YAMAHA

MUSIC SYNTHESIZER

SY35

FEATURE REFERENCE MANUAL

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. NOTE: This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

   Relocate either this product or the device that is being affected by the interference.

   Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

   In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

   If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

Dette apparat overholder det gaeldende EF-direktiv vedrørende radiostøj.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frequencia fijados por el Consejo Directivo 87/308/CEE.

YAMAHA CORPORATION

CANADA

THIS DIGITAL APPARATUS DOES NOT EXCEED THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATION OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

LE PRESENT APPAREIL NUMERIQUE N'EMET PAS DE BRUITS RADIOELECTRIQUES DEPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMERIQUES DE LA "CLASSE B" PRESCRITES DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

* This applies only to products distributed by YAMAHA CANADA MUSIC LTD.

Litiumbatteri!
Bör endast bytas av servicepersonal.
Explosionsfara vid felaktig hantering.

VAROITUS!
Lithiumparisto, Räjähdysvaara.
Pariston saa vaihtaa ainoastaan alan ammattimies.

ADVARSEL!
Lithiumbatteri!
Eksplosionsfare. Udskiftning må kun foretages af en sagkyndig, – og som beskrevet i servicemanualen.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT
THE WIRES IN MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:

Blue: NEUTRAL
Brown: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows: The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Making sure that neither core is connected to the earth terminal of the three pin plug.

SPECIAL MESSAGE SECTION

This product utilizes batteries or an external power supply (adapter). DO NOT connect this product to any power supply or adapter other than one described in the manual, on the name plate, or specifically recommended by Yamaha.

WARNING: Do not place this product in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, the minimum wire size for a 25' cord (or 1 cm) is 18 AWG. NOTE: The smaller the AWG number, the larger the current handling capacity. For longer extension cords, consult a local electrician.

This product should be used only with the components supplied MMM a cart, rack, or stand that is recommended by Yamaha. If a cart, etc., is used, please observe all safety markings and instructions that accompany the accessory product.

SPECIFICATIONS SUBJECT TO CHANGE: The information contained in this manual is believed to be correct at the time of printing. However, Yamaha reserves the right to change or modify any of the specifications without notice or obligation to update existing units.

Do not attempt to service this product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist. IMPORTANT: The louder the sound, the shorter the time period before damage occurs.

Some Yamaha products may have benches and/or accessory mounting fixtures that are either supplied with the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well MMM BEFORE using. Benches supplied by Yamaha are designed for MMM only. No other uses are recommended.

NOTICE: Service charges incurred due to lack of knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owners responsibility. Please study this manual carefully and consult your dealer before requesting service.

ENVIRONMENTAL ISSUES: Yamaha strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

Battery Notice: This product MAY contain a small non-rechargeable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

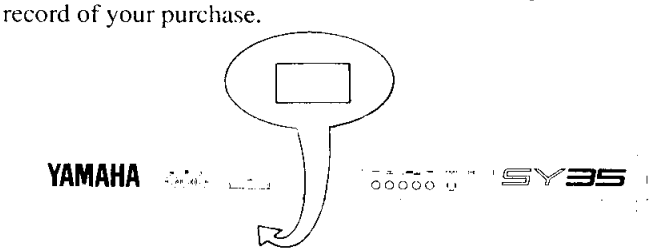
This product may also use "household" type batteries. Some of these may be rechargeable, Make sure that the battery being charged is a rechargeable type and that the charger is intended for the battery being charged.

When installing batteries, do not mix old batteries with new, or with batteries of a different type. Batteries MUST be installed correctly. Mismatches or incorrect installation may result in overheating and battery case rupture.

Warning: Do not attempt to disassemble, or incinerate any battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by the laws in your area. Note: Check with any retailer of household type batteries in your area for battery disposal information.

Disposal Notice: Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc. If your dealer is unable to assist you, please contact Yamaha directly.

NAME PLATE LOCATION: The graphic below indicates the location of the name plate for this model. The model number, serial number, power requirements, etc., are located on this plate. You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



Model _____

Serial No. _____

Purchase Date _____

PLEASE KEEP THIS MANUAL

CONTENTS

About This Manual

The SY35 Feature Reference manual individually describes the SY35 functions in detail, providing a summary, operating procedure, and additional details for each function. It is divided into eight main sections, each describing the various functions within a particular SY35 edit or utility mode.

We recommend that you start by going through the Getting Started manual in order to become familiar with the SY35 and the way it works, then you can refer to the Feature Reference manual from time to time to get details on functions you've never used before, or refresh your memory about functions that you don't use very often.

Each section of this manual has its own table of contents, so you should be able to locate any particular function quickly and easily. Functions and references can also be located by referring to the index at the back of the manual.

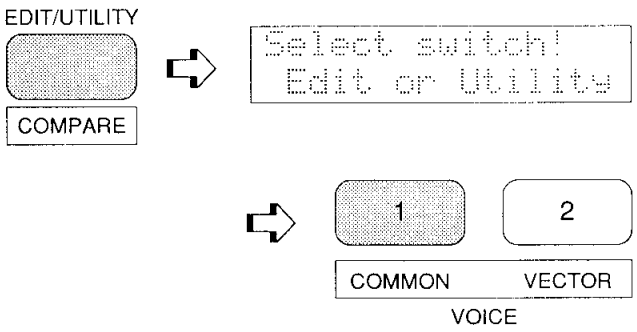
Feature Reference Manual

VOICE COMMON

The VOICE COMMON mode provides access to a range of parameters that affect the selected voice as a whole. Detailed programming of individual elements is provided by the ELEMENT TONE and ELEMENT ENVELOPE edit modes.

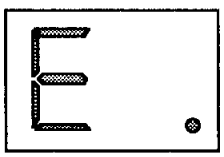
Selecting the VOICE COMMON Edit Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [VOICE COMMON].

An "E" will appear on the LED display, indicating that an edit mode has been selected. The dot to the right of the "E" will appear as soon as any parameter is edited.

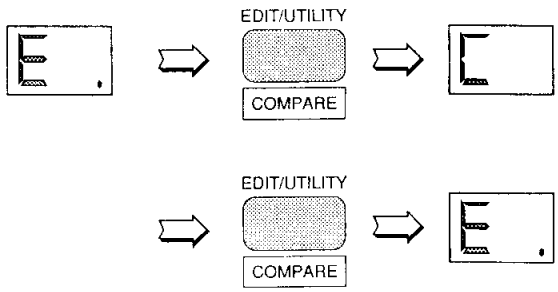


Selecting the VOICE COMMON Edit Mode Functions

The various VOICE COMMON edit mode functions can be selected in sequence by pressing the [VOICE COMMON] key, or by using the [–1/NO] and [+1/YES] keys when the cursor (▷)is located immediately before the function name on the upper display line.

The COMPARE Function

You can compare the sound of the edited voice with the sound of the voice before it was edited by pressing the [EDIT/COMPARE] key to activate the COMPARE function. A "C" will appear on the LED display while the COMPARE function is active, and the sound of the voice prior to editing will be heard when you play the keyboard. Press the [EDIT/COMPARE] key again to return to the edit mode.



NAME

```
VC>VOICE  NAME

 I23  Initial
```

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

Settings: The following characters are available for use in voice names:

```
(Space) !"#¢%&'()*+,-./0123456789:;<=>?Å
ABCDEFGHIJKLMNOPQRSTUVWXYZ[Á]^_«
abcdefghijklmnopqrstuvwxyz“|‘Ÿ°
```

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the character to be changed. Use the [–1/NO] and [+1/YES] keys to select the desired character. Continue until the entire voice name has been programmed.

Details: It’s a good idea to give your voices names that make them easily identifiable. If you’ve created a new voice that combines piano and organ elements, for example, you could call it something like “PianOrg”.
When selecting characters, scrolling will pause at the beginning of each character group (capitals, lower case, numbers, and symbols).

CONFIGURATION

```
VC>CONFIGURATION
 A-B-C-D
```

Summary: Selects the two-element (A-B) or four-element (A-B-C-D) voice configuration.

Settings: A-B, A-B-C-D

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired configuration.

Details: In the 2-element “A-B” configuration, element A is AWM and element B is FM. In the 4-element “A-B-C-D” configuration elements A and B are the same as in the “A-B” configuration, while element C is AWM and element D is FM.

A-B: A = AWM, B = FM.
A-B-C-D: A = AWM, B = FM, C = AWM, D = FM.

EFFECT (Type & Depth)

```
VC>VOICE  EFFECT
Rev  Hall      Dep=1
```

Summary: Selects one of sixteen digital effects, and sets the depth of the selected effect for the current voice.

Settings: Effect type:

Rev Hall	(Reverb Hall)
Rev Room	(Reverb Room)
Rev Plate	(Reverb Plate)
Rev Club	(Reverb Club)
Rev Metal	(Reverb Metal)
Delay 1	(Short Single Delay)
Delay 2	(Long Delay)
Delay 3	(Long Delay)
Doubler	(Doubler)
Ping-Pong	(Ping Pong Delay)
Pan Ref	(Panned Reflections)
Early Ref	(Early Reflections)
Gate Rev	(Gated Reverb)
Dly&Rev 1	(Delay & Reverb 1)
Dly&Rev 2	(Delay & Reverb 2)
Dist&Rev	(Distortion & Reverb)

Depth: 0 … 7

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the effect type or depth parameter. Use the [–1/NO] and [+1/YES] keys to select the desired effect or effect depth.

Details: Setting the depth parameter to "0" is equivalent to turning the effect OFF. A depth setting of "7" produces the greatest effect.

PITCH BEND

VC@PITCH BEND
Range= 2

Summary: Sets the range of the pitch bend wheel.

Settings: 0 … 12 max.*

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired pitch bend range.

Details: 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.

* This range may be more limited in some cases. An exclamation mark (!) will appear after the range value when the limit is reached.

WHEEL (Amplitude & Pitch Modulation)

VC@WHEEL
AM=on PM=ON

Summary: Assigns the modulation wheel to amplitude and/or pitch modulation.

Settings: AM (Amplitude Modulation): off, on
PM (Pitch Modulation): off, on

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the AM or PM parameter. Use the [–1/NO] and [+1/YES] keys to turn the selected parameter on or off.

Details: Amplitude modulation produces a *tremolo* effect while pitch modulation produced a *vibrato* effect. This function allows the modulation wheel to be assigned to produce either or both. This is only an "off/on" switch, however, and the maximum depth of modulation to be applied must be set using the LFO AM Depth and PM Depth parameters in the ELEMENT TONE edit mode.

When the modulation wheel is assigned to amplitude or pitch modulation, LFO modulation can *only* be applied via the wheel.

If both WHEEL and AFTER TOUCH are assigned to modulation control, the controller via which the highest modulation level is applied will take priority when both are used simultaneously.

AFTER TOUCH (Amplitude & Pitch Modulation, Pitch & Level Control)

```
VC>AFTER TOUCH
 AM=on   PM=on   ->
```

Summary: Assigns keyboard after-touch to amplitude modulation, pitch modulation, pitch control, or level control — or any combination of the above.

Settings: AM (Amplitude Modulation): off, on
PM (Pitch Modulation): off, on
Pit (Pitch Control): –12 … 0 … +12 max.*
Lev (Level Control): off, on

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the AM, PM, Pit, or Lev parameter. The arrows at either end of the display mean that more parameters can be accessed by scrolling in the indicated direction. Use the [–1/NO] and [+1/YES] keys to turn the AM, PM, and/or Lev parameter on or off, or to select the desired Pit control range.

Details: As with the modulation wheel, amplitude modulation produces a *tremolo* effect while pitch modulation produced a *vibrato* effect. The harder you press a key, the deeper the modulation. This is only an "off/on" switch, however, and the maximum depth of modulation to be applied must be set using the LFO AM Depth and PM Depth parameters in the ELEMENT TONE edit mode.

When after touch is assigned to amplitude or pitch modulation, LFO modulation can *only* be applied via after touch.

The Pit parameter allows keyboard after touch to be used for note bending. The greater the key pressure the greater the amount of pitch bend. Positive values produce an upward bend when key pressure is applied, and minus values produce a downward bend. Each increment from represents a semitone. A setting of "0" produces no pitch bend. A setting of "12" allows a maximum upward pitch bend of one octave, while a setting of "–4" allows a maximum downward pitch bend of a major third.

When the Lev parameter is turned on it becomes possible to control the level of the sound over a limited range by keyboard after touch. The amount and direction (i.e. an increase or decrease) of level change depends on the setting of the AFTER TOUCH SENSITIVITY parameter in the ELEMENT TONE edit mode.

If both WHEEL and AFTER TOUCH are assigned to modulation control, the controller via which the highest modulation level is applied will take priority when both are used simultaneously.

* This range may be more limited in some cases. An exclamation mark (!) will appear after the range value when the limit is reached.

ENVELOPE (Attack & Release Rates)

```
VC>ENVELOPE
 AR=   0   RR=   0
```

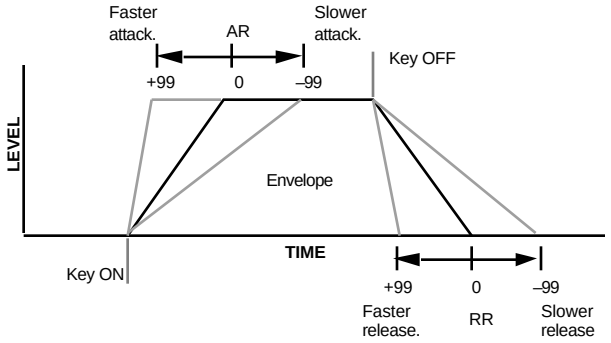
Summary: Sets the overall attack and release rates for the current voice.

Settings: AR (Attack Rate): –99 … 0 … +99 max.*
RR (Release Rate): –99 … 0 … +99 max.*

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the AR or RR parameter. Use the [–1/NO] and [+1/YES] keys to set the selected parameter as required.

Details: Although much more detailed envelope programming capability is available for individual elements (see the ELEMENT ENVELOPE edit mode), these functions provide an easy way to adjust the most important envelope parameters for the overall voice. Positive values produce a faster attack or release time, while negative values produce a slower attack or release time. You might want to lengthen the release time of a voice, for example, to produce a lingering sustain effect after you release the keys.

Please note that the AR parameter will have no effect on elements in which the INITIAL LEVEL parameter (page 28) is set to 99.



* This range may be more limited in some cases. An exclamation mark (!) will appear after the range value when the limit is reached.

RANDOM (Element, Level & Detune)

VC>RANDOM ELEMENT

Summary: Automatically produces random combinations of elements, level vectors, or detune vectors.

Settings: None.

Procedure: Use the [4] and [6] cursor keys to place the left parameter on the lower display line, then use the [–1/NO] and [+1/YES] keys to select ELEMENT, LEVEL or DETUNE. Press the [6] to move the cursor to "Y/N," then press the [+1/YES] key to generate random values of the select type. A new set of random values is generated each time the [+1/YES] key is pressed while the cursor is in this position. Pressing the [–1/NO] returns the cursor to the left parameter.

Details: This function is actually a very useful programming aid. It allows you try out a virtually unlimited variety of element combinations or level/detune vectors by simply pressing a single key. The random element combinations, in particular, can produce some very surprising and often pleasant results.

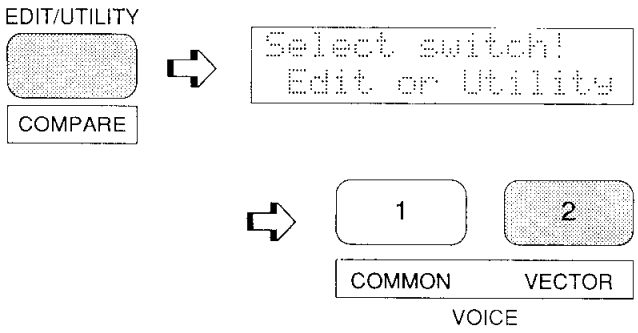
When the "A-B" voice configuration is selected (see CONFIGURATION on page 5), random element combinations will always consist of only two elements. When the "A-B-C-D" voice configuration is selected, random element generation will produce combinations of four elements.

VOICE VECTOR

The VOICE VECTOR edit mode allows recording and fine editing of dynamic level and detune vectors.

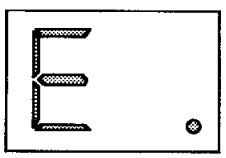
Selecting the VOICE VECTOR Edit Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [VOICE VECTOR].

An "E" will appear on the LED display, indicating that an edit mode has been selected. The dot to the right of the "E" will appear as soon as any parameter is edited.

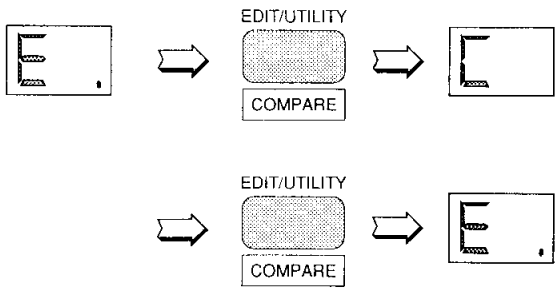


Selecting the VOICE VECTOR Edit Mode Functions

The various VOICE VECTOR edit mode functions can be selected in sequence by pressing the [VOICE VECTOR] key, or by using the [–1/NO] and [+1/YES] keys when the cursor (▷)is located immediately before the function name on the upper display line.

The COMPARE Function

You can compare the sound of the edited voice with the sound of the voice before it was edited by pressing the [EDIT/COMPARE] key to activate the COMPARE function. A "C" will appear on the LED display while the COMPARE function is active, and the sound of the voice prior to editing will be heard when you play the keyboard. Press the [EDIT/COMPARE] key again to return to the edit mode.



LEVEL SPEED (Vector Rate)

```
VV>LEVEL SPEED
Vector Rate 30ms
```

Summary: Sets the time between level vector steps.

Settings: 10 … 160 milliseconds (in 10-millisecond steps)

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired vector rate.

Details: Each dynamic vector is composed of up to 50 "steps" corresponding to points along the path followed by the vector control. This function sets the initial time between each step. The Time parameter in the LEVEL EDIT function, described later, allows the length of individual steps to be edited. The vector rate parameter can be changed even after recording a vector, producing a corresponding change in the spacing between the steps.

The LEVEL SPEED parameter can also be used to change the playback speed of a pre-recorded vector.

LEVEL RECORD

```
VV>LEVEL REC
 STBY   REC   PLAY
```

Summary: Allows recording of a dynamic level vector.

Settings: STBY, REC, PLAY

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under STBY. The vector control LEVEL mode will be automatically selected and you can rehearse the vector sweep you wish to record.

Move the cursor to REC. Recording will actually begin as soon as you play a key on the keyboard. When you release the key or when 50 steps have been recorded (See "LEVEL SPEED" above), recording will end and the cursor will move to the PLAY position. You can now play the keyboard to hear how the vector sweep you just recorded sounds.

Details: The amount of time available for recording depends both on the vector rate setting and how much the vector control is moved.

LEVEL EDIT (Step, X-axis, Y-axis & Time)

● ***Step***

```
VV L.ED A¤B¤C¤D¤
 1 X  0 Y  0 End
```

Summary: Selects any of the 50 steps in a recorded level vector for editing.

Settings: 1 … 50

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the leftmost value on the lower display line (Step). Use the [–1/NO] and [+1/YES] keys to select the step to be edited.

Details: Step 1 is the first step recorded and step 50 is the last. Experience will give you a feel for relating specific points in a dynamic vector to the corresponding steps.

● ***X-axis & Y-axis***

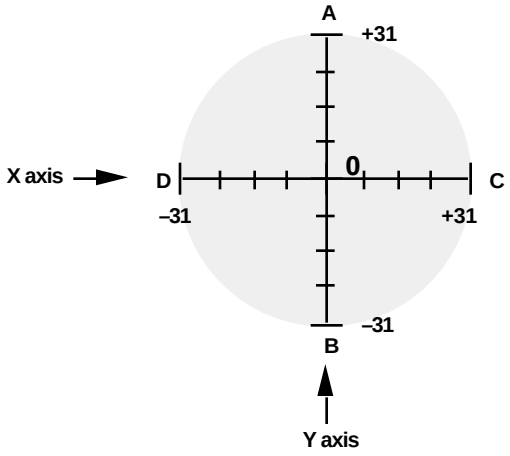
```
VV L.ED A¤B¤C¤D¤
 1 X   0 Y   0 End
```

Summary: These parameters define the position of the currently selected step on the X and Y axes of the level vector control range.

Settings: –31 … 0 … +31

Procedure: After selecting the step to be recorded as described in the previous function, use the [4] and [6] cursor keys to place the underline cursor under the X or Y parameter. Use the [–1/NO] and [+1/YES] keys to set the value as required.

Details: On the X (D-C) axis, a setting of –31 places the step as far as possible toward the D element while a setting of +31 places it as far as possible toward the C element. The Y (A-B) axis values work in the same way: a setting of –31 places the step as far as possible toward the B element while a setting of +31 places it as far as possible toward the A element. In both axes a setting of 0 places the step at center position.



● ***Time***

```
VV L.ED A¤B¤C¤D¤
 1 X   0 Y   0 End
```

Summary: Multiplies the vector rate setting of the current level vector step only. Also allows vectors to be looped or ended at the current step.

Settings: 1 … 254, Rep, End

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the rightmost value on the lower display line (Time). Use the [–1/NO] and [+1/YES] keys to select the required time value, repeat, or end.

Details: Time values multiply the vector rate setting for the current step. If the vector rate parameter is set to 30ms, for example, setting the time parameter to 2 results in a step length of 60ms, setting it to 3 results in a step length of 90ms, and so on. Since the maximum time value is 254, extremely long steps can be created.

If you select the "End" setting, the vector will end at the current step.

The "Rep" setting causes the vector to loop back to the first step from the current step, repeating continuously.

DETUNE SPEED (Vector rate)

```
VV>DETUNE SPEED
Vector Rate 30ms
```

Summary: Sets the time between detune vector steps.

Settings: 10 … 160 milliseconds

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired vector rate.

Details: Each automatic vector sweep is composed of up to 50 "steps," corresponding to equally-spaced points along the path followed by the vector control. This function sets the initial time between each step.

DETUNE RECORD

```
VV>DETUNE REC
 STBY   REC   PLAY
```

Summary: Allows recording of a dynamic detune vector.

Settings: STBY, REC, PLAY

Procedure: Use the [4] and [6] cursor keys to place the STBY. The vector control DETUNE mode will be automatically selected and you can rehearse the vector sweep you wish to record.
Move the cursor to REC. Recording will actually begin as soon as you play a key on the key board. When you release the key or when all 50 steps have been recorded (See "DETUNE SPEED" above), recording will end and the cursor will move to the PLAY position. You can now play the keyboard to hear how the vector sweep you just recorded sounds.

Details: The amount of time available for recording depends both on the vector rate setting and how much the vector control is moved.
Moving the vector control towards an element raises the pitch of that element while lowering the pitch of the others.

DETUNE EDIT (Step, X-axis, Y-axis & Time)

● ***Step***

```
VV D.ED A¤B¤C¤D¤

 1 X  0 Y  0 End
```

Summary: Selects any of the 50 steps in a recorded detune vector for editing.

Settings: 1 … 50

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the leftmost value on the lower display line (Step). Use the [–1/NO] and [+1/YES] keys to select the step to be edited.

Details: Step 1 is the first step recorded and step 50 is the last. Experience will give you a feel for relating specific points in a dynamic vector to the corresponding steps.

● ***X-axis & Y-axis***

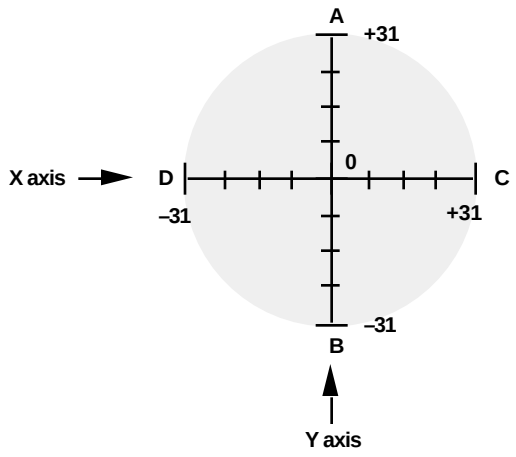
```
VV  D.ED  A¤B¤C¤D¤
 1  X   0  Y   0  End
```

Summary: These parameters define the position of the currently selected step on the X and Y axes of the detune vector control range.

Settings: –31 … 0 … +31

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the X or Y parameter. Use the [–1/NO] and [+1/YES] keys to set the value as required.

Details: On the X (D-C) axis, a setting of –31 places the step as far as possible toward the D element while a setting of +31 places it as far as possible toward the C element. The Y (A-B) axis values work in the same way: a setting of –31 places the step as far as possible toward the B element while a setting of +31 places it as far as possible toward the A element. In both axes a setting of 0 places the step at center position.



● ***Time***

```
VV  D.ED  A¤B¤C¤D¤
 1  X   0  Y   0  End
```

Summary: Multiplies the vector rate setting of the current detune vector step only. Also allows vectors to be looped or ended at the current step.

Settings: 1 … 254, Rep, End

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the rightmost value on the lower display line (Time). Use the [–1/NO] and [+1/YES] keys to select the required time value.

Details: Time values multiply the vector rate setting for the current step. If the vector rate parameter is set to 30ms, for example, setting the time parameter to 2 results in a step length of 60ms, setting it to 3 results in a step length of 90ms, and so on. Since the maximum time value is 254, extremely long steps can be created.

If you select the "End" setting, the vector will end at the current step.

The "Rep" setting causes the vector to loop back to the first step from the current step, repeating continuously.

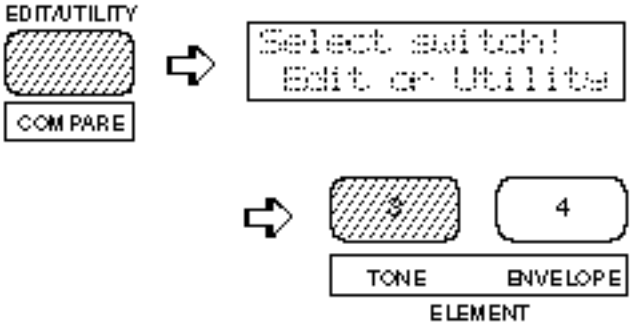
ELEMENT TONE

The ELEMENT TONE edit mode allows editing many of the most important sound-determining parameters of each individual element — A and B in a 2-element voice; A, B, C and D in a 4-element voice.

* These four parameters are not available for an AWM element in which wave number 127 (Drum Set) is selected — “Cannot edit” display appears.

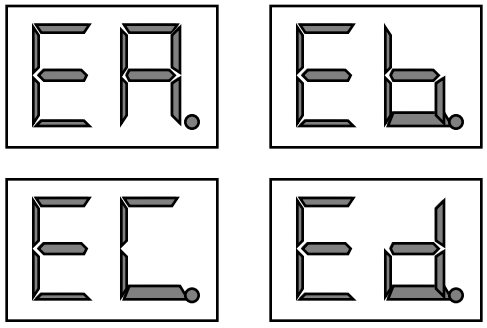
Selecting the ELEMENT TONE Edit Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [ELEMENT TONE].

An "E" will appear to the left of the LED display to indicate that an edit mode is selected, and the element selected for editing will be displayed to the right of the display — "A", "b", "C", or "d". A dot will appear to the right of the element character as soon as any parameter has been edited.



Different elements can be selected for editing by pressing the appropriate [ELEMENT SELECT] key — [A], [B], [C] or [D]. If a 2-element voice is being edited, only elements A and B can be selected.

Any of the available elements can also be turned on or off by pressing the appropriate [ELEMENT ON/OFF] key. Each key alternately turns the associated element on and off, and the on/off status of the elements is shown to the right of the upper LCD line. If the element character is showing, the associated element is ON, if a dash appears in place of the element character, that element is OFF. The ability to turn elements on or off while editing makes it easier to hear the effect of parameter changes on a single element. The currently selected element is also shown on the LCD as a reversed (white on black) character.

In this example elements A, B and D are ON, while element C is OFF. Element A is currently selected for editing.

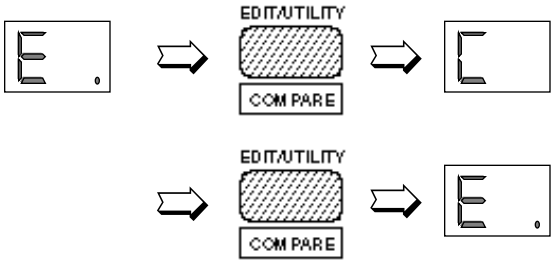
```
ET>WAVE  000  ÅB-D
 Piano:Piano
```

Selecting the ELEMENT TONE Edit Mode Functions

The various ELEMENT TONE edit mode functions can be selected in sequence by pressing the [ELEMENT TONE] key, or by using the [–1/NO] and [+1/YES] keys when the cursor (6)is located immediately before the function name on the upper display line.

The COMPARE Function

You can compare the sound of the edited voice with the sound of the voice before it was edited by pressing the [EDIT/COMPARE] key to activate the COMPARE function. A "C" will appear on the LED display while the COMPARE function is active, and the sound of the voice prior to editing will be heard when you play the keyboard. Press the [EDIT/COMPARE] key again to return to the edit mode.



WAVE TYPE

```
ET>WAVE  000  !BCD
 Piano:Piano
```

Summary: Assigns a preset wave to the selected element.

Settings: Elements A and C (AWM): 0 … 127
Elements B and D (FM): 0 … 255

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the left parameter on the lower display line to directly select the different wave categories, or under the right parameter to select individual waves. Use the [–1/NO] and [+1/YES] keys to select the desired wave (refer to the wave list, below).

Details: The number of waves available depends on whether the currently selected element is an AWM element (A or C) or an FM element (B or D). The SY35 has 128 preset AWM waves (0 … 127) and 256 preset FM waves (0 … 255).

AWM WAVEFORM LIST

Category	No.	Name	Category	No.	Name	Category	No.	Name	Category	No.	Name
Piano	0	Piano	Bass	32	E.Bass 3	Synth	64	PopsHit	OSC	96	Pad wv
	1	E.Piano		33	E.Bass 4	SFX	65	NoisPad1		97	Digital1
	2	Clavi		34	Slap		66	NoisPad2		98	Digital2
	3	Cembalo		35	Fretless		67	NoisPad3		99	Digital3
	4	Celesta		36	SynBass1		68	Coin		100	Digital4
Organ	5	P.Organ		37	SynBass2		69	Crash		101	Digital5
	6	E.Organ1	Str.	38	Strings		70	Bottle		102	Saw 1
	7	E.Organ2		39	Vn.Ens.		71	BotleOpn		103	Saw 2
	8	Bandneon		40	Cello		72	Cracker		104	Saw 3
Brass	9	Trumpet		41	Pizz.		73	Scratch		105	Saw 4
	10	Mute Trp		42	Syn Str	Hits	74	Metal 1		106	Square 1
	11	Trombone	Vocal	43	Choir		75	Metal 2		107	Square 2
	12	Flugel		44	Itopia		76	Metal 3		108	Square 3
	13	Fr Horn		45	Choir pa		77	Metal 4		109	Square 4
	14	BrasEns	Perc.	46	Vibes		78	Wood		110	Pulse 1
	15	SynBrass		47	Marimba		79	Bamboo		111	Pulse 2
Wood	16	Flute		48	Bells		80	Slam		112	Pulse 3
	17	Clarinet		49	Timpani	Tran.	81	Tp. Body		113	Pulse 4
	18	Oboe		50	Tom		82	Tb. Body		114	Pulse 5
	19	Sax		51	E. Tom		83	HornBody		115	Pulse 6
Gtr	20	Gut		52	Cuica		84	Fl. Body		116	Tri
	21	Steel		53	Whistle		85	Str.Body		117	Sin8’
	22	E.Gtr 1		54	ThumbStr		86	AirBlown		118	Sin8’+4’
	23	E.Gtr 2	Synth	55	SynPad		87	Reverse1	SEQ	119	SEQ 1
	24	Mute Gtr		56	Harmonic		88	Reverse2		120	SEQ 2
	25	Sitar		57	SynLead1		89	Reverse3		121	SEQ 3
	26	Pluck 1		58	SynLead2	OSC	90	EP wv		122	SEQ 4
	27	Pluck 2		59	Bell Mix		91	Organ wv		123	SEQ 5
Bass	28	Wood B 1		60	Sweep		92	M.Tp wv		124	SEQ 6
	29	Wood B 2		61	HumanAtk		93	Gtr wv		125	SEQ 7
	30	E.Bass 1		62	Noise 1		94	Str wv 1		126	SEQ 8
	31	E.Bass 2		63	Noise 2		95	Str wv 2	Drum	127	Drum set

AWM Waveform Category Descriptions

Piano	Piano, clavi, and other decay-type keyboard sounds.	Synth	A range of synth sounds (including noise).
Organ	Pipe, electric and reed organs.	SFX	Special effects – crash, bottle, etc.
Brass	Acoustic and synthesized brass sounds.	Hits	Struck metal and woods.
Wood	Flute, sax and other woodwind sounds.	Tran.	Transient attack waves and some reverse sounds.
Gtr	Acoustic and electric guitars.	OSC	Standard synth waveforms and the basic waveforms from some actual instruments.
Bass	Acoustic, electric, and synth bass.		
Str.	Violin ensemble and other strings.	SEQ	Sequences of sampled sounds.
Vocal	Choir and other vocal-type sounds.	Drum	Drum set waves.
Perc.	Vibes, timpani, etc.		

ELEMENT TONE

FM WAVEFORM LIST

Category	No.	Name
Piano	0	E.Piano1
	1	E.Piano2
	2	E.Piano3
	3	E.Piano4
	4	E.Piano5
	5	E.Piano6
Organ	6	E.Organ1
	7	E.Organ2
	8	E.Organ3
	9	E.Organ4
	10	E.Organ5
	11	E.Organ6
	12	E.Organ7
	13	E.Organ8
Brass	14	Brass 1
	15	Brass 2
	16	Brass 3
	17	Brass 4
	18	Brass 5
	19	Brass 6
	20	Brass 7
	21	Brass 8
	22	Brass 9
	23	Brass 10
	24	Brass 11
	25	Brass 12
	26	Brass 13
	27	Brass 14
Wood	28	Wood 1
	29	Wood 2
	30	Wood 3
	31	Wood 4
	32	Wood 5
	33	Wood 6
	34	Wood 7
	35	Wood 8
Reed	36	Reed 1
	37	Reed 2
	38	Reed 3
	39	Reed 4
	40	Reed 5
	41	Reed 6
Pluck	42	Clavi 1
	43	Clavi 2
	44	Clavi 3
	45	Clavi 4
	46	Guitar 1
	47	Guitar 2
	48	Guitar 3
Pluck	49	Guitar 4
	50	Guitar 5
	51	Guitar 6
	52	Guitar 7
	53	Guitar 8
Bass.	54	Bass 1
	55	Bass 2
	56	Bass 3
	57	Bass 4
	58	Bass 5
	59	Bass 6
	60	Bass 7
	61	Bass 8
	62	Bass 9
Str.	63	Str 1
	64	Str 2
	65	Str 3
	66	Str 4
	67	Str 5
	68	Str 6
	69	Str 7
Perc.	70	Vibes 1
	71	Vibes 2
	72	Vibes 3
	73	Vibes 4
	74	Marimba1
	75	Marimba2
	76	Marimba3
	77	Bells 1
	78	Bells 2
	79	Bells 3
	80	Bells 4
	81	Bells 5
	82	Bells 6
	83	Bells 7
	84	Bells 8
	85	Metal 1
	86	Metal 2
	87	Metal 3
	88	Metal 4
	89	Metal 5
	90	Metal 6
Syn.S	91	Lead 1
	92	Lead 2
	93	Lead 3
	94	Lead 4
	95	Lead 5
	96	Lead 6
	97	Lead 7
Syn.S	98	Sus. 1
	99	Sus. 2
	100	Sus. 3
	101	Sus. 4
	102	Sus. 5
	103	Sus. 6
	104	Sus. 7
	105	Sus. 8
	106	Sus. 9
	107	Sus. 10
	108	Sus. 11
	109	Sus. 12
	110	Sus. 13
	111	Sus. 14
	112	Sus. 15
	113	Attack 1
	114	Attack 2
	115	Attack 3
	116	Attack 4
	117	Attack 5
Syn.M	118	Move 1
	119	Move 2
	120	Move 3
	121	Move 4
	122	Move 5
	123	Move 6
	124	Move 7
Syn.D	125	Decay 1
	126	Decay 2
	127	Decay 3
	128	Decay 4
	129	Decay 5
	130	Decay 6
	131	Decay 7
	132	Decay 8
	133	Decay 9
	134	Decay 10
	135	Decay 11
	136	Decay 12
	137	Decay 13
	138	Decay 14
	139	Decay 15
	140	Decay 16
	141	Decay 17
	142	Decay 18
SFX	143	SFX 1
	144	SFX 2
	145	SFX 3
	146	SFX 4
SFX	147	SFX 5
	148	SFX 6
	149	SFX 7
OSC 1	150	Sin 16’
	151	Sin 8’
	152	Sin 4’
	153	Sin2 2/3
	154	Sin 2’
	155	Saw 1
	156	Saw 2
	157	Square
	158	LFOnoise
	159	Noise 1
	160	Noise 2
	161	Digi 1
	162	Digi 2
	163	Digi 3
	164	Digi 4
	165	Digi 5
	166	Digi 6
	167	Digi 7
	168	Digi 8
	169	Digi 9
	170	Digi 10
	171	Digi 11
OSC 2	172	wave1-1
	173	wave1-2
	174	wave1-3
	175	wave2-1
	176	wave2-2
	177	wave2-3
		:
		:
	220	wave17-1
	221	wave17-2
	222	wave17-3
OSC 3	223	wave18-1
	224	wave18-2
	225	wave18-3
		:
		:
	250	wave27-1
	251	wave27-2
	252	wave27-3
	253	wave28
	254	wave29
	255	wave30

FM Voice Category Descriptions

Piano	Electric pianos.
Organ	Electric organs.
Brass	A variety of brass sounds.
Wood	Woodwind instrument sounds.
Reed	Sax, oboe and other reed instruments.
Pluck	Guitar, clavi, and other plucked instrument sounds.
Bass	Bass sounds.
Str.	Strings.
Perc.	Vibes, marimba, bells and other percussion sounds.
Syn.S	Sustained lead synth sounds.
Syn.M	Synth sounds that vary with time.
Syn.D	Decay-type synth sounds.
SFX	A range of sound-effect type synth sounds.
OSC1	Sine, sawtooth, and other standard synth waveforms.
OSC2	Basic FM timbres, group 1.
OSC3	Basic FM timbres, group 2.

If the TYPE parameter in the ELEMENT ENVELOPE edit mode (page 27) is set to PRESET, selecting a WAVE TYPE also selects the corresponding preset envelope. If a different envelope type is selected, the preset envelope is *not* selected together with the wave.

ELEMENT COPY

```
ET>COPYfrom ABCD
 any Voice?     ->
```

Summary: Copies all element parameters from an element of the same type (AWM or FM) in another voice to the current element of the current voice.

Settings: Source: I, C, P
Bank: 1 … 8
Number: 1 … 8
Element: A/C or B/D

Procedure: Use the [4] and [6] cursor keys to move the cursor to the source, bank, or number of the source voice (the voice from which the element parameters are to be copied) to the left of the lower display line. Use the [–1/NO] and [+1/YES] keys to set the selected parameter as necessary.

Next move the cursor to the element type parameter to the right of the lower display line, and select the element from which the data is to be copied using the [–1/NO] and [+1/YES] keys.

Press the [6] cursor key one more time and the "Are you sure?" display will appear. Press [+1/YES] to execute the element copy operation or [–1/NO] to cancel. ">>Completed!!<<" will appear briefly when the copy operation has finished.

Details: In this display the source, bank and number parameters are shown in the standard SY35 voice number format. "P12," for example, is preset bank 1, number 2; "I35" is internal bank 3, number 5, etc.

Data can only be copied between elements of the same type. If the element currently being edited is an AWM element (A or C), only element A or C of the source voice can be copied from. the same applies to FM elements.

The data for all parameters contained in the ELEMENT TONE mode will be copied.

FREQUENCY SHIFT

```
ET>FREQ.       ABCD
 Shift=  0
```

Summary: Shifts the frequency (pitch) of the selected element up or down in semitone steps.

Settings: –12 ... 0 … +12.

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired amount of frequency shift.

Details: A setting of "–12," for example, shifts the pitch of the selected element down by one octave; a setting of "+4" shifts the pitch up by a major third.

The Frequency Shift function can be used to transpose an element to its most useful range, or to create harmony (intervals) between different elements.

VOLUME

```
ET>VOLUME      ABCD
Level=   0
```

Summary: Adjusts the volume of the selected element.

Settings: 0 ... 99

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired volume level.

Details: A setting of "0" produces no sound while a setting of "99" produces maximum volume. The ability to independently adjust the volume of each element makes it simple to set up the optimum balance or "mix" between elements.

PAN

```
ET>PAN         ÅBCD
 L--|--R
```

Summary: Determines the position in the stereo sound field in which the sound from selected element will be heard (left to right).

Settings: Graphic Display: L--+--R, 5 positions from left to right.

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired pan position.

Details: The lower line of the display shows a graphic representation of the stereo sound field with "L" representing "left" and "R" representing "right." As you edit the pan parameter the position indicator will appear at the corresponding position on the graphic display. A total of five different positions are available, corresponding to left, left-center, center, right-center, and right.

Interesting stereo effects can be produced by placing the output from different elements at different locations in the stereo sound field.

VELOCITY SENSITIVITY

```
ET>VELOCITY  ABCD
 Sense=  0   ---
```

Summary: Determines how the output level of the selected element changes in response to velocity changes (keyboard initial touch response).

Settings: –5 ... 0 … +5

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired velocity sensitivity.

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

0 No response.
+1 Narrow change between medium-hard and hard velocity.

+2 Broader change between medium and hard velocity.
+3 Smooth change all the way from soft to hard velocity.
+4 Large change over small velocity range.
+5 Sudden change from no sound to maximum level at about medium velocity.

"–" Settings have the same effect, but the sound level decreases rather than increasing with increased key velocity. A graphic display to the right of the sensitivity value provides a visual indication as to the type of change produced by each setting.

AFTER TOUCH SENSITIVITY

```
ET>AFTER        ABCD
 Sense=  0    ---
```

Summary: Determines how the output level of the selected element changes in response to keyboard after touch pressure changes when the Lev (Level) parameter of the AFTER TOUCH function in the VOICE COMMON mode is set to "on" (see page 7).

Settings: –3 ... 0 … +3

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired after touch sensitivity.

Details: Plus "+" settings produce higher output level in response to higher after touch pressure. Minus "–" settings produce the opposite effect: lower level in response to higher pressure. A setting of "0" results in no level variation.

0 No response.
+1 Narrow change between medium-high and high pressure.
+2 Broader change between medium and high pressure.
+3 Smooth change all the way from low to high pressure.

"–" Settings have the same effect, but the sound level decreases rather than increasing with increased after touch pressure. A graphic display to the right of the sensitivity value provides a visual clue as to the type of change produced by each setting.

TONE (FM Elements B and D Only)

```
ET>TONE         A>CD
 Lev=  0    FB=0
```

Summary: Adjusts the tone of the selected FM element — B or D.

Settings: Lev (Level): 0 … 99
FB (Feedback): 0 … 7

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the Lev or FB parameter. Use the [–1/NO] and [+1/YES] keys to set the level or feedback as required.

Details: The Lev parameter adjusts the modulation level of the select FM element, so higher values produce a brighter, sharper tone while lower values produce a rounder, more mellow tone. The effect of the feedback parameter varies from element to element, but in general higher values make the sound more brassy or noisy, while lower values make the sound smoother.

LFO (Low Frequency Oscillator) AM Depth, PM Depth, Type, Delay, Rate & Speed

● ***AM (Amplitude Modulation Depth)***

```
ET LFO          ABCD
AM= 0 PM= 0
```

Summary: Determines the maximum amount of amplitude modulation that can be applied to the selected element by the modulation wheel or keyboard after touch.

Settings: 0 ... 15

Procedure: Use the [4] and [6] cursor keys to select the AM parameter. Use the [–1/NO] and [+1/YES] keys to set the desired degree of amplitude modulation.

Details: A "0" setting produces no modulation while a setting of "15" produces maximum modulation. Amplitude modulation produces a periodic variation in the volume of the sound, thus creating a tremolo effect.
Please note that the AM parameter of the WHEEL and/or AFTER TOUCH function in the VOICE COMMON edit mode must be set to "on" before amplitude modulation can be applied manually (see page 7). Amplitude modulation is applied automatically when these parameters are off.

● ***PM (Pitch Modulation Depth)***

```
ET LFO          ABCD
AM= 0 PM= 0
```

Summary: Determines the maximum amount of pitch modulation that can be applied to the selected element by the modulation wheel or keyboard after touch.

Settings: 0 ... 31

Procedure: Use the [4] and [6] cursor keys to select the PM parameter. Use the [–1/NO] and [+1/YES] keys to set the desired degree of pitch modulation.

Details: A "0" setting produces no modulation while a setting of "31" produces maximum modulation. Pitch modulation produces a periodic pitch variation, thereby creating a vibrato effect.
Please note that the PM parameter of the WHEEL and/or AFTER TOUCH function in the VOICE COMMON edit mode must be set to "on" before pitch modulation can be applied manually. Pitch modulation is applied automatically when these parameters are off.

● ***Type***

```
ET LFO          ABCD
AM= 0 PM= 0
```

Summary: Determines the waveform of the LFO for the selected element.

Settings:

SAW UP	SAW DOWN	TRIANGLE
SQUARE	SAMPLE&HOLD	

Procedure: Use the [4] and [6] cursor keys to select the waveform parameter. Use the [–1/NO] and [+1/YES] keys to select the desired LFO waveform.

Details:

= Upward sawtooth.
= Downward sawtooth.
= Triangle.
= Square.
= Sample and hold.

● ***Dly (Delay)***

```
ET LFO          ABCD
˚Dly= 0 Rate= 0->
```

Summary: Sets the delay time between the beginning of a note and the beginning of LFO operation for the selected element when the WHEEL and AFTER TOUCH parameters in the VOICE COMMON edit mode are both turned off.

Settings: 0 ... 99

Procedure: Use the [4] and [6] cursor keys to select the Dly parameter. Use the [–1/NO] and [+1/YES] keys to set the desired LFO delay.

Details: The minimum setting "0" results in no delay, while the maximum setting of "99" produces maximum delay before the LFO begins operation.

● ***Rate***

```
ET LFO          ÅBCD
˚Dly= 0 Rate= 0->
```

Summary: Sets the rate of LFO "fade in" for the selected element when the WHEEL and AFTER TOUCH parameters in the VOICE COMMON edit mode are both turned off.

Settings: 0 ... 99

Procedure: Use the [4] and [6] cursor keys to select the Rate parameter. Use the [–1/NO] and [+1/YES] keys to set the desired LFO fade-in rate.

Details: "0" is the fastest rate, causing the LFO to start operation at full depth immediately. A setting of 99 produces the longest LFO fade in.

● ***Spd (Speed)***

```
ET LFO          ABCD
˚Spd= 0
```

Summary: Sets the speed of the LFO for the selected element.

Settings: 0 ... 31

Procedure: Use the [4] and [6] cursor keys to select the Spd parameter. Use the [–1/NO] and [+1/YES] keys to set the desired LFO speed.

Details: "0" is slowest LFO speed setting; "31" is the fastest.

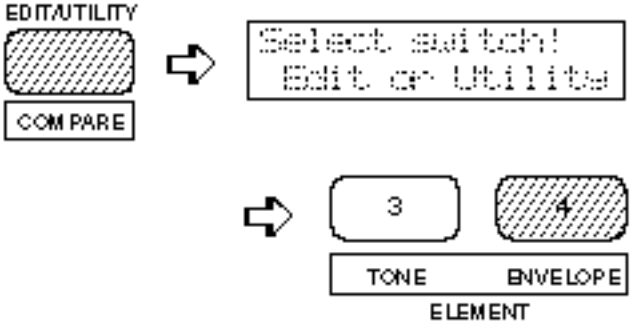
The speed parameter can not be edited when the sample-and-hold (ºº) LFO TYPE is selected.

ELEMENT ENVELOPE

The ELEMENT ENVELOPE edit mode allows detailed programming of the amplitude envelopes for each element in the selected voice.

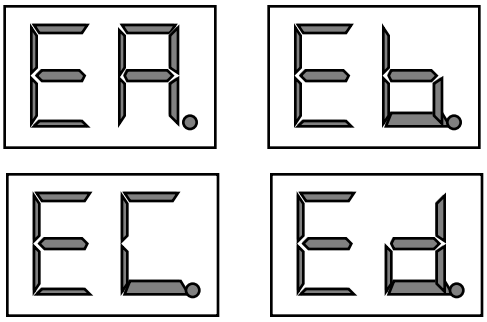
Selecting the ELEMENT ENVELOPE Edit Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [ELEMENT ENVELOPE].

An "E" will appear to the left of the LED display to indicate that an edit mode is selected, and the element selected for editing will be displayed to the right of the display — "A", "b", "C", or "d". A dot will appear to the right of the element character as soon as any parameter has been edited.



Different elements can be selected for editing by pressing the appropriate [ELEMENT SELECT] key — [A], [B], [C] or [D]. If a 2-element voice is being edited, only elements A and B can be selected.

Any of the available elements can also be turned on or off by pressing the appropriate [ELEMENT ON/OFF] key. Each key alternately turns the associated element on and off, and the on/off status of the elements is shown to the right of the upper LCD line. If the element character is showing, the associated element is ON, if a dash appears in place of the element character, that element is OFF. The ability to turn elements on or off while editing makes it easier to hear the effect of parameter changes on a single element. The currently selected element is also shown on the LCD as a reversed (white on black) character.

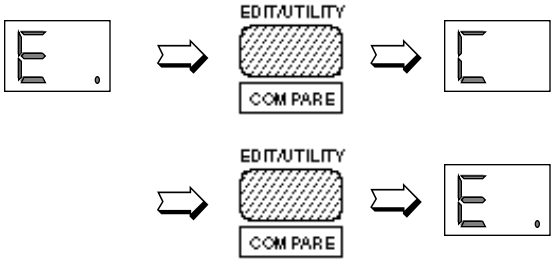
In this example elements A, B and D are ON, while element C is OFF. Element A is currently selected for editing.

Selecting the ELEMENT ENVELOPE Edit Mode Functions

The various ELEMENT ENVELOPE edit mode functions can be selected in sequence by pressing the [ELEMENT ENVELOPE] key, or by using the [–1/NO] and [+1/YES] keys when the cursor (6)is located immediately before the function name on the upper display line.

The COMPARE Function

You can compare the sound of the edited voice with the sound of the voice before it was edited by pressing the [EDIT/COMPARE] key to activate the COMPARE function. A "C" will appear on the LED display while the COMPARE function is active, and the sound of the voice prior to editing will be heard when you play the keyboard. Press the [EDIT/COMPARE] key again to return to the edit mode.



TYPE

EE>TYPE ÅBCD
USER

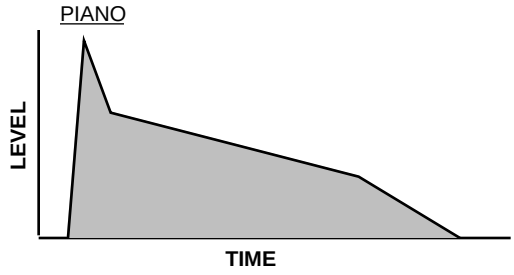
Summary: Selects a user or preset amplitude envelope for the selected element.

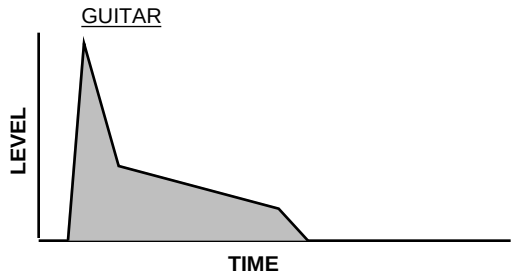
Settings: PRESET, PIANO, GUITAR, PLUCK, BRASS, STRINGS, ORGAN, USER

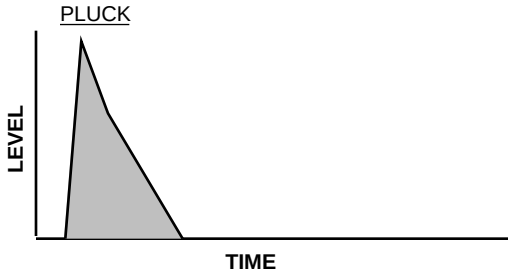
Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired envelope.

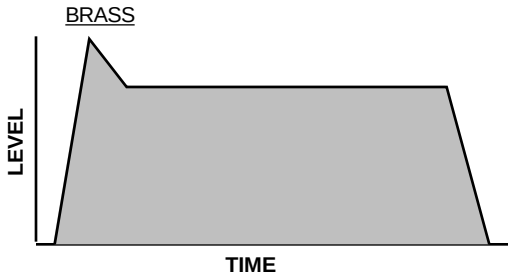
Details: When "PRESET" is selected, the original envelope of the wave selected for the current element is used. For example, if the current uses a guitar wave corresponding guitar envelope will be selected.

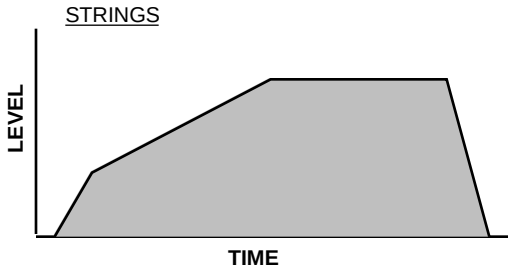
When "PIANO," "GUITAR," "PLUCK," "BRASS," "STRINGS," or "ORGAN" is selected, a generic envelope of the appropriate type is used. Then piano, organ and strings envelopes are roughly as shown below:

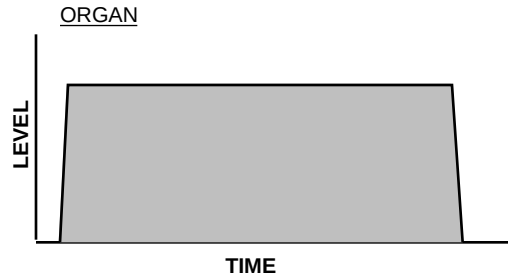












Editing any of the envelope parameters for one of the above types turns the envelope into a "USER" type.

When "USER" is selected, an original envelope can be programmed using the attack, decay, and release parameters described on pages 29, 30.

ENVELOPE COPY

```
EE>COPYfrom  ÅBCD
 any Element?   ->
```

Summary: Copies envelope parameters from a selected element to the current element.

Settings: Element: A, B, C, D

Procedure: Use the [4] and [6] cursor keys to move the cursor to the "from" element parameter. Use the [–1/NO] and [+1/YES] keys to select the element from which the envelope data is to be copied.

Press the [6] cursor key one more time and the "Are you sure?" display will appear. Press [+1/YES] to execute the copy operation or [–1/NO] to cancel. ">>Completed!!<<" will appear briefly when the copy operation has finished.

Details: This function can save a lot of programming time by allowing easy copying of complex USER type envelope data between elements.

DELAY (Delay Rate & ON/OFF)

```
EE>DELAY       ÅBCD
 Rate= 0      off
```

Summary: Sets a delay before the envelopes of all elements begin.

Settings: Delay: 0 … 99
Mode: on/off

Procedure: Use the [4] and [6] cursor keys to move the cursor to the "Rate" parameter. Use the [–1/NO] and [+1/YES] keys to select the desired delay rate.
Press the [6] cursor key one more time to move to the on/off mode parameter, and use the [–1/NO] and [+1/YES] keys to set as required.

Details: The envelope delay rate parameter affects all envelopes simultaneously. A setting of "0" produces almost no delay while a setting of "99" produces maximum delay.

INITIAL LEVEL

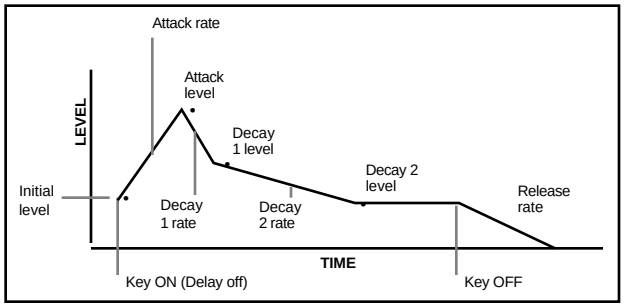
```
EE>INITIAL   ÅBCD
 Level=   0
```

Summary: Sets the starting level of the amplitude envelope for the current element.

Settings: 0 … 99

Procedure: Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to set the initial level.

Details: A setting of "0" means that the envelope will begin from zero (minimum) level, while a setting of "99"causes the envelope to begin immediately from maximum level. The highest setting produces the sharpest attack.



ATTACK (Level & Rate)

```
EE>ATTACK      ÅBCD
 AL= 0   AR= 0
```

Summary: Sets the rate and peak level of the attack of the amplitude envelope for the current element.

Settings: AL (Attack Level): 0 … 99
AR (Attack Rate): 0 … 99

Procedure: Use the [4] and [6] cursor keys to move the cursor to the "AL" or "AR" parameter. Use the [–1/NO] and [+1/YES] keys to set the selected level or rate parameter.

Details: Refer to the INITIAL LEVEL function for a complete envelope diagram.
A rate setting of "0" produces the slowest attack, and a setting of "99" produces the fastest attack.
A level setting of "0" produces the lowest attack level, while a setting of "99" produces the highest level.
Please note that the attack may be "biased" by the ENVELOPE Attack Rate parameter in the VOICE COMMON edit mode.

DECAY 1 (Level & Rate)

```
EE>DECAY1      ÅBCD
 D1L= 0  D1R= 0
```

Summary: Sets the rate and final level of the first decay of the amplitude envelope for the current element.

Settings: D1L (Decay 1 Level): 0 … 99
D1R (Decay 1 Rate): 0 … 99

Procedure: Use the [4] and [6] cursor keys to move the cursor to the "D1L" or "D1R" parameter. Use the [–1/NO] and [+1/YES] keys to set the selected level or rate parameter.

Details: Refer to the INITIAL LEVEL function for a complete envelope diagram.
A rate setting of "0" produces the slowest decay, and a setting of "99" produces the fastest decay.
A level setting of "0" produces the lowest decay level, while a setting of "99" produces the highest level.

DECAY 2 (Level & Rate)

```
EE>DECAY2      ÅBCD
 D2L= 0  D2R= 0
```

Summary: Sets the rate and final level of the second decay of the amplitude envelope for the current element.

Settings: D2L (Decay 2 Level): 0 … 99
D2R (Decay 2 Rate): 0 … 99

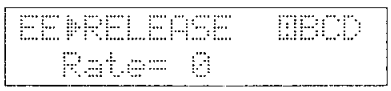
Procedure: Use the [4] and [6] cursor keys to move the cursor to the "D2L" or "D2R" parameter. Use the [–1/NO] and [+1/YES] keys to set the selected level or rate parameter.

Details: Refer to the INITIAL LEVEL function for a complete envelope diagram.
A rate setting of "0" produces the slowest decay, and a setting of "99" produces the fastest decay.
A level setting of "0" produces the lowest decay level, while a setting of "99" produces the

A level setting of "0" produces the lowest decay level, while a setting of "99" produces the highest level.

The decay 2 level parameter also sets the hold level at which the note is sustained until released.

RELEASE RATE



Summary: Sets the release rate of the amplitude envelope for the current element.

Settings: 0 ... 99

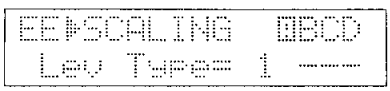
Procedure: Use the [▷] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to set the release rate.

Details: Refer to the INITIAL LEVEL function for a complete envelope diagram.

A release rate setting of "0" produces the slowest release, and a setting of "99" produces the fastest release.

Please note that the release note may be "biased" by the ENVELOPE Release Rate parameter in the VOICE COMMON edit mode.

LEVEL SCALING



Summary: Determines how the level of the current element changes across the range of the keyboard.

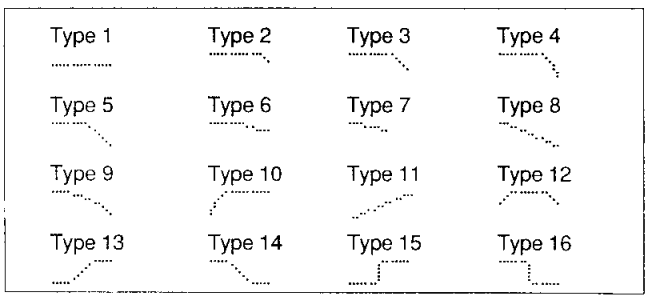
Settings: 1 ... 16

Procedure: Use the [▷] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to set the desired level scaling curve.

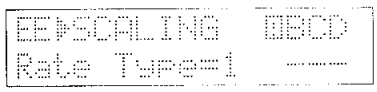
Details: Most acoustic instruments do not produce a uniform sound level throughout their pitch range. This results in a level curve that can be simulated by appropriate settings of the level scaling parameter. Often, for example, the level decreases slightly as the pitch increases.

Each of the 16 available level scaling curves is shown in graphic form on the LCD when selected, making it easy to locate and select the optimum curve for each application.

● ***Level Scaling LCD Graphic***



RATE SCALING



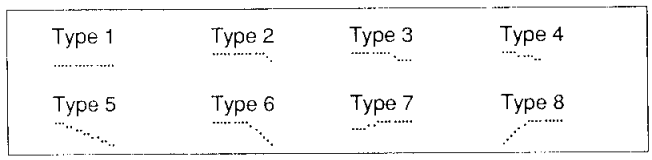
Summary: Determines how the overall rate of the amplitude envelope for the current element changes across the range of the keyboard.

Settings: 1 ... 8

Procedure: Use the [▷] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to set the desired rate scaling curve.

Details: Many acoustic instruments do not produce uniform note length throughout their pitch range. This results in a rate curve that can be simulated by appropriate settings of the rate scaling parameter. Often, for example, the overall note length decreases slightly as the pitch increases. Each of the 8 available rate scaling curves is shown in graphic form on the LCD when selected, making it easy to locate and select the optimum curve for each application.

● *Rate Scaling LCD Graphic*

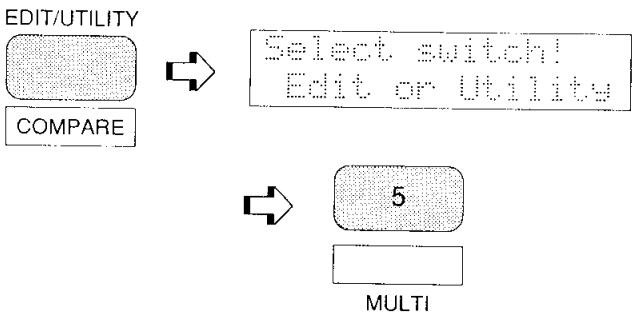


MULTI

The MULTI edit mode allows 8 different voices to be assigned to different MIDI channels. The assigned voices can then be individually controlled over the appropriate channels from an external MIDI sequence recorder or other controller. If a number of these channel/voice “parts” are assigned to the MIDI transmit channel of the SY35, they can all be played simultaneously from the SY35 keyboard. Individual characteristics of each voice, such as volume and detune, can also be programmed.

Selecting the MULTI Edit Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [MULTI].

An "E" will appear to the left of the LED display to indicate that an edit mode is selected, and the multi-setup part selected for editing will be displayed to the right of the display — "1" through "8." A dot will appear to the right of the part number as soon as any parameter has been edited.

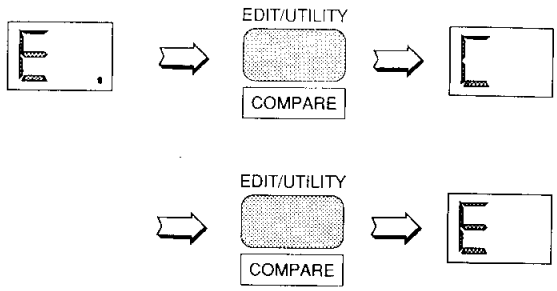
Different parts can be selected for editing by pressing the appropriate [NUMBER/MULTI PART SELECT] key — [1] through [8].

Selecting the MULTI Edit Mode Functions

The various MULTI edit mode functions can be selected in sequence by pressing the [MULTI] key, or by using the [–1/NO] and [+1/YES] keys when the cursor (▷)is located immediately before the function name on the upper display line.

The COMPARE Function

You can compare the sound of the edited multi-play setup with the sound of the setup before it was edited by pressing the [EDIT/COMPARE] key to activate the COMPARE function. A "C" will appear on the LED display while the COMPARE function is active, and the sound of the setup prior to editing will be heard when you play the keyboard. Press the [EDIT/COMPARE] key again to return to the edit mode.



SY35 PRESET MULTI Performance Note

No.	MULTI Name	Type	Comments	No.	MULTI Name	Type	Comments
11	Orchstra	Layer	Big orchestra.	21	DistLead	Layer	Distortion lead voice.
12	BigBand	Layer	Big-band brass section.	22	Wb/Piano	Split	Wood bass and piano split.
13	SuperClv	Layer	Layered clavi sound.	23	B/BrsSec	Split	Electric bass and brass split.
14	PianoStr	Layer	Layered piano and strings.	24	Celo/Flt	Split	Cello and flute split.
15	VoiceBs	Layer	Layered bass and human voice.	25	<Pop>	MIDI Multi	Pop music ensemble.
16	FullBrs	Layer	Powerful brass.	26	<Rock>	MIDI Multi	Rock group.
17	PanLead	Layer	Pan-flute type lead voice.	27	<Jazz>	MIDI Multi	Jazz ensemble.
18	Str&Cho	Layer	Layered strings and choir.	28	<Demo>	MIDI Multi	SY35 demo multi.

SY35 INTERNAL MULTI Performance Note

No.	MULTI Name	Type	Comments	No.	MULTI Name	Type	Comments
11	SyncLead	Layer	Fat "sync" lead.	21	FatBrass	Layer	Fat analog synth brass.
12	SuperSaw	Layer	Extra-fat sawtooth lead.	22	HyuhPad	Layer	Synth pad with wind effect.
13	BellPad	Layer	Filter sweep synth pad.	23	Reggae	Layer	Ideal for Reggae music.
14	SunBeam	Layer	"Sunny" sound for backing.	24	Mikado	Layer	Musical effect.
15	WideDcy	Layer	Bright backing layer.	25	Prologue	Layer	Musical effect.
16	AnaPad1	Layer	Analog synth pad 1.	26	Epilogue	Layer	Musical effect.
17	AnaPad2	Layer	Analog synth pad 2.	27	SolidSet	Split	Bass and synth lead split.
18	AnaPad3	Layer	Analog synth pad 3.	28	RytmSec.	Split	Auto drum and bass pattern.

NAME

```
MU>NAME
  P11  Initial
```

Summary: Assigns a name of up to 8 characters to the current multi-play setup.

Settings: The following characters are available for use in multi-play names:

```
(Space) !"#¢%&'()*+,-./0123456789:;<=>?Å
ABCDEFGHIJKLMNOPQRSTUVWXYZ[Á]^_«
abcdefghijklmnopqrstuvwxyz“|‘Ÿ°
```

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the character to be changed. Use the [–1/NO] and [+1/YES] keys to select the desired character. Continue until the entire multi-play name has been programmed.

Details: It’s a good idea to give your multi-play setups names that make them easily identifiable. If you’ve created a new setup using three voices intended for rock music, you could call it something like “RockTrio”.

EFFECT (Type & Depth)

```
MU>EFFECT
Rev  Hall      Dep=1
```

Summary: Selects one of sixteen digital effects, and sets the depth of the selected effect for the current multi-play setup.

Settings: Effect type:

Rev Hall	(Reverb Hall)
Rev Room	(Reverb Room)
Rev Plate	(Reverb Plate)
Rev Club	(Reverb Club)
Rev Metal	(Reverb Metal)
Delay 1	(Short Single Delay)
Delay 2	(Long Delay)
Delay 3	(Long Delay)
Doubler	(Doubler)
Ping-Pong	(Ping Pong Delay)
Pan Ref	(Panned Reflections)
Early Ref	(Early Reflections)
Gate Rev	(Gated Reverb)
Dly&Rev 1	(Delay & Reverb 1)
Dly&Rev 2	(Delay & Reverb 2)
Dist&Rev	(Distortion & Reverb)

Depth: 0 … 7

Procedure: Use the [4] and [6] cursor keys to place the underline cursor under the effect type or depth parameter. Use the [–1/NO] and [+1/YES] keys to select the desired effect or effect depth.

Details: Setting the depth parameter to “0” is equivalent to turning the effect OFF. A depth setting of “7” produces the greatest effect.

VOICE NUMBER

```
MU>VOICE  NUMBER
  I11  Initial
```

Summary: Assigns a preset, card or internal voice to the selected multi-play part.

Settings: Source: I, C, P
Bank: 1 … 8
Number: 1 … 8

Procedure: Press the [NUMBER/MULTI PART SELECT] key corresponding to the desired multi-play part.
Use the [4] and [6] cursor keys to move the cursor to the source, bank, or number parameter. Use the [–1/NO] and [+1/YES] keys to set the selected parameter as necessary.

Details: In this display the source, bank and number parameters are shown in the standard SY35 voice number format. "P12," for example, is preset bank 1, number 2; "I35" is internal bank 3, number 5, etc.

MIDI RECEIVE CHANNEL

```
MU>MIDI Rcv.ch
 channel= 1
```

Summary: Sets the MIDI receive channel for the selected multi-play part to any channel between 1 and 16, or off.

Settings: 0 ... 16, off

Procedure: Press the [NUMBER/MULTI PART SELECT] key corresponding to the desired multi-play part.
Use the [6] cursor key to move the cursor to the lower display line. The [–1/NO] and [+1/YES] keys are used to select the desired MIDI channel or turn MIDI reception for that part off.

Details: The most logical and easy-to-follow settings for multi-play parts 1 through 8 are, naturally, MIDI channels 1 through 8. Turn MIDI reception "off" for parts you do not intend to use.

VOLUME

```
MU>VOLUME
 Level= 0
```

Summary: Adjusts the volume of the selected multi-play part.

Settings: 0 ... 99

Procedure: Press the [NUMBER/MULTI PART SELECT] key corresponding to the desired multi-play part.
Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired volume level.

Details: A setting of "0" produces no sound while a setting of "99" produces maximum volume.
The ability to independently adjust the volume of each multi-play part makes it simple to set up the optimum balance or "mix" between parts.

DETUNE

```
MU>DETUNE
      0cent
```

Summary: Allows slight upward or downward pitch adjustment of the selected multi-play part.

Settings: –50 ... 0 … +50

Procedure: Press the [NUMBER/MULTI PART SELECT] key corresponding to the desired multi-play part.
Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired amount of detuning.

Details: The Detune function allows different parts in a multi-play setup to be slightly detuned in relation to each other, thereby "thickening" the overall sound.
Detuning occurs in 3 or 4-cent steps. Since 100 cents equals one semitone, the overall detune range is approximately one semitone. Plus settings tune upward from normal pitch, and minus settings tune downward. A setting of "0" produces normal pitch.

NOTE LIMIT (Low & High)

```
MU>NOTE LIMIT
Low= C-2 High= G8
```

Summary: Sets the low and high note limits for the selected multi-play part.

Settings: C-2 ... G8

Procedure: Press the [NUMBER/MULTI PART SELECT] key corresponding to the desired multi-play part.
Use the [4] and [6] cursor keys to select the Low or High parameter. The [–1/NO] and [+1/YES] keys are used to set the low or high note limit.

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

This function allows the sound from a multi-play part to be limited to a specific region of the keyboard. If the Low Note Limit is set to C3 and the High Note Limit is set to C4, for example, the sound from that part 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 *lower* than the Low Note Limit, the keys between the limits will produce no sound while all others will operate normally.

NOTE SHIFT

```
MU>NOTE SHIFT
      0
```

Summary: Shifts the pitch of the selected multi-play part up or down in semitone steps.

Settings: –24 ... 0 … +24.

Procedure: Press the [NUMBER/MULTI PART SELECT] key corresponding to the desired multi-play part.
Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired degree of note shift.

Details: A setting of "–12," for example, shifts the pitch of the selected voice down by one octave; a setting of "+4" shifts the pitch up by a major third. The maximum range is plus or minus two octaves.

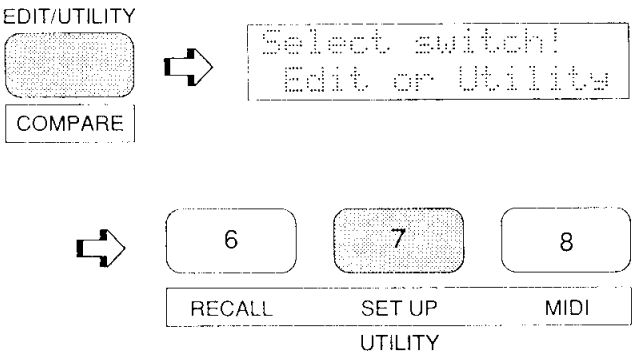
The Note Shift function can be used to transpose a voice to its most useful range, or to create harmony (intervals) between different parts in a multi-play setup.

UTILITY SETUP

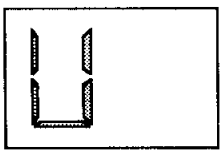
The UTILITY SETUP mode provides access to a range of basic utility functions that are essential for general operation of the SY35.

Selecting the UTILITY SETUP Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [UTILITY SETUP].
A "U" will appear on the LED display to indicate that a utility mode has been selected



Selecting the UTILITY SETUP Mode Functions

The various UTILITY SETUP mode functions can be selected in sequence by pressing the [UTILITY SETUP] key, or by using the [–1/NO] and [+1/YES] keys when the cursor (▷)is located immediately before the function name on the upper display line.

MASTER TUNE

```
SU>MASTER TUNE
      0cent
```

Summary: Tunes the overall pitch of the SY35 over approximately a 100-cent range.

Settings: –50 ... 0 … +50

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to set the desired degree of tuning.

Details: Tuning occurs in 3 or 4-cent steps. Since 100 cents equals one semitone, the overall tuning range is approximately one semitone — i.e. plus or minus a quarter tone. Plus settings tune upward from normal pitch, and minus settings tune downward. A setting of "0" produces normal pitch.

TRANSPOSE

```
SU>TRANSPOSE
      0
```

Summary: Transposes the overall pitch of the SY35 up or down in semitone steps.

Settings: –12 ... 0 … +12

Procedure: Use the [6] key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to set the desired degree of transposition.

Details: A setting of "–12," for example, transposes down by one octave; a setting of "+4" transposes up by a major third.

MEMORY CARD (Save, Load, Format, & Bank)

● ***Save***

```
SU CARD
  >SAVE
```

Summary: Saves all internal voice and multi-play data to a memory card.

Settings: SAVE

Procedure: Use the [6] key to move the cursor to the lower display line, then use the [–1/NO] and [+1/YES] keys to select "SAVE." Now press the [6] key again and the "SAVE TO CARD?" display will appear. Press the [+/YES] key to start the save operation, or the [–1/NO] key to cancel. "****SAVE NOW****" will appear on the display while the operation is in progress, and ">>Completed!!<<" will appear briefly when the save operation has finished.

Details: The SAVE operation can only be executed if the CARD parameter of the MEMORY PROTECT function described on page 45 is turned "off," and the WRITE PROTECT switch of the MCD32 or MCD64 Memory Card loaded in into the CARD slot is turned "off."
When an MCD64 Memory Card is used, the bank to which the data is to be save can be selected using the BANK function described on page 42.

Exercise caution when saving data to a memory card — the previous card data will be erased and completely replaced by the saved data.

● ***Load***

```
SU  CARD
  >LOAD
```

Summary: Loads voice and multi-play data from a memory card into the SY35 internal memory.

Settings: LOAD

Procedure: Use the [6] key to move the cursor to the lower display line, then use the [–1/NO] and [+1/YES] keys to select "LOAD." Now press the [6] key again and the "LOAD from CARD?" display will appear. Press the [+1/YES] key to start the load operation, or the [–1/NO] key to cancel. "****LOAD NOW****" will appear on the display while the operation is in progress, and ">>Completed!!<<" will appear briefly when the load operation has finished.

Details: The LOAD operation can only be executed if the INTERNAL parameter of the MEMORY PROTECT function described on page 45 is turned "off."

When an MCD64 Memory Card is used, the bank from which the data is to be loaded can be selected using the BANK function described on this page.

Exercise caution when loading data from a memory card — the corresponding internal SY35 data will be erased and completely replaced by the loaded data.

● ***Format***

```
SU  CARD
  >FORMAT
```

Summary: Formats MCD64 or MCD32 Memory Cards so that they can be used by the SY35 to save and load voice and multi-play data.

Settings: FORMAT

Procedure: Use the [6] key to move the cursor to the lower display line, then use the [–1/NO] and [+1/YES] keys to select "FORMAT." Now press the [6] key again and the "FORMAT ?" display will appear. Press the [+1/YES] key to start the format operation, or the [–1/NO] key to cancel. ">>Completed!!<<" will appear briefly when the format operation has finished.

Details: Formatting can only be carried out if the memory card WRITE PROTECT switch is turned OFF (refer to your MCD64 or MCD32 Memory Card instructions for details).

● ***Bank***

```
SU  CARD
  >BANK       1
```

Summary: Selects bank 1 or bank 2 of a Yamaha MCD64 type memory card prior to formatting or load/save operations.

Settings: 1, 2

Procedure: Use the [6] key to move the cursor to the lower display line, then use the [–1/NO] and [+1/YES] keys to select "BANK." Now press the [6] key again to move the cursor to the bank number. Use the [–1/NO] and [+1/YES] keys to select the desired bank.

Details: MCD32 memory cards only have a single bank, so bank 2 cannot be selected if this type of card is used. MCD64 memory cards allow selection of bank 1 or 2. Each bank holds 64 voices and 16 multi-play setups.

VOICE INITIALIZE

SU>INIT. VOICE

Summary: Initializes all parameters of the current voice.

Settings: None.

Procedure: Select the UTILITY SETUP mode from the VOICE play mode. Then, after selecting the "INIT. VOICE" display, press the [6] key. "Are you sure?" will appear on the lower line of the display. Press the [+1/YES] to initialize or [–1/NO] to cancel the initialize operation. ">>Completed!!<<" will appear briefly when the initialization is finished.

Details: When Voice Initialize is executed, the voice parameters are initialized to the following values:

INITIAL VOICE

COMMON		
VOICE NAME		Initial
CONFIGURATION		A–B–C–D
EFFECT		Rev. Hall
	Dep	1
PITCH BEND		2
WHEEL	AM	off
	PM	on
AFTER TOUCH	AM	off
	PM	off
	Pit	0
	Lev	off
ENVELOPE	AR	0
	RR	0
VECTOR		
VECTOR LEVEL SPEED		30 ms
STEP/X/Y/TIME		1 0 0 End
VECTOR DETUNE SPEED		30 ms
STEP/X/Y/TIME		1 0 0 End

		A	B	C	D
ELEMENT TONE					
WAVE		000:PIANO:PIANO	151:OSC1:sin8'	039:Str:Vn.Ens	152:OSC1:sin4'
FREQ. shift		0	0	0	0
VOLUME		99	99	99	99
PAN		L--<u>C</u>--R	L--<u>C</u>--R	L--<u>C</u>--R	L--<u>C</u>--R
VELOCITY	Sense	2	2	2	2
AFTER	Sense	0	0	0	0
TONE Lev		—	92	—	92
TONE FB		—	0	—	0
LFO AM		0	0	0	0
LFO PM		16	16	16	16
LFO TYPE		/\/\	/\/\	/\/\	/\/\
LFO Dly		0	0	0	0
LFO Rate		99	99	99	99
LFO Spd		20	20	20	20

	A	B	C	D
ELEMENT ENV				
TYPE	PRESET	PRESET	PRESET	PRESET
DELAY Rate	99	99	99	99
DELAY ELE.	off	off	off	off
INITIAL Level	67	0	90	0
ATTACK AL	99	92	97	92
ATTACK AR	99	99	64	99
DECAY1 D1L	99	92	95	92
DECAY1 D1R	0	0	32	0
DECAY2 D2L	0	92	95	92
DECAY2 D2R	26	0	0	0
RELEASE Rate	60	76	52	76
SCALING Lev Type	2	1	4	1
Rate Type	3	1	2	1

The voice initialize function is useful if you want to begin programming a voice "from scratch."

MULTI INITIALIZE

SU>INIT. MULTI

Summary: Initializes all parameters of the current multi-play setup.

Settings: None.

Procedure: Select the UTILITY SETUP mode from the MULTI play mode. Then, after selecting the "INIT. MULTI" display, press the [6] key. "Are you sure?" will appear on the lower line of the display. Press the [+1/YES] to initialize or [–1/NO] to cancel the initialize operation. ">>Completed!!<<" will appear briefly when the initialization is finished.

Details: When multi-play Initialize is executed, the multi-play setup parameters are initialized to the following values:

INITIAL MULTI

	PART1	PART2	PART3	PART4	PART5	PART6	PART7	PART8
NAME	Initial							
EFFECT	Rev Hall							
EFFECT Dep	1							
VOICE NUMBER	P11 AP:Rock	P11 AP:Rock	P11 AP:Rock	P11 AP:Rock	P11 AP:Rock	P11 AP:Rock	P11 AP:Rock	P11 AP:Rock
MIDI Rcv.ch	1	2	3	4	5	6	7	8
VOLUME	99	99	99	99	99	99	99	99
DETUNE	0	0	0	0	0	0	0	0
NOTE LIMIT Low	c-2	c-2	c-2	c-2	c-2	c-2	c-2	c-2
NOTE LIMIT High	G8	G8	G8	G8	G8	G8	G8	G8
NOTE SHIFT	0	0	0	0	0	0	0	0

The multi initialize function is useful if you want to begin programming a voice "from scratch."

MEMORY PROTECT (Internal & Card)

SU>MEM.PROTECT
INT=on CARD=on

Summary: Turns internal or card memory protection on or off.

Settings: INT: on, off
CARD: on, off

Procedure: Use the [4] and [6] cursor keys to select the INT or CARD parameter. Use [–1/NO] and [+1/YES] keys to turn memory protection on or off.

Details: When INT memory protection is "on," the internal memory is protected and voice store operations to the internal memory cannot be carried out. The same applies to card memory: when protection is "on" memory card save operations will be blocked even if the memory card WRITE PROTECT switch is turned OFF.

FACTORY VOICE & MULTI RESTORE

SU>FACTORY V&M

Summary: Restores the factory-preset voices and multi-play setups in the INTERNAL VOICE and MULTI memory areas.

Procedure: Make sure the internal memory protect function is turned OFF before using this function (see "MEMORY PROTECT" above).
From the initial "SU>FACTORY V&M" display press [6] cursor key. "Are you sure?" will appear on the display. Press the [+1/YES] key if you want to go ahead with the factory voice and multi restore operation, or press [–1/NO] to cancel. If you press [+1/YES], ">>Completed!!<<" will appear on the display when the restore operation has finished.

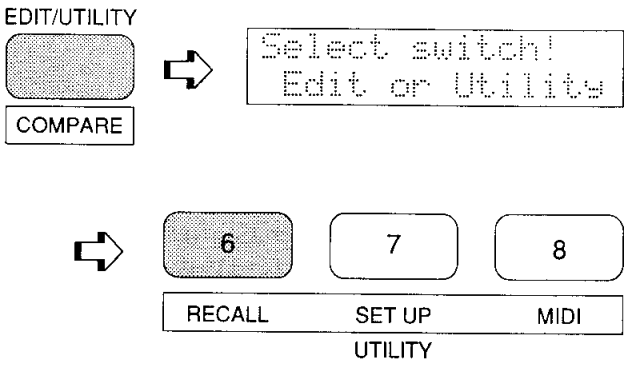
Details: When the factory voice and multi restore operation is executed, all data in the SY35 internal voice and multi memory areas is overwritten by the factory preset data. Make sure you save important voice and multi data to memory card or an external MIDI data filer prior to restoring the factory preset data.
If you attempt to execute the factory voice and multi restore operation when internal memory protect is turned ON, "Memory Protected" will appear on the display and the restore operation will be aborted.

UTILITY RECALL

The UTILITY RECALL mode accesses the VOICE or MULTI recall function, depending on whether the VOICE or MULTI play mode is selected when the RECALL function is called. RECALL makes it possible to recover a voice or multi-play setup that has been “lost” through failure to store the voice or multi-play setup prior to selecting a different voice or multi-play setup.

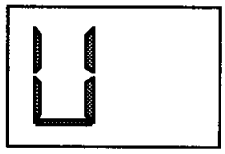
Selecting the UTILITY RECALL Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [UTILITY RECALL].

A "U" will appear on the LED display to indicate that a utility mode has been selected



VOICE RECALL (Voice or Multi)

```
RC RECALL VOICE
  Are you sure?
```

Summary: Recalls the last voice or multi-play setup edited from the SY35 edit buffer memory.

Settings: None

Procedure: The "RECALL VOICE" function is selected if called from the VOICE play mode, while "RECALL MULTI" function is selected if called from the MULTI play mode. "Are you sure?" appears on the lower display line. Press the [+1/YES] key to recall or [–1/NO] to cancel the recall operation.

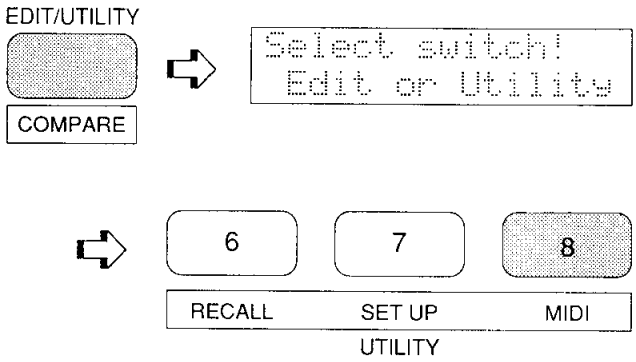
Details: Even if you've exited the edit mode and called a different voice or multi-play setup, this function will recall the last voice or multi-play setup edited with all parameters as they were at the time the edit mode was exited.

UTILITY MIDI

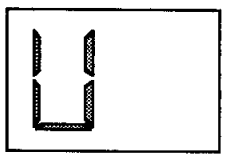
The UTILITY MIDI mode provides access to all of the SY35's MIDI control functions.

Selecting the UTILITY MIDI Mode

From the VOICE or MULTI mode:



From another edit or utility mode simply press [UTILITY MIDI].
A "U" will appear on the LED display to indicate that a utility mode has been selected.



Selecting the UTILITY MIDI Mode Functions

The various UTILITY MIDI mode functions can be selected in sequence by pressing the [UTILITY MIDI] key, or by using the [−1/NO] and [+1/YES] keys when the cursor (▷)is located immediately before the function name on the upper display line.

MIDI ON/OFF

```
MD>MIDI
 midi=on
```

Summary: Turns all MIDI control functions on or off.

Settings: on, off

Procedure: Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to turn MIDI control on or off.

Details: MIDI control can be turned "off" to prevent unwanted interference from external MIDI devices connected to the SY35, and/or to prevent the SY35 from affecting operation of the external equipment.

BASIC RECEIVE CHANNEL

```
MD>BASIC Rcv.CH
 channel= 1
```

Summary: Sets the SY35 MIDI receive channel to any channel between 1 and 16, or the "omni" mode for reception on all channels.

Settings: 1 ... 16, omni

Procedure: Use the [6] cursor key to move the cursor to the lower display line. The [–1/NO] and [+1/YES] keys are used to select the desired MIDI channel or the omni mode.

Details: When the SY35 is to receive data from an external MIDI device such as a sequencer, make sure that the SY35 MIDI receive channel is either set to the channel that the external device is transmitting on, or the omni mode.

TRANSMIT CHANNEL

```
MD>TRANSMIT CH
 channel= 1
```

Summary: Sets the MIDI transmit channel for the SY35.

Settings: 1 … 16.

Procedure: Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to select the desired MIDI transmit channel number.

Details: The MIDI transmit channel job is used primarily to match the transmit channel of the SY35 with the receive channel of an external MIDI device being driven by the SY35. When a multi-play setup is selected, however, the MIDI transmit channel setting also determines which of the setup's voices is played via the SY35 keyboard.

LOCAL CONTROL ON/OFF

```
MD>LOCAL
 Local=on
```

Summary: Determines whether the SY35 keyboard controls the internal tone generator system or not.

Settings: on, off.

Procedure: Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to turn local control on or off.

Details: Normally, local control will be turned "on" so that the SY35 keyboard plays its own internal tone generator system. If you want to control an external MIDI tone generator or other device from the SY35 keyboard *without* playing the internal tone generator, turn local control "off." One possibility is to drive the SY35 tone generator system from an external sequencer while independently playing a separate external tone generator from the SY35 keyboard.

MIDI PROGRAM CHANGE

```
MD>PROG.CHANGE
 =off
```

Summary: Determines how the SY35 will respond to MIDI program change messages for remote voice/multi selection.

Settings: off, common, individual

Procedure: Use the [6] cursor key to move the cursor to the lower display line. The [–1/NO] and [+1/YES] keys are used to select the desired MIDI program change mode.

Details: The "off" setting turns MIDI program change reception and transmission off, so MIDI program change messages received from external equipment will not cause the corresponding SY35 voice to be selected, and no program change messages will be transmitted by the SY35 when one of its voices are selected.

In the "common" mode, program change numbers 0 through 63 received from external equipment will select SY35 voices 1.1 through 8.8, and program change numbers 64 through 79 select multi-play setups 1.1 through 2.8. The card, internal or preset voice banks cannot be selected via MIDI control. The corresponding program change number will also be transmitted by the SY35 when one of its voices are selected.
The "individual" mode allows individual voice selection for each multi-play part when the MULTI play mode is active. Program change between 0 and 63 received in a specific MIDI channel will change only the voice for the multi-play part assigned to that channel.

MIDI CONTROL CHANGE

```
MD>CTRL.CHANGE
 =off
```

Summary: Determines whether or not the SY35 will receive and transmit MIDI control change messages.

Settings: off, on

Procedure: Use the [6] cursor key to move the cursor to the lower display line. The [–1/NO] and [+1/YES] keys are used to turn control change reception/transmission on or off.

Details: The "off" setting turns MIDI control change reception and transmission off so that control change messages corresponding to modulation, volume and other functions will be ignored by the SY35 when received, and the SY35 will not transmit any control change messages.

AFTER TOUCH ON/OFF

```
MD>AFTER TOUCH
 =on
```

Summary: Turns keyboard after touch on or off.

Settings: on, off.

Procedure: Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to turn after touch on or off.

Details: When after touch is turned "off," internal SY35 after touch will function normally but no MIDI after touch data will be transmitted or received.

Keyboard after touch generates a tremendous amount of MIDI data, so you might want to turn after touch "off" when recording to a MIDI sequencer in order to preserve memory capacity.

PITCH BEND ON/OFF

```
MD>PITCH BEND
 =on
```

Summary: Turns pitch bend control on or off.

Settings: on, off.

Procedure: Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to turn pitch bend control on or off.

Details: When pitch bend control is turned "off," the SY35 pitch bend wheel will function normally but no MIDI pitch bend wheel data will be transmitted or received.

EXCLUSIVE ON/OFF

```
MD>EXCLUSIVE
 =on
```

Summary: Turns transmission/reception of MIDI system exclusive data on or off.

Settings: on, off.

Procedure: Use the [6] cursor key to move the cursor to the lower display line. Use the [–1/NO] and [+1/YES] keys to exclusive transmission/reception on or off.

Details: MIDI system exclusive data is transmitted by the SY35 when one of the voice transmit functions described below is used. The same type of data will also be automatically loaded into the SY35 memory when received from a second SY35 or other MIDI device, thus erasing previous data. This function can be turned "off" to prevent accidental erasure of the internal memory, or the memory of external equipment, do to mistaken data reception or transmission.

ALL V/M TRANSMIT

```
MD>ALL V/M TRANS
 ALL Voice&Multi
```

Summary: Initiates MIDI bulk transmission of all voice and multi-play data.

Settings: None

Procedure: Use the [6] key to move the cursor to the lower display line. "Are you sure?" will appear on the display. Press the [+1/YES] key to begin transmission, or the [–1/NO] key to cancel. "Transmitting!!" will appear on the display during transmission, and ">>Completed!!<<" will appear briefly when transmission has finished.

Details: This function is useful for transferring all the voice and multi-play data in the INTERNAL memory from one SY35 to another. If the MIDI OUT of the transmitting SY35 is connected to the MIDI IN of the receiving SY35 via a MIDI cable, the receiving unit will automatically receive and load the data as long as its internal memory protect function is turned "off" and EXCLUSIVE ON/OFF is turned "on." Another possibility is to transfer the data to a MIDI bulk data storage device for long-term storage.

1 VOICE TRANSMIT

```
MD>1 VOICE TRANS
 I11   Yes/No ?
```

Summary: Initiates bulk transmission of the data for a specified SY35 voice.

Settings: Source: I, C, P
Bank: 1 … 8
Number: 1 … 8

Procedure: Use the [4] and [6] cursor keys are used to move the cursor to the source, bank, or number parameter. Use the [–1/NO] and [+1/YES] keys to set the selected parameter as necessary. When the desired voice number has been selected, move the cursor to the Yes/No? parameter and press the [+1/YES] key to begin transmission. "Transmitting!!" will appear on the display during transmission, and ">>Completed!!<<" will appear briefly when transmission has finished.

Details: Like the ALL V/M TRANSMIT function described above, the 1 VOICE TRANSMIT function is ideal for transferring voice from one SY35 to another, or to a MIDI bulk storage device for long-term storage.
In this display the source, bank and number parameters are shown in the standard SY35 voice number format. "P12," for example, is preset bank 1, number 2; "I35" is internal bank 3, number 5, etc.

APPENDIX

VOICE LIST

Preset Voice List

No.	Voice Name	Wave	Effect	Ct	Comment
11	AP:Rock (Rock)	000 Piano 071 Vibes 2	Dly&Rev2	MW	Basic rock piano
12	AP:Clsic (Classic)	000 Piano 002 E.Piano3	Rev Hall	MW	Standard classical piano
13	AP Chors (Chorus)	000 Piano∞2 005 E.Piano6∞2	Rev Hall		A chorused piano
14	AP:HTonk (HonkyTonk)	000 Piano 057 Bass 4	Dly&Rev2	MW	Gin joint honky-tonk piano
15	AP:Soft (Soft)	000 Piano 002 E.Piano3	Dly&Rev2	MW	Mild piano, tone changes with velocity.
16	AP Pf&St (PF&Strings)	000 Piano 085 Str.Body 002 E.Piano3 064 Str 2	Rev Hall		Acoustic piano with orchestral strings
17	AP:Blend (Blend)	000 Piano 073 Vibes 4	Rev Hall		Blended acoustic and electric pianos
18	AP Bell (Bell)	000 Piano 001 E.Piano 079 Bells 3 070 Vibes 1	Rev Hall		Acoustic piano with bell attack
21	EP Tine (Tine)	001 E.Piano∞2 070 Vibes 1∞2	Rev Hall		DX-like electric piano
22	EP:Light (Light)	001 E.Piano 000 E.Piano1	Rev Club	MW	Electric piano with light metal attack
23	EP:Old (Old)	001 E.Piano 002 E.Piano3	Rev Hall	MW	Electric piano from the ’70s
24	EP Malet (Malet)	001 E.Piano∞2 071 Vibes 2∞2	Rev Hall	MW	Bright electric piano with mallet attack
25	KY Clav1 (Clavi1)	002 Clavi 083 HornBody 057 Bass 4 242 Wave24-2	Dly&Rev2	MW	A standard clavinet
26	KY:Clav2 (Clavi2)	083 HornBody 057 Bass 4	Dly&Rev2	MW AT	Slightly different clavinet, aftertouch produces vibrato.
27	KY:Celst (Celesta)	004 Celesta 152 Sin 4’	Rev Hall	MW	Delicate celesta
28	KY:Hrpsi (Harpsichord)	003 Cembalo 044 Clavi 3	Dly&Rev2	MW	The classic harpsichord
31	BR:Trmpt (Trumpet)	009 Trumpet 018 Brass 5	Rev Hall	MW AT	Trumpet with aftertouch vibrato
32	BR:Mute (MuteTrumpet)	010 MuteTrp 099 Sus. 2	Rev Hall	MW AT	Muted trumpet
33	BR:Tromb (Trombone)	011 Trombone 017 Brass 4	Rev Room	MW	Trombone, attack goes brassy when played hard.
34	BR:Flugl (FlugelHorn)	012 Flugel 018 Brass 5	Rev Hall	MW AT	Flugelhorn with aftertouch vibrato
35	BR:FrHrn (FrenchHorn)	013 FrHorn 020 Brass 7	Rev Hall	MW AT	French horn with aftertouch vibrato
36	BR Sect1 (Section1)	014 BrasEns∞2 016 Brass 3 017 Brass 4	Rev Club		Bright pops brass section
37	BR Sect2 (Section2)	019 Sax 014 BrasEns 038 Reed 3 016 Brass 3	Rev Club	MW AT	Low brass section with sax

: = 2 elements, = 4 elements

MW = Modulation Wheel effective

AT = Aftertouch effective

No.	Voice Name	Wave	Effect	Ct	Comment
38	BR Fanfr (Fanfare)	011 Trombone∞2 017 Brass 4 016 Brass 3	Rev Hall	MW AT	Classic fanfare brass
41	ST Arco1 (Arco1)	038 Strings∞2 155 Saw 1∞2	Rev Hall		Full orchestral strings
42	ST:Arco2 (Arco2)	039 Vn.Ens. 063 Str 1	Rev Room		Chamber strings
43	ST:Cello (Cello)	040 Cello 065 Str 3	Rev Room	MW AT	A cello, good played stacatto or with aftertouch.
44	ST SlwAt (SlowAtack)	038 Strings 039 Vn.Ens 068 Str 6∞2	Rev Hall	MW AT	Slow attack strings, level changes with aftertouch.
45	ST Pizz (Pizzicato)	041 Pizz∞2 052 Guitar 7∞2	Rev Hall	MW	Pizzicato strings
46	ST Treml (Tremolo)	039 Vn.Ens.∞2 156 Saw 2∞2	Rev Hall		Tremolo strings
47	ST OrchB (OrchestraBrass)	038 Strings∞2 027 Brass 14 023 Brass 10	Rev Hall		Orchestral strings, brass appear when played hard.
48	ST OrchS (OrchestraStrings)	038 Strings∞2 127 Decay 3∞2	Rev Hall		Orchestral strings
51	BA:Wood (Wood)	028 Wood B 1 055 Bass 2	Rev Room	MW AT	Wood bass
52	BA:Frtls (Fretless)	035 Fretless 055 Bass 2	Rev Hall	MW AT	Fretless bass
53	BA Slap (Slap)	031 E.Bass 2 054 TumbStr 006 E.Organ1 043 Clavi 2	Rev Hall	MW	Slapped bass, thumps when played hard.
54	BA:Fingr (Finger)	030 E.Bass 1 055 Bass 2	Rev Plate	MW	Fingered electric bass
55	BA:Pick (Pick)	031 E.Bass 2 056 Bass 3	Rev Club	MW	Picked electric bass
56	BA:Synth (Synth)	104 Saw 3 062 Bass 9	Delay 1	MW AT	Synth bass
57	BA:Tchno (Techno)	037 SynBass2 138 Decay 14	Delay 1	MW AT	Technorock-oriented synth bass
58	BA:Groov (Groove)	111 Pulse 2 061 Bass 8	Gate Rev	MW AT	Fat synth bass with resonance
61	WN:Sax (Sax)	019 Sax 038 Reed 3	Rev Room	MW AT	A bright alto sax
62	WN:Flute (Flute)	016 Flute 028 Wood 1	Rev Hall	MW AT	Flute with aftertouch vibrato
63	WN:Clari (Clarinet)	017 Clarinet 032 Wood 5	Rev Hall	MW AT	Clarinet
64	WN:Oboe (Oboe)	018 Oboe 037 Reed 2	Rev Hall	MW AT	Oboe
65	WN PanFl (PanFlute)	066 NoisPad2 070 Bottle 034 Wood 7∞2	Rev Hall		Pan flute
66	WN SaxEm (SaxEnsemble)	019 Sax∞2 038 Reed 3∞2	Rev Club	MW AT	Saxophone ensemble
67	WN Ensmb (WindEnsemble)	016 Flute 017 Clarinet 110 Sus. 13 108 Sus. 11	Early Ref	MW AT	Wind ensemble, tone varies with velocity.
68	WN Orch (Orchestra)	016 Flute 085 Str.Body 121 Move 4 108 Sus. 11	Rev Hall		An orchestra, featuring the wind instruments

: = 2 elements, = 4 elements

MW = Modulation Wheel effective

AT = Aftertouch effective

No.	Voice Name	Wave	Effect	Ct	Comment
71	PL:Gypsy (Gypsy)	020 Gut 179 Wave3-2	Rev Hall	MW	Nylon guitar
72	PL:Folk (Folk)	021 Steel 044 Clavi 3	Rev Hall	MW	Steel-string folk guitar
73	PL Wide (Wide)	021 Steel∞2 048 Guitar 3∞2	Rev Room		12-string guitar
74	PL Mute (Mute)	026 Pluck 1 024 MuteGtr 052 Guitar 7 050 Guitar 5	Dly&Rev2	MW	Muted guitar, tone changes with velocity.
75	PL:Rock (Rock)	026 Pluck 1 048 Guitar 3	Dist&Rev	MW	Rock guitar
76	PL Dist (Distortion)	022 E.Gtr 1 098 Digital2 157 Square 193 Wave8-1	Dist&Rev	MW	Distorted guitar, vectoring produces feedback
77	PL:Chrng (Charango)	021 Steel 048 Guitar 3	Rev Hall	MW	Charango
78	PL:Sitar (Sitar)	025 Sitar 053 Guitar 8	Rev Room		Sitar
81	CH Pure (Pure)	067 NoisPad3 043 Choir 130 Decay 6∞2	Rev Hall		Choir with a clear high tone
82	CH Itopy (Itopy)	044 Itopia∞2 030 Wood 3∞2	Rev Hall		Itopia-style synth chorus
83	CH Uhh-- (Uhh)	043 Choir∞2 125 Decay 1∞2	Rev Room		Chorus with a strong attack
84	CH Angel (Angel)	065 NoisPad1∞2 028 Wood 1∞2	Rev Hall		Heavenly female synth chorus
85	CH Bell (Bell)	043 Choir∞2 079 Bells 3∞2	Rev Hall	AT	Chorus with a bell attack
86	CH Snow (Snow)	066 NoisPad2 044 Itopia 131 Decay 7∞2	Rev Hall		A cold choir
87	CH Vcodr (Vocorder)	045 Choir Pa∞2 109 Sus. 12∞2	Dly&Rev2		Vocoder-like chorus
88	CH Marin (Marin)	043 Choir∞2 028 Wood 1 152 Sin 4’	Rev Hall		Mysterious choir sound

: = 2 elements, = 4 elements

MW = Modulation Wheel effective

AT = Aftertouch effective

APPENDIX

Internal Voice List

No.	Voice Name	Wave	Effect	Ct	Comment
11	SP Warm (Warm)	055 SynPad∞2 111 Sus. 14∞2	Rev Hall		Warm synth pad on a grand scale
12	SP Resnc (Resonance)	102 Saw 1 081 Tp.Body 061 Bass 8∞2	Rev Room	MW AT	Resonant synth pad with aftertouch vibrato
13	SP Full! (Full)	042 Syn Str∞2 063 Str 1∞2	Rev Hall		Analog-like fat synth sound
14	SP Bell (Bell)	059 Bell Mix 055 SynPad 104 Sus. 7∞2	Rev Hall	MW AT	Synth pad with metal attack and aftertouch vibrato
15	SP Filtr (Filter)	060 Sweep∞2 121 Move 4∞2	Rev Hall		Synth pad with filter EG tone change
16	SP Deep (Deep)	046 Vibes∞2 078 Bells 2∞2	Rev Hall		Deep sea synth, best played low.
17	SP Fog (Fog)	067 NoisPad3∞2 101 Sus. 4∞2	Rev Hall		Pad with a touch of London fog
18	SP Dyna (Dynamic)	044 Itopia 066 NoisPad 2 111 Sus. 14 122 Move 5	Pan Ref		The SY35's theme sound, dynamic and big
21	SC Dgcrd (Digichord)	101 Digital5∞2 045 Clavi 4∞2	Rev Hall		Digichord, a buzzy low-range comping synth
22	SC Elgnt (Elegant)	059 Bell Mix∞2 106 Sus. 9∞2	Rev Hall		Soft comping synth, sizzles when held.
23	SC sFz (Sforzando)	015 SynBrass∞2 121 Move 4∞2	Dly&Rev 2	MW	Comping with filter EG and distinctive attack
24	SC Coin (Coin)	068 Coin∞2 073 Vibes 4∞2	Delay 3		Bell-like comping synth
25	SC Brash (Brash)	015 SynBrass∞2 026 Brass 13 017 Brass 4	Rev Club		Comping synth with brass attack
26	SC:Water (Water)	056 Harmonic 090 Metal 6	Rev Hall		Wet synth with water drops
27	SC Sand (Sand)	067 NoisPad3∞2 044 Clavi 3∞2	Gate Rev		Comping synth, good for sequencing.
28	SC Reso (Resonance)	058 SynLoad2∞2 140 Decay 16∞2	Rev Club	MW AT	Resonant synth with aftertouch vibrato
31	SL Saw (Saw)	102 Saw 1∞2 091 Lead 1∞2	Delay 3	MW AT	Typical sawtooth lead with aftertouch vibrato
32	SL:Squar (Square)	107 Square 2 093 Lead 3	Rev Plate	MW AT	Typical square wave lead with aftertouch vibrato
33	SL Sync (Sync)	058 SynLead2 116 Tri 061 Bass 8∞2	Rev Hall	MW AT	Lead synth with unique attack and aftertouch vibrato
34	SL Power (Power)	067 NoisPad3∞2 098 Sus. 1∞2	Delay 3	MW AT	Buzzy, powerful lead synth with aftertouch vibrato
35	SL Whstl (Whistle)	066 NoisPad2∞2 073 Vibes 4∞2	Rev Plate		The sound of two lips whistling
36	SL 2VCO (2VCO)	108 Square 3 095 Str wv 2 135 Decay 11 124 Move 7	Delay 3	MW AT	Lead synth with noisy attack and aftertouch vibrato
37	SL Fat (Fat)	102 Saw 1∞2 095 Lead 5∞2	Rev Hall	MW AT	Powerful fat lead synth with aftertouch vibrato
38	SL AnaSy (AnalogSynth)	057 SynLead1∞2 096 Lead 6∞2	Rev Hall	MW AT	Analog wind synth lead with aftertouch vibrato
41	OR:Tango (Tango)	008 Bandneon 038 Reed 3	Rev Room		Bandneon

: = 2 elements, = 4 elements

MW = Modulation Wheel effective

AT = Aftertouch effective

No.	Voice Name	Wave	Effect	Ct	Comment
42	OR:Paris (Paris)	008 Bandneon 094 Lead 4	Rev Room		An accordion you might hear at a Paris sidewalk cafe
43	OR Rock1 (Rock1)	006 E.Organ1 007 E.Organ2 006 E.Organ1 007 E.Organ2	Pan Ref	MW AT	Heavy rock organ
44	OR Rock2 (Rock2)	006 E.Organ1∞2 008 E.Organ3 006 E.Organ1	Rev Room	MW AT	Slightly brighter rock organ
45	OR Rock3 (Rock3)	007 E.Organ2∞2 153 Sin2 2/3∞2	Rev Room	MW	Rock organ with sampled rotary speaker sound
46	OR Cat (Cat)	090 EP wv 117 Sin8' 153 Sin2 2/3 152 Sin 4'	Rev Room		Jazz organ with a percussive attack
47	OR Big (Big)	005 P.Organ∞2 011 E.Organ6 250 Wave27-1	Rev Hall	MW	A huge cathedral pipe organ
48	OR Combo (Combo)	117 Sin8' 090 EP wv 037 Reed 2 153 Sin2 2/3	Rev Room	MW	Combo organ
51	BR Punch (Punch)	015 SynBrass∞2 062 Bass 9∞2	Gate Rev	MW AT	Synth brass with a punched attack and aftertouch vibrato
52	BR Power (Power)	057 SynLead1 015 SynBrass 014 Brass 1∞2	Rev Hall		Powerful synth brass
53	BR Fat (Fat)	015 SynBrass∞2 022 Brass 9∞2	Rev Club	MW AT	Fat synth brass with aftertouch vibrato
54	BR:Lite (Light)	104 Saw 3 096 Lead 6	Rev Club		Bright synth brass
55	ST Modrn (Modern)	042 Syn Str∞2 063 Str 1∞2	Rev Hall		Modern-sounding synth strings
56	ST Soft (Soft)	038 Strings∞2 091 Lead 1∞2	Rev Hall		Very basic synth strigns
57	ST Mild (Mild)	039 Vn.Ens.∞2 067 Str 5∞2	Rev Hall		Mild synth strings
58	ST:Lite (Light)	085 Str.Body 155 Saw 1	Rev Hall		Bright synth strings
61	SE Hit (Hit)	064 PopsHit 069 Crash 255 Wave30x2	Rev Hall		Pops hit with crash cymbal
62	SE Start (Start)	044 Itopia 060 Sweep 150 Sin 16'x2	Rev Metal		Sweep attack followed by an uncanny pitch change
63	SE Who? (Who)	060 Sweep 059 Bell Mix 144 SFX 2 121 Move 4	Rev Hall	MW	A bell sound appears when held.
64	SE Open (Open)	068 Coin∞2 120 Move 3 118 Move 1	Delay 3		Play a lot of keys while holding the sustain pedal.
65	SE Emgsy (Emergensy)	055 SynPad 056 Harmonic 156 Saw 2 145 SFX 3	Dly&Rev1		Emergency! A crisis is approaching …
66	SE Elect (Electric)	100 Digital4 098 Digital2 152 Sin 4' 162 Digi 2	Rev Room	MW	The sound of old-fashioned electric machines
67	SE GoUp! (GoUp)	121 SEQ 3 125 SEQ 7 254 Wave29 121 Move 4	Rev Hall		Pitch and tone vary when held.
68	SE and>? (and>?)	056 Harmonic 071 BotleOpn 123 Move 6 145 SFX 3	Rev Hall		The final sound effect: hold it for a long time.
71	ME Wide! (Wide)	066 NoisPad2x2 124 Move 7x2	Rev Hall		Grand scale and a distinctive sizzle
72	ME Drama (Drama)	055 SynPad 121 SEQ 3 145 SFX 3 091 Lead 1	Rev Hall	MW	Dramatic sound, tone changes often when held.

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AT = Aftertouch effective

No.	Voice Name	Wave	Effect	Ct	Comment
73	ME SlwSg (SlowSong)	046 Vibes 083 HornBody 073 Vibes 4 102 Sus. 5	Rev Club		Typical vector effect sound
74	ME Grand (Grand)	048 Bells 122 SEQ 4 121 Move 4 122 Move 5	Rev Hall	MW AT	Large-scale sound with a bell attack
75	ME Typhn (Typhoon)	059 Bell Mix 044 Itopia 102 Sus. 5 144 SFX 2	Rev Hall		Mysterious chorus sound, broadens when held.
76	ME Tzone (Tzone)	062 Noise 1∞2 154 Sin 2' 153 Sin2 2/3	Rev Hall		A mysterious, somehow sorrowful sound
77	ME Space (Space)	065 NoisPad1∞2 122 Move 5∞2	Rev Hall		Outer space synth pad
78	ME Memry (Memory)	119 SEQ 1121 SEQ 3 121 Move 4 112 Sus. 15	Rev Hall		Two wave sequences appear.
81	PC:Vibe (Vibraphone)	046 Vibes 151 Sin 8'	Rev Club		A cool vibraphone
82	PC Marim (Marimba)	047 Marimba∞2 075 Marimba2∞2	Rev Hall		Marimba
83	PC:M.Box (MusicBox)	046 Vibes 088 Metal 4	Rev Room	MW	An old-time music box
84	PC:Timp (Timpani)	049 Timpani 184 Wave5-1	Dly&Rev2	MW	Timpani
85	PC Batl (Battle)	080 Slam∞2 000 E.Piano1∞2	Rev Hall		TNT below B1, cannon around C3, machine guns at E4
86	PC Human (Human)	087 Reverse1 061 HumanAtk 151 Sin 8' 152 Sin 4'	Rev Hall		Human voice attack and its reverse, combined
87	DR Auto (Auto)	124 SEQ 6 051 E.Tom 160 Noise 2 151 Sin 8'	Rev Club		Drum pattern below C2, electric toms above G3
88	DR:Kit (Kit)	127 Drum Set	Rev Plate		Drum set voice

: = 2 elements, = 4 elements

MW = Modulation Wheel effective

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Sound Category List

AP = Acoustic Piano	WN = Wind	OR = Organ
EP = Electric Piano	PL = Plucked	SE = Sound Effect
KY = Keyboard	CH = Chorus	ME = Musical Effect
BR = Brass	SP = Synth Pad	PC = Percussive
ST = Strings	SC = Synth Comp	DR = Drums
BA = Bass	SL = Synth Lead	

Voice Number I88 DR:Kit: Drum-set Voice

Key	Wave Name
C1	BD 1
C♯1	Analog HH Close
D1	SD 1
D♯1	Analog HH Open
E1	E.Tom 1
F1	E.Tom 2
F♯1	E.Tom 3
G1	E.Tom 4
G♯1	BD 2
A1	BD 3
A♯1	CrossStick
B1	Tom 1
C2	Tom 2
C♯2	SD 2
D2	Tom 3
D♯2	Rimshot
E2	SD 3
F2	Tom 4
F♯2	Claps
G2	Cowbell 1
G♯2	Shaker
A2	HH Close
A♯2	Gong
B2	HH Open

Key	Wave Name
C3	CrashCymbal
C♯3	Splash
D3	Cup
D♯3	Ride
E3	Low Conga
F3	High Conga
F♯3	Mute Conga
G3	HumanAtackLow
G♯3	HumanAtackHigh
A3	LowTimbale
A♯3	HighTimbale
B3	Tambourine
C4	FingerSnap
C♯4	Claves
D4	Low Agogo
D♯4	High Agogo
E4	Low Cuica
F4	High Cuica
F♯4	LowWhistle
G4	HighWhistle
G♯4	Bamboo
A4	Bottle
A♯4	Cowbell 2
B4	MetalCrash

Key	Wave Name
C5	SD 4
C♯5	LowScratch
D5	SD 5
D♯5	HighScratch
E5	ReverseCymbal
F5	Slam 1
F♯5	Coin
G5	Slam 2
G♯5	BottleOpen
A5	LowTimpani
A♯5	Cracker
B5	HighTimpani
C6	MetalHit

MULTI LIST

PRESET MULTI LIST

No.	MULTI Name	Type	Voice Numbers								Comments
11	Orchstra	Layer	P47	P41							Big orchestra.
12	BigBand	Layer	P36	P37							Big-band brass section.
13	SuperClv	Layer	P25	P26							Layered clavi sound.
14	PianoStr	Layer	P15	P42							Layered piano and strings.
15	VoiceBs	Layer	P52	P87							Layered bass and human voice.
16	FullBrs	Layer	P35	P38							Powerful brass.
17	PanLead	Layer	P63	P63	P65	P65					Pan-flute type lead voice.
18	Str&Cho	Layer	P42	P85							Layered strings and choir.
21	DistLead	Layer	P76	P76	P76	P76	P76	P76	P76	P76	Distortion lead voice.
22	Wb/Piano	Split	P51	P12							Wood bass and piano split.
23	B/BrsSec	Split	P54	P37							Electric bass and brass split.
24	Celo/Flt	Split	P43	P62							Cello and flute split.
25	<Pop>	MIDI Multi	P12	P22	P74	P36	P61	P42	P54	I88	Pop music ensemble.
26	<Rock>	MIDI Multi	P11	I43	P74	P37	P61	P41	P55	I88	Rock group.
27	<Jazz>	MIDI Multi	P15	I46	P71	P32	P61	P42	P51	I88	Jazz ensemble.
28	<Demo>	MIDI Multi	P72	P42	P61	P58	P12	I35	I64	I88	SY35 demo multi.

INTERNAL MULTI LIST

No.	MULTI Name	Type	Voice Numbers								Comments
11	SyncLead	Layer	I33	I33	I33	I33					Fat “sync” lead.
12	SuperSaw	Layer	I31	I31	I31	I31	I31	I31	I31	I31	Extra-fat sawtooth lead.
13	BellPad	Layer	I11	I14							Filter sweep synth pad.
14	SunBeam	Layer	I22	I24							“Sunny” sound for backing.
15	WideDcy	Layer	I25	I27							Bright backing layer.
16	AnaPad1	Layer	I13	I51							Analog synth pad 1.
17	AnaPad2	Layer	I15	I23							Analog synth pad 2.
18	AnaPad3	Layer	I13	I55							Analog synth pad 3.
21	FatBrass	Layer	I51	I53							Fat analog synth brass.
22	HyuhPad	Layer	I71	I76							Synth pad with wind effect.
23	Reggae	Layer	I46	I82							Ideal for Reggae music.
24	Mikado	Layer	I67	I18							Musical effect.
25	Prologue	Layer	I62	I18							Musical effect.
26	Epilogue	Layer	I64	I72							Musical effect.
27	SolidSet	Split	I37	I31							Bass and synth lead split.
28	RytmSec.	Split	I87	I36							Auto drum and bass pattern.

PRESET Multi setups 25 through 28 (labelled “MIDI” in the above list) are designed for use with an external MIDI sequencer. Each has 8 voices assigned to different MIDI channels as shown in the chart below.

PRESET MULTI MIDI CHANNEL ASSIGNMENTS

No.	MULTI Name	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch16
25	<Pop>	P12	P22	P74	P36	P61	P42	P54	—	I88
26	<Rock>	P11	I43	P74	P37	P61	P41	P55	—	I88
27	<Jazz>	P15	I46	P71	P32	P61	P42	P51	—	I88
28	<Demo>	P72	P42	P61	P58	P12	I35	I64	I88	—

WAVEFORM LIST

AWM WAVEFORM LIST

Category	No.	Name
Piano	0	Piano
	1	E.Piano
	2	Clavi
	3	Cembalo
	4	Celesta
Organ	5	P.Organ
	6	E.Organ1
	7	E.Organ2
	8	Bandneon
Brass	9	Trumpet
	10	Mute Trp
	11	Trombone
	12	Flugel
	13	Fr Horn
	14	BrasEns
	15	SynBrass
Wood	16	Flute
	17	Clarinet
	18	Oboe
	19	Sax
Gtr	20	Gut
	21	Steel
	22	E.Gtr 1
	23	E.Gtr 2
	24	Mute Gtr
	25	Sitar
	26	Pluck 1
	27	Pluck 2
Bass	28	Wood B 1
	29	Wood B 2
	30	E.Bass 1
	31	E.Bass 2
Bass	32	E.Bass 3
	33	E.Bass 4
	34	Slap
	35	Fretless
	36	SynBass1
	37	SynBass2
Str.	38	Strings
	39	Vn.Ens.
	40	Cello
	41	Pizz.
	42	Syn Str
Vocal	43	Choir
	44	Itopia
	45	Choir pa
Perc.	46	Vibes
	47	Marimba
	48	Bells
	49	Timpani
	50	Tom
	51	E. Tom
	52	Cuica
	53	Whistle
	54	ThumbStr
Synth	55	SynPad
	56	Harmonic
	57	SynLead1
	58	SynLead2
	59	Bell Mix
	60	Sweep
	61	HumanAtk
	62	Noise 1
	63	Noise 2
Synth	64	PopsHit
SFX	65	NoisPad1
	66	NoisPad2
	67	NoisPad3
	68	Coin
	69	Crash
	70	Bottle
	71	BotleOpn
	72	Cracker
	73	Scratch
Hits	74	Metal 1
	75	Metal 2
	76	Metal 3
	77	Metal 4
	78	Wood
	79	Bamboo
	80	Slam
Tran.	81	Tp. Body
	82	Tb. Body
	83	HornBody
	84	Fl. Body
	85	Str.Body
	86	AirBlown
	87	Reverse1
	88	Reverse2
	89	Reverse3
OSC	90	EP wv
	91	Organ wv
	92	M.Tp wv
	93	Gtr wv
	94	Str wv 1
	95	Str wv 2
OSC	96	Pad wv
	97	Digital1
	98	Digital2
	99	Digital3
	100	Digital4
	101	Digital5
	102	Saw 1
	103	Saw 2
	104	Saw 3
	105	Saw 4
	106	Square 1
	107	Square 2
	108	Square 3
	109	Square 4
	110	Pulse 1
	111	Pulse 2
	112	Pulse 3
	113	Pulse 4
	114	Pulse 5
	115	Pulse 6
	116	Tri
	117	Sin8’
	118	Sin8’+4’
SEQ	119	SEQ 1
	120	SEQ 2
	121	SEQ 3
	122	SEQ 4
	123	SEQ 5
	124	SEQ 6
	125	SEQ 7
	126	SEQ 8
Drum	127	Drum set

AWM Waveform Category Descriptions

Piano	Piano, clavi, and other decay-type keyboard sounds.
Organ	Pipe, electric and reed organs.
Brass	Acoustic and synthesized brass sounds.
Wood	Flute, sax and other woodwind sounds.
Gtr	Acoustic and electric guitars.
Bass	Acoustic, electric, and synth bass.
Str.	Violin ensemble and other strings.
Vocal	Choir and other vocal-type sounds.
Perc.	Vibes, timpani, etc.
Synth	A range of synth sounds (including noise).
SFX	Special effects – crash, bottle, etc.
Hits	Struck metal and woods.
Tran.	Transient attack waves and some reverse sounds.
OSC	Standard synth waveforms and the basic waveforms from some actual instruments.
SEQ	Sequences of sampled sounds.
Drum	Drum set waves.

FM WAVEFORM LIST

Category	No.	Name
Piano	0	E.Piano1
	1	E.Piano2
	2	E.Piano3
	3	E.Piano4
	4	E.Piano5
	5	E.Piano6
Organ	6	E.Organ1
	7	E.Organ2
	8	E.Organ3
	9	E.Organ4
	10	E.Organ5
	11	E.Organ6
	12	E.Organ7
	13	E.Organ8
Brass	14	Brass 1
	15	Brass 2
	16	Brass 3
	17	Brass 4
	18	Brass 5
	19	Brass 6
	20	Brass 7
	21	Brass 8
	22	Brass 9
	23	Brass 10
	24	Brass 11
	25	Brass 12
	26	Brass 13
	27	Brass 14
Wood	28	Wood 1
	29	Wood 2
	30	Wood 3
	31	Wood 4
	32	Wood 5
	33	Wood 6
	34	Wood 7
	35	Wood 8
Reed	36	Reed 1
	37	Reed 2
	38	Reed 3
	39	Reed 4
	40	Reed 5
	41	Reed 6
Pluck	42	Clavi 1
	43	Clavi 2
	44	Clavi 3
	45	Clavi 4
	46	Guitar 1
	47	Guitar 2
	48	Guitar 3
Pluck	49	Guitar 4
	50	Guitar 5
	51	Guitar 6
	52	Guitar 7
	53	Guitar 8
Bass.	54	Bass 1
	55	Bass 2
	56	Bass 3
	57	Bass 4
	58	Bass 5
	59	Bass 6
	60	Bass 7
	61	Bass 8
	62	Bass 9
Str.	63	Str 1
	64	Str 2
	65	Str 3
	66	Str 4
	67	Str 5
	68	Str 6
	69	Str 7
Perc.	70	Vibes 1
	71	Vibes 2
	72	Vibes 3
	73	Vibes 4
	74	Marimba1
	75	Marimba2
	76	Marimba3
	77	Bells 1
	78	Bells 2
	79	Bells 3
	80	Bells 4
	81	Bells 5
	82	Bells 6
	83	Bells 7
	84	Bells 8
	85	Metal 1
	86	Metal 2
	87	Metal 3
	88	Metal 4
	89	Metal 5
	90	Metal 6
Syn.S	91	Lead 1
	92	Lead 2
	93	Lead 3
	94	Lead 4
	95	Lead 5
	96	Lead 6
	97	Lead 7
Syn.S	98	Sus. 1
	99	Sus. 2
	100	Sus. 3
	101	Sus. 4
	102	Sus. 5
	103	Sus. 6
	104	Sus. 7
	105	Sus. 8
	106	Sus. 9
	107	Sus. 10
	108	Sus. 11
	109	Sus. 12
	110	Sus. 13
	111	Sus. 14
	112	Sus. 15
	113	Attack 1
	114	Attack 2
	115	Attack 3
	116	Attack 4
	117	Attack 5
Syn.M	118	Move 1
	119	Move 2
	120	Move 3
	121	Move 4
	122	Move 5
	123	Move 6
	124	Move 7
Syn.D	125	Decay 1
	126	Decay 2
	127	Decay 3
	128	Decay 4
	129	Decay 5
	130	Decay 6
	131	Decay 7
	132	Decay 8
	133	Decay 9
	134	Decay 10
	135	Decay 11
	136	Decay 12
	137	Decay 13
	138	Decay 14
	139	Decay 15
	140	Decay 16
	141	Decay 17
	142	Decay 18
SFX	143	SFX 1
	144	SFX 2
	145	SFX 3
	146	SFX 4
SFX	147	SFX 5
	148	SFX 6
	149	SFX 7
OSC 1	150	Sin 16'
	151	Sin 8'
	152	Sin 4'
	153	Sin2 2/3
	154	Sin 2'
	155	Saw 1
	156	Saw 2
	157	Square
	158	LFOnoise
	159	Noise 1
	160	Noise 2
	161	Digi 1
	162	Digi 2
	163	Digi 3
	164	Digi 4
	165	Digi 5
	166	Digi 6
	167	Digi 7
	168	Digi 8
	169	Digi 9
	170	Digi 10
	171	Digi 11
OSC 2	172	wave1-1
	173	wave1-2
	174	wave1-3
	175	wave2-1
	176	wave2-2
	177	wave2-3
		:
		:
	220	wave17-1
	221	wave17-2
	222	wave17-3
OSC 3	223	wave18-1
	224	wave18-2
	225	wave18-3
		:
		:
	250	wave27-1
	251	wave27-2
	252	wave27-3
	253	wave28
	254	wave29
	255	wave30

FM Voice Category Descriptions

Piano	Electric pianos.
Organ	Electric organs.
Brass	A variety of brass sounds.
Wood	Woodwind instrument sounds.
Reed	Sax, oboe and other reed instruments.
Pluck	Guitar, clavi, and other plucked instrument sounds.
Bass	Bass sounds.
Str.	Strings.
Perc.	Vibes, marimba, bells and other percussion sounds.
Syn.S	Sustained lead synth sounds.
Syn.M	Synth sounds that vary with time.
Syn.D	Decay-type synth sounds.
SFX	A range of sound-effect type synth sounds.
OSC1	Sine, sawtooth, and other standard synth waveforms.
OSC2	Basic FM timbres, group 1.
OSC3	Basic FM timbres, group 2.

If the TYPE parameter in the ELEMENT ENVELOPE edit mode (page 27) is set to PRESET, selecting a WAVE TYPE also selects the corresponding preset envelope. If a different envelope type is selected, the preset envelope is *not* selected together with the wave.

SPECIFICATIONS

Keyboard: 61 keys, initial and after-touch response.

Tone Generator Systems: AWM (Advanced Wave Memory) & FM (Frequency Modulation).

Internal Memory:
Wave ROM; 128 preset AWM & 256 preset FM waveforms.
Preset ROM; 64 preset voices.
Internal RAM; 64 user voices.

External Memory: Voice & Multi data; MCD64 or MCD32 memory cards + write & read.

Displays:
16-character ∞ 2-line backlit LCD.
7-segment 2-digit LED display.

Controls: VOLUME, VECTOR CONTROL, PITCH BEND, MODULATION.

Key & Switches: POWER; VECTOR PLAY ON/ OFF, LEVEL/DETUNE; CURSOR 4 and 6; MODE VOICE and MULTI; –1/NO and +1/YES; EDIT/ UTILITY/COMPARE; STORE; INTERNAL, CARD, PRESET; BANK 1–8 (VOICE COMMON and VECTOR; ELEMENT TONE and ENVELOPE; MULTI; UTILITY RECALL, SETUP and MIDI); NUMBER/ MULTI PART SELECT 1–8 (ELEMENT SELECT A–D, ELEMENT ON/OFF A–D); DEMO.

Connectors: DC 10V–12V IN; PHONES; OUTPUT R & L/MONO, FOOT VOLUME, SUSTAIN.

MIDI Connectors:
IN, OUT, THRU.

Power requirements:
UL, CSA: 120V
Europe, WG, Australia, BS: 220–240V

Power consumption:
7W (with PA-3 AC Adaptor)

Dimensions (W ∞ D ∞ H):
976 ∞ 285 ∞ 93 mm (37-7/8" ∞ 11-1/4" ∞ 3-5/8")

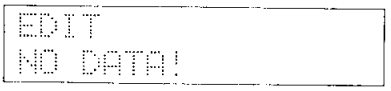
Weight: 6.8 kg (14 lbs 16 oz)

ERROR MESSAGES

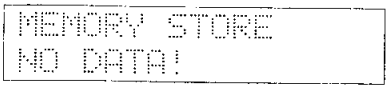
Things do go wrong from time to time, and people do make mistakes. When an error occurs, the SY35 will usually display a message that describes the type of error so you can easily take steps to rectify the problem. The following are quick summaries of the SY35 error displays.

VOICE PLAY
(XXX=MEMORY, BANK, NUMBER)

MULTI PLAY



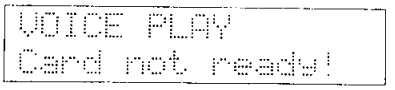
EDIT



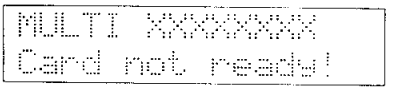
STORE

SET UP
(CARD LOAD)

The currently loaded memory contains no data or data that is not recognizable by the SY35.



VOICE PLAY



MULTI PLAY
(XXXXXXXX=
MULTI NAME)

STORE

SET UP
(CARD SAVE/LOAD/
FORMAT)

You have attempted to execute a memory card-related operation but no card is inserted in the CARD slot.

VOICE PLAY

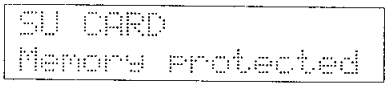
MULTI PLAY
(XXXXXXXX=
MULTI NAME)

STORE

SET UP
(CARD SAVE)

The currently loaded memory card is not properly formatted for use with the SY35.

STORE



SET UP
(CARD SAVE/LOAD/
FORMAT)

You have attempted to execute an operation that will after the card or internal memory, but the v=card and/or internal memory protect function is turned ON.

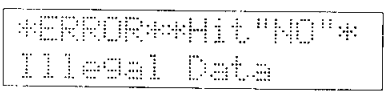
VOICE PLAY

MULTI PLAY
(XXXXXXXX=
MULTI NAME)

STORE

SET UP
(SAVE/LOAD/
FORMAT)

An MCD32 type memory card is loaded but card bank 2 is selected (MCD32 cards only have a single bank — BANK 1 — so it is necessary to select bank 1 if this display appears).



Unrecognizable MIDI bulk data has been received by the SY35.

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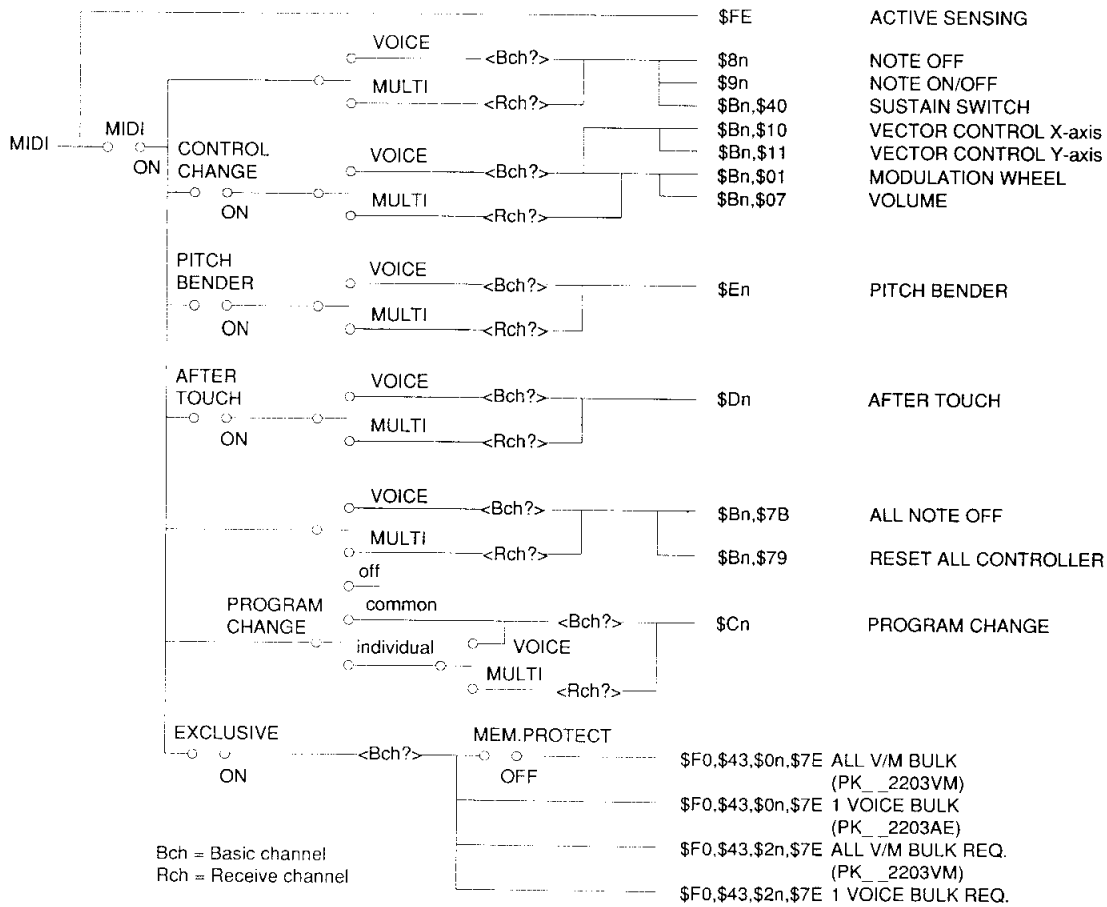
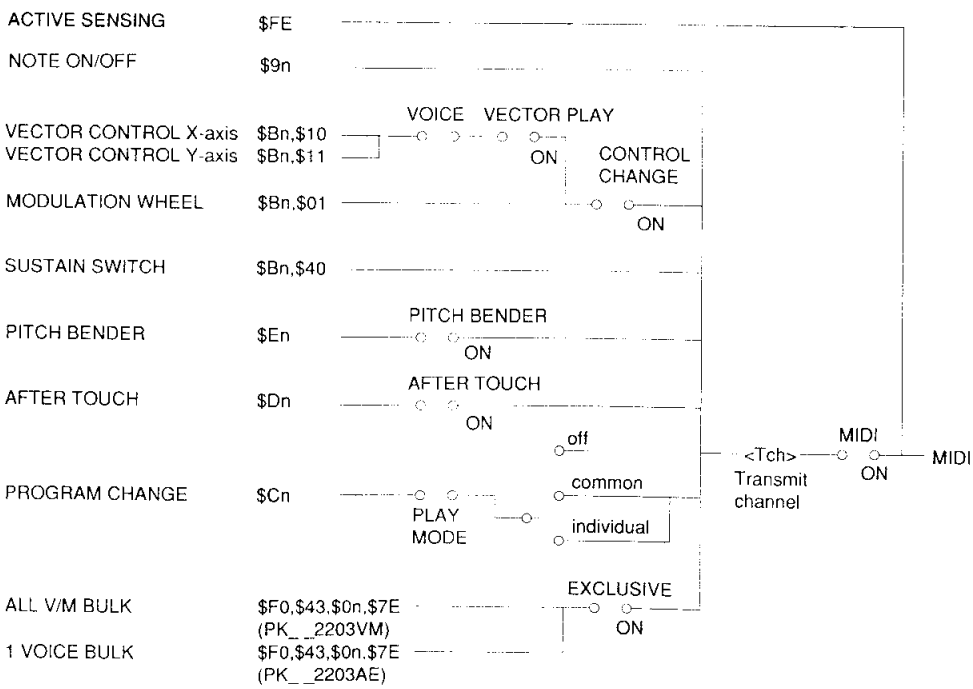
MIDI DATA FORMAT

DATA FORMAT

(1) MIDI reception conditions



(2) MIDI transmission conditions



(3) Channel Messages

3.1 Note On/Off

Transmission:
- Note range = C1($24)~C6($60)
- Velocity range = 0~$7F (0: note off)
- $9n, note, $00 for note off and $8n is not transmitted.

Reception:
- Note range = C-2($00)~G8($7F)
- Velocity range = 0~$7F

3.2 Control Change

MODULATION WHEEL and VECTOR CONTROL is possible to set transmission/reception on/off by the utility control change on/off. (SUSTAIN CONTROL is always or regardless of whether Control Change is on or off.)

Transmission:
- Output to MIDI through the transmit channel when the following controller is operated irrespective of the play, edit, etc. mode.

controller	code	output data range
MODULATION WHEEL	$Bn, $01, $vv	vv = 0~$7F
SUSTAIN SWITCH	$Bn, $40, $vv	off:vv=0, on:vv=$7F
VECTOR CONTROL		
X-axis	$Bn, $10, $vv	vv=0~$7F
Y-axis	$Bn, $11, $vv	vv=0~$7F

- VECTOR CONTROL is transmitted only if the VECTOR PLAY ON/OFF' switch on the panel is on.

Reception:
- The following parameters are accepted by MIDI.

parameter	code	Description
MODULATION WHEEL	$Bn,$01,$vv	vv=0(WHEEL:MIN)~ $7F(WHEEL:MAX)
SUSTAIN SWITCH	$Bn,$40,$vv	vv=0~$3F:SUS OFF, vv=$40~$7F:SUS ON
VOLUME	$Bn,$07,$vv	
VECTOR CONTROL		
X-axis	$Bn,$10,$vv	Depends on the panel [VECTOR PLAY ON/ OFF] and [LEVEL/ DETUNE] status.
Y-axis	$Bn,$11,$vv	

3.3 Program Change

- It is possible to set transmission/reception on/off by the utility program change on/off.

Transmission:
- The voice and multi Nos. and the program change Nos. correspond to each other as shown below.

		NUMBER							
		1	2	3	4	5	6	7	8
VOICE	1	$00	$01	$02	$03	$04	$05	$06	$07
	2	$08	$09	$0A	$0B	$0C	$0D	$0E	$0F
	B 3	$10	$11	$12	$13	$14	$15	$16	$17
	A 4	$18	$19	$1A	$1B	$1C	$1D	$1E	$1F
	N 5	$20	$21	$22	$23	$24	$25	$26	$27
	K 6	$28	$29	$2A	$2B	$2C	$2D	$2E	$2F
	7	$30	$31	$32	$33	$34	$35	$36	$37
	8	$38	$39	$3A	$3B	$3C	$3D	$3E	$3F
MULTI	1	$40	$41	$42	$43	$44	$45	$46	$47
	2	$48	$49	$4A	$4B	$4C	$4D	$4E	$4F

Reception:
- The above program change Nos. are accepted. Other Nos. are ignored.

3.4 Pitch Bend

- It is possible to set transmission/reception on/off by the utility pitch bend on/off.

Transmission:
- Transmitted at 7-BIT resolution.

Reception:
- Operates by 7 BIT on the MSB side only. The LSB side is ignored.

3.5 After Touch

- It is possible to set transmission/reception on/off by the utility after touch on/off.

Channel mode message

Reception:
- With the following codes, receive is possible in each of the voice and multi modes and the corresponding channel process is performed.
  Not accepted if OMNI ON, however.
  The NOTE OFF process is restricted to the MIDI input NOTE only.
  ALL NOTE OFF $Bn, $7B, $00
  RESET ALL CONTROLLER $Bn, $79, $00

(4) System Common Message

- At statuses $F1~$F6, nothing is done.
- At status $F7, "END OF SYSTEM EXCLUSIVE".

(5) System Realtime Message

Transmission:
- $FE is transmitted about every 270 msec.

Reception:
- If no signal comes from MIDI for about 300 msec or more after once receiving $FE, the MIDI receive buffer is cleared and the MIDI KEY ON is turned OFF.

(6) System Exclusive Messages

4.1 1 VOICE BULK DUMP

Transmission:
The voice data set by input is transmitted.

Reception:
The received data is saved in the voice edit buffer.

Format:

```
$F0   %11110000   Status
$43   %01000011   Yamaha
$0n   %0000nnnn   n=Receive or Transmit channel
$7E   %01111110
$06   %0nnnnnnn   BYTE Count (MSB)
$21   %0nnnnnnn   BYTE Count (LSB)
$50   %01010000   ASCII 'P      ┐
$48   %01001011   ASCII 'K      │
$20   %00100000   ASCII '_      │
$20   %00100000   ASCII '_      │  Byte count shows this area.
$32   %00110010   ASCII '2      │
$32   %00110010   ASCII '2      │
$30   %00110000   ASCII '0      │
$33   %00110011   ASCII '3      │
$41   %01000001   ASCII 'A      │
$45   %01000101   ASCII 'E      │
$dd   %0ddddddd ┐               │
 |       |      │ 1 VOICE DATA  │
$dd   %0ddddddd ┘               ┘
$ee   %0eeeeeee   CHECK SUM
$F7   %11110111   EOX
```

4.2 ALL V/M BULK DUMP

Transmission:
All the internal voice and multi data is transmitted.

Reception:
The received data is internally saved.

Format:

```
$F0   %11110000   Status
$43   %01000011   Yamaha
$0n   %0000nnnn   n=Receive or Transmit channel
$7E   %01111110
$1B   %0nnnnnnn   BYTE Count (MSB)
$66   %0nnnnnnn   BYTE Count (LSB)
$50   %01010000   ASCII 'P      ┐
$48   %01001011   ASCII 'K      │
$20   %00100000   ASCII '_      │
$20   %00100000   ASCII '_      │  Byte count shows this area.
$32   %00110010   ASCII '2      │
$32   %00110010   ASCII '2      │
$30   %00110000   ASCII '0      │
$33   %00110011   ASCII '3      │
$56   %01010110   ASCII 'V      │
$40   %01001101   ASCII 'M      │
$dd   %0ddddddd ┐               │
 |       |      │ VOICE DATA    │
$dd   %0ddddddd ┘ (00-03)       ┘
$ee   %0eeeeeee   CHECK SUM
-----100 msec WAIT-----------------------------------------------
$1B   %0nnnnnnn   BYTE Count (MSB)
$5C   %0nnnnnnn   BYTE Count (LSB)
$dd   %0ddddddd ┐
 |       |      │ VOICE DATA
$dd   %0ddddddd ┘ (04-07)
$ee   %0eeeeeee   CHECK SUM
-----100 msec WAIT-----------------------------------------------
Voice data is transmitted as divided per 4 timbres as shown above.
A time interval of a minimum of 100 msec is always allocated
between them.
-----100 msec WAIT-----------------------------------------------
$09   %0nnnnnnn   BYTE Count (MSB)
$00   %0nnnnnnn   BYTE Count (LSB)
$dd   %0ddddddd ┐
 |       |      │ MULTI DATA
$dd   %0ddddddd ┘ (00-15)
$ee   %0eeeeeee   CHECK SUM
$F7   %11110111   EOX
```

4.3.1 VOICE BULK REQUEST

Reception:
The request signal of the above Item 4.1. However, the data transmitted by this request is the timbre No. sounded at VOICE instead of being the one set as specified in Item 4.1.

Format:

```
$F0   %11110000   Status
$43   %01000011   Yamaha
$2n   %0010nnnn   n=Receive channel
$7E   %01111110
$50   %01010000   ASCII 'P
$48   %01001011   ASCII 'K
$20   %00100000   ASCII '_
$20   %00100000   ASCII '_
$32   %00110010   ASCII '2
$32   %00110010   ASCII '2
$30   %00110000   ASCII '0
$33   %00110011   ASCII '3
$41   %01000001   ASCII 'A
$45   %01000101   ASCII 'E
$F7   %11110111   EOX
```

4.4 ALL V/M BULK REQUEST

Reception:
The request signal of the above Item 4.2.

Format:

```
$F0   %11110000   Status
$43   %01000011   Yamaha
$2n   %0010nnnn   n=Receive channel
$7E   %01111110
$50   %01010000   ASCII 'P
$48   %01001011   ASCII 'K
$20   %00100000   ASCII '_
$20   %00100000   ASCII '_
$32   %00110010   ASCII '2
$32   %00110010   ASCII '2
$30   %00110000   ASCII '0
$33   %00110011   ASCII '3
$56   %01010110   ASCII 'V
$40   %01001101   ASCII 'M
$F7   %11110111   EOX
```

YAMAHA [Digital synthesizer]
Model SY35 MIDI Implementation Chart Version : 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1-16	1-16	memorized
	Changed	1-16	1-16	
Mode	Default	3	1, 3	memorized
	Messages	X	X	
	Altered	**********	X	
Note Number		36-96	0 -127	
	True voice	**********	19-114	
Velocity	Note on	O 9nH,v=1-127	O v=1-127	
	Note off	X 9nH,v=0	X	
After Touch	Key's	X	X	
	Ch's	O *3	O *3	
Pitch Bender		O *2	O 0-12 semi *2	7bit resolution
Control Change	1	O *1	O *1	Modulation wheel
	7	X *1	O *1	Volume
	16	O *1	O *1	Vector control X
	17	O *1	O *1	Vector control Y
	64	O	O	Sustain
Program Change		O 0-79	O 0-79	
	True #	**********	0-79	
System Exclusive		O *4	O *4	
System Common	Song Pos	X	X	
	Song Sel	X	X	
	Tune	X	X	
System Real Time	Clock	X	X	
	Commands	X	X	
Aux Mes- sages	Local ON/OFF	X	X	
	All Notes OFF	X	O (123)	
	Active Sense	O	O	
	Reset	X	X	

Notes : *1 = transmit/recive if control change sw is on.
*2 = transmit/recive if pitch bend sw is on.
*3 = transmit/recive if after touch sw is on.
*4 = transmit/recive if exclusive sw is on.

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO O : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO X : No

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