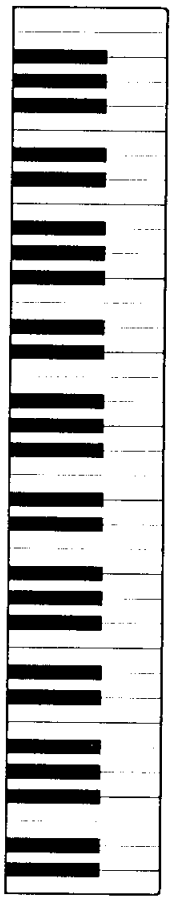
DRUM EDIT MODE

Contents

Drum Voice Configuration

The drum voices — P63 and P64 — are composed of 61 elements each, corresponding to keys from C1 to C6 on the master keyboard or other MIDI controller. A different drum sound or other wave can thus be assigned to each key on the keyboard (i.e. to each drum element), making it possible to create different "drum set" configurations according to your musical requirements.

Keys C1 through C6 are initially programmed with the following voices for P63 and P64:



● Voice 63: Drum Set 1

Key	Wave Name	No.	Key	Wave Name	No.
			C6	Syn Bass	P28
A#5	Syn Bass	P28	B5	Syn Bass	P28
G#5	Syn Bass	P28	A5	Syn Bass	P28
F#5	Syn Bass	P28	G5	Syn Bass	P28
			F5	Syn Bass	P28
D#5	Syn Bass	P28	E5	Syn Bass	P28
C#5	Syn Bass	P28	D5	Syn Bass	P28
			C5	Syn Bass	P28
A#4	Vocal Ga	P53	B4	Bulb	P57
G#4	Bell Mix	P58	A4	Vocal Ga	P53
F#4	Bottle	P51	G4	Bottle	P51
			F4	Bottle	P51
D#4	Shaker	P74	E4	Styroll	P56
C#4	Bamboo	P54	D4	Ride	P71
			C4	Vibe Np	P50
A#3	Claps	P72	B3	Vibe Np	P50
G#3	Popping	P26	A3	Claps	P72
F#3	Tube	P52	G3	Popping	P26
			F3	Tube	P52
D#3	Ride	P71	E3	Tube	P52
C#3	Crash	P70	D3	Ride	P71
			C3	Crash	P70
A#2	Crash	P70	B2	HH open	P69
G#2	Shaker	P74	A2	HH closed	P68
F#2	Claps	P72	G2	Cowbell	P73
			F2	Tom 1	P66
D#2	Rim	P65	E2	SD 1	P62
C#2	SD 2	P63	D2	Tom 1	P66
			C2	Tom 1	P66
A#1	SD 3	P64	B1	Tom 1	P66
G#1	BD 2	P60	A1	BD 1	P59
F#1	Tom 2	P67	G1	Tom 2	P67
			F1	Tom 2	P67
D#1	BD 3	P61	E1	Tom 2	P67
C#1	BD 2	P60	D1	BD 3	P61
			C1	BD 2	P60

● Voice 64: Drum Set 2

Key	Wave Name	No.	Key	Wave Name	No.
			C6	Syn Bass	P28
A#5	Syn Bass	P28	B5	Syn Bass	P28
G#5	Syn Bass	P28	A5	Syn Bass	P28
F#5	Syn Bass	P28	G5	Syn Bass	P28
			F5	Syn Bass	P28
D#5	Syn Bass	P28	E5	Syn Bass	P28
C#5	Syn Bass	P28	D5	Syn Bass	P28
			C5	Syn Bass	P28
A#4	Vocal Ga	P53	B4	Bulb	P57
G#4	Bell Mix	P58	A4	Vocal Ga	P53
F#4	Bottle	P51	G4	Bottle	P51
			F4	Bottle	P51
D#4	Shaker	P74	E4	Styroll	P56
C#4	Bamboo	P54	D4	Ride	P71
			C4	Vibe Np	P50
A#3	Claps	P72	B3	Vibe Np	P50
G#3	Popping	P26	A3	Claps	P72
F#3	Tube	P52	G3	Popping	P26
			F3	Tube	P52
D#3	Ride	P71	E3	Tube	P52
C#3	Crash	P70	D3	Ride	P71
			C3	Crash	P70
A#2	Crash	P70	B2	HH open	P69
G#2	Shaker	P74	A2	HH closed	P68
F#2	Claps	P72	G2	Cowbell	P73
			F2	Tom 2	P67
D#2	Rim	P65	E2	SD 2	P63
C#2	SD 1	P62	D2	Tom 2	P67
			C2	Tom 2	P67
A#1	SD 3	P64	B1	Tom 2	P67
G#1	BD 1	P59	A1	BD 2	P60
F#1	Tom 1	P66	G1	Tom 1	P66
			F1	Tom 1	P66
D#1	BD 3	P61	E1	Tom 1	P66
C#1	BD 1	P59	D1	BD 3	P61
			C1	BD 1	P59

Selecting the Drum Edit Mode & Functions/Edit Compare

The drum edit mode and its various functions are selected in exactly the same was as in the voice edit mode — the only difference being that a drum voice must be selected before the edit mode is engaged. See "Selecting the Voice Edit Mode", and "Selecting the Various Voice Edit Mode Functions" on page 42. The Edit/Compare function also works with the drum edit mode — see "Edit Compare Operation" on page 43.

The Drum Copy Function

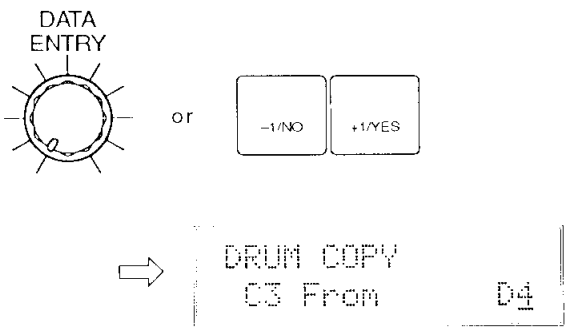
The Drum Copy function makes it possible to copy the parameter assignments from any other drum element to the drum element currently being edited. This is useful if, for example, you want to create a set of pitched tom-toms. You can copy a single tom-tom sound to as many drum elements as necessary — complete with all necessary parameter settings — and then simply change the pitch of each using the TUNE function.

1. Make sure the drum edit mode is engaged and that any function other than one of the EFFECT functions, DRUM NAME, DRUM RECALL, or DRUM INITIALIZE is selected.

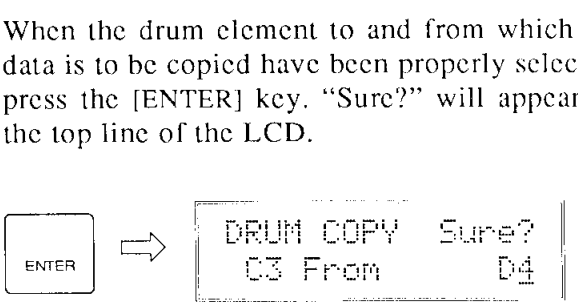
2. Select the drum element to which the new parameter data will be copied by pressing the appropriate key on the master keyboard.

3. Press the [STORE/COPY] key. The following display will appear.

4. Next, select the drum element from which the parameter data is to be copied by pressing the appropriate key on the master keyboard, by using the [DATA ENTRY] control, or using the [+1/YES] and [–1/NO] keys. The name of the selected drum element will appear to the right of the bottom LCD line.



5. When the drum element to and from which the data is to be copied have been properly selected, press the [ENTER] key. "Sure?" will appear on the top line of the LCD.



6. Press the [+1/YES] key to confirm and actually execute the copy operation, or [–1/NO] to cancel. "Completed!" will appear for a few seconds when the copy operation has been successfully completed.

7. When the copy operation has finished, the TG55 will return automatically to the display that was showing immediately prior to activation of the drum copy function.

The Effect Copy Function

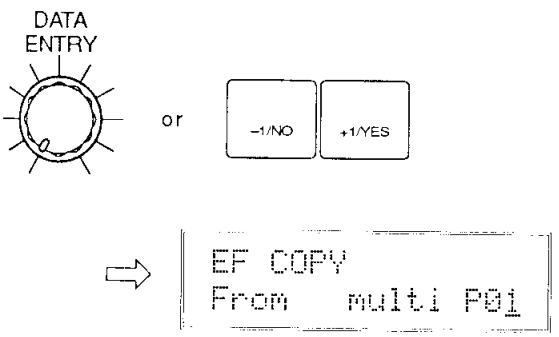
The Effect Copy function makes it possible to copy the effect parameter assignments from any other voice or multi-timbral setup to the drum voice currently being edited.

1. Make sure the drum edit mode is engaged and that one of the EFFECT functions is selected.

2. Press the [STORE/COPY] key. The following display will appear.

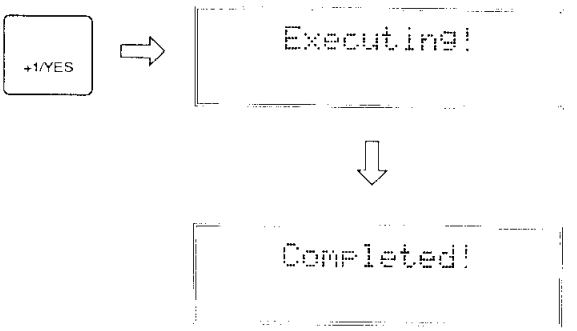
3. Use the ◁ and ▷ cursor keys to move to the Multi/Voice parameter and select "multi" if you want to copy the effect parameters from a multi-timbral setup, or "voice" if you want to copy the effect parameters from a preset or internal voice.

4. Next, move the cursor to the multi or voice number parameter by pressing the ▷ key, and select the multi-timbral setup or voice from which the parameter data is to be copied by using the [DATA ENTRY] control or the [+1/YES] and [–1/NO] keys. The [MEMORY] key can be used to select the "P" (preset) or "I" (internal) voice bank if necessary — or, if a properly formatted memory card is inserted in the DATA card slot, the "C" or "ↄ" card bank.



5. Press the [ENTER] key. "Sure?" will appear on the top line of the LCD.

6. Press the [+1/YES] key to confirm and actually execute the copy operation, or [–1/NO] to cancel. "Executing!" will appear briefly on the display while the data is being copied, then "Completed!" will appear for a few seconds when the copy operation has been successfully completed.



7. When the copy operation has finished, the TG55 will return automatically to the display that was showing immediately prior to activation of the effect copy function.

AWM WAVE SELECTION

Summary: Assigns a preset or cartridge wave to each key (drum element) between C1 and C6.

Settings:
off, P01 ... P58 (preset voices)
P59 ... P74 (preset drums)
off, C01 ... max. C99 (cartridge voices)

Procedure: Select the drum element to which the new wave will be assigned (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

Once the desired drum element has been selected, move the cursor to the wave name position (if it is not already there) by pressing the ▷ cursor key, then use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to assign the desired wave to the selected drum element.

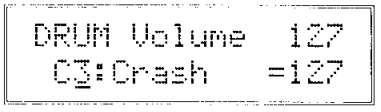
The [MEMORY] key can be used to select the "P" (PRESET) or "C" (CARD) memory bank.

Details: Note that in addition to drum sounds any other waves may be assigned to the drum elements. This makes it possible to include other non-drum waves in your original drum sets.

Drum elements can also be turned "off" (unassigned). The "off" setting can be selected by decrementing below the lowest-numbered wave.

Refer to: Tutorial, page 16, 25.

VOLUME



Summary: Allows the volume of individual drum elements to be adjusted, as well as the overall volume of the current drum voice.

Settings: 0 ... 127

Procedure: Select the drum element to be edited (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

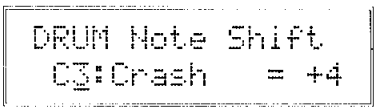
Once the desired drum element has been selected, use the ◁ and ▷ cursor keys to move the cursor to the volume parameter on the bottom line of the LCD to adjust individual volume, or the volume parameter on the upper line of the LCD to adjust overall volume.

Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to set the desired volume level.

Details: A setting of "0" produces no sound while a setting of "127" produces maximum volume.

The ability to independently adjust the volume of each drum element makes it simple to set up the optimum balance or "mix" between instruments in the drum set. Overall volume adjustment can be used to match the the overall level of different voices.

NOTE SHIFT



Summary: Individually shifts the pitch of each drum element up or down in semitone steps.

Settings: –48 ... +36

Procedure: Select the drum element to be edited (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

Once the desired drum element has been selected, use the ◁ and ▷ cursor keys to move the cursor to the note shift parameter.

Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to set the desired degree of note shift.

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

In a drum voice, the note shift function can be used to create pitched sets of tom-toms or other instruments.

TUNE

Summary: Allows each individual drum element to be tuned over approximately a 150-cent range.

Settings: –64 ... +63

Procedure: Select the drum element to be edited (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

Once the desired drum element has been selected, use the ◁ and ▷ cursor keys to move the cursor to the tuning parameter.

Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to set the desired tuning value.

Details: Each tuning increment corresponds to a 75/64-cent change in pitch. The entire tuning range is therefore 75/64 x 127 (i.e. 64 + 63 increments) — almost 150 cents. Since 100 cents equals one semitone, the tuning range is approximately one and a half semitones. A setting of "0" produces normal pitch.

ALTERNATE GROUP

Summary: Specifies drum elements which may not sound at the same time.

Settings: On, Off

Procedure: Select the drum element to be edited (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

Once the desired drum element has been selected, use the ◁ and ▷ cursor keys to move the cursor to the alternate group parameter.

Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to turn alternate grouping "on" or "off."

Details: In a real drum set, you would never hear the sound of a closed hi-hat at the same time as the open hi-hat. If you turn alternate group "on" for both of these instruments (which are really different sounds produced by the same instrument), the closed and open hi-hat elements will not sound together even if their keys are played at the same time.

This also means that you can play the open hi-hat, then "close" the hi-hat before the open hi-hat sound ends by playing the closed hi-hat key.

PANNING

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

Settings: –31 ... +31

Procedure: Select the drum element to be edited (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

Once the desired drum element has been selected, use the ◁ and ▷ cursor keys to move the cursor to the pan parameter.

Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to set the desired pan value.

The upper line of the display also shows a graphic representation of the stereo sound field with "L" representing "left" and "R" representing "right." As you change the pan value the vertical bar will appear at the corresponding position on the graphic display.

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

Refer to: "OUTPUT ASSIGN," on page 87. "THE CONTROLS AND CONNECTORS," page 6.

OUTPUT ASSIGN

Summary: Determines whether L/MONO and R OUTPUT jacks, or the INDIVIDUAL 1 and 2 jacks deliver the output from the selected drum element. Also determines which INDIVIDUAL jacks are active

Settings: str, -:-, 1:-, -:2, 1:2

Procedure: Select the drum element to be edited (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

Once the desired drum element has been selected, use the ◁ and ▷ cursor keys to move the cursor to the output assign parameter.

Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to select the desired output assign setting.

Details: When the "str" (STEREO) setting is selected, the sound from the selected drum element will be delivered via the L/MONO and R OUTPUT jacks, but not the INDIVIDUAL 1 and 2 jacks. This is the "normal mode" of operation which allows the output from that drum element to be positioned from left to right in the stereo sound field (See "PANNING," above). When any setting **other** than "str" is selected, the INDIVIDUAL 1 and 2 outputs are active and the L/MONO and R OUTPUT jacks are off.

Setting	Result
str	Outputs L/MONO and R ON. 1 and 2 OFF.
-:-	Outputs 1 and 2 both OFF. L/MONO and R OFF.
1:-	Output 1 ON, 2 OFF. L/MONO and R OFF.
-:2	Output 1 OFF, 2 ON. L/MONO and R OFF.
1:2	Outputs 1 and 2 both ON. L/MONO and R OFF.

Also please note that the TG55 effects are not applied to the sound at the INDIVIDUAL outputs.

Refer to: "PANNING" on page 86. "THE CONTROLS AND CONNECTORS," page 6.

EFFECT BALANCE

Summary: Determines the balance between the direct and effect sound for each drum element.

Settings: 0 ... 100

Procedure: Select the drum element to be edited (C1 ... C6) by pressing the appropriate key on the master keyboard.

It is also possible to select the drum element to be edited by moving the cursor to the key name position by pressing the ◁ key and then using the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys.

Once the desired drum element has been selected, use the ◁ and ▷ cursor keys to move the cursor to the effect balance parameter.

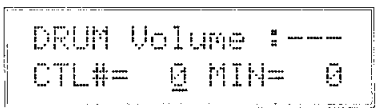
Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to set the desired effect balance value.

Details: A setting of "0" produces only the direct sound of the selected drum element, while a setting of "100" produces only the effect sound. A setting of "50" delivers both the direct and effect sound in approximately equal proportions.

The effect (reverb, delay, etc.) applied to the voice is selected and edited using the EFFECT functions described on page 74.

Refer to: "EFFECT: TYPE/OUTPUT LEVEL" on page 73. "EFFECT: EFFECT PARAMETERS" on page 74.

VOLUME CONTROL



Summary: Assigns a controller to, and sets the range of volume control for the current drum voice.

Settings:

CTL# (Control Number) Parameter: 0 ... 120, AT

MIN (Minimum Volume) Parameter: 0 ... 127

Procedure: Use the ◁ and ▷ keys to select the "CTL#" or "MIN" parameter, then use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to set the selected parameter as required.

Details: The "CTL#" parameter corresponds to MIDI control numbers. Standard controller assignments are noted in the upper right-hand corner of the display:

Set the CTL# parameter to the number of the controller with which you intend to control this function.

The MIN parameter can be set to a value between 0 and 127: A setting of "0" allows volume control over the full 0 ... 127 range, while a setting of "100," for example, allows volume control over only a small portion of the total range — 100 ... 127.

Please note that different controllers may be assigned to the normal and drum voices, so that they can be controlled independently.

EFFECT: TYPE/OUTPUT LEVEL

● Type

Summary: Selects one of 34 digital effects for the current drum voice.

Settings and operation are exactly the same as in the voice edit mode; refer to "EFFECT: TYPE/OUTPUT LEVEL" on page 73.

● Output Level

Summary: Sets the level of the selected drum voice effect in relation to the direct (no effect) sound.

Settings and operation are exactly the same as in the voice edit mode: refer to "EFFECT: TYPE/OUTPUT LEVEL" on page 73.

EFFECT: EFFECT PARAMETERS

Summary: Accesses the individual programmable parameters for the selected drum voice effect.

Settings and operation are exactly the same as in the voice edit mode: refer to "EFFECT: EFFECT PARAMETERS" on page 74.

DRUM SET VOICE NAME

Summary: Assigns a name of up to 10 characters to the current drum voice.

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

[Space] ! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [¥] ^ _ `
a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ← →

Procedure: Use the ◁ and ▷ cursor keys to place the underline cursor under the character to be changed. Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to select the desired character. Continue until the entire drum voice name has been programmed.

Details: It's a good ideas to give your voices names that make the voice easily identifiable. If you've created a new drum voice designed specifically for a jazzy sound, for example, you could call it something like "Jazz Set".

DRUM SET VOICE RECALL

```
DRUM Edit
         Recall
```

Summary: Recalls the last drum voice edited from the TG55 edit buffer.

Settings: None

Procedure: After selecting the "DRUM Edit Recall" display, press the [ENTER] key. "Sure?" will appear on the upper line of the display. Press the [+1/YES] to initialize or [-1/NO] to cancel the initialize operation.

"Completed!" will appear briefly when the recall operation is finished.

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

Please note, however, that a compare operation overwrites the recall buffer with the contents of the edit buffer at that time. A recall operation following a compare operation will therefore recall the contents of the edit buffer at the time of the compare operation.

DRUM SET VOICE INITIALIZE

```
DRUM
         Initialize
```

Summary: Initializes all parameters of the current drum voice.

Settings: None.

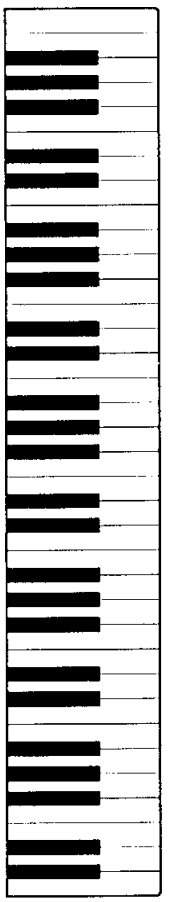
Procedure: After selecting the "DRUM Initialize" display, press the [ENTER] key. "Sure?" will appear on the upper line of the display. Press the [+1/YES] to initialize or [-1/NO] to cancel the initialize operation.

"Completed!" will appear briefly when the initialization is finished.

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

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

● INIT DRUM



Key	Wave Name	No.
A#5	Syn Bass	P28
G#5	Syn Bass	P28
F#5	Syn Bass	P28
D#5	Syn Bass	P28
C#5	Syn Bass	P28
A#4	Vocal Ga	P53
G#4	Bell Mix	P58
F#4	Bottle	P51
D#4	Shaker	P74
C#4	Bamboo	P54
A#3	Claps	P72
G#3	Popping	P26
F#3	Tube	P52
D#3	Ride	P71
C#3	Crash	P70
A#2	Crash	P70
G#2	Shaker	P74
F#2	Claps	P72
D#2	Rim	P65
C#2	SD 2	P63
A#1	SD 3	P64
G#1	BD 2	P60
F#1	Tom 2	P67
D#1	BD 3	P61
C#1	BD 2	P60

Key	Wave Name	No.
C6	Syn Bass	P28
B5	Syn Bass	P28
A5	Syn Bass	P28
G5	Syn Bass	P28
F5	Syn Bass	P28
E5	Syn Bass	P28
D5	Syn Bass	P28
C5	Syn Bass	P28
B4	Bulb	P57
A4	Vocal Ga	P53
G4	Bottle	P51
F4	Bottle	P51
E4	Styroll	P56
D4	Ride	P71
C4	Vibe Np	P50
B3	Vibe Np	P50
A3	Claps	P72
G3	Popping	P26
F3	Tube	P52
E3	Tube	P52
D3	Ride	P71
C3	Crash	P70
B2	HH open	P69
A2	HH closed	P68
G2	Cowbell	P73
F2	Tom 1	P66
E2	SD 1	P62
D2	Tom 1	P66
C2	Tom 1	P66
B1	Tom 1	P66
A1	BD 1	P59
G1	Tom 2	P67
F1	Tom 2	P67
E1	Tom 2	P67
D1	BD 3	P61
C1	BD 2	P60

DRUM EDIT MODE

MULTI EDIT MODE

Contents

Multi Mode Configuration

In the multi edit mode 16 different voices can be assigned to the 16 MIDI channels. The assigned voices can then be individually controlled over the appropriate channels from an external MIDI sequence recorder or other controller.

Since the TG55 can produce a maximum of 16 notes at the same time (16-note polyphony), the number of simultaneous notes that each voice can produce depends on the number of voices being played at the time. If 16 single-element voices are played at once, for example, each can only produce a single note. On the other hand, if only one voice is being played the TG55's "Dynamic Note Allocation" feature allows 16 notes to be played simultaneously by that one voice even if 16 voices are assigned.

The TG55 also has a RESERVED NOTE function that allows you to specify a minimum number of notes for each voice.

Selecting the Multi Edit Mode & Functions/Edit Compare

The multi edit mode and its various functions are selected in exactly the same was as in the voice edit mode — the only difference being that the MULTI play mode must be selected by pressing the [MULTI] key before the edit mode is engaged. See "Selecting the Voice Edit Mode", and "Selecting the Various Voice Edit Mode Functions" on page 42. The Edit/Compare function also works with the multi edit mode — see "Edit Compare Operation" on page 43.

The Channel Copy Function

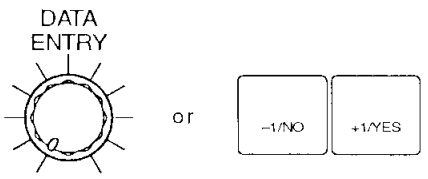
The Channel Copy function makes it possible to copy the parameter assignments from any other multi-play channel to the channel currently being edited.

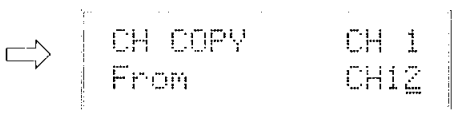
1. Make sure the multi edit mode is engaged and that any function other than one of the EFFECT functions, MULTI NAME, MULTI RECALL, or MULTI INITIALIZE is selected.

2. Select the channel to which the new parameter data will be copied by using the ◁ and ▷ cursor keys. The selected channel number is shown at the right end of the upper line of the LCD (CH1 ... CH16).

3. Press the [STORE/COPY] key. The following display will appear.

Next, select the channel from which the parameter data is to be copied by using the [DATA ENTRY] control or the [+1/YES] and [–1/NO] keys. The number of the selected channel will appear to the right of the bottom LCD line.





4. When the channels to and from which the data is to be copied have been properly selected, press the [ENTER] key. "Sure?" will appear on the top line of the LCD.

5. Press the [+1/YES] key to confirm and actually execute the copy operation, or [–1/NO] to cancel. "Completed!" will appear for a few seconds when the copy operation has been successfully completed.

6. When the copy operation has finished, the TG55 will return automatically to the display that was showing immediately prior to activation of the channel copy function.

The Effect Copy Function

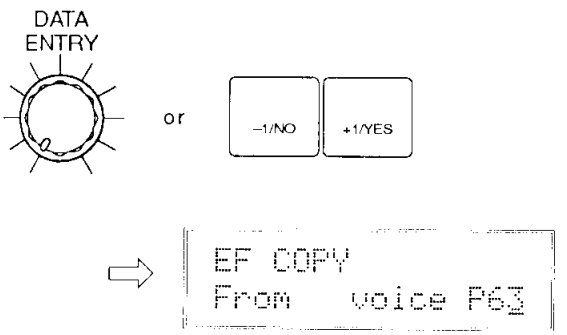
The Effect Copy function makes it possible to copy the effect parameter assignments from any other voice or multi-play setup to the multi-play setup currently being edited.

1. Make sure the multi edit mode is engaged and that one of the EFFECT functions is selected.

2. Press the [STORE/COPY] key. The following display will appear.

3. Use the ◁ and ▷ cursor keys to move to the multi/voice parameter and select "multi" if you want to copy the effect parameters from another multi-play setup, or "voice" if you want to copy the effect parameters from a preset or internal voice.

4. Next, move the cursor to the multi or voice number parameter by pressing the ▷ key, and select the multi-play setup or voice from which the parameter data is to be copied by using the [DATA ENTRY] control or the [+1/YES] and [–1/NO] keys. The [MEMORY] key can be used to select the "P" (preset) or "I" voice bank if necessary — or, if a properly formatted memory card is inserted in the DATA card slot, the "C" or "ↄ" card bank.



5. Press the [ENTER] key. "Sure?" will appear on the top line of the LCD.

6. Press the [+1/YES] key to confirm and actually execute the copy operation, or [–1/NO] to cancel. "Completed!" will appear for a few seconds when the copy operation has been successfully completed.

7. When the copy operation has finished, the TG55 will return automatically to the display that was showing immediately prior to activation of the effect copy function.

VOICE SELECTION

Summary: Assigns a preset or internal voice to each MIDI channel.

Settings:
off, P01 ... P64 (preset voices)
I01 ... I64 (internal voices)
C01 ... C64 (card voices)

Procedure: Use the ◁ and ▷ cursor keys are used to move the cursor to the desired channel (a channel number between CH1 and CH16 will appear in the upper right-hand corner of the display), and then use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to assign the desired voice to the selected channel.

If you have selectd a preset or internal multi-play setup, use the [MEMORY] key to select the "P" (preset) or "I" (internal) voice bank for each channel, as necessary. Or, if you have selectd a card multi-play setup, use the [MEMORY] key to select the "P" (preset) or "C" (card) voice bank for each channel, as necessary (internal voices cannot be selected for card multi-play setups).

By decrementing below the lowest voice (P01 or I01), the assignment for the current channel can be turned "off."

Details: The bank character ("P" or "I") of the voice currently selected in the voice mode is shown in reverse (i.e. white character on black background). The voice-mode voice can be switched to any voice assigned in this function by moving the cursor to the appropriate voice position and then pressing the [SELECT] key. The bank character of the newly selected voice-mode voice will then appear in reverse.

When the cursor is placed at the voice-mode voice number position, a reverse letter "E" will appear to the left of the channel number if the voice has been edited. In this case, the sound produced will be that of the edited voice.

Refer to: Tutorial, page 20.

VOLUME

Summary: Allows individual volume adjustment of the voice assigned each multi-play channel.

Settings: 0 ... 127

Procedure: The ◁ and ▷ cursor keys are used to select the channel/voice for which the volume is to be adjusted. The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to set the desired volume.

Details: A setting of "0" produces no sound while a setting of "127" produces the maximum volume available with the individual volume setting of that voice.

The ability to independently adjust the volume of each voice makes it simple to set up the optimum balance or "mix" between voices.

Refer to: Tutorial, page 21.

NOTE SHIFT

Summary: Individually shifts the pitch of the voice assigned to each multi-play channel up or down in semitone steps.

Settings: –64 ... +63.

Procedure: The ◁ and ▷ cursor keys are used to select the channel/voice to be note-shifted. The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to set 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 Note Shift function can be used to transpose a voice to its most useful range, or to create harmony (intervals) between different voices in a multi-play setup.

TUNE

Summary: Allows each individual voice to be tuned over approximately a 150-cent range.

Settings: –64 ... +63

Procedure: The ◁ and ▷ cursor keys are used to select the voice/channel to be tuned. The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to set the desired degree of tuning.

Details: Each tuning increment corresponds to a 75/64-cent change in pitch. The entire tuning range is therefore 75/64 x 127 (i.e. 64 + 63 increments) — almost 150 cents. Since 100 cents equals one semitone, the tuning range is approximately one and a half semitones. A setting of "0" produces normal pitch.

RESERVED NOTE

Summary: Reserves a minimum number of notes to be played simultaneously by each voice.

Settings: 0 ... 16

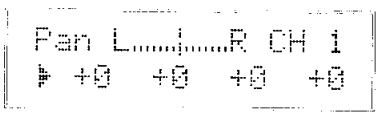
Procedure: The ◁ and ▷ cursor keys are used to select the voice/channel, then the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to set the number of reserved notes.

Details: The main use for this function is to ensure that a minimum number of notes are available to specific instruments even under circumstances in which less would normally be available. For example, if 1-element voices assigned to all 16 channels are played at once, each can only produce a single note. If one of those voices is an important piano voice that should be playing at least 3-note chords, for example, then the overall sound will be ruined. This problem can be overcome by setting the piano voice reserved note parameter to "3" so that the piano voice always has at least 3 notes available. This occurs, however, at the expense of the other voices, and if all 16 voices are played simultaneously (with the piano playing a 3-note chord), two of the instruments will not sound at all. You can specify which instruments should be sacrificed in such a case by setting the piano to "3" and all but two of the remaining instruments to "1." The remaining two instruments, set to "0," will be the ones that don't sound when a full complement of 16 notes is received.

Please keep in mind the fact that the TG55 can produce a maximum of 16 notes simultaneously no matter how this function is set. The total number of reserved notes set for all channels should not exceed 16.

Refer to: Tutorial, page 22.

PANNING



Summary: Determines the position in the stereo sound field in which the sound from each voice/channel will be heard (left to right).

Settings: vce, –31 ... +31

Procedure: The ◁ and ▷ cursor keys are used to select the voice/channel for which the pan position is to be set. The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to set the pan position.

The upper line of the display also shows a graphic representation of the stereo sound field with "L" representing "left" and "R" representing "right." As you change the pan value the vertical bar will appear at the corresponding position on the graphic display. If the "VCE setting is selected, the original pan setting of the voice is retained.

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

Refer to: Tutorial, page 22. "THE CONTROLS AND CONNECTORS," page 6.

OUTPUT ASSIGN

Summary: Determines whether the voice assigned to the current channel is delivered via the L/MONO and R OUTPUT jacks, or the INDIVIDUAL 1 and 2 jacks. Also determines which INDIVIDUAL jacks are active

Settings: str, -:-, 1:-, -:2, 1:2, vce

Procedure: The ◁ and ▷ cursor keys are used to select the voice/channel for which the output assignment is to be set. The [DATA ENTRY] control or [–1/NO] and [+1/YES] keys are used to select "str," "-:-," "1:-," "-:2," "1:2," or "vce."

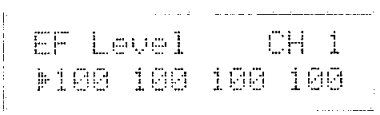
Details: When the "str" (STEREO) setting is selected, the L/MONO and R OUTPUT jacks are active and the INDIVIDUAL 1 and 2 jacks are off. This is the "normal mode" of operation which allows the selected voice to be positioned from left to right in the stereo sound field (See "PANNING," above). When any setting **other** than "str" is selected, the INDIVIDUAL 1 and 2 outputs are active and the L/MONO and R OUTPUT jacks are off. The "vce" (VOICE) setting means that the voice-mode OUTPUT ASSIGN setting for the currently selected voice will be used.

Setting	Result
str	Outputs L/MONO and R ON. 1 and 2 OFF.
-:-	Outputs 1 and 2 both OFF. L/MONO and R OFF.
1:-	Output 1 ON, 2 OFF. L/MONO and R OFF.
-:2	Output 1 OFF, 2 ON. L/MONO and R OFF.
1:2	Outputs 1 and 2 both ON. L/MONO and R OFF.
vce	As voice

Also please note that the TG55 effects are not applied to the sound at the INDIVIDUAL outputs.

Refer to: "THE CONTROLS AND CONNECTORS," page 6.

EFFECT LEVEL



Summary: Individually sets the effect level for the voice assigned to each multi-play channel.

Settings: 0 ... 100

Procedure: The ◁ and ▷ cursor keys are used to select the voice/channel for which the effect level is to be set. The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to set the effect level.

Details: A setting of "0" produces only the direct sound of the selected voice, while a setting of "100" produces maximum effect. Maximum effect is equivalent to the voice-mode EFFECT BALANCE setting.

Refer to: Tutorial, page 23. "EFFECT BALANCE," page 51. "EFFECT: TYPE/OUTPUT LEVEL" on page 73. "EFFECT: EFFECT PARAMETERS" on page 74.

EFFECT: SOURCE

Summary: Determines whether the current multi-play setup will have its own effect settings or the effect parameters of one of the assigned voices will be applied.

Settings: multi, CH1 ... CH16

Procedure: Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to select the desired setting.

Details: When "multi" is selected, independent effect parameters can be assigned to the current multi-play setup via the following effect functions. When a channel number between "CH1" and "CH16" is selected, the effect parameters from the voice assigned to the selected channel number are applied to the current multi-play setup. In the latter case, the following effect functions are not active.

Refer to: "EFFECT: TYPE/OUTPUT LEVEL" on page 73. "EFFECT: EFFECT PARAMETERS" on page 74.

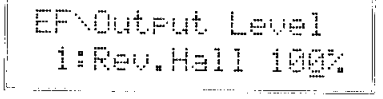
EFFECT: TYPE/OUTPUT LEVEL

● Type

Summary: Selects one of 34 digital effects for the current multi-play setup.

Settings and operation are exactly the same as in the voice edit mode; refer to "EFFECT: TYPE/OUTPUT LEVEL" on page 73.

● Output Level



Summary: Sets the level of the selected multi effect in relation to the direct (no effect) sound.

Settings and operation are exactly the same as in the voice edit mode; refer to "EFFECT: TYPE/OUTPUT LEVEL" on page 73.

EFFECT: EFFECT PARAMETERS

Summary: Accesses the individual programmable parameters for the selected multi effect.

Settings and operation are exactly the same as in the voice edit mode; refer to "EFFECT: EFFECT PARAMETERS" on page 74.

MULTI NAME

Summary: Assigns a name of up to 10 characters to the current multi-play setup.

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

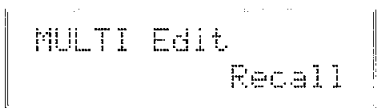
[Space] ! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [¥] ^ _ `
a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~

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

Details: It's a good ideas to give your multi-play setups names that make them easily identifiable. If you've created a new multi that is set up for use with a song titled "The Way Things Are," for example, you could call it something like "TheWay.MUL".

Refer to: Tutorial, page 23.

MULTI RECALL



Summary: Recalls the last multi-play setup edited from the TG55 edit buffer.

Settings: None

Procedure: After selecting the "MULTI Edit Recall" display, press the [ENTER] key. "Sure?" will appear on the upper line of the display. Press the [+1/YES] to initialize or [–1/NO] to cancel the initialize operation.

"Completed!" will appear briefly when the recall operation is finished.

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

Please note, however, that a compare operation overwrites the recall buffer with the contents of the edit buffer at that time. A recall operation following a compare operation will therefore recall the contents of the edit buffer at the time of the compare operation.

Refer to: Tutorial, page 23.

MULTI INITIALIZE

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

Settings: None.

Procedure: After selecting the "MULTI Initialize" display, press the [ENTER] key. "Sure?" will appear on the upper 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 Initialize is executed, the multi parameters are initialized to the following values:

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

Functions	Initialized Values		
Voice selection	P01		
Volume	127		
Note shift	+0		
Tune	+0		
Reserved note	0		
Panning	+0		
Output assign	str		
Effect: level	0		
Effect: source	multi		
Effect: type/output level	Type 1	Output level 100%	
Effect: effect parameters	Time 2.6 sec	LPF 8.0 KHz	Delay 29 ms
Multi name	INIT MULTI		

UTILITY MODE

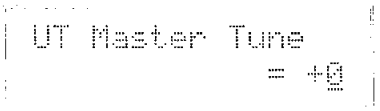
Contents

GENERAL OPERATION

Selecting the UtilityMode & Functions

The utility mode and its various functions are selected in exactly the same was as in the voice, multi-play and drum edit modes: press the [UTILITY] key to enter the utility mode, use the [PAGE –] and [PAGE +] keys to select the various functions, the ◁ and ▷ keys to select parameters within a function display, and the [–1/NO] and [+1/YES] keys to change values or settings. The MIDI and CARD functions are contained in function subsets accessed by pressing the [ENTER] key at the appropriate screen, and exited by pressing the [EXIT] key.

MASTER TUNE



Summary: Tunes the overall pitch of the TG55 over approximately a 150-cent range.

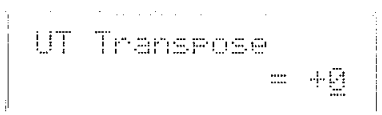
Settings: –64 ... +63

Procedure: The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to set the desired degree of tuning.

Details: Each tuning increment corresponds to a 75/64-cent change in pitch. The entire tuning range is therefore 75/64 x 127 (i.e. 64 + 63 increments) — almost 150 cents. Since 100 cents equals one semitone, the tuning range is approximately one and a half semitones. A setting of "+0" produces normal pitch.

Refer to: "TUNE," page 85 and 97.

TRANSPOSE



Summary: Transposes the overall pitch of the TG55 up or down in semitone steps.

Settings: –64 ... +63.

Procedure: The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used 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.

Refer to: "NOTE SHIFT," pages 47, 85 and 97.

VELOCITY CURVE

Summary: Selects one of eight different velocity curves.

Settings: 1 (normal), 2 (soft-1), 3 (soft-2), 4 (easy), 5 (wide), 6 (hard), 7 (cross-1), 8 (cross-2)

Procedure: The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to select the desired velocity curve.

Details: The velocity curves determine how the TG55 responds to different velocity values (i.e. keyboard dynamics). Different keyboards and controllers have different velocity sensitivity, and different players have individual preferences. This function lets you select the velocity curve that best suits your keyboard/controller and playing style. Try each one out to find the one you like best.

EFFECT

Summary: Turns the TG55 effect processor on or off.

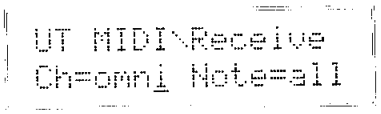
Settings: off, on

Procedure: Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to turn the effect processor off or on.

Details: This function completely turns the system effect processor off or on, so when it is turned off, **no** effects are applied to any voices or multi-play setups.

Refer to: "EFFECT: TYPE/OUTPUT LEVEL" on page 73. "EFFECT: EFFECT PARAMETERS" on page 74.

MIDI RECEIVE CHANNEL



Summary: Sets the TG55 MIDI receive channel to any channel between 1 and 16, or the "omni" mode for reception on all channels.

Settings:
Ch: 0 ... 16, omni
Note: all, odd, even

Procedure: Use the ◁ and ▷ keys to select the "Ch" or "Note" parameter, then the [DATA ENTRY] control or [–1/NO] and [+1/YES] keys to set as required.

Details: Make sure that the TG55 MIDI receive channel is either set to the channel that your keyboard/controller is transmitting on, or the omni mode.

The "Notes = all" setting means that the TG55 will play all notes received. If the "odd" or "even" setting is chosen, the TG55 will play only odd or even-numbered notes (based on their MIDI note numbers) received from an external MIDI controller or sequencer. This allows two TG55's to be used — one set to "odd" and one to "even" — to achieve 32-note polyphony.

Refer to: Tutorial, page 10. "ERROR MESSAGES," page 114.

MIDI PROGRAM CHANGE

Summary: Determines whether the TG55 will respond to MIDI program change messages for remote voice/multi selection.

Settings: off, normal, direct

Procedure: The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to select the desired MIDI program change reception mode.

Details: The "off" setting turns MIDI program change reception off, so operating the voice selectors on your keyboard/controller will not cause the corresponding TG55 voice or multi-play setup to be selected.

In the "normal" mode, program change numbers 0 through 63 select TG55 voices 1 through 64, and program change numbers 64 through 79 select multi-play setups 1 through 16.

The "direct" mode allows, in addition to the voice and multi-play selection of the "normal" mode, selection of the various TG55 modes by reception of program change numbers 119 through 127.

Refer to: Tutorial, page 15. "ERROR MESSAGES," page 114.

MIDI DEVICE NUMBER

Summary: Sets the TG55 MIDI device number — i.e. the MIDI channel on which all system exclusive data will be received and transmitted.

Settings: off, 1 ... 16, all

Procedure: The [DATA ENTRY] control or [–1/NO] and [+1/YES] keys are used to select the desired device number or turn system exclusive reception/transmission off.

Details: The device number is important for transfer of voice data and other system exclusive data between the TG55 and other YAMAHA MIDI devices — e.g. another TG55, the SY55 Digital Synthesizer, a YAMAHA MIDI sequence recorder such as the QX3, etc. Bulk voice data, for example, is transmitted and received on the channel specified by the device number (see the BULK IN PROTECT and BULK OUT functions, described below). Make sure that the TG55 device number is matched to that of other devices in your system with which such data transfers will take place.

Refer to: "ERROR MESSAGES," page 114. "MIDI BULK OUT," page 110.

BULK IN PROTECT

Summary: Enables or disables bulk data reception.

Settings: off, on

Procedure: The [DATA ENTRY] control or [+1/YES] and [–1/NO] keys are used to select off or on..

Details: When this function is set to "off," the TG55 will automatically receive a bulk dump of voice, multi-play or system data from an external device connected to its MIDI IN terminal when the appropriate bulk dump data is received (assuming that the TG55 and transmitting device are both set to the same device number).

Turn bulk in protect "on" to disable bulk dump reception (this prevents accidental disruption of the TG55 during use).

Bulk in protect is automatically turned ON whenever the power is turned ON.

Refer to: "MIDI BULK OUT," page 110. "ERROR MESSAGES," page 114. "MIDI DEVICE NUMBER," above.

MIDI BULK OUT

Summary: Initiates bulk transmission of multi-play, voice, system or all data.

Settings:

multi I01 ... I16, P01 ... P16, int, pre.
voice I01 ... I64, P01 ... P64, int, pre.
V & M int, pre.
system
all

Procedure: Use the ◁ and ▷ cursor keys to select the data type parameter (Multi, Voice, V & M, System or All) to the left or the memory location parameter to the right). Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to select the desired data type and memory location where applicable.

When the desired data and memory location(s) have been selected, press [ENTER]. "Sure?" will appear at the top of the screen. Press [+1/YES] to actually begin transmission of the selected data. "Now Transmitting" will appear during transmission, and "Completed!" will appear briefly when the transmission has finished.

Details: The "Multi" setting allows transmission of individual or complete banks of multi-play setup data. Select I01 through I16 for individual transmission of the corresponding INTERNAL multi-play setup, or P01 through P16 for individual transmission of the corresponding PRESET multi-play setup. The "P" and "I" banks are switched using the [MEMORY] key. The "int" or "pre" setting (selected by the [MEMORY] key) that appears after the highest memory number causes transmission of the entire INTERNAL (int) or PRESET (pre) multi-play bank.

The "Voice" setting allows transmission of individual or complete banks of voice data. Select I01 through I64 for individual transmission of the corresponding INTERNAL voice, or P01 through P64 for individual transmission of the corresponding PRESET voice. The "P" and "I" banks are switched using the [MEMORY] key. The "int" or "pre" setting (selected by the [MEMORY] key) that appears after the highest memory number causes transmission of the entire INTERNAL (int) or PRESET (pre) voice bank.

The "V & M" setting allows transmission of all voices **and** multi-play setups in the internal or preset bank. Select "int" or "pre" using the [–1/NO] and [+1/YES] keys.

The "System" setting transmits all system setup data — e.g. current mode, utility master tune, utility transpose, utility effect and other settings.

The "All' setting transmits all of the above data.

The BULK OUT function will not work if the TG55 MIDI device number is set to "off."

Refer to: "BULK IN PROTECT," page 109. "ERROR MESSAGES," page 114. "MIDI DEVICE NUMBER," page 109.

MEMORY CARD BANK SELECT

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

Settings: 1, 2

Procedure: Use the [DATA ENTRY] control or [+1/YES] and [–1/NO] keys to select the desired bank.

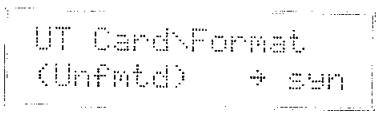
Details: The format of the selected bank is shown in parentheses following the bank number:

(55 SYN) = TG55/SY55 synthesizer format.
(55 SEQ) = SY55 sequencer format.
(SY77) = SY77 Digital Synthesizer format.
(V50) = V50 format.
(RX8) = RX8 Digital Rhythm Programmer format.
(YS S/V) = EOS synthesizer format.
(YS SEQ) = EOS sequencer format.
(Unfmtd) = Unformatted.
(NoBank) = Bank unavailable (appears if bank 2 of single-bank MCD32 card is selected).

The only format useable by the TG55 is the "55 SYN" format. Cards with a different format will have to be reformatted using the MEMORY CARD FORMAT function described below before they can be used with the TG55.

Refer to: Tutorial, page 11. "ERROR MESSAGES," page 114.

MEMORY CARD FORMAT



Summary: Formats MCD64 or MCD32 Memory Cards to the "SY55" format required by the TG55.

Settings: None

Procedure: After selecting the card bank to be formatted using the MEMORY CARD BANK SELECT function described above, press [ENTER]. "Sure?" will appear at the top of the screen. Press [+1/YES] to actually begin formatting. "Executing!" will appear during formatting, and "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. If you attempt to format a memory card with the WRITE PROTECT switch set to ON, the following error display will appear:

If this happens, press the [EXIT] key to return to the previous display.

The current format of the selected card bank is shown in the parentheses to the left of the screen. See the format abbreviations in the "Details" section of the MEMORY CARD BANK SELECT function, described above.

Refer to: "ERROR MESSAGES," page 114.

MEMORY CARD SAVE

Summary: Saves voice and multi-play data, system data, or both (all) to a memory card.

Settings: V & M, system, all.

Procedure: After selecting the card bank to which the data is to be saved using the MEMORY CARD BANK SELECT function described above, select this function and choose the type of data to be saved ("V & M", "system" or "all") using the [–1/NO] and [+1/YES] keys. Then press [ENTER]. "Sure?" will appear at the top of the screen. Press [+1/YES] to actually begin loading. "Executing!" will appear during loading, and "Completed!" will appear briefly when the load operation has finished.

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

The "V & M" setting saves all voice and multi-play data, the "system" setting saves only the system setup data (current mode, utility master tune, utility transpose, utility effect and others), and the "all" setting saves all of the above.

A data save operation 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). If you attempt to save with the WRITE PROTECT switch set to ON, the following error display will appear:

If this happens, press the [EXIT] key to return to the previous display.

Refer to: "ERROR MESSAGES," page 114.

MEMORY CARD LOAD

Summary: Loads voice and multi-play data, system data, or both (all) from a memory card into the TG55 internal memory.

Settings: V & M, system, all.

Procedure: After selecting the card bank containing the data to be loaded using the MEMORY CARD BANK SELECT function described above, select this function and choose the type of data to be loaded ("V & M", "system" or "all") using the [–1/NO] and [+1/YES] keys. Then press [ENTER]. "Sure?" will appear at the top of the screen. Press [+1/YES] to actually begin loading. "Executing!" will appear during loading, and "Completed!" will appear briefly when the load operation has finished.

Details: Exercise caution when loading data from a memory card — the corresponding internal TG55 data will be erased and completely replaced by the loaded data.

The "V & M" setting loads all voice and multi-play data, the "system" setting loads only the system setup data (current mode, utility master tune, utility transpose, utility effect and others), and the "all" setting loads all of the above.

Refer to: "ERROR MESSAGES," page 114.

ERROR MESSAGES

Things do go wrong from time to time, and people do make mistakes. When an error occurs, the TG55 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 TG55 error displays.

MIDI Error Messages

ERROR! Hit"EXIT" MIDI Buffer Full	MIDI receive buffer overflow. Too much MIDI data being received too quickly.
ERROR! Hit"EXIT" MIDI Data	Unrecognizeable MIDI data.
ERROR! Hit"EXIT" MIDI Check Sum	A checksum error occured during MIDI data reception.
ERROR! Hit"EXIT" MIDI Device# off	Attempt to transmit bulk out or receive bulk data while device number is set to "off."
ERROR! Hit"EXIT" MIDI Bulk Prot.	Bulk data was received but ignored because bulk protect function is "on."
********** Bulk Canceled	Bulk data reception was cancelled before completion. The upper row of asterisks is the previous display. Any key operation cancels this display.

Memory Card Error Messages

ERROR! Hit"EXIT" No Data Card	Attempt to save or load while memory card not inserted in DATA card slot.
ERROR! Hit"EXIT" Data Card Prot.	Attempt to save to or format memory card with WRITE PROTECT switch set to ON position.
ERROR! Hit"EXIT" Data Card Format	Attempt to save to or load from unformatted memory card or card with wrong format.

ERROR! Hit"EXIT" Verify Failured	Failure to verify data after save or load operation.
ERROR! Hit"EXIT" Data Card Bat.Lo	Memory card battery voltage low. Replace battery as described in Memory Card instruction sheet.
ERROR! Hit"EXIT" Data Card Bat.NG	Memory card voltage malfunction. Have the unit checked by qualified YAMAHA service personnel.

Miscellaneous Error Messages

ERROR! Hit"EXIT" Internal Bat.Lo	Internal battery voltage low. Have battery replaced by qualified YAMAHA service personnel.
ERROR! Hit"EXIT" Internal Bat.NG	Internal voltage malfunction. Have the unit checked by qualified YAMAHA service personnel.
ERROR! Hit"EXIT" ID Mismatch	Voice with mismatched wave card ID exists in multi-play setup.
ERROR! Hit"EXIT" No Wave Card	Wave card not inserted in WAVE slot.
ERROR! Hit"EXIT" Wrong Wave Card	Voice ID and wave card ID do not match.
ERROR! Hit"EXIT" Voice Type	Voice number and voice type do not match.
ERROR! Hit"EXIT" Illegal Data	Wrong bulk dump byte count or unrecognizeable bulk, memory or card data.

SPECIFICATIONS

Tone Generator System	AWM2 (2nd-generation 16-bit Advanced Wave Memory).
Internal Memory	Wave ROM: 74 preset waveforms. Preset ROM: 64 preset voices & 16 preset multi-play setups. Internal RAM: 64 user voices & 16 user multi-play setups.
External Memory	Voice data: MCD64 or MCD32 memory cards — write & read. Wave data: YAMAHA waveform cards — read only.
Display	16-character x 2-line backlit LCD.
Controls	DATA ENTRY, MASTER VOLUME.
Keys & Switches	POWER, VOICE, MULTI, UTILITY, MEMORY, EDIT/COMPARE, STORE/COPY, –1/NO, +1/YES, PAGE –, PAGE +, ◁, ▷, EXIT, SELECT, ENTER, DEMO.
Output Connectors	Front panel: PHONES. Rear panel: OUTPUT L/MONO & R, INDIVIDUAL OUPUT 1 & 2.
MIDI Connectors	IN, OUT, THRU.
Power Consumption	12 W
Power Requirements	US & Canadian models: 120 V General model: 220—240 V
Dimensions (W x H x D)	480 x 44 x 330 mm (18-7/8" x 1-3/4" x 13")
Weight	4.2 kg (9 lbs. 4 oz)

** Specifications and appearance subject to change without notice.*

IMPORTANT
SAFETY AND INSTALLATION INSTRUCTIONS

INFORMATION RELATING TO POSSIBLE PERSONAL INJURY, ELECTRIC SHOCK AND FIRE HAZARD POSSIBILITIES HAS BEEN INCLUDED IN THIS LIST.

WARNING — When using electronic products, basic precautions should always be followed, including the following:

1. Read all Safety and Installation Instructions, Supplemental Marking and Special Message Section data, and any applicable assembly instructions BEFORE using this product.
2. Check unit weight specifications BEFORE you attempt to move this product.
3. Main power supply verification. YAMAHA Digital Musical Instrument products are manufactured specifically for use with the main supply voltage used in the area where they are to be sold. The main supply voltage required by these products is printed on the name plate. For name plate location please refer to the graphic in the Special Message section. If any doubt exists please contact the nearest YAMAHA Digital Musical Instrument retailer.
4. Some YAMAHA Digital Musical Instrument products utilize external power supplies or adapters. Do NOT connect products of this type to any power supply or adapter other than the type described in the owners manual or as marked on the unit.
5. This product may be equipped with a plug having three prongs or a polarized line plug (one blade wider than the other). If you are unable to insert the plug into the outlet, contact an electrician to have the obsolete outlet replaced. Do NOT defeat the safety purpose of the plug. YAMAHA products not having three prong or polarized line plugs incorporate construction methods and designs that do not require line plug polarization.
6. **WARNING** — Do NOT place objects on the power cord or place the unit in a position where anyone could walk on, trip over, or roll anything over cords of any kind. An improper installation of this type can create the possibility of a fire hazard and/or personal injury.
7. Environment: Your YAMAHA Digital Musical Instrument should be installed away from heat sources such as heat registers and/or other products that produce heat.
8. Ventilation: This product should be installed or positioned in a way that its placement or location does not interfere with proper ventilation.
9. YAMAHA Digital Musical Instrument products are frequently incorporated into "Systems" which are assembled on carts, stands or in racks. Utilize only those carts, stands, or racks that have been designed for this purpose and observe all safety precautions supplied with the products. Pay special attention to cautions that relate to proper assembly, heavier units being mounted at the lower levels, load limits, moving instructions, maximum usable height and ventilation.
10. YAMAHA Digital Musical Instrument products, either alone or in combination with amplification, headphones, or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do NOT operate at high volume levels or at a level that is uncomfortable. If you experience any discomfort, ringing in the ears, or suspect any hearing loss, you should consult an audiologist.
11. Do NOT use this product near water or in wet environments. For example, near a swimming pool, spa, in the rain, or in a wet basement.
12. Care should be taken so that objects do not fall, and liquids are not spilled into the enclosure.
13. YAMAHA Digital Musical Instrument products should be serviced by a qualified service person when:
    a. The power supply/power adapter cord or plug has been damaged; or
    b. Objects have fallen, or liquid has been spilled into the products; or
    c. The unit has been exposed to rain; or
    d. The product does not operate, exhibits a marked change in performance; or
    e. The product has been dropped, or the enclosure of the product has been damaged.
14. When not in use, always turn your YAMAHA Digital Musical Instrument equipment "OFF". The power supply cord should be unplugged from the outlet when the equipment is to be left unused for a long period of time.
    NOTE: In this case, some units may lose some user programmed data. Factory programmed memories will not be affected.
15. Electromagnetic Interference (RFI). YAMAHA Digital Musical Instruments utilize digital (high frequency pulse) technology that may adversely affect Radio/TV reception. Please read FCC information (inside cover) for additional information.
16. Do NOT attempt to service this product beyond that described in the user maintenance section of the owners manual. All other servicing should be referred to qualified service personnel.

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE!

This information on safety is provided to comply with U.S.A. laws, but should be observed by users in all countries.

SPECIAL MESSAGE SECTION

ELECTROMAGNETIC INTERFERENCE (RFI): Your YAMAHA Digital Musical Instrument Product has been type tested and found to comply with all applicable regulations. However, if it is installed in the immediate proximity of other electronic devices, some form of interference may occur. For additional RFI information see the FCC information section located in this manual.

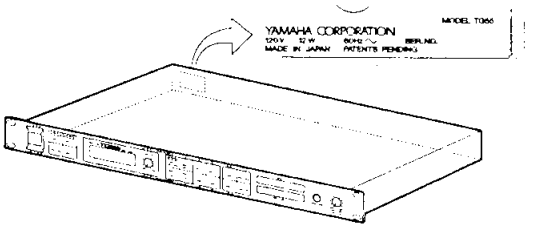
IMPORTANT NOTICE: This product has been tested and approved by independent safety testing laboratories in order that you may be sure that when it is properly installed and used in its normal and customary manner, all foreseeable risks have been eliminated. DO NOT modify this unit or commission others to do so unless specifically authorized by YAMAHA. Product performance and /or safety standards may be diminished. Claims filled under the expressed warranty may be denied if the unit is/has been modified. Implied warranties may also be affected.

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

NOTICE: Service charges incurred due to a 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. Please study this manual carefully before requesting service.

NAME PLATE LOCATION: The graphic below indicates the location of the Name Plate on your YAMAHA Digital Musical Instrument. The Model, Serial Number, Power requirements, etc., are indicated on this plate.

You should note the model, serial number and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



STATIC ELECTRICITY CAUTION: Some YAMAHA Digital Musical Instrument products have modules that plug into the unit to perform various functions. The contents of a plug-in module can be altered/damaged by static electricity discharges. Static electricity
build-ups are more likely to occur during cold winter months (or in areas with very dry climates) when the natural humidity is low. To avoid possible damage to the plug-in module, touch any metal object (a metal desk lamp, a door knob, etc.) before handling the module. If static electricity is a problem in your area, you may want to have your carpet treated with a substance that reduces static electricity build-up. See your local carpet retailer for professional advice that relates to your specific situation.

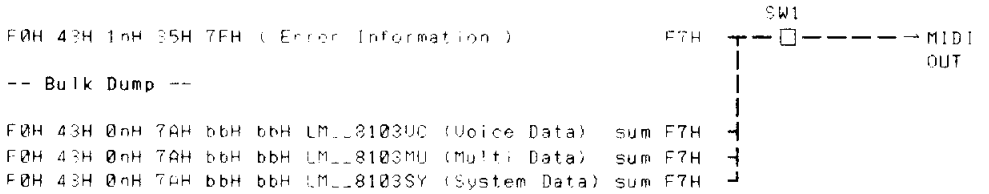
Model _____

Serial No. _____

Purchase Date _____

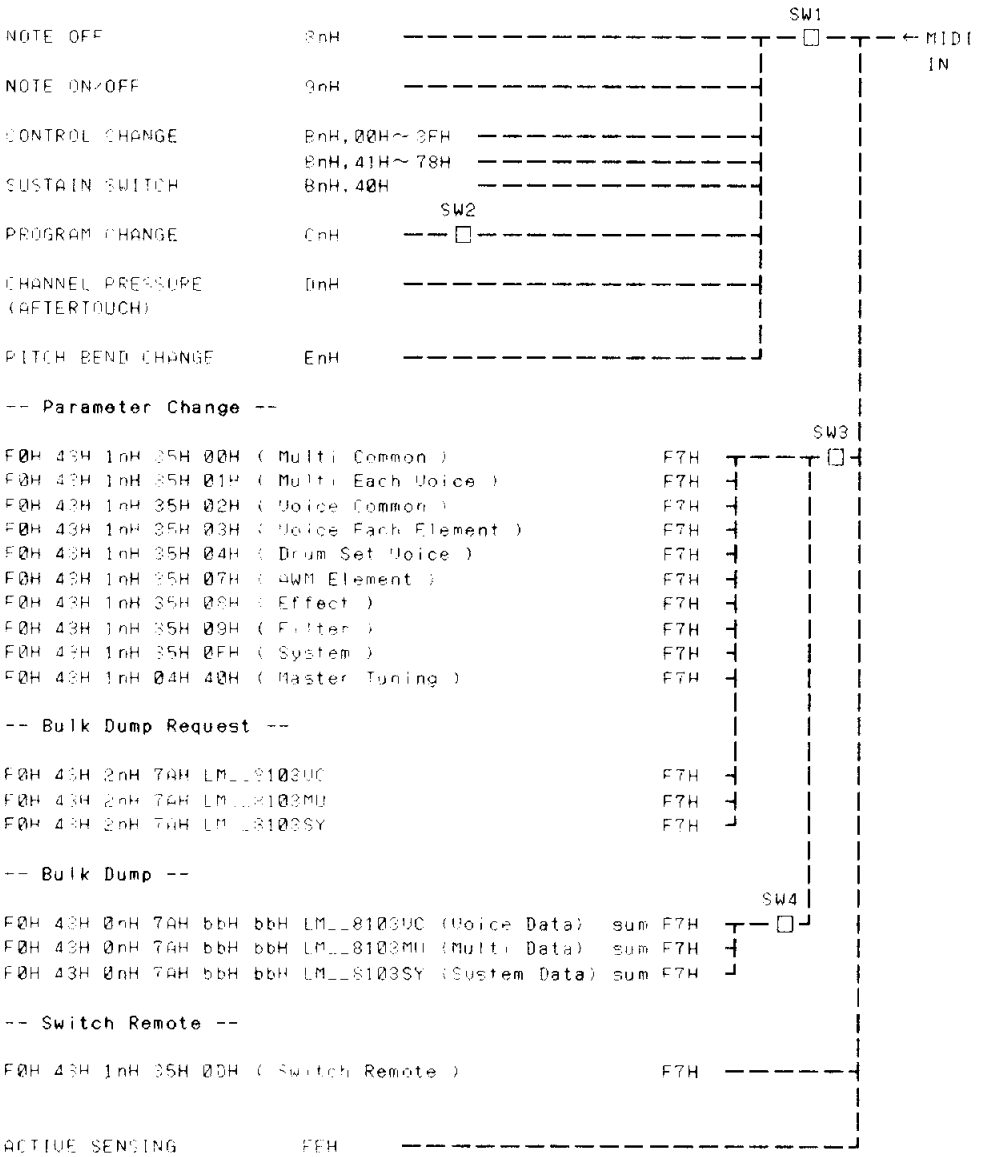
This information on safety is provided to comply with U.S.A. laws, but should be observed by users in all countries.

(1) TRANSMIT FLOW



SW1 □ System Exclusive Message Transmit Channel
System exclusive message on/off, and device number selection.

(2) RECEIVE FLOW



SW1 □ MIDI Receive Channel
MIDI receive channel 1~16 or OMNI ON selection.
SW2 □ Program Change Mode Select
Program change receive on/off, normal mode or direct mode selection.
SW3 □ System Exclusive Message Receive Channel
System exclusive message on/off, and device number selection.
SW4 □ Bulk Protect
Bulk data on/off, and switching (data received by edit buffer regardless of this setting).

(3) TRANSMIT/RECEIVE DATA

(3-1) CHANNEL VOICE MESSAGES

(3-1-1) NOTE OFF

STATUS	1000nnnnB	(8nH)	n = VOICE CHANNEL NUMBER
NOTE NUMBER	0kkkkkkkB		k = 0 (C-2) ~ 127 (G8)
VELOCITY	0vvvvvvvB		Ignored

Receive only.

(3-1-2) NOTE ON/OFF

STATUS	1001nnnnB	(9nH)	n = VOICE CHANNEL NUMBER
NOTE NUMBER	0kkkkkkkB		k = 0 (C-2) ~ 127 (G8)
VELOCITY	0vvvvvvvB	(v≠0)	NOTE ON
	00000000B	(v=0)	NOTE OFF

Receive only.

•The following system data options are available for NOTE OFF and/or NOTE ON/OFF reception:
all = all note numbers received.
odd = only odd note numbers received.
even = only even note numbers received.

(3-1-3) CONTROL CHANGE

STATUS	1011nnnnB	(BnH)	n = VOICE CHANNEL NUMBER
CONTROL NUMBER	0ccccccB		
CONTROL VALUE	0vvvvvvvB		

Receive only.

c = 0 ~ 120 These control numbers can be assigned to the following.
Pitch Modulation
Amplitude Modulation
Filter Modulation
Filter Cutoff
EG Bias
Voice Volume
v = 0 ~ 127

c = 64 SUSTAIN SWITCH
v = 0 ~ 63 : OFF , 64 ~ 127:ON

(3-1-4) PROGRAM CHANGE

(NORMAL MODE)

STATUS	1100nnnnB	(CnH)	n = VOICE CHANNEL NUMBER
PROGRAM NUMBER	0ppppppB		p = 0 ~ 63 (VOICE)
			64 ~ 79 (MULTI)

(DIRECT MODE)

* Voice or multi number select.
* Select multi-play setup voices.

STATUS	1100nnnnB	(CnH)	n = VOICE CHANNEL NUMBER
PROGRAM NUMBER	0ppppppB		p = 0 ~ 63 (VOICE)
			64 ~ 79 (MULTI)

* Select multi-play setup voices.
* Mode or memory select.

STATUS	1100nnnnB	(CnH)	n = VOICE CHANNEL NUMBER
MODE/MEMORY NUMBER	0ddddddB		d = 119 ~ 127
PROGRAM NUMBER	0ppppppB		p = 0 ~ 63 (VOICE)
			64 ~ 79 (MULTI)

* MODE/MEMORY NUMBER

d = 119	INDIVIDUAL	INTERNAL
d = 120	INDIVIDUAL	CARD
	(INTERNAL and CARD cannot be combined in one MULTI.)	
d = 121	INDIVIDUAL	PRESET
d = 122	COMMON	VOICE PLAY MODE INTERNAL
d = 123	COMMON	VOICE PLAY MODE CARD
d = 124	COMMON	VOICE PLAY MODE PRESET
d = 125	COMMON	MULTI PLAY MODE INTERNAL
d = 126	COMMON	MULTI PLAY MODE CARD
d = 127	COMMON	MULTI PLAY MODE PRESET

Receive only.
Receive on/off, normal mode or direct mode selection.

NORMAL MODE

Select voice or multi number only.
Mode or memory cannot be selected.

VOICE PLAY MODE :

p = 0 ~ 63 Voice select.
p = 64 ~ 127 Ignored

MULTI PLAY MODE :

p = 0 ~ 63 Change multi-play setup voice.
p = 64 ~ 79 Select multi-play setup.
p = 80 ~ 127 Ignored

DIRECT MODE

Mode and memory number select in addition to voice and multi number select.

Voice or multi number select.
Change multi-play setup voice.

VOICE PLAY MODE

p = 0 ~ 63 Voice select.
p = 64 ~ 118 Ignored

MULTI PLAY MODE

p = 0 ~ 63 Change multi-play setup voice.
p = 64 ~ 79 Select multi-play setup.
p = 80 ~ 118 Ignored

Change multi-play setup.
Select mode or memory.

d = 119 ~ 127 Program change occurs when next program change message received.

d = 119 ~ 121
p = 0 ~ 63
Change multi-play setup.
d = 119, 120
Internal voice selected if preset multi currently active.
Voice with same memory number as multi selected if internal or card multi currently active.

d = 122 ~ 124
p = 0 ~ 63 (VOICE)
or
d = 125 ~ 127
p = 64 ~ 79 (MULIT)
changes mode, memory, voice or multi number.

(3-1-5) CHANNEL PRESSURE / AFTERTOUCH

STATUS	1101nnnnB	(DnH)	n = VOICE CHANNEL NUMBER
PRESSURE VALUE	0vvvvvvvB		v = 0 ~ 127

Receive only.
Aftertouch can be assigned to the following functions:
- Pitch Modulation
- Amplitude Modulation
- Filter Modulation
- Filter Cutoff
- Pan Bias
- EG Bias
- Voice Volume

(3-1-6) PITCH BEND CHANGE

STATUS	1110nnnnB	(EnH)	n = VOICE CHANNEL NUMBER
LSB	0vvvvvvvB		PITCH BEND CHANGE LSB
MSB	0vvvvvvvB		PITCH BEND CHANGE MSB

Receive only.
Only the MSB data is operational

MSB	
00000000B (00H)	Min.
01000000B (40H)	Center
01111111B (7FH)	Max.

(3-2) SYSTEM REAL TIME MESSAGES

(3-2-1) ACTIVE SENSING

STATUS	11111110B	(FEH)

Receive only.
Sensing begins when this code is received. If no status or data received for more than approximately 300 milliseconds, the MIDI received buffer is cleared and all notes/sustain switch are forced off. All control values are initialized.

(3-3) SYSTEM EXCLUSIVE MESSAGES

No exclusive messages received in demo mode (except recall button).

(3-3-1) PARAMETER CHANGE

STATUS	11110000B	F0H
IDENTIFICATION	01000011B	43H
SUB STATUS	0010nnnnB	10H + n : DEVICE NUMBER
GROUP NUMBER	00110101B	35H
STRUCTURE NUMBER MSB	0000tttt B	
STRUCTURE NUMBER LSB	0fee nnnn B	
PARAMETER NUMBER MSB	0prpppprB	
PARAMETER NUMBER LSB	0pp.oppp B	
PARAMETER VALUE MSB	0vvvvvvvB	
PARAMETER VALUE LSB	0vvvvvvvB	
EOX	11110111B	F7H

The 10 parameter change messages from MULTI COMMON to SYSTEM groups in the chart below are received; ERROR INFORMATION is transmitted. Device number and receive-transmit on-off can be set in the utility mode.

Switch remote reception occurs regardless of receive-transmit on-off or device number settings.
These parameter change messages allow remote control of all panel switches, producing the same effect as if the corresponding panel switch was actually pressed.

Of all the system parameters, only the format of MASTER TUNING is different. Refer to chart 8.

Type	t	f	e	n	Refer to
MULTI COMMON	00H	-	-	-	chart 1
MULTI EACH VOICE	01H	-	-	channel#	chart 1
VOICE COMMON	02H	-	-	-	chart 2
VOICE EACH ELEMENT	03H	-	element#		chart 2
DRUM SET VOICE	04H	key note number			chart 3
AWM ELEMENT	07H	-	element#		chart 4
EFFECT	08H	-	-	-	chart 5
FILTER	09H	filter#	element#	-	chart 6
SWITCH REMOTE	0DH	-	-	-	chart 7
SYSTEM	0FH	-	-	-	chart 8
ERROR INFORMATION	7FH	-	-		chart 9

note) • element number 0 (EL1) ~ 3 EL4'
• channel number 0 (CH1) ~ 15 (CH16)
• filter number 0 : filter #1
1 : filter #2
don't care : filter common
• key note number 36 (C1) ~ 96 (C6)

• Unused bits of the structure number LSB are transmitted as 0's and ignored when received.

• The unused bit of the parameter number MSB is transmitted as 0 and ignored when received.

• Error information is transmitted when an error occurs.

(3-3-2) BULK DUMP

STATUS	11110000B	(F0H)		
IDENTIFICATION	01000011B	(43H)		
SUB STATUS	0000nnnnB	(0nH)	n = DEVICE NUMBER	
FORMAT NUMBER	01111010B	(7AH)		
BYTE COUNT(MSB)	0bbbbbbbB			
BYTE COUNT(LSB)	0bbbbbbbB			
CLASSIFICATION	01001100B	(4CH)	ASCII'L	┐
NAME	01001101B	(4DH)	ASCII'M	|
	00100000B	(20H)	ASCII'	|
	00100000B	(20H)	ASCII'	|
DATA FORMAT	00111000B	(38H)	ASCII'8	|
NAME	00110001B	(31H)	ASCII'1	|
	00110000B	(30H)	ASCII'0	| data bytes
	00110011B	(33H)	ASCII'3	|
	0mmmmmmmB		ASCII	|
	0mmmmmmmB		ASCII	|
ADDITIONAL	00000000B	(00H)		|
HEADER	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
	00000000B	(00H)		|
MEMORY TYPE	0xxxxxxxB			|
MEMORY NUMBER	0yyyyyyyB			|
DATA	0ddddddB			|
	↓			|
	0ddddddB			┘
CHECK SUM	0eeeeeeeB	2's complement of 7 bits sum of all data bytes		
EOX	11110111B	(F7H)		

The 3 types of bulk data shown in the chart below are transmitted and received.
Device number, receive/transmit on/off and receive protect can be set in the utility mode.
Received to edit buffer regardless of protect setting.

Type	b	m	x	y	Refer to
VOICE	1AWM 01H 38H	VC	INTERNAL 00H	00H~3FH	chart 10
	2AWM 02H 31H		PRESET 02H		
	4AWM 04H 23H		EDIT BUFFER 7FH		
	DRUM SET 04H 64H				
MULTI	01H 3AH	MU		00H~0FH	chart 11
SYSTEM	00H 2AH	SY	00H	00H	chart 12

NOTE)

For 1 voice or 1 multi bulk dump transmission, memory type = edit buffer, and memory number = 00H.
When a memory type = edit buffer bulk dump is received, the memory number is ignored.
Received to voice edit buffer only in voice mode.
Received to multi edit buffer only in multi mode.

All voice or all multi bulk dump transmission are carried out with the selected memory type and the appropriate voice or multi memory number. When a bulk dump other than a memory type = edit buffer type is received, memory type is processed as internal. Unused memory number bits are ignored.

If a system bulk dump is received, the memory type and memory number are ignored.

Unused bytes in the additional header (00H) are ignored when received.

When successive bulk dumps are transmitted, an interval of greater than approximately 100 milliseconds is inserted between each. This interval is also necessary between bulk dumps received.

(3-3-3) BULK DUMP REQUEST

STATUS	11110000B	(F0H)	
IDENTIFICATION	01000011B	(43H)	
SUB STATUS	0010nnnnB	(2nH)	n = DEVICE NUMBER
FORMAT NUMBER	01111010B	(7AH)	
CLASSIFICATION	01001100B	(4CH)	ASCII'L
NAME	01001101B	(4DH)	ASCII'M
	00100000B	(20H)	ASCII'
	00100000B	(20H)	ASCII'
DATA FORMAT	00111000B	(38H)	ASCII'8
NAME	00110001B	(31H)	ASCII'1
	00110000B	(30H)	ASCII'0
	00110011B	(33H)	ASCII'3
	0mmmmmmmB		ASCII
	0mmmmmmmB		ASCII
ADDITIONAL	00000000B	(00H)	
HEADER	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
	00000000B	(00H)	
MEMORY TYPE	0xxxxxxxB		
MEMORY NUMBER	0yyyyyyyB		
EOX	11110111B	(F7H)	

The 3 types of bulk dump request shown in the chart below are received. Device number and receive on/off can be set in the utility mode.

Type	m	x		y
VOICE	VC	INTERNAL	00H	00H～3FH
		PRESET	02H	
MULTI	MU	EDIT BUFFER	7FH	00H～0FH
SYSTEM	SY		00H	00H

NOTE)

Unused bytes in the additional header (00H) are ignored.
When memory type = edit buffer, the memory number is ignored.
When memory type ≠ edit buffer, the unused memory number bits are ignored.
For the system bulk dump request, the memory type and memory number are ignored.

< CHART 1 > PARAMETER TABLE (MULTI)

(1) Multi Header

MIDI Parameter Change Format

F0H 43H 1nH 35H 00H 00H 00H n2H 00H v2H F7H

note) n ; device number
n2 ; parameter number
v2 ; parameter value

No.	n2	function	value	note
		--- Multi Voice Set Name ---		
0	00	"* "	v2 : 20-127	
1	01	" * "	v2 : 20-127	
2	02	" * "	v2 : 20-127	
3	03	" * "	v2 : 20-127	
4	04	" * "	v2 : 20-127	
5	05	" * "	v2 : 20-127	
6	06	" * "	v2 : 20-127	
7	07	" * "	v2 : 20-127	
8	08	" * "	v2 : 20-127	
9	09	" *"	v2 : 20-127	
10	0A	Effect Source Select	v2 : 0-16	0:multi, 1-16:1-16ch

(2) Multi Each Voice

MIDI Parameter Change Format

F0H 43H 1nH 35H 01H t2H n1H n2H 00H v2H F7H

note) n ; device number
t2 ; voice channel number
n1 ; parameter number MSB
n2 ; parameter number LSB
v2 ; parameter value

No.	n2	function	value	note
0	00	Voice on/off	v2: b6 0-1	0:off, 1:on
		Output Select	b0,1,2 0-5	0:STR, 1:OFF, 2:1, 3:2, 4:12 5:UCE
1	01	Voice Memory Select	v2 : 0-1	0:int/crd, 1:pre
2	02	Voice Number	v2 : 0-63	
3	03	Volume	v2 : 0-127	
4	04	Tuning	v2 : 0-127	0-127:-64～+63
5	05	Note Shift	v2 : 0-127	0-127:-64～+63
6	06	Multi Static PAN	v2 : 0-63	0:voice, 1-63:-31～+31 If a mode other than VOICE is selected, voice pan will not operate.
7	07	Effect Level	v2 : 0-100	
8	08	Reserve Note	v2 : 0-16	

note) * The SY55 transmits parameter change when output select b0,1,2 = 7. When the TG55 receives this value, the current output select value does not change.
* The SY55 transmits bulk dump when output select = 0. Thus, when the TG55 receives a bulk dump from the SY55, output select becomes stereo L,R.

* When n2 = 00, n1 is used to display the edit screen shown during reception.
  n1 = 1 Output select
  n2 = 2 Voice on/off
  When n1 is a value other than 1, the voice on/off edit screen is displayed.
  The value changes with output select and voice on/off regardless of n1.
* When voice on/off is set to "off", the LCD changes to the edit screen when a volume - reserve note parameter change is received, but the value does not change.
  Voice on/off is forced on when a voice number is received.

<CHART 2> PARAMETER TABLE (VOICE)

(1) Voice Header

MIDI Parameter Change Format

F0H 43H 1nH 35H 02H 00H 00H n2H 00H v2H F7H

note) n : device number
n2 : parameter number
v2 : parameter value

No.	n2	function	value	note
		--- Element Select Mode ---		
0	00	Mode	v2 : 5-7,10	5:1AWM_poly 6:2AWM_poly 7:4AWM_poly 10:DRUM_SET
		--- Voice Name ---		
1	01	"* "	v2 : 20-127	
2	02	" * "	v2 : 20-127	
3	03	" * "	v2 : 20-127	
4	04	" * "	v2 : 20-127	
5	05	" * "	v2 : 20-127	
6	06	" * "	v2 : 20-127	
7	07	" * "	v2 : 20-127	
8	08	" * "	v2 : 20-127	
9	09	" * "	v2 : 20-127	
10	0A	" *"	v2 : 20-127	

note) * Element select mode 5 - 7 can be selected for voice number 1 - 62.
The element select mode is fixed at 10 for voice number 63 and 64.

(2) Voice Common

MIDI Parameter Change Format

F0H 43H 1nH 35H 02H 00H 00H n2H 00H v2H F7H

note) n : device number
n2 : parameter number
v2 : parameter value

No.	n2	function	value	note
		--- Pitch Bend Wheel ---		
0	10	Range	v2 : 0-12	
		--- After Touch Pitch Bend ---		
1	11	Pitch Bend Range	v2 : 0-12,16-28	0-12:0～+12 16-28:0～-12, (bit4 = sign bit)

		--- Pitch Modulation ---		
2	12	Device Assign (MIDI Control#)	v2 : 0-121	0-120:0-120, 121:AT
3	13	Modulation Range	v2 : 0-127	
		--- Amplitude Modulation ---		
4	14	Device Assign (MIDI Control#)	v2 : 0-121	0-120:0-120, 121:AT
5	15	Modulation Range	v2 : 0-127	
		--- Filter Modulation ---		
6	16	Device Assign (MIDI Control#)	v2 : 0-121	0-120:0-120, 121:AT
7	17	Modulation Range	v2 : 0-127	
		--- Filter Cut_off ---		
8	18	Device Assign (MIDI control#)	v2 : 0-121	0-120:0-120, 121:AT
9	19	Cut_off Range	v2 : 0-127	
10		Reserve	0	
11		Reserve	0	
		--- EG Bias ---		
12	1C	Device assign (MIDI control#)	v2 : 0-121	0-120:0-120, 121:AT
13	1D	Bias Range	v2 : 0-127	
		--- Voice Volume ---		
14*	1E	Device assign (MIDI control#)	v2 : 0-121	0-120:0-120, 121:AT
15*	1F	Volume Limit Low	v2 : 0-127	
16	20	Random Pitch Fluctuation	v2 : 0-7	
17	21	Output Select	v2 : 0-4	0:str, 1:off, 2:1, 3:2, 4:1?
18	22	Voice Volume	v2 : 0-127	
19*	23	AWM_card ID (MSB)	v2 : 0-127	(If 0:AWM_card not used,
20*	24	AWM_card ID (LSB)	v2 : 0-127	1~max.16383)

note) * Only numbers with an asterisk (*) apply to drum set voices.
* The SY55 transmits bulk dump when output select = 0.
Thus, when the TG55 receives a bulk dump from the SY55, output select becomes stereo L,R.

(3) Element Enable

MIDI Parameter Change Format

F0H 43H 1nH 35H 02H 00H 00H 7FH 00H v2H F7H

v2 : 0,0,0,0,e3,e2,e1,e0 on:1 off:0

(4) Voice Each Element

MIDI Parameter Change Format

F0H 43H 1nH 35H 03H t2H 00H n2H 00H v2H F7H

note) n ; device number
t2 : 00ee0000B
ee 00 - element 0
01 - element 1
10 - element 2
11 - element 3
n2 ; parameter number
v2 ; parameter value

No.	n2	function	value	note
0	00	Element Volume	v2 : 0-127	
1	01	Element Detune	v2 : 0-31	0-15:0～+15, 16-31:0～-15 (bit4 = sign bit)
2	02	Element Note Shift	v2 : 0-127	0-127:-64～+63
		--- Element Limit ---		
3	03	Note Limit Low	v2 : 0-127	(note #)
4	04	Note Limit High	v2 : 0-127	(note #)
5	05	Velocity Limit Low	v2 : 1-127	(velocity #)
6	06	Velocity Limit High	v2 : 1-127	(velocity #)
7	07	Static Pan	v2 : 1-63	1-63:-31～+31 No effect when Multi Static PAN selected.
8	08	Effect Balance	v2 : 0-100	

<CHART 3> PARAMETER TABLE (DRUM SET VOICE)

MIDI Parameter Change Format

F0H 43H 1nH 35H 04H t2H n1H n2H v1H v2H F7H

note) n ; device number
t2 ; MIDI note number
n1 ; parameter number MSB
n2 ; parameter number LSB
v1 ; MSB of parameter value
v2 ; LSB of parameter value

No.	n2	function	value	note
0	00	Alternate Group	v2 : b6 0-1	0:off, 1:on
		Wave on/off	b5 0-1	0:off, 1:on
		Output Select	b0,1,2 0-4	0:str, 1:off, 2:1, 3:2, 4:12
1	01	Wave Source	v2 : 0-1	0:pre, 1:card
2	02	Wave Number	v1 : 0-1	(0～max.255)
3			v2 : 0-127	
4	03	Wave Volume	v2 : 0-127	
5	04	Wave Tuning	v2 : 0-127	0-127:-64～+63
6	05	Wave Note Shift	v2 : 16-100	16-100:-48～+36
7	06	Static Pan	v2 : 1-63	1-63:-31～+31 No effect when Multi Static PAN selected.
8	07	Effect Balance	v2 : 0～100	

note)
- The SY55 transmits parameter change when output select b0,1,2 = 7. When the TG55 receives this value, the current output select value does not change.
- The SY55 transmits bulk dump when output select b0,1,2 = 0. Thus, when the TG55 receives a bulk dump from the SY55, output select becomes stereo L,R.
- When n2 = 00, n1 is used to display the edit screen shown during reception.
  - n1 = 1 Output select
  - n1 = 2 Wave on/off
  - n1 = 3 Alternate group

  When n1 is a value other than 1 or 3, the wave on/off edit screen is displayed.
  The value changes with output select, wave on/off and alternate regardless of n1.

* When wave on/off is set to "off", the LCD changes to the edit screen when a wave volume - effect balance parameter change is received, but the value does not change.
Wave on/off is forced on when a wave number is received.

< CHART 4 > PARAMETER TABLE (AWM ELEMENT)

MIDI Parameter Change Format

F0H 43H 1nH 35H 07H t2H 00H n2H v1H v2H F7H

note) n ; device number
t2 ; 00ee0000B
ee 00 - element 0
01 - element 1
10 - element 2
11 - element 3
n2 ; parameter number
v1 ; MSB of parameter value
v2 ; LSB of parameter value

(1) AWM Element Data 1

No.	n2	function	value	note
0	00	Wave Source	v2 : 0-1	0:pre, 1:card
1	01	Wave Number	v1 : 0-1	(0～255)
2			v2 : 0-127	
3	02	Frequency Mode	v2 : 0-1	0:normal, 1:fixed
4	03	Fixed Mode Note#	v2 : 0-127	
5	04	Frequency Fine	v2 : 0-127	0-127:-64～+63
6	05	Pitch Modulation Sensitivity	v2 : 0-7	
		--- Pitch EG ---		
7	06	Key_on Rate 1	v2 : 0-63	
8	07	Key_on Rate 2	v2 : 0-63	
9	08	Key_on Rate 3	v2 : 0-63	
10	09	Key_off Rate 1	v2 : 0-63	
11	0A	Key_on Level 0	v2 : 0-127	0-127:-64～+63
12	0B	Key_on Level 1	v2 : 0-127	0-127:-64～+63
13	0C	Key_on Level 2	v2 : 0-127	0-127:-64～+63
14	0D	Key_on Level 3	v2 : 0-127	0-127:-64～+63
15	0E	Key_off Level 1	v2 : 0-127	0-127:-64～+63
16	0F	Range	v2 : 1-3	1:2, 2:1, 3:1/2 oct
17	10	Rate Scaling	v2 : 0-15	0-7:0～+7, 8-15:0～-7 (bit3 = sign bit)
18	11	Velocity Switch	v2 : 0-1	0:off, 1:on
		--- Multi LFO ---		
19	12	Speed	v2 : 0-99	
20	13	Delay Time	v2 : 0-99	
21	14	Pitch Modulation Depth	v2 : 0-99	
22	15	Amplitude Modulation Depth	v2 : 0-99	
23	16	Filter Modulation Depth	v2 : 0-99	
24	17	Wave	v2 : 0-5	0:Tri, 1:Dwn, 2:Up, 3:Squ, 4:Sine, 5:S/H
25	18	Initial Phase	v2 : 0-99	
26		Reserve	0	

(2) AWM Element Data 2

No.	n2	function	value	note
		--- Amplitude EG ---		
0	4F	EG Mode	v2 : 0-1	0:normal, 1:hold
1	50	Key_on Rate 1 (attack/hold)	v2 : 0-63	
2	51	Key_on Rate 2 (decay)	v2 : 0-63	
3	52	Key_on Rate 3	v2 : 0-63	
4	53	Key_on Rate 4 (decay)	v2 : 0-63	
5	54	Key_off Rate 1 (release)	v2 : 0-63	
6	55	Key_on Level 2 (decay)	v2 : 0-63	
7	56	Key_on Level 3 (decay)	v2 : 0-63	
8	57	Rate Scaling	v2 : 0-15	0-7:0～+7, 8-15:0～-7 (bit3 = sign bit)
9	58	Out_level Scaling Break Point 1	v2 : 0-127	(note #)
10	59	Out_level Scaling Break Point 2	v2 : 0-127	(note #)
11	5A	Out_level Scaling Break Point 3	v2 : 0-127	(note #)
12	5B	Out_level Scaling Break Point 4	v2 : 0-127	(note #)
13	5C	Out_level Scaling Offset 1	v1 : 0-1	(1-255:-127～+127)
14			v2 : 0-127	
15	5D	Out_level Scaling Offset 2	v1 : 0-1	(1-255:-127～+127)
16			v2 : 0-127	
17	5E	Out_level Scaling Offset 3	v1 : 0-1	(1-255:-127～+127)
18			v2 : 0-127	
19	5F	Out_level Scaling Offset 4	v1 : 0-1	(1-255:-127～+127)
20			v2 : 0-127	
21	60	Velocity Sensitivity Key_on	v2 : 0-15	0-7:0～+7, 8-15:0～-7 (bit3 = sign bit)
22	61	Rate Velocity Switch Key_on	v2 : 0-1	0:off, 1:on
23	62	Amplitude Modulation Sens.	v2 : 0-15	0-7:0～+7, 8-15:0～-7 (bit3 = sign bit)

<CHART 5> PARAMETER TABLE (EFFECT)

MIDI Parameter Change Format

F0H 43H 1nH 35H 08H 00H 00H n2H 00H v2H F7H

note) n ; device number
n2 ; parameter number
v2 ; parameter value

No.	n2	function	value	note
0	00	Reverb Effect Type	v2 : 1-34	
1	01	Reverb Effect Output Level	v2 : 0-100	
2	02	Reverb Effect Parameter 1	v2 :	
3	03	Reverb Effect Parameter 2	v2 :	
4	04	Reverb Effect Parameter 3	v2 :	

<CHART 6> PARAMETER TABLE (FILTER)

MIDI Parameter Change Format

F0H 43H 1nH 35H 09H t2H 00H n2H v1H v2H F7H

note) n ; device number
t2 ; 0fee0000B
f 0 - filter 1
1 - filter 2
don't care - filter common
ee 00 - element 0
01 - element 1
10 - element 2
11 - element 3
n2 ; parameter number
v1 ; MSB of parameter value
v2 ; LSB of parameter value

(1) Filter 1 & 2

No.	n2	function	value	note
0	00	Filter Type	v2 : 0-2	0:THR, 1:LPF, 2:HPF (2:HPF in Filter 1 only)
1	01	Cut_off Frequency	v2 : 0-127	
2	02	Filter Mode	v2 : 0-2	0:EG, 1:LFO, 2:EGUA
3	03	Key_on Rate 1	v2 : 0-63	
4	04	Key_on Rate 2	v2 : 0-63	
5	05	Key_on Rate 3	v2 : 0-63	
6	06	Key_on Rate 4	v2 : 0-63	
7	07	Key_off Rate 1	v2 : 0-63	
8	08	Key_off Rate 2	v2 : 0-63	
9	09	Key_on Cut_off Level 0	v2 : 0-127	0-127:-64~+63
10	0A	Key_on Cut_off Level 1	v2 : 0-127	0-127:-64~+63
11	0B	Key_on Cut_off Level 2	v2 : 0-127	0-127:-64~+63
12	0C	Key_on Cut_off Level 3	v2 : 0-127	0-127:-64~+63
13	0D	Key_on Cut_off Level 4	v2 : 0-127	0-127:-64~+63
14	0E	Key_off Cut_off Level 1	v2 : 0-127	0-127:-64~+63
15	0F	Key_off Cut_off Level 2	v2 : 0-127	0-127:-64~+63
16	10	Rate Scaling	v2 : 0-15	0-7:0~+7, 8-15:0~-7 (bit3 = sign bit)
17	11	C_off_lvl Scaling Break Point 1	v2 : 0-127	(note #)
18	12	C_off_lvl Scaling Break Point 2	v2 : 0-127	(note #)
19	13	C_off_lvl Scaling Break Point 3	v2 : 0-127	(note #)
20	14	C_off_lvl Scaling Break Point 4	v2 : 0-127	(note #)
21	15	C_off_lvl Scaling Offset 1	v1 : 0-1	(1-255:-127~+127)
22			v2 : 0-127	
23	16	C_off_lvl Scaling Offset 2	v1 : 0-1	(1-255:-127~+127)
24			v2 : 0-127	
25	17	C_off_lvl Scaling Offset 3	v1 : 0-1	(1-255:-127~+127)
26			v2 : 0-127	
27	18	C_off_lvl Scaling Offset 4	v1 : 0-1	(1-255:-127~+127)
28			v2 : 0-127	

(2) Filter Common

No.	n2	function	value	note
0	32	Resonance	v2 : 0-99	
1	33	Velocity Sensitivity Key_on	v2 : 0-15	0-7:0~+7, 8-15:0~-7 (bit3 = sign bit)
2	34	Cut_off Modulation sensitivity	v2 : 0-15	0-7:0~+7, 8-15:0~-7 (bit3 = sign bit)

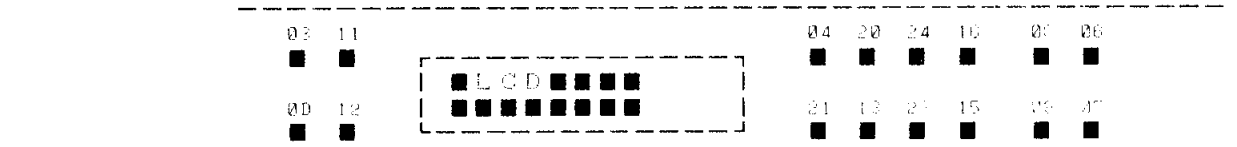
<CHART 7> PARAMETER TABLE (SWITCH REMOTE)

F0H 43H 1nH 35H 00H 00H 20H n2H 00H v2H F7H

note) n : device number
n2 : parameter number
v2 : parameter value
data range : off:00H~7FH,on:40H~7FH

n2	switch
03	VOICE
04	EDIT/COMPARE
06	MEMORY
07	SELECT
08	EXIT
09	ENTER
0D	DEMO
11	MULTI
12	UTILITY
13	PAGE+
15	++
16	+1 DEC
17	-
20	STORE COPY
21	PAGE-
22	--
24	-1 INC
2F	Initial Set

Switch numbers correspond to the following layout.



<CHART 8> PARAMETER TABLE (SYSTEM)

MIDI Parameter Change Format (Except Master Fine Tuning)

F0H 43H 1nH 2FH 2FH 00H 00H n2H 00H v2H F7H

note) n : device number
n2 : parameter number
v2 : parameter value

MIDI Parameter Change Format (Master Fine Tuning)

F0H 43H 1nH 04H 40H DTH F7H

note) n : device number
DT : parameter value

Same as DX1 Master Tuning

No.	n2	name	value	note
		--- Master Tuning ---		
0	00	Master Note Shift	v2 : 0-127	0-127:-64～+63
1		Master Fine Tuning	DT : 0-127	0-127:-64～+63
		--- Velocity ---		
2	02	Velocity Curve Select	v2 : 0-7	0-7:1-8
		--- MIDI ---		
3	03	Keyboard Transmit Channel	v2 : 0-15	0-15:1～16ch
4	04	Voice Receive Channel	v2 : 0-16	0-15:1～16ch, 16:omni
5	05	Local Switch	v2 : 0-1	0:off, 1:on
6	06	Device Number	v2 : 0-17	0:off, 1-16:1～16, 17:all
7	07	Bulk Data Memory Protect Switch	v2 : 0-1	0:off, 1:on
8	08	Program Change Mode	v2 : 0-2	0:off, 1:normal, 2:direct
9	09	Effect on/off	v2 : 0-1	0:off, 1:on
10	0A	Card Bank Select 1 or 2	v2 : 0-1	syn 0:bank1, 1:bank2
11	0B	Note on/off	v2 : 0-2	0:all, 1:odd, 2:even
12		Reserve	0	
13		Reserve	0	
14		Reserve	0	
15		Reserve	0	

note) * When "Device # = all" is selected, transmission occurs on device number 1.

<CHART 9> PARAMETER TABLE (ERROR INFORMATION)

MIDI Parameter Change Format

F0H 43H 1nH 35H 7FH 00H 00H 00H 00H v2H F7H

note) v2 ; error number

number	name
01	MIDI Buffer Full
02	SEQ Buffer Full
03	MIDI Data
04	MIDI Check Sum
05	MIDI Device# off
06	MIDI Bulk Prot.
07	No Data Card
08	Data Card Prot.
09	Data Card Format
0A	Illegal Data
0B	Verify Failed
0C	Internal Bat.Lo
0D	Data Card Bat.Lo
0E	SEQ Memory Full
0F	SEQ Data Empty
10	Now SEQ Running
11	Song Data Exist
12	Internal Bat.NG
13	Data Card Bat.NG
14	ID Mismatch
15	No Wave Card
16	Wrong Wave Card
17	Now SEQ Running
18	(not defined)
19	Voice Type
1A	Song Cleared

----- not error -----

1E	Bulk Received
1F	Bulk Receiving
20	Bulk Canceled

<CHART 10> BULK DUMP FORMAT (VOICE)

(1) 1AWM

STATUS	11110000B	(F0H)		
IDENTIFICATION	01000011B	(43H)		
SUB STATUS	0000nnnnB	(0nH)	n = DEVICE NUMBER	
FORMAT NUMBER	01111010B	(7AH)		
BYTE COUNT(MSB)	00000001B	(01H)		
BYTE COUNT(LSB)	00111000B	(38H)	(Byte Count = 184)	
	HEADER		26 byte	see (3-3-2) BULK DUMP
	VOICE HEADER		11 byte	see chart 2
	EFFECT		5 byte	see chart 5
	VOICE COMMON		21 byte	see chart 2
	ELEMENT 0 DATA		9 byte	see chart 2
	ELEMENT 0			
	AWM ELEMENT DATA 1		27 byte	see chart 4
	FILTER 1		29 byte	see chart 6
	FILTER 2		29 byte	see chart 6
	FILTER COMMON		3 byte	see chart 6
	AWM ELEMENT DATA 2		24 byte	see chart 4
CHECK SUM	0eeeeeeeB	2's complement of 7 bits sum of all data bytes		
EOX	11110111B	(F7H)		

(2) 2AWM

STATUS	11110000B	(F0H)		
IDENTIFICATION	01000011B	(43H)		
SUB STATUS	0000nnnnB	(0nH)	n = DEVICE NUMBER	
FORMAT NUMBER	01111010B	(7AH)		
BYTE COUNT(MSB)	00000010B	(02H)		
BYTE COUNT(LSB)	00110001B	(31H)	(Byte Count = 305)	
	HEADER		26 byte	see (3-3-2) BULK DUMP
	VOICE HEADER		11 byte	see chart 2
	EFFECT		5 byte	see chart 5
	VOICE COMMON		21 byte	see chart 2
	ELEMENT 0 DATA		9 byte	see chart 2
	ELEMENT 1 DATA		9 byte	see chart 2
	ELEMENT 0			
	AWM ELEMENT DATA 1		27 byte	see chart 4
	FILTER 1		29 byte	see chart 6
	FILTER 2		29 byte	see chart 6
	FILTER COMMON		3 byte	see chart 6
	AWM ELEMENT DATA 2		24 byte	see chart 4
	ELEMENT 1			
	AWM ELEMENT DATA 1		27 byte	see chart 4
	FILTER 1		29 byte	see chart 6
	FILTER 2		29 byte	see chart 6
	FILTER COMMON		3 byte	see chart 6
	AWM ELEMENT DATA 2		24 byte	see chart 4
CHECK SUM	0eeeeeeeB	2's complement of 7 bits sum of all data bytes		
EOX	11110111B	(F7H)		

(3) 4AWM

STATUS	11110000B	(F0H)	
IDENTIFICATION	01000011B	(43H)	
SUB STATUS	0000nnnnB	(0nH)	n = DEVICE NUMBER
FORMAT NUMBER	01111010B	(7AH)	
BYTE COUNT(MSB)	00000100B	(04H)	
BYTE COUNT(LSB)	00100011B	(23H)	(Byte Count = 547)
	HEADER		26 byte see (3-3-2) BULK DUMP
	VOICE HEADER		11 byte see chart 2
	EFFECT		5 byte see chart 5
	VOICE COMMON		21 byte see chart 2
	ELEMENT 0 DATA		9 byte see chart 2
	ELEMENT 1 DATA		9 byte see chart 2
	ELEMENT 2 DATA		9 byte see chart 2
	ELEMENT 3 DATA		9 byte see chart 2
	ELEMENT 0		
	AWM ELEMENT DATA 1		27 byte see chart 4
	FILTER 1		29 byte see chart 6
	FILTER 2		29 byte see chart 6
	FILTER COMMON		3 byte see chart 6
	AWM ELEMENT DATA 2		24 byte see chart 4
	ELEMENT 1		
	AWM ELEMENT DATA 1		27 byte see chart 4
	FILTER 1		29 byte see chart 6
	FILTER 2		29 byte see chart 6
	FILTER COMMON		3 byte see chart 6
	AWM ELEMENT DATA 2		24 byte see chart 4
	ELEMENT 2		
	AWM ELEMENT DATA 1		27 byte see chart 4
	FILTER 1		29 byte see chart 6
	FILTER 2		29 byte see chart 6
	FILTER COMMON		3 byte see chart 6
	AWM ELEMENT DATA 2		24 byte see chart 4
	ELEMENT 3		
	AWM ELEMENT DATA 1		27 byte see chart 4
	FILTER 1		29 byte see chart 6
	FILTER 2		29 byte see chart 6
	FILTER COMMON		3 byte see chart 6
	AWM ELEMENT DATA 2		24 byte see chart 4
CHECK SUM	0eeeeeeeB	2's complement of 7 bits sum of all data bytes	
EOX	11110111B	(F7H)	

(4) DRUM SET

STATUS	11110000B	(F0H)	
IDENTIFICATION	01000011B	(43H)	
SUB STATUS	0000nnnnB	(0nH)	n = DEVICE NUMBER
FORMAT NUMBER	01111010B	(7AH)	
BYTE COUNT(MSB)	00000100B	(04H)	
BYTE COUNT(LSB)	01100100B	(64H)	(Byte Count = 612)
	HEADER		26 byte see (3-3-2) BULK DUMP
	VOICE HEADER		11 byte see chart 2
	EFFECT		5 byte see chart 5
	VOICE COMMON		21 byte see chart 2
	C1 DRUM SET VOICE		9 byte see chart 3
	C6 DRUM SET VOICE		9 byte see chart 3
CHECK SUM	0eeeeeeeB	2's complement of 7 bits sum of all data bytes	
EOX	11110111B	(F7H)	

<CHART 11> BULK DUMP FORMAT (MULTI)

STATUS	11110000B	(F0H)	
IDENTIFICATION	01000011B	(43H)	
SUB STATUS	0000nnnnB	(0nH)	n = DEVICE NUMBER
FORMAT NUMBER	01111010B	(7AH)	
BYTE COUNT(MSB)	00000001B	(01H)	
BYTE COUNT(LSB)	00111010B	(3AH)	(Byte Count = 186)
	HEADER		26 byte see (3-3-2) BULK DUMP
	MULTI HEADER		11 byte see chart 1
	EFFECT		5 byte see chart 5
	CH_0 VOICE		9 byte see chart 1
	CH15 VOICE		9 byte see chart 1
CHECK SUM	0eeeeeeeB	2's complement of 7 bits sum of all data bytes	
EOX	11110111B	(F7H)	

<CHART 12> BULK DUMP FORMAT (SYSTEM)

STATUS	11110000B	(F0H)	
IDENTIFICATION	01000011B	(43H)	
SUB STATUS	0000nnnnB	(0nH)	n = DEVICE NUMBER
FORMAT NUMBER	01111010B	(7AH)	
BYTE COUNT(MSB)	00000000B	(00H)	
BYTE COUNT(LSB)	00101010B	(2AH)	(Byte Count = 42)
	HEADER		26 byte see (3-3-2) BULK DUMP
	SYSTEM		16 byte see chart 8
CHECK SUM	0eeeeeeeB	2's complement of 7 bits sum of all data bytes	
EOX	11110111B	(F7H)	

YAMAHA [Tone Generator]
Model TG55 MIDI Implementation Chart Version : 1.0

Function ...		Transmitted	Recognized	Remarks
Basic	Default	1 - 16	1 - 16	memorized
Channel	Changed	1 - 16	1 - 16	
Mode	Default	3	1, 3	memorized
	Messages	x	x	
	Altered	**********	x	
Note Number : True voice		x **********	0 - 127 0 - 127	
Velocity	Note ON	x	o v=1-127	
	Note OFF	x	x	
After Touch	Key's	x	x	
	Ch's	x	o	
Pitch Bender		x	o 0-12 semi	7 bit resolution
Control Change	0	x	o	
	1	x	o	Modulation Wheel
	2	x	o	Breath Control
	3-5	x	o	
	6	x	o	Data Entry Knob
	7	x	o	Volume
	8-63	x	o	
	64	x	o	Sustain Switch
	65-120	x	o	
Prog Change : True #		x **********	o 0-79,119-127 0 - 63	
System Exclusive		o	o	*1
System : Song Pos		x	x	
: Song Sel		x	x	
Common : Tune		x	x	
System Real Time	:Clock	x	x	
	:Commands	x	x	
Aux	:Local ON/OFF	x	x	
	:All Notes OFF	x	x	
Mes-	:Active Sense	x	o	
sages	:Reset	x	x	

Notes: *1 = transmit/receive if system exclusive message switch is on.
not receive bulk data if bulk protect switch is on.
not receive at demo mode except remote switch.
Voice data, Multi data and System data are available.

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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YAMAHA

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