ~127     1 ~127      1 ~127     1 ~127
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

The name of the currently selected voice/layer is shown in the upper right corner of the display. The characters "ABCD" to the right of the voice name indicate the status of each voice: a capital letter if the voice is on, a lower-case letter if the voice is muted, and a dash if the voice is off.
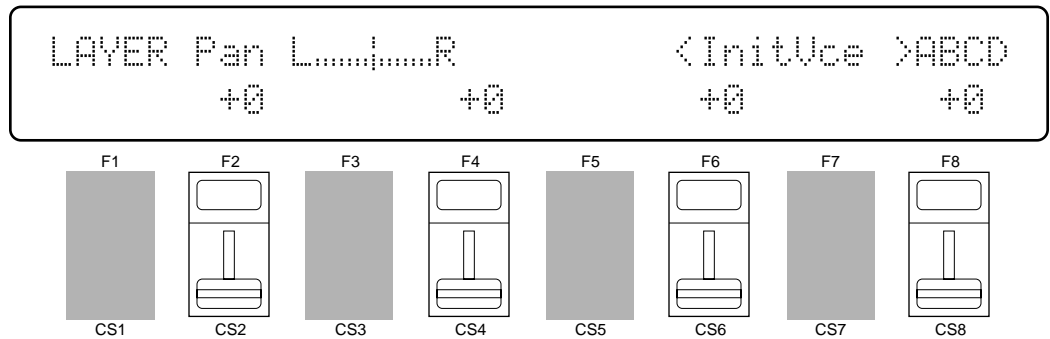
Lo (Low velocity limit)
Range: 1 … 127
Controls: [CS1], [CS3], [CS5], [CS7], [-1] [+1], Dial, [SHIFT]+keyboard

Sets the lowest velocity value for a range of velocity values over which each active layer will produce output.

Use the [CS1], [CS3], [CS5], and [CS7] sliders to set the low velocity limits of the A, B, C, and D layer voices, respectively. It is also possible to play any note on the keyboard at the desired velocity while holding the [SHIFT] key.

Every note played on the keyboard (or external MIDI controller) produces a "velocity" value that tells the tone generator how hard the note has been played. The range of MIDI velocity values is from 1 to 127 — thus the 1 ... 127 range of this parameter.

The Low Velocity Limit parameter, in conjunction with the High Velocity Limit parameter described below, makes it possible to specify a range of velocity values over which the selected layer will produce sound. You could, for example, set Low Velocity Limit to "60" and High Velocity Limit to "127." This would cause that layer to produce output <u>only</u> when a velocity value between 60 and 127 was received — i.e. when a fairly loud note is played. A second layer could then be set to produce output only when velocity values below 60 are received, so that completely different sounds are produced on soft and loud notes.

Voices that are turned off are indicated by "---" on the display.

Hi (High velocity limit)

Range: 1 … 127
Controls: [CS2], [CS4], [CS6], [CS8], [-1] [+1], Dial,
[SHIFT]+keyboard

Sets the highest velocity value for a range of velocity values over which each active layer will produce output.

Use the [CS2], [CS4], [CS6], and [CS8] sliders to set the high velocity limits of the A, B, C, and D layer voices, respectively. It is also possible to play any note on the keyboard at the desired velocity while holding the [SHIFT] key.

See the "Lo" parameter, above, for more details.

7: CS ENABLE

The CS3 and CS4 sliders can be used to control the level of individual layers or specified groups of layers in the performance play mode. This screen specifies which slider controls which layers.
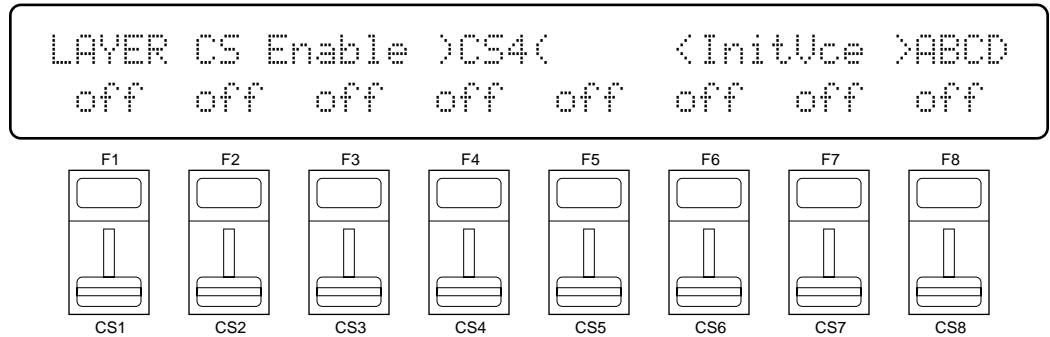
```
LAYER CS Enable )CS4(    <InitVce >ABCD
 off  off  off  off  off  off  off  off
```

The name of the currently selected voice/layer is shown in the upper right corner of the display. The characters "ABCD" to the right of the voice name indicate the status of each voice: a capital letter if the voice is on, a lower-case letter if the voice is muted, and a dash if the voice is off.

CS3 Enable

Range: on, off
Controls: [CS1], [CS3], [CS5], [CS7], [-1] [+1], Dial

The [CS1], [CS3], [CS5], and [CS7] sliders turn CS3 control of layers A, B, C, and D on or off, respectively.

Voices that are turned off and are not available for editing are indicated by "---" on the display.

CS4 Enable

Range: on, off
Controls: [CS2], [CS4], [CS6], [CS8], [-1] [+1], Dial

The [CS2], [CS4], [CS6], and [CS8] sliders turn CS4 control of layers A, B, C, and D on or off, respectively.

Voices that are turned off and are not available for editing are indicated by "---" on the display.

LAYER DATA COPY

This function facilitates performance editing by allowing the layer parameters from any layer in any other performance (the "source" performance) to be copied to the current layer. You can copy a layer setup that is close to the type you want, then edit it to produce the required sound.

```
LAYER COPY        From Performance    Layer
                     ⌘A1:InitPerf      B
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
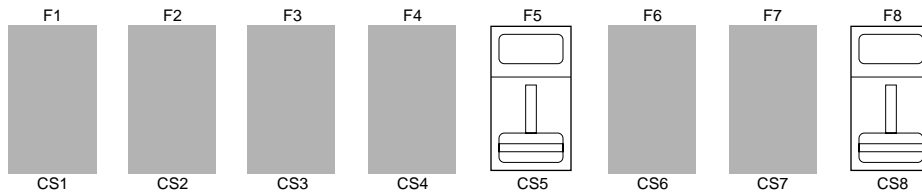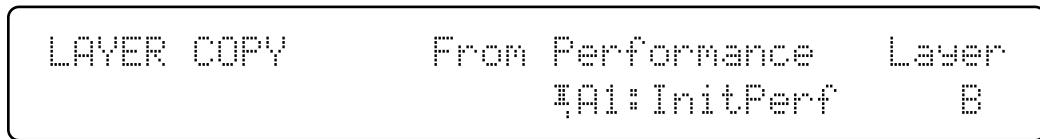
From Performance

Range: Any INTERNAL or CARD performance
Controls: MEMORY, GROUP, PROGRAM, [CS5], [-1] [+1], Dial

Layer

Range: A, B, C, D
Controls: [CS8], [-1] [+1], Dial

Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source performance is to be selected. Use the GROUP keys to select the source performance bank, then use the PROGRAM keys to select the source performance number. The [CS5] slider and other data entry controls can also be used to select the source performance number. Use the [CS8] slider to select the source layer.

Once the source performance and layer has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
LAYER COPY        From Performance    Layer
Are you sure ?       ⌘G1:InitPerf      A
```
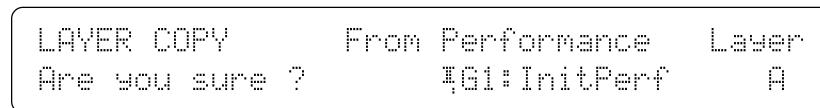
Press the [ENTER/YES] key again to copy the layer data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the layer edit mode.

PERFORMANCE TOTAL LEVEL

This parameter sets the overall volume of the current performance combination in relation to the others, making it possible to match levels for smooth transition when switching between performance combinations.

```
PERFORMANCE Total Level
              80▋
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
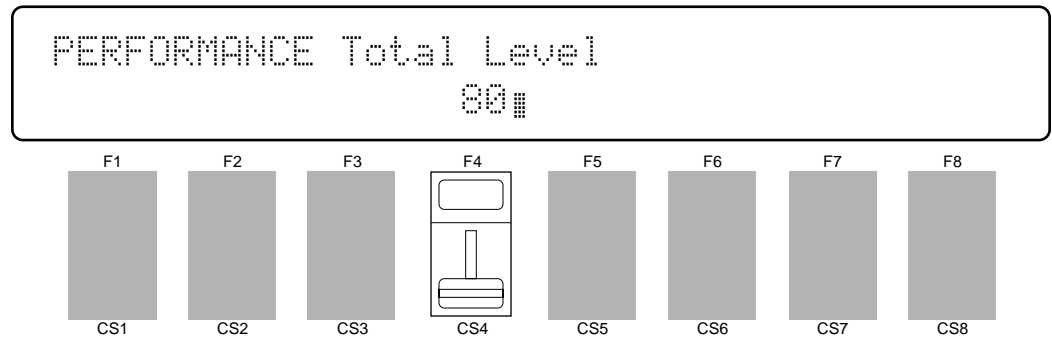
Total Level
Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Adjusts the volume of the current performance.

A setting of "0" produces no sound while a setting of "127" produces maximum volume. A bar graph to the right of the parameter provides a visual indication of volume level — the longer the bar, the higher the volume.

PERFORMANCE NAME

Your original performance combinations should naturally have original names. This function can be used to assign a name of up to 8 characters to the current performance.

```
PERFORMANCE Name                    "InitPerf"
[CLR][UPR][LWR][SPC]                  [←]   [→]
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Name

Range: See character list, below
Controls: GROUP, PROGRAM, [F1] … [F4], [F7], [F8],
**   [CS1] … [CS8], [-1] [+1], Dial**

Assigns a name of up to 8 characters to the current performance.

Use the [F7] function key to move the character cursor to the left, and the [F8] function key to move the cursor to the right. Use the GROUP and PRO-GRAM keys to input a character at the cursor position. Each GROUP or PRO-GRAM key selects the three characters printed above it in sequence. It is also possible to use the [-1] and [+1] keys or dial to scroll through the available characters (see list below).

The sliders, [CS1] through [CS8], independently select characters for the corresponding character position: [CS1] selects the first character, [CS2] selects the second character, and so on.

The first four function keys also perform important functions: [F1] clears the entire name, [F2] selects upper-case characters for GROUP and PROGRAM key entry, [F3] selects lower-case characters for GROUP and PROGRAM key entry, and [F4] inserts a space at the cursor position.

GROUP key	PROGRAM key
[A]: A → B → C	[1]: Y → Z → 0
[B]: D → E → F	[2]: 1 → 2 → 3
[C]: G → H → I	[3]: 4 → 5 → 6
[D]: J → K → L	[4]: 7 → 8 → 9
[E]: M → N → O	[5]: * → & → _
[F]: P → Q → R	[6]: / → . → ,
[G]: S → T → U	[7]: ' → ! → ?
[H]: V → W → X	[8]: # → : → ;

LAYER VOICE EDIT MENU

The Layer Voice Edit menu allows you to access any of the voice edit parameters for the voice assigned to the currently selected performance layer, without having to leave the performance edit mode.

```
LAYER VOICE

                              Hit [ENTER]
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
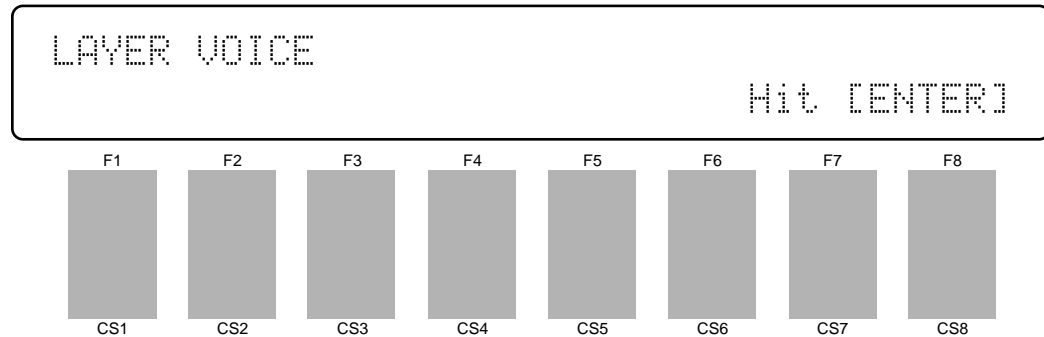
Press [ENTER/YES] from the entry display (above) to access the layer voice edit menu.

```
LAYER VOICE EDIT  MENU  1~8
            1:Oscillator
```

Use the [CS3] slider, the [-1] and [+1] keys, or the data entry dial to select the desired voice edit screen, then press [ENTER/YES] to jump to selected screen. Other voice edit screens can then be selected by using the [◄] and [►] keys. The available voice edit screens are listed below:

1: Oscillator
2: Amplitude EG
3: Filter
4: Pitch EG
5: LFO
6: Controller
7: VOICE Total Level
8: VOICE Name

While editing the voice parameters in voice edit screens 2 through 7, above, the PROGRAM keys [1] through [4] (LAYER SELECT A, B, C, and D) can be used to select a different layer for editing. PROGRAM keys [5] through [8] can also be used for layer muting.

Press [EXIT/NO] to return to the performance edit mode when you're finished with the voice edit parameters. Refer to pages 58 through 95 in the "Voice Edit Mode" section for details on the voice edit parameters.

1: AMPLITUDE EG OFFSET

These parameters allow the amplitude envelopes of the voices assigned to each layer to be modified to some degree. The actual amplitude EG of the voices are not affected, these "offset" values are only effective in the performance mode.

```
QED AEG)    R1   R2,3  R4   RR   Vel
ALL[Lyr:A] +0    +0    +0   +0    +0
```

```
F1      F2      F3      F4      F5      F6      F7      F8
┌──┐            ┌──┐    ┌──┐    ┌──┐    ┌──┐    ┌──┐
│  │            │  │    │  │    │  │    │  │    │  │
└──┘            └──┘    └──┘    └──┘    └──┘    └──┘
                 │       │       │       │       │
                ▭       ▭       ▭       ▭       ▭

CS1     CS2     CS3     CS4     CS5     CS6     CS7     CS8
```
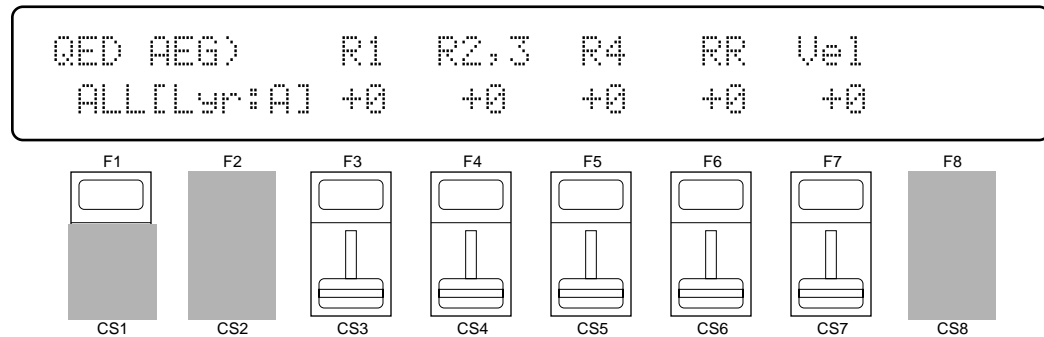
Use PROGRAM keys [1] through [4] (LAYER SELECT A, B, C, and D) to select the layer to be edited.

Hold the [F1] function key ("ALL") while editing any of the following parameters to change its value by the same amount for all layers simultaneously.

R1 (Attack rate)
Range: -63 ... +63
Controls: [CS3], [-1] [+1], Dial

Modifies the "R1" parameter of the voice amplitude EG — see page 60. Plus (+) values produce a faster attack rate while minus (-) values produce a slower attack rate.

No matter how much offset is applied, the minimum and maximum EG attack rates cannot be exceeded.

R2,3 (Decay 1 rate)
Range: -63 ... +63
Controls: [CS4], [-1] [+1], Dial

Modifies the "R2" and "R3" parameters of the voice amplitude EG — see page 60. Plus (+) values produce a faster decay rate while minus (-) values produce a slower decay rate.

No matter how much offset is applied, the minimum and maximum EG decay rates cannot be exceeded.

R4 (Decay 2 rate)
Range: -63 ... +63
Controls: [CS5], [-1] [+1], Dial

Modifies the "R4" parameter of the voice amplitude EG — see page 60. Plus (+) values produce a faster decay rate while minus (-) values produce a slower decay rate.

No matter how much offset is applied, the minimum and maximum EG decay rates cannot be exceeded.

RR (Release rate)
Range: -63 … +63
Controls: [CS6], [-1] [+1], Dial

Modifies the "RR" parameter of the voice amplitude EG — see page 60. Plus (+) values produce a faster release rate while minus (-) values produce a slower release rate.

No matter how much offset is applied, the minimum and maximum EG release rates cannot be exceeded.

Vel (Velocity sensitivity)
Range: -14 ... +14
Controls: [CS7], [-1] [+1], Dial

Modifies the amplitude EG velocity sensitivity setting (see page 63). Plus "+" settings increase sensitivity while minus "-" settings reduce sensitivity.

No matter how much offset is applied, the minimum and maximum velocity values cannot be exceeded.

2: LFO & FILTER OFFSET

These parameters allow the main LFO and filter parameters of the voices assigned to each layer to be modified to some degree. The actual LFO and filter parameters of the voices are not affected, these "offset" values are only effective in the performance mode.

```
QED  LFO)Speed Depth Fltr)Coff Reso   Vel
ALL[Lyr:C] +0     +0          ----  ----     +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
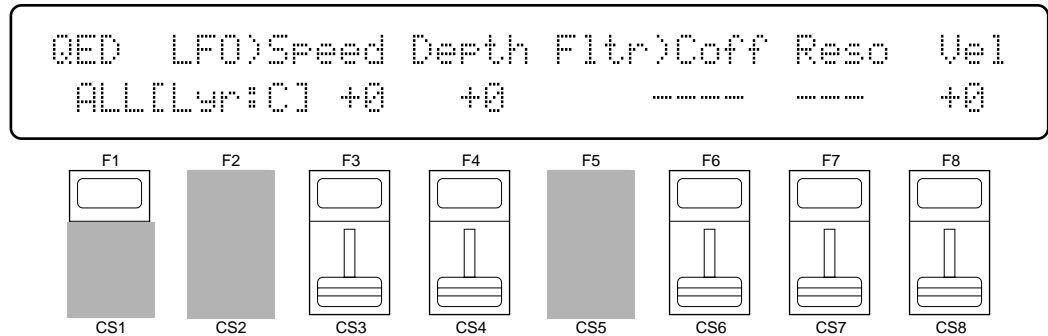
Use PROGRAM keys [1] through [4] (LAYER SELECT A, B, C, and D) to select the layer to be edited.

Hold the [F1] function key ("ALL") while editing any of the following parameters to change its value by the same amount for all layers simultaneously.

Speed (LFO speed)
Range: -99 … +99
Controls: [CS3], [-1] [+1], Dial

Modifies the speed of the LFO (this corresponds to the "Speed" parameter of the main voice LFO — see page 78). Plus (+) values increase the LFO speed while minus (-) values reduce the speed.

No matter how much offset is applied, the minimum and maximum LFO speeds cannot be exceeded.

Depth (LFO depth)
Range: -99 … +99
Controls: [CS4], [-1] [+1], Dial

Modifies the amplitude, pitch, and frequency modulation depth of the LFO (this corresponds to the "Pmod", "Amod", and "Fmod" parameters of the main voice LFO — see page 78 and 79). Plus (+) values produce greater modulation depth while minus (-) values reduce the modulation depth.

No matter how much offset is applied, the minimum and maximum LFO depth values cannot be exceeded.

Coff (Filter cutoff frequency)
Range: -127 … +127
Controls: [CS6], [-1] [+1], Dial

Modifies the filter cutoff frequency (this corresponds to the voice filter "CutOff" parameter — see page 65). Plus (+) values increase the cutoff frequency while minus (-) values lower the cutoff frequency. This parameter cannot be used if the filter is set to "Thru". In this case "----" appears in place of the parameter value.

No matter how much offset is applied, the minimum and maximum cutoff frequency values cannot be exceeded.

Reso (Filter resonance)
Range: -99 … +99
Controls: [CS7], [-1] [+1], Dial

Modifies the height of the filter's resonant peak (this corresponds to the filter "Resonance" parameter — see page 68). Plus (+) values increase resonance while minus (-) values reduce resonance. This parameter cannot be used if the filter is <u>not</u> set to "LPF". In this case "---" appears in place of the parameter value.

No matter how much offset is applied, the minimum and maximum resonance values cannot be exceeded.

Vel (Velocity sensitivity)
Range: -127 ... +127
Controls: [CS8], [-1] [+1], Dial

Modifies the filter velocity sensitivity setting (see page 72). Plus "+" settings increase sensitivity while minus "-" settings reduce sensitivity.

No matter how much offset is applied, the minimum and maximum velocity values cannot be exceeded.

3: CONTROLLER CONDITIONS

These parameters determine how the performance layers are affected by keyboard aftertouch response, the modulation wheel, and the foot controller.
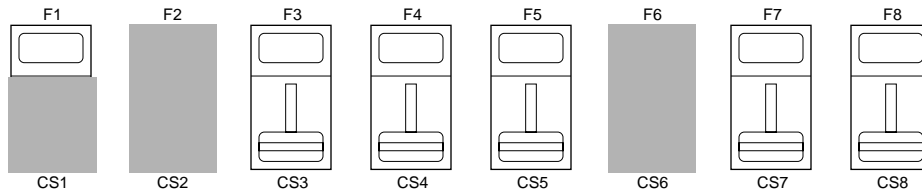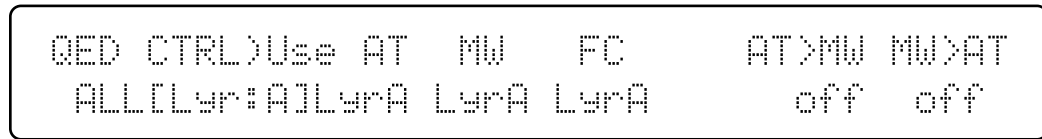
```
QED CTRL)Use AT   MW   FC      AT>MW MW>AT
    ALL[Lyr:A]LyrA LyrA LyrA       off   off
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Use PROGRAM keys [1] through [4] (LAYER SELECT A, B, C, and D) to select the layer to be edited.

Hold the [F1] function key ("ALL") while editing any of the following parameters to change its value by the same amount for all layers simultaneously.

AT (Aftertouch)
Range: off, LyrA, LyrB, LyrC, LyrD
Controls: [CS3], [-1] [+1], Dial

The aftertouch control settings from the voice assigned to the selected layer (LyrA, LyrB, LyrC, or LyrD) are applied to the layer being edited (i.e. the layer selected via PROGRAM keys [1] through [4]). Select "off" to turn aftertouch control off for the layer being edited.

MW (Modulation wheel)
Range: off, LyrA, LyrB, LyrC, LyrD
Controls: [CS4], [-1] [+1], Dial

The modulation wheel control settings from the voice assigned to the selected layer (LyrA, LyrB, LyrC, or LyrD) are applied to the layer being edited (i.e. the layer selected via PROGRAM keys [1] through [4]). Select "off" to turn modulation wheel control off for the layer being edited.

FC (Foot controller)
Range: off, LyrA, LyrB, LyrC, LyrD
Controls: [CS6], [-1] [+1], Dial

The foot controller control settings from the voice assigned to the selected layer (LyrA, LyrB, LyrC, or LyrD) are applied to the layer being edited (i.e. the layer selected via PROGRAM keys [1] through [4]). Select "off" to turn foot control off for the layer being edited.

AT>MW (Aftertouch ➜ modulation wheel)
Range: off, on
Controls: [CS7], [-1] [+1], Dial

When this parameter is turned "on," aftertouch can be used to prouce the same effect as the modulation wheel, in addition to any parameters assigned to aftertouch.

MW>AT (Modulation wheel ➜ aftertouch)
Range: off, on
Controls: [CS8], [-1] [+1], Dial

When this parameter is turned "on," the modulation wheel can be used to produce the same effect as aftertouch, in addition to any parameters assigned to the modulation wheel.

4: OTHER CONDITIONS

Other parameters that can be individually set for each performance layer are provided in this screen: sustain enable, pitch envelope generator enable, oscillator fixed note mode and note number.
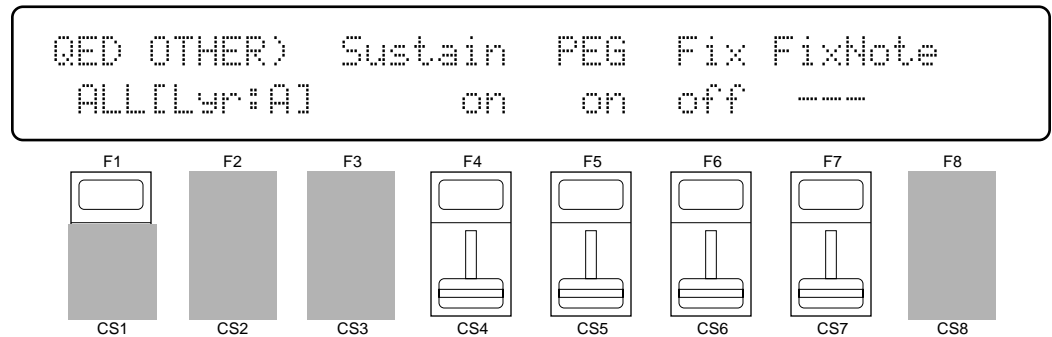
```
QED OTHER)  Sustain  PEG  Fix FixNote
ALL[Lyr:A]        on   on  off  ---
```

Use PROGRAM keys [1] through [4] (LAYER SELECT A, B, C, and D) to select the layer to be edited.

Hold the [F1] function key ("ALL") while editing any of the following parameters to change its value by the same amount for all layers simultaneously.

Sustain
Range: off, on
Controls: [CS4], [-1] [+1], Dial

Turns sustain off or on for the selected layer. Interesting effects can be produced by setting some layers to respond to the sustain footswitch in the normal way, while others do not sustain at all.

PEG (Pitch EG enable)
Range: off, on
Controls: [CS5], [-1] [+1], Dial

Turns pitch envelope generator control of the selected layer off or on.

Fix (Oscillator fix)
Range: off, on
Controls: [CS6], [-1] [+1], Dial

Turns the oscillator fixed-pitch mode on or off (see page 58). The FixNote parameter described below can be used to set the note produced when the "fix" mode is turned on.

FixNote (Oscillator fix note number)

Range: C-2 … G8

Controls: [CS7], [-1] [+1], Dial

Sets the frequency (note) at which the selected layer will be played when the "fix" mode is turned on ("---" is displayed in place of the note when the "fix" mode is turned off).

The C-2 to G8 range of this parameter covers a full 10-1/2 octaves. "C3" corresponds to "middle C" on a keyboard.

5: EFFECT TYPE

The SY85 features a complex, high-performance effect system that can be programmed easily via the parameters presented here and in the following screen.

For a complete list of effect parameters see page 274.

```
QED EFFECT)   Type              Wet Balance
   06:Rev.Stage1  57:EQ -> Sym   50%  50%
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

Effect Type 1/2
Range: 0 … 90
Controls: [CS1]/[CS4], [-1] [+1], Dial

[CS1] selects any of the SY85's 90 effect types for the EFFECT 1 processor, and [CS4] does the same for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system.

Wet Balance 1/2
Range: 0 … 100
Controls: [CS7]/[CS8], [-1] [+1], Dial

[CS7] controls the balance between the direct no-effect sound and the effect sound of the EFFECT 1 processor, while [CS8] does the same for the EFFECT 2 processor. The higher the value the deeper the effect. See page 254 for more details on the SY85 effect system.

6: EFFECT PARAMETER
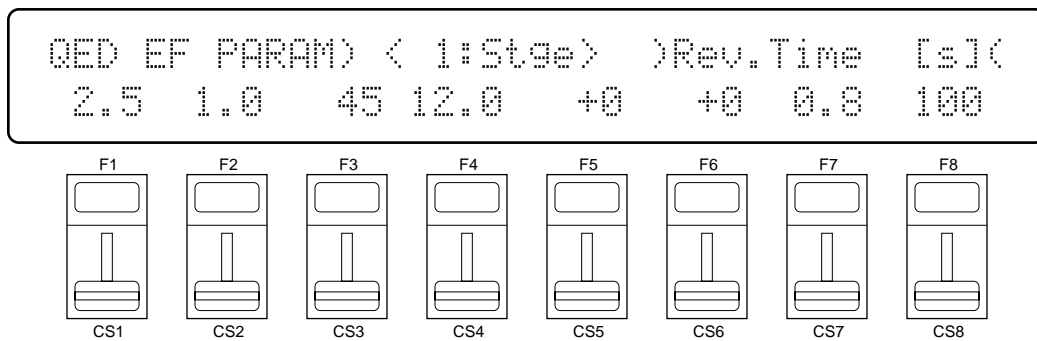
```
QED EF PARAM) < 1:Stge>  )Rev.Time  [s](
 2.5  1.0   45 12.0    +0    +0  0.8  100
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

This screen provides access to the four main parameters each for the current selected effect 1 and effect 2. The four effect 1 parameters are edited via [CS1] through [CS4], while the four effect 2 parameters are edited via [CS5] through [CS8].

The parameters are different for each effect (refer to page 274 for details). The EFFECT mode PARAMETERS screen described on page 44 provides full access to all 8 effect parameters.

1: MODE, TYPE

The SY85 features a dual-processor effect system that includes 90 top-quality digital effects. Two different effects can be connected in series or parallel, providing an extensive range of possible configurations.

```
EF Mode      EF1 Type        EF2 Type
  2:para     06:Rev.Stage1   57:EQ -> Sym
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

Mode
Range: 0:off, 1:seri, 2:para
Controls: [CS1], [-1] [+1], Dial

Determines whether the SY85's two effect processors are connected in series ("1:seri") or in parallel ("2:para"), or whether the entire effect system is turned off ("0:off").

EF1 Type
Range: 0 … 90
Controls: [CS3], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 1 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

EF2 Type
Range: 0 … 90
Controls: [CS6], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

2: SEND SELECT & LEVEL

The parameters provided here determine to which of the SY85 effect stages the output from the voice assigned to each layer is sent, and at what level. It is also possible to control the effect send level via keyboard dynamics and key scaling.

```
EF Send <InitVce > Switch Levl VelS Kscl
Layer=A(¶A)      1a/- 2a/b 127    +0    +0
```
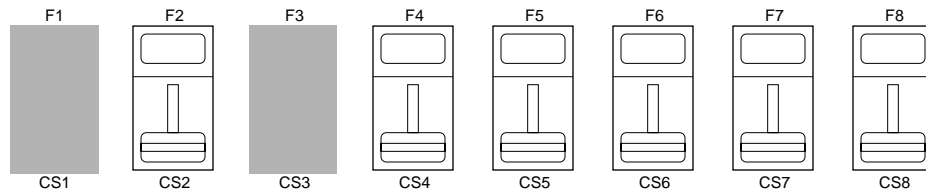
```
F1      F2      F3      F4      F5      F6      F7      F8

CS1     CS2     CS3     CS4     CS5     CS6     CS7     CS8
```

Layer
Range: A, B, C, D
Controls: [CS2], PROGRAM [1] … [4], [-1] [+1], Dial

Selects the layer to be edited. The name of the voice assigned to the selected layer is shown between parentheses on the upper line of the display.

Switch 1a, 1b/2a, 2b
Range: See text below.
Controls: [CS4]/[CS5], [-1] [+1], Dial

Determines to which of the EFFECT 1 and EFFECT 2 effect stages the output from the current layer is sent. The [-1] and [+1] keys can then be used to turn the stage on ("a" or "b") or off ("."). The [CS4] and [CS5] sliders select the following settings in sequence:

CS4 (EFFECT 1)		CS5 (EFFECT 2)	
1./.	(a and b off)	2./.	(a and b off)
1a/.	(a on, b off)	2a/.	(a on, b off)
1a/b	(a and b on)	2a/b	(a and b on)
1./b	(a off, b on)	2./b	(a off, b on)

If a "single" type effect is selected then only stage "a" can be selected. If a "dual" or "cascade" type effect is selected, then both stages "a" and "b" can be selected. An effect stage that cannot be selected is represented by "-" on the display.

Send (Send level)
Range: 0 … 127
Controls: [CS6], [-1] [+1], Dial

This parameter adjusts the amount of direct voice signal that is sent to the effect processors, determining the strength of the final effect sound. A setting of "0" results in no effect, leaving only the "dry" sound of the voice. The maximum setting of "127" produces the maximum amount of effect.

VelS (Send velocity sensitivity)
Range: -7 … +7
Controls: [CS7], [-1] [+1], Dial

Determines how the send level from the selected layer is affected by velocity changes (e.g. keyboard dynamics).

Plus "+" settings produce higher send levels in response to higher velocity values — i.e. the harder a key is played, the higher the send level, and therefore the deeper the effect. The maximum setting of "+7" produces the maximum level variation in response to velocity changes. Minus "-" settings produce the opposite effect: lower send level in response to higher velocity. A setting of "+0" results in no send level variation.

Kscl (Send key scaling)
Range: -7 … +7
Controls: [CS8], [-1] [+1], Dial

Allows the send level for the selected layer to be varied across the entire pitch range (i.e. keyboard range).

Plus ("+") settings produce a higher send level for the low notes and a lower send level for the high notes. The maximum "+7" setting produces the greatest send level variation across the pitch range. Minus ("-") settings produce the opposite effect — a lower low-note send level and higher high-note send level. A setting of "+0" results in no send level variation.

3: LAYER DRY OUTPUT SELECT

These parameters determine turn the "dry lines" (i.e. the signal paths which by-passes each effect processor) on or off, determining whether any dry signal output can occur at OUTPUT 1 and OUTPUT 2.

```
OUTPUT Select <InitVce > Dry1 Dry2
   Layer=A(¦A1)              on    on
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Layer

Range: A, B, C, D
Controls: [CS2], PROGRAM [1] … [4], [-1] [+1], Dial

Selects the layer to be edited. The name of the voice assigned to the selected layer is shown between parentheses on the upper line of the display.

Dry1

Range: off, on
Controls: [CS6], [-1] [+1], Dial

Turns the "dry line" bypassing the EFFECT 1 signal processor on or off. When this parameter is turned "off," the "WET:DRY BALANCE" parameters (page 42) have no effect.

Dry2

Range: off, on
Controls: [CS7], [-1] [+1], Dial

Turns the "dry line" bypassing the EFFECT 2 signal processor on or off. When this parameter is turned "off," the "WET:DRY BALANCE" parameters (page 42) have no effect.

4: OUTPUT LEVEL

Depending on the selected effects the SY85 effect system can have up to four separate output levels that are adjusted by the parameters provided in this screen.

```
EF OutLevel 1a   1b              2a   2b
 EF1(sngl)=100%  -- EF2(casc)=  --   100%
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

1a, 1b, 2a, and 2b (Effect output levels)
Range: 0 … 100
Controls: [CS3], [CS4], [CS7], [CS8], [-1] [+1], Dial

The [CS3] and [CS4] sliders adjust the output levels of the effect 1 "1a" and "1b" stages, respectively, while the [CS7] and [CS8] sliders adjust the output levels of the effect 2 "2a" and "2b" stages. A setting of "0" turns output from the corresponding effect stage off, while a setting of "100" produces maximum output level.

If the selected effect is a "single" type, then only the "1a" or "2a" output level is available. If it is a "cascade" type, then only the "1b" or "2b" output level is available. Both the "1a" and "1b" or "2a" and "2b" levels are available only if the selected effect is a "dual" type. The type of the effects currently selected for the effect 1 and effect 2 processors are shown in parentheses on the bottom line of the display. See page 254 for details on the effect stages and the SY85 effect system in general.

If a controller is assigned to any of the output level parameters (page 45), an inverse "c" will appear to the right of the parameter.

5: WET:DRY BALANCE

The balance between the direct sound of the voice and the effect sound is a delicate thing. Even slight changes can make a big difference to the final sound. The parameters provided in this screen provide precise balance control.

```
EF Wet:Dry Balance
       Out1=  50 : 50      Out2=  50 : 50
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Out1 Wet/Out2 Wet
Range: 0 … 100
Controls: [CS3]/[CS7], [-1] [+1], Dial

These parameters and the corresponding "Out1 Dry" and "Out2 Dry" parameters, below, work together to balance the effect ("wet") and direct ("dry") signals delivered via the EFFECT 1 and EFFECT2 processors. Higher "Wet" values produce more effect sound in relation to the direct, dry sound of the voice.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

If a controller is assigned to the "Out1 Wet" or "Out2 Wet" parameter (page 45), an inverse "c" will appear to the right of the parameter.

Out1 Dry/Out2 Dry
Range: 0 … 100
Controls: [CS4]/[CS8], [-1] [+1], Dial

These parameters and the corresponding "Out1 Wet" and "Out2 Wet" parameters, above, work together to balance the effect ("wet") and direct ("dry") signals delivered via the EFFECT 1 and EFFECT 2 processors, respectively. Higher "Dry" values produce more direct, dry sound in relation to the effect sound.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

If a controller is assigned to the "Out1 Dry" or "Out2 Dry" parameter (page 45), an inverse "c" will appear to the right of the parameter.

6: SEND & EFFECT 2 MIX LEVEL

These parameters determine the mix level between each effect send and the output of the preceding effect stage. Refer to the section beginning on page 254 for details on the overall SY85 effect system.

```
  EF Mix Level    EF2  Insert 1b   2a   2b
                  ——          ——   ——    0%
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

EF2 Mix (Effect 2 mix level)
Range: 0 … 100
Controls: [CS4], [-1] [+1], Dial

Mixes the output of the EFFECT 2 processor with that of the EFFECT 1 processor. This parameter can only be used with the "serial" effect mode is selected. If any other mode is selected ("off" or "para"), "---" appears on the display in place of the value.

If a controller is assigned to the EF2 Mix parameter (page 45), an inverse "c" will appear to the right of the parameter.

Insert 1b, 2a, 2b (Insert level)
Range: 0 … 100
Controls: [CS6], [CS7], [CS8], [-1] [+1], Dial

These parameters mix the dry signal sent to the corresponding effect stage with the output of the preceding effect stage. The higher the value the greater mix level. If the current effect configuration does not allow one of these mix parameters, "--" will appear in place of the mix level parameter.

If a controller is assigned to the one of these parameters (page 45), an inverse "c" will appear to the right of the parameter.

7: EFFECT 1 PARAMETERS
8: EFFECT 2 PARAMETERS

[PERFORMANCE] → [EFFECT EDIT] → [MENU] ⌐→ 7:EF1 Parameter → [ENTER/YES]
                                      └→ 8:EF2 Parameter → [ENTER/YES]

Each of the SY85's 90 effects has 8 parameters that can be edited via the parameters in this screen to fine-tune the effect.

```
EF1 PARAM <Rev.Stage1>   )ER/Rev Bal[%](
   2.5  1.0    10    32    16     4     0 12.0
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Each parameter is controlled by the corresponding slider (i.e. the slider immediately below each parameter). The [-1]/[+1] keys and data entry dial can also be used to edit the parameter at which the cursor is currently located.

Refer to page 274 for a complete listing of the parameters provided for each effect.

9: CONTROL PARAMETERS

The SY85 [CS1] and [CS2] sliders can be assigned to control different effect parameters in real time while playing in the voice or performance modes. The parameters provided in this screen determine which effect parameters are to be controlled by the [CS1] and [CS2] sliders, the minimum and maximum parameter values, and assign MIDI control numbers to the same parameters for MIDI effect control.

```
EF CTRL)         ( Min  Max  Additional
  CS1 : off          0% 100% 000:off
```

CS1/CS2 (CS1/CS2 switch)
Range: CS1, CS2
Controls: [CS1], [-1] [+1], Dial

Selects [CS1] or [CS2] for assignment.

Parameter (Effect parameter)
Range: Depends on selected effects.
Controls: [CS2], [-1] [+1], Dial

Selects the effect parameter to be controlled by the currently selected slider. Since each effect has as many as 8 different parameters, the maximum number of settings available for this parameter will be 8: "Ef1prm1" through "Ef1prm8" on the display, for example, stands for "effect 1 parameter 1" through "effect 1 parameter 8". The parameters available for each effect are different, but the name of the selected parameter will be shown between the parentheses on the top line of the display. Parameters that can not be assigned to the sliders are indicated by dashes ("--------") instead of a parameter name.

Min (Minimum parameter value)
Range: 0 ... 100
Controls: [CS4], [-1] [+1], Dial

Sets the lower limit of the [CS1] or [CS2] control range. A setting of "0", for example, means that when the slider is set to its lowest position the assigned parameter will also be set to its lowest value. A setting of "50" means that the lowest slider position will set the assigned parameter to about 50% of its range (a parameter with a range of 0 to 127, for example, would be set to about 63).

If a controller is assigned to the "Min" parameter, an inverse "c" will appear to the right of the parameter.

Max (Maximum parameter value)
Range: 0 … 100
Controls: [CS5], [-1] [+1], Dial

Sets the upper limit of the [CS1] or [CS2] control range. A setting of "100", for example, means that when the slider is set to its highest position the assigned parameter will also be set to its highest value. A setting of "80" means that the highest slider position will set the assigned parameter to about 80% of its range (a parameter with a range of 0 to 127, for example, would be set to about 102).

If a controller is assigned to the "Max" parameter, an inverse "c" will appear to the right of the parameter.

Additional (Additional MIDI control)
Range: 000 … 120, AfterTch, Velocity, KeyScale, LFO
Controls: [CS6], [-1] [+1], Dial

This parameter allows MIDI control change numbers to be assigned to the selected effect parameters, so that they can be controlled from the SY85 controllers (modulation wheel, foot controller, etc) or an external MIDI device that is capable of transmitting control change messages. Additional settings include "AfterTch" for keyboard aftertouch control, "Velocity" for keyboard velocity control, "KeyScale" for key scaling control, and "LFO" for internal LFO control. This is in addition to control via the [CS1] and [CS2] sliders. MIDI control change numbers 000 through 120 can be assigned. Some control change numbers are already defined, while others are not assigned to any specific controller (see chart below).

MIDI CONTROL CHANGE NUMBER/DEVICE

0:	"--------"	91:	"Effect D"
1:	"Mod.Whl."	92:	"TremoloD"
2:	"Breath C"	93:	"Chorus D"
4:	"Foot Cnt"	94:	"CelesteD"
5:	"Porta.Tm"	95:	"Phaser D"
6:	"Data Ent"	96:	"Inc. "
7:	"Main Vol"	97:	"Dec. "
8:	"Balance "	98:	"NRPN LSB"
10:	"Panpot "	99:	"NRPN MSB"
11:	"Express."	100:	"RPN LSB"
64:	"Hold 1 "	101:	"RPN MSB"
65:	"Porta.Sw"	121:	"AfterTch"
66:	"Sostenut"	122:	"Velocity"
67:	"Soft "	123:	"KeyScale"
69:	"Hold 2 "	124:	"LFO "

10: CONTROL LFO

All of the modulation-type effects — chorus, flanging, etc. — require LFO control. The SY85 has an independent effect LFO that is set up by the following parameters.

```
EF CTRL LFO  Waveform    Speed      Delay
                  tri         0          0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Wave (LFO waveform)
Range: tri, dwn, up, squ, sin, S/H, 1tm
Controls: [CS4], [-1] [+1], Dial

Determines the waveform of the effect LFO.

"tri" = Triangle.	"dwn" = Downward sawtooth.
"up" = Upward sawtooth.	"squ" = Square.
"sin" = Sine.	"S/H" = Sample and hold.
	"1tm" = Upward 1-shot.

If a controller is assigned to the "Wave" parameter (page 45), an inverse "c" will appear to the right of the parameter.

Speed (LFO speed)
Range: 0 … 99
Controls: [CS6], [-1] [+1], Dial

Sets the speed of the effect LFO.

"0" is the slowest speed setting, producing an LFO speed of approximately 0 Hertz. The fastest setting of 99 produces an LFO speed of approximately 25 Hertz.

If a controller is assigned to the "Speed" parameter (page 45), an inverse "c" will appear to the right of the parameter.

Delay
Range: 0 … 99
Controls: [CS8], [-1] [+1], Dial

Sets the delay time between the beginning of a note and the beginning of effect LFO operation for the selected element.

The minimum setting "0" results in no delay, while the maximum setting of "99" produces a delay of approximately 2.66 seconds before the effect LFO begins operation.
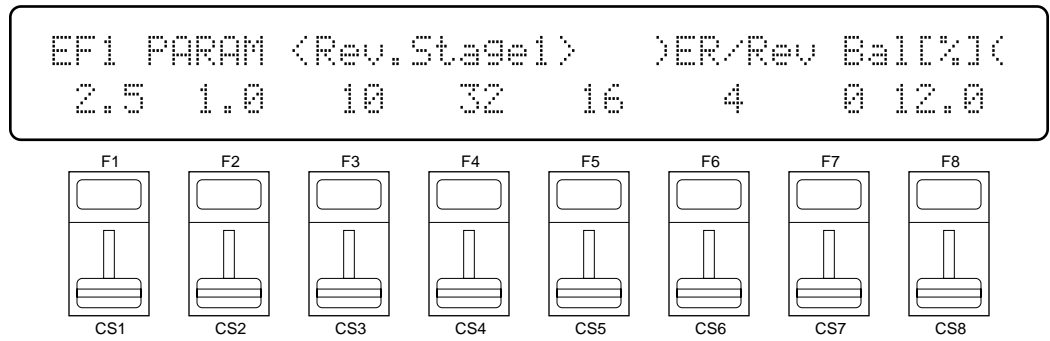
If a controller is assigned to the "Delay" parameter (page 45), an inverse "c" will appear to the right of the parameter.

EFFECT DATA COPY

This function facilitates performance effect editing by allowing the effect parameters from any other song, voice, or performance combination to be copied to the current performance combination. You can copy an effect setup that is close to the type you want, then edit it to produce the required sound.

```
EFFECT COPY    From
               PFM  ⅃A1:InitPerf
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

From

Range: Any song, voice or performance combination
Controls: MEMORY, GROUP, PROGRAM, [CS5], [-1] [+1], Dial

Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
EFFECT COPY    From
Are you sure ?  PFM  ⅃A1:InitPerf
```

Press the [ENTER/YES] key again to copy the effect data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the effect edit mode.

EFFECT SIGNAL FLOW DISPLAY

This function provides a graphic indication of the current effect system configuration while in the effect edit mode.

● **Overall Effect Flow**

```
EFFECT FLOW | ▐▛▜▜▜▜▜▜▜▜▜▌ EF1=Rev.Stage1
Mode= para | ═════▜▛▜    | EF2=EQ -> Syn
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

● **Effect 1 Configuration**

```
EF1 Send1a>---[Stge▓]-------------◇->OUT1
                                 └-<DRY1
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

● **Effect 2 Configuration**

```
EF2 Send2a>---[EQ  ]-┐-[Syn ▓]--◇->OUT2
    Send2b>----------┘          └-<DRY2
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [SHIFT] + [F1] to see the overall effect system signal flow. Press [SHIFT] + [F2] to see the effect 1 section configuration, and [SHIFT] + [F3] for the effect 2 section configuration.

Refer the to section beginning on page 254 for details on the effect system.

1: LAYER CONTROLLER SYNC

This function changes the controller parameters of all voices in the selected perfomance combination to match those of the voice assigned to the specified "source" layer.

```
PERFORMANCE JOB Layer Controller Sync
                              Source LayerA
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
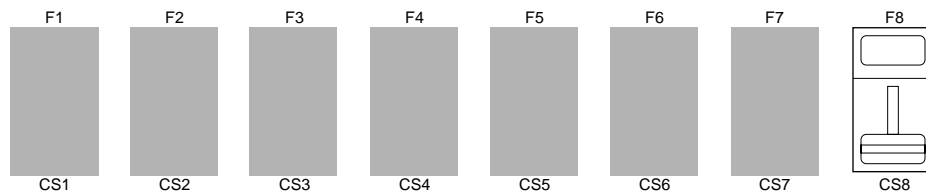
Use the [CS8] slider to select the source layer (A, B, C, or D) from which the controller data is to be copied, then press [ENTER/YES] to begin the layer controller sync procedure. The following confirmation display will appear:

```
PERFORMANCE JOB Layer Controller Sync
Are you sure ?              Source LayerA
```

Press [ENTER/YES] again to confirm that you want to go ahead with the operation (which will overwrite all controller data for the voices assigned to all layers other than the source layer), or press [EXIT/NO] to cancel.

When the data has been copied, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the layer controller sync function.

2: LAYER EXCHANGE

This function can be used to eliminate the audible effects of slight note delays that can occur in the performance play mode. The notes played by layers A, B, C, and D are sounded in sequence in the performance play mode. Normally the delay is so slight that it is not audible. If a voice with a sharp attack is assigned to one of the later layers (C or D), however, the delay can "soften" the attack of the voice. The problem can be overcome by using this function to exchange layers A and D, for example, so that the voice with the strong attack is assigned to layer A instead of layer D. Since layer A is sounded first, the sharpness of the attack will be retained.
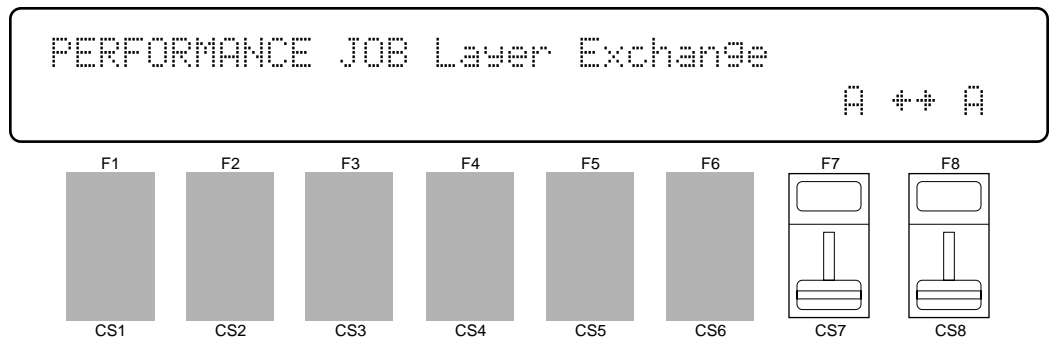
Use the [CS7] and [CS8] sliders to select the layers to be exchanged (A through D), then press [ENTER/YES] to begin the layer exchange procedure. The following confirmation display will appear:
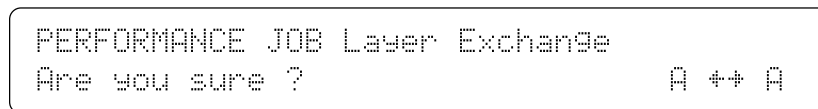
Press [ENTER/YES] again to confirm that you want to go ahead with the layer exchange operation, or press [EXIT/NO] to cancel.

When the data has been exchanged, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the layer exchange function.

3: PERFORMANCE EDIT RECALL

If you're dissatisfied with the results of edits you've made to a performance combination, or have accidentally lost track of changes made, use the PERFORMANCE EDIT RECALL function to recall the pre-edit performance data from the SY85's backup buffer memory.

```
PERFORMANCE JOB Recall              <InitPerf>
```
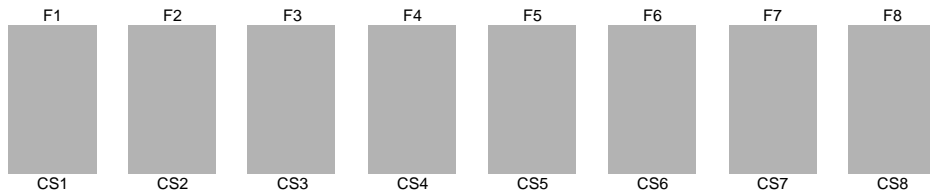
F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [ENTER/YES] to begin the recall procedure. The following confirmation display will appear:

```
PERFORMANCE JOB Recall          <InitPerf>
Are you sure ?
```

Press [ENTER/YES] again to confirm that you want to go ahead with the recall operation (which will erase all current edited data), or press [EXIT/NO] to cancel.

When the original voice data has been recalled, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the performance edit recall function.

4: PERFORMANCE INITIALIZE

When you want to program a totally new performance combination "from scratch," rather than editing an existing combination, use this function to initialize all performance parameters.

```
PERFORMANCE JOB Initialize
                         [EDIT] LYR
```
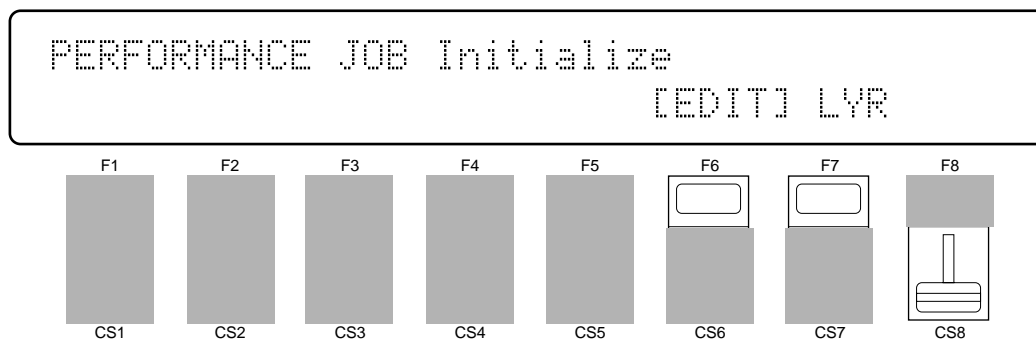
Press [F6] if you want to initialize the entire performance combination currently in the edit buffer, or [F7] if you only want to initialize one specific layer. If you choose [F7], use the [CS8] slider to select the layer you want to initialize.

Press [ENTER/YES] to begin the initialize procedure. The following confirmation display will appear:

```
PERFORMANCE JOB Initialize
Are you sure ?            [EDIT] LYR
```
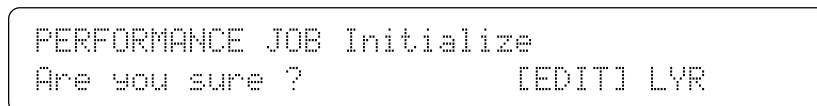
Press [ENTER/YES] again to confirm that you want to go ahead with the initialize operation (which will erase all current edited data), or press [EXIT/NO] to cancel.

When the performance data has been initialized, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the performance initialize function.

PERFORMANCE COMPARE

The performance compare function makes it possible to compare the sound of a performance combination being edited with the same performance combination prior to editing.

The illustrations here are not available.

To temporarily recall the original performance data while editing, press the [STORE] key while holding the [SHIFT] key. The [PERFORMANCE] LED will flash, indicating that the compare mode is engaged. Although you can select different edit mode display screens, data cannot be edited in the compare mode. Press [EXIT/ NO] to return to the edit mode and the performance combination being edited.

PERFORMANCE STORE

When you're satsfied with a new performance combination you've created in the performance edit mode, use the store function described below to store the new performance combination to an internal or card memory location.

```
PERFORMANCE STORE    Layer-:<------->
  To  ⅃A1:InitPerf   ⅃A1u ⅃A1u ⅃A1u ⅃A1u
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
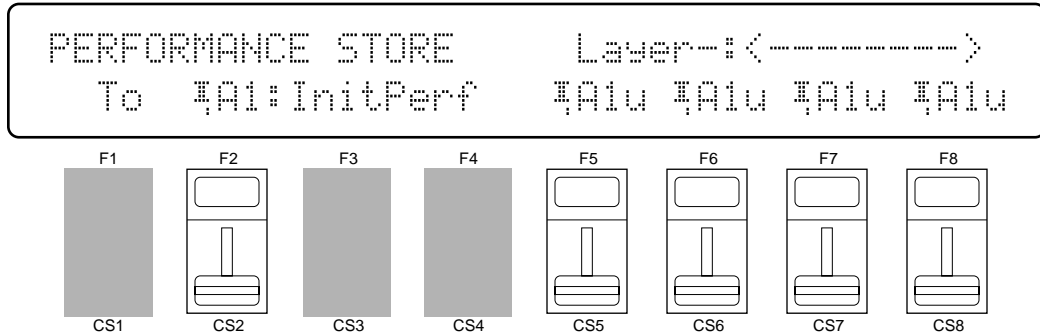
When you've finished editing, return to the normal performance play mode (press the [PERFORMANCE] key), and before selecting a different mode or performance combination press the [STORE] key. You can now use the MEMORY, GROUP, and NUMBER keys (or the [CS2] slider) to select the memory location to which your new performance combination is to be stored.

Since any changes you have made via the LAYER VOICE EDIT MENU (page 26) will be stored as voice data, it is also possible to specify the voice memory loactions to which the voice data from each layer will be stored. The [F5], [F6], [F7], and [F8] function keys select the layer A, B, C, and D layer voices, respectively. The corresponding layer and voice name appears on the upper display line. With the cursor in the appropriate position you can use the MEMORY, GROUP, and NUMBER keys (or the corresponding slider) to select the memory location to which each voice is to be stored. A "u" appearing next to one of these voice numbers means that the voice is currently used by another performance combination, and therefore any changes to that voice will affect the performance combination in which it is used. For more information press the [SHIFT] key for a list of names of other performance combinations that use the voices assigned to each layer.

Once the store location has been specified, press [ENTER/YES] to begin the store procedure. The following confirmation display will appear:

```
PERFORMANCE STORE      Are you sure ?
  To  ⅃A1:InitPerf   ⅃A1u ⅃A1u ⅃A1u ⅃A1u
```
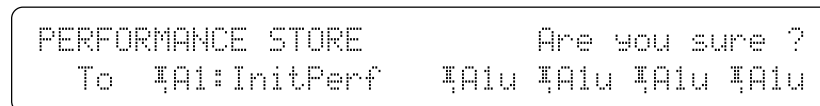
Press [ENTER/YES] again to confirm that you want to go ahead with the store operation (which will erase all previous data in the specified memory location), or press [EXIT/NO] to cancel.

When the performance data has been stored, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the store function.

VOICE EDIT MODE

OSCILLATOR

This screen contains 6 parameters that determine the fundamental sound of the voice being edited — including the number of the waveform on which the voice will be based.

```
OSC   Wave       Mode Fine Note Rndm   Rvs
P244  Sin        norm   +0   +0     0   off
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
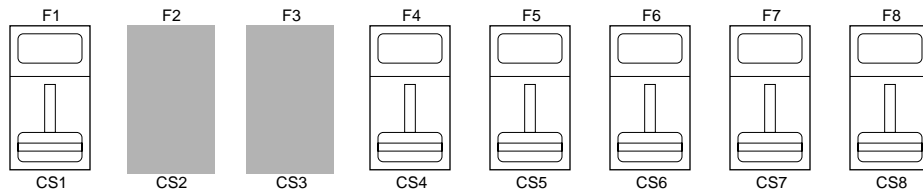
Wave

Range: P001 … P244, I00 … I63, C00 … C63
Controls: [CS1], [-1] [+1], Dial

Selects the wave (AWM waveform) to be used in the current voice. Use the [INTERNAL 1], [INTERNAL 2], and [CARD] keys to select the memory area from which the wave is to be selected. Please note that when SIMM memory is wave memory installed, wave data can not be loaded into memory from a waveform card. A complete listing of the internal waves is given in the Appendix, on page 310.

Mode

Range: fix, norm
Controls: [CS4], [-1] [+1], Dial

Determines whether the selected wave is reproduced in the normal (variable pitch) or fixed-pitch mode.

Normally you want the pitch of the AWM wave (or waves) used in a voice to be controllable from a keyboard or other type of controller, in which case the "norm" mode should be selected. In some cases — sound effects in particular — you might want the same pitch to be produced no matter what note you play on the keyboard or other controller. In this case, the "fix" mode is appropriate. The Note parameter described below can be used to set the note produced when the "fix" mode is selected.

Fine

Range: -63 … 0 … +63
Controls: [CS5], [-1] [+1], Dial

Allows fine tuning of the selected AWM wave. Each increment corresponds to approximately 1.17 cents (a "cent" is 1/100th of a semitone) so the lowest setting (-63) shifts the pitch down by almost three quarters of a semitone, while the highest setting (+63) shifts the pitch up by the same amount. A setting of "+0" produces standard concert pitch (A3 = 440 Hertz).

Please note that this parameter is used to individually tune the current voice. Overall tuning control is provided by the MASTER TUNE function available in the UTILITY mode.

Note

Range: C-2 ... G8, -64 ... +63
Controls: [CS6], [-1] [+1], Dial

When the "fix" mode is selected this parameters sets the frequency (note) at which the selected wave will be played. The C-2 to G8 range of this parameter covers a full 10-1/2 octaves. "C3" corresponds to "middle C" on a keyboard.

When the "norm" mode is selected, this parameter is used to shift the overall pitch of the entire keyboard up or down in semitone increments (i.e. a "note shift" function). In this case the range of the parameters is from -64 through 0 to +63. A setting of "-12," for example, shifts the pitch down by one octave; a setting of "+4" shifts the pitch up by a major third.

Rndm (Random pitch)

Range: 0 ... 7
Controls: [CS7], [-1] [+1], Dial

Sets the amount of random pitch variation produced each time a note is played.

When this parameter is set to a value other than "0," the pitch changes randomly each time a note is played. The random pitch change is applied independently to each note in a chord. A setting of "7" produces the greatest amount of random pitch change.

This function is ideal for simulating the sound of instruments like the clavichord, string sections or other ensembles in which the pitch of each note is rarely in perfect tune with the others.

Rvs (Reverse)

Range: off, on
Controls: [CS8], [-1] [+1], Dial

When this parameter is turned "on," the selected wave is played in reverse.
When Rvs is "on," the pitch EG "Loop" parameter described on page 75 is automatically turned "off."

1: AEG LEVEL & RATE

The SY85's main AEG (Amplitude Envelope generator) has five individually programmable rates and two levels for exceptional envelope programming flexibility. Next to the fundamental waveform used, the amplitude envelope is one of the most important factors determining the overall sound of a voice.

```
AEG    R1    R2    L2    R3    L3    R4    RR
atk    63 ▌ 63     0    63    63 ▌  0    50
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
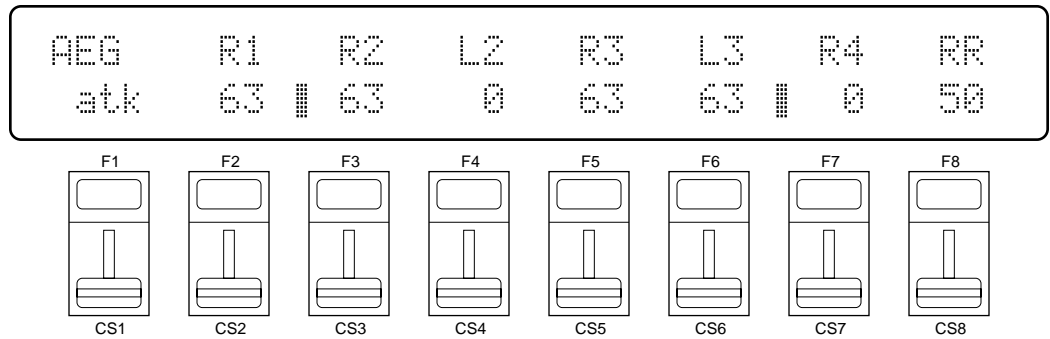
Atk/Hld (Amplitude EG attack/hold mode)
Range: atk, hold
Controls: [CS1], [-1] [+1], Dial

The "Atk" and "Hld" mode settings affect the initial attack of the sound, determining how the amplitude envelope begins. In the "Atk" mode, the envelope begins from zero level, reaching the maximum AWM level at a rate determined by the R1 (Rate 1) parameter. In this mode there will always be a slight delay between the initiation of a note and maximum level.

R1 ... RR, L2 ... L3 (Rates & levels)
Range: 0 ... 63
Controls: [CS2] ... [CS8], [-1] [+1], Dial

The following diagrams illustrate how the AEG rate and level parameters determine the overall shape of the amplitude envelope.

● "Atk" Mode

The illustrations here are not available.

The envelope begins at zero level, reaches maximum level at the rate determined by the R1 parameter, moves to L2 (Level 2) at R2 (Rate 2), moves on to L3 (Level 3) at R3 (Rate 3), and finally decays to zero level at R4 (Rate 4) if the note is held the entire time.

If the note is released before the end of the envelope described above, then the sound decays to zero level from the point at which the note is released at the rate determined by the RR (Release Rate) parameter.

The illustrations here are not available.

● "Hld" Mode

If the "hold" mode is selected, the envelope begins immediately from maximum AWM level, allowing the fast attack transients of waveforms to pass unaffected. In this case the R1 parameter is replaced by the HT (Hold Time) parameter. The HT parameter determines the length of time between the beginning of the envelope and the point at which the envelope begins to move towards L2 (Level 2) at R2 (Rate 2), as shown below.

The illustrations here are not available.

For the level parameters, a setting of "0" corresponds to the lowest possible level (no sound) while a setting of 63 produces the highest output level. A "0" rate parameter setting produces the slowest rate between levels, while the maximum setting of "63" produces the fastest (almost instantaneous) change.

2: LEVEL SCALING

Level scaling produces natural level variations across the range of the keyboard by allowing different level "offset" values to be applied to each of four "breakpoints" set at appropriate keys.

```
LEVEL  SCALING )POINT1 (
   C1    G2    E4    F4    +0    +0    +0    +0
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
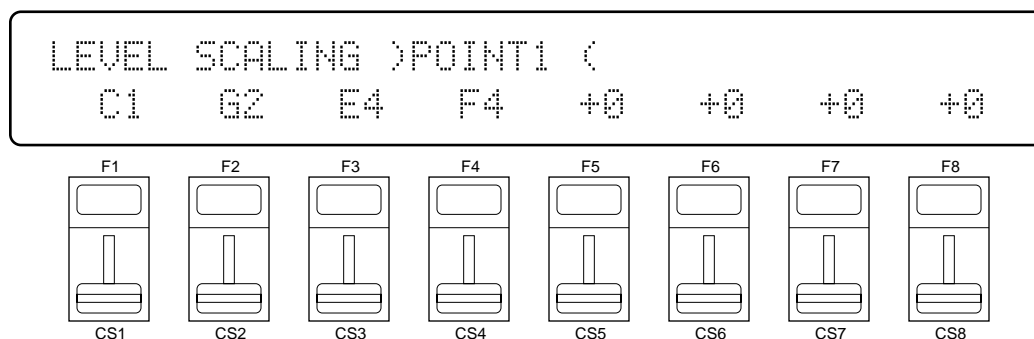
Point 1 ... 4
Range: C-2 ... G8
Controls: [CS1] … [CS4], [-1] [+1], Dial, [SHIFT] + Keyboard

Allows four separate amplitude envelope generator level-scaling breakpoints to be set at any notes between C-2 and G8 for the selected element.

To use the keyboard for breakpoint entry, simply select a breakpoint parameter by pressing the coresponding function key or moving the corresponding continuous slider, then press the key at which you want to set the breakpoint while holding the [SHIFT] key.

No breakpoint can be set to a key lower than the breakpoint to its left.

Offset 1 ... 4
Range: -127 ... +127
Controls: [CS5] … [CS8], [-1] [+1], Dial

Sets the amount of level offset for each of the four level-scaling breakpoints set by the "Point" parameters described above.

Negative values reduce the level, and positive values increase the level at the corresponding breakpoint. No matter what value is chosen, the EG level will never exceed its minimum or maximum levels. When different offset values are applied to adjacent breakpoints, the level varies smoothly between the breakpoints.

3: SENSITIVITY

The parameters provided here determine how the amplitude envelope generator responds to changes in keyboard velocity and range.
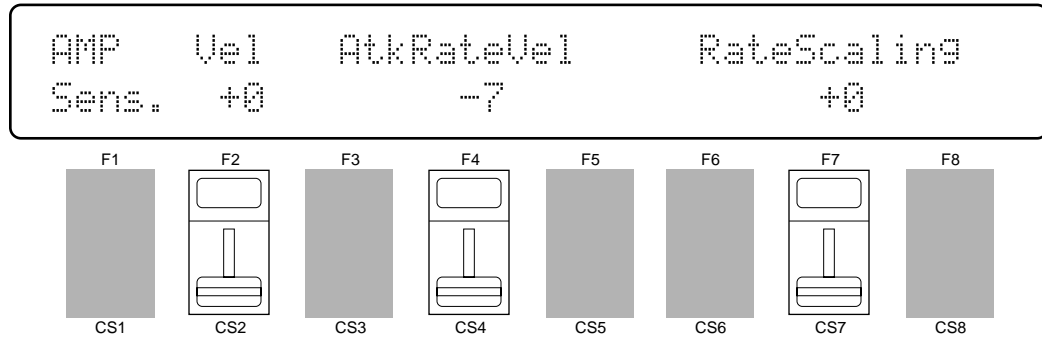
Vel (Velocity sensitivity)
Range: -7 ... +7
Controls: [CS2], [-1] [+1], Dial

Determines how the output level of the current voice changes in response to velocity changes (e.g. keyboard dynamics).

Plus "+" settings produce higher output level in response to higher velocity values — i.e. the harder a key is played, the louder the sound. The maximum setting of "+7" produces the maximum level variation in response to velocity changes. Minus "-" settings produce the opposite effect: lower level in response to higher velocity. A setting of "+0" results in no level variation.

AtkRateVel (Attack rate velocity sensitivity)
Range: -7 ... +7
Controls: [CS4], [-1] [+1], Dial

Determines how key velocity (keyboard dynamics) affect the attack time of the amplitude envelope generator.

Plus ("+") settings produce an increase in attack time in proportion to key velocity, while minus ("-") settings produce a decrease in attack time in proportion to key velocity. The greater the value the greater the change in envelope length.

RateScaling
Range: -7 ... +7
Controls: [CS7], [-1] [+1], Dial

Allows the overall amplitude envelope generator decay rate for the selected element to be varied across the entire pitch range.

Plus ("+") settings produce a longer overall envelope time for the low notes and a shorter envelope time for the high notes. This is useful for simulating instruments such as piano, in which the low notes take much longer to decay than the high notes. The maximum "+7" setting produces the greatest envelope length variation across the pitch range. Minus ("-") settings produce the opposite effect — short low notes and long high notes. A setting of "+0" results in no envelope length variation.

AEG DATA COPY

This function facilitates voice editing by allowing the amplitude EG data from any other voice (the "source" voice) to be copied to the current voice. You can copy an envelope that is close to the type you want, then edit it to produce the required sound.
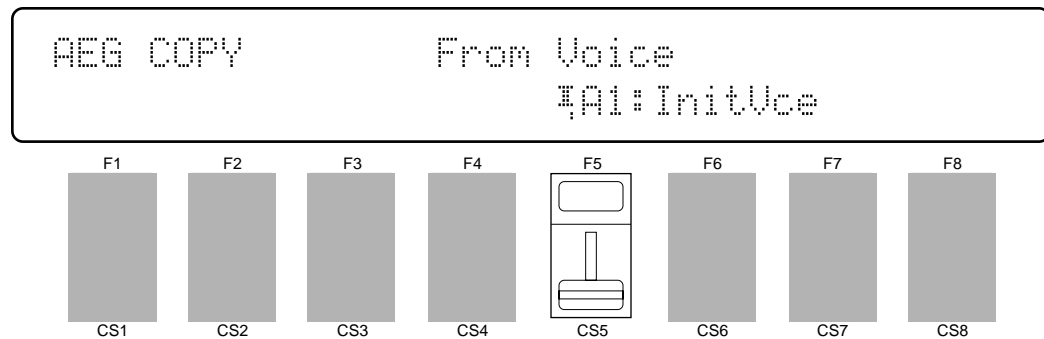
```
AEG COPY        From Voice
                ▌A1:InitVce
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

From Voice

Range: Any INTERNAL or CARD voice
Controls: MEMORY, GROUP, PROGRAM, [CS5], [-1] [+1], Dial

Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice bank and number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
AEG COPY        From Voice
Are you sure ?  ▌A1:InitVce
```
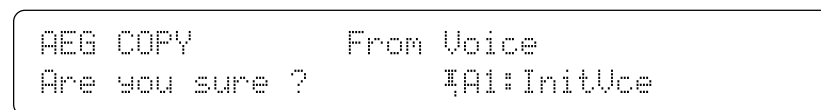
Press the [ENTER/YES] key again to copy the AEG data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the amplitude EG edit mode.

1:TYPE, CUTOFF FREQUENCY

The SY85 features a sophisticated digital filter system that can be used to shape the timbre of the voice being edited in a number of ways. Changes in the response and cutoff frequency can be used to define the basic timbre of the voice, while EG-controlled filter sweeps can produce a virtually unlimited range of time-based timbre variations.

```
FILTER Cutoff Freq. Type Band Reso CTRL
        (------Hz)  ---  THRU  ----  --  LFO
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
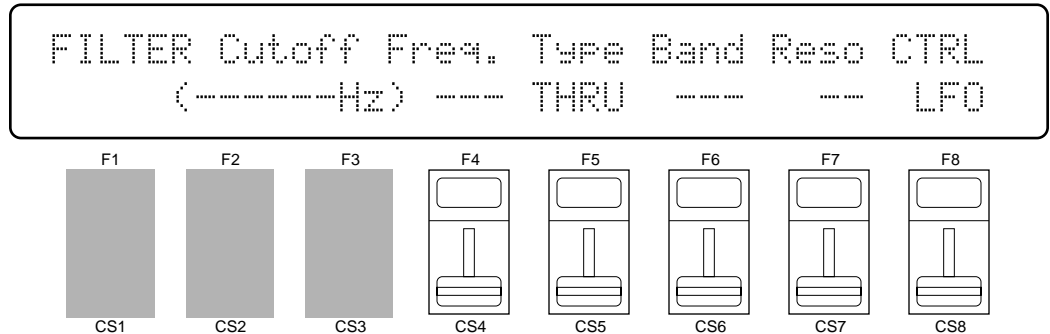
Cutoff Freq. (Cutoff frequency)
Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Sets the cutoff frequency of the selected filter.
Lower cutoff values produce a lower cutoff frequency and higher values produce a higher cutoff frequency.

The illustrations here are not available.

With an LPF response (selected by the "Type" parameter, below), a lower cutoff frequency reduces the range of high frequencies passed, making the sound "darker" or "rounder."
With a HPF response, a higher cutoff frequency reduces the range of low frequencies passed, making the sound "thinner" or "sharper."

Type (Filter type)
Range: THRU, LPF, LPF12, HPF, BPF, BEF
Controls: [CS5], [-1] [+1], Dial

Determines the type of filter response used.
The "THRU" (THROUGH) setting turns the filter OFF.

● **"LPF" and "LPF12" Types**

The "LPF" (Low Pass Filter) and "LPF12" settings produces a filter response that allows only frequencies <u>below</u> the cutoff frequency (See "Cutoff" above) to pass. The "LPF" filter type has a steep 24-dB/octave cutoff slope, while the "LPF12" type has a gentler 12-dB/octave slope.

The illustrations here are not available.

● **"HPF" Type**

The "HPF" (High Pass Filter) setting produces a filter response that allows only frequencies <u>above</u> the cutoff frequency (See "Cutoff" above) to pass.

The illustrations here are not available.

● "BPF" Type

The "BPF" (Band Pass Filter) setting produces a filter response that allows only a band of frequencies centered at the cutoff frequency (See "Cutoff" above) to pass. The "Band" parameter (below) determines the width of the pass band.

The illustrations here are not available.

● "BEF" Type

The "BEF" (Band Elimination Filter) setting produces a filter response that eliminates a band of frequencies centered at the cutoff frequency (See "Cutoff" above) to pass. The "Band" parameter (below) determines the width of the elimination band.

The illustrations here are not available.

Band (BPF & BEF bandwidth)
Range: 0 … 127
Controls: [CS6], [-1] [+1], Dial

Determeines the width of the frequency pass or elimination band for the BPF and BEF filter types, respectively. The minimum setting of "0" produces an extremely narrow pass or elimination band, while the maximum setting of "127" produces a wide band.

Reso (Resonance)
Range: 0 … 99
Controls: [CS7], [-1] [+1], Dial

Determines the degree of filter resonance when the "LPF" filter type is selected ("--" appears in place of the resonance parameter when any other filter type is selected).

This parameter has a similar effect to the "resonance" settings on traditional analog synthesizer filters — i.e. it determines the height of a peak in the filter response at the cutoff frequency.

The illustrations here are not available.

Higher resonance values produce a higher resonant peak and reduce the overall bandwidth of the filter, passing a narrow band of frequencies at the filter's cutoff.

CTRL (Filter control)
Range: EG, LFO
Controls: [CS8], [-1] [+1], Dial

Determines whether the cutoff frequency of the selected filter will be controlled by the LFO or by the filter envelope generator (EG).

Varying the filter cutoff frequency can create "sweep" or "wah-wah" type effects. If the cutoff is controlled via the LFO a cyclic variation based on the "shape" of the selected LFO waveform is produced. If EG control is selected, the filter envelope generator (see "FILTER EG LEVEL & RATE" below) can be set up to produce a wide range of time-based variations.

Please note that if "LFO" is selected, the filter cutoff envelope generator parameters have no effect on the sound.

2: CUTOFF SCALING

Cutoff scaling produces natural timbre variations across the range of the keyboard by allowing different filter cutoff frequency "offset" values to be applied to each of four "breakpoints" set at appropriate keys.

```
CUTOFF SCALING     )POINT1 (
   C1   G2   E4   F4   +0   +0   +0   +0
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
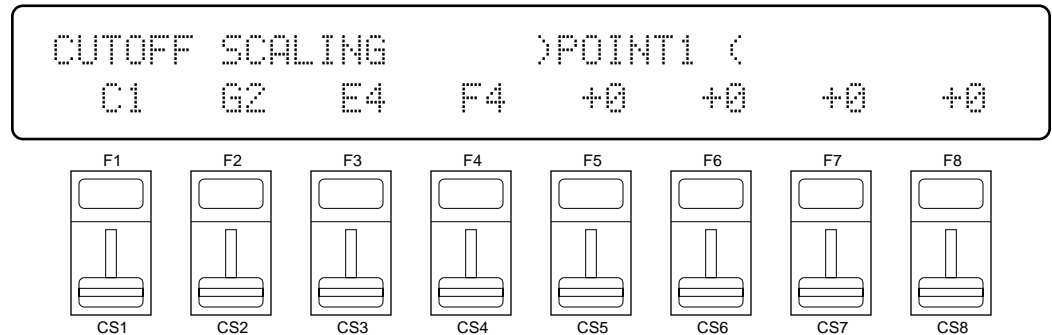
POINT 1 ... 4
Range: C-2 ... G8
Controls: [CS1] … [CS4], [-1] [+1], Dial, [SHIFT] + Keyboard

Allows four separate cutoff envelope generator level-scaling breakpoints to be set at any notes between C-2 and G8 for the selected filter.

To use the keyboard for breakpoint entry, simply select a breakpoint parameter by pressing the coresponding function key or moving the corresponding continuous slider, then press the key at which you want to set the breakpoint while holding the [SHIFT] key.

No breakpoint can be set to a key lower than the breakpoint to its left.

OFFSET 1 ... 4
**Range: -127 ... +127**
Controls: [CS5] … [CS8], [-1] [+1], Dial

Sets the amount of level offset for each of the four level-scaling breakpoints set by the "Point" parameter described above.

Negative values lower the cutoff frequency, and positive values increase the cutoff frequency at the corresponding breakpoint. No matter what value is chosen, the cutoff frequency will never exceed its minimum or maximum value. When different offset values are applied to adjacent breakpoints, the cutoff frequency varies smoothly between the breakpoints.

3: FEG LEVEL & RATE

The filter envelope generator is entirely separate from the amplitude EG, and is used specifically to create time-based timbre variations. It can be used to simulate the natural timbre variations produced by acoustic instruments, or to create more pronounced electronic effects.

```
FEG     L0     L1     L2     L3     L4     RL1    RL2
[LVL]   +0     +0    -63 ▌   +0     +0     +0     +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
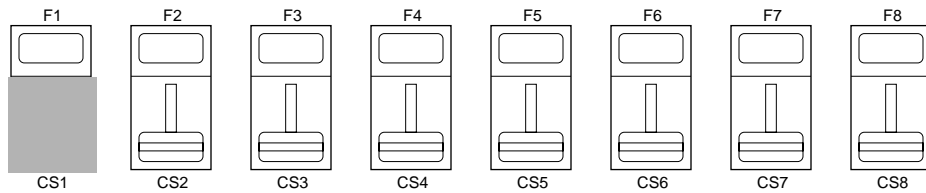
```
FEG     RS     R1     R2     R3     R4     RR1    RR2
[RATE]  +0     0      0  ▌   0      0      0      0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
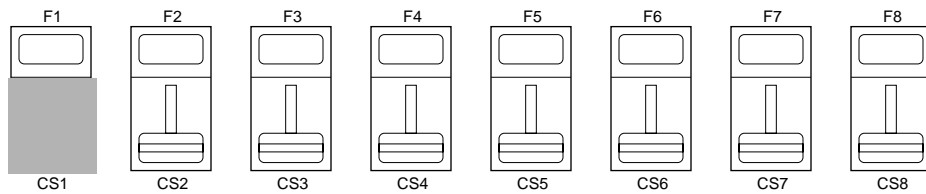
LVL/RATE (Level/Rate switch)

Range: LVL, RATE
Controls: [F1]

This "switch" determines whether the level parameters (L0 … L4, RL1, and RL2) or the rate parameters (RS, R1 … R4, RR1, and RR2), described below, are selected for editing.

L0 … L4, RL1, RL2 (Levels 0 … 4, Release levels 1 & 2)

Range: -63 ... +63
Controls: [CS2] … [CS8], [-1] [+1], Dial

These parameters are available when the Level/Rate switch parameter is set to "LVL".

The level parameters work in conjunction with the rate parameters described below to determine the "shape" of the cutoff envelope generator for the selected filter. This function is only available if the "CTRL" parameter (page 68) is set to "EG."

The cutoff envelope generator level parameters correspond to cutoff frequency. Plus "+" values produce higher cutoff frequencies while minus "-"

values produce lower cutoff frequencies. "0" level values produce the normal cutoff frequency as determined by the cutoff parameter (See "Cutoff" on page 65).

RS (Rate scaling)

Range: -7 ... +7
Controls: [CS2], [-1] [+1], Dial

Allows the overall cutoff envelope generator rate for the selected filter to be varied across the entire pitch range (i.e. keyboard range). This function is only available if the "CTRL" parameter (page 68) is set to "EG."

Plus ("+") settings produce a longer overall envelope time for the low notes and a shorter envelope time for the high notes. The maximum "+7" setting produces the greatest envelope length variation across the pitch range. Minus ("-") settings produce the opposite effect — a shorter low-note envelope and longer high-note envelope. A setting of "+0" results in no envelope length variation.

R1 ... R4, RR1, RR2 (Rates 1 ... 4, Release rates 1 & 2)

Range: 0 ... 63
Controls: [CS3] ... [CS8], [-1] [+1], Dial

These parameters work in conjunction with the level parameters described above to determine the "shape" of the cutoff envelope generator for the selected filter. This function is only available if the "CTRL" parameter (page 68) is set to "EG."

The "Rate" parameters work in the same way as the amplitude and pitch envelope generator rate parameters: a setting of "63" produces the fastest (almost instantaneous) rate between levels, while the minimum setting of "0" produces the slowest change.

The filter envelope begins at L0 (Level 0), moves to L1 (Level 1) at a rate determined by the setting of R1, then to L2 (Level 2) at R2 (Rate 2), then to L3 (Level 3) at R3 (Rate 3), and then to L4 (Level 4) at R4 (Rate 4). The cutoff stays at L4 until the key is released, and then moves to RL1 (Release Level 1) at the rate determined by RR1 (Release Rate 1), and finally to RL2 (Release Level 2) at RR2 (Release Rate 2).

4: FILTER SENSITIVITY

These parameters determine how the filter envelope generator is affected by keyboard dynamics.

```
FILTER SENS.   Type  Vel      AtkRateVel
               EG_attack  +0            +0
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
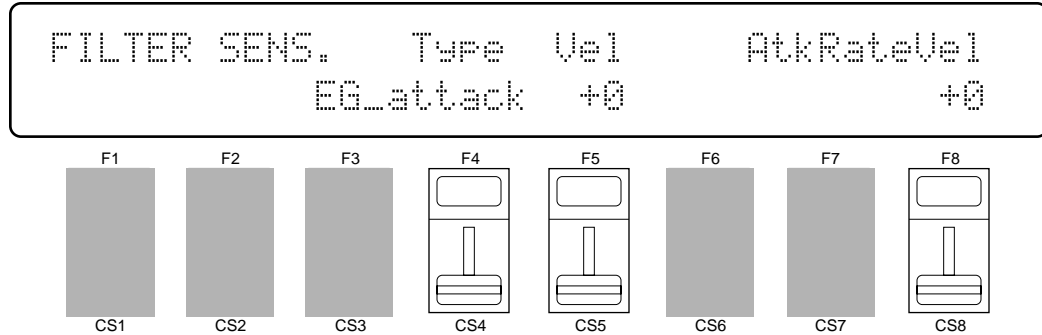
Type (Velocity sensitivity type)
Range: EG_attack, EG_shift
Controls: [CS4], [-1] [+1], Dial

Determines whether changes in key velocity (keyboard dynamics) affect the attack level of the filter EG or its cutoff frequency. When set to "EG_attack", velocity affects filter EG attack level, and when set to "EG_shift", velocity affects the filter cutoff frequency.

Vel (Velocity sensitivity)
Range: -63 ... +63
Controls: [CS5], [-1] [+1], Dial

Determines how the filter cutoff frequency changes in response to velocity changes (e.g. keyboard dynamics).

Plus "+" settings produce higher cutoff frequencies in response to higher velocity values — i.e. the harder a key is played, the higher the cutoff frequency. The maximum setting of "+63" produces the maximum level variation in response to velocity changes. Minus "-" settings produce the opposite effect: lower cutoff in response to higher velocity. A setting of "+0" results in no cutoff variation.

AtkRateVel (Attack rate velocity sensitivity)
Range: -63 ... +63
Controls: [CS8], [-1] [+1], Dial

Determines how key velocity (keyboard dynamics) affect the attack portion of the filter EG envelope.

Plus ("+") settings produce an increase in attack time in proportion to key velocity, while minus ("-") settings produce a decrease in attack time in proportion to key velocity. The greater the value the greater the change in attack time.

FILTER DATA COPY

This function facilitates voice editing by allowing the filter parameters from any other voice (the "source" voice) to be copied to the current voice. You can copy a filter setup that is close to the type you want, then edit it to produce the required sound.
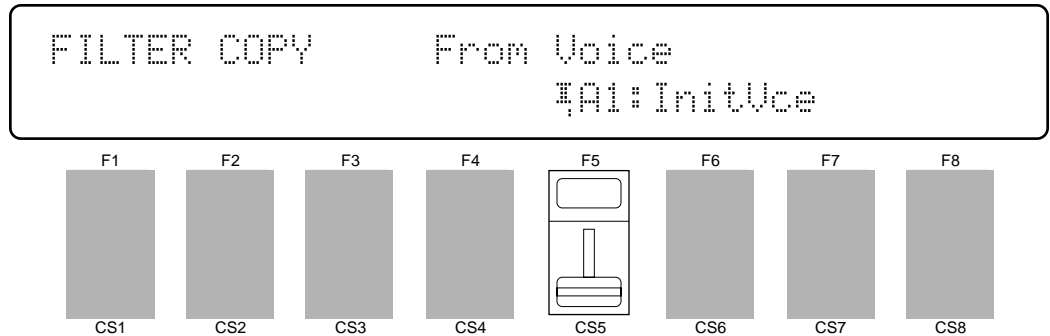
```
FILTER COPY      From Voice
                       ]A1:InitVce
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

From Voice

Range: Any INTERNAL or CARD voice
Controls: MEMORY, GROUP, PROGRAM, [CS5], [-1] [+1], Dial

Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
FILTER COPY     From Voice
Are you sure ?      ]A1:InitVce
```
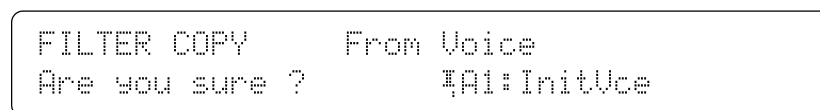
Press the [ENTER/YES] key again to copy the filter data, or press [EXIT/ NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the filter edit mode.

1: LEVEL & RATE

In addition to the amplitude and filter envelope generators, the SY85 has an independent pitch EG that can be used to produce subtle or pronounced time-based pitch variations. The pitch EG has 5 programmable levels and 4 rates for extended flexibility.

```
PEG           L0 π L1   L2 π L3 πRL1 π
[LEVEL]       +0  -63 ▮ +0    +0    +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
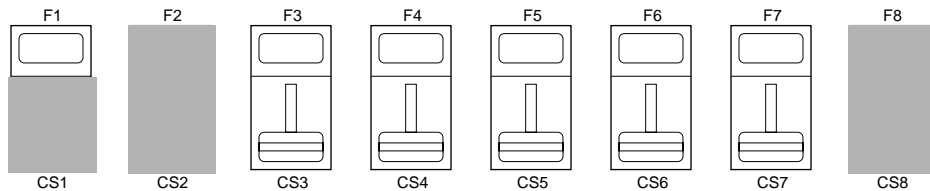
```
PEG           Loop   R1    R2    R3    RR    RS
[RATE ]       off    0  ▮ 63    63    63    +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
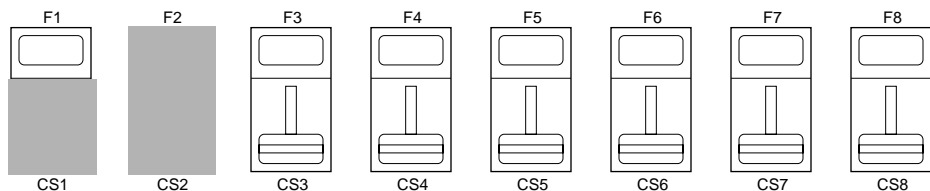
Level/Rate
Range: LEVEL, RATE
Controls: [F1]

This "switch" determines whether the level parameters (L0 … L3, RL1) or the rate parameters (Loop, R1 … R3, RR, and RS), described below, are selected for editing.

L0 … L3, RL1 (Levels 0 … 3, release level 1)
Range: -63 ... +63
Controls: [CS3] … [CS7], [-1] [+1], Dial

These parameters work in conjunction with the rate parameters described below to determine the "shape" of the pitch envelope generator for the selected element.

Unlike the amplitude envelope generator, the "Level" parameters of which actually correspond to volume levels, the pitch envelope generator level parameters correspond to pitch. Plus "+" values produce higher pitch while minus "-" values produce lower pitch. "0" level values produce normal pitch.

Loop
Range: off, on
Controls: [CS3], [-1] [+1], Dial

When the Loop parameter is set to "on" the pitch EG cycle repeats from the beginning (L0) to the L3 level until the keys being played are released. When set to "off," the L3 level is maintained until the keys being played are released.

R1 ... R3, RR (Rates 1 ... 3, release rate)
Range: 0 ... +63
Controls: [CS4] ... [CS7], [-1] [+1], Dial

These parameters work in conjunction with the level parameters described above to determine the "shape" of the pitch envelope generator for the selected element.

The "Rate" parameters work in the same way as the amplitude envelope generator rate parameters: a setting of "63" produces the fastest (almost instantaneous) rate between levels, while the minimum setting of "0" produces the slowest change.

The pitch envelope begins at L0 (Level 0), moves to L1 (Level 1) at a rate determined by the setting of R1, then to L2 (Level 2) at R2 (Rate 2), and then to L3 (Level 3) at R3 (Rate 3). The pitch stays at L3 until the key is released, and then moves to RL1 (Release Level 1) at the rate determined by RR (Release Rate).

The illustrations here are not available.

RS (Pitch EG rate scaling)
Range: -7 ... +7
Controls: [CS8], [-1] [+1], Dial

Allows the overall pitch envelope generator rate for the selected element to be varied across the entire pitch range.

Plus ("+") settings produce a longer overall envelope time for the low notes and a shorter envelope time for the high notes. The maximum "+7" setting produces the greatest envelope length variation across the pitch range. Minus ("-") settings produce the opposite effect — a shorter low-note envelope and longer high-note envelope. A setting of "+0" results in no envelope length variation.

2: RANGE, SENSITIVITY

These parameters determined the overall range of the pitch EG, and how it is affected by variations in keyboard velocity.

```
PEG SENS.  Range      Vel RateVel
           1oct       +0   +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
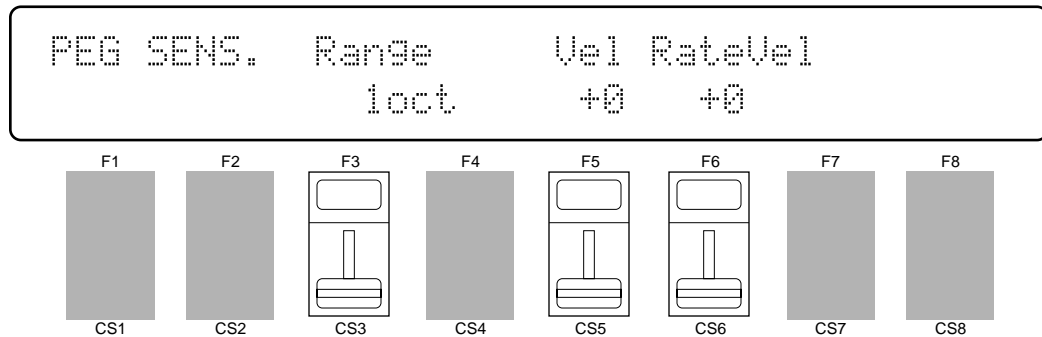
Range
Range: 1/8oct, 1/2oct, 1oct, 2oct
Controls: [CS3], [-1] [+1], Dial

Sets the maximum range of pitch envelope generator pitch variation.

This parameter determines the <u>total maximum</u> range of the pitch envelope generator, so a setting of "2oct" means that the maximum range is ±1 octave. That is, if a level parameter is set to +63, for example, the pitch at that point will be one octave above normal pitch.

Vel (Pitch EG velocity sensitivity)
Range: -7 ... +7
Controls: [CS5], [-1] [+1], Dial

Determines how the overall envelope depth of the pitch envelope generator is controlled by velocity information.

Plus ("+") values produce a deeper pitch envelope in response to higher velocity, while minus ("-") values produce a shallower pitch envelope in response to higher velocity values. The greater the value the greater the change in pitch envelope depth.

RateVel (Pitch EG rate velocity sensitivity)
Range: -7 ... +7
Controls: [CS6], [-1] [+1], Dial

Determines how the overall envelope length of the pitch envelope generator is controlled by velocity information.

Plus ("+") values produce a longer pitch envelope in response to higher velocity, while minus ("-") values produce a shorter pitch envelope in response to higher velocity values. The greater the value the greater the change in pitch envelope length.

PITCH EG DATA COPY

This function facilitates voice editing by allowing the pitch EG parameters from any other voice (the "source" voice) to be copied to the current voice. You can copy a pitch EG setup that is close to the type you want, then edit it to produce the required sound.
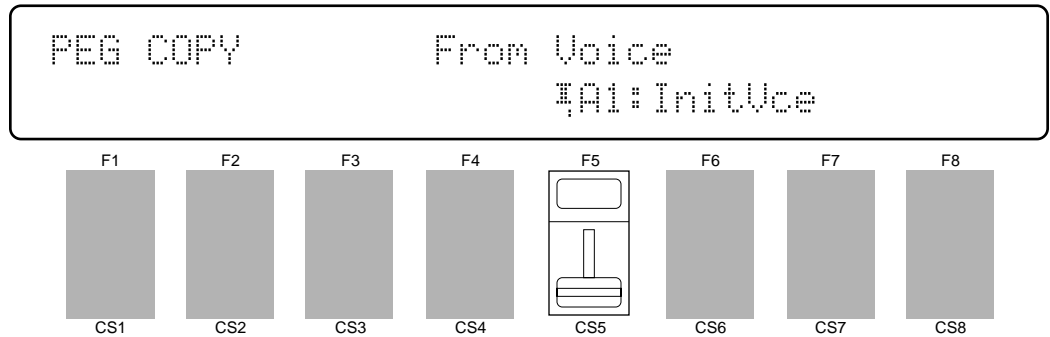
```
PEG COPY        From Voice
                ▮A1:InitVce
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

From Voice

Range: Any INTERNAL or CARD voice
Controls: MEMORY, GROUP, PROGRAM, [CS5], [-1] [+1], Dial

Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
PEG COPY        From Voice
Are you sure ?  ▮A1:InitVce
```
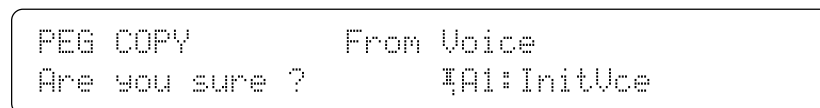
Press the [ENTER/YES] key again to copy the pitch EG data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the pitch EG edit mode.

1: LFO

These parameters define the operation of the SY85's main LFO (Low Frequency Oscillator). The main LFO controls amplitude, pitch, frequency, and filter cutoff modulation applied via the modulation wheel, the foot controller, and keyboard aftertouch response.
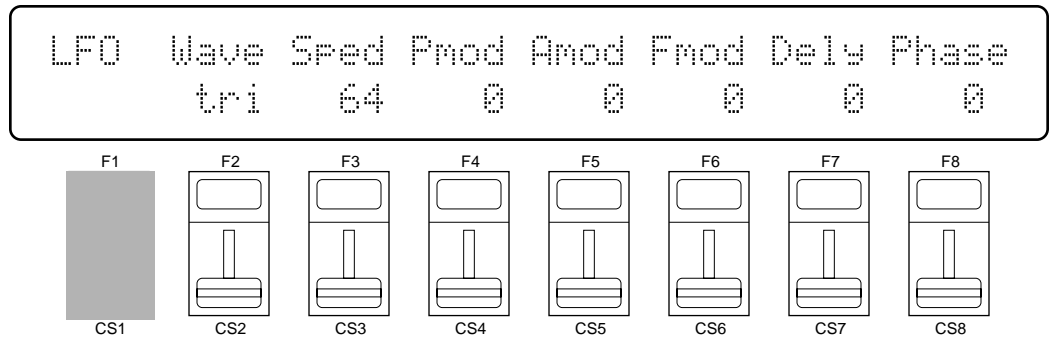
Wave (LFO waveform)
Range: tri, dwn, up, squ, sin, S/H
Controls: [CS2], [-1] [+1], Dial

Determines the waveform of the LFO.

"tri" = Triangle.	"dwn" = Downward sawtooth.
"up" = Upward sawtooth.	"squ" = Square.
"sin" = Sine.	"S/H" = Sample and hold.

Sped (LFO speed)
Range: 0 … 99
Controls: [CS3], [-1] [+1], Dial

Sets the speed of the LFO.

"0" is the slowest Speed setting, producing an LFO speed of approximately 0 Hertz. The fastest setting of 99 produces an LFO speed of approximately 25 Hertz.

Pmod (Pitch modulation depth)
Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Sets the maximum amount of pitch modulation that can be applied to the current voice.

A "0" setting produces no modulation while a setting of "127" produces maximum modulation. Pitch modulation produces a periodic pitch variation, thereby creating a vibrato effect.

Please note that the pitch modulation depth parameter for the controller which is to be used to apply pitch modulation (see page 83, 85, and 87) must also be set to an appropriate value before pitch modulation can be applied.

Amod (Amplitude modulation depth)
Range: 0 … 127
Controls: [CS5], [-1] [+1], Dial

Sets the maximum amount of amplitude modulation that can be applied to the current voice.

A "0" setting produces no modulation while a setting of "127" produces maximum modulation. Amplitude modulation produces a periodic variation in the volume of the sound, thus creating a tremolo effect.

Please note that the amplitude modulation depth parameter for the controller which is to be used to apply amplitude modulation (see page 83, 85, and 87) must also be set to an appropriate value before amplitude modulation can be applied.

Fmod (Filter cutoff frequency modulation depth)
Range: 0 … 127
Controls: [CS6], [-1] [+1], Dial

Sets the maximum amount of filter cuttoff modulation that can be applied to the current voice.

A "0" setting produces no modulation while a setting of "127" produces maximum modulation. Filter cutoff modulation produces wah-wah type effects.

Please note that the filter cutoff modulation depth parameter for the controller which is to be used to apply cutoff modulation (see page 84, 86, and 88) must also be set to an appropriate value before cutoff frequency modulation can be applied.

Dely (Delay)
Range: 0 … 99
Controls: [CS7], [-1] [+1], Dial

Sets the delay time between the beginning of a note and the beginning of LFO operation for the selected element.

The minimum setting "0" results in no delay, while the maximum setting of "99" produces a delay of approximately 2.66 seconds before the LFO begins operation (5.3 seconds before it reaches maximum depth).

Phase
Range: 0 … 180
Controls: [CS8], [-1] [+1], Dial

Determines at which point in the LFO waveform the LFO will begin operation for the selected element. The values 0 through 180 correspond to phase angles in degrees. The illustration below shows how the various phase angles correspond to points on the LFO waveform (a sine wave is used for clarity).

2: LFO SPEED SENSITIVITY

The speed of the SY85 LFO can be varied randomly, and according to variations in keyboard velocity and range. Such variations can produce more natural, musical effects.

```
LFO SPEED SENS. Random Velocity KeyScale
                  0         +0          +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
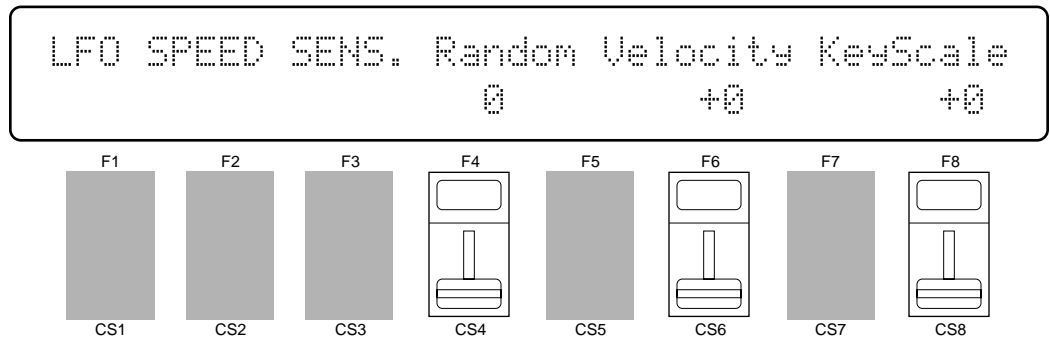
Random

Range: 0 … 7
Controls: [CS4], [-1] [+1], Dial

Sets the amount of random LFO speed variation produced each time a note is played.

When this parameter is set to a value other than "0," the LFO speed changes randomly each time a note is played. A setting of "7" produces the greatest amount of random speed change.

Velocity

Range: -7 … +7
Controls: [CS6], [-1] [+1], Dial

Determines how the LFO speed changes in response to velocity changes (e.g. keyboard dynamics).

Plus "+" settings produce higher LFO speed in response to higher velocity values — i.e. the harder a key is played, the higher the LFO speed. The maximum setting of "+7" produces the maximum speed variation in response to velocity changes. Minus "-" settings produce the opposite effect: lower speed in response to higher velocity. A setting of "+0" results in no speed variation.

KeyScale

Range: -7 … +7
Controls: [CS8], [-1] [+1], Dial

Determines how the LFO speed changes in response to the key played.

Plus "+" settings produce higher LFO speed when higher notes on the keyboard are played. The maximum setting of "+7" produces the maximum speed variation. Minus "-" settings produce the opposite effect: lower speed when higher notes are played. A setting of "+0" results in no speed variation.

LFO DATA COPY

This function facilitates voice editing by allowing the LFO parameters from any other voice (the "source" voice) to be copied to the current voice. You can copy an LFO setup that is close to the type you want, then edit it to produce the required sound.
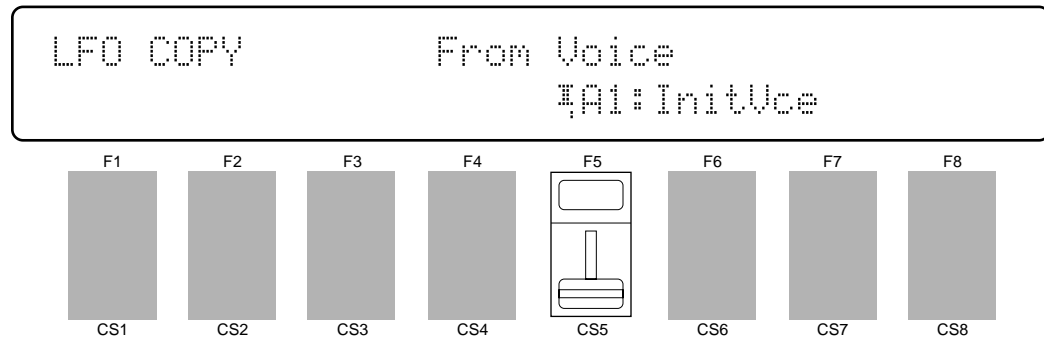
```
┌────────────────────────────────────────────────┐
│                                                │
│   LFO COPY        From Voice                   │
│                   ¶A1:InitVce                  │
│                                                │
└────────────────────────────────────────────────┘
     F1     F2     F3     F4     F5     F6     F7     F8



    CS1    CS2    CS3    CS4    CS5    CS6    CS7    CS8
```

From Voice

Range: Any INTERNAL or CARD voice
Controls: MEMORY, GROUP, PROGRAM, [CS5], [-1] [+1], Dial

Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
┌────────────────────────────────────────────────┐
│   LFO COPY        From Voice                   │
│   Are you sure ?     ¶A1:InitVce               │
└────────────────────────────────────────────────┘
```
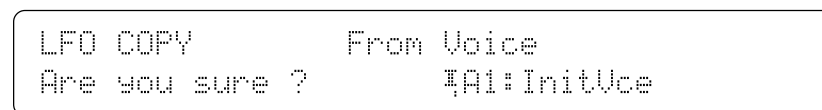
Press the [ENTER/YES] key again to copy the LFO data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the LFO edit mode.

1: PITCH BEND RANGE

This screen includes parameters that set the SY85's pitch bend range, the minimum volume attainable with the foot volume controller, and the sustain switch enable/disable mode.

```
CTRL        PB_Range VolLowLimit  SustainSw
               2          0         enable
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
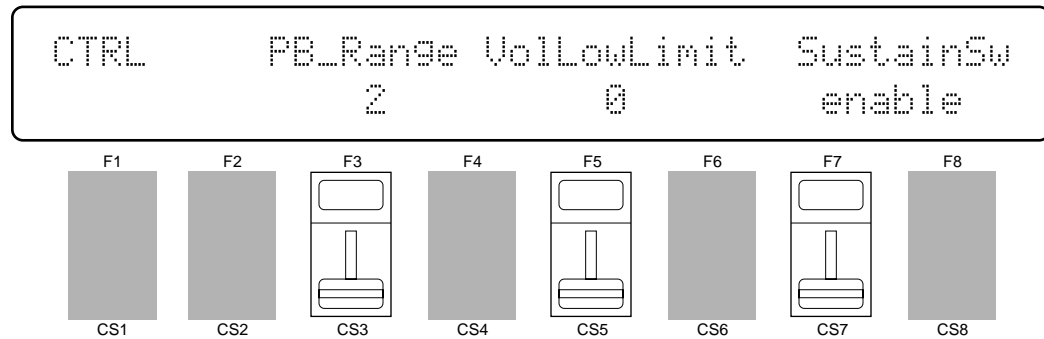
PB Range (Pitch bend range)
Range: 0 ... 12
Controls: [CS3], [-1] [+1], Dial

Sets the maximum pitch bend range.

Each increment from "0" to "12" represents a semitone. A setting of "0" produces no pitch bend. A setting of "12" allows a maximum pitch bend of plus or minus one octave, while a setting of "4" allows a maximum pitch bend of plus or minus a major third.

VolLoLimit (Minimum foot volume level)
Range: 0 ... 127
Controls: [CS5], [-1] [+1], Dial

Determines the minimum volume level that can be set by the foot volume control. If this parameter is set to "0," the minimum foot volume control position will produce no sound. A setting of "63" will result in about half volume when the control is set to its minimum position.

SustainSw (Sustain switch enable)
Range: enable, disable
Controls: [CS7], [-1] [+1], Dial

Enables or disables sustain footswitch operation. The sustain footswitch operates normally when this parameter is set to "enable," but has no effect when set to "disable."

2: MODULATION WHEEL DEPTH

The modulation wheel can be used to control a wide range of modulation effects. The parameters provided in this screen set the depth of each effect type.
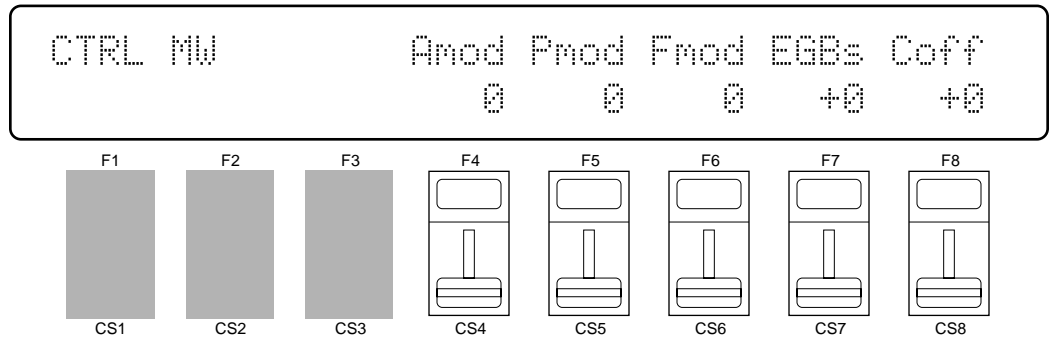
```
CTRL MW        Amod Pmod Fmod EGBs Coff
                 0    0    0   +0   +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Amod (Amplitude modulation depth)
Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Sets the maximum depth of amplitude modulation (tremolo effects) applied via the modulation wheel.

A setting of "0" allows no amplitude modulation, while a setting of 127 results in maximum amplitude modulation depth.

When setting up the low-frequency oscillator to apply amplitude modulation, this parameter must be set to a value <u>other than</u> "0" if amplitude modulation is to be applied via the modulation wheel.

Pmod (Pitch modulation depth)
Range: 0 … 127
Controls: [CS5], [-1] [+1], Dial

Sets the maximum depth of pitch modulation (vibrato effects) applied via the modulation wheel.

A setting of "0" allows no pitch modulation, while a setting of 127 results in maximum amplitude modulation.

When setting up the low-frequency oscillator to apply pitch modulation, this parameter must be set to a value <u>other than</u> "0" if pitch modulation is to be applied via the modulation wheel.

Fmod (Frequency modulation depth)
Range: 0 … 127
Controls: [CS6], [-1] [+1], Dial

Sets the maximum depth of filter cutoff frequency modulation (wah-wah type effects) applied via the modulation wheel.

A setting of "0" allows no frequency modulation, while a setting of 127 results in maximum frequency modulation.

When setting up the LFO (low-frequency oscillator) to apply cutoff modulation, this parameter must be set to a value other than "0" if cutoff modulation is to be applied via the modulation wheel. Also, the filter "CTRL" parameter (page 68) must be set to "LFO" in order to vary the cutoff frequency continuously.

EGBs (EG bias depth)
Range: -127 … +127
Controls: [CS7], [-1] [+1], Dial

Sets the depth and "direction" of EG bias produced by the modulation wheel. EG bias increases or decreases the amplitude envelope generator levels, simulating the dynamic variations that can be produced on an acoustic instrument more accurately than simple volume control.

A setting of "0" produces no change in EG levels. Plus ("+") settings produce an increase in level when the modulation wheel is rolled upward, and minus ("-") settings produce a decrease in level when when the modultion wheel is rolled upward. The greater the value, the greater the change in level.

Coff (Cutoff frequency depth)
Range: -127 … +127
Controls: [CS8], [-1] [+1], Dial

Sets the maximum depth of filter cutoff frequency variation applied via the modulation wheel.

Plus "+" settings produce higher cutoff frequencies in response to modulation wheel operation — i.e. the higher the modulation wheel position, the higher the cutoff frequency. The maximum setting of "+127" produces the maximum cutoff variation. Minus "-" settings produce the opposite effect: lower cutoff in response to higher modulation wheel positions. A setting of "+0" results in no cutoff variation. The filter "CTRL" parameter (page 68) must be set to "LFO" in order to vary the cutoff frequency continuously.

3: FOOT CONTROLLER DEPTH

The SY85 allows modulation control via a foot controller connected to th rear-panel FOOT CONTROLLER jack as well as the modulation wheel. This allows modulation effects to be applied while playing with both hands. The parameters in this screen set the depth of the foot controller modulation effects.
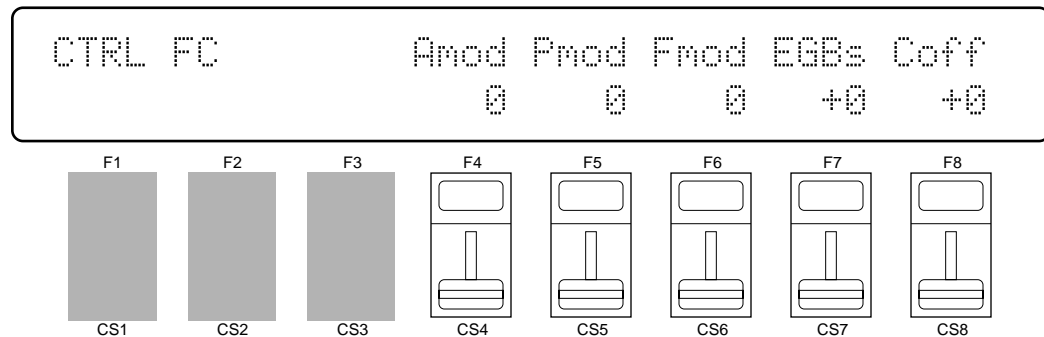
```
CTRL FC        Amod Pmod Fmod EGBs Coff
                 0    0    0   +0   +0
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Amod (Amplitude modulation depth)
Range: 0 ... 127
Controls: [CS4], [-1] [+1], Dial

Sets the maximum depth of amplitude modulation (tremolo effects) applied via the foot controller.

A setting of "0" allows no amplitude modulation, while a setting of 127 results in maximum amplitude modulation depth.

When setting up the low-frequency oscillator to apply amplitude modulation, this parameter must be set to a value <u>other than</u> "0" if amplitude modulation is to be applied via the foot controller.

Pmod (Pitch modulation depth)
Range: 0 ... 127
Controls: [CS5], [-1] [+1], Dial

Sets the maximum depth of pitch modulation (vibrato effects) applied via the foot controller.

A setting of "0" allows no pitch modulation, while a setting of 127 results in maximum amplitude modulation.

When setting up the low-frequency oscillator to apply pitch modulation, this parameter must be set to a value <u>other than</u> "0" if pitch modulation is to be applied via the foot controller.

Fmod (Frequency modulation depth)
Range: 0 … 127
Controls: [CS6], [-1] [+1], Dial

Sets the maximum depth of filter cutoff frequency modulation (wah-wah type effects) applied via the foot controller.

A setting of "0" allows no frequency modulation, while a setting of 127 results in maximum frequency modulation.

When setting up the LFO (low-frequency oscillator) to apply cutoff modulation, this parameter must be set to a value other than "0" if cutoff modulation is to be applied via the foot controller. Also, the filter "CTRL" parameter (page 68) must be set to "LFO" in order to vary the cutoff frequency continuously.

EGBs (EG bias depth)
Range: -127 … +127
Controls: [CS7], [-1] [+1], Dial

Sets the depth and "direction" of EG bias produced by the foot controller. EG bias increases or decreases the amplitude envelope generator levels, simulating the dynamic variations that can be produced on an acoustic instrument more accurately than simple volume control.

A setting of "0" produces no change in EG levels. Plus ("+") settings produce an increase in level when the foot controller is applied, and minus ("-") settings produce a decrease in level when the foot controller is applied. The greater the value, the greater the change in level.

Coff (Cutoff frequency depth)
Range: -127 … +127
Controls: [CS8], [-1] [+1], Dial

Sets the maximum depth of filter cutoff frequency variation applied via the foot controller.

Plus "+" settings produce higher cutoff frequencies in response to foot controller operation — i.e. the more the foot controller is depressed, the higher the cutoff frequency. The maximum setting of "+127" produces the maximum cutoff variation. Minus "-" settings produce the opposite effect: lower cutoff in response to higher foot controller positions. A setting of "+0" results in no cutoff variation. The filter "CTRL" parameter (page 68) must be set to "LFO" in order to vary the cutoff frequency continuously.

4: AFTER TOUCH DEPTH

For truly "intimate" modulation control, the SY85 allows a number of modulation effects to be controlled via keyboard aftertouch response. The parameters in this screen set the depth of the aftertouch modulation effects.
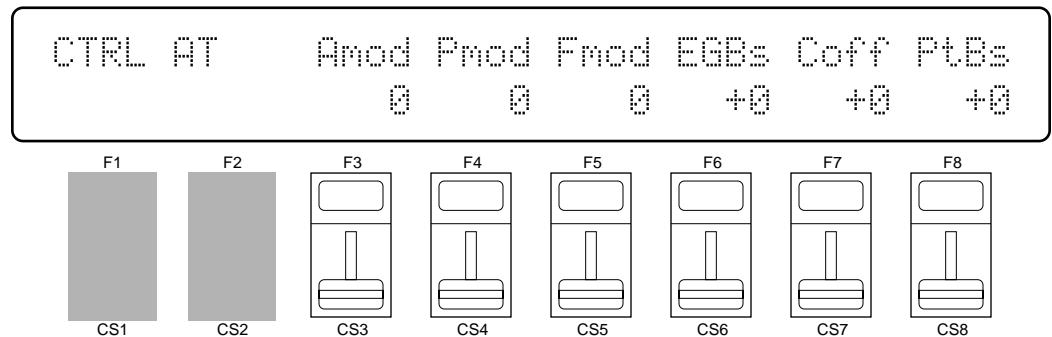
```
CTRL AT    Amod Pmod Fmod EGBs Coff PtBs
            0    0    0   +0   +0   +0
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Amod (Amplitude modulation depth)
Range: 0 … 127
Controls: [CS3], [-1] [+1], Dial

Sets the maximum depth of amplitude modulation (tremolo effects) applied via keyboard aftertouch.

A setting of "0" allows no amplitude modulation, while a setting of 127 results in maximum amplitude modulation depth.

When setting up the low-frequency oscillator to apply amplitude modulation, this parameter must be set to a value other than "0" if amplitude modulation is to be applied via keyboard after touch.

Pmod (Pitch modulation depth)
Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Sets the maximum depth of pitch modulation (vibrato effects) applied via keyboard aftertouch.

A setting of "0" allows no pitch modulation, while a setting of 127 results in maximum amplitude modulation.

When setting up the low-frequency oscillator to apply pitch modulation, this parameter must be set to a value other than "0" if pitch modulation is to be applied via keyboard aftertouch.

Fmod (Frequency modulation depth)
Range: 0 … 127
Controls: [CS5], [-1] [+1], Dial

Sets the maximum depth of filter cutoff frequency modulation (wah-wah type effects) applied via keyboard aftertouch.

A setting of "0" allows no frequency modulation, while a setting of 127 results in maximum frequency modulation.

When setting up the LFO (low-frequency oscillator) to apply cutoff modulation, this parameter must be set to a value other than "0" if cutoff modulation is to be applied via keyboard aftertouch. Also, the filter "CTRL" parameter (page 68) must be set to "LFO" in order to vary the cutoff frequency continuously.

EGBs (EG bias depth)
Range: -127 … +127
Controls: [CS6], [-1] [+1], Dial

Sets the depth and "direction" of EG bias produced by aftertouch response. EG bias increases or decreases the amplitude envelope generator levels, simulating the dynamic variations that can be produced on an acoustic instrument more accurately than simple volume control.

A setting of "0" produces no change in EG levels. Plus ("+") settings produce an increase in level when aftertouch is applied, and minus ("-") settings produce a decrease in level when aftertouch is applied. The greater the value, the greater the change in level.

Coff (Cutoff frequency depth)
Range: -127 … +127
Controls: [CS7], [-1] [+1], Dial

Sets the maximum depth of filter cutoff frequency variation applied via keyboard aftertouch.

Plus "+" settings produce higher cutoff frequencies in response to aftertouch — i.e. the greater the aftertouch pressure, the higher the cutoff frequency. The maximum setting of "+127" produces the maximum cutoff variation. Minus "-" settings produce the opposite effect: lower cutoff in response to greater aftertouch pressure. A setting of "+0" results in no cutoff variation. The filter "CTRL" parameter (page 68) must be set to "LFO" in order to vary the cutoff frequency continuously.

PtBs (Pitch bias depth)
Range: -12 … +12
Controls: [CS8], [-1] [+1], Dial

Sets the maximum pitch variation range achievable via after-touch control.

Each increment represents a semitone. A setting of "0" produces no pitch variation. A setting of "+12" allows a maximum pitch variation of one octave up, while a setting of "-12" allows a maximum pitch variation of one octave down corresponding to aftertouch key pressure.

5: CS3 PARAMETER EDIT

The [CS3] and [CS4] sliders can be assigned to control a wide range of voice parameters in real time while playing the SY85. These parameters assign a voice parameter to the [CS3] slider, and set the maximum and minimum limits of the control range.

```
CTRL CS3 Param(CTRL#=18)  Min.       Max.
    0:No_Assign               0%      100%
```
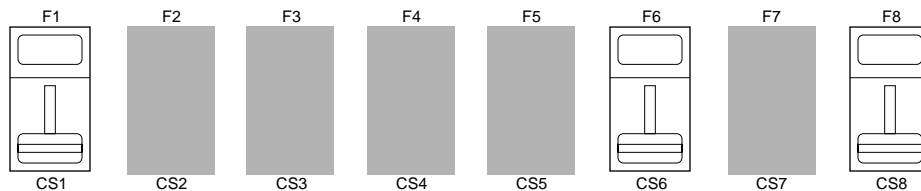

CS3 Param (CS3 parameter)

Range: 0 … 75
Controls: [CS1], [-1] [+1], Dial

Assigns any of 75 different voice parameters to be controlled via the [CS3] slider.

The numbers and abbreviations associated with each voice parameter are listed below:

CS3 PARAMETER LIST (0 … 39)

0: "No_Assign "	20: "EF_SendLvl"
1: "CT_MW_Pmod"	21: "OS_FrqFine"
2: "CT_MW_Amod"	22: "OS_Random "
3: "CT_MW_Fmod"	23: "PEG_Rate1 "
4: "CT_MW_Coff"	24: "PEG_Rate2 "
5: "CT_MW_EGBs"	25: "PEG_Rate3 "
6: "CT_FC_Pmod"	26: "PEG_RlsRt "
7: "CT_FC_Amod"	27: "PEG_Level0"
8: "CT_FC_Fmod"	28: "PEG_Level1"
9: "CT_FC_Coff"	29: "PEG_Level2"
10: "CT_FC_EGBs"	30: "PEG_Level3"
11: "CT_AT_Pmod"	31: "PEG_RlsLvl"
12: "CT_AT_Amod"	32: "PEG_Range "
13: "CT_AT_Fmod"	33: "PEG_LvlVel"
14: "CT_AT_Coff"	34: "PEG_RtVel "
15: "CT_AT_EGBs"	35: "LFO_Speed "
16: "CT_AT_PtBs"	36: "LFO_Delay "
17: "CT_PBRange"	37: "LFO_Pmod "
18: "CT_VLLoLim"	38: "LFO_Amod "
19: "TotalLevel"	39: "LFO_Fmod "

CS3 PARAMETER LIST (40 … 75)

40: "LFO_Wave "	60: "FLT_Rate3 "
41: "LFO_Phase"	61: "FLT_Rate4 "
42: "LFO_SpdVel"	62: "FLT_RlsRt1"
43: "LFO_SpdRnd"	63: "FLT_RlsRt2"
44: "AEG_Rate1 "	64: "FLT_Level0"
45: "AEG_Rate2 "	65: "FLT_Level1"
46: "AEG_Rate3 "	66: "FLT_Level2"
47: "AEG_Rate4 "	67: "FLT_Level3"
48: "AEG_RlsRt "	68: "FLT_Level4"
49: "AEG_Level2"	69: "FLT_RlsLv1"
50: "AEG_Level3"	70: "FLT_RlsLv2"
51: "AEG_LvlVel"	71: "OS_NoteSft"
52: "AEG_RtVel "	72: "FLT_BPLvl1"
53: "FLT_Reso "	73: "FLT_BPLvl2"
54: "FLT_CofVel"	74: "FLT_BPLvl3"
55: "FLT_ARVel "	75: "FLT_BPLvl4"
56: "FLT_Band "	
57: "FLT_CofFrq"	
58: "FLT_Rate1 "	
59: "FLT_Rate2 "	

The parameter assigned to [CS3] can also be controlled from an external MIDI controller via MIDI control number 18. Operation of the [CS3] slider in the VOICE or PERFORMANCE mode also transmits corresponding MIDI control change data using control number 18.

Min.
Range: 0 … 100
Controls: [CS6], [-1] [+1], Dial

Sets the lower limit of the [CS3] control range. A setting of "0", for example, means that when the [CS3] slider is set to its lowest position the assigned parameter will also be set to its lowest value. A setting of "50" means that the lowest [CS3] position will set the assigned parameter to about 50% of its range (a parameter with a range of 0 to 127, for example, would be set to about 63).

Max.
Range: 0 … 100
Controls: [CS8], [-1] [+1], Dial

Sets the upper limit of the [CS3] control range. A setting of "100", for example, means that when the [CS3] slider is set to its highest position the assigned parameter will also be set to its highest value. A setting of "80" means that the highest [CS3] position will set the assigned parameter to about 80% of its range (a parameter with a range of 0 to 127, for example, would be set to about 102).

6: CS4 PARAMETER EDIT

The [CS3] and [CS4] sliders can be assigned to control a wide range of voice parameters in real time while playing the SY85. These parameters assign a voice parameter to the [CS4] slider, and set the maximum and minimum limits of the control range.

```
CTRL CS4 Param(CTRL#=19)  Min.        Max.
    0:No_Assign                0%       100%
```
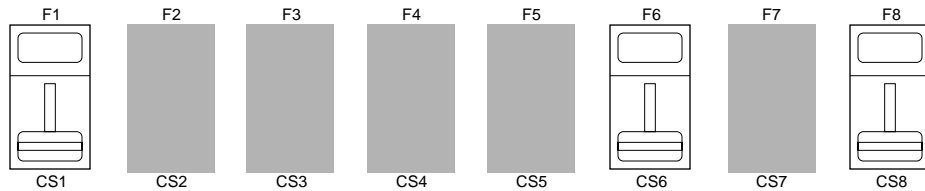
CS4 Param (CS4 parameter)

Range: 0 … 75
Controls: [CS1], [-1] [+1], Dial

Assigns any of 75 different voice parameters to be controlled via the [CS4] slider.

The numbers and abbreviations associated with each voice parameter are listed below:

CS4 PARAMETER LIST (0 … 39)

0:	"No_Assign "	20:	"EF_SendLvl"
1:	"CT_MW_Pmod"	21:	"OS_FrqFine"
2:	"CT_MW_Amod"	22:	"OS_Random "
3:	"CT_MW_Fmod"	23:	"PEG_Rate1 "
4:	"CT_MW_Coff"	24:	"PEG_Rate2 "
5:	"CT_MW_EGBs"	25:	"PEG_Rate3 "
6:	"CT_FC_Pmod"	26:	"PEG_RlsRt "
7:	"CT_FC_Amod"	27:	"PEG_Level0"
8:	"CT_FC_Fmod"	28:	"PEG_Level1"
9:	"CT_FC_Coff"	29:	"PEG_Level2"
10:	"CT_FC_EGBs"	30:	"PEG_Level3"
11:	"CT_AT_Pmod"	31:	"PEG_RlsLvl"
12:	"CT_AT_Amod"	32:	"PEG_Range "
13:	"CT_AT_Fmod"	33:	"PEG_LvlVel"
14:	"CT_AT_Coff"	34:	"PEG_RtVel "
15:	"CT_AT_EGBs"	35:	"LFO_Speed "
16:	"CT_AT_PtBs"	36:	"LFO_Delay "
17:	"CT_PBRange"	37:	"LFO_Pmod "
18:	"CT_VLLoLim"	38:	"LFO_Amod "
19:	"TotalLevel"	39:	"LFO_Fmod "

CS4 PARAMETER LIST (40 … 75)

40: "LFO_Wave "	60: "FLT_Rate3 "
41: "LFO_Phase"	61: "FLT_Rate4 "
42: "LFO_SpdVel"	62: "FLT_RlsRt1"
43: "LFO_SpdRnd"	63: "FLT_RlsRt2"
44: "AEG_Rate1 "	64: "FLT_Level0"
45: "AEG_Rate2 "	65: "FLT_Level1"
46: "AEG_Rate3 "	66: "FLT_Level2"
47: "AEG_Rate4 "	67: "FLT_Level3"
48: "AEG_RlsRt "	68: "FLT_Level4"
49: "AEG_Level2"	69: "FLT_RlsLv1"
50: "AEG_Level3"	70: "FLT_RlsLv2"
51: "AEG_LvlVel"	71: "OS_NoteSft"
52: "AEG_RtVel "	72: "FLT_BPLvl1"
53: "FLT_Reso "	73: "FLT_BPLvl2"
54: "FLT_CofVel"	74: "FLT_BPLvl3"
55: "FLT_ARVel "	75: "FLT_BPLvl4"
56: "FLT_Band "	
57: "FLT_CofFrq"	
58: "FLT_Rate1 "	
59: "FLT_Rate2 "	

The parameter assigned to [CS4] can also be controlled from an external MIDI controller via MIDI control number 19. Operation of the [CS4] slider in the VOICE or PERFORMANCE mode also transmits corresponding MIDI control change data using control number 19.

Min (Minimum parameter value)
Range: 0 … 100
Controls: [CS6], [-1] [+1], Dial

Sets the lower limit of the [CS4] control range. A setting of "0", for example, means that when the [CS4] slider is set to its lowest position the assigned parameter will also be set to its lowest value. A setting of "50" means that the lowest [CS4] position will set the assigned parameter to about 50% of its range (a parameter with a range of 0 to 127, for example, would be set to about 63).

Max (Maximum parameter value)
Range: 0 … 100
Controls: [CS8], [-1] [+1], Dial

Sets the upper limit of the [CS4] control range. A setting of "100", for example, means that when the [CS4] slider is set to its highest position the assigned parameter will also be set to its highest value. A setting of "80" means that the highest [CS4] position will set the assigned parameter to about 80% of its range (a parameter with a range of 0 to 127, for example, would be set to about 102).

CONTROLLER DATA COPY

This function allows the controller parameters from any other voice (the "source" voice) to be copied to the current voice. You can copy a controller setup that is close to the type you want, then edit it to produce the required sound.

```
CONTROLLER COPY From Voice
                     ‡A1:InitVce
```
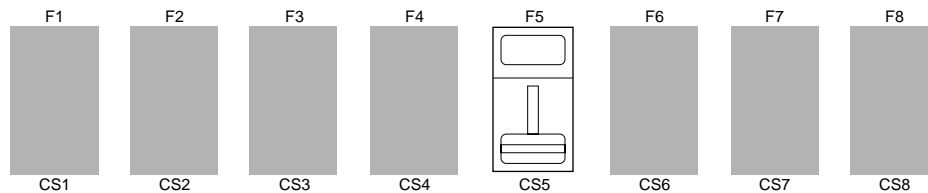
F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

From Voice
Range: Any INTERNAL or CARD voice
Controls: MEMORY, GROUP, PROGRAM, [CS5], [-1] [+1], Dial

Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
CONTROLLER COPY From Voice
Are you sure ?       ‡A1:InitVce
```

Press the [ENTER/YES] key again to copy the controller data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the controller edit mode.

VOICE TOTAL LEVEL

The ability to independently adjust the volume of each voice makes it possible to match levels for smooth transition when switching between voices.

```
VOICE Total Level
                127▌
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
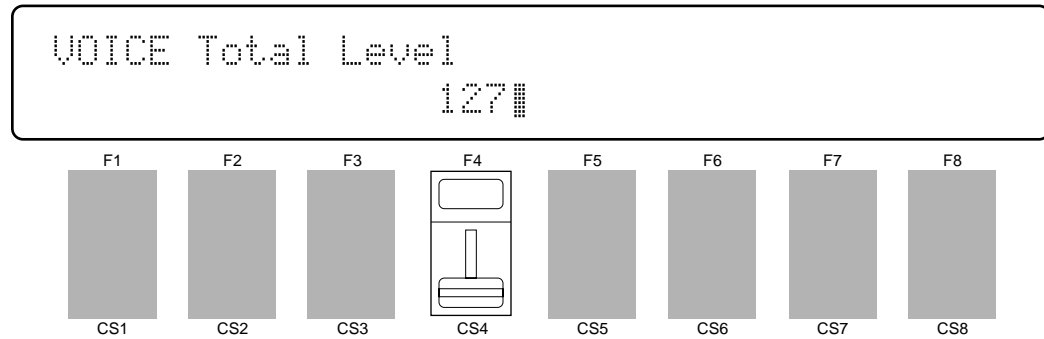
Total Level

Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Adjusts the volume of the current voice.

A setting of "0" produces no sound while a setting of "127" produces maximum volume. A bar graph to the right of the parameter provides a visual indication of volume level — the longer the bar, the higher the volume.

VOICE NAME

Your original voices should naturally have original names. This function can be used to assign a name of up to 8 characters to the current voice.

```
VOICE Name                          "InitVce "
[CLR][UPR][LWR][SPC]                 [←]   [→]
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
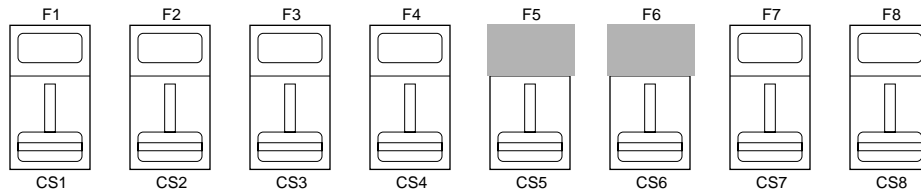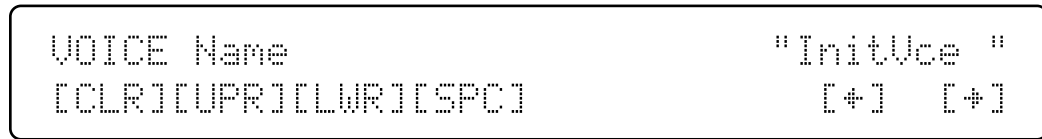
Name

Range: See character list, below
Controls: [F1] ... [F4], [F7], [F8], [CS1] ... [CS8], [-1] [+1], Dial,
GROUP, PROGRAM

Assigns a name of up to 8 characters to the current voice.

Use the [F7] function key to move the character cursor to the left, and the [F8] function key to move the cursor to the right. Use the GROUP and PRO-GRAM keys to input a character at the cursor position. Each GROUP and PROGRAM key selects the three characters printed above it in sequence. It is also possible to use the [-1] and [+1] keys or dial to scroll through the available characters (see list below).

The sliders, [CS1] through [CS8], independently select characters for the corresponding character position: [CS1] selects the first character, [CS2] selects the second character, and so on.

The first four function keys also perform important functions: [F1] clears the entire name, [F2] selects upper-case characters, [F3] selects lower-case characters, and [F4] inserts a space at the cursor position.

GROUP key	PROGRAM key
[A]: A → B → C	[1]: Y → Z → 0
[B]: D → E → F	[2]: 1 → 2 → 3
[C]: G → H → I	[3]: 4 → 5 → 6
[D]: J → K → L	[4]: 7 → 8 → 9
[E]: M → N → O	[5]: * → & → _
[F]: P → Q → R	[6]: / → . → ,
[G]: S → T → U	[7]: ' → ! → ?
[H]: V → W → X	[8]: # → : → ;

1: WAVE

These parameters provide a fast, easy way to select a new wave for the current voice, and instantly set the main amplitude envelope generator parameters to values that produce good results with the selected wave.

For full oscillator parameters see page 58.

```
QED WAVE)Group      Number
         16:Osc      P244:Sin
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
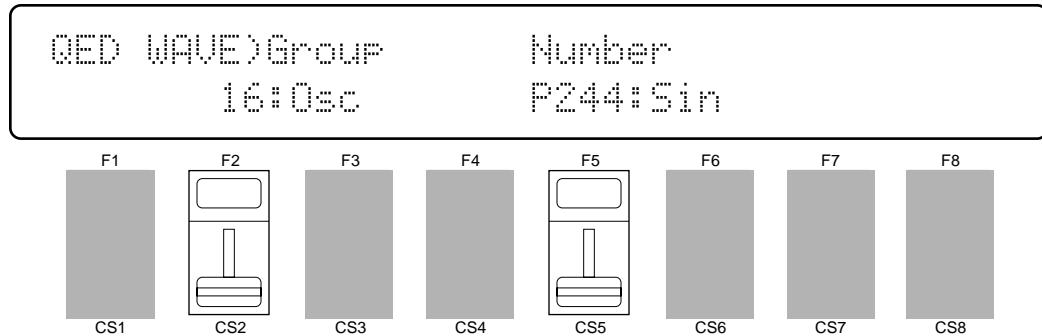
Group

Range: 1 … 16
Controls: [CS2], [-1] [+1], Dial

For fast, easy selection of the preset SY85 waves this parameter selects 16 different wave categories or "groups", each containing a number of waves that can be individually selected by using the "Number" parameter, below.

Quick Edit Wave Groups

1:Piano	Acoustic pianos
2:Key	Other keyboards
3:Brass	Brass instruments
4:Wind	Wind instruments
5:Strings	Strings
6:A.Guitar	Acoustic guitars
7:E.Guitar	Electric guitars
8:Bass	Acoustic & electric bass
9:Folk	Folk & ethnic instruments
10:Synth	Synthesizer sounds
11:Choir	Choir & human voice
12:TPerc	Tuned percussion
13:Drum	Drums
14:Perc	Percussion instruments
15:SE	Sound effects
16:Osc	Basic oscillator waveforms

Number

Range: P001 … P244, I00 … I63, C00 … C63
Controls: MEMORY, [CS5], [-1] [+1], Dial

Selects the wave (AWM waveform) to be used in the current voice. Use the "Group" parameter, above, to select the group containing the wave that is to be selected. The [INTERNAL 1], [INTERNAL 2], and [CARD] keys can also be used to select the memory area from which the wave is to be selected. A complete listing of the internal waves is given in the Appendix, on page 310.

2: AMPLITUDE EG

Rather than having to set numerous level and rate values via the full-edit amplitude EG parameters, these parameters let you select from a range of preset envelope types, and then modify the overall attack, sustain, and release characteristics as required.

For full amplitude EG parameters see page 60.

```
QED AEG)Type          Atk   Sus   Rel   Vel
0:--------             63    63    50    +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
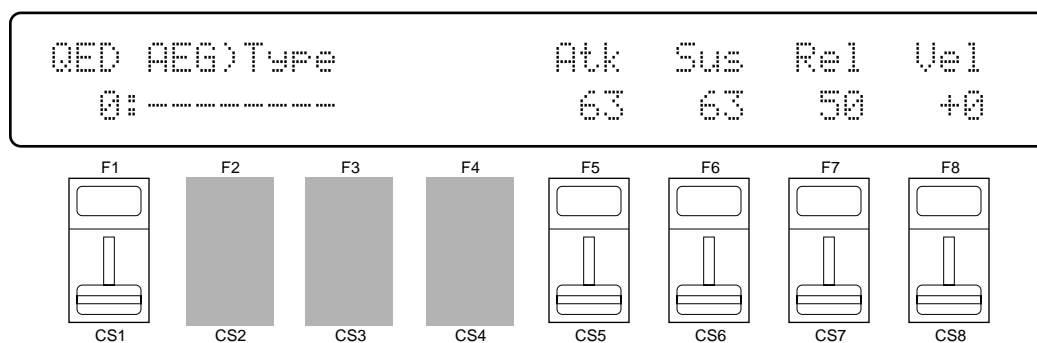
Type (Envelope type)
Range: 00 … 21
Controls: [CS1], [-1] [+1], Dial

Selects either the envelope defined by the current amplitude envelope parameter settings (page 60), or one of 21 preset amplitude envelope types for the current voice. The envelope types are:

Quick Edit Envelope Types

00:--------	Full-edit envelope
01:Piano	Acoustic piano
02:Brass	Brass
03:SfzBrass	Sforzando brass
04:SynBrass	Synthesizer brass
05:StFast	Fast-attack strings
06:StSlw/Pd	Slow-attack strings (pad)
07:E.Bass	Electric bass
08:SynBass1	Synthesizer bass 1
09:SynBass2	Synthesizer bass 2
10:Organ	Organ
11:Guitar	Guitar
12:Pluck1	Plucked instrument 1
13:Pluck2	Pluched instrument 2
14:SynPad	Synthesizer pad
15:SynComp	Synthesizer comping (backing)
16:Percusiv	Percussive
17:S.Ideal1	Sound envelope 1
18:S.Ideal2	Sound envelope 2
19:S.Ideal3	Sound envelope 3
20:S.Ideal4	Sound envelope 4
21:Init	Initialized envelope

Atk (Attack rate)

Range: 0 … 63
Controls: [CS5], [-1] [+1], Dial

Sets the attack rate for the selected envelope. "63" produces the fastest attack, while "0" produces the slowest attack.

Sus (Sustain level)

Range: 0 … 63
Controls: [CS6], [-1] [+1], Dial

Sets the sustain level for the selected envelope.

Rel (Release rate)

Range: 0 … 63
Controls: [CS7], [-1] [+1], Dial

Sets the release rate for the selected envelope.

Velo (Velocity sensitivity)

Range: -7 … +7
Controls: [CS8], [-1] [+1], Dial

Determines how the output level of the current voice changes in response to velocity changes (e.g. keyboard dynamics).

Plus "+" settings produce higher output level in response to higher velocity values — i.e. the harder a key is played, the louder the sound. The maximum setting of "+7" produces the maximum level variation in response to velocity changes. Minus "-" settings produce the opposite effect: lower level in response to higher velocity. A setting of "+0" results in no level variation.

3: FILTER

The simplified filter parameters provided here have been specifically created for fast, efficient filter programming.

For full filter parameters see page 65.

```
QED FILTER)Type            Coff Reso  Vel
           0:------------   ----  ---   +0
```

	F1	F2	F3	F4	F5	F6	F7	F8
	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
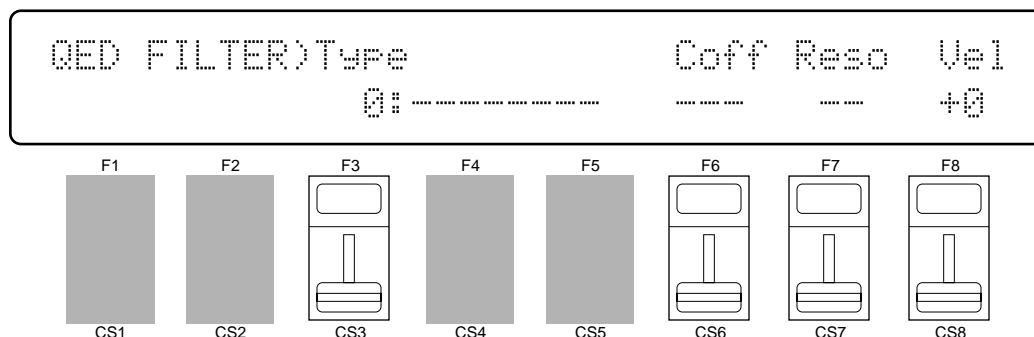
Type (Filter type)
Range: 0 ... 15
Controls: [CS3], [-1] [+1], Dial

Selects either the filter defined by the current filter parameter settings (page 65), or one of 15 preset filter types for the current voice. The filter types are:

Quick Edit Filter Types

0:--------	Full-edit filter
1:VeloSoft	Velocity sensitive, soft response
2:VeloWide	Velocity sensitive, wide response
3:VeloHard	Velocity sensitive, hard response
4:VeloReso	Velocity sensitive, resonant
5:SynBass1	Synthesizer bass 1
6:SynBass2	Synthesizer bass 2
7:SynBras1	Synthesizer brass 1
8:SynBras2	Synthesizer brass 2
9:Sweep	Sweep-frequency filter
10:SlowAtak	Slow-attack filter
11:LPF_Init	Initialized LPF
12:HPF_Init	Initialized HPF
13:BPF_Init	Initialized BP
14:BEF_Init	Initialized BEF
15:Thru	No filter

Coff (Cutoff frequency)
Range: 0 ... 127
Controls: [CS6], [-1] [+1], Dial

Sets the cutoff frequency of the selected filter.

Lower cutoff values produce a lower cutoff frequency and higher values produce a higher cutoff frequency. If the "Thru" filter type is selected, no cutoff frequency can be set and "---" appears on the display in place of the parameter.

Reso (Resonance)
Range: 0 … 99
Controls: [CS7], [-1] [+1], Dial

Determines the degree of filter resonance.

This parameter has a similar effect to the "resonance" settings on traditional analog synthesizer filters — i.e. it determines the height of a peak in the filter response at the cutoff frequency. If a filter type other than "LPF" is selected, no resonance can be produced and "---" appears on the display in place of the parameter.

The illustrations here are not available.

Higher resonance values produce a higher resonant peak and reduce the overall bandwidth of the filter, passing a narrow band of frequencies at the filter's cutoff.

Vel (Velocity sensitivity)
Range: -63 … +63
Controls: [CS8], [-1] [+1], Dial

Determines how the filter cutoff frequency changes in response to velocity changes (e.g. keyboard dynamics).

Plus "+" settings produce higher cutoff frequencies in response to higher velocity values — i.e. the harder a key is played, the higher the cutoff frequency. The maximum setting of "+63" produces the maximum level variation in response to velocity changes. Minus "-" settings produce the opposite effect: lower cutoff in response to higher velocity. A setting of "+0" results in no cutoff variation.

4: LFO

Here, the main LFO parameters are simplified and concentrated in a single screen for quick, easy programming.

For full LFO parameters see page 78.

```
QED LFO)   Type      Speed  Depth
           ------------  64     ---
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8
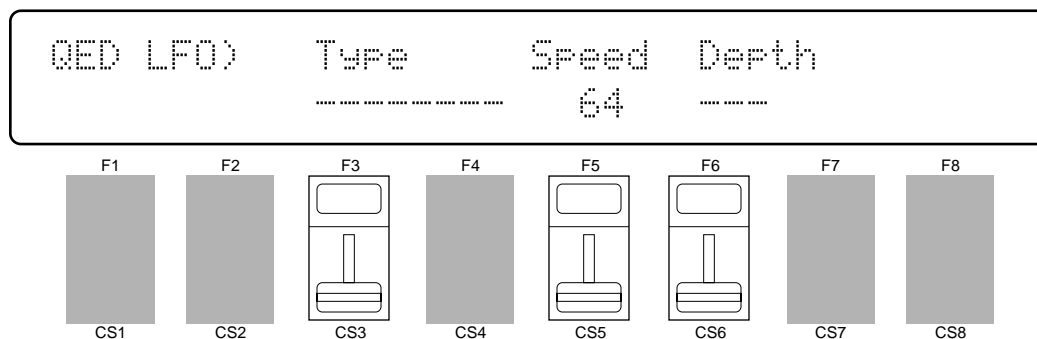
Type (LFO modulation type)
Range: --------, vibrato, tremolo, wahwah
Controls: [CS3], [-1] [+1], Dial

Determines whether the LFO will produce vibrato (pitch modulation), tremolo (amplitude modulation), or wahwah (filter cutoff modulation) effects. The current LFO parameter settings (page 78) are selected when this parameter is set to "--------".

Speed
Range: 0 … 99
Controls: [CS5], [-1] [+1], Dial

Sets the speed of the LFO.

"0" is the slowest speed setting, producing an LFO speed of approximately 0 Hertz. The fastest setting of 99 produces an LFO speed of approximately 25 Hertz.

Depth
Range: 0 … 127
Controls: [CS6], [-1] [+1], Dial

Sets the maximum amount of amplitude (tremolo), pitch (vibrato), or filter cutoff (wahwah) modulation that can be applied to the current voice.

A "0" setting produces no modulation while a setting of "127" produces maximum modulation.

5: EFFECT TYPE

The SY85 features a complex, high-performance effect system that can be programmed easily via the parameters presented here and in the following screen.

For a complete list of effect parameters see page 274.

```
QED EFFECT)    Type              Wet Balance
   06:Rev.Stage1  00:Through           50%
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
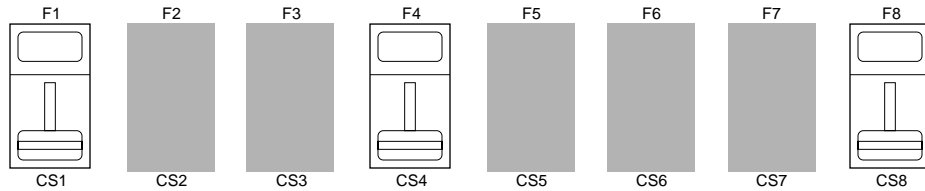
Effect Type 1/2
Range: 0 … 90
Controls: [CS1]/[CS4], [-1] [+1], Dial

[CS1] selects any of the SY85's 90 effect types for the EFFECT 1 processor, and [CS4] does the same for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system.

Wet Balance
Range: 0 … 100
Controls: [CS8], [-1] [+1], Dial

[CS8] controls the balance between the direct no-effect sound and the effect sound delivered via the OUTPUT 1 jacks. The maximum setting of "100" produces maximum effect depth.

6: EFFECT PARAMETER
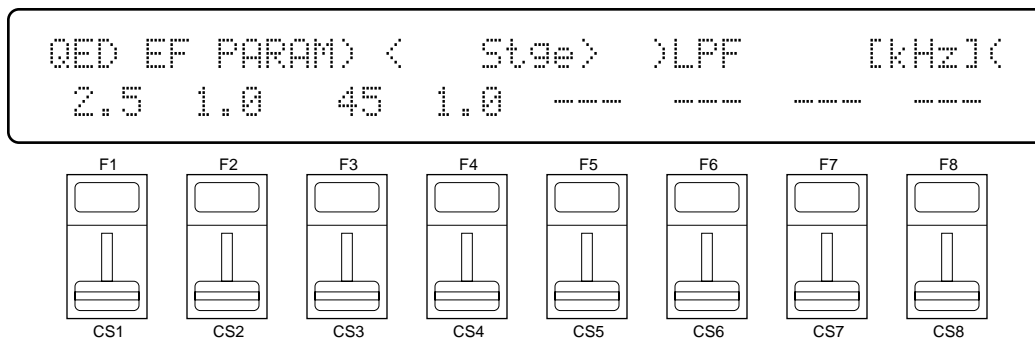
```
QED EF PARAM) <   Stge> )LPF     [kHz](
 2.5  1.0   45  1.0  ---  ---  ---  ---
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

    This screen provides access to the four main parameters each for the current
selected effect 1 and effect 2. The four effect 1 parameters are edited via [CS1]
through [CS4], while the four effect 2 parameters are edited via [CS5] through [CS8].
    The parameters are different for each effect (refer to page 274 for details). The
EFFECT mode PARAMETERS screen described on page 109 provides full access to
all 8 effect parameters.

1: MODE, TYPE

The SY85 features a dual-processor effect system that includes 90 top-quality digital effects. Two different effects can be connected in series or parallel, providing an extensive range of possible configurations.

```
EF Mode        EF1 Type        EF2 Type
   2:para      06:Rev.Stage1   00:Through
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Mode
Range: 0:off, 1:seri, 2:para
Controls: [CS1], [-1] [+1], Dial

Determines whether the SY85's two effect processors are connected in series ("1:seri") or in parallel ("2:para"), or whether the entire effect system is turned off ("0:off").

EF1 Type
Range: 0 ... 90
Controls: [CS3], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 1 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

EF2 Type
Range: 0 ... 90
Controls: [CS6], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

2: SEND, MIX, WET:DRY

The balance between the direct sound of the voice and the effect sound is a delicate thing. Even slight changes can make a big different to the final sound. The parameters provided in this screen provide precise balance control.

```
 EF Level   Send     EF2 Mix    Out1 Wet:Dry
            127       ----           50 : 50
```

		F3		F5		F7	F8
F1	F2	CS3	F4	CS5	F6	CS7	CS8
CS1	CS2		CS4		CS6		
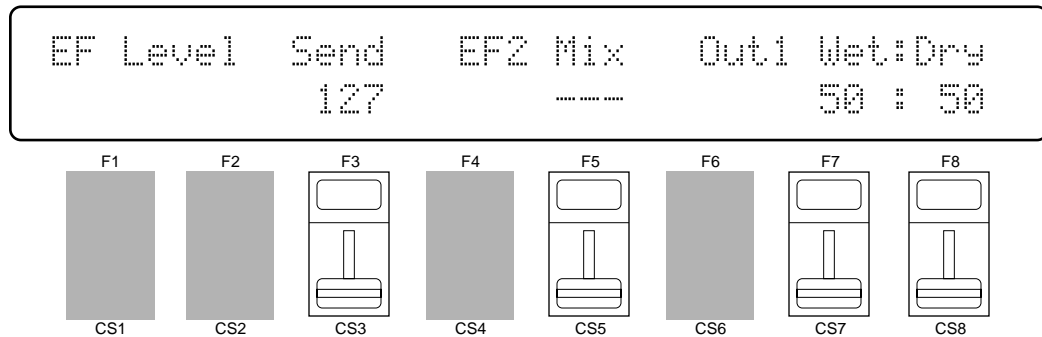
Send (Send level)
Range: 0 … 127
Controls: [CS3], [-1] [+1], Dial

This parameter adjusts the amount of direct voice signal that is sent to the effect processors, determining the strength of the final effect sound. A setting of "0" results in no effect, leaving only the "dry" sound of the voice. The maximum setting of "127" produces the maximum amount of effect.

EF2 Mix (Effect 2 mix level)
Range: 0 … 100
Controls: [CS5], [-1] [+1], Dial

This parameter can only be used with the "serial" effect mode is selected. If any other mode is selected ("off" or "para"), "---" appears on the display in place of the value.

If a controller is assigned to the EF2 Mix parameter (page 110), an inverse "c" will appear to the right of the parameter.

Out1 Wet
Range: 0 … 100
Controls: [CS7], [-1] [+1], Dial

This parameter and the "Out1 Dry" parameter, below, work together to balance the effect ("wet") and direct ("dry") signals delivered via the OUTPUT 1 jacks. Higher "Out1 Wet" values produce more effect sound in relation to the direct, dry sound of the voice.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

If a controller is assigned to the "out1 Wet" parameter (page 110), an inverse "c" will appear to the right of the parameter.

Out1 Dry

Range: 0 … 100
Controls: [CS8], [-1] [+1], Dial

This parameter and the "Out1 Wet" parameter, above, work together to balance the effect ("wet") and direct ("dry") signals delivered via the OUTPUT 1 jacks. Higher "Out1 Dry" values produce more direct, dry sound in relation to the effect sound.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

3: OUTPUT LEVEL

Depending on the selected effects the SY85 effect system can have up to four separate output levels that are adjusted by the parameters provided in this screen.

```
EF OutLevel 1a   1b                 2a   2b
EF1(sngl)=100%  --  EF2(sngl)=100%  --
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

1a, 1b, 2a, and 2b (Effect output levels)
Range: 0 … 100
Controls: [CS3], [CS4], [CS7], [CS8], [-1] [+1], Dial

The [CS3] and [CS4] sliders adjust the output levels of the effect 1 "1a" and "1b" stages, respectively, while the [CS7] and [CS8] sliders adjust the output levels of the effect 2 "2a" and "2b" stages. A setting of "0" turns output from the corresponding effect stage off, while a setting of "100" produces maximum output level.

If the selected effect is a "single" type, then only the "1a" or "2a" output level is available. If it is a "cascade" type, then only the "1b" or "2b" output level is available. Both the "1a" and "1b" or "2a" and "2b" levels are available only if the selected effect is a "dual" type. The type of the effects currently selected for the effect 1 and effect 2 processors are shown in parentheses on the bottom line of the display. See page 254 for details on the effect stages and the SY85 effect system in general.

If a controller is assigned to any of the output level parameters (page 110), an inverse "c" will appear to the right of the parameter.

4: EFFECT 1 PARAMETERS
5: EFFECT 2 PARAMETERS

Each of the SY85's 90 effects has 8 parameters that can be edited via the parameters in this screen to fine-tune the effect.

```
EF1 PARAM <Rev.Stage1>   )Init Dly [ms](
  2.5  1.0    10     0    16     4    45   1.0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
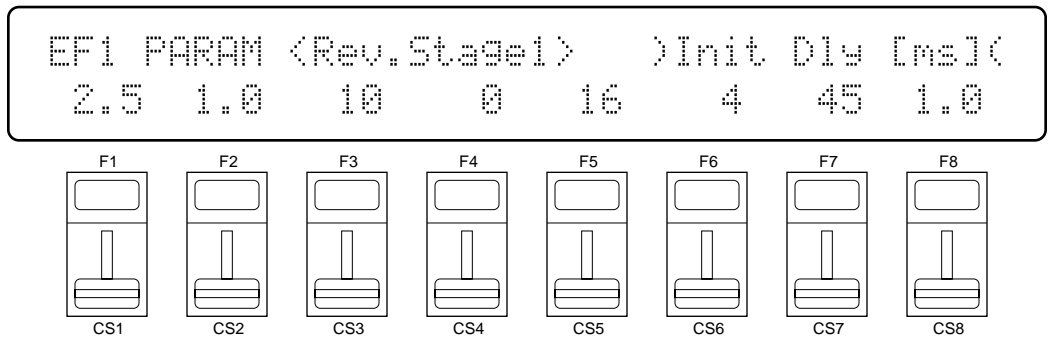
Each parameter is controlled by the corresponding slider (i.e. the slider immediately below each parameter). The [-1]/[+1] keys and data entry dial can also be used to edit the parameter at which the cursor is currently located.

Refer to page 274 for a complete listing of the parameters provided for each effect.

6: CONTROL PARAMETERS

The SY85 [CS1] and [CS2] sliders can be assigned to control different effect parameters in real time while playing in the voice or performance modes. The parameters provided in this screen determine which effect parameters are to be controlled by the [CS1] and [CS2] sliders, the minimum and maximum parameter values, and assign MIDI control numbers to the same parameters for MIDI effect control.

```
EF CTRL)        ( Min  Max  Additional
  CS1 : Off       0% 100% 000:off
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8

CS1/CS2 (CS1/CS2 switch)
Range: CS1, CS2
Controls: [CS1], [-1] [+1], Dial

Selects [CS1] or [CS2] for assignment.

Parameter (Effect parameter)
Range: Depends on selected effects.
Controls: [CS2], [-1] [+1], Dial

Selects the effect parameter to be controlled by the currently selected slider. Since each effect has as many as 8 different parameters, the maximum number of settings available for this parameter will be 8: "Ef1prm1" through "Ef1prm8" on the display, for example, stands for "effect 1 parameter 1" through "effect 1 parameter 8". The parameters available for each effect are different, but the name of the selected parameter will be shown between the parentheses on the top line of the display. Parameters that can not be assigned to the sliders are indicated by dashes ("--------") instead of a parameter name.

Min (Minimum parameter value)
Range: 0 … 100
Controls: [CS4], [-1] [+1], Dial

Sets the lower limit of the [CS1] or [CS2] control range. A setting of "0", for example, means that when the slider is set to its lowest position the assigned parameter will also be set to its lowest value. A setting of "50" means that the lowest slider position will set the assigned parameter to about 50% of its range (a parameter with a range of 0 to 127, for example, would be set to about 63).

If a controller is assigned to the "Min" parameter, an inverse "c" will appear to the right of the parameter.

Max (Maximum parameter value)

Range: 0 … 100
Controls: [CS5], [-1] [+1], Dial

Sets the upper limit of the [CS1] or [CS2] control range. A setting of "100", for example, means that when the slider is set to its highest position the assigned parameter will also be set to its highest value. A setting of "80" means that the highest slider position will set the assigned parameter to about 80% of its range (a parameter with a range of 0 to 127, for example, would be set to about 102).

If a controller is assigned to the "Max" parameter, an inverse "c" will appear to the right of the parameter.

Additional (Additional MIDI control)

Range: 000 … 120, AfterTch, Velocity, KeyScale, LFO
Controls: [CS6], [-1] [+1], Dial

This parameter allows MIDI control change numbers to be assigned to the selected effect parameters, so that they can be controlled from the SY85 controllers (modulation wheel, foot controller, etc) or an external MIDI device that is capable of transmitting control change messages. Additional settings include "AfterTch" for keyboard aftertouch control, "Velocity" for keyboard velocity control, "KeyScale" for key scaling control, and "LFO" for internal LFO control. This is in addition to control via the [CS1] and [CS2] sliders. MIDI control change numbers 000 through 120 can be assigned. Some control change numbers are already defined, while others are not assigned to any specific controller (see chart below).

MIDI CONTROL CHANGE NUMBER/DEVICE

0:	"--------"	91:	"Effect D"
1:	"Mod.Whl."	92:	"TremoloD"
2:	"Breath C"	93:	"Chorus D"
4:	"Foot Cnt"	94:	"CelesteD"
5:	"Porta.Tm"	95:	"Phaser D"
6:	"Data Ent"	96:	"Inc. "
7:	"Main Vol"	97:	"Dec. "
8:	"Balance "	98:	"NRPN LSB"
10:	"Panpot "	99:	"NRPN MSB"
11:	"Express."	100:	"RPN LSB"
64:	"Hold 1 "	101:	"RPN MSB"
65:	"Porta.Sw"	121:	"AfterTch"
66:	"Sostenut"	122:	"Velocity"
67:	"Soft "	123:	"KeyScale"
69:	"Hold 2 "	124:	"LFO "

7: EFFECT LFO

All of the modulation-type effects — chorus, flanging, etc. — require LFO control. The SY85 has an independent effect LFO that is set up by the following parameters.

```
EF CTRL LFO  Waveform    Speed    Delay
                  tri        0        0
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Wave (LFO waveform)
Range: tri, dwn, up, squ, sin, S/H, 1tm
Controls: [CS4], [-1] [+1], Dial

Determines the waveform of the effect LFO.

"tri" = Triangle	"dwn" = Downward sawtooth
"up" = Upward sawtooth	"squ" = Square
"sin" = Sine	"S/H" = Sample and hold
	"1tm" = Upward 1-shot

If a controller is assigned to the "Wave" parameter (page 110), an inverse "c" will appear to the right of the parameter.

Speed (LFO speed)
Range: 0 … 99
Controls: [CS6], [-1] [+1], Dial

Sets the speed of the effect LFO.

"0" is the slowest Speed setting, producing an LFO speed of approximately 0 Hertz. The fastest setting of 99 produces an LFO speed of approximately 25 Hertz.

If a controller is assigned to the "Speed" parameter (page 110), an inverse "c" will appear to the right of the parameter.

Delay
Range: 0 … 99
Controls: [CS8], [-1] [+1], Dial

Sets the delay time between the beginning of a note and the beginning of effect LFO operation for the selected element.

The minimum setting "0" results in no delay, while the maximum setting of "99" produces a delay of approximately 2.66 seconds before the LFO begins operation (5.3 seconds before it reaches maximum depth).

If a controller is assigned to the "Delay" parameter (page 110), an inverse "c" will appear to the right of the parameter.

EFFECT DATA COPY

[VOICE] → [EFFECT EDIT] → [COPY]

This function facilitates voice effect editing by allowing the effect parameters from any other song, voice, or performance combination to be copied to the current voice. You can copy an effect setup that is close to the type you want, then edit it to produce the required sound.

```
EFFECT COPY     From
                VCE  ∄A1:InitVce
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
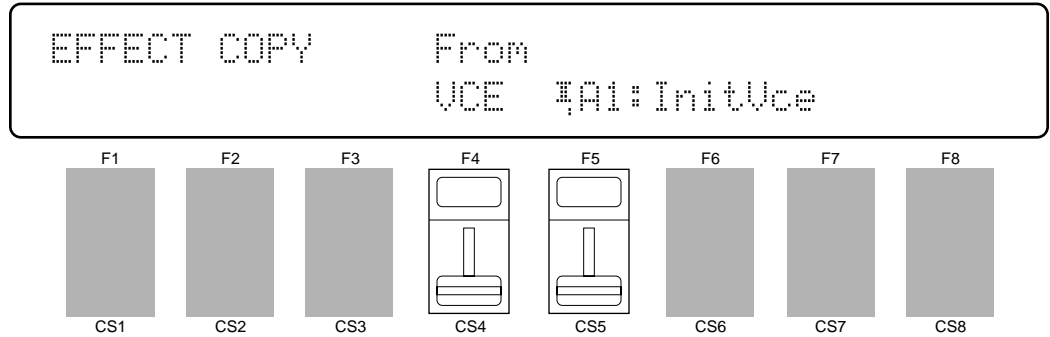
From Voice
Range: Any song, voice or performance combination
Controls: MEMORY, GROUP, PROGRAM, [CS4], [CS5], [-1] [+1], Dial

Use the [CS4] slider to select the mode containing the desired voice and effect data ("PFM" = PERFORMANCE, "VCE" = VOICE, and "MLT" = MULTI). Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
EFFECT COPY     From
Are you sure ?  VCE  ∄A1:InitVce
```

Press the [ENTER/YES] key again to copy the effect data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the effect edit mode.

EFFECT SIGNAL FLOW DISPLAY

This function provides a graphic indication of the current effect system configuration while in the effect edit mode.

● **Overall Effect Flow**

```
EFFECT FLOW |          ˜ | EF1=Rotary SP.
   Mode= para |       ▀ПП | EF2=Dist-> Rev
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

● **Effect 1 Configuration**

```
EF1 Send1a>---[R.SP▯]------------▓-->OUT1
                               └─<DRY1
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

● **Effect 2 Configuration**

```
EF2 Send2a>---[Dist ]-╖-[Rev ▓]--◊-->OUT2
    Send2b>-----------▯        └─<DRY2
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [SHIFT] + [F1] to see the overall effect system signal flow. Press [SHIFT] + [F2] to see the effect 1 section configuration, and [SHIFT] + [F3] for the effect 2 section configuration. Press the [EXIT/NO] key to exit from the effect signal flow display.

Refer the to section beginning on page 254 for details on the effect system.

1: VOICE EDIT RECALL

If you're dissatisfied with the results of edits you've made to a voice, or have accidentally lost track of changes made, use the VOICE EDIT RECALL function to recall the pre-edit voice data from the SY85's voice backup buffer memory.
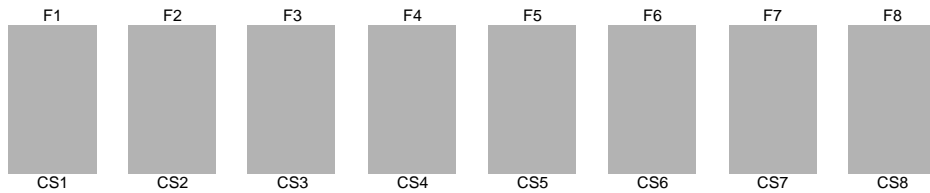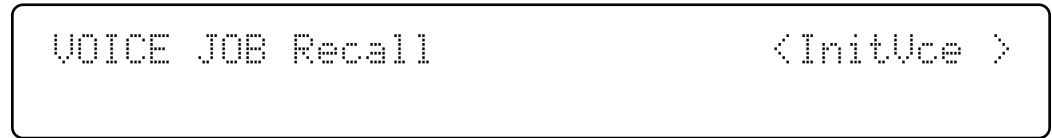
```
VOICE JOB Recall                    <InitVce >
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [ENTER/YES] to begin the recall procedure. The following confirmation display will appear:

```
VOICE JOB Recall                    <InitVce >
Are you sure ?
```

Press [ENTER/YES] again to confirm that you want to go ahead with the recall operation (which will erase all current edited data), or press [EXIT/NO] to cancel.

When the original voice data has been recalled, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the voice edit recall function.

2: VOICE INITIALIZE

When you want to program a totally new voice "from scratch," rather than editing an existing voice, use this function to initialize all voice parameters.

```
VOICE JOB Initialize
```
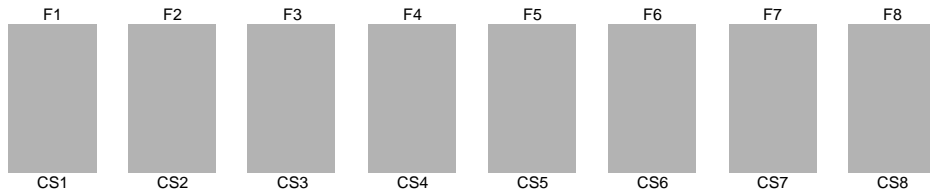
F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [ENTER/YES] to begin the initialize procedure. The following confirmation display will appear:

```
VOICE JOB Initialize
Are you sure ?
```

Press [ENTER/YES] again to confirm that you want to go ahead with the initialize operation (which will erase all current edited data), or press [EXIT/NO] to cancel.

When the voice data has been initialized, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the voice initialize function.

VOICE COMPARE

[SHIFT] + [STORE]

The voice compare function makes it possible to compare the sound of a voice being edited with the same voice prior to editing.

The illustrations here are not available.

To temporarily recall the original voice while editing, press the [STORE] key while holding the [SHIFT] key. The [VOICE] LED will flash, indicating that the compare mode is engaged. Data cannot be edited in the compare mode. Press [EXIT/ NO] again to return to the edit mode and the voice being edited.

VOICE STORE

When you're satsfied with a new voice you've created in the voice edit mode, use the store function described below to store the new voice to an internal or card memory location.

```
VOICE STORE          To
                     ▯A1:InitVce
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
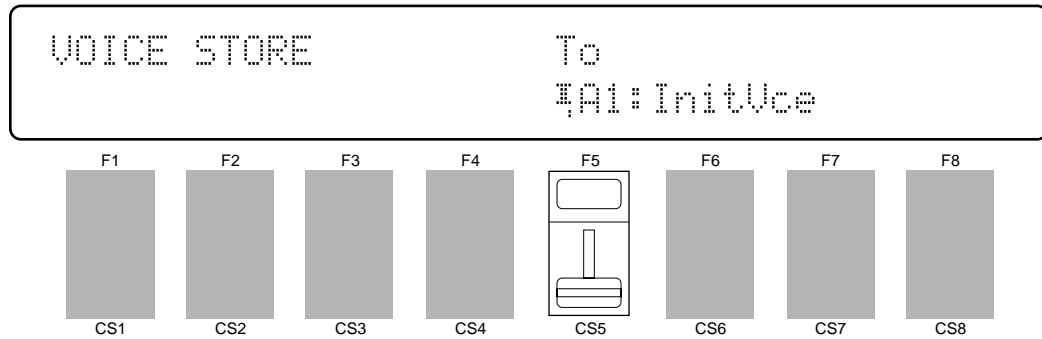
When you've finished editing, return to the normal voice play mode (press the [VOICE] key), and <u>before selecting a different voice</u> press the [STORE] key. You can now use the MEMORY, GROUP, and NUMBER keys to select the memory location to which your new voice is to be stored.

Once the store location has been specified, press [ENTER/YES] to begin the store procedure. The following confirmation display will appear:

```
VOICE STORE          To
Are you sure ?       ▯A1:InitVce
```
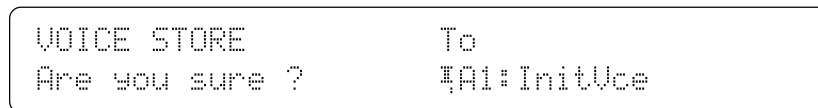
Press [ENTER/YES] again to confirm that you want to go ahead with the store operation (which will erase all previous data in the specified memory location), or press [EXIT/NO] to cancel.

When the voice data has been stored, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the store function.

DRUM VOICE EDIT MODE

1: KEY PARAMETERS 1
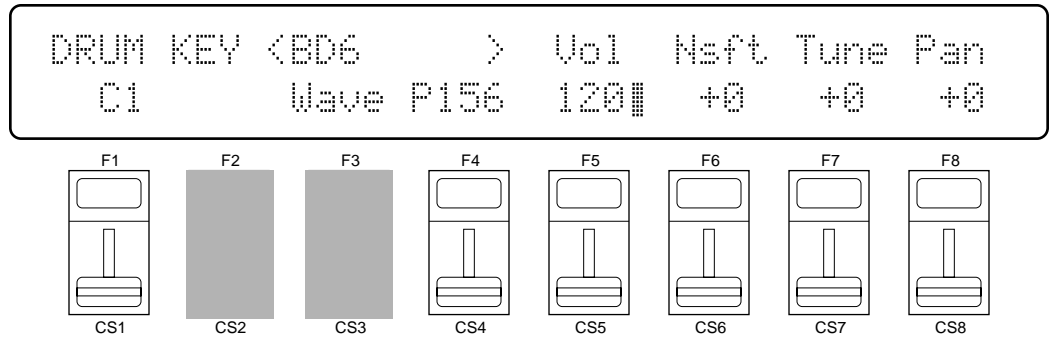
```
DRUM KEY <BD6      >  Vol  Nsft Tune Pan
   C1        Wave P156  120▊  +0   +0   +0
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8

Key Number

Range: C1 … C5
Controls: [CS1], [-1] [+1], Dial, Keyboard

Selects the the drum key to be edited. In addition to using the [CS1] slider, data entry dial, and [-1] and [+1] keys, the drum key can be selected by simply pressing the appropriate key on the keyboard.

Wave

Range: P001 … P244, I00 … I63, C00 … C63
Controls: MEMORY, [CS4], [-1] [+1], Dial

Selects the wave (AWM waveform) to be played by the current drum key. Use the [INTERNAL 1], [INTERNAL 2], and [CARD] keys to select the memory area from which the wave is to be selected. A complete listing of the internal waves is given in the Appendix, on page 310.

Vol

Range: 0 … 127
Controls: [CS5], [-1] [+1], Dial

For optimum balance between the instruments in a drum "kit," this parameter allows the volume of the current drum key to be adjusted independently. A setting of "0" produces no sound, while a setting of "127" produces maximum volume.

Nsft

Range: -48 … +36
Controls: [CS6], [-1] [+1], Dial

Shifts the pitch of selected drum key up or down in semitone steps.
A setting of "-12," for example, shifts the pitch of the selected layer down by one octave; a setting of "+4" shifts the pitch up by a major third.

Tune

Range: -63 … +63
Controls: [CS7], [-1] [+1], Dial

Allows upward or downward pitch adjustment of the current drum key in approximately 1.7-cent steps (a "cent" is 1/100th of a semitone).

The maximum minus setting of "-63" produces a downward pitch shift of approximately three quarters of a semitone, and the maximum plus setting of "+63" shifts the pitch up by the same amount. A setting of "0" produces no pitch change.

Pan

Range: -31 … +31
Controls: [CS8], [-1] [+1], Dial

Interesting stereo effects can be produced by placing the sound of different drum instruments at different locations in the stereo sound field. This parameter determines the position in the stereo sound field in which the sound from the current drum key will be heard (left to right).

Minus values represent panning to the left, and positive values represent panning to the right. "0" positions the sound of the selected layer in the center of the stereo sound field.

2: KEY PARAMETERS 2
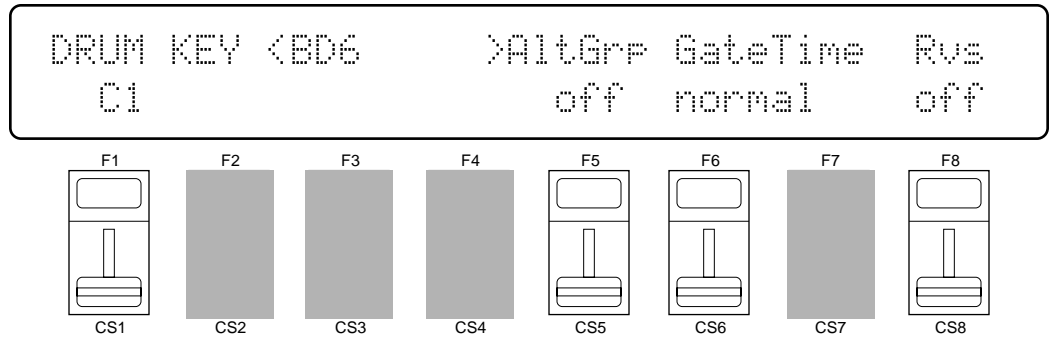
```
DRUM KEY <BD6      >AltGrp GateTime  Rvs
         C1                 off  normal      off
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

Key Number
Range: C1 … C5
Controls: [CS1], [-1] [+1], Dial, Keyboard

Selects the the drum key to be edited. In addition to using the [CS1] slider, data entry dial, and [-1] and [+1] keys, the drum key can be selected by simply pressing the appropriate key on the keyboard.

AltGrp
Range: off, 1 … 5
Controls: [CS5], [-1] [+1], Dial

Assigns the selected drum key to an "alternate group" numbered between 1 and 5. No two drum keys assigned to the same alternate group number can sound at the same time. This is most commonly used to create a realistic hi-hat cymbal effect: the closed and open hi-hat keys are assigned to the same alternate group, so that when the closed hi-hat key is played the open hi-hat sound is immediately cut off. Turn this parameter "off" if you don't want the current drum key to be assigned to any alternate group.

GateTime
Range: short, normal, long, very_long
Controls: [CS6], [-1] [+1], Dial

Sets the length of the note played by the selected drum key to short, normal, long, or very long. Please note that this parameter will not extend the length of the waveform assigned to the current drum key, so no change may be heard even if you select the "very long" gate time for a short wave.

Rvs (Reverse)
Range: off, on
Controls: [CS8], [-1] [+1], Dial

When this parameter is turned "on," the selected wave is played in reverse. When Rvs is "on," the pitch EG "Loop" parameter described on page 75 is automatically turned "off."

3: TOTAL LEVEL

This parameter sets the overall volume of the current drum voice in relation to the others, making it possible to match levels for smooth transition when switching between voices.

```
DRUM          TotalLevel  VolLowLimit
                 127▌           0
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
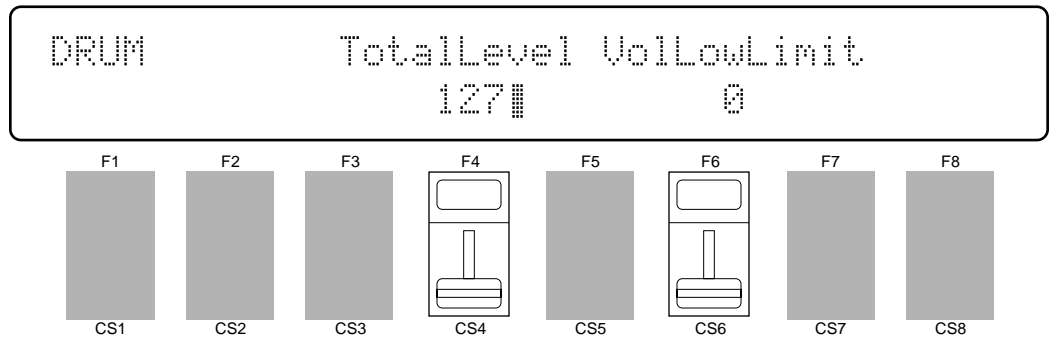
Total Level
Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Adjusts the volume of the current drum voice.

A setting of "0" produces no sound while a setting of "127" produces maximum volume. A bar graph beside the parameter provides a visual indication of volume level — the longer the bar, the higher the volume.

VolLoLimit (Minimum volume level)
Range: 0 … 127
Controls: [CS6], [-1] [+1], Dial

Determines the minimum volume level that can be set by the foot volume control MIDI volume control data. If this parameter is set to "0," the minimum foot volume control position will produce almost no sound. A setting of "63" will result in about half volume when the control is set to its minimum position. This parameter does not affect keyboard velocity response.

4: DRUM VOICE NAME

Your original drum voices should naturally have original names. This function can be used to assign a name of up to 8 characters to the current drum voice.

```
DRUM VOICE Name                "DR PTN  "
[CLR][UPR][LWR][SPC]           [←]  [→]
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
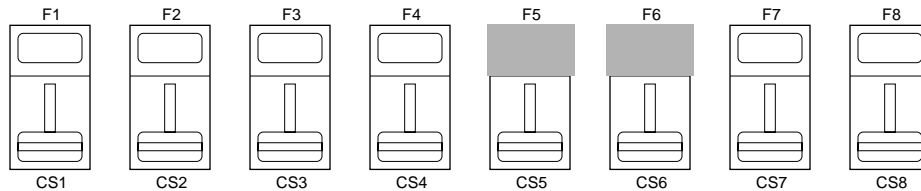
Name
Range: See character list, below
Controls: GROUP, PROGRAM, [F1] … [F4], [F7], [F8]
**   [CS1] … [CS8], [-1] [+1], Dial**

Assigns a name of up to 8 characters to the current drum voice.

Use the [F7] function key to move the character cursor to the left, and the [F8] function key to move the cursor to the right. Use the GROUP and PROGRAM keys to input a character at the cursor position. Each GROUP or PROGRAM key selects the three characters printed above it in sequence. It is also possible to use the [-1] and [+1] keys or dial to scroll through the available characters (see list below).

The sliders, [CS1] through [CS8], independently select characters for the corresponding character position: [CS1] selects the first character, [CS2] selects the second character, and so on.

The first four function keys also perform important functions: [F1] clears the entire name, [F2] selects upper-case characters for GROUP and PROGRAM key entry, [F3] selects lower-case characters for GROUP and PROGRAM key entry, and [F4] inserts a space at the cursor position.

GROUP key	PROGRAM key
[A]: A → B → C	[1]: Y → Z → 0
[B]: D → E → F	[2]: 1 → 2 → 3
[C]: G → H → I	[3]: 4 → 5 → 6
[D]: J → K → L	[4]: 7 → 8 → 9
[E]: M → N → O	[5]: * → & → _
[F]: P → Q → R	[6]: / → . → ,
[G]: S → T → U	[7]: ' → ! → ?
[H]: V → W → X	[8]: # → : → ;

DRUM KEY DATA COPY

This function facilitates drum voice editing by allowing the data from one drum key (the "source" key) to be copied to any other drum key. You can copy the data from a key that is close to the sound you want, then edit it as required.

```
DRUM KEY COPY From<BD6      >To<BD6      >
                      C1    ✦    C1
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
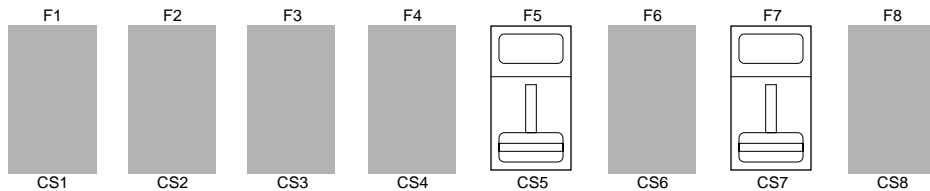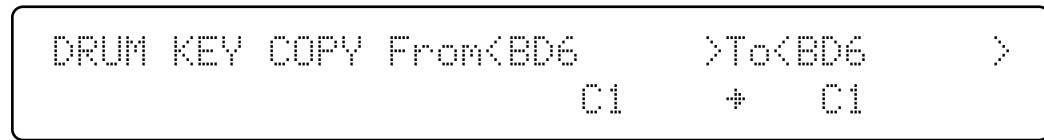
From
Range: C1 … C5
Controls: [CS5], [-1] [+1], Dial, Keyboard

To
Range: C1 … C5
Controls: [CS7], [-1] [+1], Dial, Keyboard

Use the [CS5] slider to select the source ("From") key, and the [CS7] slider to select the destination ("To") key. The source and destination keys can also be selected by simply pressing the appropriate key on the keyboard after placing the cursor at the "From" or "To" parameter position by pressing the [F5] or [F7] function key, respectively. The names of the waves currently assigned to the "From" and "To" keys are displayed above the key numbers.

Once the source and destination keys have been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
DRUM KEY COPY From<BD6      >To<BD6      >
Are you sure ?        C1    ✦    C1
```
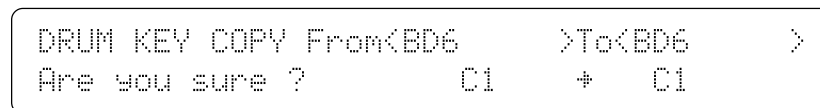
Press the [ENTER/YES] key again to copy the drum key data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the drum edit mode.

1: EFFECT TYPE

The SY85 features a complex, high-performance effect system that can be programmed easily via the parameters presented here and in the following screen.

For a complete list of effect parameters see page 274.

```
QED EFFECT)   Type            Wet Balance
   03:Rev.Room1   12:Rev.Basmnt  40%  10%
```

	F1	F2	F3	F4	F5	F6	F7	F8
	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Effect Type 1/2
Range: 0 … 90
Controls: [CS1]/[CS4], [-1] [+1], Dial

[CS1] selects any of the SY85's 90 effect types for the EFFECT 1 processor, and [CS4] does the same for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system.

Wet Balance 1/2
Range: 0 … 100
Controls: [CS7]/[CS8], [-1] [+1], Dial

[CS7] controls the balance between the direct no-effect sound and the effect sound of the EFFECT 1 processor, while [CS8] does the same for the EFFECT 2 processor. The higher the value the deeper the effect. See page 254 for more details on the SY85 effect system.

2: EFFECT SEND LEVEL

The ability to set different effect send levels for each drum key provides extremely fine control over the drum effect sound.

```
QED EFFECT)Send Level              <BD6        >
         Key= C1        127
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Key
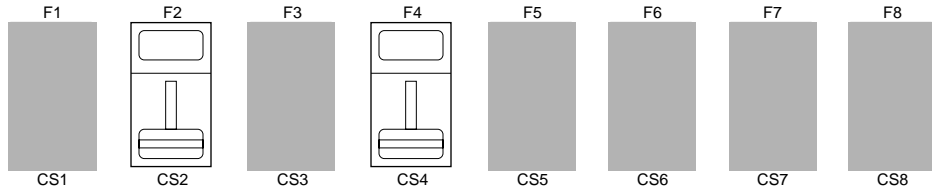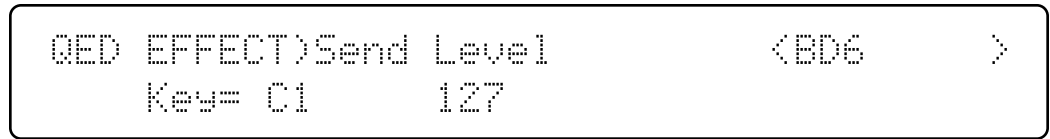
Range: C1 … C5
Controls: [CS2], [-1] [+1], Dial, keyboard

Selects the drum key (C1 … C5) for which the send level is to be adjusted. Use either the [CS2] slider or the keyboard to enter the key number.

Send Level

Range: 0 … 127
Controls: [CS4], [-1] [+1], Dial

Sets the effect send level for the selected drum key.

1: MODE, TYPE

The SY85 features a dual-processor effect system that includes 90 top-quality digital effects. Two different effects can be connected in series or parallel, providing an extensive range of possible configurations.

```
EF Mode        EF1 Type         EF2 Type
  2:para       03:Rev.Room1     12:Rev.Basmnt
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Mode

Range: 0:off, 1:seri, 2:para
Controls: [CS1], [-1] [+1], Dial

Determines whether the SY85's two effect processors are connected in series ("1:seri") or in parallel ("2:para"), or whether the entire effect system is turned off ("0:off").

EF1 Type

Range: 0 … 90
Controls: [CS3], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 1 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

EF2 Type

Range: 0 … 90
Controls: [CS6], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

2: KEY SEND SELECT & LEVEL

The parameters provided here determine to which of the SY85 effect stages the output from each drum key is sent, and at what level. It is also possible to control the effect send level via keyboard dynamics.

```
EF Send <BD6     >  Switch    Levl VelS
   Key= C1                1./- 2./-  127   +0
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Key
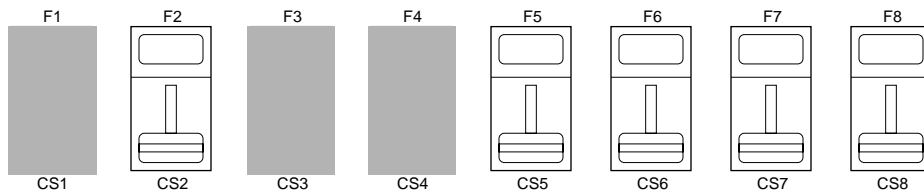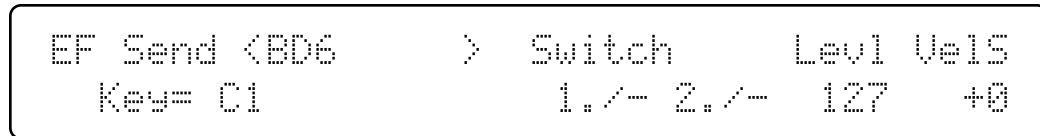
Range: C1 … C5
Controls: [CS2], [-1] [+1], Dial, Keyboard

Selects the drum key (C1 … C5) for which the send select and level parameters are to be adjusted. Use either the [CS2] slider or the keyboard to enter the key number.

Switch 1a, 1b/2a, 2b

Range: See text below
Controls: [CS5]/[CS6], [-1] [+1], Dial

Determines to which of the EFFECT 1 and EFFECT 2 effect stages the output from the current layer is sent. Each time the [F5] or [F6] function key is pressed, the cursor alternately moves to the corresponding "a" or "b" parameter. The [-1] and [+1] keys can then be used to turn the stage on ("a" or "b") or off ("."). The [CS5] and [CS6] sliders select the following settings in sequence:

CS5 (EFFECT 1)	CS6 (EFFECT 2)
1./. (a and b off)	2./. (a and b off)
1a/. (a on, b off)	2a/. (a on, b off)
1a/b (a and b on)	2a/b (a and b on)
1./b (a off, b on)	2./b (a off, b on)

If a "single" type effect is selected then only stage "a" can be selected. If a "cascade" type effect is selected, then only stage "b" can be selected. If a "dual" type effect is selected, then both stages "a" and "b" can be selected. An effect stage that cannot be selected is represented by "-" on the display.

Send (Send level)
Range: 0 … 127
Controls: [CS7], [-1] [+1], Dial

This parameter adjusts the amount of direct voice signal that is sent to the effect processors, determining the strength of the final effect sound. A setting of "0" results in no effect, leaving only the "dry" sound of the voice. The maximum setting of "127" produces the maximum amount of effect.

VelS (Send velocity sensitivity)
Range: -7 … +7
Controls: [CS8], [-1] [+1], Dial

Determines how the send level from the selected drum key is affected by velocity changes (e.g. keyboard dynamics).

Plus "+" settings produce higher send levels in response to higher velocity values — i.e. the harder a key is played, the higher the send level, and therefore the deeper the effect. The maximum setting of "+7" produces the maximum level variation in response to velocity changes. Minus "-" settings produce the opposite effect: lower send level in response to higher velocity. A setting of "+0" results in no send level variation.

3: KEY DRY OUTPUT SELECT

These parameters determine turn the "dry lines" (i.e. the signal paths which by-passes each effect processor) on or off, determining whether any dry signal output can occur at OUTPUT 1 and OUTPUT 2.

```
OUTPUT Select <BD6      > Dry1 Dry2
   Key= C1                 on   on
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Key
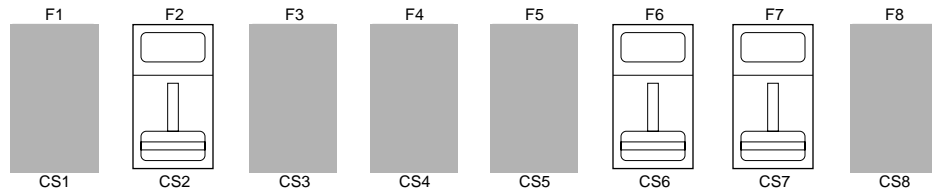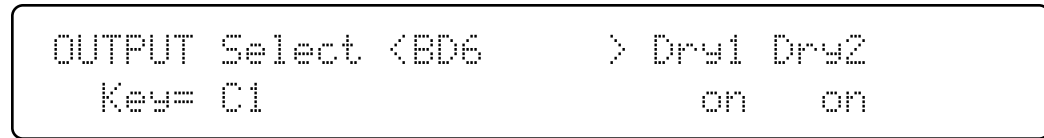
Range: C1 … C5
Controls: [CS2], GROUP [A] … [D], [-1] [+1], Dial

Selects the key to be edited. The name of the voice assigned to the selected key is shown between parentheses on the upper line of the display.

Dry1

Range: off, on
Controls: [CS6], [-1] [+1], Dial

Turns the "dry line" bypassing the EFFECT 1 signal processor on or off. When this parameter is turned "off," the "WET:DRY BALANCE" parameters (page 133) have no effect.

Dry2

Range: off, on
Controls: [CS7], [-1] [+1], Dial

Turns the "dry line" bypassing the EFFECT 2 signal processor on or off. When this parameter is turned "off," the "WET:DRY BALANCE" parameters (page 133) have no effect.

4: OUTPUT LEVEL

Depending on the selected effects the SY85 effect system can have up to four separate output levels that are adjusted by the parameters provided in this screen.

```
EF OutLevel 1a   1b                      2a    2b
 EF1(sngl)=100%   --   EF2(sngl)= 98%    --
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

1a, 1b, 2a, and 2b (Effect output levels)
Range: 0 … 100
Controls: [CS3], [CS4], [CS7], [CS8], [-1] [+1], Dial

The [CS3] and [CS4] sliders adjust the output levels of the effect 1 "1a" and "1b" stages, respectively, while the [CS7] and [CS8] sliders adjust the output levels of the effect 2 "2a" and "2b" stages. A setting of "0" turns output from the corresponding effect stage off, while a setting of "100" produces maximum output level.

If the selected effect is a "single" type, then only the "1a" or "2a" output level is available. If it is a "cascade" type, then only the "1b" or "2b" output level is available. Both the "1a" and "1b" or "2a" and "2b" levels are available only if the selected effect is a "dual" type. The type of the effects currently selected for the effect 1 and effect 2 processors are shown in parentheses on the bottom line of the display. See page 254 for details on the effect stages and the SY85 effect system in general.

If a controller is assigned to any of the output level parameters (page 136), an inverse "c" will appear to the right of the parameter.

5: WET:DRY BALANCE

The balance between the direct sound of the voice and the effect sound is a delicate thing. Even slight changes can make a big difference to the final sound. The parameters provided in this screen provide precise balance control.

```
EF Wet:Dry Balance
      Out1=  40█: 60       Out2=  16 : 84
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Out1 Wet/Out2 Wet
Range: 0 … 100
Controls: [CS3]/[CS7], [-1] [+1], Dial

These parameters and the corresponding "Out1 Dry" and "Out2 Dry" parameters, below, work together to balance the effect ("wet") and direct ("dry") signals delivered via the EFFECT 1 and EFFECT2 processors. Higher "Wet" values produce more effect sound in relation to the direct, dry sound of the voice.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

If a controller is assigned to the "Out1 Wet" or "Out2 Wet" parameter (page 136), an inverse "c" will appear to the right of the parameter.

Out2 Dry/Out2 Dry
Range: 0 … 100
Controls: [CS4]/[CS8], [-1] [+1], Dial

These parameters and the corresponding "Out1 Wet" and "Out2 Wet" parameters, above, work together to balance the effect ("wet") and direct ("dry") signals delivered via the EFFECT 1 and EFFECT 2 processors, respectively. Higher "Dry" values produce more direct, dry sound in relation to the effect sound.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

If a controller is assigned to the "Out1 Dry" or "Out2 Dry" parameter (page 136), an inverse "c" will appear to the right of the parameter.

6: SEND & EFFECT 2 MIX LEVEL

These parameters determine the mix level between each effect send and the output of the preceding effect stage. Refer to the section beginning on page 254 for details on the overall SY85 effect system.

```
EF Mix Level    EF2  Insert 1b    2a    2b
                ----          ----  ----  ----
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

EF2 Mix (Effect 2 mix level)
Range: 0 … 100
Controls: [CS4], [-1] [+1], Dial

Mixes the output of the EFFECT 2 processor with that of the EFFECT 1 processor. This parameter can only be used with the "serial" effect mode is selected. If any other mode is selected ("off" or "para"), "---" appears on the display in place of the value.

If a controller is assigned to the EF2 Mix parameter (page 136), an inverse "c" will appear to the right of the parameter.

Send 1b, 2a, 2b (Send level)
Range: 0 … 100
Controls: [CS6], [CS7], [CS8], [-1] [+1], Dial

These parameters mix the dry signal sent to the corresponding effect stage with the output of the preceding effect stage. The higher the value the greater mix level. If the current effect configuration does not allow one of these mix parameters, "--" will appear in place of the mix level parameter.

If a controller is assigned to the one of these parameters (page 136), an inverse "c" will appear to the right of the parameter.

7: EFFECT 1 PARAMETERS
8: EFFECT 2 PARAMETERS

Each of the SY85's 90 effects has 8 parameters that can be edited via the parameters in this screen to fine-tune the effect.

```
EF1 PARAM <Rev.Room1 >   )Rev.Time [s](
  1.2  0.8    8    0   50    4   68  5.6
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Each parameter is controlled by the corresponding slider (i.e. the slider immediately below each parameter). The [-1]/[+1] keys and data entry dial can also be used to edit the parameter at which the cursor is currently located.

Refer to page 274 for a complete listing of the parameters provided for each effect.

9: CONTROL PARAMETERS

The SY85 [CS1] and [CS2] sliders can be assigned to control different effect parameters in real time while playing in the voice or performance modes. The parameters provided in this screen determine which effect parameters are to be controlled by the [CS1] and [CS2] sliders, the minimum and maximum parameter values, and assign MIDI control numbers to the same parameters for MIDI effect control.

```
EF CTRL)        ( Min  Max  Additional
   CS1 : Out1 Wet   0%   40% 000:off
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

CS1/CS2 (CS1/CS2 switch)
Range: CS1, CS2
Controls: [CS1], [-1] [+1], Dial

Selects [CS1] or [CS2] for assignment.

Parameter (Effect parameter)
Range: Depends on selected effects.
Controls: [CS2], [-1] [+1], Dial

Selects the effect parameter to be controlled by the currently selected slider. Since each effect has as many as 8 different parameters, the maximum number of settings available for this parameter will be 8: "Ef1prm1" through "Ef1prm8" on the display, for example, stands for "effect 1 parameter 1" through "effect 1 parameter 8". The parameters available for each effect are different, but the name of the selected parameter will be shown between the parentheses on the top line of the display. Parameters that can not be assigned to the sliders are indicated by dashes ("--------") instead of a parameter name.

Min (Minimum parameter value)
Range: 0 … 100
Controls: [CS4], [-1] [+1], Dial

Sets the lower limit of the [CS1] or [CS2] control range. A setting of "0", for example, means that when the slider is set to its lowest position the assigned parameter will also be set to its lowest value. A setting of "50" means that the lowest slider position will set the assigned parameter to about 50% of its range (a parameter with a range of 0 to 127, for example, would be set to about 63).

If a controller is assigned to the "Min" parameter, an inverse "c" will appear to the right of the parameter.

Max (Maximum parameter value)
Range: 0 … 100
Controls: [CS5], [-1] [+1], Dial

Sets the upper limit of the [CS1] or [CS2] control range. A setting of "100", for example, means that when the slider is set to its highest position the assigned parameter will also be set to its highest value. A setting of "80" means that the highest slider position will set the assigned parameter to about 80% of its range (a parameter with a range of 0 to 127, for example, would be set to about 102).

If a controller is assigned to the "Max" parameter, an inverse "c" will appear to the right of the parameter.

Additional (Additional MIDI control)
Range: 000 … 120, AfterTch, Velocity, KeyScale, LFO
Controls: [CS6], [-1] [+1], Dial

This parameter allows MIDI control change numbers to be assigned to the selected effect parameters, so that they can be controlled from the SY85 controllers (modulation wheel, foot controller, etc) or an external MIDI device that is capable of transmitting control change messages. Additional settings include "AfterTch" for keyboard aftertouch control, "Velocity" for keyboard velocity control, "KeyScale" for key scaling control, and "LFO" for internal LFO control. This is in addition to control via the [CS1] and [CS2] sliders. MIDI control change numbers 000 through 120 can be assigned. Some control change numbers are already defined, while others are not assigned to any specific controller (see chart below).

MIDI CONTROL CHANGE NUMBER/DEVICE

0:	"--------"	91:	"Effect D"
1:	"Mod.Whl."	92:	"TremoloD"
2:	"Breath C"	93:	"Chorus D"
4:	"Foot Cnt"	94:	"CelesteD"
5:	"Porta.Tm"	95:	"Phaser D"
6:	"Data Ent"	96:	"Inc. "
7:	"Main Vol"	97:	"Dec. "
8:	"Balance "	98:	"NRPN LSB"
10:	"Panpot "	99:	"NRPN MSB"
11:	"Express."	100:	"RPN LSB"
64:	"Hold 1 "	101:	"RPN MSB"
65:	"Porta.Sw"	121:	"AfterTch"
66:	"Sostenut"	122:	"Velocity"
67:	"Soft "	123:	"KeyScale"
69:	"Hold 2 "	124:	"LFO "

10: CONTROL LFO

All of the modulation-type effects — chorus, flanging, etc. — require LFO control. The SY85 has an independent effect LFO that is set up by the following parameters.

```
EF CTRL LFO  Waveform    Speed     Delay
             ∆↘∆ tri        0         0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Wave (LFO waveform)

Range: tri, dwn, up, squ, sin, S/H, 1tm
Controls: [CS4], [-1] [+1], Dial

Determines the waveform of the effect LFO.

"tri" = Triangle.	"dwn" = Downward sawtooth.
"up" = Upward sawtooth.	"squ" = Square.
"sin" = Sine.	"S/H" = Sample and hold.
	"1tm" = Upward 1-shot.

If a controller is assigned to the "Wave" parameter (page 136), an inverse "c" will appear to the right of the parameter.

Speed (LFO speed)

Range: 0 … 99
Controls: [CS6], [-1] [+1], Dial

Sets the speed of the effect LFO.

"0" is the slowest speed setting, producing an LFO speed of approximately 0 Hertz. The fastest setting of 99 produces an LFO speed of approximately 25 Hertz.

If a controller is assigned to the "Speed" parameter (page 136), an inverse "c" will appear to the right of the parameter.

Delay

Range: 0 … 99
Controls: [CS8], [-1] [+1], Dial

Sets the delay time between the beginning of a note and the beginning of effect LFO operation for the selected element.

The minimum setting "0" results in no delay, while the maximum setting of "99" produces a delay of approximately 2.66 seconds before the effect LFO begins operation.

If a controller is assigned to the "Delay" parameter (page 136), an inverse "c" will appear to the right of the parameter.

EFFECT DATA COPY

This function facilitates drum voice effect editing by allowing the effect parameters from any other song, voice, or performance combination to be copied to the current drum voice. You can copy an effect setup that is close to the type you want, then edit it to produce the required sound.

```
EFFECT COPY      From
                 VCE  IH8:DR PTN
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

From

Range: Any song, voice or performance combination
Controls: MEMORY, GROUP, PROGRAM, [CS4], [CS5], [-1] [+1], Dial

Use the [CS4] slider to select the mode containing the desired voice and effect data ("PFM" = PERFORMANCE, "VCE" = VOICE, and "MLT" = MULTI). Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
EFFECT COPY      From
Are you sure ?   VCE  IH8:DR PTN
```

Press the [ENTER/YES] key again to copy the effect data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the effect edit mode.

EFFECT SIGNAL FLOW DISPLAY

This function provides a graphic indication of the current effect system configuration while in the effect edit mode.

● Overall Effect Flow

```
EFFECT FLOW |  ╓╥╥╥╥╥╥╥╖  EF1=Rev.Room1
Mode= para  |  ╙╨╨╨╨╨╨╨╜  | EF2=Rev.Basmnt
```

```
  F1      F2      F3      F4      F5      F6      F7      F8
 ┌───┐
 │   │
 └───┘
 CS1     CS2     CS3     CS4     CS5     CS6     CS7     CS8
```

● Effect 1 Configuration

```
EF1 Send1a>---[Room▓]--------------◇->OUT1
                                   └─<DRY1
```

```
  F1      F2      F3      F4      F5      F6      F7      F8
         ┌───┐
         │   │
         └───┘
 CS1     CS2     CS3     CS4     CS5     CS6     CS7     CS8
```

● Effect 2 Configuration

```
EF2 Send2a>---[Base▓]--------------▯->OUT2
                                   └─<DRY2
```

```
  F1      F2      F3      F4      F5      F6      F7      F8
                 ┌───┐
                 │   │
                 └───┘
 CS1     CS2     CS3     CS4     CS5     CS6     CS7     CS8
```

Press [SHIFT] + [F1] to see the overall effect system signal flow. Press [SHIFT] + [F2] to see the effect 1 section configuration, and [SHIFT] + [F3] for the effect 2 section configuration.

1: KEY DATA INITIALIZE

When you want to program a single drum key "from scratch," rather than editing an existing key, use this function to initialize all data for the specified drum key.

```
DRUM JOB Key Initialize        Key
                    <BD6      >  C1
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
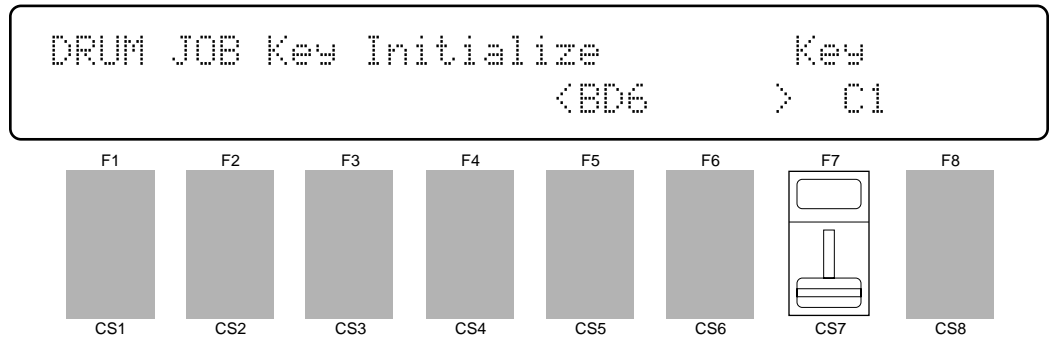
Use the [CS7] slider or the keyboard to enter the drum key you want to initialize (C1 … C5), then press [ENTER/YES] to begin the initialize procedure. The following confirmation display will appear:

```
DRUM JOB Key Initialize        Key
Are you sure ?      <BD6      >  C1
```
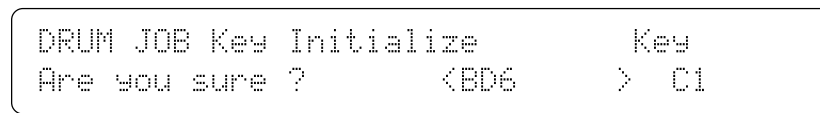
Press [ENTER/YES] again to confirm that you want to go ahead with the initialize operation (which will erase all current edited data), or press [EXIT/ NO] to cancel.

When the drum key data has been initialized, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the key data initialize function.

2: KEY DATA EXCHANGE

This function makes it simple to re-arrange you drum key layout by directly exchanging the data between any two specifed drum keys.

```
DRUM JOB Exchange    <BD6     ><BD6       >
                      C1     ↔    C1
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
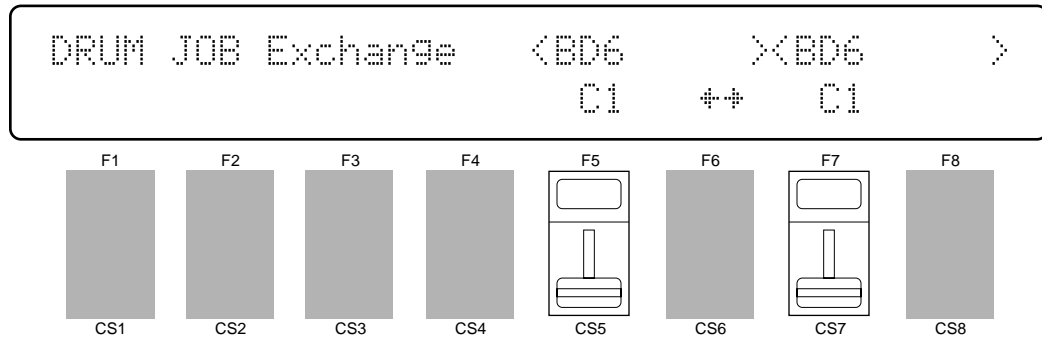
Use the [CS5] and [CS7] sliders to select the drum keys to be exchanged (C1 … C5), or use the keyboard to enter the keys after pressing the [F5] or [F7] function key to move the cursor to the appropriate parameter.

Press [ENTER/YES] to begin the layer exchange procedure. The following confirmation display will appear:

```
DRUM JOB Exchange    <BD6     ><BD6       >
Are you sure ?        C1    ↔    C1
```
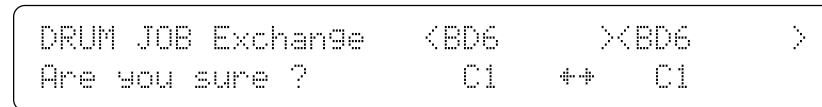
Press [ENTER/YES] again to confirm that you want to go ahead with the key data exchange operation, or press [EXIT/NO] to cancel.

When the data has been exchanged, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the key data exchange function.

3: DRUM VOICE EDIT RECALL

If you're dissatisfied with the results of edits you've made to a drum voice, or have accidentally lost track of changes made, use the DRUM VOICE EDIT RECALL function to recall the pre-edit drum voice data from the SY85's backup buffer memory.
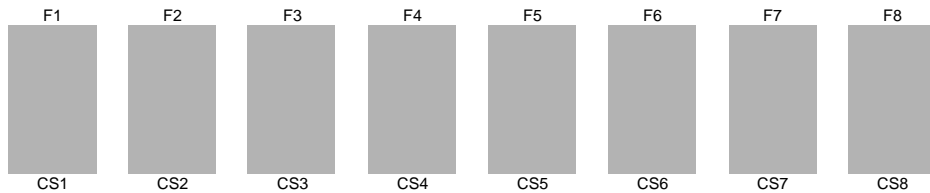
```
DRUM JOB Recall                    <DR PTN  >
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [ENTER/YES] to begin the recall procedure. The following confirmation display will appear:

```
DRUM JOB Recall                    <DR PTN  >
Are you sure ?
```
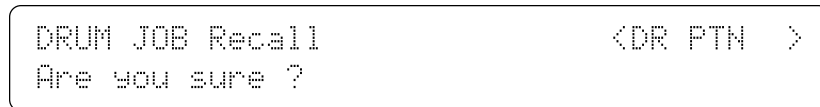
Press [ENTER/YES] again to confirm that you want to go ahead with the recall operation (which will erase all current edited data), or press [EXIT/NO] to cancel.

When the original drum voice data has been recalled, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the performance drum voice edit recall function.

4: DRUM VOICE INITIALIZE

When you want to program a totally new drum voice "from scratch," rather than editing an existing voice, use this function to initialize all drum voice parameters.

```
DRUM JOB Initialize      Type
                           1
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
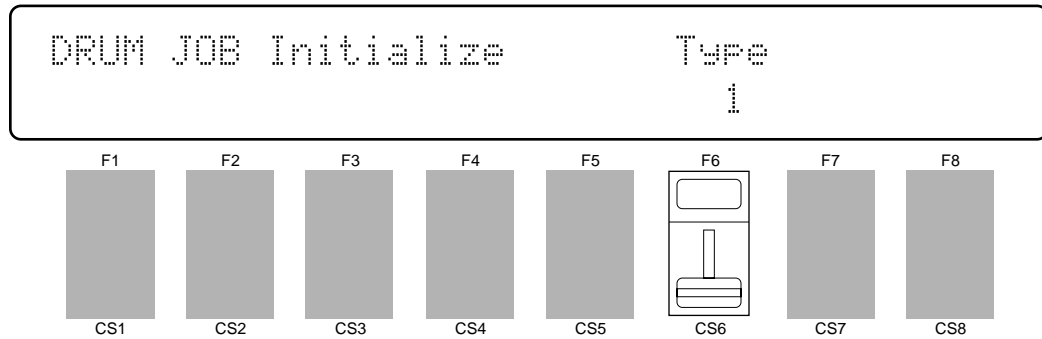
Use [CS6] to select the type of drum voice to be initialized. Press [ENTER/YES] to begin the initialize procedure. The following confirmation display will appear:

```
DRUM JOB Initialize      Type
Are you sure ?             1
```
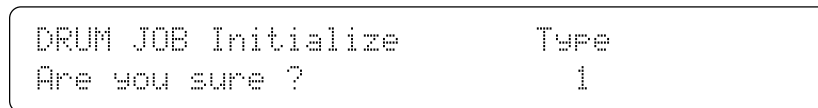
Press [ENTER/YES] again to confirm that you want to go ahead with the initialize operation (which will erase all current edited data), or press [EXIT/NO] to cancel.

When the drum voice data has been initialized, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the drum voice initialize function.

DRUM VOICE COMPARE

The drum voice compare function makes it possible to compare the sound of a drum voice being edited with the same drum voice prior to editing.

The illustrations here are not available.

To temporarily recall the original drum voice data while editing, press the [STORE] key while holding the [SHIFT] key. The [VOICE] LED will flash, indicating that the compare mode is engaged. Although you can select different edit mode display screens, data cannot be edited in the compare mode. Press [EXIT/NO] to return to the edit mode and the drum voice being edited.

DRUM VOICE STORE

When you're satisfied with a new drum voice you've created in the drum voice edit mode, use the store function described below to store the new voice to an internal or card memory location.

```
VOICE STORE (DRUM)   To
                     ⫼H8:DR PTN
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
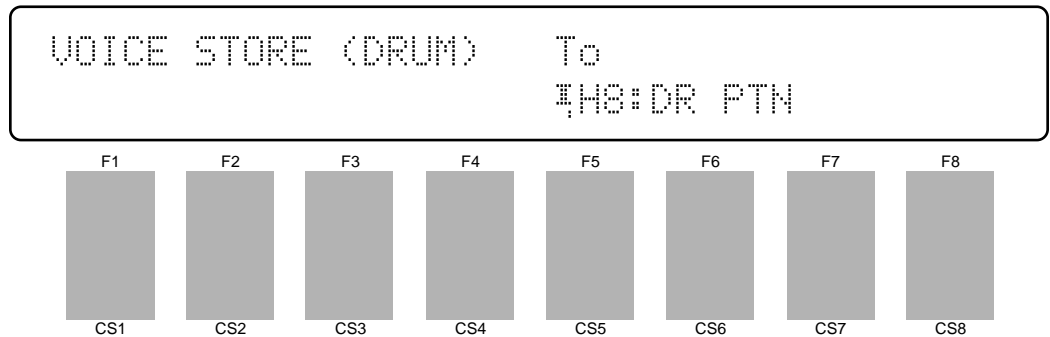
When you've finished editing, return to the normal play mode (press the [VOICE] key), and before selecting a different voice press the [STORE] key. You can now use the MEMORY, GROUP, and NUMBER keys to select the memory location to which your new drum voice is to be stored.

Once the store location has been specified, press [ENTER/YES] to begin the store procedure. The following confirmation display will appear:

```
VOICE STORE (DRUM)   To
Are you sure ?       ⫼H8:DR PTN
```
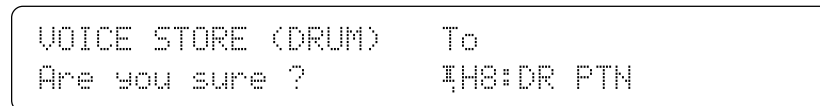
Press [ENTER/YES] again to confirm that you want to go ahead with the store operation (which will erase all previous data in the specified memory location), or press [EXIT/NO] to cancel.

When the voice data has been stored, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the store function.

SONG EDIT MODE

1: VOICE SELECT

Each SY85 "song" has an independent "multi setup" that can have up to 16 voices assigned to "instruments" 1 through 16. Each instrument is controlled via the correspondingly numbered MIDI channel. This screen lets you select the voices that are to be played via the various multi-setup channels.

```
MULTI Voice Select 1- 8      <InitPerf>
P¶A1 P¶A1 P¶A1 P¶A1 P¶A1 P¶A1 P¶A1 P¶A1
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
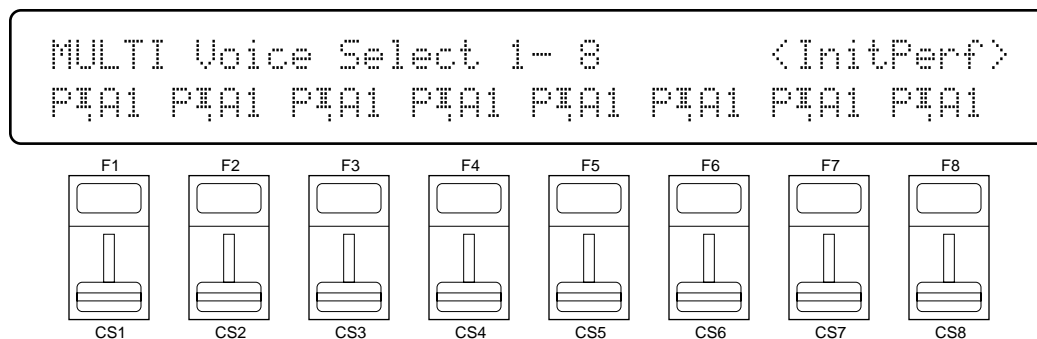
Voice Select 1... 16
Range: off, Any voice or performance combination.
Controls: [SHIFT] + [◄]/[►], MEMORY, GROUP, PROGRAM, [CS1] …
[CS8], [-1] [+1], Dial

Only eight voice numbers are shown on the display at one time. Use the PAGE [◄] and [►] keys while holding the [SHIFT] key to switch between multi instruments "1 … 8" and "9 … 16". The currenty selected group of voices is indicated on the upper display line.

After moving the cursor to the instrument you want to edit by pressing the appropriate function key, use the same function key to toggle between PER-FORMANCE or VOICE memory ("P" or "V" at the beginning of the voice number). Then use the [INTERNAL 1], [INTERNAL 2], and [CARD] keys to select the memory area from which the voice is to be selected, and finally the GROUP and PROGRAM keys to select the voice. Voices within the selected memory bank can also be selected directy for each channel by the appropriate CS sliders, the data entry dial, and the [-] and [+] keys.

The voices can individually turned on or off by using the [-] (off) and [+] (on) keys while holding the [SHIFT] key.

The name of the currently selected voice is shown in the upper right corner of the display.

2: VOLUME

For optimum balance between the instruments in a multi setup, this screen allows the volume of each voice to be adjusted individually.
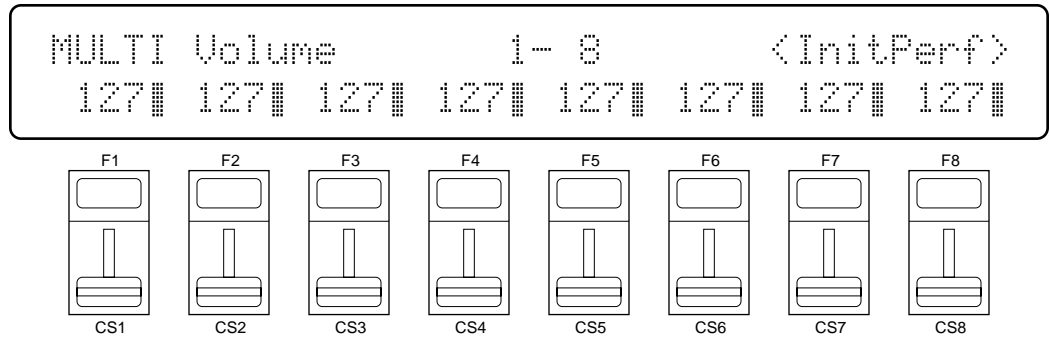
```
MULTI Volume        1- 8        <InitPerf>
   127▐ 127▐ 127▐ 127▐ 127▐ 127▐ 127▐ 127▐
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8

Volume

Range: 0 … 127
Controls: [SHIFT] + [◄]/[►], [CS1] … [CS8], [-1] [+1], Dial

Only eight voice numbers are shown on the display at one time. Use the PAGE [◄] and [►] keys while holding the [SHIFT] key to switch between multi instruments "1 … 8" and "9 … 16". The currenty selected group of voices is indicated on the upper display line.

Use the [CS1] through [CS8] sliders to adjust the volume levels of voices 1 through 8 or 9 through 16, respectively. The name of the currently selected voice is shown in the upper right corner of the display. Voices that are turned off are indicated by "---" on the display. A setting of "0" produces no sound, while a setting of "127" produces maximum volume. The vertical bar graphs next to each parameter provide a visual indication of volume levels — the longer the bar the higher the volume.

3: PAN

In a multi setup, interesting stereo effects can be produced by placing the output from different voices at different locations in the stereo sound field. The parameters in this screen determine the position in the stereo sound field in which the sound from each active voice will be heard (left to right).

```
MULTI Pan L........!........R 1- 8         <InitPerf>
       +0      +0      +0      +0      +0      +0      +0      +0
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
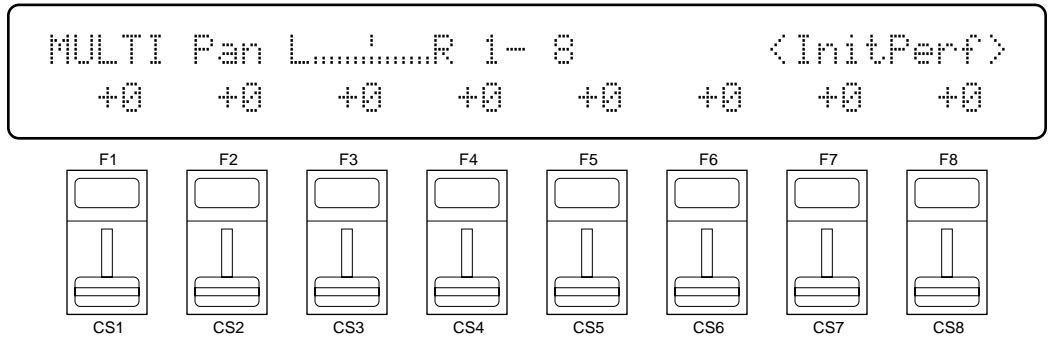
Pan

Range: -31 … +31, vce
Controls: [SHIFT] + [◄]/[►], [CS1] … [CS8], [-1] [+1], Dial

Only eight voice numbers are shown on the display at one time. Use the PAGE [◄] and [►] keys while holding the [SHIFT] key to switch between multi instruments "1 … 8" and "9 … 16". The currenty selected group of voices is indicated on the upper display line.

Use the [CS1] through [CS8] sliders to adjust the pan positions of voices 1 through 8 or 9 through 16, respectively. The name of the currently selected voice is shown in the upper right corner of the display. Voices that are turned off are indicated by "---" on the display. Minus values represent panning to the left, and positive values represent panning to the right. "0" positions the sound of the selected layer in the center of the stereo sound field. The next setting above "+31" is "vce." When "vce" is selected the preset pan position for the selected voice or performance combination is used. The upper line of the display also shows a graphic representation of the stereo sound field with "L" representing "left" and "R" representing "right." As you change the pan value the vertical bar will appear at the corresponding position on the graphic display.

4: EFFECT SEND LEVEL

The ability to individually adjust the effect send level for each voice in a multi setup allows the optimum amount of effect to be applied to each voice.

```
MULTI EF SendLevel 1- 8        <InitPerf>
   127▊ 127▊ 127▊ 127▊ 127▊ 127▊ 127▊ 127▊
```
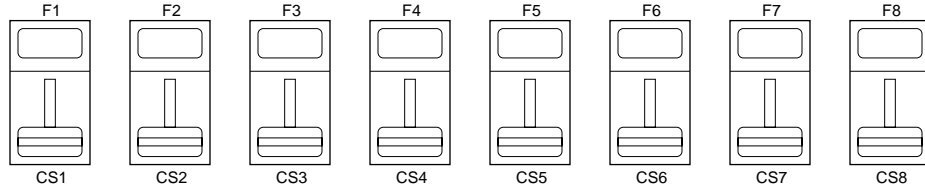
F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

SendLevel

Range: 0 … 127
Controls: [SHIFT] + [◄]/[►], [CS1] … [CS8], [-1] [+1], Dial

Only eight voice numbers are shown on the display at one time. Use the PAGE [◄] and [►] keys while holding the [SHIFT] key to switch between multi instruments "1 … 8" and "9 … 16". The currenty selected group of voices is indicated on the upper display line.

Use the [CS1] through [CS8] sliders to adjust the effect send levels of voices 1 through 8 or 9 through 16, respectively. The name of the currently selected voice is shown in the upper right corner of the display. Voices that are turned off are indicated by "---" on the display. A setting of "0" produces no effect, while a setting of "127" produces maximum send level and therefore maximum effect sound. The vertical bar graphs next to each parameter provide a visual indication of send levels — the longer the bar the higher the send level.

Please note that if the "Source" parameter in the "2: SEND SELECT & LEVEL" screen (page 167) is set to "VCE" or "PFM" for any instrument, the send level of that instrument cannot be changed. In this case "(vce)" will appear on the display in place of the send level value.

5: NOTE SHIFT

Individually shifts the pitch of each active voice up or down in semitone steps.
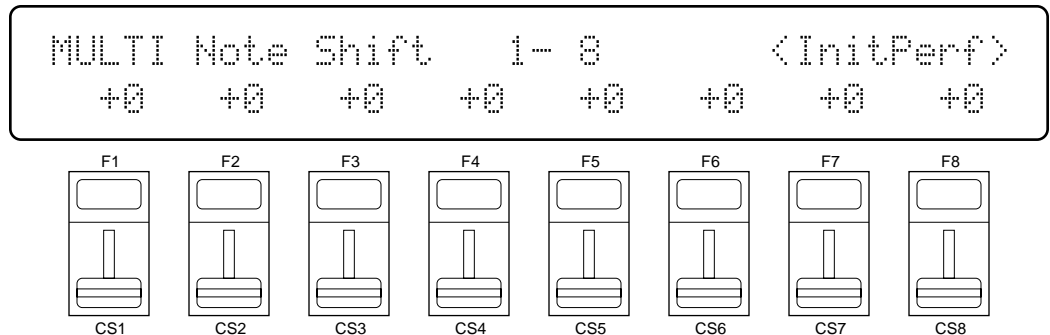
```
MULTI Note Shift   1- 8        <InitPerf>
    +0    +0    +0    +0    +0    +0    +0    +0
```

|F1|F2|F3|F4|F5|F6|F7|F8|
|CS1|CS2|CS3|CS4|CS5|CS6|CS7|CS8|

Note Shift

Range: -63 … +63
Controls: [SHIFT] + [◄]/[►], [CS1] … [CS8], [-1] [+1], Dial

Only eight voice numbers are shown on the display at one time. Use the PAGE [◄] and [►] keys while holding the [SHIFT] key to switch between multi instruments "1 … 8" and "9 … 16". The currenty selected group of voices is indicated on the upper display line.

Use the [CS1] through [CS8] sliders to shift the pitch of voices 1 through 8 or 9 through 16, respectively. The name of the currently selected voice is shown in the upper right corner of the display. Voices that are turned off are indicated by "---" on the display. A setting of "-12," for example, shifts the pitch of the selected layer down by one octave; a setting of "+4" shifts the pitch up by a major third. Please note that note shift cannot be applied to drum/percussion voices (the Note Shift value is fixed at "+0").

The Note Shift parameter can be used to transpose a voice to its most useful range, or to create harmony (intervals) between different voices in a multi setup.

6: TUNE

Allows slight upward or downward pitch adjustment of each active voice. More than just simple tuning, the tune parameters make it possible to create sound-thickening detune effects between voices.

```
MULTI Tune         1- 8        <InitPerf>
  +0    +0    +0    +0    +0    +0    +0    +0
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
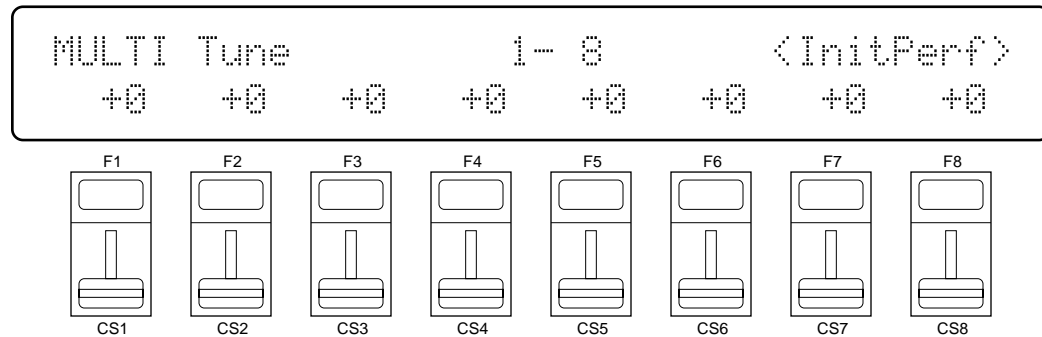
Tune (Fine tuning)
Range: -63 … +63
Controls: [SHIFT] + [◄]/[►], [CS1] … [CS8], [-1] [+1], Dial

Only eight voice numbers are shown on the display at one time. Use the PAGE [◄] and [►] keys while holding the [SHIFT] key to switch between multi instruments "1 … 8" and "9 … 16". The currenty selected group of voices is indicated on the upper display line.

Use the [CS1] through [CS8] sliders to fine tune voices 1 through 8 or 9 through 16, respectively. The name of the currently selected voice is shown in the upper right corner of the display. Voices that are turned off are indicated by "---" on the display. Each increment corresponds to approximately 1.17 cents (a "cent" is 1/100th of a semitone). The maximum minus setting of "-63" produces a downward pitch shift of almost three-quarters of a semitone, and the maximum plus setting of "+63" produces an upward pitch shift of the same amount. A setting of "0" produces no pitch change. Please note that tuning cannot be applied to drum/percussion voices (the Tune value is fixed at "+0").

7: EFFECT TYPE, OUT BALANCE

The SY85 features a complex, high-performance effect system that can be programmed easily via the parameters presented here and in the following screen.

For a complete list of effect parameters see page 274.

```
┌─────────────────────────────────────────────────────────┐
│  MULTI      Effect Type          Wet Balance            │
│   06:Rev.Stage1  57:EQ -> Sym   50%  50%                │
└─────────────────────────────────────────────────────────┘
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8

Effect Type 1/2
Range: 0 … 90
Controls: [CS1]/[CS4], [-1] [+1], Dial

[CS1] selects any of the SY85's 90 effect types for the EFFECT 1 processor, and [CS4] does the same for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system.

Wet Balance 1/2
Range: 0 … 100
Controls: [CS7]/[CS8], [-1] [+1], Dial

[CS7] controls the balance between the direct no-effect sound and the effect sound of the EFFECT 1 processor, while [CS8] does the same for the EFFECT 2 processor. The higher the value the deeper the effect. See page 254 for more details on the SY85 effect system.

8: SONG NAME

Your original songs should naturally have original names. This function can be used to assign a name of up to 8 characters to the current song.

```
MULTI Song Name                    "InitSong"
[CLR][UPR][LWR][SPC]               [←]   [→]
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

Name

Range: See character list, below
Controls: GROUP, PROGRAM, [F1] … [F4], [F7], [F8],
**   [CS1] … [CS8], [-1] [+1], Dial**

Assigns a name of up to 8 characters to the current performance.

Use the [F7] function key to move the character cursor to the left, and the [F8] function key to move the cursor to the right. Use the GROUP and PRO-GRAM keys to input a character at the cursor position. Each GROUP or PRO-GRAM key selects the three characters printed above it in sequence. It is also possible to use the [-1] and [+1] keys or dial to scroll through the available characters (see list below).

The sliders, [CS1] through [CS8], independently select characters for the corresponding character position: [CS1] selects the first character, [CS2] selects the second character, and so on.

The first four function keys also perform important functions: [F1] clears the entire name, [F2] selects upper-case characters for GROUP and PROGRAM key entry, [F3] selects lower-case characters for GROUP and PROGRAM key entry, and [F4] inserts a space at the cursor position.

GROUP key	PROGRAM key
[A]: A → B → C	[1]: Y → Z → 0
[B]: D → E → F	[2]: 1 → 2 → 3
[C]: G → H → I	[3]: 4 → 5 → 6
[D]: J → K → L	[4]: 7 → 8 → 9
[E]: M → N → O	[5]: * → & → _
[F]: P → Q → R	[6]: / → . → ,
[G]: S → T → U	[7]: ' → ! → ?
[H]: V → W → X	[8]: # → : → ;

9: SONG INITIALIZE

When you want to program a totally new multi setup "from scratch," rather than editing an existing setup, use this function to initialize all multi parameters.
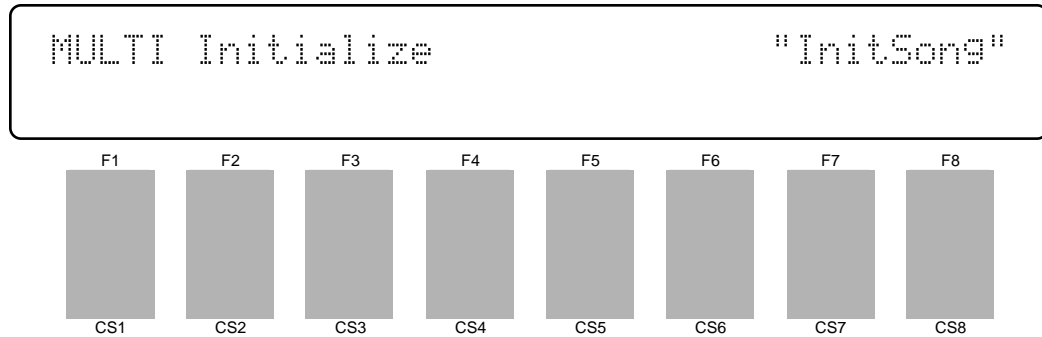
```
MULTI Initialize                         "InitSong"
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [ENTER/YES] to begin the initialize procedure. The following confirmation display will appear:

```
MULTI Initialize                "InitSong"
Are you sure ?
```

Press [ENTER/YES] again to confirm that you want to go ahead with the initialize operation (which will erase all current edited data), or press [EXIT/ NO] to cancel.

When the multi data has been initialized, "Completed!" will appear briefly on the display, then the display will return to the mode that was engaged prior to calling the multi initialize function.

TRACK EDIT

The track edit mode is used to edit material already recorded on the sequencer tracks. Individual notes and other events can be deleted, changed, or inserted as required, providing precise musical control.

```
        Meas Beat Clock C#3   (♩)   mf
CHG   001 - 01 - 24   61 0018   64 ERASE
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
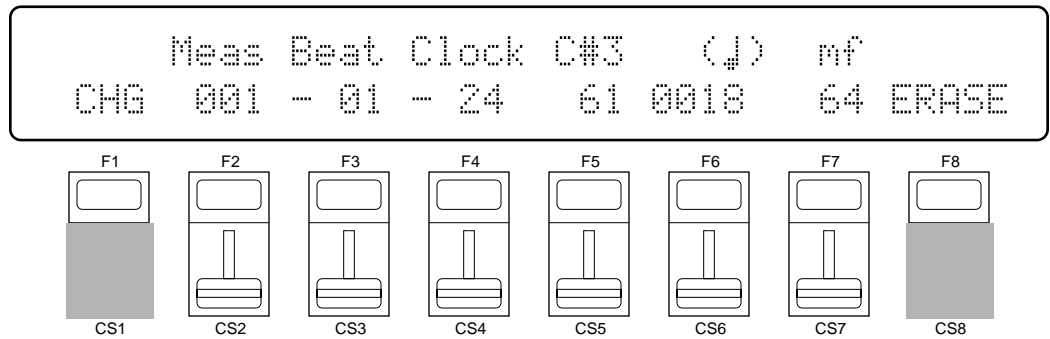
The track edit mode has two sub-modes — change and insert — which will be described below. Use the [F1] key to toggle between the change ("CHG" on the display) and insert ("INS" on the display) modes. The change mode is always selected when the track edit mode is initially engaged.

■ THE CHANGE MODE (Tracks 1 ... 8)

Change edit ("CHG") allows note, control change, program change, pitch bend, and aftertouch data to be changed or erased as required.

Use the GROUP [A] through [H] keys to select the track you want to edit (A = track1, B = track 2, etc.). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use the data entry dial to step through the events on the selected track. The displays and parameters corresponding to the various event types are described below. When the event to be changed is located, use the appropriate slider to change it as required (or move the cursor to the desired parameter by pressing the corresponding function key and then use the [-] and [+] keys). The selected event can be erased by pressing the [F8] key ("Top of Track", "Measure Bar", and "End of Track" can not be deleted). After changing a value the [ENTER/YES] key must be pressed to actually enter the new value.

When done, press the [EXIT/NO] key to return to the song mode menu.

● Top of the Track, Measure Dividers, & End of Track

```
        Meas Beat Clock == Top of Track ==
   CHG  001 - 01 - 24
```

```
        Meas Beat Clock == Measure Bar ==
   CHG  001 - 01 - 24
```

```
        Meas Beat Clock == End of Track ==
   CHG  001 - 01 - 24
```

These displays indicated the beginning of the track, measure lines, and the end of the track, respectively. Since they are not actually musical events, they can not be edited.

● Notes

```
       Meas Beat Clock C#3   (♩ ) mf
CHG    001 - 01 - 24    61 0018   64 ERASE
```

```
   F1     F2     F3     F4     F5     F6     F7     F8
  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐
  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │
  CS1    CS2    CS3    CS4    CS5    CS6    CS7    CS8
```
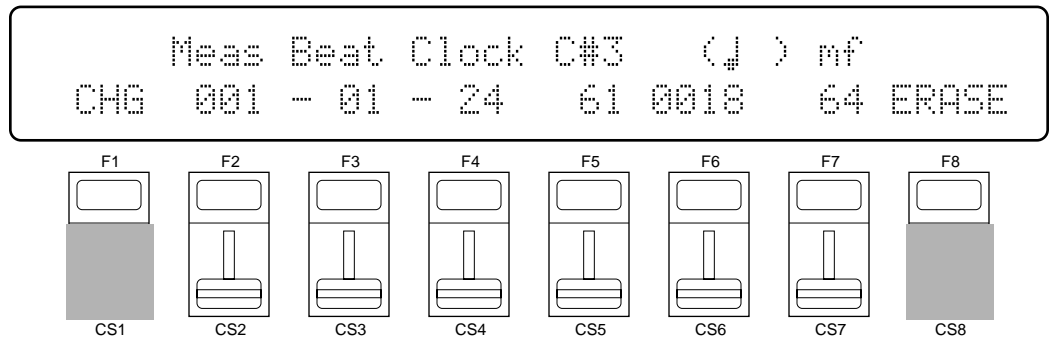
Note events appear with three parameters:

•   The note itself, edited by [CS5]. Range: 0 (C-2) … 111 (D#7). The note
    name appears on the upper display line while the corresponding MIDI note
    number appears on then lower line. In addition to using [CS5] or the [-1]
    and [+1] keys, note events can be change by pressing the desired key on
    the keyboard while holding the [SHIFT] key.

•   The gate time of the note, edited by [CS6]. Range: 0000 (j) … 8190 (j).
    The note length is shown graphically on the upper display line while the
    corresponding length in clocks is shown on the lower line.

•   The velocity of the note, edited by [CS7]. Range: 1 (ppp) … 127 (fff). The
    velocity is displayed in approximate musical dynamic markings on the
    upper display line, while the corresponding MIDI velocity value is shown
    on the lower line.

● Control Change

```
       Meas Beat Clock  = Control Change =
CHG    001 - 01 - 24    1    2        ERASE
```

```
   F1     F2     F3     F4     F5     F6     F7     F8
  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐
  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │
  CS1    CS2    CS3    CS4    CS5    CS6    CS7    CS8
```
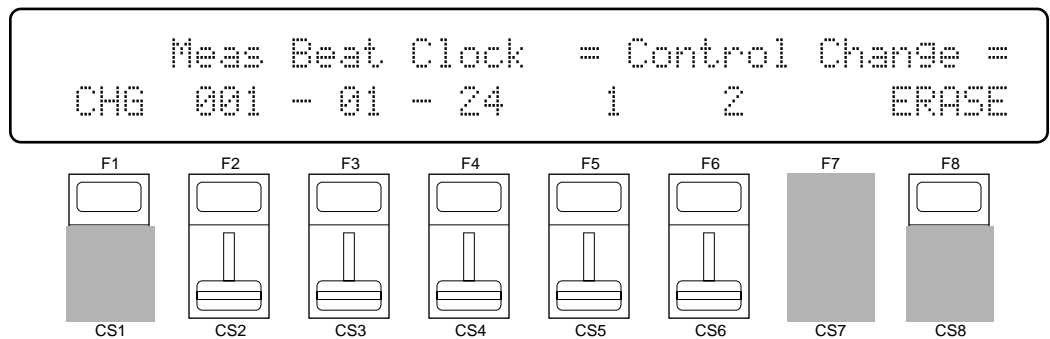
Control change events appear with 2 parameters:

•   The control number, edited by [CS5]. Range: 0 … 120. This specifies what
    controller was used (modulation wheel, foot controller, etc.).

•   The control value, edited by [CS6]. Range: 0 … 127. This specifies the
    actual controller setting, and therefore how the sound is modified.

● Program Change

```
        Meas Beat Clock   = Program Change =
CHG   001 - 01 - 24        001        ERASE
```
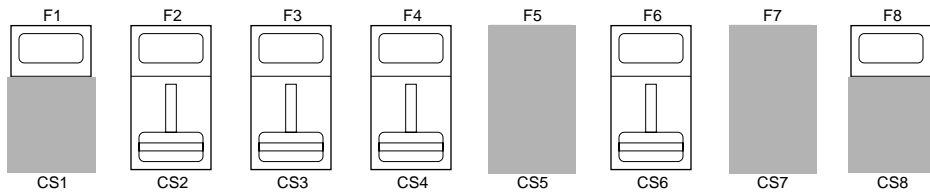
Program change events have a single parameter: the program change number itself, edited via [CS6]. Range: 000 … 127. Program change numbers normally specify a voice change.

● Pitch Bend

```
        Meas Beat Clock   = Pitch Bend =
CHG   001 - 01 - 24        +07        ERASE
```
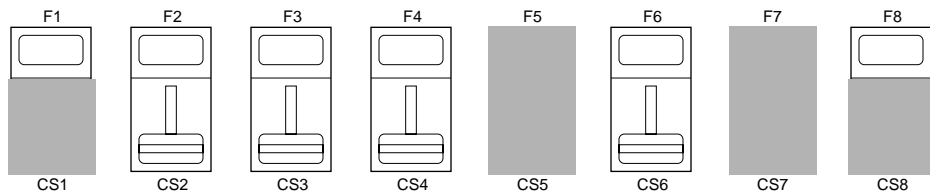
Pitch change events appear with a single parameter: the new pitch bend value, edited via [CS6]. Range: -64 … +63.

● Aftertouch

```
        Meas Beat Clock   = After Touch =
CHG   001 - 01 - 24         7         ERASE
```
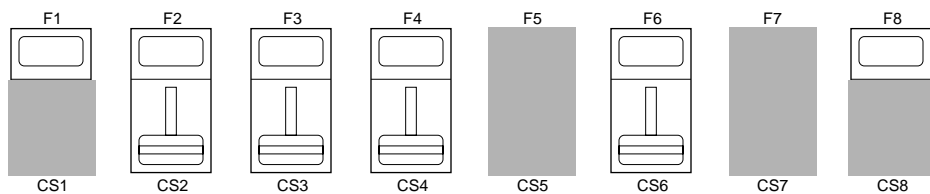
Aftertouch events appear with a single parameter: the new aftertouch value, edited via [CS6]. Range: 0 … 127. The effect of aftertouch events depends on how aftertouch control is assigned in the voice edit mode.

● The Meas, Beat, and Clock Parameters

These three parameters are common to all the displays described above. In addition to indicating the location of the current event, they can be edited to move the event as required:

* The "Meas" parameter, edited via [CS2], indicates the number of the current measure. Range: 001 … 999. The length of each measure depends on the time signature of the song.

* The "Beat" parameter, edited via [CS3], indicates the current beat within the current measure. The value of each beat and the number of beats in each measure depend on the selected time signature. If the time signature is 4/4, for example, each beat will equal one quarter-note, and there will be four beats per measure. If the time signature is 6/8, however, each beat will equal an eighth-note, and there will be six beats per measure.

* The "Clock" parameter, edited via [CS4], indicates the current clock within the current beat within the current measure. There are 48 clocks per quarter note, 24 per eighth note, 12 per sixteenth note, and so on.

If the "Top of Track", "Measure Bar", or "End of Track" display is showing, changing these parameters and pressing the [ENTER/YES] key takes you directly to the specified location.

■ THE INSERT MODE (Tracks 1 … 8)

Insert edit (INS) allows note, control change, program change, pitch bend, and aftertouch events to be inserted at any point in the sequencer tracks.

Normally, the insert mode is entered by pressing the [F1] key after locating the desired insert point in the change mode. The type of event to be inserted can then be selected by pressing the [F8] key until the desired event appears on the display ("NOTE" = note; "CTRL" = control change; "PGM" = program change; "PB" = pitch bend; "AT" = aftertouch). The various event types have the same parameters and ranges as in the change mode (see above). Set the parameters for the selected event as required, then press the [ENTER/YES] key to insert the event.

The insert location can be changed while in the insert mode by using the data entry dial. The [F3] key determines whether the dial changes the measure ("MEAS"), beat ("BEAT"), or clock ("CLOCK") value.

Press the [F1] key to return to the change mode, or the [EXIT/NO] key to return to the song play mode.

■ RHYTHM TRACK EDIT

When the track edit mode is engaged while the rhythm track (track 9) is selected, or when the rhythm track is selected while the track edit mode is engaged, the following display will appear:

```
SONG EDIT
Part: 001= ptn  *** [INS][DEL][CPY][SCH]
```
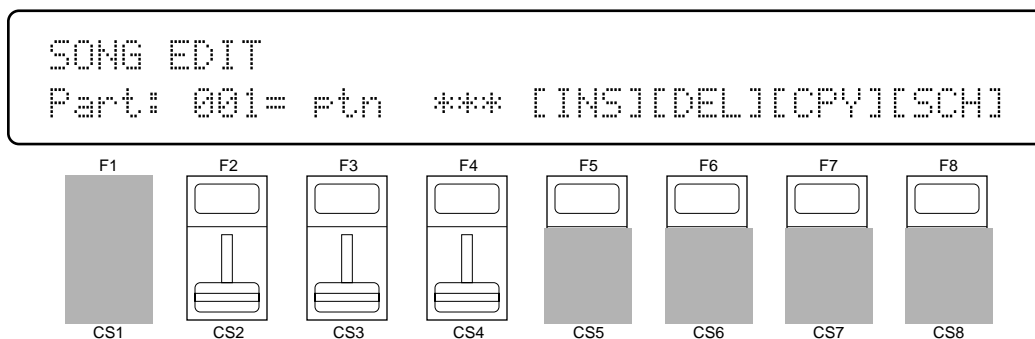
This initial display allows any existing rhythm part to be selected via [CS2] (001 … 999), the event located at that part to be changed via [CS3], and the parameter asociated with the event to be changed via [CS4]. The various event types and their parameters are as follows:

• ptn (Pattern number)

Use [CS4] to select a different pattern number as required (P00 … P99 or I00 … I99).

• ||: (Begin repeat)

This symbol indicates the beginning of a range of rhythm parts to be repeated. The begin repeat event has no other parameter.

• :|| (End repeat)

A "||:" must always be followed at some point by a ":||" symbol signifying the end of the range of parts to be repeated. Use [CS4] to set the number of times the specified section is to be repeated (x00 … x99).

• vol (Volume change)

This event produces a volume change at the selected part. The [CS4] slider sets the new volume level (0 … 127).

• tmp (Tempo change)

This event indicates a tempo change to occur over a specified number of beats. The numbers above the [CS4] slider define the tempo change: the number to the left of the slash (-99 … 0 … +99, or atmp for "a tempo") sets the number of beats per minute by which the tempo will decrease or increase, and the number to the right of the slash (0 … 99) sets the number of beats from the "tmp" mark over which the change will occur. A setting of "+20/8", for example, would increase the tempo by 20 beats per minute over 8 beats (2 measures of 4/4 time). The [F4] function key is used to toggle the cursor between the left and right numbers, and [CS4] is used to change the selected number.

• mark (Search mark)

This sets one of 16 markers to be used by the rhythm track search function described on page 165. [CS4] is used to specify the marker (A … P).

The [F5] through [F8] function keys are used to access the rhythm track edit functions described below:

● [F5]: "INS" = Rhythm Track Insert
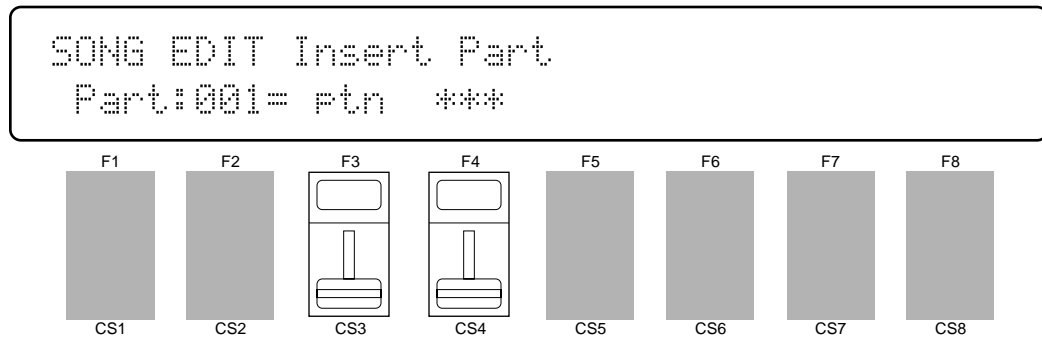
This function is used to insert a new part at any point in an existing rhythm track. Press [F5] to engage the rhythm track insert function after locating the desired insert point via the main rhythm track edit screen, described above. Then use [CS3] and [CS4] to specify the event to be inserted. The event types that can be inserted and their parameters are exactly the same as those described for the main rhythm track edit screen, above. Once the event to be inserted has been specified, press [ENTER/YES] to begin the insert procedure. The following confirmation display will appear:
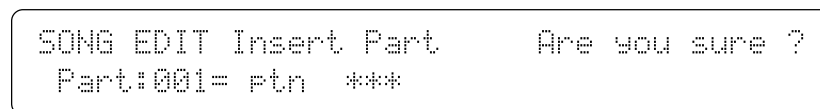
Press [ENTER/YES] again to confirm that you want to go ahead with the insert operation, or press [EXIT/NO] to cancel.

When the event has been inserted, "Completed!" will appear briefly on the display, then the display will return to the main rhythm track edit mode.

● [F6]: "DEL" = Rhythm Track Delete

```
SONG EDIT Delete Part
 Part:001= ptn  ***
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
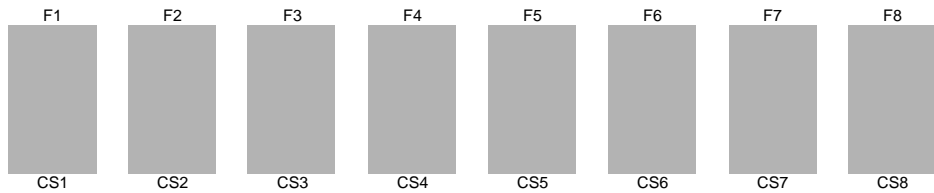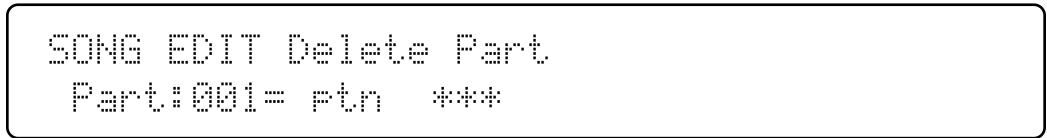
This function is used to delete a part from an existing rhythm track. Press [F6] to engage the rhythm track delete function after locating the part to be deleted via the main rhythm track edit screen, described above. The following confirmation display will appear:
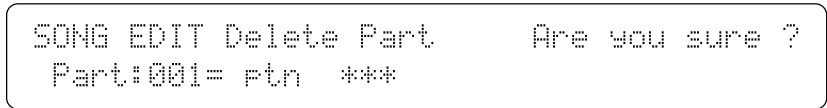
```
SONG EDIT Delete Part    Are you sure ?
 Part:001= ptn  ***
```

Press [ENTER/YES] again to confirm that you want to go ahead with the delete operation, or press [EXIT/NO] to cancel.

When the part has been deleted, "Completed!" will appear briefly on the display, then the display will return to the main rhythm track edit mode.

● [F7]: "CPY" = Rhythm Track Copy

```
SONG EDIT Copy Part         from      To
 Part:001= ptn  ***         001~ 001  001
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
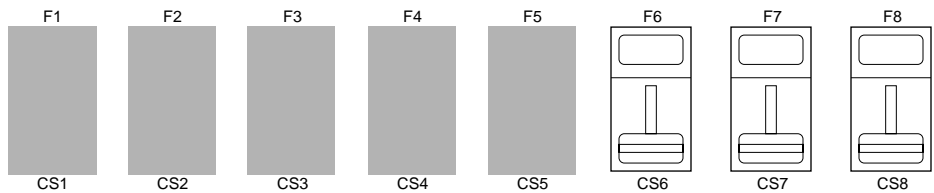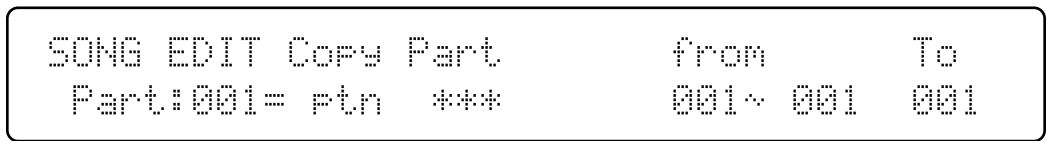
This function is used to copy a part or a range of parts to any other point in a rhythm track. Press [F7] to engage the rhythm track copy function. Then use [CS6] to select the number of the first part in the range of parts to be copied (001 … 999), [CS7] to select the number of the last part in the range of parts to be copied (001 … 999), and [CS8] to select the part number to which the source parts will be copied (001 … 999). Press [ENTER/YES] to begin the copy procedure. The following confirmation display will appear:

```
SONG EDIT Copy Part        Are you sure ?
 Part:001= ptn  ***        001~ 001  001
```

Press [ENTER/YES] again to confirm that you want to go ahead with the copy operation (which will overwite existing parts from the destination part number), or press [EXIT/NO] to cancel.

When the parts have been copied, "Completed!" will appear briefly on the display, then the display will return to the main rhythm track edit mode.

● [F8]: "SCH" = Rhythm Track Search

```
SONG EDIT Search Mark
   A    B    C    D    E    F    G    H
```
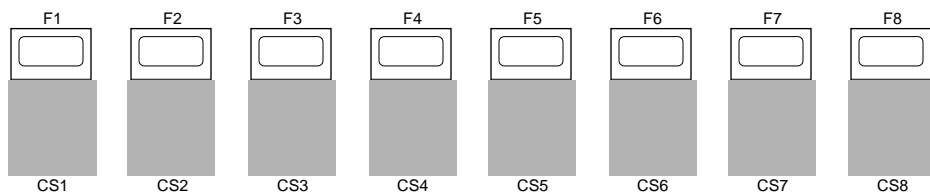

This function makes it possible to directly locate "marks" entered in the track using the "mark" event in the main rhythm track edit screen. The [SHIFT] key is used to toggle between marks A through H and I through G. Square brackets appear around marks that exist within the rhythm track. To go directly to a marked location, simply press the function key immediately below the desired mark. The main rhythm track edit screen will appear with the marked part selected.

If you select a mark that has not been specified, "Mark Not Used!" will appear on the display. Press [EXIT/No] to return to the Search Mark display.

1: MODE, TYPE

The SY85 features a dual-processor effect system that includes 90 top-quality digital effects. Two different effects can be connected in series or parallel, providing an extensive range of possible configurations.

```
EF Mode      EF1 Type       EF2 Type
  2:para     06:Rev.Stage1  57:EQ -> Sym
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

Mode

Range: 0:off, 1:seri, 2:para
Controls: [CS1], [-1] [+1], Dial

Determines whether the SY85's two effect processors are connected in series ("1:seri") or in parallel ("2:para"), or whether the entire effect system is turned off ("0:off").

EF1 Type

Range: 0 … 90
Controls: [CS3], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 1 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

EF2 Type

Range: 0 … 90
Controls: [CS6], [-1] [+1], Dial

Selects any of the SY85's 90 effect types for the EFFECT 2 processor. See page 254 for more details on the SY85 effect system, and page 274 for a complete list of the available effects.

2: SEND SELECT & LEVEL

The parameters provided here determine to which of the SY85 effect stages the output from the voice assigned to each layer is sent, and at what level. It is also possible to control the effect send level via keyboard dynamics and key scaling.

```
EF Send<InitSong> Source  Switch    Levl
   Inst= 1(P¶A1)    MLT   1a/- 2a/b  127
```
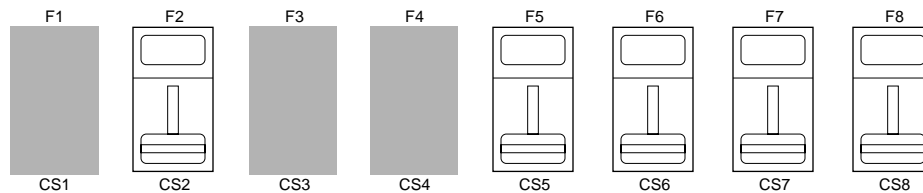
F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8

Inst (Instrument)
Range: 1 … 16
Controls: [CS2], [-1] [+1], Dial

Selects the multi instrument to be edited. The name of the voice assigned to the selected instrument is shown between parentheses on the upper line of the display.

Source
Range: MLT, VCE, PFM
Controls: [CS5], [-1] [+1], Dial

When "MLT" is selected the "Switch" and "Levl" parameters, described below, can be applied to the selected instrument. If a voice is assigned to the selected instrument, the "Source" parameter can also be set to "VCE", causing the switch and send levels of the assigned voice to be used. In the same way, if a performance combination is assigned to the selected instrument, the "Source" parameter can be set to "PFM", causing the switch and send levels of the assigned performance combination to be used. If "VCE" or "PFM" is selected, the "Switch" and "Levl" parameters cannot be edited ("----" appears in place of the parameters).

Switch 1a, 1b/2a, 2b
Range: See text below.
Controls: [CS6]/[CS7], [-1] [+1], Dial

Determines to which of the EFFECT 1 and EFFECT 2 effect stages the output from the current layer is sent. Each time the [F6] or [F7] function key is pressed, the cursor alternately moves to the corresponding "a" or "b" parameter. The [-1] and [+1] keys can then be used to turn the stage on ("a" or "b") or off ("."). The [CS6] and [CS7] sliders select the following settings in sequence:

CS6 (EFFECT 1)	CS7 (EFFECT 2)
1./. (a and b off)	2./. (a and b off)
1a/. (a on, b off)	2a/. (a on, b off)
1a/b (a and b on)	2a/b (a and b on)
1./b (a off, b on)	2./b (a off, b on)

If a "single" type effect is selected then only stage "a" can be selected. If a "cascade" type effect is selected, then only stage "b" can be selected. If a "dual" type effect is selected, then both stages "a" and "b" can be selected. An effect stage that cannot be selected is represented by "-" on the display.

Levl (Send level)
Range: 0 … 127
Controls: [CS8], [-1] [+1], Dial

This parameter adjusts the amount of direct voice signal that is sent to the effect processors, determining the strength of the final effect sound. A setting of "0" results in no effect, leaving only the "dry" sound. The maximum setting of "127" produces the maximum amount of effect.

3: INST DRY OUTPUT SELECT

```
OUTPUT Select <InitSong> Dry1 Dry2
   Inst= 1(P¶A1)            on    on
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

Inst (Instrument)

Range: 1 … 16
Controls: [CS2], [-1] [+1], Dial

Selects the multi instrument to be edited. The name of the voice assigned to the selected instrument is shown between parentheses on the upper line of the display.

Dry1

Range: off, on
Controls: [CS6], [-1] [+1], Dial

Turns the "dry line" bypassing the EFFECT 1 signal processor on or off. When this parameter is turned "off," the "WET:DRY BALANCE" parameters (page 171) have no effect.

Dry2

Range: off, on
Controls: [CS7], [-1] [+1], Dial

Turns the "dry line" bypassing the EFFECT 2 signal processor on or off. When this parameter is turned "off," the "WET:DRY BALANCE" parameters (page 171) have no effect.

4: OUTPUT LEVEL

Depending on the selected effects the SY85 effect system can have up to four separate output levels that are adjusted by the parameters provided in this screen.

```
EF OutLevel 1a   1b              2a   2b
 EF1(sngl)=100%   --   EF2(casc)= --   100%
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

1a, 1b, 2a, and 2b (Effect output levels)
Range: 0 … 100
Controls: [CS3], [CS4], [CS7], [CS8], [-1] [+1], Dial

The [CS3] and [CS4] sliders adjust the output levels of the effect 1 "1a" and "1b" stages, respectively, while the [CS7] and [CS8] sliders adjust the output levels of the effect 2 "2a" and "2b" stages. A setting of "0" turns output from the corresponding effect stage off, while a setting of "100" produces maximum output level.

If the selected effect is a "single" type, then only the "1a" or "2a" output level is available. If it is a "cascade" type, then only the "1b" or "2b" output level is available. Both the "1a" and "1b" or "2a" and "2b" levels are available only if the selected effect is a "dual" type. The type of the effects currently selected for the effect 1 and effect 2 processors are shown in parentheses on the bottom line of the display. See page 254 for details on the effect stages and the SY85 effect system in general.

If a controller is assigned to any of the output level parameters (page 174), an inverse "c" will appear to the right of the parameter.

5: WET:DRY BALANCE

The balance between the direct sound of the voice and the effect sound is a delicate thing. Even slight changes can make a big difference to the final sound. The parameters provided in this screen provide precise balance control.

```
EF Wet:Dry Balance
      Out1=  50 : 50      Out2=  50 : 50
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Out1 Wet/Out2 Wet
Range: 0 … 100
Controls: [CS3]/[CS7], [-1] [+1], Dial

These parameters and the corresponding "Out1 Dry" and "Out2 Dry" parameters, below, work together to balance the effect ("wet") and direct ("dry") signals delivered via the EFFECT 1 and EFFECT2 processors. Higher "Wet" values produce more effect sound in relation to the direct, dry sound of the voice.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

If a controller is assigned to the "Out1 Wet" or "Out2 Wet" parameter (page 174), an inverse "c" will appear to the right of the parameter.

Out1 Dry/Out2 Dry
Range: 0 … 100
Controls: [CS4]/[CS8], [-1] [+1], Dial

These parameters and the corresponding "Out1 Wet" and "Out2 Wet" parameters, above, work together to balance the effect ("wet") and direct ("dry") signals delivered via the EFFECT 1 and EFFECT 2 processors, respectively. Higher "Dry" values produce more direct, dry sound in relation to the effect sound.

Although the "Wet" and "Dry" parameters can be set independently, adjusting one will cause the other to change so that their total is always 100(%).

If a controller is assigned to the "Out1 Dry" or "Out2 Dry" parameter (page 174), an inverse "c" will appear to the right of the parameter.

6: SEND & EFFECT 2 MIX LEVEL

These parameters determine the mix level between each effect send and the output of the preceding effect stage. Refer to the section beginning on page 254 for details on the overall SY85 effect system.

```
EF Mix Level    EF2   Insert 1b    2a    2b
                ----              ----  ----    0%
```

| | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |

EF2 Mix (Effect 2 mix level)
Range: 0 … 100
Controls: [CS4], [-1] [+1], Dial

Mixes the output of the EFFECT 2 processor with that of the EFFECT 1 processor. This parameter can only be used with the "serial" effect mode is selected. If any other mode is selected ("off" or "para"), "---" appears on the display in place of the value.

If a controller is assigned to the EF2 Mix parameter (page 174), an inverse "c" will appear to the right of the parameter.

Send 1b, 2a, 2b (Send level)
Range: 0 … 100
Controls: [CS6], [CS7], [CS8], [-1] [+1], Dial

These parameters mix the dry signal sent to the corresponding effect stage with the output of the preceding effect stage. The higher the value the greater mix level. If the current effect configuration does not allow one of these mix parameters, "--" will appear in place of the mix level parameter.

If a controller is assigned to the one of these parameters (page 174), an inverse "c" will appear to the right of the parameter. SONG EFFECT

7: EFFECT 1 PARAMETERS
8: EFFECT 2 PARAMETERS

Each of the SY85's 90 effects has 8 parameters that can be edited via the parameters in this screen to fine-tune the effect.

```
EF1 PARAM <Rev.Stage1>    )Rev.Time  [S](
   2.5  1.0    10    32    16     4    45 12.0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Each parameter is controlled by the corresponding slider (i.e. the slider immediately below each parameter). The [-1]/[+1] keys and data entry dial can also be used to edit the parameter at which the cursor is currently located.

Refer to page 274 for a complete listing of the parameters provided for each effect.

9: CONTROL PARAMETERS

The parameters provided in this screen determine which effect parameters are to be controlled by the minimum and maximum parameter values and assign MIDI control numbers to the same parameters for MIDI effect control.

```
EF CTRL)        ( Min  Max  Controller
     1 : off         0% 100% 000:off
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
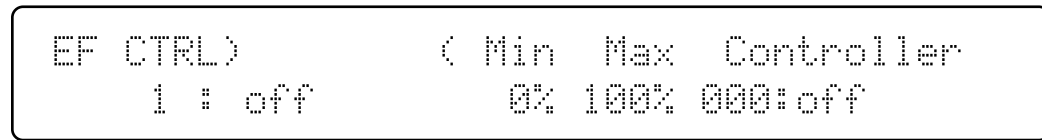
CTRL1/CTRL2 (CTRL1/CTRL2 switch)
Range: 1, 2
Controls: [CS1], [-1] [+1], Dial

Selects CTRL1 or CTRL2 for assignment.

Parameter (Effect parameter)
Range: Depends on selected effects.
Controls: [CS2], [-1] [+1], Dial

Selects the effect parameter to be controlled by the currently selected slider. Since each effect has as many as 8 different parameters, the maximum number of settings available for this parameter will be 8: "Ef1prm1" through "Ef1prm8" on the display, for example, stands for "effect 1 parameter 1" through "effect 1 parameter 8". The parameters available for each effect are different, but the name of the selected parameter will be shown between the parentheses on the top line of the display. Parameters that can not be assigned to the sliders are indicated by dashes ("--------") instead of a parameter name.

Min (Minimum parameter value)
Range: 0 … 100
Controls: [CS4], [-1] [+1], Dial

Sets the lower limit of the [CS1] or [CS2] control range. A setting of "0", for example, means that when the slider is set to its lowest position the assigned parameter will also be set to its lowest value. A setting of "50" means that the lowest slider position will set the assigned parameter to about 50% of its range (a parameter with a range of 0 to 127, for example, would be set to about 63).

If a controller is assigned to the "Min" parameter, an inverse "c" will appear to the right of the parameter.

Max (Maximum parameter value)
Range: 0 … 100
Controls: [CS5], [-1] [+1], Dial

Sets the upper limit of the [CS1] or [CS2] control range. A setting of "100", for example, means that when the slider is set to its highest position the assigned parameter will also be set to its highest value. A setting of "80" means that the highest slider position will set the assigned parameter to about 80% of its range (a parameter with a range of 0 to 127, for example, would be set to about 102).

If a controller is assigned to the "Max" parameter, an inverse "c" will appear to the right of the parameter.

Controller (Control device number)
Range: 000 … 120, AfterTch, Velocity, KeyScale, LFO
Controls: [CS6], [-1] [+1], Dial

This parameter allows MIDI control change numbers to be assigned to the selected effect parameters, so that they can be controlled from the SY85 controllers (modulation wheel, foot controller, etc) or an external MIDI device that is capable of transmitting control change messages. Additional settings include "AfterTch" for keyboard aftertouch control, "Velocity" for keyboard velocity control, "KeyScale" for key scaling control, and "LFO" for internal LFO control. This is in addition to control via the [CS1] and [CS2] sliders. MIDI control change numbers 000 through 120 can be assigned. Some control change numbers are already defined, while others are not assigned to any specific controller (see chart below).

MIDI CONTROL CHANGE NUMBER/DEVICE

0:	"--------"	91:	"Effect D"
1:	"Mod.Whl."	92:	"TremoloD"
2:	"Breath C"	93:	"Chorus D"
4:	"Foot Cnt"	94:	"CelesteD"
5:	"Porta.Tm"	95:	"Phaser D"
6:	"Data Ent"	96:	"Inc. "
7:	"Main Vol"	97:	"Dec. "
8:	"Balance "	98:	"NRPN LSB"
10:	"Panpot "	99:	"NRPN MSB"
11:	"Express."	100:	"RPN LSB"
64:	"Hold 1 "	101:	"RPN MSB"
65:	"Porta.Sw"	121:	"AfterTch"
66:	"Sostenut"	122:	"Velocity"
67:	"Soft "	123:	"KeyScale"
69:	"Hold 2 "	124:	"LFO "

10: CONTROL LFO

All of the modulation-type effects — chorus, flanging, etc. — require LFO control. The SY85 has an independent effect LFO that is set up by the following parameters.

```
EF CTRL LFO  Waveform    Speed       Daley
                  sin        0           0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Wave (LFO waveform)
Range: tri, dwn, up, squ, sin, S/H, 1tm
Controls: [CS4], [-1] [+1], Dial

Determines the waveform of the effect LFO.

"tri" = Triangle.	"dwn" = Downward sawtooth.
"up" = Upward sawtooth.	"squ" = Square.
"sin" = Sine.	"S/H" = Sample and hold.
	"1tm" = Upward 1-shot.

If a controller is assigned to the "Wave" parameter (page 174), an inverse "c" will appear to the right of the parameter.

Speed (LFO speed)
Range: 0 … 99
Controls: [CS6], [-1] [+1], Dial

Sets the speed of the effect LFO.

"0" is the slowest speed setting, producing an LFO speed of approximately 0 Hertz. The fastest setting of 99 produces an LFO speed of approximately 25 Hertz.

If a controller is assigned to the "Speed" parameter (page 174), an inverse "c" will appear to the right of the parameter.

Delay
Range: 0 … 99
Controls: [CS8], [-1] [+1], Dial

Sets the delay time between the beginning of a note and the beginning of effect LFO operation for the selected element.

The minimum setting "0" results in no delay, while the maximum setting of "99" produces a delay of approximately 2.66 seconds before the effect LFO begins operation.

If a controller is assigned to the "Delay" parameter (page 174), an inverse "c" will appear to the right of the parameter.

EFFECT DATA COPY

[SONG] → [EFFECT EDIT] → [EFFECT COPY]

This function facilitates song editing by allowing the effect parameters from any other song, voice, or performance combination to be copied to the current song. You can copy an effect setup that is close to the type you want, then edit it to produce the required sound.

```
EFFECT COPY      From
                 MLT   01:InitSong
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

From

Range: Any song, voice or performance combination
Controls: MEMORY, GROUP, PROGRAM, [CS4], [CS5], [-1] [+1], Dial

Use the [CS4] slider to select the mode containing the desired voice and effect data ("PFM" = PERFORMANCE, "VCE" = VOICE, and "MLT" = MULTI). Use the [INTERNAL 1], [INTERNAL 2], and [CARD] MEMORY keys to select the memory area from which the source voice is to be selected. Use the GROUP keys to select the source voice bank, then use the PROGRAM keys to select the source voice number. The [CS5] slider and other data entry controls can also be used to select the source voice number.

Once the source voice has been selected, press the [ENTER/YES] key. "Are you sure?" will appear on the display.

```
EFFECT COPY     From
Are you sure ?  MLT   01:InitSong
```

Press the [ENTER/YES] key again to copy the effect data, or press [EXIT/NO] to cancel the copy operation. Once the copy operation has finished, "Completed!" will appear on the display briefly, then the display will return to the effect edit mode.

EFFECT SIGNAL FLOW DISPLAY

This function provides a graphic indication of the current effect system configuration while in the effect edit mode.

● **Overall Effect Flow**

```
EFFECT FLOW | ⅡⅡⅢⅢⅢ EF1=Rev.Stage1
 Mode= para |  ════🞐Ⅰ🞐  | EF2 EQ -> Sym
```

```
   F1       F2       F3       F4       F5       F6       F7       F8
  ┌──┐
  │  │
  └──┘
  CS1      CS2      CS3      CS4      CS5      CS6      CS7      CS8
```

● **Effect 1 Configuration**

```
EF1 Send1a>---[Stge▓]------------◊->OUT1
                                 └─<DRY1
```

```
   F1       F2       F3       F4       F5       F6       F7       F8
          ┌──┐
          │  │
          └──┘
  CS1      CS2      CS3      CS4      CS5      CS6      CS7      CS8
```

● **Effect 2 Configuration**

```
EF2 Send2a>---[EQ   ]-◘-[Sym ▓]--◊->OUT2
    Send2b>--------------□        └─<DRY2
```

```
   F1       F2       F3       F4       F5       F6       F7       F8
                   ┌──┐
                   │  │
                   └──┘
  CS1      CS2      CS3      CS4      CS5      CS6      CS7      CS8
```

Press [SHIFT] + [F1] to see the overall effect system signal flow. Press [SHIFT] + [F2] to see the effect 1 section configuration, and [SHIFT] + [F3] for the effect 2 section configuration.

Refer the to section beginning on page 254 for details on the effect system.

1: CLEAR SONG

Entirely clears all songs or just the currently selected song (one song) from memory.

```
SONG JOB Clear Song
[ONE] ALL    <InitSong>
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
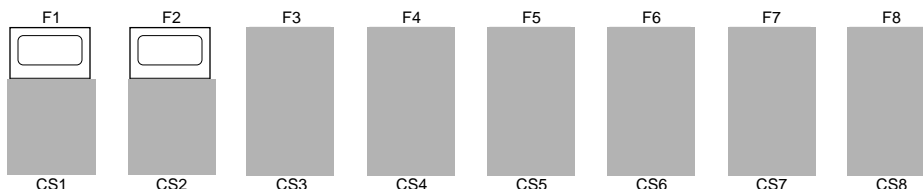
ONE, ALL
Range: ONE, ALL
Controls: [F1], [F2]

Press [F1] if you want to clear the currently selected song, or [F2] if you want to clear all songs in memory. If you select "ONE" song, the current song name is shown between parentheses on the lower display line.

Press [ENTER/YES] to begin the clear procedure. The following confirmation display will appear:

```
SONG JOB Clear Song      Are you sure ?
[ONE] ALL    <InitSong>
```

Press [ENTER/YES] again to confirm that you want to go ahead with the clear operation, or press [EXIT/NO] to cancel.

When the song data has been cleared, "Completed!" will appear briefly on the display.

In addition to clearing all sequencer data for the current song, the clear function initializes the following parameters:

Song name:	"InitSong"
Tempo:	120
Time signature:	4/4

2: COPY SONG

Copies all song data from one song to any other. This can be handy if you want to make minor changes to an existing song while retaining a copy of the original song data.

```
SONG JOB Copy Song                    From To
              <InitSong>              S01  S01
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

From
Range: 01 … 10
Controls: [CS7], [-1] [+1], Dial

To
Range: 01 … 10
Controls: [CS8], [-1] [+1], Dial

Use the [CS7] slider to select the "From" or source song number (1 … 10), and the [CS8] slider to select the "To" or desination song number. The name of the currently selected "From" or "To" song is shown between parentheses on the lower display line, depending on which parameter the cursor is positioned below.

Press [ENTER/YES] to begin the copy procedure. The following confirmation display will appear:

```
SONG JOB Copy Song         Are you sure ?
              <InitSong>        S01  S01
```
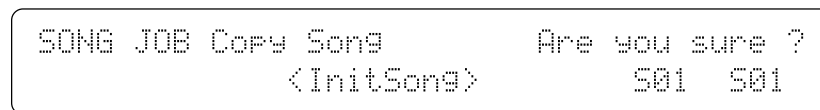
Press [ENTER/YES] again to confirm that you want to go ahead with the copy operation (which will overwrite all data in the "To" song number), or press [EXIT/NO] to cancel.

When the song data has been copied, "Completed!" will appear briefly on the display.

3: MEMORY STATUS

Indicates the amount of memory available for song recording.

This job is not available when the rhythm track (track 9) is selected. The "CLEAR RHYTHM TRACK" job described on page 182 appears in its place.

```
SONG JOB Memory Status          Free=100%
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
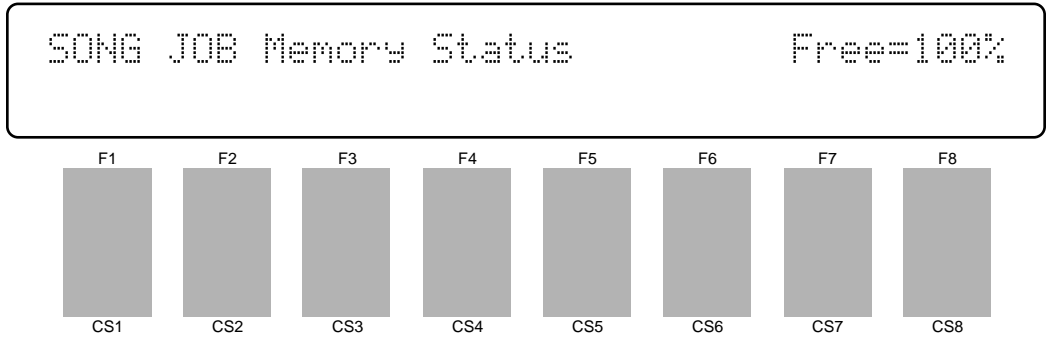
A display of "Free=80%", for example, means that approximately 20% of the available memory has been used, and approximately 80% is available for further recording.

A "Memory full" error message may appear during recording even if this function does not indicate "Free=0%". This is because a certain amount of free "work area' is required by each function, and the memory can never be occupied entirely by song data.

3: CLEAR RHYTHM TRACK

Deletes all data from the rhythm track.

This job appears in place of the "MEMORY STATUS" job, described on the previous page, when the rhtyhm track (track 9) is selected.

```
SONG JOB Clear Rhythm Track
```
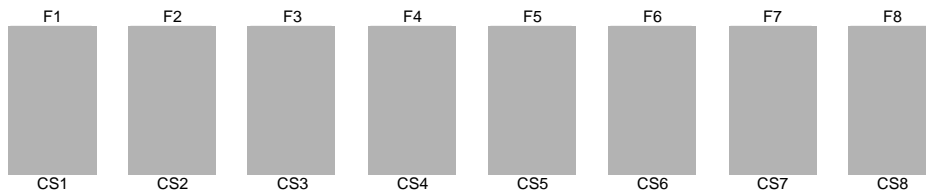
F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press [ENTER/YES] to begin the delete procedure. The following confirmation display will appear:

```
SONG JOB Clear Rhythm Track
Are you sure ?
```

Press [ENTER/YES] again to confirm that you want to go ahead with the delete operation, or press [EXIT/NO] to cancel.

When the rhythm track has been deleted, "Completed!" will appear briefly on the display.

4: TRACK MIXDOWN

Combines the data from two different tracks and copies the result to a third track. This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Track Mixdown    From      To
                          TR1+ TR1+ TR1
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

From (From track 1 + track 2)
Range: 1 ... 8
Controls: [CS6], [CS7], [-1] [+1], Dial

To
Range: 1 ... 8
Controls: [CS8], [-1] [+1], Dial

Use the [CS6] slider to select the first "From" (source) track and the [CS7] slider to select the second source track. The data from the first and second source tracks will be combined and copied to the "To" (destination) track, selected by the [CS8] slider.

Press [ENTER/YES] to begin the mixdown procedure. The following confirmation display will appear:

```
SONG JOB Track Mixdown    From      To
Are you sure ?            TR1+ TR1+ TR1
```
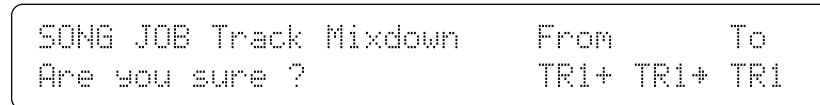
Press [ENTER/YES] again to confirm that you want to go ahead with the mixdown operation (which will overwrite all data in the "To" track), or press [EXIT/NO] to cancel.

When the data has been mixed and copied, "Completed!" will appear briefly on the display.

The mixdown function is most useful when you want to record more than 8 individual parts. Successfully recorded parts can be combined using this function, thus opening up more tracks for further recording. The data in the source tracks is not erased during a mixdown operation.

Please note that if both source tracks are set to the same track number, the data from that track will simply be copied to the destination track.

The illustrations here are not available.

5: DELETE TRACK

Deletes all data from the specified track.
This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Delete Track
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
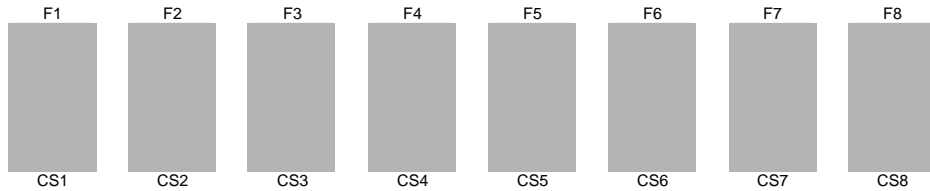
Use the GROUP [A] through [H] keys to select the track you want to delete (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.   Press [ENTER/YES] to begin the delete procedure. The following confirmation display will appear:

```
SONG JOB Delete Track
                            Are you sure ?
```

Press [ENTER/YES] again to confirm that you want to go ahead with the delete operation, or press [EXIT/NO] to cancel.
When the track has been deleted, "Completed!" will appear briefly on the display.

6: QUANTIZE

Aligns notes in the specified track to the nearest specified beat.
This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Quantize        Meas    Size
                         001~ 001 1/48
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8

Meas (First & last measure numbers)
Range: 001 … 999
Controls: [CS6], [CS7], [-1] [+1], Dial

Size
Range: 1/48, 1/32, 1/24, 1/16, 1/12, 1/8, 1/6, 1/4
Controls: [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track you want to quantize (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use the [CS6] and [CS7] sliders to select the numbers of the first and last measures in the range of measures you want to quantize, and use the [CS8] slider to select the quantize size.

Press [ENTER/YES] to begin the quantize procedure. The following confirmation display will appear:

```
SONG JOB Quantize        Meas    Size
Are you sure ?           001~ 001 1/48
```
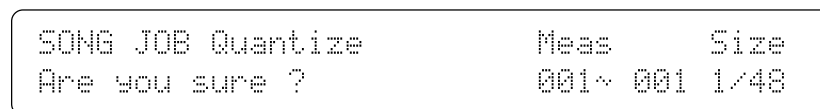
Press [ENTER/YES] again to confirm that you want to go ahead with the quantize operation, or press [EXIT/NO] to cancel.

When the data has been quantized, "Completed!" will appear briefly on the display.

Quantization is generally used to tighten up sloppy timing. Use it judiciously, however, because timing that is too perfect can sound cold and mechanical — unless, of course, you're specifically aiming for a cold, mechanical feel. Always use a quantize value that is at least as "short" as the shortest notes in the track to be quantized. If you quantize a track containing 16th notes to 1/8 (8th notes), for example, some of the 16th notes will be aligned with 8th note beats, thus ruining the track.

The various quantize values correspond to note lengths as follows:

7: COPY MEASURE

Copies a specified measure or range of measures from one track to the specified measure in another track.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Copy   From Meas     To Meas
                1x(TR1  001~ 001) TR1   001
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
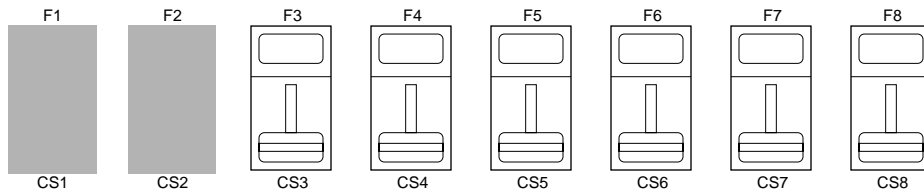
From Meas (Source measure range, track, copy count)
Range: Measures: 001 … 999. Track: TR1 … TR8. Count: 1x … 99x
Controls: [CS3] … [CS6], [-1] [+1], Dial

To Meas (Destination track & measure)
Range: Track: TR1 … TR8. Measure: 001 … 999.
Controls: [CS7], [CS8], [-1] [+1], Dial

Use [CS4] to specify the track from which the data is to be copied, [CS5] and [CS6] to select the first and last measures of the range to be copied, and [CS3] to specify the number of times the selected data is to be copied. Use [CS7] to specify the destination track, and [CS8] to specify the destination measure.

Press [ENTER/YES] to begin the copy procedure. The following confirmation display will appear:

```
SONG JOB Copy   From Meas Are you sure ?
                1x(TR1  001~ 001) TR1   001
```

Press [ENTER/YES] again to confirm that you want to go ahead with the copy operation (which will overwrite data in the destination track), or press [EXIT/NO] to cancel.

When the data has been copied, "Completed!" will appear briefly on the display.

A copy operation overwrites the data from the beginning of the specified destination measure with the data from the source measure(s). Previous data in the overwritten measures is therefore lost.

The illustrations here are not available.

8: DELETE MEASURE

Deletes the specified measure or range of measures from <u>all</u> tracks.
This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Delete Measure       Meas
        ( TR1~8 All )         001~ 001
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
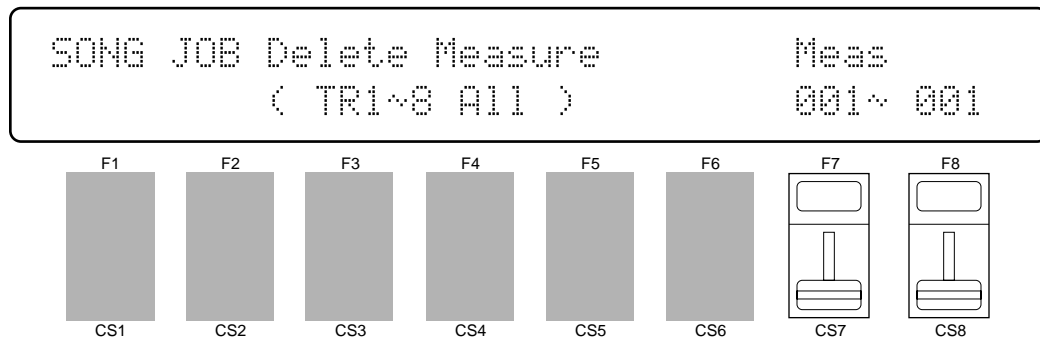
Meas (First & last measure numbers)

Range: 001 ... 999
Controls: [CS7], [CS8], [-1] [+1], Dial

Use the [CS7] and [CS8] sliders to select the numbers of the first and last measures in the range of measures you want to delete.

Press [ENTER/YES] to begin the delete procedure. The following confirmation display will appear:

```
SONG JOB Delete Measure   Are you sure ?
        ( TR1~8 All )           001~ 001
```
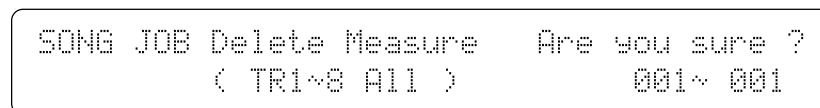
Press [ENTER/YES] again to confirm that you want to go ahead with the delete operation, or press [EXIT/NO] to cancel.

When the data has been deleted, "Completed!" will appear briefly on the display.

It's important to remember that a delete operation affects <u>all</u> tracks simultaneously, and that measures following the deleted range are moved back to take the place of the deleted measures.

9: INSERT MEASURE

Inserts a specified measure or range of measures from all tracks before any other specified measure.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Insert Measure   From      To
        ( TR1~8 All )     001 ~001  001
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
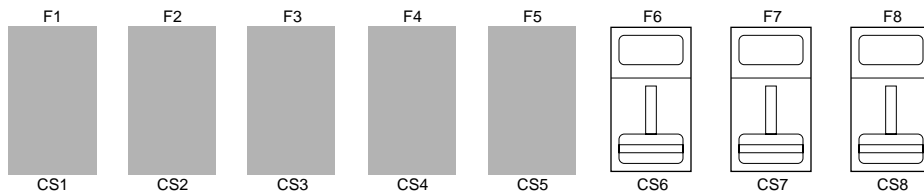
From (Source measure range)
Range: 001 … 999
Controls: [CS6], [CS7], [-1] [+1], Dial

To (Destination measure)
Range: 001 … 999
Controls: [CS8], [-1] [+1], Dial

Use [CS6] and [CS7] to specify the first and last measures in the range to be copied, and [CS8] to select the destination measure number at which the source data will be inserted.

Press [ENTER/YES] to begin the insert procedure. The following confirmation display will appear:

```
SONG JOB Insert Measure   Are you sure ?
        ( TR1~8 All )     001 ~001  001
```

Press [ENTER/YES] again to confirm that you want to go ahead with the insert operation, or press [EXIT/NO] to cancel.

When the data has been inserted, "Completed!" will appear briefly on the display.

Insert affects all tracks simultaneously. The source measure or range of measures in inserted <u>before</u> the specified destination measure.

10: ERASE MEASURE

Erases all note and event data from the specified measure or range of measures in the specified track.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Erase Measure        Meas
                              001~ 001
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
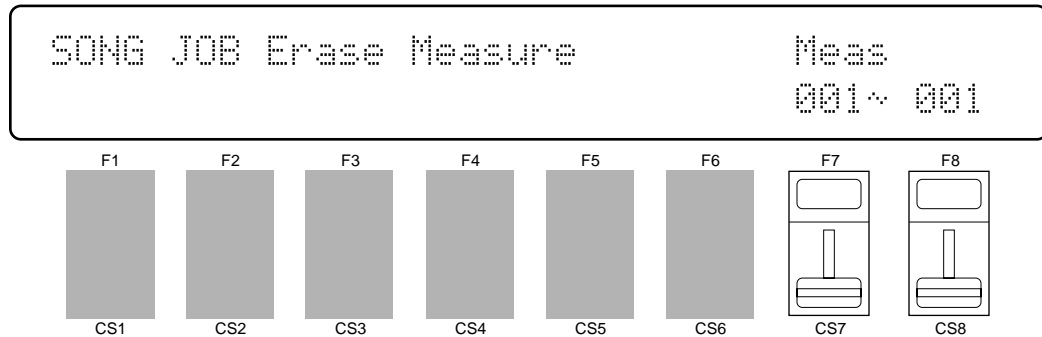
Meas (First & last measure numbers)
Range: 001 ... 999
Controls: [CS7], [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track containing the measures you want to erase (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use the [CS7] and [CS8] sliders to select the numbers of the first and last measures in the range of measures you want to erase.

Press [ENTER/YES] to begin the erase procedure. The following confirmation display will appear:

```
SONG JOB Erase Measure        Meas
Are you sure ?                001~ 001
```
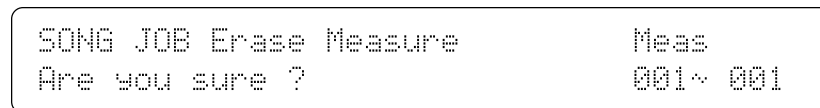
Press [ENTER/YES] again to confirm that you want to go ahead with the erase operation, or press [EXIT/NO] to cancel.

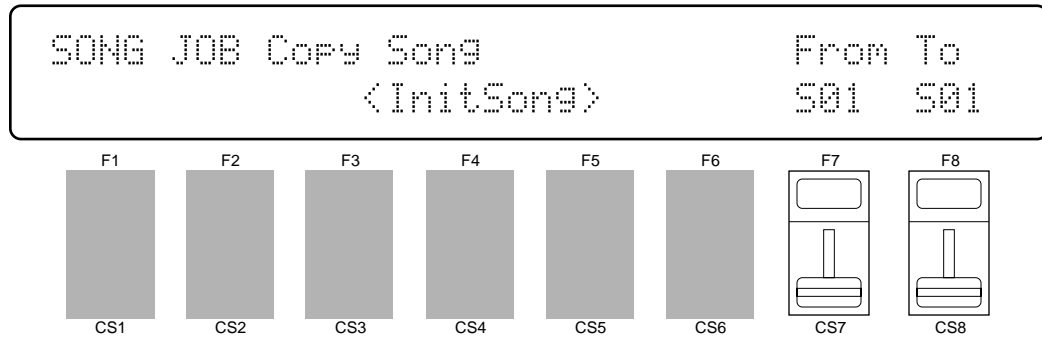When the data has been erased, "Completed!" will appear briefly on the display.

An erase operation leaves the specified measures intact but blank.

11: REMOVE EVENT

Allows pitch bend, after touch, program change, or control change events (data) to be removed from a specified measure or range of measures in a specified track.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Remove       Event        Meas
                      PB           001~ 001
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
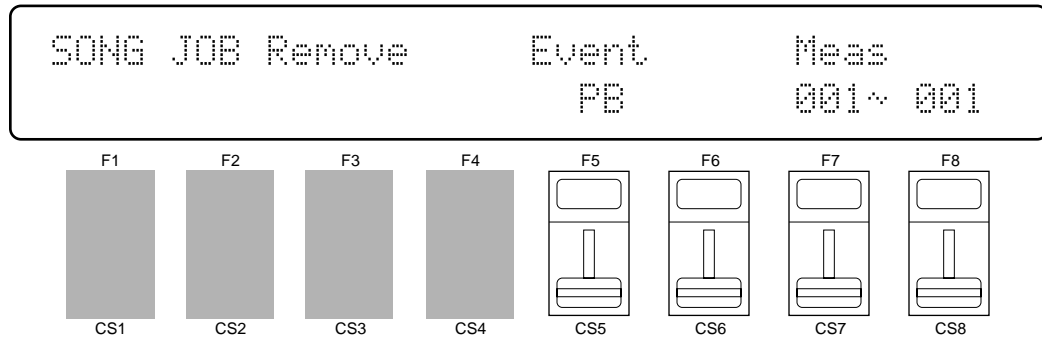
Event (Event type & No. if "ctrl" selected)
Range: PB, AT, crtl, pgm
Controls: [CS5], [CS6], [-1] [+1], Dial

Meas (First & last measure numbers)
Range: 001 … 999
Controls: [CS7], [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track containing the measures from which you want to remove events (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use [CS5] to select the type of event to remove: "ctrl" for control change, "pgm" for program change, "AT" for aftertouch, and "PB" for pitch bend. Removing a program change ("pgm") event also removes control change number 0 and 32 (bank select). If "ctrl" is selected, [CS6] can be used to specify a control number to be removed (see below). Use the [CS7] and [CS8] sliders to select the numbers of the first and last measures in the range of measures from which the specified event data is to be removed.

Press [ENTER/YES] to begin the remove event procedure. The following confirmation display will appear:

```
SONG JOB Remove       Event        Meas
Are you sure ?        PB           001~ 001
```
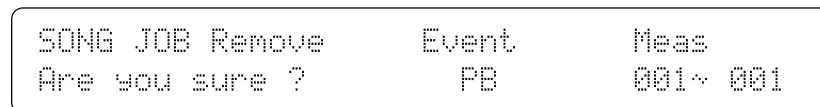
Press [ENTER/YES] again to confirm that you want to go ahead with the remove event operation, or press [EXIT/NO] to cancel.

When the data has been removed, "Completed!" will appear briefly on the display.

● Control Change Numbers

If you choose to remove control change events — modulation wheel, breath controller, volume, etc. — you must also specify the control change number corresponding to the specific event you want to remove. For your reference, the following is a list of assigned controllers:

MIDI CONTROL CHANGE NUMBER

0:	"--------"	91:	"Effect D"
1:	"Mod.Whl."	92:	"TremoloD"
2:	"Breath C"	93:	"Chorus D"
4:	"Foot Cnt"	94:	"CelesteD"
5:	"Porta.Tm"	95:	"Phaser D"
6:	"Data Ent"	96:	"Inc. "
7:	"Main Vol"	97:	"Dec. "
8:	"Balance "	98:	"NRPN LSB"
10:	"Panpot "	99:	"NRPN MSB"
11:	"Express."	100:	"RPN LSB"
64:	"Hold 1 "	101:	"RPN MSB"
65:	"Porta.Sw"		
66:	"Sostenut"		
67:	"Soft "		
69:	"Hold 2 "		

12: CLOCK MOVE

Moves all notes and events in the specified track and range of measures forward or backward by the specified number of "clocks."

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Clock Move        Meas     Clock
                           001~ 001 +000
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
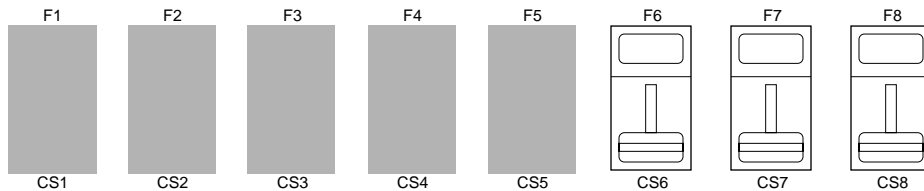
Meas (First & last measure numbers)
Range: 001 … 999
Controls: [CS6], [CS7], [-1] [+1], Dial

Clock
Range: -999 … +999
Controls: [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track on which the clock move operation is to be performed (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use [CS6] and [CS7] to specify the first and last measure numbers in the range of measures over which you want to shift the timing of note and event data. Use [CS8] to set the number of clocks by which the data will be moved forward or backward. Minus (-) values move the data backward (toward the beginning of the song) while plus (+) values move the data forward (toward the end of the song). Each "clock" is equal to 1/48th of a quarter note.

Press [ENTER/YES] to begin the clock move procedure. The following confirmation display will appear:

```
SONG JOB Clock Move        Meas     Clock
Are you sure ?             001~ 001 +000
```
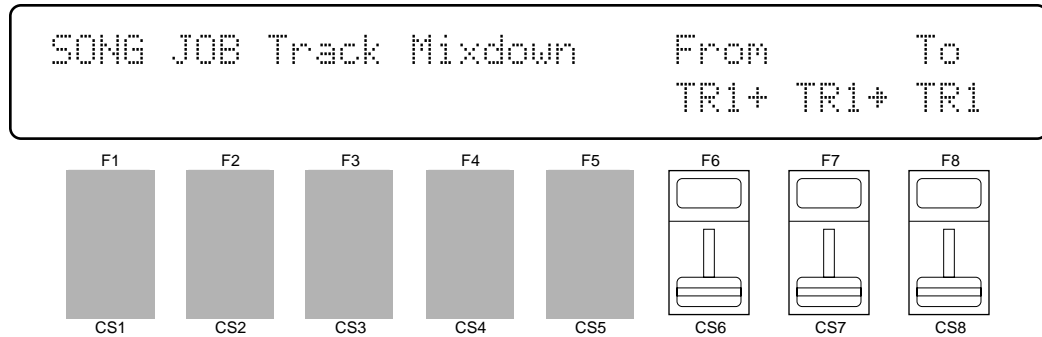
Press [ENTER/YES] again to confirm that you want to go ahead with the clock move operation, or press [EXIT/NO] to cancel.

When the data has been moved, "Completed!" will appear briefly on the display.

13: TRANSPOSE

Transposes all notes in the specified track and range of measures up or down by the specified "offset" in semitones.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Transpose        Meas      Ofst
                          001~ 001   +0
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
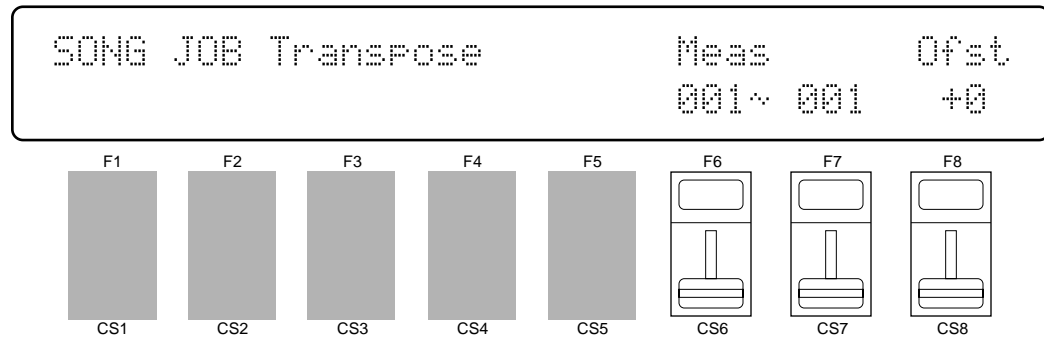
Meas (First & last measure numbers)
Range: 001 … 999
Controls: [CS6], [CS7], [-1] [+1], Dial

Ofst (Offset)
Range: -99 … +99
Controls: [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track on which the transpose operation is to be performed (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use [CS6] and [CS7] to specify the first and last measure numbers in the range of measures over which you want to transpose note data. Use [CS8] to set the number of semitones by which the notes will be transposed up or down. Minus (-) values transpose down while plus (+) values transpose up.

Press [ENTER/YES] to begin the transpose procedure. The following confirmation display will appear:

```
SONG JOB Transpose        Meas      Ofst
Are you sure ?            001~ 001   +0
```
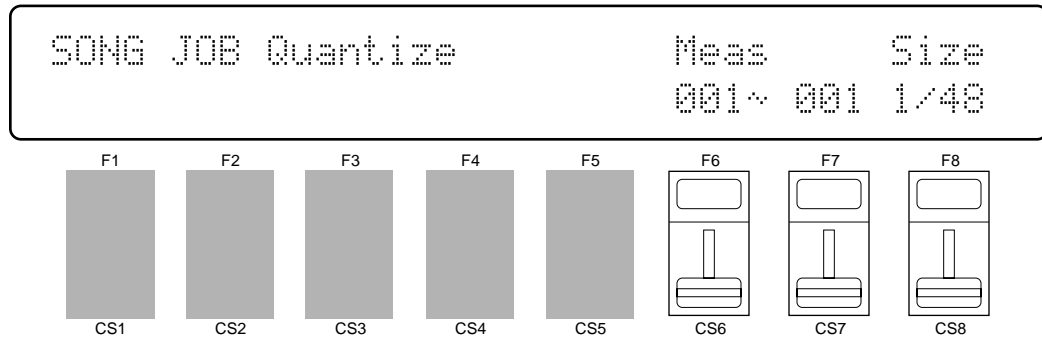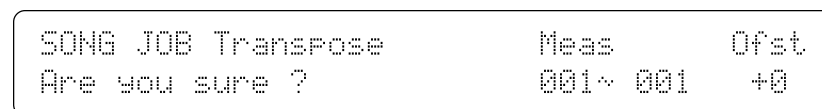
Press [ENTER/YES] again to confirm that you want to go ahead with the transpose operation, or press [EXIT/NO] to cancel.

When the data has been transposed, "Completed!" will appear briefly on the display.

14: NOTE SHIFT

Shifts all occurences of the specified note in the specified track and range of measures to any other note.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Note Shift  Meas      From To
                     001~ 001   C≥   C≥
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
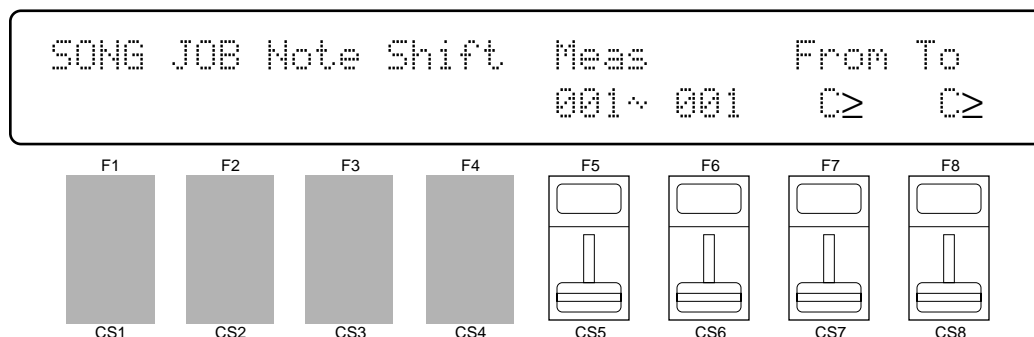
Meas (First & last measure numbers)

Range: 001 ... 999
Controls: [CS5], [CS6], [-1] [+1], Dial

From (Original note)

Range: C-2 ... G8
Controls: [CS7], [-1] [+1], Dial, Keyboard

To (New note)

Range: C-2 ... G8
Controls: [CS8], [-1] [+1], Dial, Keyboard

Use the GROUP [A] through [H] keys to select the track on which the note shift operation is to be performed (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use [CS5] and [CS6] to specify the first and last measure numbers in the range of measures over which you want to shift note data. Use [CS7] to specify the note that is to be shifted (or press the appropriate key on the keyboard after moving the cursor to the "From" parameter by pressing the [F7] key), and use [CS8] or the keyboard to specify the new note to which all occurrences of the "From" note are to be shifted.

Press [ENTER/YES] to begin the note shift procedure. The following confirmation display will appear:

```
SONG JOB Note Shift  Meas      From To
Are you sure ?       001~ 001   C≥   C≥
```
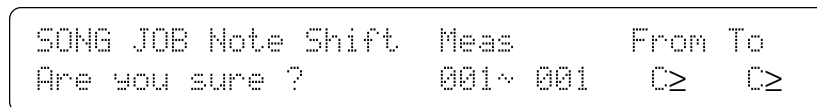
Press [ENTER/YES] again to confirm that you want to go ahead with the note shift operation, or press [EXIT/NO] to cancel.

When the notes have been shifted, "Completed!" will appear briefly on the display.

15: VELOCITY MODIFY

Increases or decreases the velocity values of all notes in the specified track and range of measures.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Vel.Modify  Meas         Rate Ofst
                     001~ 001     000%  +0
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8
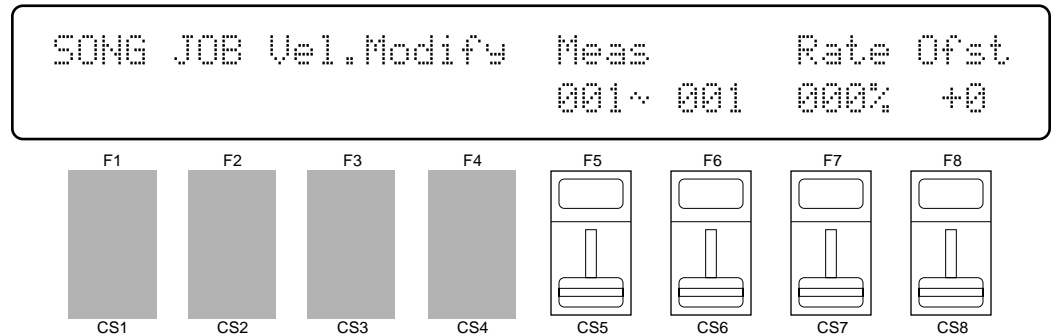
Meas (First & last measure numbers)
Range: 001 … 999
Controls: [CS5], [CS6], [-1] [+1], Dial

Rate (Velocity ratio)
Range: 000 … 200
Controls: [CS7], [-1] [+1], Dial

Ofst (Offset)
Range: -99 … +99
Controls: [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track on which the velocity modify operation is to be performed (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use [CS5] and [CS6] to specify the first and last measure numbers in the range of measures over which you want to modify the velocity data. Use [CS7] to set the "ratio" between the lower and higher velocity values (a setting of "100%" maintains the original relationship between the notes, lower values produce a narrower dynamic range, and higher values produce a broader dynamic range). Use [CS8] to specify the amount of offset ("-" settings reduce the velocity while "+" settings increase the velocity).

Press [ENTER/YES] to begin the velocity modify procedure. The following confirmation display will appear:

```
SONG JOB Vel.Modify  Meas         Rate Ofst
Are you sure ?       001~ 001     000%  +0
```

Press [ENTER/YES] again to confirm that you want to go ahead with the velocity modify operation, or press [EXIT/NO] to cancel.

When the velocity data has been modified, "Completed!" will appear briefly on the display.

16: GATE TIME MODIFY

Increases or decreases the gate times (length) of all notes in the specified track and range of measures.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Gate Modify Meas    Rate Ofst
                  001~ 001  000%  +0
```

F1 F2 F3 F4 F5 F6 F7 F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
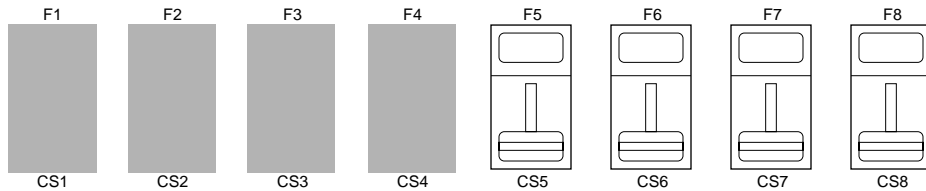
Meas (First & last measure numbers)
Range: 001 … 999
Controls: [CS5], [CS6], [-1] [+1], Dial

Rate (Gate time ratio)
Range: 000 … 200
Controls: [CS7], [-1] [+1], Dial

Ofst (Offset)
Range: -99 … +99
Controls: [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track on which the gate time modify operation is to be performed (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use [CS5] and [CS6] to specify the first and last measure numbers in the range of measures over which you want to modify the gate time data. Use [CS7] to set the "ratio" between the shorter and longer gate time values (a setting of "100%" maintains the original relationship between the notes, lower values produce a narrower gate time range, and higher values produce a broader gate time range). Use [CS8] to specify the amount of offset ("-" settings shorten the gate time while "+" settings increase the gate time).

Press [ENTER/YES] to begin the gate time modify procedure. The following confirmation display will appear:

```
SONG JOB Gate Modify Meas    Rate Ofst
Are you sure ?    001~ 001  000%  +0
```

Press [ENTER/YES] again to confirm that you want to go ahead with the gate time modify operation, or press [EXIT/NO] to cancel.

When the gate time data has been modified, "Completed!" will appear briefly on the display.

17: CRESCENDO

Produces a crescendo or decrescendo across the specified range of measures in the selected track by gradually increasing or decreasing the note velocity values.

This job is not available when the rhythm track (track 9) is selected.

```
SONG JOB Crescendo          Meas        Rng
                            001~ 001     +0
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
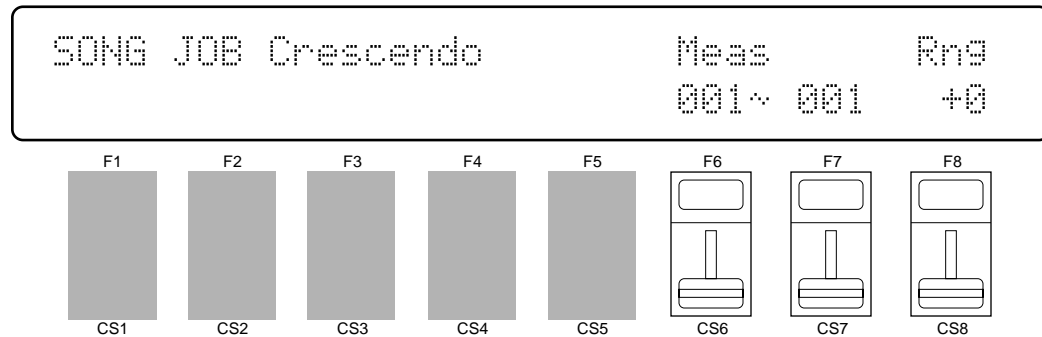
Meas (First & last measure numbers)
Range: 001 … 999
Controls: [CS6], [CS7], [-1] [+1], Dial

Rng (Range)
Range: -99 … +99
Controls: [CS8], [-1] [+1], Dial

Use the GROUP [A] through [H] keys to select the track on which the crescendo operation is to be performed (A = track1, B = track 2, and so on). The LED of the selected track will glow red while the LEDs of all other tracks containing data glow green.

Use [CS6] and [CS7] to specify the first and last measure numbers in the range of measures over which you want to produce a crescendo or decrescendo. Use [CS8] to specify the final range of the crescendo or decrescendo: "-" settings produce a decrescendo while "+" settings produce a crescendo.

Press [ENTER/YES] to begin the crescendo procedure. The following confirmation display will appear:

```
SONG JOB Crescendo          Meas        Rng
Are you sure ?              001~ 001     +0
```
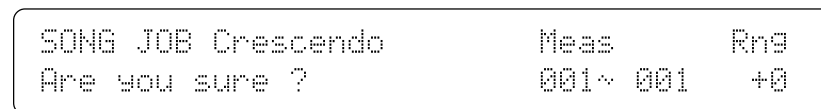
Press [ENTER/YES] again to confirm that you want to go ahead with the crescendo operation, or press [EXIT/NO] to cancel.

When the crescendo or decrescendo has been created, "Completed!" will appear briefly on the display.

PATTERN EDIT MODE

1: COPY PATTERN

Copies all pattern data from one pattern to any other. This can be handy if you want to make minor changes to an existing pattern while retaining a copy of the original pattern data. It is also possible to append one pattern to another, and copy the result to a new pattern number.

```
PTN JOB Copy Pattern      From        To
                 <Funk1  V> I00+ ***  I00
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
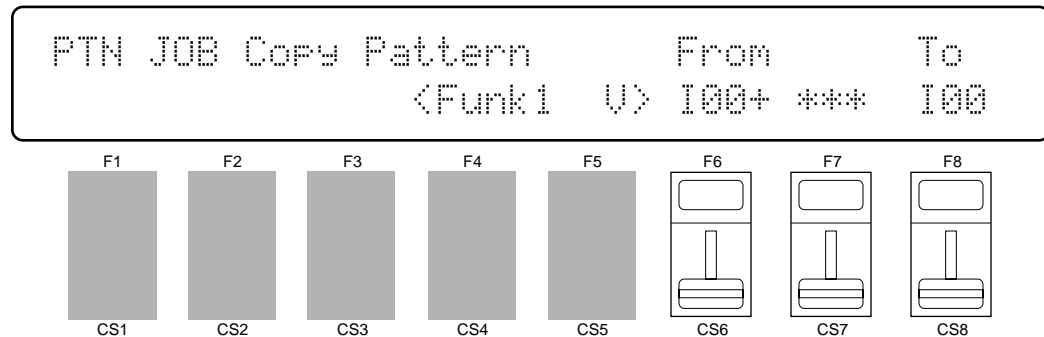
From (Source and append patterns)
Range: 00 … 99
Controls: [CS6], [CS7], [-1] [+1], Dial

To
Range: 00 … 99
Controls: [CS8], [-1] [+1], Dial

Use [CS6] to select the "From" or source pattern number (0 … 99), [CS7] to select a pattern to be appended to the end of the of the first pattern (leave this parameter set to "***" if you do not want to append a pattern), and [CS8] to select the "To" or destination pattern number. The name of the currently selected "From" or "To" pattern is shown between parentheses on the lower display line, depending on which parameter the cursor is positioned below.

Press [ENTER/YES] to begin the copy procedure. The following confirmation display will appear:

```
PTN JOB Copy Pattern      From        To
Are you sure ? <Funk1  V> I00+ ***  I00
```
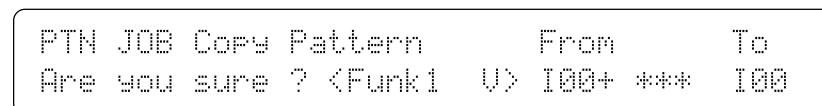
Press [ENTER/YES] again to confirm that you want to go ahead with the copy operation (which will overwrite all data in the "To" pattern number), or press [EXIT/NO] to cancel.

When the pattern data has been copied, "Completed!" will appear briefly on the display.

2: CLEAR PATTERN

Entirely clears all patterns, a single pattern, or one instrument (key) from a selected pattern.

```
PTN JOB Clear Pattern    Ptn
[PTN] ALL  KEY <Funk1  V> I00w
```
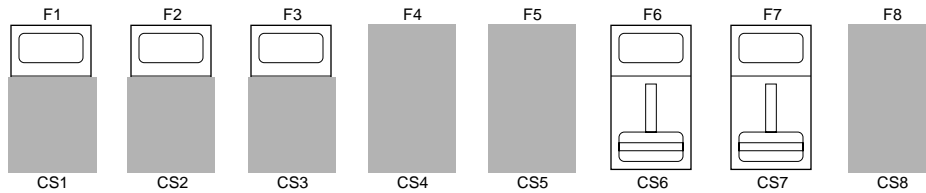

PTN, ALL, KEY
Range: PTN, ALL, KEY
Controls: [F1], [F2], [F3]

Ptn (Pattern number)
Range: 00 … 99
Controls: [CS6], [-1] [+1], Dial

Key
Range: 36 … 96 (C1 … C6)
Controls: [CS7], [-1] [+1], Dial, Keyboard

Press [F1] if you want to clear one pattern, [F2] if you want to clear all patterns in memory, or [F3] if you want to clear a specified instrument (key) from a selected pattern. If you select "PTN", the current pattern name is shown between parentheses on the lower display line and [CS6] can be used to select the pattern to be cleared.

If you select "KEY", the current pattern name is shown between parentheses on the lower display line, [CS6] can be used to select the pattern from which an instrument is to be cleared, and [CS7] is used to select the key to be cleared. The key to be cleared can also be directly specified by pressing the appropriate key on the keyboard. The MIDI note number corresponding to the selected instrument/key is shown on the lower display line while the note name (C1 … C6) is shown on the upper line.

Press [ENTER/YES] to begin the clear procedure. The following confirmation display will appear:

```
PTN JOB Clear Pattern    Are you sure ?
[PTN] ALL  KEY <Funk1  V> I00w
```

Press [ENTER/YES] again to confirm that you want to go ahead with the clear operation, or press [EXIT/NO] to cancel.

When the specified data has been cleared, "Completed!" will appear briefly on the display.

3: INSTRUMENT CHANGE

Allows a specified instrument (key) in one or all patterns to be changed to any other. This makes it possible to change all occurences of one instrument to a different instrument in one easy step.

```
PTN JOB Inst Change        Ptn   From    To
[PTN] ALL          <Funk1  V> I00    C1     C1
```

```
  F1      F2      F3      F4      F5      F6      F7      F8
 [___]   [___]                          [___]   [___]   [___]
                                         | |     | |     | |
                                         |_|     |_|     |_|
  CS1     CS2     CS3     CS4     CS5     CS6     CS7     CS8
```
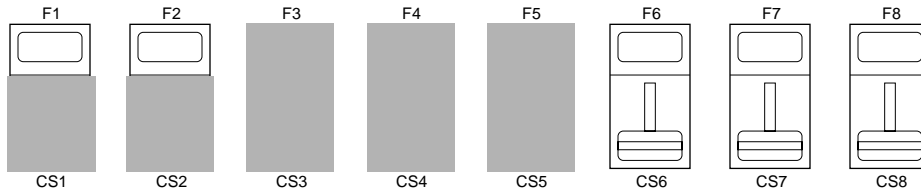
PTN, ALL
Range: PTN, ALL
Controls: [F1], [F2]

Ptn (Pattern number)
Range: 00 … 99
Controls: [CS6], [-1] [+1], Dial

From
Range: C1 … C6
Controls: [CS7], [-1] [+1], Dial, Keyboard

To
Range: C1 … C6
Controls: [CS8], [-1] [+1], Dial, Keyboard

Press [F1] if you want to change an instrument in one pattern, or [F2] if you want to change an instrument in all patterns. If you select "PTN", the current pattern name is shown between parentheses on the lower display line and [CS6] can be used to select the pattern in which an instrument is to be changed. Use [CS7] ("From") to select the key corresponding to the instrument to be changed, and [CS8] ("To") to select the key corresponding to the new instrument. The "From" and "To" keys can also be directly specified via the keyboard when the cursor is located at the corresponding parameter.

Press [ENTER/YES] to begin the instrument change procedure. The following confirmation display will appear:

```
PTN JOB Inst Change        Are you sure ?
[PTN] ALL          <Funk1  V> I00    C1     C1
```

Press [ENTER/YES] again to confirm that you want to go ahead with the instrument change operation, or press [EXIT/NO] to cancel.

When the instrument has been changed, "Completed!" will appear briefly on the display, then the display will return to the pattern play mode.

4: VELOCITY MODIFY

Inceases or decreases the velocity values of all occurences of the specified instrument (key) in the specified pattern or all patterns.

```
PTN JOB Velocity      Ptn  Key  Rate Ofst
[PTN] ALL <Funk1  V> I00   C1   000%  +0
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8
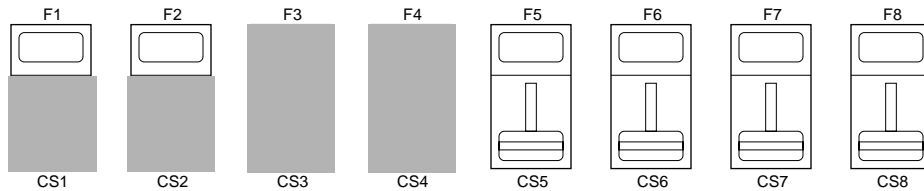
PTN, ALL
Range: PTN, ALL
Controls: [F1], [F2]

Ptn (Pattern number)
Range: 00 ... 99
Controls: [CS5], [-1] [+1], Dial

Key
Range: C1 ... C6
Controls: [CS6], [-1] [+1], Dial, Keyboard

Rate (Velocity ratio)
Range: 000 ... 200
Controls: [CS7], [-1] [+1], Dial

Ofst (Offset)
Range: -99 … +99
Controls: [CS8], [-1] [+1], Dial

Press [F1] if you want to modify the velocity values of an instrument in one pattern, or [F2] if you want to modify the velocity values of an instrument in all patterns. If you select "PTN", the current pattern name is shown between parentheses on the lower display line and [CS5] can be used to select the pattern in which the velocity values are to be modified. Use [CS6] to select the instrument (key) for which the velocity values are to be modified. Use [CS7] to set the "ratio" between the lower and higher velocity values (a setting of "100%" maintains the original relationship between the notes, lower values produce a narrower dynamic range, and higher values produce a broader dynamic range). Use [CS8] to specify the amount of offset ("-" settings reduce the velocity while "+" settings increase the velocity).

Press [ENTER/YES] to begin the velocity modify procedure. The following confirmation display will appear:

```
PTN JOB Velocity    ptn  Are you sure ?
[PTN] ALL <Funk1  V> I00   C1  000%  +0
```

Press [ENTER/YES] again to confirm that you want to go ahead with the velocity modify operation, or press [EXIT/NO] to cancel.

When the velocity data has been modified, "Completed!" will appear briefly on the display, then the display will return to the pattern play mode.

PATTERN NAME

[PATTERN] → [NAME]

This function can be used to assign a name of up to 8 characters to the current pattern.

```
 Pattern Name               I00 ▪"Funk1  V"
 [CLR][UPR][LWR][SPC]           [◀]   [▶]
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
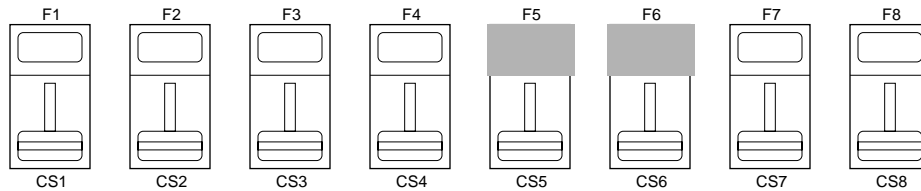
Name

Range: See character list, below
Controls: GROUP, PROGRAM, [CS1] … [CS8], [-1] [+1], Dial

Assigns a name of up to 8 characters to the current pattern.

Use the [F7] function key to move the character cursor to the left, and the [F8] function key to move the cursor to the right. Use the GROUP and PRO-GRAM keys to input a character at the cursor position. Each GROUP or PRO-GRAM key selects the three characters printed above it in sequence. It is also possible to use the [-1] and [+1] keys or dial to scroll through the available characters (see list below).

The sliders, [CS1] through [CS8], independently select characters for the corresponding character position: [CS1] selects the first character, [CS2] selects the second character, and so on.

The first four function keys also perform important functions: [F1] clears the entire name, [F2] selects upper-case characters for GROUP and PROGRAM key entry, [F3] selects lower-case characters for GROUP and PROGRAM key entry, and [F4] inserts a space at the cursor position.

GROUP key	PROGRAM key
[A]: A → B → C	[1]: Y → Z → 0
[B]: D → E → F	[2]: 1 → 2 → 3
[C]: G → H → I	[3]: 4 → 5 → 6
[D]: J → K → L	[4]: 7 → 8 → 9
[E]: M → N → O	[5]: * → & → _
[F]: P → Q → R	[6]: / → . → ,
[G]: S → T → U	[7]: ' → ! → ?
[H]: V → W → X	[8]: # → : → ;

UTILITY MODE

1: SYSTEM

This screen includes several parameters that affect overall operation of the SY85.

```
SYNTH SYSTEM    NtShft Tune CtrlRst Local
                  +0     +0         off    on
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8
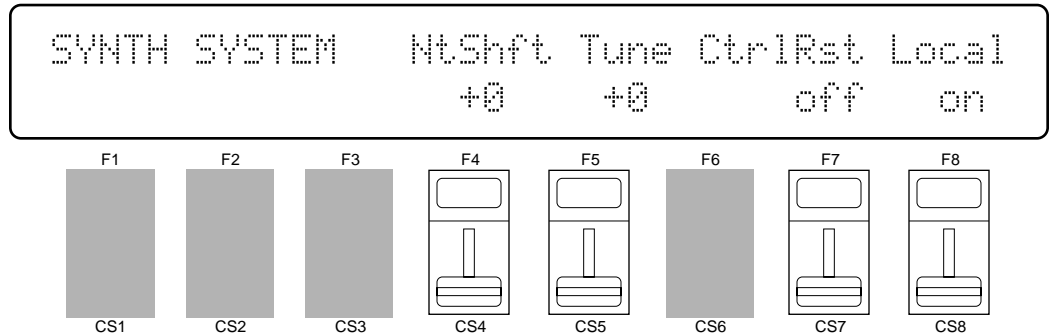
NtShft (Note shift)
Range: -63 … +63
Controls: [CS4], [-1] [+1], Dial,

Shifts the overall pitch of the SY85 up or down in semitone steps.

A setting of "-12," for example, shifts the pitch down by one octave; a setting of "+4" shifts the pitch up by a major third.

Tune (Master tuning)
Range: -63 … +63
Controls: [CS5], [-1] [+1], Dial,

Fine tunes the overall pitch of the SY85 in approximately 1.17-cent steps (a "cent" is 1/100th of a semitone).

The maximum minus setting of "-63" produces a downward pitch shift of almost three-quarters of a semitone, and the maximum plus setting of "+63" produces an upward pitch shift of the same amount. A setting of "0" produces no pitch change.

CtrlRst (Control reset)
Range: off, on
Controls: [CS7], [-1] [+1], Dial

Determines whether controller settings (modulation wheel, pitch bend, breath controller, foot controller, etc.) are held ("off") or reset ("on") when voices or multi-play setups are switched.

If this function is set to "off," then if, for example, you have applied modulation to a voice via the modulation wheel and switch to a new voice while maintaining the same modulation wheel position, then the same amount of modulation will be applied to the new voice. If "on" is selected, than all controller values are reset when a new voice or multi-play setup is selected.

Local

Range: off, on
Controls: [CS8], [-1] [+1], Dial,

"Local control" refers to the fact that, normally, the SY85 keyboard controls its internal tone generator, allowing the internal voices to be played directly from the keyboard. This situation is "Local Control ON" since the internal tone generator is controlled locally by its own keyboard. Local control can be turned OFF, however, so that the keyboard does not play the internal voices, but the appropriate MIDI information is still transmitted via the MIDI OUT connector when notes are played on the keyboard. At the same time, the internal tone generator responds to MIDI information received via the MIDI IN connector.

2: MIDI 1 (CHANNEL PARAMETERS)

The MIDI channel parameters provided here are essential to ensure proper communication between the SY85 and other MIDI instruments.

```
SYNTH MIDI 1        Tch  Rch DevNo
                    01 omni  all
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
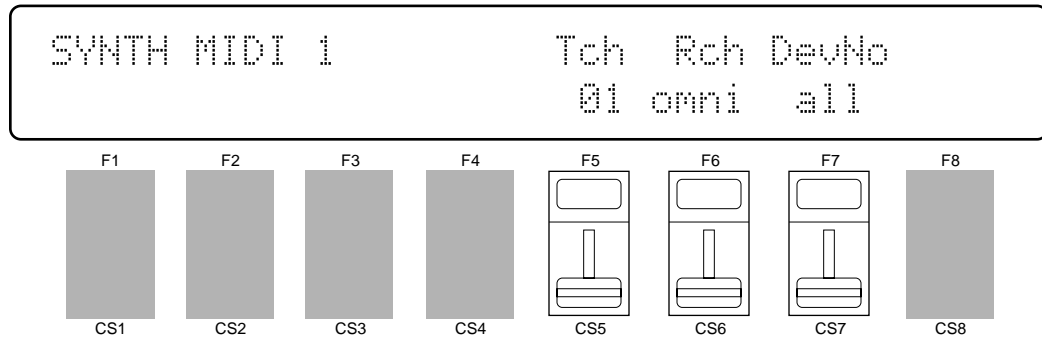
Tch (Transmit channel)
Range: 1 … 16
Controls: [CS5], [-1] [+1], Dial

Selects the MIDI channel via which all SY85 data will be transmitted.

Rch (Receive channel)
Range: 1 … 16, omni
Controls: [CS6], [-1] [+1], Dial

Sets the MIDI receive channel to any channel between 1 and 16, or the "omni" mode for reception on all channels. Make sure that the SY85 MIDI receive channel is either set to the channel that your external controller is transmitting on, or the omni mode.

DevNo (Device number)
Range: off, 1 … 16, all
Controls: [CS7], [-1] [+1], Dial

Sets the SY85 MIDI device number — i.e. the MIDI channel on which all system exclusive data will be received and transmitted.

The device number is important for transfer of voice data and other system exclusive data between the SY85 and other Yamaha MIDI devices — e.g. another SY85 or SY-series synthesizer, a Yamaha MIDI sequence recorder such as the QX3, etc. Bulk voice data, for example, is transmitted and received on the channel specified by the device number. Make sure that the SY85 device number is matched to that of other devices in your system with which such data transfers will take place.

3: MIDI 2 (OTHER PARAMETERS)

More MIDI parameters that determine how the SY85 responds to external MIDI control.

```
SYNTH MIDI 2 VolCtrl PC  Bulkprot
       (Main Vol)007 drct   on
```
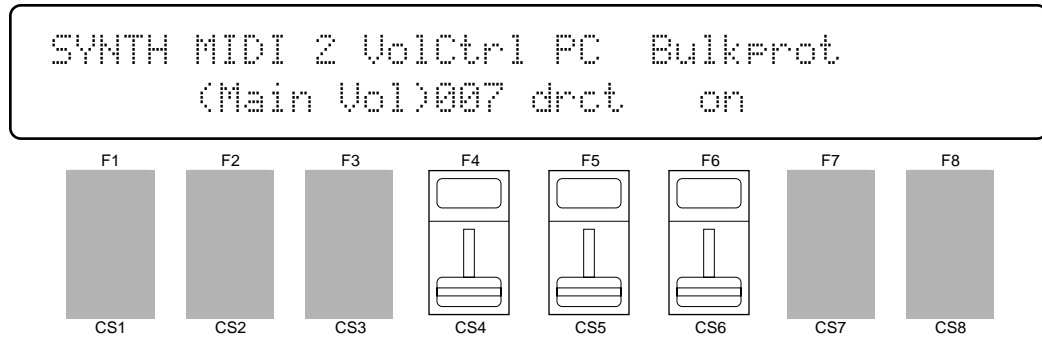

VolCtrl (Volume control device)
Range: 000 … 121
Controls: [CS4], [-1] [+1], Dial

Sets a MIDI control number via which the overall volume of the SY85 can be controlled.

PC (Program change type)
Range: off, norm, drct, tbl
Controls: [CS5], [-1] [+1], Dial

Determines whether the SY85 will respond to MIDI program change messages for remote voice/performance selection.

The "off" setting turns MIDI program change reception off, so operating the voice selectors on an external controller will not cause the corresponding SY85 voice or performance setup to be selected.

In the "norm" (normal) mode, program change numbers 0 through 63 select SY85 voices or performance combinations 1 through 64, depending on the current mode.

The "drct" (direct) mode allows, in addition to the voice and performance selection of the "norm" mode, selection of the various SY85 modes by reception of the MIDI program bank change messages listed below.

MIDI PROGRAM BANK CHANGE MESSAGE		MODE	MEMORY
"00H"	"20H"		
00	00		Internal1
00	03		Internal2
00	06		Internal3
00	09	Voice	Internal4
00	01		Card1
00	04		Card2
00	07		Card3
00	0A		Card4
00	40		Internal1
00	43	Performance	Internal2
00	41		Card1
00	44		Card2
00	20		Internal1
00	23		Internal2
00	26		Internal3
00	29	Voice	Internal4
00	21	(multi)	Card1
00	24		Card2
00	27		Card3
00	2A		Card4
00	50		Internal1
00	53	Performance	Internal2
00	51	(multi)	Card1
00	54		Card2

When "tbl" (table) is selected, transmission conforms to the program change table (see "4: PROGRAM CHANGE TABLE," below), while reception is the same as in the "drct" mode, above.

Bulkprot (Bulk receive protect)
Range: off, on
Controls: [CS6], [-1] [+1], Dial

Enables or disables bulk data reception. When this function is set to "off," the SY85 will automatically receive a bulk dump of voice, multi-play or system data from an external device connected to its MIDI IN terminal when the appropriate bulk dump data is received (assuming that the SY85 and transmitting device are both set to the same device number).

Turn bulk in protect "on" to disable bulk dump reception (this prevents accidental disruption of the SY85 during use).

4: PROGRAM CHANGE TABLE

These parameters make it possible to specify what MIDI program change number is transmitted via the MIDI OUT connector when any of the internal voice or performance memory locations are selected.

```
SYNTH PC TABLE      BankSel(MSB)(LSB) PGM
(Transmit Only)Source=A1  000  064   000
```
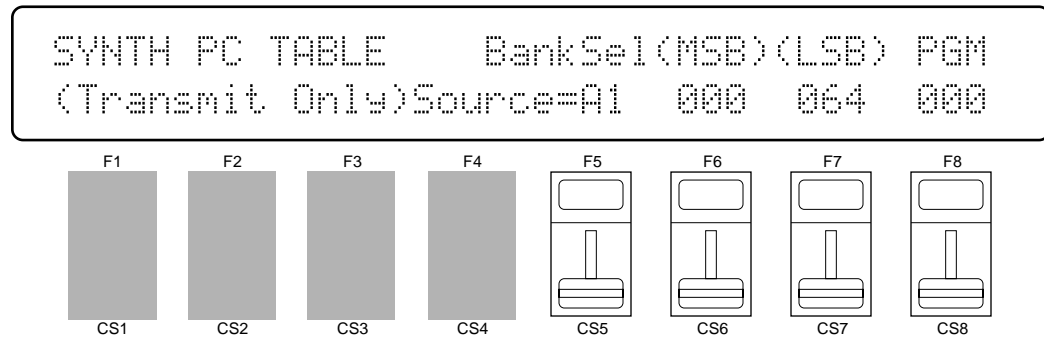

Source
Range: A1 … H8
Controls: [CS5], GROUP, PROGRAM, [-1] [+1], Dial

Specifies the source voice number (GROUP and PROGRAM) which, when selected on the SY85, will cause the bank and program change numbers specified by the "MSB", "LSB", and "PGM" parameters, described below, to be transmitted via the MIDI OUT connector.

MSB (Bank select most significant bits)
Range: 000 … 127
Controls: [CS6], [-1] [+1], Dial

Sets the decimal value of the most significant bits of the bank select code to be transmitted when the source voice number is selected. The specific functions of the bank select codes are determined by individual instrument manufacturers, so, if you intend to use these codes, refer to the documentation of the device you intend to control.

LSB (Bank select least significant bits)
Range: 000 … 127
Controls: [CS7], [-1] [+1], Dial

Sets the decimal value of the least significant bits of the bank select code to be transmitted when the source voice number is selected. See "MSB", above, for more details.

PGM (Program change number)
Range: 00 … 127
Controls: [CS8], [-1] [+1], Dial

Sets the MIDI program change number to be transmitted via the MIDI OUT connector when the corresponding "Source" voice number is selected.

5: VELOCITY

Thge SY85 offers a range of keyboard velocity curves that produce subtly different responses to keyboard dynamics. Choose the velocity curve that best suits your personal style of expression.

```
SYNTH OTHER Vel)Crv  Fix
            (normal)0  off
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
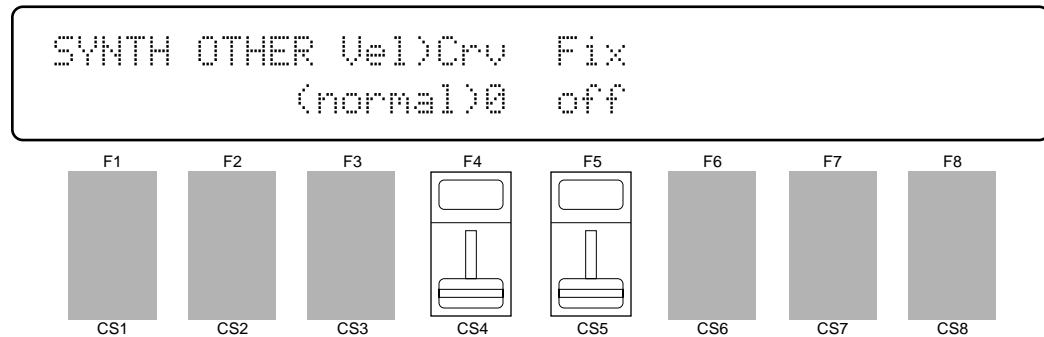
Crv (Velocity curve)
Range: 0 … 7
Controls: [CS4], [-1] [+1], Dial

Selects one of eight different velocity curves.

0: normal
1: soft1
2: soft2
3: easy
4: wide
5: hard
6: cross1
7: cross2

The velocity curves determine how the SY85 responds to different velocity values (i.e. keyboard dynamics). Different keyboards and controllers have different velocity sensitivity, and different players have individual preferences. This function lets you select the velocity curve that best suits your keyboard/ controller and playing style. Try each one out to find the one you like best.

Fix
Range: off, 1 … 127
Controls: [CS5], [-1] [+1], Dial

Sets an absolute velocity value. All notes played, no matter how hard they are played, are sounded at the specified velocity value. When this parameter is set to "off" normal keyboard velocity control is enabled.

1: CLICK CONDITION

The parametrers provided in this screen determine how the sequencer's metronome functions, and whether sequencer operation is synchronized to the SY85's own internal clock or an external MIDI device.

```
SEQUENCER Click Beat Clock      MIDI Ctrl
            on   1/4  int              on
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
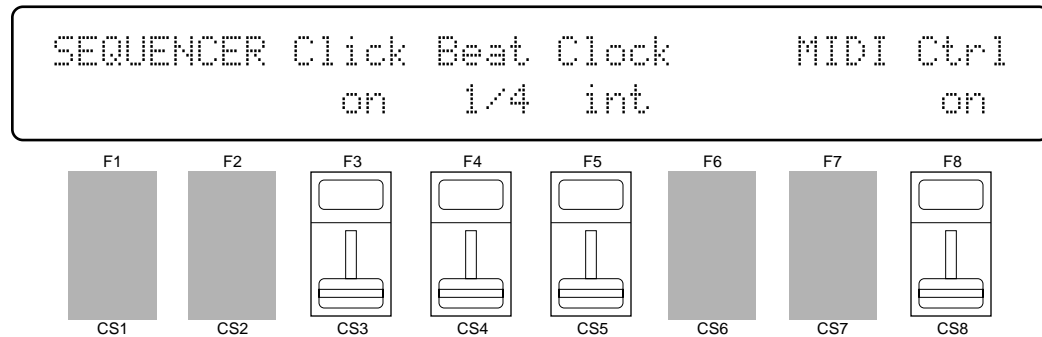
Click

Range: off, on
Controls: [CS3], [-1] [+1], Dial

Enables or disables the sequencer's metronome click sound.

The "off" setting means that the metronome never sounds. This setting is useful for recording free-tempo passages. The "on" setting causes the metronome to sound during real-time recording.

The volume of the click metronome sound can be adjusted via the rear-panel [CLICK VOLUME] control.

Beat

Range: 1/4, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32
Controls: [CS4], [-1] [+1], Dial

Effective only in the pattern mode, this parameter determines how many metronome beats occur between each accented beat.

Clock

Range: int, MIDI
Controls: [CS5], [-1] [+1], Dial

Determines whether the SY85 sequencer timing is synchronized by its own internal clock or an external MIDI clock.

"int" (internal) is the normal setting when the SY85 is being used alone. If you are using the SY85 with an external sequencer, MIDI computer, or other MIDI device, and you want the SY85 to be synchronized to the external device, set this function to MIDI. In the latter case, the external device must be connected to the SY85 MIDI IN connector, and must be transmitting an appropriate MIDI clock signal.

MIDI Ctrl
Range: off, on
Controls: [CS8], [-1] [+1], Dial

Enables or disables reception and transmission of MIDI start, stop, and continue messages; enables or disables MIDI clock transmission; and enables or disables MIDI song position pointer reception.

2: RECORD CONDITION

Since you might want to use the SY85 sequencer to record material from an external MIDI device rather than the instrument's own keyboard, the Receive Channel parameter on this page is provided so you can specify reception on any MIDI channel. The Aftertouch parameter is used to turn recording of aftertouch data on or off.

```
SEQUENCER Rec Condition        Rch    AT
                               kbd    off
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
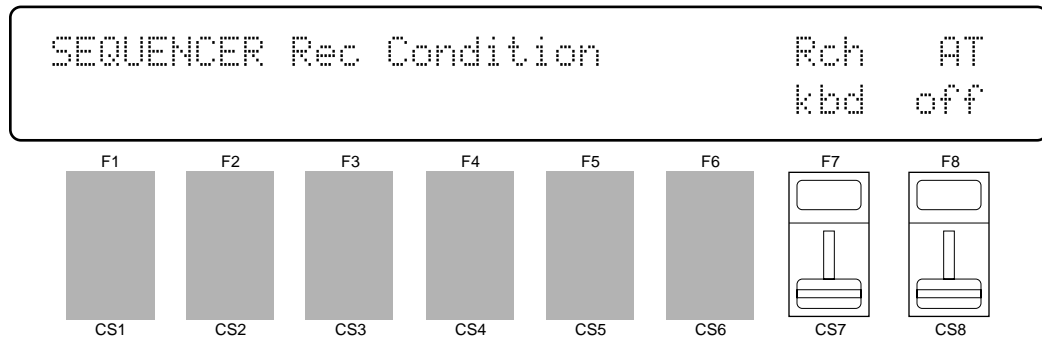
Rch (Receive channel)
Range: 1 … 16, omni, kbd
Controls: [CS7], [-1] [+1], Dial

Selects input from the SY85 keyboard, or sets the MIDI receive channel when data is to be recorded from an external MIDI device.

This function must be set to "kbd" if you will be recording from the SY85 keyboard. If you will be recording from an external MIDI controller such as a master keyboard or wind controller, however, select the appropriate MIDI channel or the "omni" mode for reception on all MIDI channels.

AT (Aftertouch)
Range: off, on
Controls: [CS8], [-1] [+1], Dial

Turns recording of after touch data on or off.

After touch data tends to be quite voluminous, and can use up the sequencer memory capacity quickly, For this reason, the default setting for after touch data recording is "off." turn this parameter "on" only if you specifically want to use an after touch effect.

3: ACCENT VELOCITY

Determine the velocity values of three accent types that can be entered in the song/pattern step record mode and in the pattern real-time record mode, and of the fixed velocity value for all record modes.

```
SEQUENCER Accent      ACC1 ACC2 ACC3 FIX
                       56   88  120  kbd
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
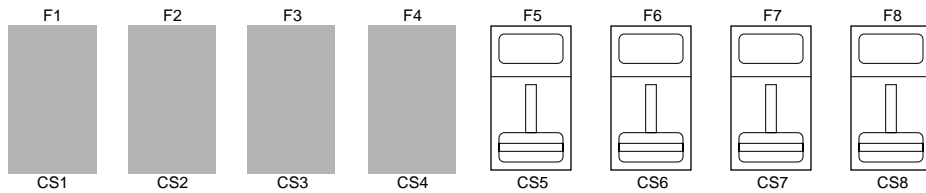
ACC1, ACC2, ACC3 (Accents 1 ... 3)
Range: 1 ... 127
Controls: [CS5], [CS6], [CS7], [-1] [+1], Dial

[CS5], [CS6], and [CS7] set the ACC1, ACC2, and ACC3 velocity values, respectively. Refer to the step recording instructions beginning on page 52 of the "Getting Started" manual for more information about the accents.

FIX
Range: 1 ... 127, kbd
Controls: [CS8], [-1] [+1], Dial

Set to "kbd" for normal velocity control during recording, or to a specific fixed velocity value, as required. The specified value will be used for all song and pattern recording.

4: SONG CHAIN

These parameters allow repeat playback of a single song, sequential playback of several songs, or repeat playback of a sequence of songs.

```
SEQUENCER Song        Loop:÷    Chain:↕
                      off       off
```
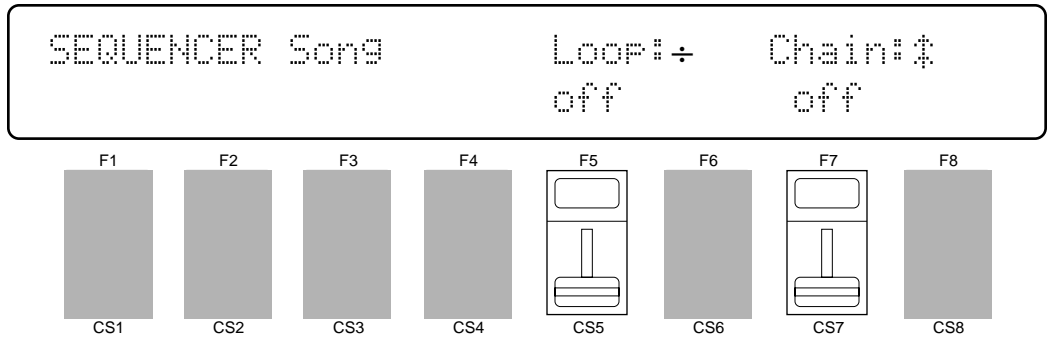
Loop

Range: off, on
Controls: [CS5], [-1] [+1], Dial

When this parameter is turned "on", a song (or chain of songs — see below) played back in the song play mode will repeat continuously until stopped manually. When "on" the loop symbol (÷) will apear on the display in the song play mode.

Chain

Range: off, on
Controls: [CS7], [-1] [+1], Dial

When this parameter is turned "on", consecutively-numbered songs that contain data will be played back in sequence in the song play mode, then playback will stop when the last song has finished. If the "Loop" parameter is also "on", the entire chain will repeat until stopped manually. When "on" the chain symbol (↕) will apear on the display in the song play mode.

BULK DUMP

Initiates MIDI bulk transmission of the selected voice, multi-play, and/or system data.

```
Bulk Dump    Type
             1 :all
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
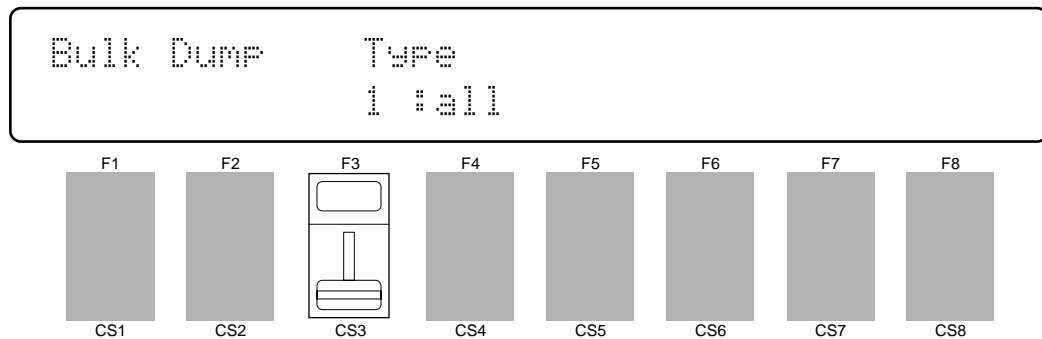
Type

Range: all, synth all, sequencer all, pattern all, 1 performance, 1 voice, 1 song
Controls: [CS3], [-1] [+1], Dial

Use [CS3] to select the type of data you want to transmit. The various data types are as follows:

1: all	All internal data.
2: synth all	All synthesizer data, including setup, performance combinations, and voices.
3: sequencer all	All sequencer data, including setup, songs,and patterns.
4: pattern all	All patterns.
5: 1 performance	The currently selected performance combination.
6: 1 voice	The currently selected voice.
7: 1 song	The currently selected song, including multi data.

Press [ENTER/YES] to begin the bulk dump procedure. The following confirmation display will appear:

```
Bulk Dump    Type          Are you sure ?
             1 :all
```
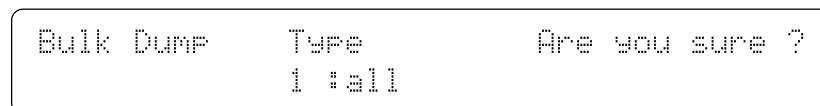
Press [ENTER/YES] again to confirm that you want to go ahead with the bulk dump operation, or press [EXIT/NO] to cancel.

When the data has been transmitted, "Completed!" will appear briefly on the display.

This function is useful for transferring synthesizer, sequencer, and/or system data from one SY85 to another. If the MIDI OUT of the transmitting SY85 is connected to the MIDI IN of the receiving SY85 via a MIDI cable, the receiving unit will automatically receive and load the data as long as its BULK RECEIVE PROTECT (page 214) function is turned "off" and it is set to the same device number as the transmitting SY85. Another possibility is to transfer the data to an external MIDI bulk data storage device for long-term storage.

1: CARD ALL LOAD/SAVE

Saves or loads all internal voices and performance combinations to or from a Yamaha MCD64 memory card plugged into to the DATA card slot.

```
CARD All              Card=<----->
[LOAD]SAVE      Card      ÷ Internal
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
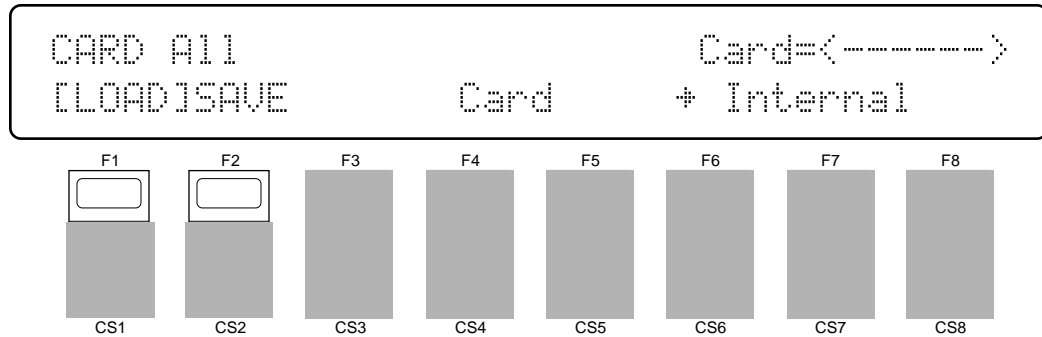
Before executing a load or save operation, check the card status as shown in the upper right corner of the display. If the display shows "Card=<SY85 >", a properly formatted MCD64 is installed and the load or save operation can be executed. If the wrong type of card (wrong format) or no card is installed in the DATA slot, however, the card status display will show "Card=<------>" and no load or save operation is possible. You will have to use the card format job, described next, to format a new memory card or one that has been formatted for use with a different instrument before the card can be used with the SY85. Also make sure that the card write protect switch (see MCD64 Memory Card operation manual) is set to the "OFF" position before attempting to save data to the card.

Press the [F1] key to highlight "LOAD" on the display if you want to load the voices and performance combinations from the card into the SY85's internal memory, or press the [F2] key to highlight "SAVE" on the display if you want to save the voice and performance data from the internal memory to the card.

Press [ENTER/YES] to begin the card load or save procedure. The following confirmation display will appear:

```
CARD All              Card=<----->
[LOAD]SAVE      Card      Are you sure ?
```
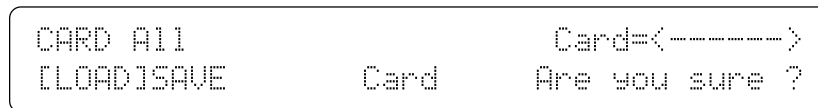
Press [ENTER/YES] again to confirm that you want to go ahead with the card load or save operation, or press [EXIT/NO] to cancel.

When the data has been loaded or saved, "Completed!" will appear briefly on the display.

2: CARD FORMAT

New memory cards, or cards that have been formatted for use with a different instrument or device, will have to be formatted specifically for use with the SY85. Note that this operation will erase any existing data on the card.

```
CARD Format                    Card=<—————>
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
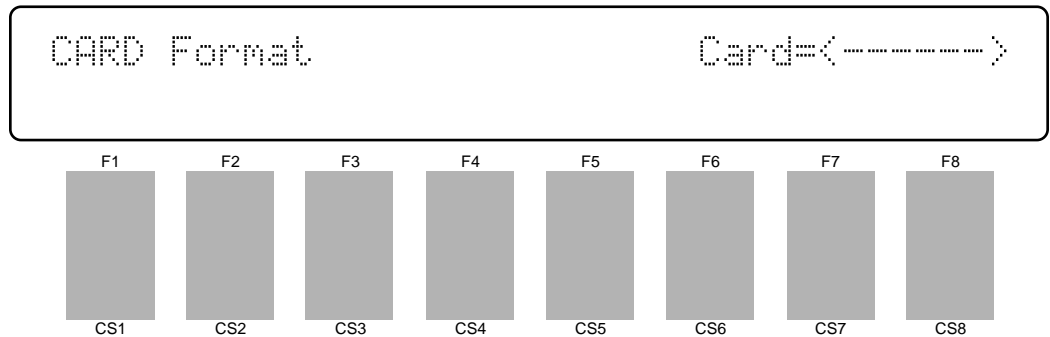
After plugging the card to be formatted into the DATA card slot, press [ENTER/YES] to begin the card format procedure. The following confirmation display will appear:

```
CARD Format              Card=<—————>
                         Are you sure ?
```

Press [ENTER/YES] again to confirm that you want to go ahead with the card format operation, or press [EXIT/NO] to cancel.

When the card has been formatted, "Completed!" will appear briefly on the display.

1: DISK ALL LOAD/SAVE
2: DISK ALL LOAD/SAVE SYNTH
3: DISK ALL LOAD/SAVE SEQ
4: DISK NSEQ LOAD/SAVE
5: DISK OTHER LOAD/SAVE

[UTILITY] → [DISK] → [MENU] ↱ **1:All Load/Save → [ENTER/YES]**
   ↳ **2:Synth All Load/Save → [ENTER/YES]**
   ↳ **3:Seq All Load/Save → [ENTER/YES]**
   ↳ **4:NSEQ Load/Save → [ENTER/YES]**
   ↳ **5:Other Load/Save → [ENTER/YES]**

These 5 disk utilities allow different types of data to be saved to or loaded from a 3.5" floppy disk inserted in the SY85 disk drive. Since the operation of all five utilities is almost identical, they will be described here in a single section.

Use only 2DD type disks that have been formatted for use with the SY85 via the DISK FORMAT function described on page 235.

● 1: Load or Save All Synthesizer & Sequencer Data

```
DISK All        <--NEW--*>
[LOAD]SAVE        Disk=01  + Internal
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
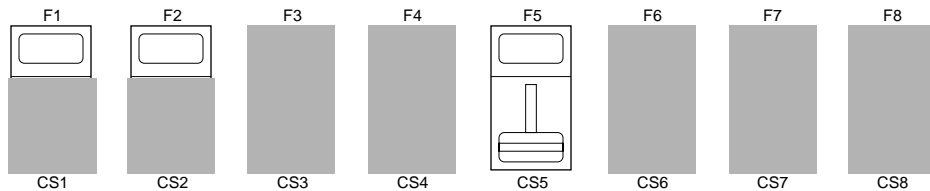
● 2: Load or Save All Synthesizer Data

```
DISK Synth All <--NEW--*>
[LOAD]SAVE        Disk=01  + Internal
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
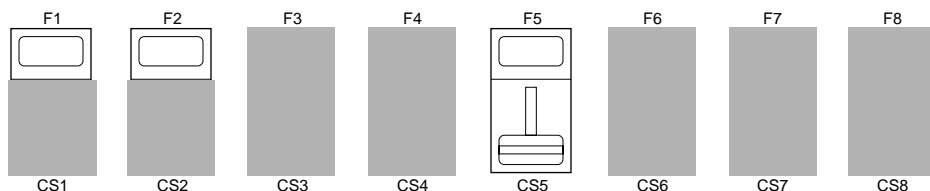
● 3: Load or Save All Sequencer Data

```
DISK Seq All    <--NEW--*>
[LOAD]SAVE      Disk=01  + Internal
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
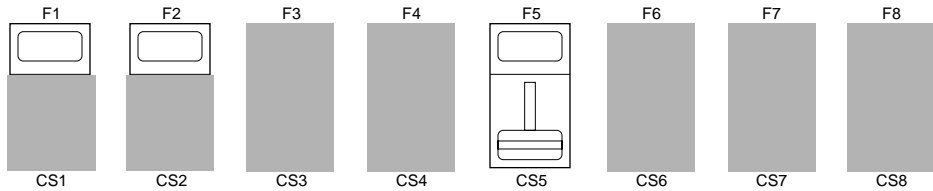
● 4: Load or Save 1 NSEQ File

```
DISK NSEQ       <--NEW--*>   <InitSong>
[LOAD]SAVE      Disk=01  + Internal:01
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
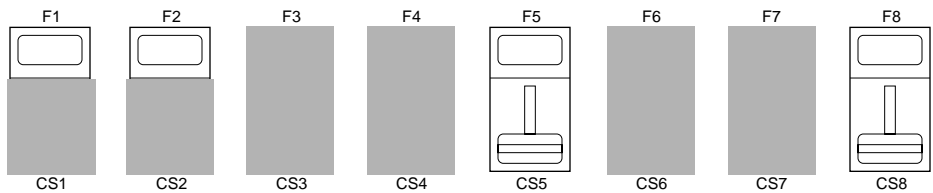
● 5: Load or Save 1 Song in Standard MIDI File Format

```
DISK Other      <--NEW--*>   <InitSong>
[LOAD]SAVE      Disk=01  + Internal:01
```
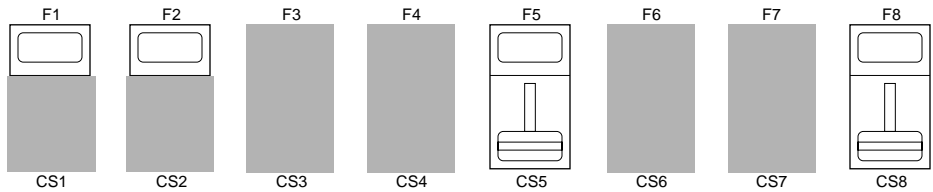
F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press the [F1] key to highlight "LOAD" on the display if you want to load data from the disk into the SY85 internal memory, or press the [F2] key to highlight "SAVE" on the display if you want to save data from the internal memory to the disk. Next, use [CS5] to select the number of the disk file (01 through 99) that you want to load from or save to. In the case of utilities number 4 and 5, you also need to select the number of the song (1 through 10) to be loaded or saved via [CS8].

Press [ENTER/YES] to begin the disk load or save procedure. If you select "SAVE", you have the option of pressing the [F3] key to give the data file a name before it is saved (the name is displayed above the file number — un-named files are automatically named "--NEW--*"). If you choose the "NAME" option, enter the file name in the normal way (see page 95)$^\lozenge$, then press [EN-TER/YES] to begin the disk load or save procedure. The following confirmation display will appear:

```
DISK All        <--NEW--*> Are you sure ?
[LOAD]SAVE        Disk=01  ✦ Internal
```

Press [ENTER/YES] again to confirm that you want to go ahead with the disk load or save operation, or press [EXIT/NO] to cancel.

When the data has been loaded or saved, "Completed!" will appear briefly on the display.

See page 321 for information on disk error messages.

$\lozenge$ Please note the following points if you will writing or modifying disk file names using a personal computer.

- The file extension ".Xnn" <u>must</u> be present ("nn" is the extension number).

- If two files having the same extension number exist on the same disk, only one will appear on the display. Please make sure that all files on the same disk have different extension numbers.

- Unlike voice names, file name can consist only of upper-case characters.

6: MDR

The MDR (MIDI Data Recorder) utilities allow MIDI bulk dump data to be transferred between different MIDI devices via the SY85, and saved to or loaded from floppy disk.

Engaging the MDR utilities required an extra confirmation step since all sequencer data in the SY85 song memory is erased when the MDR functions are used. This is because the sequencer memory is used as temporary storage for MDR data handled by the SY85.

```
MDR

                              Hit [ENTER]
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
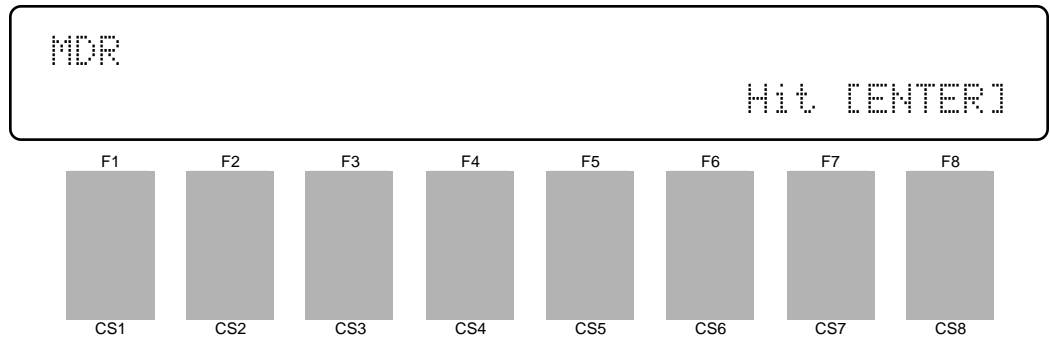
From this entry display press [ENTER/YES]. The following confirmation display will appear:

```
MDR                       Are you sure ?
**** Sequencer data will be erased ! ***
```
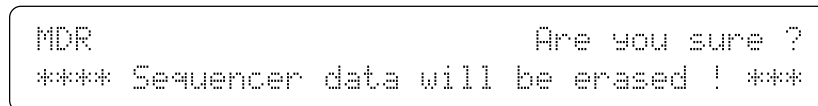
Press [ENTER/YES] again to access the MDR functions (erasing any song data in the process), or [EXIT/NO] to quit. Once in the MDR mode, you can use th PAGE [◄] and [►] keys to access the two display screens it includes.

Press [EXIT/NO] when you're ready to exit from the MDR mode.

● 1: MDR IN/OUT

This utility allows MIDI bulk data to be received from an external device and stored in the SY85 internal memory, after which it can be saved to disk by using the MDR SAVE utility, described next. In the same way, MIDI bulk data that has been loaded into the SY85 memory from disk using the MDR LOAD utility can be transmitted to an external device.

```
MDR                         Block Count=000
  [IN] OUT   INIT    Interval=01 DataNo=01
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
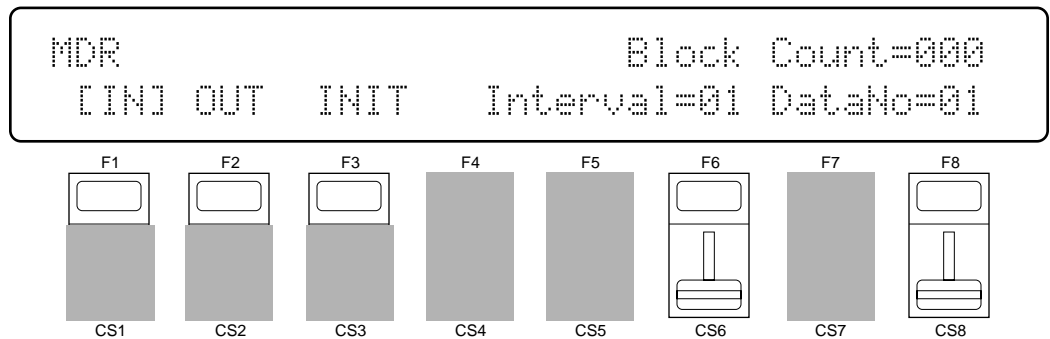
Up to 16 different MDR files can be retained in internal memory. Use [CS8] ("DataNo") to select the number of the file to be initialized, transmitted, or received.

The "Interval" parameter, adjustable from 01 to 10 via [CS6], sets a delay interval between transmitted data to conform to the timing requirements of some MIDI devices. Normally the "Interval" parameter can be set at "01" unless your receiving device has trouble receiving data from the SY85.

Initializing the MDR Memory

Press [F3] ("INIT") and then press [ENTER/YES] twice to initialize (clear) the selected file number. "Completed!" appears briefly when the data has been initialized.

Receiving MDR Data

Press [F1] ("IN") and then [ENTER/YES] to receive the data to the current file number. The number of data blocks received is displayed on the upper display line during reception.

Transmitting MDR Data

Press [F2] ("OUT") and then [ENTER/YES] to transmit the data in the current file number. The number of data blocks transmitted is displayed on the upper display line during transmission. "Completed!" appears briefly when the data has been transmitted.

● 2: MDR SAVE/LOAD

This utility is used to move MDR data between the internal memory and disk. A SAVE operation saves MDR data from the internal memory to the specified disk file number, and a LOAD operation loads MDR data to the internal memory from the specified disk file number.

```
MDR              <--NEW--*>
[LOAD]SAVE        Disk=01  + Internal
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
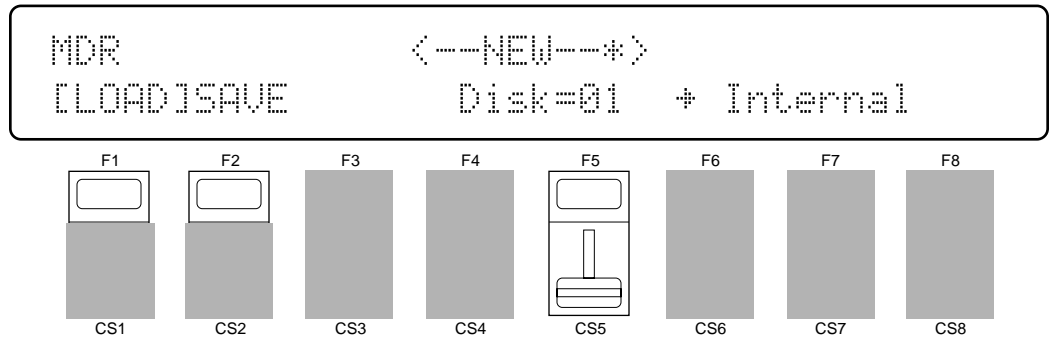
Press the [F1] key to highlight "LOAD" on the display if you want to load MDR data from the disk into the SY85 internal memory, or press the [F2] key to highlight "SAVE" on the display if you want to save MDR data from the internal memory to the disk. Next, use [CS5] to select the number of the disk file (00 through 99) that you want to load from or save to.

Press [ENTER/YES] to begin the MDR disk load or save procedure. If you select "SAVE", you have the option of pressing the [F2] key to give the data file a name before it is saved (the name is displayed above the file number — unnamed files are automatically named "--NEW--*"). If you choose the "NAME" option, enter the file name in the normal way (see page 95), then press [ENTER/YES] to begin the disk load or save procedure. The following confirmation display will appear:

```
MDR              <--NEW--*> Are you sure ?
[LOAD]SAVE        Disk=01  + Internal
```
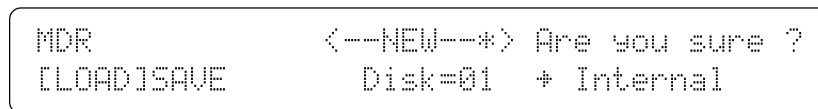
Press [ENTER/YES] again to confirm that you want to go ahead with the disk load or save operation, or press [EXIT/NO] to cancel.

When the data has been loaded or saved, "Completed!" will appear briefly on the display.

See page 321 for information on disk error messages.

7: RENAME/DELETE

These utilities allow disk files to be renamed or deleted.

```
DISK Rename/Del<           >    Type
[REN] DEL         Disk=01      1:All,Sy,Seq
```

F1   F2   F3   F4   F5   F6   F7   F8

CS1   CS2   CS3   CS4   CS5   CS6   CS7   CS8
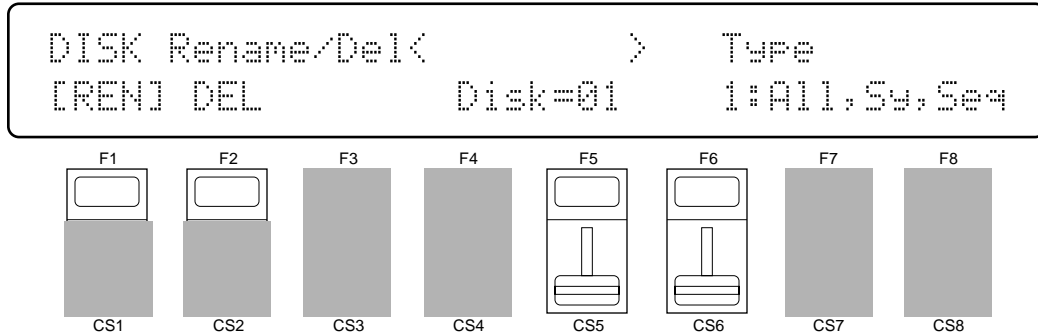
Press the [F1] key to highlight "REN" on the display if you want to rename a file, or press the [F2] key to highlight "DEL" on the display if you want to delete a file. Next, use [CS6] to select the type of data file you want to rename or delete ("1:All,Sy,Seq" for all synthesizer and sequencer files, "NSEQ" for NSEQ format files, "Other" for standard MIDI format files, and "MDR" for MDR files). Use [CS5] to select the number of the disk file (01 through 99) that you want to load from or save to. Only files that have the selected file type will show a file name above the file number.

If you selected "REN", enter the file name with the group and program keys as in "Voice Name" (see page 95), then press [ENTER/YES] to begin the rename procedure. If you selected "DEL", simply press [ENTER/YES] to begin the delete procedure. The following confirmation display will appear:

```
DISK Rename/Del<        > Are you sure ?
 REN [DEL]       Disk=01    1:All,Sy,Seq
```
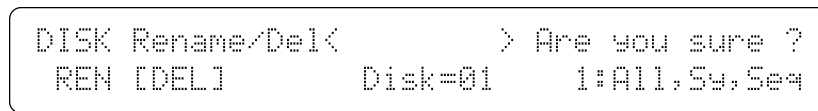
Press [ENTER/YES] again to confirm that you want to go ahead with the file rename or delete operation, or press [EXIT/NO] to cancel.

When the file has been renamed or deleted, "Completed!" will appear briefly on the display.

See page 321 for information on disk error messages.

8: BACKUP DISK

The disk backup utility makes it simple to create backup disks of important data.
Engaging the disk backup utility required an extra confirmation step since all sequencer data in the SY85 song memory is erased when the disk backup function is used. This is because the sequencer memory is used as temporary storage for the data copied from the source disk to the backup disk.

```
DISK Backup                    Are you sure ?
**** Sequencer data will be erased ! ***
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
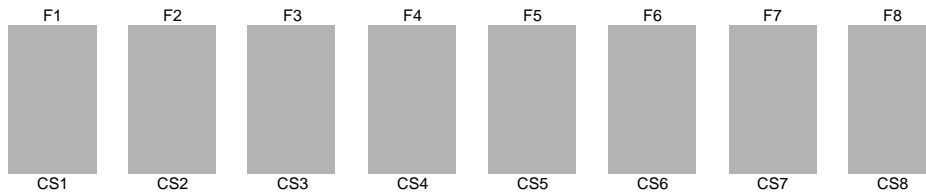
Press [ENTER/YES] to access the disk backup utility (erasing any song data in the process), or [EXIT/NO] to quit.

```
DISK Backup
Input source disk !           Hit[ENTER]
```

When this display appears, insert the source disk containing the data to be backed up, then press [ENTER/YES].

```
DISK Backup *** Now loading source *****
      ** BUSY ** Now executing !
```

"Now loading source" appears on the display while the data from the source disk is loaded into the SY85 memory.

```
DISK Backup
Input destination disk !      Hit[ENTER]
```

When this display appears, insert the blank, formatted disk to which the data is to be copied (i.e. the backup disk), then press [ENTER/YES].

```
DISK Backup *** Now saving destination *
       ** BUSY ** Now executing !
```

This display appears while the data is being saved to the destination disk, then "Completed!" will appear briefly when the data has been saved.

See page 321 for information on disk error messages.

9: DISK STATUS

This display shows the amount of remaining disk space in kilobytes. A newly formatted disk has a free area of approximately 713 kilobytes.

```
DISK Status
                    Free area=  0 Kbyte
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
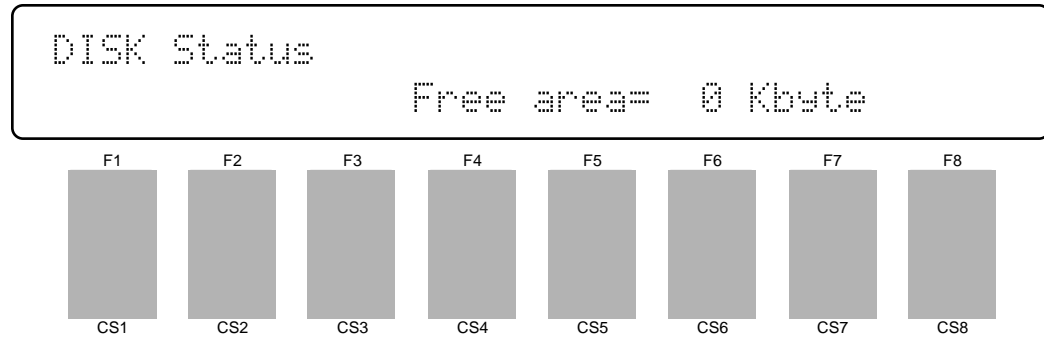
10: DISK FORMAT

The disk format utility must be used to format new floppy disks, or disks that have been formatted for use with other equipment, before they can be used with the SY85.

```
DISK Format
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
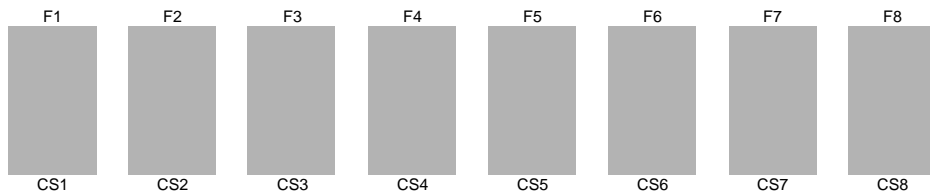
Press [ENTER/YES] to begin the format operation. Note that formatting a disk that already contains data will erase all data on the disk!

```
DISK Format                Are you sure ?
```

"Now formatting" appears on the display while the disk is being formatted, and the percent of the disk that has been formatted is shown on the lower display line.

When the disk has been completely formatted, "Completed!" will appear briefly on the display.

See page 321 for information on disk error messages.

WAVE EDIT MODE

Unlike the other SY85 modes, the WAVE mode is not directly accessed via the mode matrix. To access the WAVE mode, press the [UTILITY] key while holding the [SHIFT] key. This takes you directly to the WAVEFORM NUMBER SELECT screen, described on the following page.

[SHIFT] + [UTILITY] → WAVE MODE

```
Waveform Number Select          <InitWave>
                                Waveform=00
```
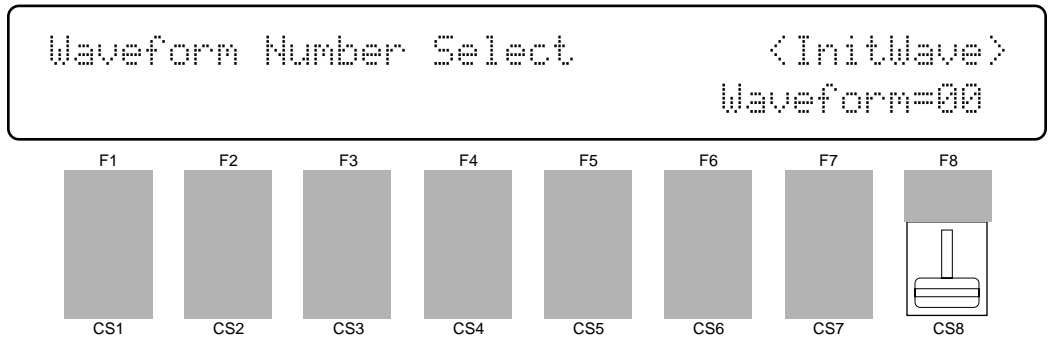

The other matrix UTILITY SUB MODE keys access the following functions:

[UTILITY]	[WAVE]
[SYNTH SETUP]	[EDIT]
[SEQ SETUP]	[INITIALIZE]
[MIDI]	[MIDI SAMPLE DUMP]
[CARD]	[CARD]
[DISK]	[DISK]

WAVE NUMBER SELECT

Specifies the number of the waveform to be edited using the WAVE EDIT functions, and the number of the waveform to which a sample loaded from disk will be assigned.

```
Waveform Number Select          <InitWave>
                                Waveform=00
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
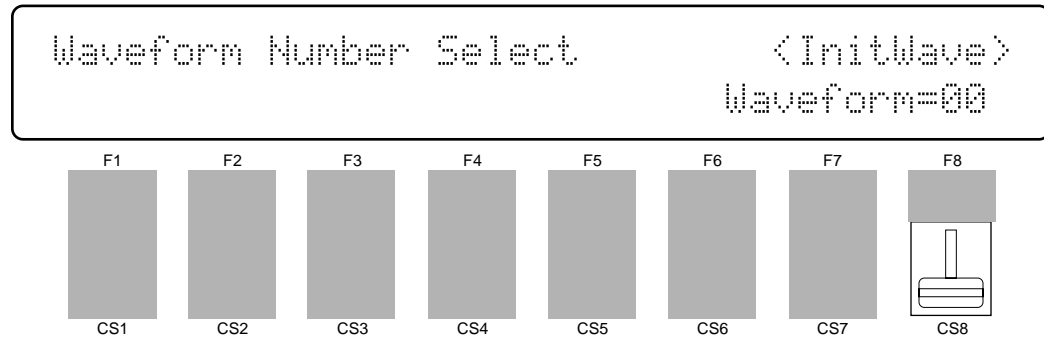
Waveform

Range: 00 … 63
Controls: [CS8], [-1] [+1], Dial

Use [CS8] to select the number of the waveform to be edited. The name of the selected waveform appears between parentheses on the upper display line.

1: WAVE ASSIGN
2: WAVE NAME

After pressing the [SYNTH SETUP] SUB MODE key (actually the [EDIT] key in the WAVE mode), the PAGE [◄] and [►] keys can be used to select the entry display for the WAVEFORM EDIT or SAMPLE EDIT functions. Select "WAVE-FORM EDIT".

```
WAVEFORM EDIT
                              Hit [ENTER]
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
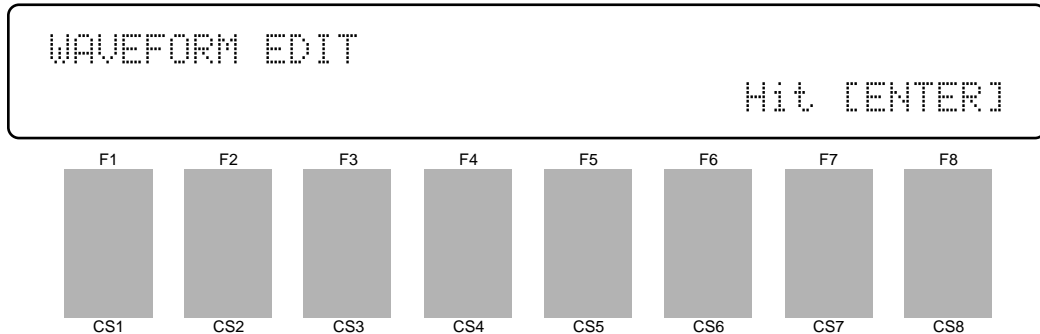
From this entry display press [ENTER/YES].

Press [EXIT/NO] when you're ready to exit from the WAVEFORM EDIT mode.

● 1: WAVE ASSIGN

If not already selected, press the PAGE [◄] key to select this screen.

This function assigns the selected sample(s) to a "waveform". A waveform can consist of anywhere from 0 to 63 samples. The SAMPLE EDIT functions described below allows each sample assigned to a waveform to be mapped to a specific range of the keyboard, as well as allowing the volume, pitch, and loop characteristics of each sample to be set individually.

```
WAVEFORM Assign  From To      <InitWave>
[ ON][OFF]        ──   ──
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
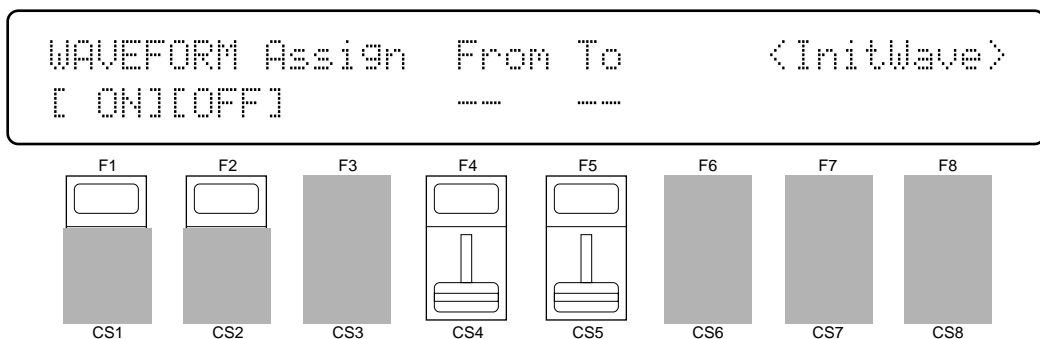
ON, OFF
Range: ON, OFF
Controls: [F1], [F2]

From/To

Range: 00 … 63
Controls: [CS4]/[CS5], [-1] [+1], Dial

Press [F1] to turn wave assignment on. If wave assignment is turned off, "---" appears in place of the "From" and "To" parameters. Use [CS4] and [CS5] to specify the range of samples to be assigned to the waveform. [CS4] specifies the first sample ("From") and [CS5] specifies the last sample ("To") in the range to be assigned. If both the "From" and "To" parameters are set to the same sample number, then only that sample is assigned to the waveform. If, for example, "From" is set to "2" and "To" is set to "5", then sample numbers 2, 3, 4, and 5 are assigned to the waveform.

● 2: WAVE NAME

If not already selected, press the PAGE [▶] key to select this screen.
This function can be used to assign a name of up to 8 characters to the current sample.


```
WAVEFORM Name                        "InitWave"
[CLR][UPR][LWR][SPC]                  [←]   [→]
```

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
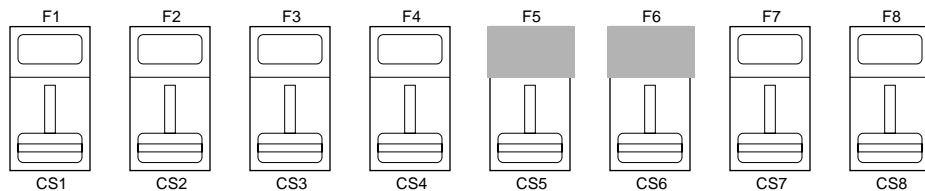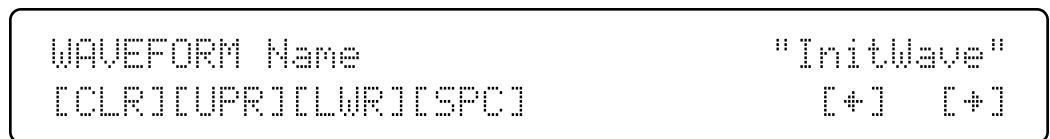
Name

Range: See character list, below
Controls: GROUP, PROGRAM, [F1] … [F4], [F7], [F8],
[CS1] … [CS8], [-1] [+1], Dial

Use the [F7] function key to move the character cursor to the left, and the [F8] function key to move the cursor to the right. Use the GROUP and PROGRAM keys to input a character at the cursor position. Each GROUP or PROGRAM key selects the three characters printed above it in sequence. It is also possible to use the [-1] and [+1] keys or dial to scroll through the available characters (see list below).

The sliders, [CS1] through [CS8], independently select characters for the corresponding character position: [CS1] selects the first character, [CS2] selects the second character, and so on.

The first four function keys also perform important functions: [F1] clears the entire name, [F2] selects upper-case characters for GROUP and PROGRAM key entry, [F3] selects lower-case characters for GROUP and PROGRAM key entry, and [F4] inserts a space at the cursor position.

GROUP key	PROGRAM key
[A]: A → B → C	[1]: Y → Z → 0
[B]: D → E → F	[2]: 1 → 2 → 3
[C]: G → H → I	[3]: 4 → 5 → 6
[D]: J → K → L	[4]: 7 → 8 → 9
[E]: M → N → O	[5]: * → & → _
[F]: P → Q → R	[6]: / → . → ,
[G]: S → T → U	[7]: ' → ! → ?
[H]: V → W → X	[8]: # → : → ;

1: SAMPLE KEY MAP
2: SAMPLE DATA

[SHIFT]+[UTILITY] → [SYNTH SETUP] → [MENU] → 2:Sample → [ENTER/YES] →
→ [ENTER/YES] → [MENU] ┬ 1:Key Map → [ENTER/YES]
└ 2:Data → [ENTER/YES]

After pressing the [SYNTH SETUP] SUB MODE key (actually the [EDIT] key in the WAVE mode), the PAGE [◄] and [►] keys can be used to select the entry display for the WAVEFORM EDIT or SAMPLE EDIT functions. Select "SAMPLE EDIT".

```
SAMPLE EDIT

                           Hit [ENTER]
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
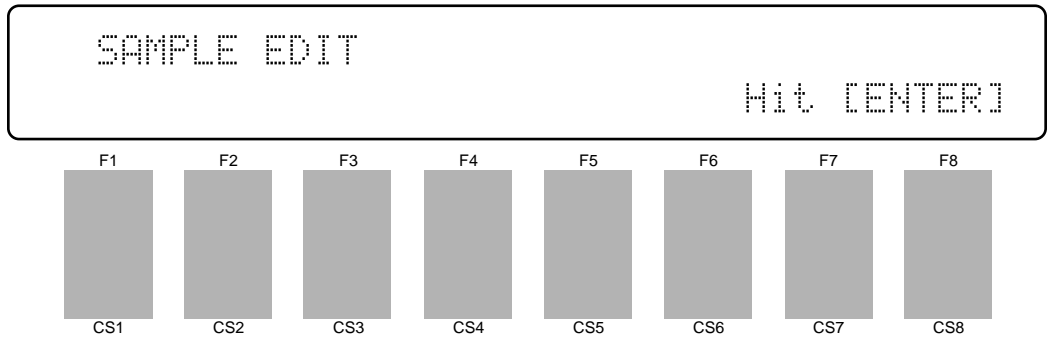
From this entry display press [ENTER/YES].
Press [EXIT/NO] when you're ready to exit from the SAMPLE EDIT mode.

● 1: SAMPLE KEY MAP

If not already selected, press the PAGE [◄] key to select this screen.
This function is used to "map" the samples assigned to the waveform to specific regions of the keyboard. If more than one sample is assigned, start by selecting the sample you want to map via the "Sample" parameter, then use the "Org", "Low", and "High" parameters to map the specified sample.

```
SMPL Map   Org  Low  High   ————————
           ———  ———  ———     Sample——
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
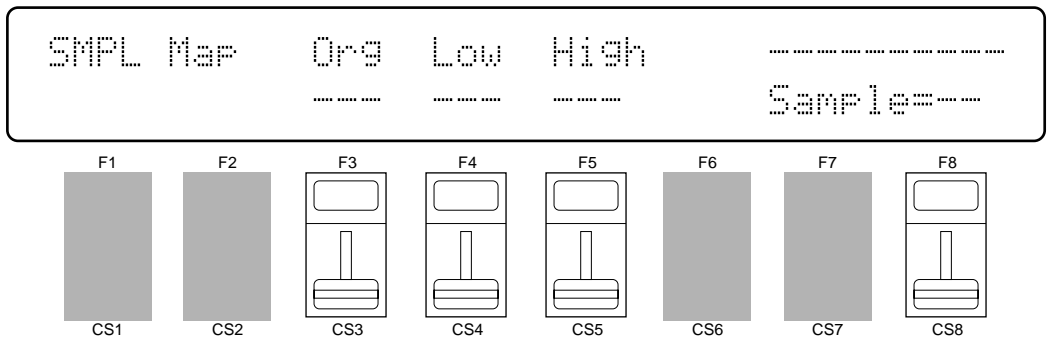
Org (Original note)
Range: C-2 … C8
Controls: [CS3], [-1] [+1], Dial, Keyboard

This parameter specifies the "original note" to which the pitch of the raw waveform will be assigned. In addition to the [CS3] slider, the original note can be specified by pressing the appropriate key on the keyboard if the cursor is located below the "Org" parameter.

If, for example, the raw sample has a pitch of C3, then setting this parameter to "C3" will cause the right note to sound when the C3 key is played. If, however, the same sample is mapped to C4, then playing the C4 key will produce a pitch of C3 while playing the C3 will produce a pitch of C2.

Low/High (Low and high limits)
Range: C-2 … C8
Controls: [CS4]/[CS5], [-1] [+1], Dial, Keyboard

These parameters specify the lowest and highest notes on the keyboard on which the selected sample will sound. In addition to the [CS4] and [CS5] sliders, the low and high limits can be specified by pressing the appropriate keys on the keyboard if the cursor is located below the corresponding parameter.

If "Low" is set to "C1" and "High" is set to "C3", for example, then the current sample will sound only when keys between (and including) C1 and C3 are played.

Sample
Range: 00 … 63
Controls: [CS8], [-1] [+1], Dial

Selects the sample to be mapped using the "Org", "Low", and "High" parameters.

The memory area in which the selected sample resides is shown on the upper display line ("Volatile" or "Non-vol."), and an inverted key symbol appears to the right of sample numbers that correspond to copy-protected samples.

● 2: SAMPLE DATA

If not already selected, press the PAGE [►] key to select this screen.

These functions allow the volume, pitch, and loop characteristics of each sample assigned to the waveform to be set individually. If more than one sample is assigned, start by selecting the sample you want to edit via the "Sample" parameter, then use the "Vol", "Pitch", "Loop", and "Typ" parameters to edit the specified sample.

```
SMPL Data   Vol Pitch Loop Typ ------------
------ ------- ------ --- Sample=--
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
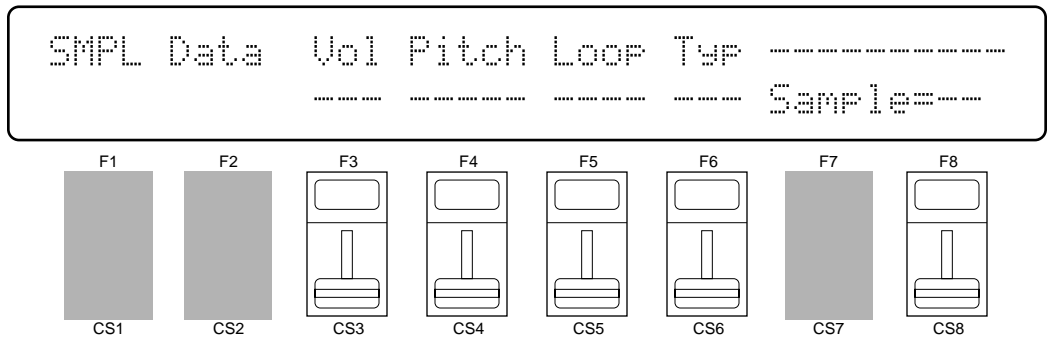
Vol (Volume)
Range: 0 … 127
Controls: [CS3], [-1] [+1], Dial

Sets the volume of the selected sample. A setting of "0" produces minimum volume (almost no sound), and a setting of "127" produces maximum volume.

Use this parameter to balance the levels of the different samples used in a waveform.

Pitch
Range: -4158 … +5376
Controls: [CS4], [-1] [+1], Dial

Fine-tunes the pitch of the selected range over a wide range. Minus (-) settings decrease the pitch of the sample while plus (+) settings raise the pitch of the sample. Each increment corresponds to a pitch change of approximately 1.7 cents (a "cent" is one-hundredth of a semitone).

Loop

Range: FOne, FLp, BOne, BLp
Controls: [CS5], [-1] [+1], Dial

Selects the type of loop to be used for playback of the selected sample. The settings are:

FOne = Forward one-shot. The sample is played in the normal forward direction and is not looped (i.e. the sound stops a the end of the sample).

FLp = Forward loop. The sample is played in the normal forward direction and is looped (repeated) as long as the key is held.

BOne = Backward one-shot. The sample is played backward and is not looped (i.e. the sound stops at the beginning of the sample).

BLp = Backward loop. The sample is played backward and is looped (repeated) as long as the key is held.

Typ (Loop type)

Range: Nrm, Alt
Controls: [CS6], [-1] [+1], Dial

This parameter is only available when either the "FLp" or "BLp" loop type is selected (see "Loop", above). When set to "Nrm" (normal), the sample is repeatedly looped in either the forward or reverse direction, as specified by the Loop parameter. If "Alt" (alternate) is selected, the sample is alternately played forward and backward.

Sample

Range: 00 … 63
Controls: [CS8], [-1] [+1], Dial

Selects the sample to be edited using the "Vol", "Pitch", "Loop", and "Typ" parameters.

The memory area in which the selected sample resides is shown on the upper display line ("Volatile" or "Non-vol."), and an inverted key symbol appears to the right of sample numbers that correspond to copy-protected samples.

WAVE INITIALIZE

This function erases and initializes all wave memory, the specified type of wave memory, or a single specified sample.

```
WAVE Initialize      Wave Mem Allocation
  Volatile Mem.         Non-vol.  Mem =off
```

F1	F2	F3	F4	F5	F6	F7	F8

CS1 CS2 CS3 CS4 CS5 CS6 CS7 CS8
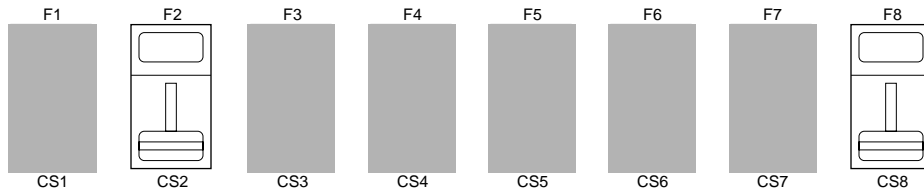
Mem (Memory type)
Range: Volatile, Non-vol., all
Controls: [CS2], [-1] [+1], Dial

Use [CS2] to select either the volatile wave memory ("Volatile Mem."), non-volatile wave memory (Non-vol. Mem."), or all wave memory to be cleared.

See "Wave Memory Expansion" on page 285 for additional information.

Wave Mem Allocation
Range: 0 … 63, off
Controls: [CS8], [-1] [+1], Dial

All numbers from the number specified here to 63 are allocated for use as non-volatile waveform and sample numbers.

Press [ENTER/YES] to begin the wave initialize procedure. The following confirmation display will appear:

```
WAVE Initialize      Wave  Are you sure ?
  Volatile Mem.        Non-vol.  Mem =off
```

Press [ENTER/YES] again to confirm that you want to go ahead with the initialize operation, or press [EXIT/NO] to cancel.

When the specified wave memory has been initialized, "Completed!" will appear briefly on the display.

1: SAMPLE DUMP RECEIVE

This function initiates reception of MIDI Sample Dump data from an external MIDI device. Both the MIDI IN and OUT terminals must be connected to the external MIDI device, since the SY85 transmits a sample dump request message to initiate transmission by the external device.

```
MIDI SAMPLE DUMP Receive        To
     Sample=00              Volatile Mem.
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
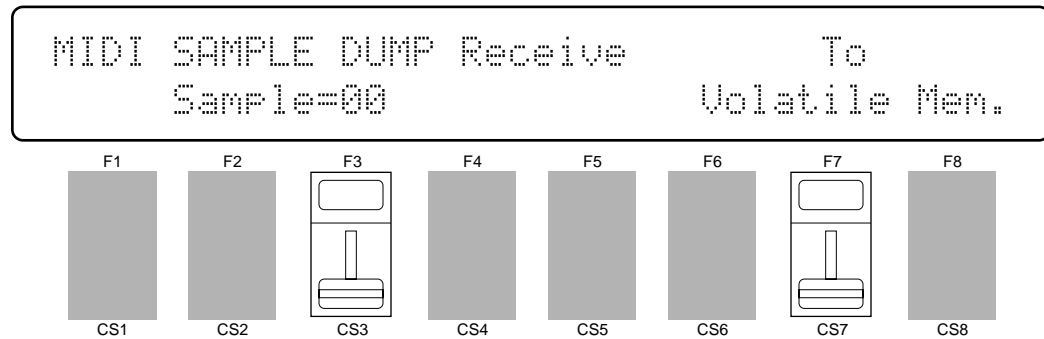
Sample
Range: 00 … 99
Controls: [CS3], [-1] [+1], Dial

To
Range: Volatile, Non-vol.
Controls: [CS7], [-1] [+1], Dial

Use [CS3] to select the number of the sample to be received from the transmitting device, and [CS7] to select the type of memory in which the data is to be stored (see "Wave Memory Expansion" on page 285 for additional information about the memory types).

When ready to receive the data, press the [ENTER/YES] key. This initiates transmission of a sample dump request message, then the SY85 waits for the sample dump data. The received data is appended to the sample data previously residing in the SY85 memory.

The [EXIT/NO] key can be used to cancel reception at any time.

2: SAMPLE DUMP TRANSMIT

This function initiates transmission of MIDI Sample Dump data to an external MIDI device.

```
MIDI SAMPLE DUMP Transmit
        Sample=--
```

F1	F2	F3	F4	F5	F6	F7	F8

| CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
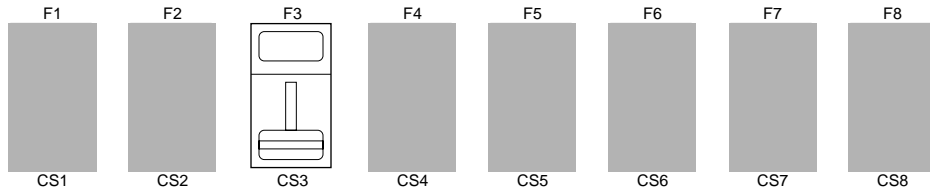
Sample

Range: 00 … 63
Controls: [CS3], [-1] [+1], Dial

Use [CS3] to select the number of the sample to be transmitted ("--" appears on the display if no samples are available).

When ready to transmit the data, press the [ENTER/YES] key. The following confirmation display will appear:

```
MIDI SAMPLE DUMP Transmit Are you sure ?
        Sample=--
```

Press [ENTER/YES] again to confirm that you want to go ahead with the transmission, or press [EXIT/NO] to cancel.

"MIDI Transmitting!" appears while the data is being transmitted, as does a countdown of the sample packets being sent.

The [EXIT/NO] key can be used to cancel reception at any time.

WAVE CARD LOAD

Loads all samples from a pre-programmed card plugged into the WAVEFORM card slot.

```
WAVE Card Load
                    Card    ✦ Volatile Mem.
```

F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

To
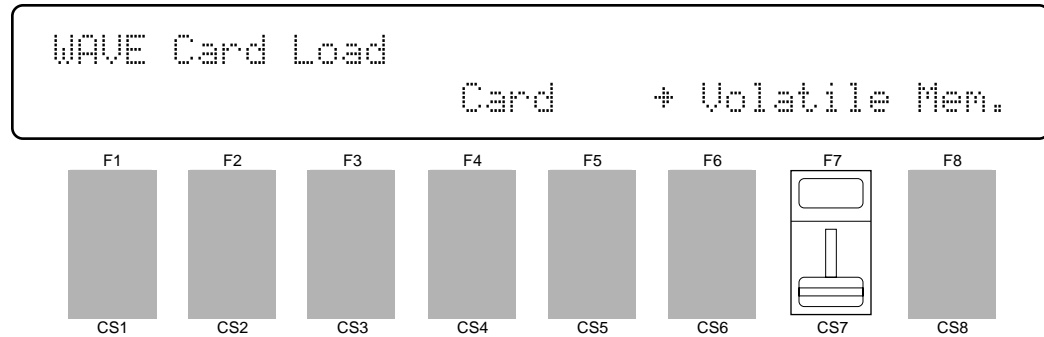
Range: Volatile, Non-vol.
Controls: [CS7], [-1] [+1], Dial

Use [CS7] to select the type of memory to which the data is to be stored (see "Wave Memory Expansion" on page 285 for additional information about the memory types).

Press [ENTER/YES] to begin the card load procedure. The following confirmation display will appear:

```
WAVE Card Load          Are you sure ?
                   Card    ✦ Volatile Mem.
```
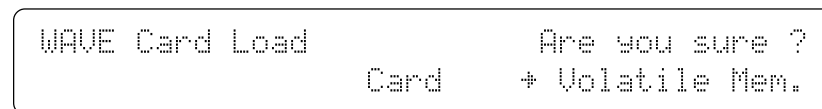
Press [ENTER/YES] again to confirm that you want to go ahead with the card load operation, or press [EXIT/NO] to cancel.

When the data has been loaded , "Completed!" will appear briefly on the display.

WAVE DISK LOAD/SAVE 1 SAMPLE

These utilities allow sample data to be saved to or loaded from a 3.5" floppy disk inserted in the SY85 disk drive.

Use only 2DD type disks that have been formatted for use with the SY85 via the DISK FORMAT function described on page 235.

```
WAVE Disk 1Smpl <--NEW--*>
[LOAD]SAVE        Disk=01 + Volatile Mem
```
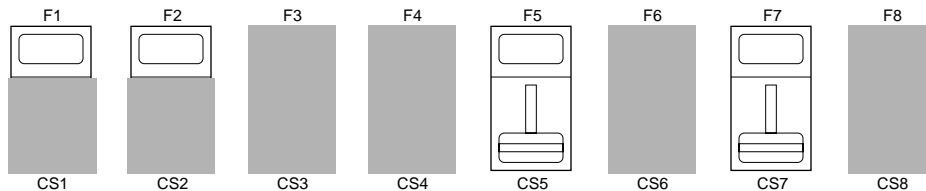
F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

Press the [F1] key to highlight "LOAD" on the display if you want to load data from the disk into the SY85 wave memory, or press the [F2] key to highlight "SAVE" on the display if you want to save data from the wave memory to the disk. Next, use [CS5] to select the number of the disk file (01 through 99) that you want to load from or save to. If you select "LOAD", [CS7] is used to select the type of wave memory to which to data is to be loaded ("Volatile" or "Non-vol."). If you select "SAVE", [CS7] is used to select the number of the sample to be saved (00 ... 63).

Press [ENTER/YES] to begin the disk load or save procedure. If you select "SAVE", you have the option of pressing the [F3] key to give the data file a name before it is saved (the name is displayed above the file number — unnamed files are automatically named "--NEW--*"). If you choose the "NAME" option, enter the file name with the group and program keys as in "Voice Name" (see page 95), then press [ENTER/YES] to begin the disk load or save procedure. The following confirmation display will appear:

```
WAVE Disk 1Smpl <--NEW--*>Are you sure ?
[LOAD]SAVE        Disk=01 + Volatile
```

Press [ENTER/YES] again to confirm that you want to go ahead with the disk load or save operation, or press [EXIT/NO] to cancel.

When the data has been loaded or saved, "Completed!" will appear briefly on the display.

See page 321 for information on disk error messages

WAVE MEMORY STATUS DISPLAY

Press and hold the [SHIFT] key at any time while in the WAVE mode to call the wave memory status display. This display shows the amount of free volatile and non-volatile memory in approximate kilobytes.

See "Wave Memory Expansion" on page 285 for information about volatile and non-volatile wave memory.

```
WAVE Memory Status   Volatile:   512kbytes
       (Free Area)   Non_vol.:  1024kbytes
```
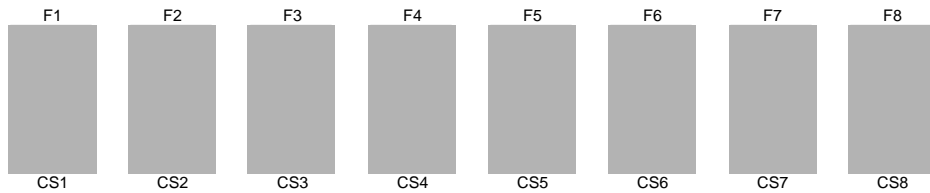
F1	F2	F3	F4	F5	F6	F7	F8
CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8

APPENDIX

EFFECTS

The SY85 features a sophisticated effect system that affords extraordinary sound-shaping potential. It includes two separate effect processors — referred to a EFFECT 1 and EFFECT 2 in this manual — that can be connected either in series or in parallel via the effect "Mode" parameter (page 105 for voice effects, page 128 for drum voice effects, page 37 for performance effects, page 166 for song mode effects). In simplified block diagram form the serial and parallel modes look like this:

The illustrations here are not available.

The SY85 has 90 different effects including reverb, early reflections, delay, pitch change, modulation and more. Any of these can be assigned to the EFFECT 1 and EFFECT 2 processors via the "EF1 Type" and "EF2 Type" parameters (page 105 for voice effects, page 128 for drum voice effects, page 37 for performance effects, page 166 for song mode effects). Each effect has up to 8 different parameters that can be edited via the EFFECT 1 PARAMETERS and EFFECT 2 PARAMETERS screens (page 109 for voice effects, page 135 for drum voice effects, page 44 for performance effects, page 173 for song mode effects). A complete list of the effects and their parameters is provided on page 274.

The 90 effects are further divided into three types:

Effects 00 - 30 .... "Single"
Effects 31 - 60 .... "Cascade"
Effects 61 - 90 .... "Dual"

The "Single" effects are, as the name applies, single effects.

The illustrations here are not available.

The "Cascade" effects actually include two effects connected in a cascade configuration. Effect number 33 (Flg → Rev), for example, includes cascaded flanger and reverb.

The illustrations here are not available.

The "Dual" effects include two effects connected in parallel.

The illustrations here are not available.

Clearly, the possibilities for combining effect modes with effect types allows a large variety of effect system configurations. Further versatility is provided by a range of parameters that allow the effect signals to be combined and mixed in a number of ways. The effect signal flow diagrams provided in the following section should help you understand the effect signal flow and how the various effect parameter function. Since the signal flow is somewhat different in the normal voice mode and the other modes (drum voice, performance, and song), different sets of flow diagrams are provided.

■ Effect Signal Flow Diagrams — Voice Mode

The following diagrams illustrate effect signal flow with different effect mode and effect type combinations in the normal voice mode. In the diagrams a diamond (◆) indicates an on/off switch parameter, and a block (■) indicates a continuously variable level or mix parameter. Although abbreviated in the diagrams, the direct and effect output signal paths are stereo.

● **EFFECT MODE = off.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = single. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = single. EFFECT 2 = cascade.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = single. EFFECT 2 = dual.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = cascade. EFFECT 2 = single.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = dual. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = cascade. EFFECT 2 = cascade.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = cascade. EFFECT 2 = dual.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = dual. EFFECT 2 = cascade.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = dual. EFFECT 2 = dual.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = single. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = single. EFFECT 2 = cascade.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = single. EFFECT 2 = dual.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = cascade. EFFECT 2 = single.**
(⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = dual. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = cascade. EFFECT 2 = cascade.**
(⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = cascade. EFFECT 2 = dual.**
  ($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = dual. EFFECT 2 = cascade.**
  ($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = dual. EFFECT 2 = dual.**

The illustrations here are not available.

■ Effect Signal Flow Diagrams — Drum Voice, Performance, and Song Modes

The following diagrams illustrate effect signal flow with different effect mode and effect type combinations in the drum voice, performance, and song modes. The "Tone Generator" block has slightly different meanings in each of these modes:

● **Drum Voice**
"Tone Generator" corresponds to the output from a single drum/ percussion instrument. The other instruments are mixed into the effect signal path behind the "Dry1" and "Dry2" parameters or the "Switch" parameters, as indicated by a star (★) in the diagrams.

● **Performance**
"Tone Generator" corresponds to the output from a single layer. The other layers are mixed into the effect signal path behind the "Dry1" and "Dry2" parameters or the "Switch" parameters, as indicated by a star (★) in the diagrams.

● **Song**
"Tone Generator" corresponds to the output from a single multi instrument. The other instruments are mixed into the effect signal path behind the "Dry1" and "Dry2" parameters or the "Switch" parameters, as indicated by a star (★) in the diagrams.

In the diagrams a diamond (◆) indicates an on/off switch parameter, and a block (■) indicates a continuously variable level or mix parameter. Although abbreviated in the diagrams, the direct and effect signal paths are stereo.

● **EFFECT MODE = off.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = single. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = single. EFFECT 2 = cascade.**
   ($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = single. EFFECT 2 = dual.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = cascade. EFFECT 2 = single.**
($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = dual. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = cascade. EFFECT 2 = cascade.**
  ($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = cascade. EFFECT 2 = dual.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = dual. EFFECT 2 = cascade.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = serial. EFFECT 1 = dual. EFFECT 2 = dual.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = single. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = single. EFFECT 2 = cascade.**
  ($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = single. EFFECT 2 = dual.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = cascade. EFFECT 2 = single.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = dual. EFFECT 2 = single.**

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = cascade. EFFECT 2 = cascade.**
  ($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = cascade. EFFECT 2 = dual.**
  ($\otimes$ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = dual. EFFECT 2 = cascade.**
  (⊗ = effect parameter number 8)

The illustrations here are not available.

● **EFFECT MODE = parallel. EFFECT 1 = dual. EFFECT 2 = dual.**

The illustrations here are not available.

■ The Effects & Their Parameters

* Parameters with "○" in the QE column are editable in the Quick Edit modes.

"Single" Effects

• 00 : Through

No.	PARAMETER	RANGE	QE
1~8	—	—	

• 01 : Rev. Hall1

No.	PARAMETER	RANGE	QE
1	Rev.Time [s]	0.3 ~ 30.0s	○
2	High	0.1 ~ 1.5	○
3	Diffusion	0 ~ 10	
4	Density	0 ~ 4	
5	ER/Rev Bal [%]	0 ~ 100%	○
6	Low Gain [dB]	-12 ~ +12dB	
7	High Gain [dB]	-12 ~ +12dB	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 02 : Rev. Hall2

No.	PARAMETER	RANGE	QE
1	Rev.Time [s]	0.3 ~ 30.0s	○
2	High	0.1 ~ 1.5	○
3	Diffusion	0 ~ 10	
4	Init Dly [ms]	0 ~ 150ms	○
5	Rev.Dly [ms]	0 ~ 100ms	
6	Density	0 ~ 4	
7	ER/Rev Bal [%]	0 ~ 100%	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 03 : Rev. Room1, 04 : Rev. Room2, 05 : Rev. Room3

No.	PARAMETER	RANGE	QE
1	Rev.Time [s]	0.3 ~ 30.0s	○
2	High	0.1 ~ 1.5	○
3	Diffusion	0 ~ 10	
4	Init Dly [ms]	0 ~ 200ms	○
5	Rev.Dly [ms]	0 ~ 130ms	
6	Density	0 ~ 4	
7	ER/Rev Bal [%]	0 ~ 100%	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 06 : Rev. Stage1, 07 : Rev. Stage2

No.	PARAMETER	RANGE	QE
1	Rev.Time [s]	0.3 ~ 30.0s	○
2	High	0.1 ~ 1.5	○
3	Diffusion	0 ~ 10	
4	Init Dly [ms]	0 ~ 60ms	
5	Rev.Dly [ms]	0 ~ 30ms	
6	Density	0 ~ 4	
7	ER/Rev Bal [%]	0 ~ 100%	○
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 08 : Rev. Plate

No.	PARAMETER	RANGE	QE
1	Rev.Time [s]	0.3 ~ 30.0s	○
2	High	0.1 ~ 1.5	○
3	Diffusion	0 ~ 10	
4	Init Dly [ms]	0 ~ 200ms	○
5	Rev.Dly [ms]	0 ~ 200ms	
6	Density	0 ~ 4	
7	ER/Rev Bal [%]	0 ~ 100%	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 09 : Rev. WhRoom, 10 : Rev. Tunnel, 11 : Rev. Canyon, 12 : Rev. Basmnt

No.	PARAMETER	RANGE	QE
1	Rev.Time [s]	0.3 ~ 30.0s	○
2	High	0.1 ~ 1.5	
3	Diffusion	0 ~ 10	
4	Width [m]	0.5 ~ 23.6m	○
5	Height [m]	0.5 ~ 23.6m	○
6	Depth [m]	0.5 ~ 23.6m	○
7	Wall Vary	0 ~ 30	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	

• 13 : Early Ref1, 14 : Early Ref2

No.	PARAMETER	RANGE	QE
1	Type	Smll, Lrge, Rnd, Rvrs, Plte, Sprg	○
2	Room Size	0.1 ~ 20.0	○
3	Liveness	0 ~ 10	
4	Diffusion	0 ~ 10	
5	Init Dly [ms]	0 ~ 150ms	○
6	FB Dly [ms]	0 ~ 400ms	
7	FB Gain [%]	-99 ~ +99%	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 15 : Gate Rev., 16 : Revrs Gate

No.	PARAMETER	RANGE	QE
1	Type	A, B	○
2	Room Size	0.1 ~ 20.0	○
3	Liveness	0 ~ 10	
4	Diffusion	0 ~ 10	
5	Init Dly [ms]	0 ~ 150ms	○
6	FB Dly [ms]	0 ~ 400ms	
7	FB Gain [%]	-99 ~ +99%	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 17 : Dly L, R

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 680ms	○
2	Rch Dly [ms]	0 ~ 680ms	○
3	FB1 Dly [ms]	0 ~ 680ms	
4	FB1 Gain [%]	-99 ~ +99%	○
5	FB2 Dly [ms]	0 ~ 680ms	
6	FB2 Gain [%]	-99 ~ +99%	○
7	FB High	0.1 ~ 1.0	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	

• 18 : Dly L, C, R

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 680ms	○
2	Rch Dly [ms]	0 ~ 680ms	○
3	Cntr Dly [ms]	0 ~ 680ms	○
4	FB Dly Sync.	Lch, Rch, Cntr, L, R	
5	FB Gain [%]	-99 ~ +99%	○
6	FB High	0.1 ~ 1.0	
7	HPF [Hz]	thru, 32 ~ 1000Hz	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	

• 19 : St. Echo

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 340ms	○
2	Rch Dly [ms]	0 ~ 340ms	
3	L FB Gain [%]	-99 ~ +99%	○
4	R Int Dly [ms]	0 ~ 340ms	○
5	R FB Dly [ms]	0 ~ 340ms	
6	R FB Gain [%]	-99 ~ +99%	○
7	FB High	0.1 ~ 1.0	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	

• 20 : Pit Chnge1

No.	PARAMETER	RANGE	QE
1	1 Pitch	-24 ~ +24	○
2	1 Fine	-100 ~ +100	
3	1 Dly [ms]	0 ~ 300ms	○
4	2 Pitch	-24 ~ +24	○
5	2 Fine	-100 ~ +100	
6	2 Dly [ms]	0 ~ 300ms	○
7	FB Gain [%]	-99 ~ +99%	
8	1/2 Bal. [%]	0 ~ 100%	

• 21 : Pit Chnge2

No.	PARAMETER	RANGE	QE
1	L Pitch	-24 ~ +24	
2	L Fine	-100 ~ +100	○
3	L Dly [ms]	0 ~ 300ms	○
4	L FB Gain [%]	-99 ~ +99%	
5	R Pitch	-24 ~ +24	
6	R Fine	-100 ~ +100	○
7	R Dly [ms]	0 ~ 300ms	○
8	R FB Gain [%]	-99 ~ +99%	

• 22 : Pit Chnge3

No.	PARAMETER	RANGE	QE
1	1 Pitch	-24 ~ +24	○
2	1 Fine	-100 ~ +100	
3	2 Pitch	-24 ~ +24	○
4	2 Fine	-100 ~ +100	
5	3 Pitch	-24 ~ +24	○
6	3 Fine	-100 ~ +100	
7	Dly Time [ms]	0 ~ 600ms	○
8	FB Gain [%]	-99 ~ +99%	

• 23 : Aural Exc. (Aural Exciter®*)

No.	PARAMETER	RANGE	QE
1	HPF [kHz]	500Hz ~ 16.0kHz	○
2	Enhance [%]	0 ~ 100%	○
3	Exc Level [%]	0 ~ 100%	○
4	Init Dly [ms]	0.0 ~ 99.9ms	○
5	—		
6	—		
7	—		
8	—		

* Aural Exciter® is a registered trademark and is manufactured under license from APHEX Systems Ltd.

• 24 : EG Flanger

No.	PARAMETER	RANGE	QE
1	Atck Time [ms]	2.0ms ~ 22.0s	
2	Atck Level [%]	0 ~ 100%	○
3	Rlse Time [ms]	2.0ms ~ 22.0s	
4	EG Target	Freq, Dpth	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 99.9ms	
8	Mod. FB Gain [%]	0 ~ 99%	

• 25: EG Chorus

No.	PARAMETER	RANGE	QE
1	Atck Time [ms]	2.0ms ~ 22.0s	
2	Atck Level [%]	0 ~ 100%	○
3	Rlse Time [ms]	2.0ms ~ 22.0s	
4	EG Target	Freq, Dpth	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	PM Depth [%]	0 ~ 100%	○
7	AM Depth [%]	0 ~ 100%	
8	High Gain [dB]	-12 ~ +12dB	

• 26 : EG Sympho

No.	PARAMETER	RANGE	QE
1	Atck Time [ms]	2.0ms ~ 22.0s	
2	Atck Level [%]	0 ~ 100%	○
3	Rlse Time [ms]	2.0ms ~ 22.0s	
4	EG Target	Freq, Dpth	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Init Dly [ms]	0 ~ 300ms	
8	High Gain [dB]	-12 ~ +12dB	

• 27 : EG Phaser

No.	PARAMETER	RANGE	QE
1	Atck Time [ms]	2.0ms ~ 22.0s	
2	Atck Level [%]	0 ~ 100%	○
3	Rlse Time [ms]	2.0ms ~ 22.0s	
4	EG Target	Freq, Dpth	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 5.0ms	
8	High Gain [dB]	-12 ~ +12dB	

• 28 : Rotary SP.

No.	PARAMETER	RANGE	QE
1	Mid Speed [Hz]	0.1 ~ 40.0Hz	○
2	Depth [%]	0 ~ 100%	○
3	TransTime [ms]	2.0ms ~ 22.0s	○
4	Sped Diff [Hz]	0.05 ~ 5.80Hz	○
5	L/M/H Switch	Low, Mid, High	
6	Low Gain [dB]	-12 ~ +12dB	
7	High Gain [dB]	-12 ~ +12dB	
8	—		

• 29 : Ring Mod.

No.	PARAMETER	RANGE	QE
1	Wave Type	tri, dwn, up, squ, sin	
2	Wave Freq [Hz]	1 ~ 180Hz	
3	PM Freq. [Hz]	0.1 ~ 40.0Hz	○
4	PM Depth [%]	0 ~ 100%	○
5	AM Freq. [Hz]	0.1 ~ 40.0Hz	○
6	AM Depth [%]	0 ~ 100%	○
7	Low Gain [dB]	-12 ~ +12dB	
8	High Gain [dB]	-12 ~ +12dB	

• 30 : D.Flt (Wah)

No.	PARAMETER	RANGE	QE
1	Flt Freq [kHz]	315Hz ~ 14.0kHz	○
2	Flt1 Q	1.0 ~ 5.0	○
3	Flt1 Gain [dB]	0 ~ +12dB	○
4	Flt2 Q	0.1 ~ 0.7	○
5	Wah Dly [ms]	0 ~ 680ms	
6	FB Dly [ms]	0 ~ 680ms	
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

"Cascade" Effects

• 31 : Dly → Rev

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 400ms	○
2	Rch Dly [ms]	0 ~ 400ms	○
3	FB Gain [%]	-99 ~ +99%	
4	Rev. Time [s]	0.3 ~ 30.0s	○
5	High	0.1 ~ 1.5	
6	ER/Rev Bal [%]	0 ~ 100%	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 32 : Echo → Rev

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 200ms	○
2	L FB Gain [%]	-99 ~ +99%	
3	Rch Dly [ms]	0 ~ 200ms	○
4	R FB Gain [%]	-99 ~ +99%	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 33 : Flg → Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 30.0ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 34 : Cho → Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	PM Depth [%]	0 ~ 100%	○
3	AM Depth [%]	0 ~ 100%	
4	Rev. Time [s]	0.3 ~ 30.0s	○
5	High	0.1 ~ 1.5	
6	Init Dly [ms]	0 ~ 200ms	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 35 : Sym → Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	High Gain [dB]	-12 ~ +12dB	
4	Rev. Time [s]	0.3 ~ 30.0s	○
5	High	0.1 ~ 1.5	
6	Init Dly [ms]	0 ~ 200ms	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 36 : Pha → Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 5.0ms	
4	Rev. Time [s]	0.3 ~ 30.0s	○
5	High	0.1 ~ 1.5	
6	Init Dly [ms]	0 ~ 200ms	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 37 : Pit → Rev

No.	PARAMETER	RANGE	QE
1	L Pitch	-24 ~ +24	
2	L Fine	-100 ~ +100	○
3	R Pitch	-24 ~ +24	
4	R Fine	-100 ~ +100	○
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1~ 1.5	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 38 : Exc → Rev (Aural Exciter®*)

No.	PARAMETER	RANGE	QE
1	HPF [kHz]	500Hz ~ 16.0kHz	○
2	Enhance [%]	0 ~ 100%	○
3	Exc Level [%]	0 ~ 100%	
4	Rev. Time [s]	0.3 ~ 30.0s	○
5	High	0 .1~ 1.5	
6	Init Dly [ms]	0 ~ 200ms	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

Aural Exciter® is a registered trademark and is manufactured under license from APHEX Systems Ltd.

• 39 : Dist → Rev

No.	PARAMETER	RANGE	QE
1	Dist. Level [%]	0 ~ 100%	○
2	Mid. Freq [kHz]	315Hz ~ 6.3kHz	
3	Mid. Gain [dB]	-12 ~ +12dB	
4	Trbl Gain [dB]	-12 ~ +12dB	○
5	Rev. Time [s]	0 .3~ 30.0s	○
6	High	0.1 ~ 1.5	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 40 : Pan → Rev

No.	PARAMETER	RANGE	QE
1	Type	L→R, R→L, L<>R	○
2	Speed	1 ~ 52	○
3	Fade In [%]	-100 ~ +100%	
4	L/R Depth [%]	0 ~ 100%	
5	Rev. Time [s]	0 .3~ 30.0s	○
6	High	0.1 ~ 1.5	
7	LPF [kHz]	1.0 ~ 16.0kHz, thru	
8	Rev Level [%]	0 ~ 100%	○

• 41 : Flg → Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 30.0ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 42 : Cho → Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	PM Depth [%]	0 ~ 100%	○
3	AM Depth [%]	0 ~ 100%	
4	High Gain [dB]	-12 ~ +12dB	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 43 : Sym → Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod Depth [%]	0 ~ 100%	○
3	—	—	
4	High Gain [dB]	-12 ~ +12dB	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 44 : Pha → Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 5.0ms	
4	High Gain [dB]	0.1 ~ +12dB	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 45 : Pit → Dly

No.	PARAMETER	RANGE	QE
1	L Pitch	-24 ~ +24	
2	L Fine	-100 ~ +100	○
3	R Pitch	-24 ~ +24	
4	R Fine	-100 ~ +100	○
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 46 : Exc → Dly (Aural Exciter®*)

No.	PARAMETER	RANGE	QE
1	HPF [kHz]	500Hz ~ 16kHz	○
2	Enhance [%]	0 ~ 100%	○
3	Exc Level [%]	0 ~ 100%	
4	Init Dly [ms]	0.0 ~ 80.0ms	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

Aural Exciter® is a registered trademark and is manufactured under license from APHEX Systems Ltd.

• 47 : Dist → Dly

No.	PARAMETER	RANGE	QE
1	Dist. Level [%]	0 ~ 100%	○
2	Mid. Freq [kHz]	315Hz ~ 6.3kHz	
3	Mid. Gain [dB]	-12 ~ +12dB	
4	Trbl Gain [dB]	-12 ~ +12dB	○
5	Lch Dly [ms]	0 ~ 680ms	○
6	Rch Dly [ms]	0 ~ 680ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 48 : Pan → Dly

No.	PARAMETER	RANGE	QE
1	Type	L→R, R→L, L<>R	○
2	Speed	1 ~ 52	○
3	Fade In [%]	-100 ~ +100%	
4	L/R Depth [%]	0 ~ 100%	
5	Lch Dly [ms]	0~ 680ms	○
6	Rch Dly [ms]	0~ 680ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 49 : Dist → Echo

No.	PARAMETER	RANGE	QE
1	Dist. Level [%]	0 ~ 100%	○
2	Mid. Freq [kHz]	315Hz ~ 6.3kHz	
3	Mid. Gain [dB]	-12 ~ +12dB	
4	Trbl Gain [dB]	-12 ~ +12dB	○
5	Lch Dly [ms]	0 ~ 340ms	○
6	Rch Dly [ms]	0 ~ 340ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Echo Level [%]	0 ~ 100%	

• 50 : EQ → Rev1

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq. [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	ER/Rev Bal [%]	0 ~ 100%	
8	Rev Level [%]	0 ~ 100%	○

• 51 : EQ → Rev2

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 250ms	
8	Rev Level [%]	0 ~ 100%	○

• 52 : EQ → ER

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Type	Smll, Lrge, Rnd, Rvrs, Plte, Sprg	○
6	Diffusion	0 ~ 10	
7	Init Dly [ms]	0 ~ 200ms	
8	ER Level [%]	0 ~ 100%	○

• 53 : EQ → Dly

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Lch Dly [ms]	0 ~ 680ms	○
6	Rch Dly [ms]	0 ~ 680ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Dly Level [%]	0 ~ 100%	

• 54 : EQ → Echo

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Lch Dly [ms]	0 ~ 340ms	○
6	Rch Dly [ms]	0 ~ 340ms	○
7	FB Gain [%]	-99 ~ +99%	
8	Echo Level [%]	0 ~ 100%	

• 55 : EQ → Flg

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. FB Gain [%]	0 ~ 99%	
8	Flg Level [%]	0 ~ 100%	

• 56 : EQ → Cho

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	PM Depth [%]	0 ~ 100%	○
7	AM Depth [%]	0 ~ 100%	
8	Cho Level [%]	0 ~ 100%	

• 57 : EQ → Sym

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Init Dly [ms]	0 ~ 300ms	
8	Sym Level [%]	0 ~ 100%	

• 58 : EQ → Pha

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 5.0ms	
8	Pha Level [%]	0 ~ 100%	

• 59 : EQ → Pit

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	L Fine	-999 ~ +999	○
6	R Fine	-999 ~ +999	○
7	Init Dly [ms]	0 ~ 300ms	
8	Pit Level [%]	0 ~ 100%	

• 60 : EQ → Pan

No.	PARAMETER	RANGE	QE
1	Low Freq [kHz]	32Hz ~ 2.0kHz	
2	Low Gain [dB]	-12 ~ +12dB	○
3	High Frq [kHz]	500Hz ~ 16.0kHz	
4	High Gain [dB]	-12 ~ +12dB	○
5	Type	L→R, R→L, L<>R	○
6	Speed	1 ~ 52	○
7	Fade In [%]	-100 ~ +100%	
8	L/R Depth [%]	0 ~ 100%	

"Dual" Effects

• 61 : Hall & Plate

No.	PARAMETER	RANGE	QE
1	Rev. Time [s]	0.3 ~ 30.0s	○
2	High	0.1 ~ 1.5	
3	Diffusion	0 ~ 10	
4	LPF [kHz]	1.0 ~ 16.0kHz, thru	○
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Diffusion	0 ~ 10	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 62 : Echo & Rev

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 200ms	○
2	L FB Gain [%]	-99 ~ +99%	
3	Rch Dly [ms]	0 ~ 200ms	○
4	R FB Gain [%]	-99 ~ +99%	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	ER/Rev Bal [%]	0 ~ 100%	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 63 : Flg & Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod Dly [ms]	0.1 ~ 30.0ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 200ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 64 : Cho & Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	PM Depth [%]	0 ~ 100%	○
3	AM Depth [%]	0 ~ 100%	
4	High Gain [dB]	-12 ~ +12dB	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 200ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 65 : Sym & Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	—		
4	High Gain [dB]	-12 ~ +12dB	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 200ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 66 : Pha & Rev

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 5.0ms	
4	High Gain [dB]	-12 ~ +12dB	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 200ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 67 : Pit & Rev

No.	PARAMETER	RANGE	QE
1	L Pitch	-24 ~ +24	
2	L Fine	-100 ~ +100	○
3	R Pitch	-24 ~ +24	
4	R Fine	-100 ~ +100	○
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 200ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 68 : Exc & Rev (Aural Exciter®*)

No.	PARAMETER	RANGE	QE
1	HPF [kHz]	500Hz ~ 16.0kHz	○
2	Enhance [%]	0 ~ 100%	○
3	Exc Level [%]	0 ~ 100%	
4	Init Dly [ms]	0.0 ~ 50.0ms	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 200ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

Aural Exciter® is a registered trademark and is manufactured under license from APHEX Systems Ltd.

• 69 : Dist & Rev

No.	PARAMETER	RANGE	QE
1	Dist. Level [%]	0 ~ 100%	○
2	Mid. Freq [kHz]	315Hz ~ 6.3kHz	
3	Mid. Gain [dB]	-12 ~ +12dB	
4	Trbl Gain [dB]	-12 ~ +12dB	○
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 200ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 70 : Pan & Rev

No.	PARAMETER	RANGE	QE
1	Pan Type	L→R, R→L, L<>R	○
2	Speed	1 ~ 52	○
3	Fade In [%]	-100 ~ +100%	
4	L/R Depth [%]	0 ~ 100%	
5	Rev. Time [s]	0.3 ~ 30.0s	○
6	High	0.1 ~ 1.5	
7	Init Dly [ms]	0 ~ 150ms	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 71 : Dly & Rev

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 400ms	○
2	Rch Dly [ms]	0 ~ 400ms	○
3	FB Gain [%]	-99 ~ +99%	
4	Rev. Time [s]	0.3 ~ 30.0s	○
5	High	0.1 ~ 1.5	
6	Diffusion	0 ~ 10	
7	ER/Rev Bal [%]	0 ~ 100%	
8	LPF [kHz]	1.0 ~ 16.0kHz, thru	○

• 72 : Dly & Dly

No.	PARAMETER	RANGE	QE
1	Lch Dly [ms]	0 ~ 340ms	○
2	Rch Dly [ms]	0 ~ 340ms	○
3	FB Gain [%]	-99 ~ +99%	
4	High Gain [%]	-12 ~ +12dB	
5	Lch Dly [ms]	0 ~ 340ms	○
6	Rch Dly [ms]	0 ~ 340ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 73 : Flg & Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [ms]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 30.0ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 74 : Cho & Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	PM Depth [%]	0 ~ 100%	○
3	AM Depth [%]	0 ~ 100%	
4	High Gain [dB]	-12 ~ +12dB	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 75 : Sym & Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	—	—	
4	High Gain [dB]	-12 ~ +12dB	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 76 : Pha & Dly

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod Depth [%]	0 ~ 100%	○
3	Mod Dly [ms]	0.1 ~ 5.0ms	
4	High Gain [dB]	-12 ~ +12dB	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 77 : Pit & Dly

No.	PARAMETER	RANGE	QE
1	L Pitch	-24 ~ +24	
2	L Fine	-100 ~ +100	○
3	R Pitch	-24 ~ +24	
4	R Fine	-100 ~ +100	○
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 78 : Exc & Dly (Aural Exciter®*)

No.	PARAMETER	RANGE	QE
1	HPF [kHz]	500Hz ~ 16.0kHz	○
2	Enhance [%]	0 ~ 100%	○
3	Exc Level [%]	0 ~ 100%	
4	Init Dly [ms]	0.0 ~ 80.0ms	
5	Lch Dly [ms]	0 ~ 600ms	○
6	Rch Dly [ms]	0 ~ 600ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

* Aural Exciter® is a registered trademark and is manufactured under license from APHEX Systems Ltd.

• 79 : Dist & Dly

No.	PARAMETER	RANGE	QE
1	Dist. Level [%]	0 ~ 100%	○
2	Mid. Freq [kHz]	315Hz ~ 6.3kHz	
3	Mid. Gain [dB]	-12 ~ +12dB	
4	Trbl Gain [dB]	-12 ~ +12dB	○
5	Lch Dly [ms]	0 ~ 680ms	○
6	Rch Dly [ms]	0 ~ 680ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 80 : Pan & Dly

No.	PARAMETER	RANGE	QE
1	Type	L→R, R→L, L<>R	○
2	Speed	1 ~ 52	○
3	Fade In [%]	-100 ~ +100%	
4	L/R Depth [%]	0 ~ 100%	
5	Lch Dly [ms]	0 ~ 680ms	○
6	Rch Dly [ms]	0 ~ 680ms	○
7	FB Gain [%]	-99 ~ +99%	
8	High Gain [dB]	-12 ~ +12dB	

• 81 : Flg & Flg

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 99.9ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 99.9ms	
8	Mod. FB Gain [%]	0 ~ 99%	

• 82 : Flg & Cho

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 99.9ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	PM Depth [%]	0 ~ 100%	○
7	AM Depth [%]	0 ~ 100%	
8	High Gain [dB]	-12 ~ +12dB	

• 83 : Flg & Sym

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 99.9ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Init Dly [ms]	0 ~ 300ms	
8	High Gain [dB]	-12 ~ +12dB	

• 84 : Flg & Pha

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 99.9ms	
4	Mod. FB Gain [%]	0 ~ 99%	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 5.0ms	
8	High Gain [dB]	-12 ~ +12dB	

• 85 : Cho & Cho

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	PM Depth [%]	0 ~ 100%	○
3	AM Depth [%]	0 ~ 100%	
4	High Gain [dB]	-12 ~ +12dB	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	PM Depth [%]	0 ~ 100%	○
7	AM Depth [%]	0 ~ 100%	
8	High Gain [dB]	-12 ~ +12dB	

• 86 : Cho & Sym

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	PM Depth [%]	0 ~ 100%	○
3	AM Depth [%]	0 ~ 100%	
4	High Gain [dB]	-12 ~ +12dB	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Init Dly [ms]	0 ~ 300ms	
8	High Gain [dB]	-12 ~ +12dB	

• 87 : Cho & Pha

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	PM Depth [%]	0 ~ 100%	○
3	AM Depth [%]	0 ~ 100%	
4	High Gain [dB]	-12 ~ +12dB	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 5.0ms	
8	High Gain [dB]	-12 ~ +12dB	

• 88 : Sym & Sym

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod.Depth [%]	0 ~ 100%	○
3	Init Dly [ms]	0 ~ 300ms	
4	High Gain [dB]	-12 ~ +12dB	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Init Dly [ms]	0 ~ 300ms	
8	High Gain [dB]	-12 ~ +12dB	

• 89 : Sym & Pha

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Init Dly [ms]	0 ~ 300ms	
4	High Gain [dB]	-12 ~ +12dB	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 5.0ms	
8	High Gain [dB]	-12 ~ +12dB	

• 90 : Pha & Pha

No.	PARAMETER	RANGE	QE
1	Mod. Freq [Hz]	0.1 ~ 40.0Hz	○
2	Mod. Depth [%]	0 ~ 100%	○
3	Mod. Dly [ms]	0.1 ~ 5.0ms	
4	High Gain [dB]	-12 ~ +12dB	
5	Mod. Freq [Hz]	0.1 ~40.0Hz	○
6	Mod. Depth [%]	0 ~ 100%	○
7	Mod. Dly [ms]	0.1 ~ 5.0ms	
8	High Gain [dB]	-12 ~ +12dB	

WAVE MEMORY EXPANSION

The SY85 comes with 512 kilobytes of internal wave RAM memory for storage of wave data loaded from floppy disk or via the MIDI interface (MIDI sample dump). The internal wave memory is not backed up like the voice, performance, and song memories, and is therefore "volatile" (i.e. the contents of the memory are lost when the SY85 power is turned off).

Extra memory modules can be added to the SY85 to expand the wave memory to a maximum of 3.5 megabytes. Two types of expansion memory are available:

Yamaha SYEMB06 Memory Expansion Modules

One or two Yamaha SYEMB06 Memory Expansion Modules can be plugged into expansion slots provided on the SY85 bottom panel. Each SYEMB06 provides 512 kilobytes. With two SYEMB06 modules installed, you have a total of 1.5 megabytes of wave memory (512 kilobytes internal + 1 megabyte external). Unlike the internal wave memory, SYEMB06 memory is "non-volatile", so its contents are retained even when the SY85 power is turned off.

SIMM Memory Modules

The SY85 will also accommodate up to 2 megabytes of memory in standard SIMM memory modules (the type used in popular personal computers: 8-bit, 1-megabyte, 80-nanosecond or faster types only). SIMM memory is volatile, so its contents will be lost whenever the SY85 power is turned off.

Please note that when SIMM memory is wave memory installed, wave data can not be loaded into memory from a waveform card.

■ Memory Installation

⊘
CAUTION

Memory Installation can erase internal memory!
Be sure to safe all internal data to disk or card before installing
memory.

1

Turn the SY85 power switch OFF, and disconnect the AC power cord
from the mains outlet.

2

Place the SY85 face down on a stable, padded surface.

3

Locate the small cover on the bottom panel, and remove the six screws
that hold it in place (figure 1).

The illustrations here are not available.

4

Below the cover you will see two recessed panels. The left panel has
slots for two SYEMB06 Memory Expansion Modules, while the right panel
accomodates two SIMM memory modules. While both SIMM modules must
be installed at the same time, you can install either one or two SYEMB06
modules, as required.

5

   INSTALLING SYEMB06 MODULES: A RAM card adapter (provided) is required to install SYEMB06 modules. Assemble the SYEMB06 and adapter as shown in figure 3.

The illustrations here are not available.

6

   When installing a single SYEMB06 use slot number 1 (figure 4). Install a second SYEMB06 in slot number 2. If you will not be installing SIMM memory modules skip ahead to step number 8.

The illustrations here are not available.

7

INSTALLING SIMM MODULES: The right panel accomodates compatible SIMM memory modules. Two SIMM modules (1 megabyte each) must be installed in connector CN13.

Keyboard

SIMM

The illustrations here are not available.

8

Replace the expansion slot cover and attach with the six screws removed in step 3.

!!
IMPORTANT

Once installed, SYEMB06 memory expansion modules <u>cannot be removed</u> (the plastic rivets lock the boards in place). Have your Yamaha dealer remove installed modules to avoid possible damage.

INITIAL DATA & BLANK CHART

● **INITIAL PERFORMANCE "InitPerf"**

Performance Name	InitPerf				Total Level	80			
Voice Number	A : I_I_A1		B : I_I_A1		Quick Edit		A	B	C	D
	C : I_I_A1		D : I_I_A1		AEG	R1	+0	+0	+0	+0
Layer	A	B	C	D		R2, R3	+0	+0	+0	+0
Volume	127	127	127	127		R4	+0	+0	+0	+0
Pan	+0	+0	+0	+0		RR	+0	+0	+0	+0
Note Shift	+0	+0	+0	+0		Vel. Sense	+0	+0	+0	+0
Fine Tune	+0	+0	+0	+0	LFO	Speed	+0	+0	+0	+0
Note Limit	C-2~G8	C-2~G8	C-2~G8	C-2~G8		Depth	+0	+0	+0	+0
Vel. Limit	1~127	1~127	1~127	1~127	Filter	Cutoff	──	──	──	──
CS3 Enable	off	off	off	off		Resonance	──	──	──	──
CS4 Enable	off	off	off	off		Vel. Sense	+0	+0	+0	+0
Effect Send	A	B	C	D	Con-trol	AT	LyrA	LyrA	LyrA	LyrA
Switch	(1a) 1b (2a) (2b)	(1a) 1b (2a) 2b	(1a) 1b (2a) 2b	(1a) 1b (2a) (2b)		MW	LyrA	LyrA	LyrA	LyrA
						FC	LyrA	LyrA	LyrA	LyrA
Level	127	127	127	127		AT > MW	off	off	off	off
Vel.Sense	+0	+0	+0	+0		MW > AT	off	off	off	off
Key.Scale	+0	+0	+0	+0		Sustain	on	on	on	on
Dry Output Select	(D1) (D2)	(D1) (D2)	(D1) (D2)	(D1) (D2)		Pitch EG	on	on	on	on
						Fixed Note	──	──	──	──

Effect	Mode off / serial / (parallel)				
Effect 1	Type 06 : Rev.Stage1				
	Output Level a 100		Output Level b ──		Wet : Dry 50 : 50
Param.	P1 2.2	P2 0.7	P3 8	P4 8	P5 0	P6 4	P7 65	P8 Thru
Effect 2	Type 57 : EQ → Sym				
	Output Level a ──		Output Level b 100		Wet : Dry 50 : 50
Param.	P1 500	P2 +0	P3 3.2	P4 +0	P5 0.8	P6 60	P7 0	P8 100
Mix Level	EF2 ──		Insert 1b ──	Insert 2a ──	Insert 2b 0
Control 1	Parameter off		Min 0	Max 100	Additional ──
Control 2	Parameter off		Min 0	Max 100	Additional ──
Effect LFO	Waveform tri		Speed 0	Delay 0	

● INITIAL NORMAL VOICE "InitVce"

Voice Name	InitVce	Total Level	127

Oscillator	Mode (normal) / fixed	LFO		Phase 0°	Delay 0

	Waveform	P244 Sin		Waveform	tri
	Fine Tune	+0		Speed	64
	Fixed Note	+0		Depth	Pmod 0 · Amod 0 · Fmod 0
	Random	0		SpeedSens	Random 0 · Vel. +0
	Reverse	off			Key Scale +0

Amplitude EG

Amplitude EG	Mode (atk) / hold	L2 63	L3 63		
	(R1) / HT 63	R2 63	R3 63	R4 0	RR 50

Scaling	BP1	BP2	BP3	BP4	Sensitivity	Velocity	+0
Note	C1	G2	E4	C6		Atk Rate Vel	+0
Offset	+0	+0	+0	+0		Rate Scaling	+0

Filter

Filter	Cutoff freq	———	Type THRU	Band ——	Reso ——	CTRL LFO

EG	L0 +0	L1 +0	L1 +0	L3 +0	L4 +0	RL1 +0	RL2 +0
	RS +0	R1 +0	R2 +0	R3 +0	R4 +0	RR1 +0	RR2 +0

Scaling	BP1	BP2	BP3	BP4	Sensitivity	Type	EGshift
Note	C1	G2	E4	C6		Velocity	+0
Offset	+0	+0	+0	+0		Attack Rate Vel	+0

Pitch

Pitch	Range 1 oct	Velocity +0	Rate Velocity +0

EG	L0 +0	L1 +0	L2 +0	L3 +0	RL1 +0	
	RS 63	R1 63	R2 63	R3 63	RR 63	Loop on / (off)

Controller

Controller	PB Range 2	Volume Low Limit 0	Sustain SW enable

MW	Amod 0	Pmod 0	Fmod 0	EG Bias +0	Cutoff +0	
FC	Amod 0	Pmod 0	Fmod 0	EG Bias +0	Cutoff +0	
AT	Amod 0	Pmod 0	Fmod 0	EG Bias +0	Cutoff +0	Pitch Bias
CS3(#=18)	Parameter ———		Min 0	Max 100		
CS4(#=19)	Parameter ———		Min 0	Max 100		

Effect			Mode off / serial / parallel						Send 127		EF2 Mix ———	
	Effect 1		Type: 06 : Rev.Stage1									
			Output Level a 100				Output Level b ———			Wet :Dry 50 : 50	
		Param.	P1 2.2	P2 0.7	P3 8	P4 8	P5 0	P6 4	P7 65		P8 Thru
	Effect 2		Type: 57 : EQ → Sym									
			Output Level a ———				Output Level b 100				
		Param.	P1 500	P2 +0	P3 3.2	P4 +0	P5 0.8	P6 60	P7 0		P8 100
	Control 1		Parameter off		Min 0		Max 100		Additional ———		
	Control 2		Parameter off		Min 0		Max 100		Additional ———		
	Effect LFO		Waveform tri			Speed 0			Delay 0		

● INITIAL DRUM VOICE "DR PTN"

Voice Name	DR PTN		Total Level	127		Vol Lo Limit	0

Note	Waveform	Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut
C1	P156 BD6	120	+0	+0	+0	off	norm	off	a b	(a)(b)	127	+0	①②
C#1	P155 BD5	120	+0	+0	+0	off	norm	off	a b	(a)(b)	127	+0	①②
D1	P154 BD4	121	+0	+0	+0	off	norm	off	a b	(a)(b)	127	+0	①②
D#1	P153 BD3	127	+0	+0	+0	off	norm	off	a b	(a)(b)	127	+0	①②
E1	P170 Tom2	103	−6	+0	−24	off	long	off	(a)(b)	(a)(b)	97	+0	①②
F1	P170 Tom2	105	−1	+0	−8	off	long	off	(a)(b)	(a)(b)	90	+0	①②
F#1	P170 Tom2	112	+3	+0	+8	off	norm	off	(a)(b)	(a)(b)	95	+0	①②
G1	P170 Tom2	119	+8	+0	+21	off	norm	off	(a)(b)	(a)(b)	98	+0	①②
G#1	P152 BD2	115	−3	+0	+0	off	norm	off	a b	(a)(b)	127	+0	①②
A1	P151 BD1	119	−5	+0	+0	off	norm	off	a b	(a)(b)	127	+0	①②
A#1	P162 SD4	119	+0	+0	+0	off	norm	off	(a)(b)	(a)(b)	109	+0	①②
B1	P169 Tom1	127	−4	+0	−29	off	verylong	off	(a)(b)	(a)(b)	94	+0	①②
C2	P169 Tom1	127	+0	+0	−10	off	long	off	(a)(b)	(a)(b)	98	+0	①②
C#2	P160 SD2	127	−1	−21	+0	off	norm	off	(a)(b)	(a)(b)	123	+2	①②
D2	P169 Tom1	127	+6	+0	+9	off	long	off	(a)(b)	(a)(b)	89	+0	①②
D#2	P168 SDside	127	+0	+0	+0	off	norm	off	(a)(b)	(a)(b)	124	+3	①②
E2	P161 SD3	127	−2	+0	+0	off	long	off	(a)(b)	(a)(b)	113	+3	①②
F2	P169 Tom1	127	+12	+0	+20	off	long	off	(a)(b)	(a)(b)	92	+0	①②
F#2	P193 Clap	127	+0	+0	+8	off	short	off	(a)(b)	(a)(b)	99	+0	①②
G2	P196 Cowbell	127	+0	+0	+13	off	short	off	(a)(b)	(a)(b)	104	+0	①②
G#2	P188 Cabasa	127	−5	+0	−26	off	short	off	(a)(b)	(a)(b)	90	+0	①②
A2	P173 HH light	127	+0	+0	+12	1	short	off	a (b)	(a)(b)	111	+0	①②
A#2	P174 HH mid	127	+0	+0	+12	1	norm	off	a (b)	(a)(b)	94	+0	①②
B2	P171 HH Open	127	+0	+0	+12	1	long	off	a (b)	(a)(b)	87	+0	①②
C3	P176 Crash	127	+0	+0	−11	off	verylong	off	a (b)	(a)(b)	102	+0	①②
C#3	P176 Crash	127	+3	+1	−5	off	verylong	off	a (b)	(a)(b)	109	+0	①②
D3	P177 Ride	127	+0	+0	+8	off	verylong	off	a (b)	(a)(b)	107	+0	①②
D#3	P178 RideBell	127	+0	+0	+17	off	verylong	off	a (b)	(a)(b)	107	+0	①②
E3	P189 CongaLo	97	+2	+0	−17	off	norm	off	(a)(b)	(a)(b)	100	+0	①②

Note	Waveform		Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut
										Key Parameters →	Effect Send →			
F3	P190	CongaMt	116	+0	+0	+8	off	norm	off	ⓐⓑ	ⓐⓑ	100	+0	①②
F#3	P191	CongaSlp	117	+0	+0	+19	off	norm	off	ⓐⓑ	ⓐⓑ	100	+0	①②
G3	P187	Bongo	127	+0	+0	−15	off	short	off	ⓐⓑ	ⓐⓑ	98	+0	①②
G#3	P187	Bongo	127	+3	+0	+15	off	norm	off	ⓐⓑ	ⓐⓑ	99	+0	①②
A3	P201	Timbale	100	−4	+0	−2	off	norm	off	ⓐⓑ	ⓐⓑ	99	+0	①②
A#3	P201	Timbale	108	−1	+0	+22	off	norm	off	ⓐⓑ	ⓐⓑ	99	+0	①②
B3	P198	Tmbrine	127	+0	+0	−12	off	norm	off	ⓐⓑ	ⓐⓑ	101	+0	①②
C4	P194	Clave	127	+0	+0	−25	off	short	off	ⓐⓑ	ⓐⓑ	108	+0	①②
C#4	P200	Temp1Bl K	127	+0	+0	+30	off	short	off	ⓐⓑ	ⓐⓑ	127	+0	①②
D4	P186	AgogoHi	98	−3	+0	−21	off	long	off	ⓐⓑ	ⓐⓑ	102	+0	①②
D#4	P186	AgogoHi	102	+2	+0	−7	off	long	off	ⓐⓑ	ⓐⓑ	104	+0	①②
E4	P204	Whistle	127	−2	+0	+13	off	norm	off	ⓐⓑ	ⓐⓑ	97	+0	①②
F4	P157	BD7	104	−3	+0	+0	off	long	off	a b	ⓐⓑ	127	+0	①②
F#4	P195	AnaCwbl	127	+0	+0	−24	off	norm	off	ⓐⓑ	ⓐⓑ	127	+0	①②
G4	P158	BD8	104	−4	+0	+0	off	long	off	a b	ⓐⓑ	127	+0	①②
G#4	P181	HHclAnlg	127	+3	+37	+0	1	norm	off	a ⓑ	ⓐⓑ	113	+0	①②
A4	P166	SD8	127	−2	−23	+0	off	norm	off	a ⓑ	ⓐ b	127	+0	①②
A#4	P180	HHopAnlg	127	+0	+0	+0	1	short	off	a ⓑ	ⓐⓑ	111	+0	①②
B4	P167	SD9	127	−6	+0	+0	off	norm	off	a ⓑ	ⓐⓑ	127	+0	①②
C5	P116	SynBs6	127	−12	+0	+0	off	short	off	a b	ⓐⓑ	127	+0	①②

Effect		Mode off / serial / ⟨parallel⟩						
	Effect 1	Type: 50 : EQ→Rev1						
		Output Level a ————		Output Level b 100		Wet : Dry 100 : 0		
		Param.	P1 2.0	P2 +12	P3 500	P4 +12	P5 1.4	P6 0.9	P7 86	P8 36
	Effect 2	Type: 52 : EQ→ER						
		Output Level a ————		Output Level b 100		Wet : Dry 100 : 0		
		Param.	P1 2.0	P2 +12	P3 500	P4 +12	P5 smll	P6 10	P7 0	P8 9
	Mix Level	EF2 ————		Insert 1b 100		Insert 2a ————		Insert 2b 100
	Control 1	Parameter Ef1 prm8		Min 0		Max 98		Additional ————
	Control 2	Parameter Ef2 prm8		Min 0		Max 42		Additional ————
	Effect LFO	Waveform tri		Speed 0		Delay 0		

● INITIAL DRUM VOICE "DR Zones"

Voice Name	DR Zones		Total Level		127		Vol Lo Limit			0		
		Key Parameters						Effect Send				
Note	Waveform	Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1 EF2		Lvel	VelS	DryOut
C1	P151 BD1	127	+0	+3	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
C#1	P152 BD2	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
D1	P153 BD3	127	+0	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
D#1	P154 BD4	127	−1	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
E1	P155 BD5	127	+0	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
F1	P156 BD6	127	+0	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
F#1	P157 BD7	127	+0	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
G1	P158 BD8	127	−2	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
G#1	P159 SD1	127	+0	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
A1	P160 SD2	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
A#1	P161 SD3	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
B1	P162 SD4	127	+2	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
C2	P163 SD5	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
C#2	P164 SD6	127	+0	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
D2	P165 SD7	127	+0	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
D#2	P166 SD8	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
E2	P167 SD9	127	+0	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
F2	P168 SDside	127	+0	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
F#2	P169 Tom1	127	−5	+0	+20	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
G2	P169 Tom1	127	+0	+0	+10	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
G#2	P169 Tom1	127	+3	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
A2	P169 Tom1	127	+6	+0	−10	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
A#2	P170 Tom2	127	−6	+0	+20	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
B2	P170 Tom2	127	−3	−14	+10	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
C3	P170 Tom2	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
C#3	P170 Tom2	127	+4	+0	−10	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
D3	P171 HH Open	127	+0	+0	+0	1	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
D#3	P172 HH Pedal	127	+0	+0	+0	1	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
E3	P173 HH light	127	+0	+0	+0	1	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②

				Key Parameters						Effect Send			
Note	Waveform		Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut
F3	P174	HH mid	127	+0	+0	+0	1	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
F#3	P175	HH heavy	127	+0	+0	+0	1	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
G3	P180	HHopAnlg	127	+0	+0	+0	2	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
G#3	P181	HHclAnlg	127	+0	+0	+0	2	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
A3	P176	Crash	127	+0	+0	+0	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
A#3	P177	Ride	127	+0	+0	+0	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
B3	P178	RideBell	127	+0	+0	+0	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
C4	P179	AnlgTom	127	-7	+0	-20	off	short	off	ⓐⓑ	ⓐⓑ	127	+0	①②
C#4	P179	AnlgTom	127	-5	+0	-10	off	short	off	ⓐⓑ	ⓐⓑ	127	+0	①②
D4	P179	AnlgTom	127	-1	+0	+0	off	short	off	ⓐⓑ	ⓐⓑ	127	+0	①②
D#4	P179	AnlgTom	127	+1	+0	+10	off	short	off	ⓐⓑ	ⓐⓑ	127	+0	①②
E4	P179	AnlgTom	127	+4	+0	+20	off	short	off	ⓐⓑ	ⓐⓑ	127	+0	①②
F4	P192	AnaConga	127	+0	+0	-10	off	norm	off	ⓐⓑ	ⓐⓑ	127	+0	①②
F#4	P192	AnaConga	127	-3	+0	+10	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
G4	P193	Clap	127	+0	+0	+0	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
G#4	P195	AnaCwbl	127	+0	+0	+0	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
A4	P194	Clave	127	-3	+0	+0	5	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
A#4	P183	RezClick	127	+0	+0	-15	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
B4	P198	Tmbrine	127	+0	+0	+0	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+0	①②
C5	P122	SynBs9	127	-24	+0	+0	off	short	off	ⓐⓑ	ⓐⓑ	127	+0	①②

Effect		Mode off / serial / ⟨parallel⟩						
	Effect 1	Type: 47 : Dist → Dly						
		Output Level a ———		Output Level b 100%		Wet : Dry 70 : 30		
		Param.	P1 25	P2 2.5	P3 +8	P4 +2	P5 500	P6 250	P7 +30	P8 0
	Effect 2	Type: 50 : EQ → Rev1						
		Output Level a ———		Output Level b 100%		Wet : Dry 40 : 60		
		Param.	P1 200	P2 +12	P3 800	P4 +6	P5 1.3	P6 0.8	P7 13	P8 18
	Mix Level	EF2 ———		Insert 1b 100		Insert 2a ———		Insert 2b 100
	Control 1	Parameter Out2 wet		Min 0		Max 100		Additional ———
	Control 2	Parameter EF1 prm8		Min 0		Max 35		Additional ———
	Effect LFO	Waveform tri		Speed 0		Delay 0		

● INITIAL DRUM VOICE "DR GMIDI"

Voice Name	DR GMIDI		Total Level		127		Vol Lo Limit			0		
	Key Parameters						Effect Send					
Note	Waveform	Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1　EF2		Lvel	VelS	DryOut
C1	P151　BD1	127	+0	+3	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
C#1	P168　SDside	127	+2	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
D1	P160　SD2	127	+0	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
D#1	P193　Clap	127	+1	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
E1	P166　SD8	127	+1	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
F1	P169　Tom1	127	−8	+0	−18	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
F#1	P174　HH mid	127	+1	+0	+0	1	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
G1	P169　Tom1	127	−6	+0	−16	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
G#1	P172　HH Pedal	127	+0	+0	+0	1	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
A1	P169　Tom1	127	−3	+0	−12	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
A#1	P171　HH Open	127	+2	+0	+0	1	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
B1	P169　Tom1	127	+2	+0	−6	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
C2	P169　Tom1	127	+7	+0	+3	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
C#2	P176　Crash	127	+0	+0	−10	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
D2	P169　Tom1	127	+12	+0	+10	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
D#2	P177　Ride	127	+0	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
E2	P176　Crash	127	−4	+0	+15	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
F2	P178　RideBell	127	+0	+0	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
F#2	P198　Tmbrine	127	−2	+0	+0	off	long	off	ⓐⓑ ⓐⓑ		127	+0	①②
G2	P176　Crash	127	−8	+0	+15	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
G#2	P196　Cowbell	127	+0	+0	+15	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
A2	P176　Crash	127	+0	+0	+0	off	verylong	on	ⓐⓑ ⓐⓑ		127	+0	①②
A#2	P191　CongaSlp	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
B2	P177　Ride	127	−2	−14	+0	off	verylong	off	ⓐⓑ ⓐⓑ		127	+0	①②
C3	P187　Bongo	127	+3	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
C#3	P187　Bongo	127	−2	−2	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
D3	P190　CongaMt	127	+0	−14	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
D#3	P189　CongaLo	127	+5	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②
E3	P189　CongaLo	127	+0	+0	+0	off	norm	off	ⓐⓑ ⓐⓑ		127	+0	①②

Note	Waveform	Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut
									Key Parameters spans Waveform–Rvs; Effect Send spans EF1–DryOut				
F3	P201 Timbale	P183	127	+0	+0	+0	5	verylong	(a)(b)	(a)(b)	off	127	①②
F#3	P201 Timbale	~~RezClick~~	127	+0	+0	−15	off	verylong	(a)(b)	(a)(b)	off	127	①②
G3	P186	P218	127	4	+0	+15	off	verylong	(a)(b)	(a)(b)	off	127	①②
G#3	AgogoHi	~~OrcHit2~~	127	+0	+0	+0	off	norm	(a)(b)	(a)(b)	off	127	①②
A3	P186	127	+0	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
A#3	AgogoHi	127	−5	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
B3	P188 Cabaso	127	+0	+0	+25	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
C4	P197 Maracas	127	−5	+0	+19	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
C#4	P204 Whistle	127	+0	+0	−20	off	norm	off	(a)(b)	(a)(b)	127	+0	①②
D4	P204 Whistle	127	+0	+0	−18	off	long	off	(a)(b)	(a)(b)	127	+0	①②
D#4	P195 AnaCwbl	127	−2	+0	+0	off	norm	off	(a)(b)	(a)(b)	127	+0	①②
E4	P179 AnlgTom	127	−4	+0	+0	off	long	off	(a)(b)	(a)(b)	127	+0	①②
F4	P194 Clave	127	+0	+0	+0	off	norm	off	(a)(b)	(a)(b)	127	+0	①②
F#4	P192 AnaConga	127	+0	+0	+0	off	long	off	(a)(b)	(a)(b)	127	+0	①②
G4	P194 Clave	127	−4	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
G#4	P184 VcDrmBD	127	+0	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
A4	P185 VcDrmSD	127	−10	+0	+25	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
A#4	P203 Triangle	127	+0	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
B4	P203 Triangle	127	+0	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+0	①②
C5	P183 RezClick	127	+0	+0	+0	5	short	off	(a)(b)	(a)(b)	127	+0	①②

Effect — Mode: off / serial / (parallel)

Effect 1 — Type: +0 : +0

Output Level a ~~+0~~ | Output Level b +0 | Wet : Dry 47 :Dist

Param. | P1 → | P2 Dly | P3 | P4 100% | P5 70 | P6 30 | P7 25 | P8 2.5

Effect 2 — Type: +8 : +2

Output Level a ~~500~~ | Output Level b 250 | Wet : Dry +30: 0

Param. | P1 50 | P2 EQ → | P3 Rev1 | P4 | P5 100% | P6 36 | P7 64 | P8 200

Mix Level | EF2 ~~+12~~ | Insert 1b 800 | Insert 2a ~~+6~~ | Insert 2b 1.3

Control 1 | Parameter 0.8 | Min 18 | Max 100 | Additional ~~100~~

Control 2 | Parameter 13 | Min | Max | Additional ~~Out2 wet~~

Effect LFO | Waveform EF1 prm8 | Speed 0 | Delay 0

100

● **INITIAL DRUM VOICE "DR Efect"**

| Voice Name | DR Efect | | Total Level | 127 | | Vol Lo Limit | 0 |

Note	Waveform	Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut
C1	P145 Marimba	127	−20	+0	+0	off	verylong	off	(a) b	(a)(b)	127	+5	①②
C#1	P152 BD2	127	−9	+0	+0	off	norm	off	(a) b	a (b)	127	+5	①②
D1	P150 Xylophon	127	−1	+0	+0	off	norm	off	(a) b	(a)(b)	127	+5	①②
D#1	P159 SD1	127	−9	+0	+0	off	long	off	(a) b	(a)(b)	127	+7	①②
E1	P160 SD2	127	−10	+14	+0	off	norm	off	(a) b	a (b)	127	+5	①②
F1	P161 SD3	127	−6	−57	+0	off	norm	off	(a) b	(a)(b)	127	+5	①②
F#1	P162 SD4	127	+2	+0	+0	off	norm	off	(a) b	(a)(b)	127	+5	①②
G1	P163 SD5	127	−2	+0	+0	off	norm	off	(a) b	(a)(b)	127	+5	①②
G#1	P169 Tom1	127	−6	+0	+0	off	long	off	(a) b	(a)(b)	127	+5	①②
A1	P169 Tom1	127	+0	+0	+0	off	long	off	(a) b	(a)(b)	127	+5	①②
A#1	P169 Tom1	127	−9	+0	+0	off	norm	off	(a)(b)	(a)(b)	127	+5	①②
B1	P018 PrcOrgl	127	−20	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+5	①②
C2	P170 Tom2	127	−17	+0	+0	off	verylong	off	(a)(b)	(a) b	127	+7	①②
C#2	P170 Tom2	127	−5	+0	+0	off	verylong	off	(a) b	(a) b	127	+7	①②
D2	P170 Tom2	127	+7	+0	+0	off	norm	off	(a) b	(a) b	127	+7	①②
D#2	P164 SD6	127	−8	+0	+0	off	norm	off	(a)(b)	(a)(b)	127	+5	①②
E2	P172 HH Pedal	127	−10	+0	+0	1	verylong	off	(a) b	(a)(b)	127	+5	①②
F2	P171 HH Open	127	+26	+0	+0	1	long	off	(a) b	a (b)	127	+2	①②
F#2	P178 RideBell	127	+25	+0	+0	off	verylong	off	(a) b	(a)(b)	127	+5	①②
G2	P177 Ride	127	+5	+0	+0	off	short	off	(a) b	(a)(b)	127	+5	①②
G#2	P176 Crash	127	+24	+0	+0	off	verylong	off	(a) b	(a)(b)	127	+5	①②
A2	P176 Crash	127	+31	+0	+0	off	verylong	off	(a) b	(a)(b)	127	+5	①②
A#2	P176 Crash	127	+11	+0	+0	off	verylong	off	(a) b	a b	127	+5	①②
B2	P168 SDside	127	−14	+0	+0	off	norm	off	(a)(b)	(a)(b)	127	+7	①②
C3	P203 Triangle	127	+8	+0	+0	2	verylong	off	(a)(b)	a b	127	+7	①②
C#3	P203 Triangle	127	+21	−1	+0	2	long	off	(a)(b)	a b	127	+7	①②
D3	P199 Timpani	127	+0	+0	+0	off	verylong	off	(a)(b)	(a)(b)	127	+3	①②
D#3	P196 Cowbell	127	−25	−9	+0	off	norm	off	(a) b	a (b)	127	+7	①②
E3	P196 Cowbell	127	−15	+0	+0	off	norm	off	(a) b	a (b)	127	+7	①②

Note	Waveform		Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut
										Effect Send				
F3	P197	Maracas	127	−11	+0	+0	off	short	off	ⓐ b	ⓐⓑ	90	+7	①②
F#3	P189	CongaLo	127	−16	+0	+0	off	verylong	off	ⓐⓑ	a ⓑ	100	+5	①②
G3	P191	CongaSlp	127	−13	+0	+0	off	long	off	ⓐⓑ	ⓐ b	127	+5	①②
G#3	P190	CongaMt	127	+7	+0	+0	off	norm	off	ⓐ b	a ⓑ	127	+6	①②
A3	P213	Mellow	127	−34	−20	+0	off	norm	off	ⓐⓑ	a ⓑ	127	+3	①②
A#3	P216	Seq2	127	−32	−20	+0	off	verylong	off	ⓐ b	a ⓑ	127	+3	①②
B3	P201	Timbale	127	+6	+0	+0	off	norm	off	ⓐ b	a ⓑ	127	+3	①②
C4	P206	E.P. Np	127	+12	+0	+0	off	norm	off	ⓐ b	ⓐⓑ	127	+5	①②
C#4	P136	DistWvLp	127	−15	+0	+0	off	verylong	off	ⓐⓑ	ⓐⓑ	127	+5	①②
D4	P200	Temp1BlK	127	−48	+15	+0	off	norm	off	ⓐⓑ	a ⓑ	127	+3	①②
D#4	P194	Clave	127	−47	−41	+0	off	norm	off	ⓐⓑ	a ⓑ	127	+5	①②
E4	P186	AgogoHi	127	−19	−26	+0	off	verylong	off	ⓐⓑ	a ⓑ	127	+5	①②
F4	P184	VcDrmBD	127	+0	+0	+0	off	verylong	off	ⓐ b	ⓐⓑ	127	+5	①②
F#4	P217	OrchHit1	127	+36	+0	+0	off	verylong	off	ⓐ b	ⓐⓑ	127	+5	①②
G4	P178	RideBell	127	−14	+0	+0	off	verylong	off	ⓐ b	ⓐⓑ	127	+5	①②
G#4	P185	VcDrmSD	127	−6	+0	+0	off	verylong	off	ⓐ b	ⓐⓑ	90	+5	①②
A4	P094	Kalimba	110	−8	+0	+0	off	long	off	ⓐ b	ⓐⓑ	93	+5	①②
A#4	P207	Bamboo	127	−17	+19	+0	off	norm	off	ⓐ b	a ⓑ	127	+5	①②
B4	P205	Bottle	127	−31	+20	+0	off	long	off	ⓐ b	a ⓑ	127	+5	①②
C5	P208	Temp Ra	93	−3	+0	+0	off	verylong	off	ⓐⓑ	a ⓑ	127	+5	①②

Effect		Mode off / ⟨serial⟩ / parallel					
	Effect 1	Type: 69 : Dist & Rev					
		Output Level a 100%		Output Level b 100%		Wet : Dry 50 : 50	
		Param.	P1 25	P2 2.0	P3 +6	P4 +12	P5 2.7	P6 1.0	P7 50	P8 12.0
	Effect 2	Type: 67 : Pit & Rev					
		Output Level a 100%		Output Level b 100%		Wet : Dry 100 : 0	
		Param.	P1 −7	P2 +0	P3 +5	P4 +0	P5 0.8	P6 1.5	P7 50	P8 9.0
	Mix Level	EF2 100		Insert 1b ——		Insert 2a 100		Insert 2b ——
	Control 1	Parameter Out1 wet		Min 0	Max 100	Additional ——	
	Control 2	Parameter EF1 prm5		Min 0	Max 50	Additional ——	
	Effect LFO	Waveform tri		Speed 0		Delay 0	

● INITIAL MULTI "InitSong"

Multi Song Name	InitSong

Inst Number				
	1 : VI$_I$A1	2 : VI$_I$A1	3 : VI$_I$A1	4 : VI$_I$A1
	5 : VI$_I$A1	6 : VI$_I$A1	7 : VI$_I$A1	8 : VI$_I$A1
	9 : VI$_I$A1	10 : VI$_I$A1	11 : VI$_I$A1	12 : VI$_I$A1
	13 : VI$_I$A1	14 : VI$_I$A1	15 : VI$_I$A1	16 : VI$_I$H8

Inst		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Volume	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
	Pan	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	vce
	Note Shift	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	(+0)
	Tune	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	(+0)

Effect Send		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Source	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	MLT	VCE
	Switch	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	(1a)	—
		1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	—
		2a	2a	2a	2a	(2a)	2a	2a	2a	2a	2a	2a	2a	2a	2a	2a	—
		2b	2b	2b	2b	(2b)	2b	2b	2b	2b	2b	2b	2b	2b	2b	2b	—
	Level	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	—

Dry Output Select	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	—
	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	—

Effect			
	Mode	off / serial / parallel	

Effect 1		Type 50 : EQ→Rev1		
		Output Level a ————	Output Level b 100	Wet : Dry 100 : 0
	Param.	P1 2.0 P2 +12 P3 500 P4 +12	P5 1.4 P6 0.9 P7 86 P8 36	

Effect 2		Type 52 : EQ→ER		
		Output Level a ————	Output Level b 100	Wet : Dry 100 : 0
	Param.	P1 2.0 P2 +12 P3 500 P4 +12	P5 Sml1 P6 10 P7 0 P8 9	

Mix Level	EF2 ————	Insert 1b 100	Insert 2a ————	Insert 2b 100

Control 1	Parameter Ef1 prm8	Min 0	Max 98	Additional ————
Control 2	Parameter Ef2 prm8	Min 0	Max 42	Additional ————

Effect LFO	Waveform tri	Speed 0	Delay ————

● SYSTEM SETUP

Synth		Note shift	+0		Tune		+0		Ctrl Reset		off		Local		on
	MIDI	T.Ch	01	R.Ch	omni	Device No.	all		Volume Ctrl		007		Bulk Protect		on
	Velocity	Curve		0		Fix	off								

Sequencer		Click	on	Beat	1/4	Clock		int	MIDI Control			on			
	Recording	AT	off	R.Ch	kbd	Accent 1	56		Accent 2	88		Accent 3	120	Fix	kbd
	Song	Loop		off		Chain		off							

Program Change off / normal / (direct) / table

Source	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8
Bank(MSB)	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
Bank(LSB)	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064
Program	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000

Source	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7	D8
Bank(MSB)	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
Bank(LSB)	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064
Program	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000

Source	E1	E2	E3	E4	E5	E6	E7	E8	F1	F2	F3	F4	F5	F6	F7	F8
Bank(MSB)	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
Bank(LSB)	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064
Program	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000

Source	G1	G2	G3	G4	G5	G6	G7	G8	H1	H2	H3	H4	H5	H6	H7	H8
Bank(MSB)	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
Bank(LSB)	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064	064
Program	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000

The illustrations here are not available.

The illustrations here are not available.

● **INITIAL PERFORMANCE LIST (2)**

The illustrations here are not available.

The illustrations here are not available.

The illustrations here are not available.

● INITIAL VOICE LIST (2)

The illustrations here are not available.

● INITIAL VOICE LIST (3)

The illustrations here are not available.

● INITIAL VOICE LIST (4)

The illustrations here are not available.

● WAVE LIST

Wave No.	Group	Wave Name	Wave No.	Group	Wave Name	Wave No.	Group	Wave Name	Wave No.	Group	Wave Name
1	Piano	Piano	62		GtrNyln	123		SynBs9Lp	184		VcDrmBD
2	Keyboard	HardEp	63		GtrNylnLp	124		SynBs10	185		VcDrmSD
3		HardEpLp	64		12String	125		SynBs10Lp	186	Percussion	AgogoHi
4		SoftEp	65		12StrngLp	126		Pad 1	187		Bongo
5		SoftEpLp	66	E.Guitar	EgSngl1	127		Pad 1Lp	188		Cabasa
6		SynthEp	67		EgSngl1Lp	128		Pad 2	189		CongaLo
7		SynthEpLp	68		EgSngl2	129		Pad 3	190		CongaMt
8		Clavi 1	69		EgSngl2Lp	130		Pad 4	191		CongaSlp
9		Clavi 1Lp	70		EgMute1	131		Pad 5	192		AnaConga
10		Clavi 2	71		EgMute2	132		SynLead1	193		Clap
11		Clavi 2Lp	72		EgComp	133		SynLead2	194		Clave
12		Harpsi	73		EgCompLp	134		SynStWv	195		AnaCwbl
13		HarpsiLp	74		EgHarm1	135		DistWv	196		Cowbell
14		Acrdion	75		EgHarm1Lp	136		DistWvLp	197		Maracas
15		AcrdionLp	76		EgHarm2	137	Choir	ChoirAa	198		Tmbrine
16		Organ 1	77		EgHarm2Lp	138		ChoirAaLp	199		Timpani
17		Organ 1Lp	78	Bass	WoodBass	139		ChoirOo	200		TemplBlk
18		PrcOrg1	79		FingBs	140		ChoirOoLp	201		Timbale
19		PrcOrg1Lp	80		FingBsLp	141		Itopia	202		Timbale2
20		PrcOrg2	81		PickBs1	142	Tuned	Glocken	203		Triangle
21		PrcOrg2Lp	82		PickBs1Lp	143	Percussion	HandBell	204		Whistle
22		RockOrg	83		PickBs2	144		HndBellLp	205	SE	Bottle
23		Pipe Wv	84		PickBs2Lp	145		Marimba	206		E.P. Np
24		Pipe WvLp	85		FretLess	146		SteelDrm	207		Bamboo
25	Brass	Trumpet	86		FretLs Lp	147		Tubular	208		Temp Ra
26		TrumpetLp	87		ThumpBs	148		TubularLp	209		Typist
27		MuteTp	88		ThumpBsLp	149		Vibes	210		VoiceAtk
28		MuteTpLp	89		SlapBs	150		Xylophon	211		ChouCho
29		Trombone	90		SlapBsLp	151	Drum	BD1	212		Vox Bell
30		TromBneLp	91	Folk	Dulcimer	152		BD2	213		Mellow
31		Horn	92		DulcimrD	153		BD3	214		Bell Mix
32		Tuba	93		DlcmSplt	154		BD4	215		Seq1
33		TpEns	94		Kalimba	155		BD5	216		Seq2
34		TpEnsLp	95		Sitar	156		BD6	217		OrchHit1
35		BrsEns	96		Harp	157		BD7	218		OrchHit2
36		BrsEnsLp	97	Synth	SynBrs1	158		BD8	219		Noise
37	Wind	Baritone	98		SynBrs1Lp	159		SD1	220	Osc	AnlgSaw1
38		BaritneLp	99		SynBrs2	160		SD2	221		AnlgSaw2
39		Tenor	100		SynBrs2Lp	161		SD3	222		Pulse 10
40		TenorLp	101		SynBrs3	162		SD4	223		Pulse 25
41		AltoSax	102		SynBrs3Lp	163		SD5	224		Pulse 50
42		AltoSaxLp	103		SynBrs4	164		SD6	225		Digital1
43		Soprano	104		SynBrs4Lp	165		SD7	226		Digital2
44		SopranoLp	105		SynBrsWv	166		SD8	227		Digital3
45		Clarinet	106		SynBs1	167		SD9	228		Digital4
46		Bassoon	107		SynBs1Lp	168		SD side	229		Digital5
47		Oboe	108		SynBs2	169		Tom1	230		Digital6
48		EngHorn	109		SynBs2Lp	170		Tom2	231		Digital7
49		Piccolo	110		SynBs3	171		HH Open	232		Digital8
50		Recorder	111		SynBs3Lp	172		HH Pedal	233		Digital9
51		Flute	112		SynBs4	173		HH light	234		Digitl10
52		Panflute	113		SynBs4Lp	174		HH mid	235		Digitl11
53		PnFluteLp	114		SynBs5	175		HH heavy	236		Digitl12
54	Strings	Strings1	115		SynBs5Lp	176		Crash	237		DigiVox1
55		Strngs1Lp	116		SynBs6	177		Ride	238		DigiVox2
56		Strings2	117		SynBs6Lp	178		RideBell	239		DigiVox3
57		Violin	118		SynBs7	179		AnlgTom	240		DigiVox4
58		Viola	119		SynBs7Lp	180		HHopAnlg	241		DigiVox5
59		Pizz	120		SynBs8	181		HHclAnlg	242		DigiWild
60	A.Guitar	GtrSteel	121		SynBs8Lp	182		Scratch	243		Tri
61		GtrStelLp	122		SynBs9	183		RezClick	244		Sin

● BLANK CHART — PERFORMANCE

Performance Name					Total Level					
Voice Number	A :		B :		Quick Edit		A	B	C	D
	C :		D :		AEG	R1				
Layer	A	B	C	D		R2, R3				
Volume						R4				
Pan						RR				
Note Shift						Vel. Sense				
Fine Tune					LFO	Speed				
Note Limit						Depth				
Vel. Limit					Filter	Cutoff				
CS3 Enable						Resonance				
CS4 Enable						Vel. Sense				
Effect Send	A	B	C	D	Con-trol	AT				
Switch	1a 1b 2a 2b	1a 1b 2a 2b	1a 1b 2a 2b	1a 1b 2a 2b		MW				
						FC				
						AT > MW				
Level						MW > AT				
Vel.Sense						Sustain				
Key.Scale						Pitch EG				
Dry Output Select	D1 D2	D1 D2	D1 D2	D1 D2		Fixed Note				

Effect	Mode off / serial / parallel							
Effect 1	Type :							
	Output Level a			Output Level b			Wet : Dry :	
Param.	P1	P2	P3	P4	P5	P6	P7	P8
Effect 2	Type :							
	Output Level a			Output Level b			Wet : Dry :	
Param.	P1	P2	P3	P4	P5	P6	P7	P8
Mix Level	EF2		Insert 1b		Insert 2a		Insert 2b	
Control 1	Parameter			Min	Max		Additional	
Control 2	Parameter			Min	Max		Additional	
Effect LFO	Waveform			Speed			Delay	

● BLANK CHART — VOICE

Voice Name					Total Level			

Oscillator — Mode normal / fixed

Oscillator	Mode normal / fixed		LFO		Phase		Delay	
	Waveform			Waveform				
	Fine Tune			Speed				
	Fixed Note			Depth	Pmod	Amod	Fmod	
	Random			SpeedSens	Random		Vel.	
	Reverse				Key Scale			

Amplitude EG

Amplitude EG	Mode atk / hold			L2	L3			
	R1 / HT			R2	R3	R4	RR	
	Scaling	BP1	BP2	BP3	BP4	Sensitivity	Velocity	
	Note						Atk Rate Vel	
	Offset						Rate Scaling	

Filter

Filter	Cutoff freq			Type	Band	Reso	CTRL	
EG	L0	L1	L1	L3	L4	RL1	RL2	
	RS	R1	R2	R3	R4	RR1	RR2	
Scaling	BP1	BP2	BP3	BP4	Sensitivity	Type		
Note						Velocity		
Offset						Attack Rate Vel		

Pitch

Pitch	Range		Velocity		Rate Velocity			
EG	L0	L1	L2	L3	RL1			
	RS	R1	R2	R3	RR	Loop on / off		

Controller

Controller	PB Range		Volume Low Limit		Sustain SW			
MW	Amod	Pmod	Fmod	EG Bias	Cutoff			
FC	Amod	Pmod	Fmod	EG Bias	Cutoff			
AT	Amod	Pmod	Fmod	EG Bias	Cutoff	Pitch Bias		
CS3(#=18)	Parameter		Min	Max				
CS4(#=19)	Parameter		Min	Max				

Effect			Mode off / serial / parallel				Send		EF2 Mix	
	Effect 1		Type: :							
			Output Level a			Output Level b			Wet :Dry :	
		Param.	P1	P2	P3	P4	P5	P6	P7	P8
	Effect 2		Type: :							
			Output Level a			Output Level b				
		Param.	P1	P2	P3	P4	P5	P6	P7	P8
	Control 1		Parameter			Min	Max		Additional	
	Control 2		Parameter			Min	Max		Additional	
	Effect LFO		Waveform				Speed		Delay	

● BLANK CHART — DRUM VOICE

Voice Name								Total Level		Vol Lo Limit			
	Key Parameters								Effect Send				
Note	Waveform	Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut
C1									a b	a b			1 2
C#1									a b	a b			1 2
D1									a b	a b			1 2
D#1									a b	a b			1 2
E1									a b	a b			1 2
F1									a b	a b			1 2
F#1									a b	a b			1 2
G1									a b	a b			1 2
G#1									a b	a b			1 2
A1									a b	a b			1 2
A#1									a b	a b			1 2
B1									a b	a b			1 2
C2									a b	a b			1 2
C#2									a b	a b			1 2
D2									a b	a b			1 2
D#2									a b	a b			1 2
E2									a b	a b			1 2
F2									a b	a b			1 2
F#2									a b	a b			1 2
G2									a b	a b			1 2
G#2									a b	a b			1 2
A2									a b	a b			1 2
A#2									a b	a b			1 2
B2									a b	a b			1 2
C3									a b	a b			1 2
C#3									a b	a b			1 2
D3									a b	a b			1 2
D#3									a b	a b			1 2
E3									a b	a b			1 2

Note	Key Parameters								Effect Send					
	Waveform	Vol.	Nsft	Tune	Pan	AltG	Gate	Rvs	EF1	EF2	Lvel	VelS	DryOut	
F3									a b	a b			1 2	
F#3									a b	a b			1 2	
G3									a b	a b			1 2	
G#3									a b	a b			1 2	
A3									a b	a b			1 2	
A#3									a b	a b			1 2	
B3									a b	a b			1 2	
C4									a b	a b			1 2	
C#4									a b	a b			1 2	
D4									a b	a b			1 2	
D#4									a b	a b			1 2	
E4									a b	a b			1 2	
F4									a b	a b			1 2	
F#4									a b	a b			1 2	
G4									a b	a b			1 2	
G#4									a b	a b			1 2	
A4									a b	a b			1 2	
A#4									a b	a b			1 2	
B4									a b	a b			1 2	
C5									a b	a b			1 2	

Effect		Mode off / serial / parallel						
	Effect 1	Type: :						
		Output Level a			Output Level b		Wet : Dry :	
		Param.	P1	P2	P3	P4	P5	P6	P7	P8
	Effect 2	Type: :						
		Output Level a			Output Level b		Wet : Dry :	
		Param.	P1	P2	P3	P4	P5	P6	P7	P8
	Mix Level	EF2		Insert 1b		Insert 2a		Insert 2b
	Control 1	Parameter		Min	Max	Additional		
	Control 2	Parameter		Min	Max	Additional		
	Effect LFO	Waveform			Speed		Delay	

● BLANK CHART — MULTI

Multi Song Name																	
Inst Number		1 :				2 :				3 :				4 :			
		5 :				6 :				7 :				8 :			
		9 :				10 :				11 :				12 :			
		13 :				14 :				15 :				16 :			
Inst		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Volume																
	Pan																
	Note Shift																
	Tune																
Effect Send		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Source																
	Switch	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	—
		1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	1b	—
		2a	2a	2a	2a	2a	2a	2a	2a	2a	2a	2a	2a	2a	2a	2a	—
		2b	2b	2b	2b	2b	2b	2b	2b	2b	2b	2b	2b	2b	2b	2b	—
	Level																—
Dry Output Select		D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	—
		D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	—

Effect		Mode off / serial / parallel			
	Effect 1	Type :			
		Output Level a	Output Level b	Wet : Dry :	
	Param.	P1	P2	P3	P4	P5	P6	P7	P8
	Effect 2	Type :			
		Output Level a	Output Level b	Wet : Dry :	
	Param.	P1	P2	P3	P4	P5	P6	P7	P8
	Mix Level	EF2	Insert 1b	Insert 2a	Insert 2b
	Control 1	Parameter	Min	Max	Additional
	Control 2	Parameter	Min	Max	Additional
	Effect LFO	Waveform	Speed	Delay	

● BLANK CHART — SYSTEM SETUP

Synth		Note shift		Tune		Ctrl Reset		Local	
	MIDI	T.Ch	R.Ch		Device No.	Volume Ctrl		Bulk Protect	
	Velocity	Curve			Fix				
Sequencer		Click	Beat		Clock	MIDI Control			
	Recording	AT	R.Ch		Accent 1	Accent 2		Accent 3	Fix
	Song	Loop		Chain					

Program Change   off / normal / direct / table

Source	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8
Bank(MSB)																
Bank(LSB)																
Program																
Source	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7	D8
Bank(MSB)																
Bank(LSB)																
Program																
Source	E1	E2	E3	E4	E5	E6	E7	E8	F1	F2	F3	F4	F5	F6	F7	F8
Bank(MSB)																
Bank(LSB)																
Program																
Source	G1	G2	G3	G4	G5	G6	G7	G8	H1	H2	H3	H4	H5	H6	H7	H8
Bank(MSB)																
Bank(LSB)																
Program																

About the Standard MIDI File Format

The Standard MIDI File Format is a standard which has recently been implemented by a number of software and hardware makers. This standardized format allows song data to be transferred easily between different sequencers — even between sequencers made by different manufacturers.

The SY85 supports two Standard MIDI File types, known as **format 0 and format 1**. In the former type, all sequencer data is recorded as a single track, which may include data for more than one MIDI channel. In the latter, an unlimited number of tracks may be used, each of which may contain data for more than one channel. The SY85 is capable of loading data saved in either of these formats. Data saved by the SY85 using the Standard MIDI File format will be saved as format 0.

Loading data: To load sequencer data saved in an Standard MIDI File format, select load operation type *Other Load* from the *disk* menu. The file to be loaded must meet the following conditions:
- The File must be loaded from a disk formatted by the SY85, or from a 3.5 inch 2DD floppy disk in MS-DOS® or PC-DOS® format. (Refer to the paragraph titled *Acceptable disk formats*, below.)
- It must have been saved as Standard MIDI File format 0 or format 1. Files saved using Standard MIDI File format 2 cannot be loaded.
- The MIDI clock must be used as the basic clock.
- The file must have a resolution of 1/96, 192, 288, 384, 480 of a quarter note.
- The file must have an extension .X01 through .X99.

When a format 0 file is loaded, the data for each MIDI channel is loaded to the corresponding track (channel 1 to Track 1, channel 2 to Track 2, and so on). Only data for channels 1 through 8 is loaded, however; any data for channel 9 through 16 will be ignored.

When a format 1 file is loaded, tracks are loaded in sequence. It will therefore be necessary to reset the channel assignments for each track when loading is complete.

All data loaded to a single track in this way will be transmitted by the SY85 on a single channel. For this reason, even if one track of a format 1 file contains data for two or more MIDI channels, all this data will be played back by the SY85 using a single channel. Since this may mean that sequencer parts may not play back as desired, we recommend that format 0 be used for the transfer of data whenever possible.

No exclusive data is loaded from Standard MIDI Files of either format type.

Saving data: Data may be saved in Standard MIDI File format to any of the disk types described in *Acceptable disk formats*, below. To save sequencer data in Standard MIDI File format, select save operation type *Other Save* from the *disk* menu. The data for each track is saved to the corresponding MIDI channel (Track 1 to channel 1, Track 2 to channel 2, and so on). No exclusive data is saved when this format is used.

Files saved using the Standard MIDI File format are given a file extension .X01 through .X99, which allows the SY85 to recognize the file's format. Other programs, however, may not be able to recognize the file as a Standard MIDI File unless the .MID extension is used; when transferring data saved by the SY85 to another device where it will be used by such a program, you should first rename the file using a personal computer or other means.

Acceptable disk formats: Standard MIDI Files may of course be saved to or loaded from disks formatted by the SY85. Disks formatted by a personal computer may also be used, as long as they are 2DD disks in MS-DOS® or PC-DOS® format. Disks formatted by an Apple Macintosh® may used as long as they are format-ted using a SuperDrive or other disk drive device capable of formatting a disk in MS-DOS® format.

To use Standard MIDI Files saved by the SY85 on an Apple Macintosh®, use ResEdit or a similar utility to change the file type attribute to that of a MIDI file.

* MS-DOS® is a registered trademark of Microsoft Corporation.
* PC-DOS® is a registered trademark of International business Machines Corporation.
* Macintosh® is a registered trademark of Apple Computer, Inc.

SPECIFICATIONS

Keyboard	61 keys, initial and after-touch response.
Tone Generator Systems	AWM2 (2nd-generation Advanced Wave Memory), 30-note polyphony.
Internal Memory	Wave ROM: 6 megabytes (48 Mbits). Wave RAM: 0.5 megabyte, expandable to 3.5 megabytes. Internal RAM: 256 voices, 128 performance combinations, 10 multi-play setups.
External Memory	3.5" 2DD floppy disk drive. MCD64 memory card for voice data (DATA x 1, WAVE x 1).
Sequencer	Tracks: 9 (8 normal + 1 rhythm). Songs: 10 songs. Simultaneous notes: 30. Capacity: Approx. 20,000 notes. Patterns: 100. Record modes: Real-time, step, and punch-in. Resolution: 1/48 quarter note (internal clock), 1/24 quarter note (MIDI sync).
Effects	90 types (dual DSP units).
Displays	40-character x 2-line LCD. 27 LEDs.
Controllers	Wheels: pitch, modulation. Sliders: Output x 2, function x 8. Dial: Data entry dial.
Panel Switches	53: function select matrix x 10, exit, enter, store, memory x 3, group x 8, program x 8, function x 8, data entry x 2, page x 3, sequencer x 6, others x 2.
Connectors	Headphones, audio output x 4, foot controller, sustain switch, volume pedal, MIDI in, MIDI out, MIDI thru.
Power Requirements	US & Canadian models: 120 VAC, 20 W. General model: 220 … 240 VAC, 20 W.
Dimensions (W x D x H)	1024 x 367 x 119 mm (3'4-3/8" x 14-1/2" x 4-3/4")
Weight	14 kg (30 lbs. 13 oz)

* *Specifications and appearance subject to change without notice.*

ERROR MESSAGE

● **MIDI**

DISPLAY	COMMENTS
MIDI buffer full !	When the SY85 attempted to receive or transmit a large amount of MIDI data, its handling capacity was exceeded.
MIDI data error !	An error occurred when receiving MIDI data.
MIDI checksum err !	An error occurred when receiving bulk data.
MIDI Bulk canceled !	While receiving or transmitting bulk data, [EXIT/NO] was pressed to abort the operation.
Bulk protected !	Since the "Bulk Protect" parameter is on, the bulk data was not received.
Device number is off !	Since the device number is off, bulk data cannot be transmintted or received.
Device number mismatch !	Since the device numbers did not match, the bulk data was not received.

● **Data card**

DISPLAY	COMMENTS
Data card not ready !	The data card is not correctly inserted into the slot.
Card protected !	Since the memory protect switch of the card is on, data cannot be saved to the card.
Illegal format !	The card is the wrong format.
Verify NG !	The data was not correctly saved.

● **Wave card**

DISPLAY	COMMENTS
Wave card not ready !	The wave card is not correctly inserted into the slot.
ID Number mismatch !	A multi includes voices which use two or more wave cards.

● Disk

DISPLAY	COMMENTS
Disk not ready !	The disk is not correctly inserted into the disk drive.
Illegal change !	During the backup operation, the original and backup disks were inserted in the wrong order.
Illegal disk !	The data in the disk is faulty.
Bad disk !	The disk is faulty.
File not found !	The file was not found, or you attempted to load a file that does not have a legal MS-DOS file name.
Write protected !	The disk is write protected.
Disk full !	There is no more memory available on the disk.
Media type error !	The disk is the wrong type.
Illegal file !	The file is not for the SY85.

● Sequencer

DISPLAY	COMMENTS
Please stop sequencer !	The sequencer cannot play during disk or card loading/saving or during bulk data transmission.
Mark not used !	Rhythm track search was performed on a track which contains no mark.
Internal buffer full !	More sequence data was played back than could be sounded.
Data Empty !	You have attempted to perform a song job on a measure that contains no data.
Song Memory full !	The sequencer's internal memory is full. Execution of song jobs, bulk reception, and loading from disks is not possible.

● Battery

DISPLAY	COMMENTS
Change internal battery !	The internal backup battery needs to be replaced.
Change card battery !	The card backup battery needs to be replaced.

● Sample

DISPLAY	COMMENTS
Sample memory full !	Since the sample memory is full, further loading of sample data is not possible.
Not enough memory for Volatie !	Not enough volatile memory. Wave memory allocation setting cannot be changed.
Not enough memory for Non_Vol. !	Not enough non-volatile memory. Wave memory allocation setting cannot be changed.
Sample data not exists !	Since no sample exists in the specified sample number, bulk transmission is not possible.
Sample data protected !	Since the waveform card is write protected, data save and bulk transmission are not possible.
Over internal waveform number !	The maximum allowable number of waves was exceeded.
Over Sample number !	The maximum allowable number of samples was exceeded.

● MDR

DISPLAY	COMMENTS
MDR memory full !	Since the MDR's memory is full, loading of data is not possible.
MDR data already exists !	Since MDR data already exists, input of data is not possible.
MDR data not found !	No data exists in the specified MDR file.

TROUBLE SHOOTING

The SY85 is a very versatile instrument with many features and functions that affect operation. In many cases, what appears to be a fault with the SY85 can actually be traced to an improperly set parameter or, at the most fundamental level, to something as simple as a bad connection.

Here's how to determine if the problem is internal (e.g. parameter settings) or external (e.g. connections, amplifier, etc.):

● Listen Via Headphones.

Plug a pair of headphones into the SY85 and play. If the headphone sound is OK, then the problem is most likely in the amplifier or mixer you are using, or the audio connection cables.

● Check the Sound In the Voice, Performance, and Song Modes.

If the problem only occurs in one mode or one voice/performance/song, then the cause is most likely a parameter setting related to that mode or voice/performance/song. If the problem occurs in all modes, then the cause may be a utility parameter or other parameter that affects all modes.

The following are some common problems and probable causes:

● Amplifier, Mixer, Connection Problems

Symptom	Possible Cause
No Sound	• Is the amplifier/mixer power turned on? • Is the amplifier/mixer volume set to an appropriate level? • Are the SY85 outputs properly connected to the amplifier/mixer inputs? • Are the connection cables shorted, open, or otherwise faulty?
Distorted sound	• Is the SY85 connected to a high-sensitivity microphone or instrument input on your amplifier or mixer? Try turning the SY85 OUTPUT controls down to avoid overloading the amplifier/mixer inputs.

● Performance Mode Problems

Symptom	Possible Cause
No Sound	• Are voices properly assigned to the performance layers (page 14)? • Are the voice volume parameters set high enough (page 15)? • Is the total performance level set high enough (page 24)? • Are the voice note and velocity parameters set to appropriate values (page 18 through 21)? • If a foot volume pedal is connected or a controller is assigned to volume control, is the controller set to produce a high enough volume level (page 31)?
Wrong pitch.	• Are the note shift parameters for each voice set to appropriate values (page 17)?.

● Voice Mode Problems

Symptom	Possible Cause
No Sound	• Is the pitch envelope generator set properly? If the L0 through L3 parameters are set too low, the resultant pitch may be below the audible range (page 74). • Is the filter set in such a way that most of the sound is filtered out (page 65)? • Is the total voice level set high enough (page 94)? • Is the amplitude envelope generator attack time set to an excessively long value (page 60)? • Is an appropriate wave assigned to the voice (page 58)?
Wrong pitch.	• Is the tuning set properly (page 58)?. • Is the note shift parameter set properly (page 59)?.
Unstable/indefinite pitch.	• Is the random pitch parameter set properly (page 59)?. • Is the aftertouch pitch bias parameter set properly (page 88)?. • Is the LFO pitch modulation parameter set to an excessively high value (page 78)?. • Is the pitch envelope generator set properly (page 74)?.

● Song Mode Problems

Symptom	Possible Cause
No Sound	• Are voices/performance combinations properly assigned to the multi instruments (page 148). • Are the volume levels of the multi instruments set high enough (page 149)? • Are the sequencer track transmit channels properly matched to the multi instrument channels (Getting Started manual, page 47)?
Wrong pitch.	• Are the note shift parameters for each multi instrument set properly (page 152)?. • Are the tune parameters for each multi instrument set properly (page 153)?.
Some notes not played during sequencer playback.	• Does the sequence data exceed the maximum polyphony of the SY85 (page 157)?.

● Other Problems

Symptom	Possible Cause
No Sound	• Is the local off mode selected (page 211). • Are the keyboard transmit channel and voice receive channels matched (page 212)?
Wrong pitch.	• Is the master tune parameter set properly (page 210)?.

INDEX

For details of products, please contact your nearest Yamaha or the authorized distributor listed below.

Pour plus de détails sur les produits, veuillez-vous adresser à Yamaha ou au distributeur le plus proche de vous figurant dans la liste suivante.

Die Einzelheiten zu Produkten sind bei Ihrer unten aufgeführten Niederlassung und bei Yamaha Vertragshändlern in den jeweiligen Bestimmungsländern erhältlich.

Para detalles sobre productos, contacte su tienda Yamaha más cercana o el distribuidor autorizado que se lista debajo.

NORTH AMERICA

CANADA
Yamaha Canada Music Ltd.
135 Milner Avenue, Scarborough, Ontario,
M1S 3R1, Canada
Tel: 416-298-1311

U.S.A.
Yamaha Corporation of America
6600 Orangethorpe Ave., Buena Park, Calif. 90620,
U.S.A.
Tel: 714-522-9011

MIDDLE & SOUTH AMERICA

MEXICO
Yamaha De Mexico S.A. De C.V.,
Departamento de ventas
Javier Rojo Gomez No.1149, Col. Gpe Del
Moral, Deleg. Iztapalapa, 09300 Mexico, D.F.
Tel: 686-00-33

BRASIL
Yamaha Musical Do Brasil LTDA.
Ave. Reboucas 2636, São Paulo, Brasil
Tel: 55-11 853-1377

PANAMA
Yamaha De Panama S.A.
Edificio Interseco, Calle Elvira Mendez no.10,
Piso 3, Oficina #105, Ciudad de Panama, Panama
Tel: 507-69-5311

**OTHER LATIN AMERICAN COUNTRIES
AND CARIBBEAN COUNTRIES**
Yamaha Music Latin America Corp.
6101 Blue Lagoon Drive, Miami, Florida 33126,
U.S.A.
Tel: 305-261-4111

EUROPE

THE UNITED KINGDOM
Yamaha-Kemble Music (U.K.) Ltd.
Sherbourne Drive, Tilbrook, Milton Keynes,
MK7 8BL, England
Tel: 0908-366700

IRELAND
Danfay Limited
61D, Sallynoggin Road, Dun Laoghaire, Co. Dublin
Tel: 01-2859177

GERMANY/SWITZERLAND
Yamaha Europa GmbH.
Siemensstraße 22-34, D-2084 Rellingen, F.R. of
Germany
Tel: 04101-3030

**AUSTRIA/HUNGARY/SLOVENIA/
ROMANIA/BULGARIA**
Yamaha Music Austria GesmbH.
Schleiergasse 20, A-1100 Wien Austria
Tel: 0222-60203900

THE NETHERLANDS
Yamaha Music Benelux B.V.,
Verkoop Administratie
Kanaalweg 18G, 3526KL, Utrecht, The Netherlands
Tel: 030-828411

BELGIUM/LUXEMBOURG
Yamaha Music Benelux B.V.,
Brussels-office
Keiberg Imperiastraat 8, 1930 Zaventem, Belgium
Tel: 02-7258220

FRANCE
Yamaha Musique France,
Division Instruments Electroniques et de Scène
BP 70-77312 Marne-la-Valée Cedex 2, France
Tel: 01-64-61-4000

ITALY
Yamaha Musica Italia S.P.A.,
Combo Division
Viale Italia 88, 20020 Lainate (Milano), Italy
Tel: 02-935-771

SPAIN
Yamaha-Hazen Electronica Musical, S.A.
Jorge Juan 30, 28001, Madrid, Spain
Tel: 91-577-7270

PORTUGAL
Valentim de Carvalho CI SA
Estrada de Porto Salvo, Paço de Arcos 2780 Oeiras,
Portugal
Tel: 01-443-3398/4030/1823

GREECE
Philippe Nakas S.A.
Navarinou Street 13, P.Code 10680, Athens, Greece
Tel: 01-364-7111

SWEDEN
Yamaha Scandinavia AB
J.A. Wettergrens gata 1, Box 30053, 400 43
Göteborg, Sweden
Tel: 031-496090

DENMARK
YS Copenhagen Liaison Office
Finsensvej 86, DK-2000 Frederiksberg, Denmark
Tel: 31-87 30 88

FINLAND
Fazer Music Inc.
Aleksanterinkatu 11, SF 00100 Helsinki, Finland
Tel: 0435 011

NORWAY
Narud Yamaha AS
Østerndalen 29, 1345 Østerås
Tel: 02-24 47 90

ICELAND
Páll H. Pálsson
P.O. Box 85, 121 Reykjavik, Iceland
Tel: 01-19440

**EAST EUROPEAN COUNTRIES
(Except HUNGARY)**
Yamaha Europa GmbH.
Siemensstraße 22-34, D-2084 Rellingen, F.R. of
Germany
Tel: 04101-3030

AFRICA

Yamaha Corporation,
International Marketing Division
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 053-460-2311

MIDDLE EAST

TURKEY/CYPRUS
Yamaha Musique France, Division Export
BP 70-77312 Marne-la-Valée Cedex 2, France
Tel: 01-64-61-4000

OTHER COUNTRIES
Yamaha Corporation,
International Marketing Division
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 053-460-2311

ASIA

HONG KONG
Tom Lee Music Co., Ltd.
11/F., Silvercord Tower 1, 30 Canton Road,
Tsimshatsui, Kowloon, Hong Kong
Tel: 730-1098

INDONESIA
PT. Yamaha Music Indonesia(Distributor)
PT. Nusantik
Gedung Yamaha Music Center, Jalan Jend. Gatot
Subroto Kav. 4, Jakarta 12930, Indonesia
Tel: 21-520-2577

KOREA
Cosmos Corporation
#131-31, Neung-Dong, Sungdong-Ku, Seoul
Korea
Tel: 02-466-0021~5

MALAYSIA
Yamaha Music Malaysia, Sdn., Bhd.
16-28, Jalan SS 2/72, Petaling Jaya, Selangor,
Malaysia
Tel: 3-717-8977

PHILIPPINES
Yupangco Music Corporation
339 Gil J. Puyat Avenue, P.O. BOX 885 MCPO,
Makati, Metro Manila, Philippines
Tel: 819-7551

SINGAPORE
Yamaha Music Asia Pte., Ltd.
Blk 17A Toa Payoh #01-190 Lorong 7
Singapore 1231
Tel: 354-0133

TAIWAN
Kung Hsue She Trading Co., Ltd.
No. 322, Section 1, FuHsing S. Road,
Taipei 106, Taiwan. R.O.C.
Tel: 02-709-1266

THAILAND
Siam Music Yamaha Co., Ltd.
865 Phornprapha Building, Rama I Road,
Patumwan, Bangkok 10330, Thailand
Tel: 2-215-3443

**THE PEOPLE'S REPUBLIC OF CHINA
AND OTHER ASIAN COUNTRIES**
Yamaha Corporation,
International Marketing Division
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 053-460-2311

OCEANIA

AUSTRALIA
Yamaha Music Australia Pty. Ltd.
17-33 Market Street, South Melbourne, Vic. 3205,
Australia
Tel: 3-699-2388

NEW ZEALAND
Music Houses of N.Z. Ltd.
146/148 Captain Springs Road, Te Papapa, Auckland,
New Zealand
Tel: 9-634-0099

**COUNTRIES AND TRUST
TERRITORIES IN PACIFIC OCEAN**
Yamaha Corporation,
International Marketing Division
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 053-460-2311

HEAD OFFICE **Yamaha Corporation, Electronic Musical Instrument Division**
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 053-460-2445

SY04