**2-5 RealTimeCommand Receive ....................... [DIS, ENA]**

If "Clock Source" is set to **EXT**, a setting of **ENA** (for this parameter) will cause the MIDI messages Start/Stop/Continue and Song Position Pointer to be received. In this case, the arpeggio will not begin playing until Start or Continue are received. With a setting of **DIS**, Start/Stop/Continue and Song Position Pointer messages from the external MIDI device will be ignored.

If "Clock Source" is **INT**, this setting will be ignored.

## ❏ Using MIDI Program Change messages to select sounds

**3-2 Program Change Transmit ........................ [OFF, ON]**

With a setting of **ON**, MIDI program change messages will be transmitted. With a setting of **OFF** they will not be transmitted.

When this is ON, selecting a program on the Z1 will cause a program change to be transmitted on the Global MIDI channel.

**3-5 Program Change Receive ................. [DIS, ENA, PRG]**

With a setting of **DIS** (Disable), program changes will not be received.

With a setting of **ENA** (Enable), program changes received on the Global MIDI channel will select programs or MultiSets. The actual program/MultiSet is determined by Bank Select.

With a setting of **PRG** (Program), if program bank select and program change messages are received when a MultiSet is selected, a program will be selected for the timbre of the corresponding MIDI channel.

## ❏ Specifying the bank on which sound selections (program or MultiSet) will be transmitted/received

**4-1 Specified Bank ...................... [Prog:A...Multi:CARD B]**

Select the sound (program or MultiSet) bank for which you wish to make settings.

**4-3 MSB of MIDI Bank Select ....................... [---, 0...127]**

Specify the MSB of the bank select message that will correspond to the sound (program or MultiSet) bank specified above. With a setting of ---, the bank select message will be ignored.

**4-4 LSB of MIDI Bank Select ........................ [---, 0...127]**

Specify the LSB of the bank select message that will correspond to the sound (program or MultiSet) bank specified above.

## MIDI Prog Map page
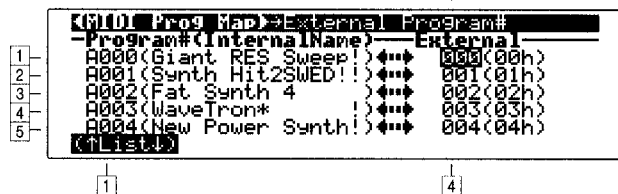


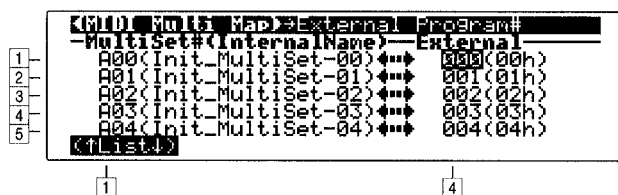## ❏ Specify the program change numbers that will be transmitted/received in Program Play mode

**✱-1 Internal Program Select ......... [A0...A127, B0...B127]**

**✱-4 External Program # ..................................... [0...127]**

Use knob [1] (↑ List ↓) to select the Z1 program number, and use knob [4] to select the program change number which will be received/transmitted for that program.

## MIDI Multi Map page



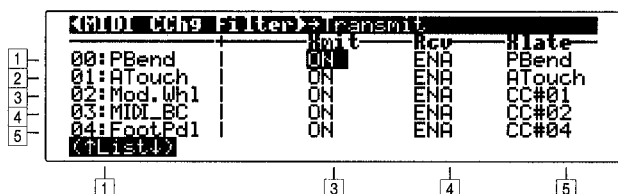## ❏ Specify the program change numbers that will be transmitted/received in MultiSet Play mode

**✱-1 Internal Program Select ......... [A00...A15, B00...B15]**

**✱-4 External Program # ..................................... [0...127]**

Use knob [1] (↑ List ↓) to select the Z1 MultiSet number, and use knob [4] to select the program change number which will be received/transmitted for that MultiSet.

## MIDI CChg Filter page



## ❏ Controlling MIDI messages

**✱-1 MIDI Control Change Source ......................... [0...49]**

Select the MIDI message that you wish to control.

**✱-3 MIDI Control Change Transmit ................... [OFF, ON]**

With a setting of **ON**, the MIDI message selected for "MIDI Control Change Source" can be transmitted from MIDI OUT. With a setting of **OFF** it will not be transmitted.

*MIDI*

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**\*-4 MIDI Control Change Receive** .................... **[DIS, ENA]**

With a setting of ENA (enable), the MIDI message selected for "MIDI Control Change Source" can be received from an external MIDI device (computer, etc.). With a setting of DIS (disable) it will be ignored.

**\*-5 Translation** .................. **[PBend, ATouch, CC#00...95]**

The MIDI message selected for "MIDI Control Change Source" will be converted into the MIDI message you specify here (**PBend** is pitch bend, **ATouch** is aftertouch, **CC#00...95** is control change #0 to 95).
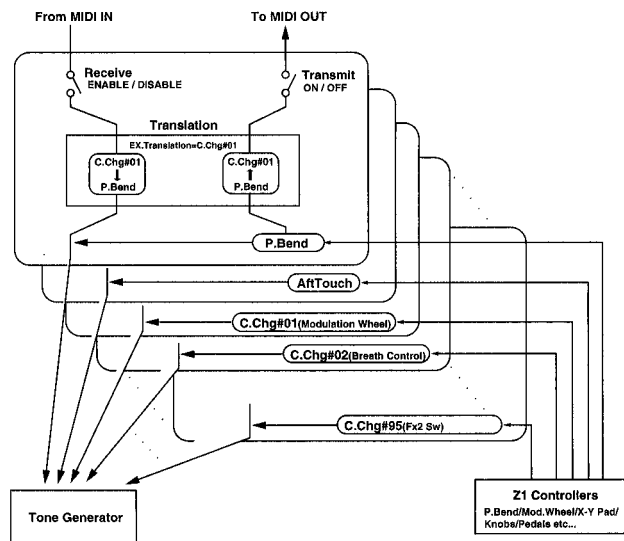


## List

| 00 : PitchBend | | 25 : Filter1 Cutoff | (CC85) |
|---|---|---|---|
| 01 : AfterTouch | | 26 : Filter1 Resonance | (CC86) |
| 02 : Mod.Wheel | (CC01) | 27 : Filter1 EGInt. | (CC87) |
| 03 : MIDI_BreathCtrl | (CC02) | 28 : Filter1 Attack | (CC24) |
| 04 : FootPedal | (CC04) | 29 : Filter1 Decay | (CC25) |
| 05 : PortamentoTime | (CC05) | 30 : Filter1 Sustain | (CC26) |
| 06 : MIDI_Volume | (CC07) | 31 : Filter1 Release | (CC27) |
| 07 : MIDI_Pan | (CC10) | 32 : Filter2 Cutoff | (CC88) |
| 08 : MIDI_Expression | (CC11) | 33 : Filter2 Resonance | (CC89) |
| 09 : Pad_X | (CC16) | 34 : Filter2 EGInt. | (CC90) |
| 10 : Pad_Y | (CC17) | 35 : Filter2 Attack | (CC28) |
| 11 : Knob1 | (CC19) | 36 : Filter2 Decay | (CC29) |
| 12 : Knob2 | (CC20) | 37 : Filter2 Sustain | (CC30) |
| 13 : Knob3 | (CC21) | 38 : Filter2 Release | (CC31) |
| 14 : Knob4 | (CC22) | 39 : Amp.Attack | (CC76) |
| 15 : Knob5 | (CC23) | 40 : Amp.Decay | (CC77) |
| 16 : Damper | (CC64) | 41 : Amp.Sustain | (CC78) |
| 17 : PortamentoSW | (CC65) | 42 : Amp.Release | (CC79) |
| 18 : Sostenuto | (CC66) | 43 : MixOutSW | (CC83) |
| 19 : Mod.SW1 | (CC80) | 44 : M.Fx_SW | (CC92) |
| 20 : Mod.SW2 | (CC81) | 45 : Fx1_SW | (CC94) |
| 21 : FootSW | (CC82) | 46 : Fx2_SW | (CC95) |
| 22 : Arp.Resolution | (CC09) | 47 : Fx Send | (CC91) |
| 23 : Arp.Gate | (CC14) | 48 : MONO_SW | (CC18) |
| 24 : Arp.Velocity | (CC15) | 49 : Unison | (CC75) |

# MIDI SystemEX page
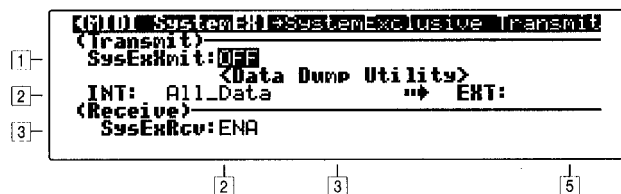


## ❏ Transmitting MIDI system exclusive messages

**1-2 SystemExclusive Transmit** ......................... **[OFF, ON]**

This setting controls transmission of parameter editing data etc. Normally you will leave this turned OFF. If you are using an external device such as a computer to edit parameters, and messages or data must be transmitted from the Z1, turn this ON.

## ❏ Using data dump to save data on an external MIDI device <Data Dump Utility>

The Z1's programs, MultiSets, arpeggio patterns etc. can be transmitted from MIDI OUT and saved on an external MIDI data filer or computer. This data can also be transmitted to another Z1.

**1-2 Data Dump Source** ........... **[All_Data...GLOBAL&MIDI]**

The following data will be transmitted.

| 0: **All_Data:** | All data (the following items 1 to 12) |
|---|---|
| 1: **All_Program:** | All internal programs |
| 2: **ProgBank_A:** | All programs of internal program bank A |
| 3: **ProgBank_B:** | All programs of internal program bank B |
| 4: **SingleProg:** | A specified program from internal memory |
| 5: **All_Multi:** | All internal MultiSets |
| 6: **MultiBank_A:** | All MultiSets of internal MultiSet bank A |
| 7: **MultiBank_B:** | All MultiSets of internal MultiSet bank B |
| 8: **SingleMulti:** | A specified MultiSet from internal memory |
| 9: **All_Pattern:** | All arpeggio patterns from internal memory |
| 10: **GLOBAL:** | Global mode data |
| 11: **MIDI:** | MIDI mode data |
| 12: GLOBAL&MIDI: | Global mode and MIDI mode data |

**2-3 Dump Source Number** ............... **[A000...B127, A00...B15]**

This parameter will appear if "Data Dump Source" number 4 or 8 is selected.

Select the number of the source data that will be transmitted.

**2-5 Dump Destination ............... [A000...B127, A00...B15,**
**BANK_A, BANK_B]**

This parameter will appear if "Dump Source" number 2, 3, 2, 6, 7 or 8 is selected.

Select the destination bank or number into which the data will be transmitted.

### Data transmission procedure

① Connect the Z1's MIDI OUT to the MIDI IN of an external MIDI device that can accept a MIDI data dump. In the case of a data filing device, it is normally not necessary to match the MIDI channel. If you are transmitted data to another Z1 so as to rewrite its programs or patterns, set the Global MIDI channels of both devices to the same number.

② Use "Data Dump Source" to select the data which will be transmitted. If necessary, select the desired source in "Dump Source Number."

Depending on the capacity of your data filer, it may not be possible to transmit **All_Program** or **All_Data**. Check the capacity of your data filer before performing a data dump. If your data filer has insufficient capacity, you will have to transmit individual banks or individual programs.

| Type of dumped data | Data size |
| --- | --- |
| All_Data | 183K (182939) bytes |
| All_Program | 169K (168531) bytes |
| ProgBank_A/B | 84K (84270) bytes |
| SingleProg | 668 bytes |
| All_Multi | 8K (7617) bytes |
| MultiBank_A/B | 4K (3814) bytes |
| SingleMulti | 248 bytes |
| All_Pattern | 6K (5860) bytes |
| GLOBAL | 483 bytes |
| MIDI | 483 bytes |
| GLOBAL&MIDI | 966 bytes |

③ If required for the selected "Data Dump Source," specify the "Dump Destination."

④ Press the [ENTER] key, and a message of "Are you sure?" will appear. If you have changed your mind, press the [EXIT] key.

⑤ Press the [ENTER] key once again, and the data dump will be executed. When transmission is completed, the display will indicate "Completed." Press the [EXIT] key to return to the normal display.

While a data dump is in progress, do not touch the Z1's switches.

The edited data of the currently selected program or MultiSet will not be transmitted by this operation. Save this data as necessary.

## ❏ Receiving MIDI system exclusive messages

**1-5 SystemExclusive Receive .......................... [DIS, ENA]**

This setting controls reception of system exclusive messages that are transmitted from an external MIDI device. If you wish to use an external device such as a computer to edit the Z1, set this to **ENA** (enable). With a setting of **DIS** (disable), incoming system exclusive messages will be ignored.

### Data reception procedure

When this operation is performed, internal data will be lost. Use a memory card or a data filter to backup important internal data before you perform this operation.

① Connect the external MIDI device's MIDI OUT to the Z1's MIDI IN.

② Turn **OFF** the memory protect setting for programs or arpeggio patterns (Global mode "Memory Protect").

③ Turn **ENA** system exclusive reception ("SystemExclusive Receive").

④ Set the transmission channel and the Z1's Global MIDI channel to matching settings. (When transmitting data that was saved on a data filter, select the Global MIDI channel that was used when saving the data.) Then transmit the data from the external MIDI device.

In this mode you can make various settings which affect the entire Z1.

⚠️ Settings made in this mode will be remembered without your having to execute the Write operation.

## GLB Basic page

```
[GLB Basic]→Master Tune
(Tune)────(Transpose)─────(Position)
440.0[Hz]      Xpose+00         PostKbd
(Curve,Sens&Polarity)─────────────────
   Keyboard[VelCrv#01 ATCrv#1 Sens:99]
   Option[Vol:+  A.Pd:+  A.SW:-  Dampr:-]
(Memory Status)───────────────────────
Protect:OFF      Page:OFF      CardArea:00
```

[1] [2] [3] [4] [5]
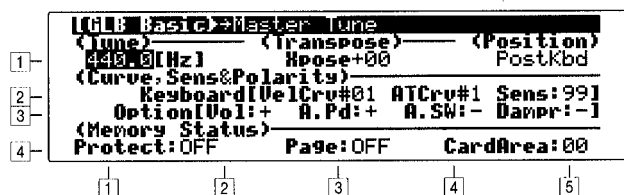
### ❑ Adjust the tuning and transposition

**1-1 Master Tune** ........................... **[430.0 Hz...450.0 Hz]**

Adjust this parameter when you need to tune the Z1 to another instrument.
The overall pitch can be adjusted in **0.1 Hz** steps. This can be adjusted in the range of **430.0 Hz** to **450.0 Hz** around the standard pitch of A4 (=440 Hz).
When using the numeric keys to input this value, specify a value of –10.0 (Hz) to +10 (Hz) relative to 440 Hz.

**1-3 Transpose** ............................................. **[–12...+12]**

Adjust this parameter when you wish to transpose the pitch of a song.
The pitch of the entire Z1 can be adjusted in steps of one semitone (100 cents). The range is one octave upward or downward.

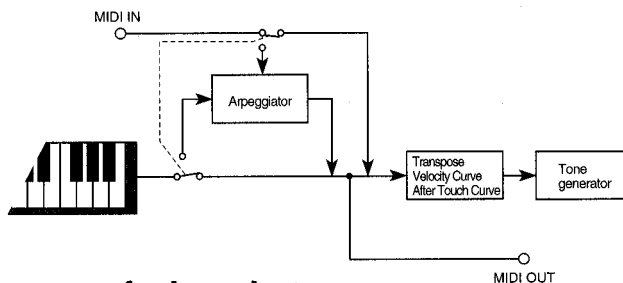### ❑ Specify how transpose, velocity curve and aftertouch curve will be applied

**1-5 Transpose Position** ........................ **[PostKbd, PreTG]**

Specify the point at which transpose, velocity curve and aftertouch curve settings will be applied. This setting will affect the way in which MIDI data is handled. If you are using the Z1's own keyboard to play the internal tone generator, this setting will make no difference.

With a setting of **PostKbd**, the transpose, velocity curve and aftertouch curve settings will be applied immediately after the Z1's keyboard, so that the note numbers, velocity data and aftertouch data transmitted from the keyboard will be converted by the specified value or curve, and this converted data will play the Z1's tone generator and be transmitted from MIDI OUT. The transpose, velocity curve and aftertouch curve settings will not affect MIDI data that is received from MIDI IN.
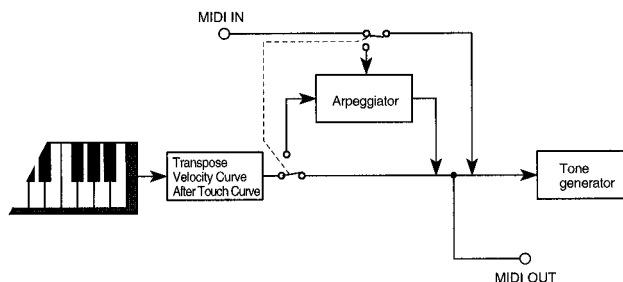
With a setting of **PreTG**, transpose, velocity curve and aftertouch curve settings will be applied immediately before the tone generator, so that the note numbers, velocity and aftertouch data being input to the tone generator will be converted by the specified value or curve before they are sounded. MIDI data transmitted from MIDI OUT will not be affected by transpose, velocity curve and aftertouch curve settings.

### ❑ Specify the velocity curve

**2-3 Velocity Curve** ............................................. **[1...13]**

Select one of eight curves to specify how changes in velocity (playing dynamics) will affect the volume or tone. This functioning of this parameter will be affected by the "Transpose Position."

1: Notes must be played strongly to create a significant change in velocity
2: :
3: :
4: Standard curve
5: :
6: Significant change in velocity will result even if you do not play strongly
7: Notes played with medium force will produce fairly consistent velocity with little change
8: Notes played with medium force will produce fairly consistent velocity with little change (flatter than 7)
9: Velocity value 64
10: Velocity value 80
11: Velocity value 100
12: Velocity value 115
13: Velocity value 127

Since curves **7** and **8** produce little change for notes played with medium force, they are suitable for situations in which you do not require velocity sensitivity or when you want the notes to sound evenly. However, control of softly-played notes will be more difficult, so use the curve that is appropriate for your needs.

With settings of 9 to 13, the same velocity value will be produced regardless of how strongly you play.
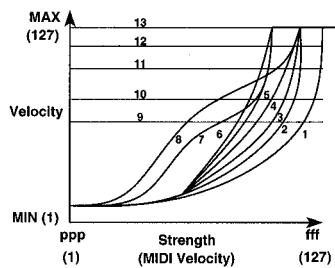


## ❏ Specify the aftertouch curve and sensitivity

**2-4 After Touch Curve** ............................................ **[1...8]**

Select one of eight curves to specify how aftertouch (pressure applied to the keyboard after playing a note) will affect the volume or tone. This functioning of this parameter will be affected by the "Transpose Position."

1: Significant effect will not occur unless you press strongly
2:          :
3: Standard curve
4:          :
5: An effect will be produced even with moderate pressure
6: Rough curve (24 steps)
7: Rougher curve (12 steps)
8: Random

Curves 6 and 7 produce change over 24 and 12 steps respectively. Since curve 7 produces a change over 12 steps, you can specify a pitch change width of 1 octave to be controlled by aftertouch, and use aftertouch to vary the pitch in semitone steps. Curve 8 is random. Use it for special effects, or to use aftertouch to create irregular modulation.
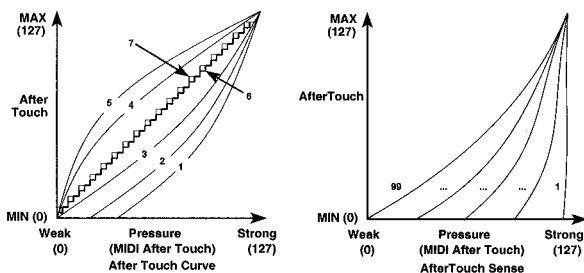


**2-5 After Touch Sensitivity** ................................... **[0...99]**

Specify the sensitivity of aftertouch. Raising the value will increase the sensitivity.

With a setting of 0, there will be no effect. This parameter will affect the selected aftertouch curve as shown in the above right diagram. The diagram shows the example of "After Touch Curve" 3.

## ❏ Specify the polarity of the pedals connected to the rear panel

**3-2 Volume Pedal Polarity** ..................................... **[+, −]**

Specify the polarity of the pedal connected to the VOLUME PEDAL jack.

**3-3 Assignable Pedal Polarity** ............................... **[+, −]**

Specify the polarity of the pedal connected to the ASSIGNABLE PEDAL jack.

**3-4 Assignable SW Pedal Polarity** ......................... **[+, −]**

Specify the polarity of the foot switch connected to the ASSIGNABLE SW PEDAL jack.

**3-5 Damper Polarity** ............................................... **[+, −]**

Specify the polarity of the pedal connected to the DAMPER PEDAL jack.

## ❏ Prohibit writing of internal programs and arpeggio patterns

**4-1 Memory Protect** ........................................ **[OFF, ON]**

With a setting of ON, writing of internal programs and arpeggio patterns will be prohibited.
When you wish to write edited data or load factory preset data, or to receive a data dump, turn this OFF.

## ❏ Using the page memory function

**4-3 Page Memory** ........................................... **[OFF, ON]**

With a setting of ON, turning on the power will cause the Z1 to start up in basically the same state in which it was when the power was turned off. The corresponding Play mode will be selected, but the edited data or edit recall data, and the pages which were last-selected in each mode when the power was turned off will be remembered.
With a setting of OFF, turning on the power will cause program A000 and MultiSet A00 to be selected, and the Z1 will start up in Program Play mode.

**To turn page memory ON:**

① Press the [GLOBAL] key to enter Global mode.
② Press the [JUMP] key, and then press knob [1] (Basic) to select the GLB Basic page.
③ Press knob [3] several times to select "PageMemory."
④ Press the [+] key or rotate knob [3] toward the right to turn the setting ON.

## ❏ Selecting the area of a memory card

**4-5 Card Area Select** ........................................ **[0...15]**

Select the card area that you wish to use. Programs, MultiSets and arpeggio settings will be selected from and written to the area that you specify here.

⚠ The number of available areas (maximum 16) will depend on the capacity of the card (see p.110). If the selected area exceeds the capacity of the card, the display will indicate "No Card." Select a different card area.

Before a new memory card can be used, it must be formatted.

*Global*

# GLB User Group Name view page

```
[1]─  {(GLB UserGroupName)+User Group Number
      Group:01
      Name:UserGroup-000
               Press Knob1 Rename ,
                  for starting renaming.
      Rename
```
         └1┘

## ❏ Modifying the name of each user group

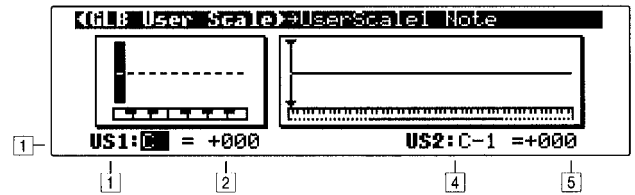**1-1 User Group Number ................................... [1...16]**

Select the user group whose name you wish to modify. User groups can be used as a method of classifying programs that is separate from program Categories.

**Name Edit ...............................................................**

Assign a name to the user group.

For details and the procedure, refer to "Modifying a name (Rename)" (p.25).

# GLB User Scale page

```
      {(GLB User Scale)+UserScale1 Note
      ┌──────────┐ ┌──────────────────┐
      │█         │ │▌                 │
      │ ─────────│ │                  │
      │          │ │                  │
[1]─  └──────────┘ └──────────────────┘
      US1:C = +000      US2:C-1 =+000
```
       └1┘    └2┘              └4┘      └5┘

## ❏ Creating an original scale

Here you can create two different original scales.
**UserScale1** lets you create a scale by specifying the pitch of each note in an octave. Adjust the pitch of each note (C to B) in the octave in 1-cent steps, and these settings will be applied to all octaves.
**UserScale2** lets you specify the pitch of each note (C–1 to G9) separately, in 1-cent steps.

For each note, the setting represents an adjustment of –100 to +100 cents (one semitone up or down) relative to the standard equal temperament (considered as 0). A setting of –100 lowers the pitch by one semitone, and a setting of +100 raises the pitch by one semitone.

The UserScale1 and UserScale2 that you create here will take effect for a program when they are selected for the Prg Common section "Scale Type" parameter, and for a MultiSet when they are selected for the Multi Common section "Scale Type" and Multi Pitch section "Scale" parameters.

**1-1 UserScale1 Note ............................................. [C...B]**

Select the note of **UserScale1** that you wish to detune. The note can be selected either by rotating knob [1] or by using the [▼] or [▲] keys.

**1-2 UserScale1 Detune .............................. [–100...+100]**

Specify a detuning of –100 cents to +100 cents for the note selected in "UserScale1 Note."
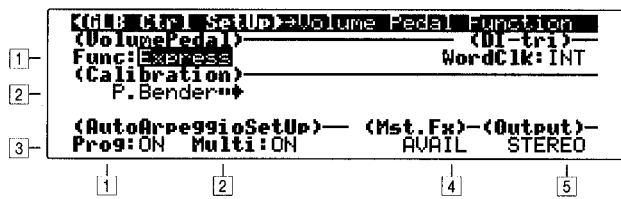
**1-4 UserScale2 Note ....................................... [C–1...G9]**

Select the note of **UserScale2** that you wish to detune. The note can be selected either by rotating knob [4] or by using the [▼] or [▲] keys.

**1-5 UserScale2 Detune .............................. [–100...+100]**

Specify a detuning of –100 cents to +100 cents for the note selected in "UserScale2 Note."

# GLB Ctrl SetUp page

```
█GLB Ctrl SetUp█▶Volume Pedal Function█
<VolumePedal>————————  <DI-tri>——
Func:Express            WordClk:INT
<Calibration>——————
    P.Bender·⬧

<AutoArpeggioSetUp>— <Mst.Fx>-<Output>-
Prog:ON  Multi:ON      AVAIL   STEREO
```

[1]  [2]  [4]  [5]

## ❏ Changing the volume pedal function to an expression pedal

**1-1  Volume Pedal Function** ................. **[Volume, Express]**
This parameter specifies the function of the pedal connected to the rear panel VOLUME PEDAL jack (see p.xiii).
With a setting of **Volume**, pedal movements will control the volume of the Z1. Simultaneously, MIDI Volume messages (CC#7) will be transmitted to regulate the volume of timbres on a matching MIDI channel.
With a setting of **Express**, pedal movements will control the volume of the Z1. Simultaneously, MIDI Expression messages (CC#11) will be transmitted to regulate the volume of timbres on a matching MIDI channel.

## ❏ Synchronizing with digital audio devices

**1-5  Word Clock Source** ..................................... **[INT, EXT]**
This parameter will be displayed if an optional <DI-TRI digital I/F board (sold separately)> is installed (see p.109).

Specify the master clock which will determine the sampling frequency.
With a setting of **INT**, the Z1 will use its own internal clock. You will normally select this setting.
With a setting of **EXT**, the Z1 will use the external digital I/F clock that it receives from the WORD CLOCK IN jack.

## ❏ Calibrating the various controllers

**2-1  Calibration Item** ..................... **[P.Bender ... AssignPdl]**
Here you can adjust (calibrate) the effective range of each controller. If the effect specified by the parameter settings is not fully produced when you move a controller to its maximum or minimum position, or if the maximum or minimum effect is reached while you are still moving the controller, you will need to perform the calibration for that controller.

| | |
|---|---|
| **P.Bender** | Adjust the effective range of movement and the width of the center for the [PITCH BENDER]. |
| **Mod.Wheel** | Adjust the effective range of [MOD WHEEL] movement away from yourself and toward yourself. |
| **Pad_X** | Adjust the effective range of movement and the width of the center for the X-axis of the [X-Y PAD]. |
| **Pad_Y** | Adjust the effective range of movement and the width of the center for the Y-axis of the [X-Y PAD]. |

| | |
|---|---|
| **AftTouch** | Adjust the effective range of the aftertouch that is applied by pressing on the keyboard. |
| **VolumePdl** | Adjust the effective range of the foot pedal connected to the VOLUME PEDAL jack. |
| **AssignPdl** | Adjust the effective range of the foot pedal connected to the ASSIGNABLE PEDAL jack. |

⚠ While this parameter is selected (i.e., while calibration is being performed), all controllers will temporarily revert to an uncalibrated state. In order to check the results of this operation, you must either continue to the end of the operation, or halt the operation by moving the cursor (up or down) or moving to a different page.

**Calibration procedure**
① For the "Calibration" setting, specify the controller whose effective range you wish to adjust.
② Move the specified controller until it stops (or to the edge of the [X-Y PAD]), to store the maximum valid range of the controller. The black area of the meter in the right of the LCD will indicate the area of movement. In this case, more space has been allowed for the length of the meter than will normally be used, so it is not a problem if the black area does not extend all the way to both edges.
③ Release your hand from the controller, and press the [ENTER] key. A message of "Are you sure?" will ask for confirmation.

⚠ Be aware that if the [Pitch Bender] has not returned to the middle, or if some point on the [X-Y PAD] is being pressed, that point will be detected as the center.

④ If this setting is satisfactory, press the [ENTER] key once again. To re-do the setting, press the [EXIT] key.

When the setting is completed, the display will indicate "Completed!" if **Mod.Wheel, AftTouch, Volume Pdl** or **AssignPdl** was selected in ①, and the effect of the controller will reach the maximum and minimum positions at the specified locations.
If **P.Bender, Pad_X** or **Pad_Y** was selected, the display will indicate "Set CENTER." The black area which indicated the valid range will shrink, and you can now adjust the center setting. Continue the procedure from step ⑤.

⚠ If the setting was inappropriate, such as an abnormally narrow valid range of movement, the display will indicate "!Value Mismatch!," and the procedure will be aborted. Press the [EXIT] key and try the procedure again from step ②.

**Adjusting the center of the P.Bender, Pad_X or Pad_Y**
⑤ Next, the width of the "null" in the middle of the [PITCH BENDER] or the [X-Y PAD] will be stored. In the case of the [PITCH BENDER], move the wheel lightly. In the case of the [X-Y PAD], press the center of the pad. The width of the detected null will be displayed below the black area that shrunk in the previous step.

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⑥ Press the [ENTER] key. A message of <Are you sure?> will appear. If you decide to re-do the settings, press the [EXIT] key to return to step ⑤.

⑦ Press the [ENTER] key once again. The display will indicate <Completed!>, and the displayed settings will be finalized.

⚠ If the central "null" area is inappropriate, the display will indicate <!Value Mismatch!>, and the procedure will be aborted. Press the [EXIT] key and try the procedure again from step ⑤.



PITCH BENDER
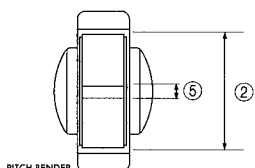
## ❏ Linking the arpeggiator to programs or MultiSets

**3-1 AutoArpeggiator Program ...................... [OFF, ON]**
This setting links the arpeggiator function to program (number) selection.
When a program is saved, it also saves the state of the arpeggiator at that time. If the arpeggiator was turned on when a program was saved, the previous state of the arpeggiator will be recalled automatically when that program is recalled if AutoArpeggiator Program is **ON**. If this parameter is **OFF**, the state of the arpeggiator at the time which the program was saved will be ignored.

**3-2 AutoArpeggiator MultiSet ...................... [OFF, ON]**
This setting links the arpeggiator function to MultiSet (number) selection. Refer to "AutoArpeggiator Program."

## ❏ Bypassing the master effect

**3-4 Master Effect.................................. [AVAIL, BYPASS]**
With a setting of **AVAIL**, the master effect will function according to the program or MultiSet settings. With a setting of **BYPASS**, the master effect will be bypassed. Use this setting when you wish to use external processing units to apply effects.

## ❏ The output configuration from stereo to mono

**3-5 Output Mode ................................ [STEREO, MONO]**
If you have connected both the L/MONO and R OUTPUT jacks, set this to STEREO.
If you have connected only the L/MONO jack, set this to **MONO**. With a setting of **MONO**, the "Panpot" settings of a program and of each timbre in a MultiSet will be ignored. If you set this to **STEREO** when only the L/MONO jack is connected, problems such as "no effect sound" or "lowered volume" may occur for some programs.

## GLB Data Utility page
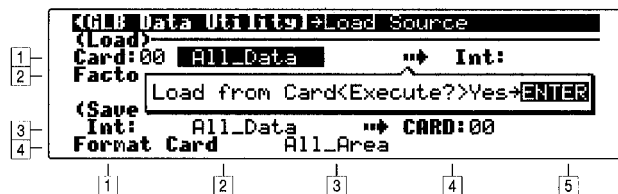


## ❏ Loading data from a memory card

Z1 data such as programs, MultiSets, arpeggio patterns etc. stored on a memory card (sold separately) can be loaded into internal memory.

**1-1 Target Card Area .......................................... [0...15]**
Select the card area from which the data will be loaded. At the time that this page is opened, the area currently selected by "Card Area Select" (see p.91) will be selected.

⚠ The number of available areas (maximum 16) will depend on the capacity of the card (see p.110). If the selected area exceeds the capacity of the card, the display will indicate "No Card." Make sure of the desired card area, and select a different "Target Card Area."
Also, a new memory card must be formatted before it can be used.

**1-2 Load Source ..................... [All_Data...GLOBAL&MIDI]**
Select one of the following types of data to be loaded from the memory card.

| | | |
|---|---|---|
| 0: **All_Data:** | All data (the following items 1 to 10) |
| 1: **All_Program:** | All programs |
| 2: **ProgBank_A:** | All programs of program bank A |
| 3: **ProgBank_B:** | All programs of program bank B |
| 4: **All_Multi:** | All MultiSets |
| 5: **MultiBank_A:** | All MultiSets of MultiSet bank A |
| 6: **MultiBank_B:** | All MultiSets of MultiSet bank B |
| 7: **All_Pattern:** | All arpeggio patterns |
| 8: **GLOBAL:** | Global mode data |
| 9: **MIDI:** | MIDI mode data |
| 10: GLOBAL&MIDI: | Global mode and MIDI mode data |

**1-5 Load Destination ....................... [BANK_A, BANK_B]**
This parameter will appear if either 2, 3, 5, or 6 was selected as "Load Source."

Specify the loading destination in internal memory.

**Loading procedure**

⚠ When this procedure is performed, data will be lost from internal memory. The current memory data will not be affected. If internal memory contains data that you wish to keep, you will need to save it to a memory card or a data filer etc. before you execute this procedure.

① Insert a memory card which has been formatted for the Z1 and which contains the desired data into the rear panel CARD connector.

② Turn **OFF** memory protection for programs and arpeggio patterns (Global mode "Memory Protect").

③ Specify the "Target CardAria", "Load Source" and "Load Destination."

④ Press the [ENTER] key, and the display will ask you <Are you sure?> If you decide to change the specified settings, press the [EXIT] key.

⑤ Press the [ENTER] key once again, and the operation will be executed.

## ❑ Loading the factory preset data into internal memory

### 2-2 Load Source ................................. [All_Data...Init_All]
The following factory preset data can be loaded.

0: **All_Data**: All factory data (the following items 1 to 12)
1: **All_Program**: All programs
2: **ProgBank_A**: All programs of program bank A
3: **ProgBank_B**: All programs of program bank B
4: **SingleProg**: A specified program
5: **All_Multi**: All MultiSets
6: **MultiBank_A**: All MultiSets of MultiSet bank A
7: **MultiBank_B**: All MultiSets of MultiSet bank B
8: **SingleMulti**: A specified MultiSet
9: **All_Pattern**: All arpeggio patterns
10: **GLOBAL**: Global mode data
11: **MIDI**: MIDI mode data
12: **GLOBAL&MIDI**:Global mode and MIDI mode data
13: **Init_All**: All data will be initialized to the factory settings

### 2-3 Load Source Number ............... [A0...B127/A0...B15]
This parameter will appear if 4 or 8 was selected for "Load Source."

Specify the number of the factory preset data which will be loaded.

### 2-5 Load Destination ... [A0...B127/A0...B15/BANK_A,BANK_B]
This parameter will appear if 2, 3, 4, 6, 7 or 8 was selected for "Load Source."

Specify the bank or number of the loading destination. For details on the loading procedure, refer to p.94.

## ❑ Saving internal memory data to a memory card

### 3-2 Save Source ..................... [All_Data...GLOBAL&MIDI]
Specify the internal data that will be saved to memory card.

For details on this parameter, refer to "1-2 Load Source."

⚠ If the memory card which you are using is a Flash EPROM type device, only **All_Data** can be selected.

### 3-4 Target Card Area ......................................... [0...15]
Select the card area to which the data will be saved.

### 3-5 Save Destination ........................ [BANK_A, BANK_B]
This parameter will appear if 2, 3, 5 or 6 was selected for "Save Source."

Specify the save destination bank of the memory card.

### Saving procedure

① Make sure that the memory card has been formatted for the Z1 and contains the area into which you wish to save the data, and insert the card into the rear panel CARD connector.

② Specify the "Target CardAria", "Save Source" and "Save Destination."

③ Press the [ENTER] key and a message will ask you <Are you sure?> If you decide to change your settings, press the [EXIT] key.

④ Press the [ENTER] key once again to execute the operation.

### 4-3 Target Card Area ............... [Area_00...15, All_Area ]
This operation formats a memory card.

Before a new memory card can be used with the Z1, the card must be formatted (initialized). This operation can also be used to re-format a previously-used card, to erase unwanted data.
You may format an individual area, or all areas at once.

### Procedure for formatting a memory card

① Insert the memory card to be formatted into the rear panel CARD connector.

② Specify the "Target Card Area."
Immediately after this page is selected, **All_Area** will be selected automatically. If you wish to format only a specific area, select the desired area.

③ Press the [ENTER] key, and you will be asked for confirmation with a message of <Are you sure?> If you have changed your mind, press the [EXIT] key.

④ If you press the [ENTER] key once again, the format operation will be executed.
When the format operation is executed, initialized program, MultiSet and pattern data will be created in the formatted area. (This data will be the same as that created by the initialize operation in the corresponding Play mode.) If you re-format an area which has already been formatted, be aware that all previous data in that area will be lost.

⚠ While a memory card operation is being performed, do not allow physical shock to be applied to the Z1, or insert or remove the card. Also, you must not perform an operation such as receiving a MIDI data dump, etc. Doing any of these things may cause data to be lost.

**Global**

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# Appendices

• • • • • • • • • • • • • • • • • • • • •
## 1. About MIDI

MIDI stands for Musical Instrument Digital Interface, and is a world-wide standard that allows electronic musical instruments and computers etc. to exchange a variety of musical data.

When two or more MIDI devices are connected via a MIDI cable, they can exchange musical performance data even if the devices are different models or were even made by different manufacturers. For example you can use the Z1 as a master keyboard to control an external MIDI device, or use an external MIDI device to control the tone generator of the Z1.

### ❑ Connections between MIDI devices

**Playing an external MIDI device**

❖ If you wish to use the keyboard and controllers of the Z1 to play an external MIDI tone generator, use a MIDI cable to connect the Z1's MIDI OUT to the external MIDI device's MIDI IN.

**Playing the Z1's tone generator from an external MIDI device**

❖ If you wish to control the Z1 from an external MIDI device such as another MIDI keyboard, use a MIDI cable to connect the MIDI OUT of the external MIDI device to the MIDI IN of the Z1.
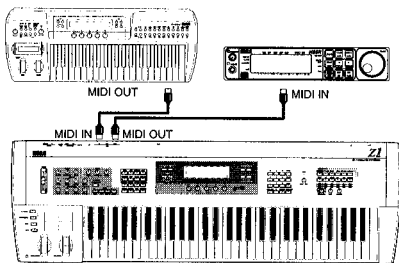
**Connections with a computer/sequencer**

❖ If you wish to play the Z1's keyboard and record your performance on a computer or sequencer, and then playback the sound on the Z1 (i.e., to use the Z1 as a MIDI keyboard for inputting as well as the MIDI tone generator for playback), connect the MIDI OUT and MIDI IN connectors of each device to those of the other.

✍ In order to connect a computer, you will need a MIDI interface.
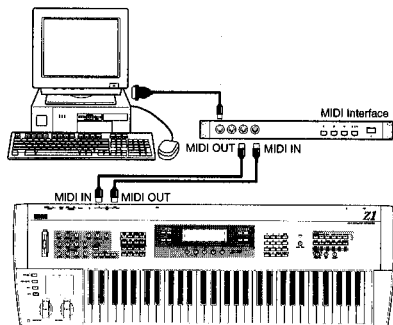
### ❑ MIDI channel settings

In order for MIDI messages to be received, the MIDI channel of the receiving device must match the MIDI channel of the transmitting device. There are sixteen MIDI channels: 1 to 16.

When you operate the keyboard (or arpeggiator) and controllers of the Z1, MIDI messages are transmitted from MIDI OUT on the Global MIDI channel (the "G.Ch" setting made in the MIDI Mode MIDI Basic page). In Program Play mode, musical data is received on the Global MIDI channel. In MultiSet Play mode, data is received by each timbre on the channel specified by the MultiSet Edit mode MLT MIDI page "MIDI Channel" parameter.

**Using the Z1 as a multi-timbral tone generator**

By making the above MIDI channel settings for a MultiSet, you can specify a separate MIDI receive channel for each timbre so that the Z1 will function as a multi-timbral tone generator with up to six parts.
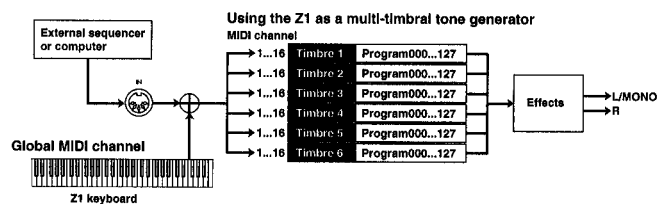
### ❑ Using the Z1 as a MIDI keyboard for input

If you wish to use the Z1 as a MIDI keyboard for inputting musical data, you will in most cases wish to turn on the Echo Back setting of your sequencer, so that you can listen to the performance that you are inputting. In this case the notes sent from the keyboard → tone generator will sound in duplicate with the notes that are sent from the keyboard → sequencer → tone generator, so you will need to turn the MIDI mode "Local (Local Control)" setting **OFF** to internally disconnect the Z1's keyboard from its tone generator. You can also transmit a Local Off message (control #122) from your sequencer to turn Local OFF.
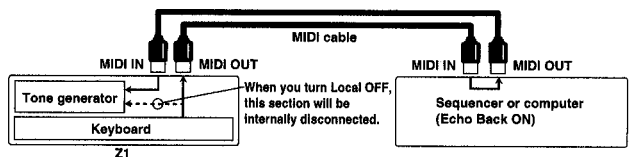
✍ If the Local parameter is turned OFF, the Z1's keyboard will not produce sound. (Data from the keyboard will be sent to MIDI OUT, and the tone generator will sound only in response to data received at MIDI IN.) If you are playing the Z1 by itself, be sure that Local is ON.

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## About the Transpose and Velocity Curve settings

You can specify the point at which the transposition ("Transpose") and velocity curve ("Velocity Curve") settings for the entire Z1 will be applied. The note numbers and velocity values will differ depending on the point at which they are converted. This setting is made by the Global mode "Transposition" parameter (see p.90). For a MultiSet, you can transpose each individual timbre ("Xpose") in addition to the Global mode setting.

## MIDI filtering and message conversion

You can specify whether or not various types of MIDI messages will be received and transmitted. In the MIDI mode MIDI CChg Filter page, you can make settings for pitch bender, after touch, and control change messages. For a MultiSet, you can in addition make settings to specify whether each timbre will receive and transmit each of the above messages. In addition, the MIDI mode MIDI CChg Filter page "Translation" parameter lets you convert a specific MIDI message into a different message for reception or transmission.

The MIDI mode System EX page lets you enable or disable transmission/reception of the data dumps which occur when parameters are edited or programs are changed, and of other system exclusive data and messages. (A data dump can always be transmitted using <Data Dump Utility>, regardless of this setting.)

For MIDI filtering of program changes, refer to the explanation below.

## Selecting sounds (programs or MultiSets)

Program Change messages [Cn, pp] (where "pp" is a program number which specifies one of 128 sounds) allow you to switch sounds from an external MIDI device. The Z1 transmits and receives these messages only when it is in Program Play mode or MultiSet Play mode. When a program change is received, a sound (program or MultiSet) of the current bank will be selected.

The MIDI mode MIDI Basic page "Program Change Transmit/Receive" parameter lets you specify whether or not program changes will be transmitted and received. When "Program Change Transmit" is set to ENA, Bank Select messages (settable in MIDI mode "MSB/LSB of MIDI Bank Select") and Program Change messages will be transmitted. When "Program Change Receive" is set either to ENA or PRG, program changes which match the "Global Channel" will be received in Program mode to select programs. In MultiSet mode, when "Program Change Receive" is set to ENA, program changes which match the "Global Channel" will be received to select MultiSets. When "Program Change Receive" is set to PRG, program changes which match the "MIDI Ch" setting of Multi MIDI & Arpeggio mode will select timbre programs. In this case, the Multi MIDI & Arpeggio section "Prog. Change" parameter must be set to ENA.

If you wish to switch the bank (program / MultiSet), you can use Bank Select messages [Bn, 00, mm] (control change #00) and [Bn, 20, bb] (control change #32) to specify the desired bank. ("mm" specifies the upper byte of the bank number and "bb" specifies the lower byte, allowing you to select from 16,384 banks.)

The Z1 allows you to freely specify the correspondence between sounds (programs / MultiSets) and the program numbers and program banks of an external MIDI device.

The MIDI mode MIDI Basic page "Bank Mapping" setting allows you to specify the bank select setting, and the MIDI Prog Map page and MIDI Multi Map page allow you to specify the program change setting.

**The factory settings are as follows.**

| [Prog] | MSB | LSB | [MultiSet] | MSB | LSB |
|---|---|---|---|---|---|
| Int_A | 00 (00H) | 00 (00H) | Int_A | 00 (00H) | 64(40H) |
| Int_B | 00 (00H) | 01 (01H) | Int_B | 00 (00H) | 65 (41H) |
| CardA | 00 (00H) | 02 (02H) | CardA | 00 (00H) | 66 (42H) |
| CardB | 00 (00H) | 03 (03H) | CardB | 00 (00H) | 67(43H) |

**Example:** With the factory settings, selecting Program Play mode internal bank B21

| MSB | (CC#: 0) | 00 |
|---|---|---|
| LSB | (CC#: 32) | 01 |
| Program Change: | | 21 |

A bank select message alone will not cause the bank to be switched; a program will be selected from the new bank only when a program change is received after the bank select message.

Depending on the oscillator type that is used by a program or MultiSet, an interval of time may be required for the Z1's program to change after receiving the program change message. When changing programs, allow a sufficient interval between the program change message and the note-on message which follows.

You will set the Z1 to **Omni OFF** (see p.86) so that only those program changes which match the Global MIDI channel will be received to select programs.

## MIDI messages which the Z1 transmits and receives

Unless otherwise specified, this section will explain only transmission. ("CC#" is the control change number, "vv" is the value.)

### Note-on/off

When a key is pressed, a note-on message [9n, kk, vv] (n: channel, kk: note number, vv: velocity) is transmitted to indicate the key which was pressed (note number) and the force with which it was pressed (velocity). When a key is released, a note-off message [8n, kk, vv] is transmitted.

Each time a note is played on the Z1's keyboard, note-on/off messages are transmitted on the Global MIDI channel. However note-on/off messages are received on all MIDI channels if **Omni** is ON. Normally you will turn **Omni OFF** (MIDI mode MIDI Basic page "Omni") so that only those note-on/off messages which match the Global MIDI channel will be received.

### Aftertouch [1]

Aftertouch is the function which allows the sound to be modified by applying pressure to the keyboard after playing a note. This is transmitted by a Channel Pressure message [Dn, vv]. When this message is received, the aftertouch effect will be applied.

There is also another type of aftertouch message called Polyphonic Key Pressure which allows an effect to be applied separately to each key. The Z1 does not use this message, so all references to "aftertouch" in this manual refer to Channel Pressure (which affects all notes regardless of the area of the keyboard to which pressure was applied).

### Pitch bender [1]

By operating the [PITCH BENDER] of the Z1 you can produce pitch bending effects. At the same time, pitch bend messages [En, bb, mm] are transmitted. (bb: lower byte of the value, mm: upper value of the byte, in combination allowing 16384 steps to be expressed, with 8192 [bb, mm = 00, 40] being the central value.)

### Bank select (CC#0 / CC#32)

Refer to "Selecting sounds (programs or MultiSets)."

### Pitch modulation (CC#01) [1]

Operating the Z1's [MOD WHEEL] will normally produce a vibrato effect. At the same time, pitch modulation depth messages [Bn, 01, vv] (CC #01) will be transmitted.

### MIDI Breath Control (CC#02) [1]

When the function of a pedal connected to the Z1's ASSIGNABLE PEDAL jack is set to **MIDI_BC** by either the program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) parameter "Assignable Pedal Function," operating the pedal will produce the tonal change that is controlled by the breath controller, and a message of [Bn, 02, vv] (CC #02) will be transmitted.

### Foot Pedal (CC#04) [1]

The function of a pedal connected to the Z1's ASSIGNABLE PEDAL jack can be specified by the program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) parameter "Assignable Pedal Function" as **FootPdl**, so that when the pedal is operated, a parameter whose modulation source has been set to **FootPdl** will modified to affect the sound ,etc. At the same time, a message of [Bn, 04, vv] (CC #04) will be transmitted.

### Portamento time (CC#05) [1]

When MIDI Portamento Time messages [Bn, 05, vv] (CC #05) are received, the speed at which portamento occurs will change. This has an effect only if the portamento switch is on.

### Data entry (MSB) (CC#06/CC#38)

This message is used to set RPN or NRPN values.

### MIDI Volume (CC#07) [1]

When the function of a pedal connected to the Z1's VOLUME PEDAL jack is set to **Volume** (Global mode "Volume Pedal Function"), operating the pedal will adjust the overall volume of the program or MultiSet (or an individual timbre, except for the Global MIDI channel). At the same time, Volume messages [Bn, 07, vv] (CC # 07) will be transmitted.

The function of a pedal connected to the Z1's ASSIGNABLE PEDAL jack can be set to **MIDI_Vol** by the "Assignable Pedal Function" parameter of a program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section), so that operating the pedal will have the same result as operating the VOLUME PEDAL with a setting of **Volume**.

### MIDI Panpot (CC#10) [1]

When listening in stereo, this specifies the location (stereo position) from which the sound of that channel will be heard. This can be controlled by MIDI Panpot messages [Bn, 0A, vv] (CC #10).

### MIDI Expression (CC#11) [1]

When the function of a pedal connected to the Z1's VOLUME PEDAL jack is set to **Express** by the Global mode "Volume Pedal Function" parameter, operating the pedal will adjust the volume of the entire program or the volume of an individual timbre in the MultiSet. At the same time, Expression messages [Bn, 0B, vv] (CC #11) will be transmitted.

The function of a pedal connected to the Z1's ASSIGNABLE PEDAL jack can be set to **MIDI_Exp** by the "Assignable Pedal Function" parameter of a program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section), so that operating the pedal will have the same result as operating the VOLUME PEDAL with a setting of **Express**.

### PAD X (CC#16) [1]

When you operate the Z1's [X-Y PAD] in the X-axis, the parameter whose modulation source is set to X[+/–], X[+] or X[–] will modify the sound. At the same time, a message of [Bn, 10, vv] (CC #16) will be transmitted.

### PAD Y (CC#17) [1]

When you operate the Z1's [X-Y PAD] in the Y-axis, the parameter whose modulation source is set to Y[+/–], Y[+] or Y[–] will modify the sound. At the same time, a message of [Bn, 11, vv] (CC #17) will be transmitted.

### Knob 1, 2, 3, 4, 5 (CC#19, 20, 21, 22, 23) [1]

When you operate one of the Z1's knobs [1] to [5], the sound will change as specified by the parameters whose modulation sources have been assigned to **knob1** to **knob5**. At the same time, the following control changes will be transmitted.

| | |
|---|---|
| knob1: | [Bn, 13, vv] (CC #19) |
| knob2: | [Bn, 14, vv] (CC #20) |
| knob3: | [Bn, 15, vv] (CC #21) |
| knob4: | [Bn, 16, vv] (CC #22) |
| knob5: | [Bn, 17, vv] (CC #23) |

### Damper (CC#64) [1]

When a pedal connected to the Z1's DAMPER jack is operated, the damper effect will be controlled. At the same time, a Hold message [Bn, 40, vv] (CC #64: "vv"= 127 [7F] when on, or 00 when off) will be transmitted. The function will be OFF if the value "vv" is 63 [3F] or less, and ON if it is 64 [40] or more.

When a pedal connected to the Z1's DAMPER jack is pressed, the damper effect will be applied. At the same time, a Hold message [Bn, 40, vv] (CC # 64, vv=127 [7F] when ON, or 00 when OFF) will be transmitted.

The function of a pedal connected to the Z1's ASSIGNABLE SW jack can be set to **Damper** by the "Assignable Pedal Function" parameter of a program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section), so that operating that pedal will have the same result as operating the pedal that is connected to the DAMPER jack.

### Portamento SW (CC#65) [1]

When the Z1's [PORTAMENTO] key is turned on, the portamento effect will be applied. At the same time, a Portamento Switch message [Bn, 41, vv] (CC #65: "vv"= 127 [7F] when ON, or 00 when OFF) will be transmitted. The function will be OFF if the value "vv" is 63 [3F] or less, and ON if it is 64 [40] or more.

### Sostenuto (CC#66) *1

When the function of a pedal connected to the Z1's AS-SIGNABLE SW jack is set to Sostenuto by either the program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) parameter "Assignable Pedal Function," operating the pedal will apply the sostenuto effect (where only those notes which were already pressed when the pedal was pressed will be held). Simultaneously, a message of [Bn, 42, vv] (CC #66) (vv: 00→OFF, 7F→ON) will be transmitted.

### Mod.SW1 (CC#80) *1

### Mod.SW2 (CC#81) *1

If you set the "SW1 Function" "SW2 Function" parameters of a program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) to Mod.SW1 and Mod.SW2, you can operate the [SW1] and [SW2] keys to modify the sound by controlling the parameters whose modulation sources are set to Mod.SW1 and Mod.SW2. At the same time, messages of [Bn, 50, vv] (CC #80) and [Bn, 51, vv] (CC #81) will be transmitted.

### Foot SW (CC#82) *1

If you set the "Assignable Pedal Function" parameter of a program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) to FootSW, a pedal connected to the Z1's ASSIGNABLE SW jack can operated to modify the sound by controlling the parameter whose modulation source is set to FootSW. At the same time, a message of [Bn, 52, vv] (CC #82) will be transmitted.

### Arpeggio Resolution Knob (CC#09) *1

When you operate the Z1's [RESOLUTION] knob, the resolution of the arpeggio notes will change. At the same time, a message of [Bn, 09, vv] (CC #9) will be transmitted. The setting will be ♪₃ for a "vv" value of 0 [0] to 21 [15], ♪ for a value of 22 [16] to 42 [2A], ♪₃ for a value of 43 [2B] to 63 [3F], ♪ for a value of 64 [40] to 84 [54], ♩₃ for a value of 85 [55] to 105 [69], and ♩ for a value of 106 [6A] to 127 [7F].

### Arpeggio Gate Knob (CC#14) *1

When you operate the Z1's [GATE] knob, the duration (Gate time) of the arpeggio notes will change. At the same time, a message of [Bn, 0E, vv] (CC #14) will be transmitted.

### Arpeggio Velocity Knob (CC#15) *1

When you operate the Z1's [VELOCITY] knob, the velocity of the arpeggio notes will change. At the same time, a message of [Bn, 0F, vv] (CC #15) will be transmitted.

### Filter1 Cutoff Knob (CC#85) *1

When you operate FILTER1 [CUTOFF], the cutoff frequency will change to modify the brightness of the sound. At the same time, a message of [Bn, 55, vv] (CC #85) will be transmitted.

### Filter1 Resonance Knob (CC#86) *1

When you operate FILTER1 [RESONANCE], the amount of resonance will change. At the same time, a message of [Bn, 56, vv] (CC #86) will be transmitted.

### Filter1 EG Intensity Knob (CC#87) *1

When you operate FILTER1 [EG INT.], the "Cutoff Frequency Mod.EG Intensity" of filter 1 will change. At the same time, a message of [Bn, 57, vv] (CC #87) will be transmitted.

### Filter1 Attack Knob (CC#24) *1

If [FILTER SELECT] key 1 or 1&2 is selected, operating FILTER EG [ATTACK] will modify the way in which the tone changes when filter 1 rises. At the same time, a message of [Bn, 18, vv] (CC #24) will be transmitted.

### Filter1 Decay Knob (CC#25) *1

If [FILTER SELECT] key 1 or 1&2 is selected, operating FILTER EG [DECAY] will modify the way in which the tone changes when filter 1 falls. At the same time, a message of [Bn, 19, vv] (CC #25) will be transmitted.

### Filter1 Sustain Knob (CC#26) *1

If [FILTER SELECT] key 1 or 1&2 is selected, operating FILTER EG [SUSTAIN] will modify the way in which the tone changes when filter 1 reaches the sustain level. At the same time, a message of [Bn, 1A, vv] (CC #26) will be transmitted.

### Filter1 Release Knob (CC#27) *1

If [FILTER SELECT] key 1 or 1&2 is selected, operating FILTER EG [RELEASE] will modify the way in which the tone changes when filter 1 falls from the sustain level. At the same time, a message of [Bn, 1B, vv] (CC #27) will be transmitted.

### Filter2 Cutoff Knob (CC#88) *1

Refer to Filter1 Fc. A message of [Bn, 58, vv] (CC #88) will be transmitted.

### Filter2 Resonance Knob (CC#89) *1

Refer to Filter1 Reso. A message of [Bn, 59, vv] (CC #89) will be transmitted.

### Filter2 EG Intensity Knob (CC#90) *1

Refer to Filter1 EG Int. A message of [Bn, 5A, vv] (CC #90) will be transmitted.

### Filter2 Attack Knob (CC#28) *1

If [FILTER SELECT] key 2 or 1&2 is selected, operating FILTER EG [ATTACK] will modify the way in which the tone changes when filter 2 rises. At the same time, a message of [Bn, 1C, vv] (CC #28) will be transmitted.

### Filter2 Decay Knob (CC#29) *1

If [FILTER SELECT] key 2 or 1&2 is selected, operating FILTER EG [DECAY] will modify the way in which the tone changes when filter 2 falls. At the same time, a message of [Bn, 1D, vv] (CC #29) will be transmitted.

### Filter2 Sustain Knob (CC#30) *1

If [FILTER SELECT] key 2 or 1&2 is selected, operating FILTER EG [SUSTAIN] will modify the way in which the tone changes when filter 2 reaches the sustain level. At the same time, a message of [Bn, 1E, vv] (CC #30) will be transmitted.

### Filter2 Release Knob (CC#31) *¹

If [FILTER SELECT] key 2 or 1&2 is selected, operating FILTER EG [RELEASE] will modify the way in which the tone changes when filter 2 falls from the sustain level. At the same time, a message of [Bn, 1F, vv] (CC #31) will be transmitted.

### Amp Attack Knob (CC#76) *¹

When you operate [ATTACK], the attack volume will change. At the same time, a message of [Bn, 4C, vv] (CC #76) will be transmitted.

### Amp Decay Knob (CC#77) *¹

When you operate [DECAY], the decay volume will change. At the same time, a message of [Bn, 4D, vv] (CC #77) will be transmitted.

### Amp Sustain Knob (CC#78) *¹

When you operate [SUSTAIN], the sustain level will change. At the same time, a message of [Bn, 4E, vv] (CC #78) will be transmitted.

### Amp Release Knob (CC#79) *¹

When you operate [RELEASE], the note-off volume will change. At the same time, a message of [Bn, 4F, vv] (CC #79) will be transmitted.

### Mixer Output SW (CC#83) *¹

MIXER SW operations will transmit a message of [Bn, 53, vv] (CC#83). Starting from the lowest bit of the 7-bit value "vv," each bit indicates the status of the OSC1/OSC2/SubOSC/NOISE switches respectively, where a bit of 1 is ON and 0 is OFF.

### Mst. Fx ON/OFF (CC#92) *¹
### Fx1 ON/OFF (CC#94) *¹
### Fx2 ON/OFF (CC#95) *¹

If you set the "Assignable Pedal Function" parameters of a program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) to M.Fx_SW, Fx1_SW or Fx2_SW, you can operate the [SW1] and [SW2] keys to switch the master effect, Fx1 or Fx2 on/off. At the same time, messages of [Bn, 5C, vv] (CC #92), [Bn, 5E, vv] (CC #94), or [Bn, 5F, vv] (CC #95) will be transmitted.

### Fx Send (CC#91)

This specifies the output level to Fx1 and Fx2. This is controlled with a message of [Bn, 5B, vv] (CC#91).

### MONO ON/OFF [CC#18] *¹

When the function of the [SW1] key, [SW2] key, or the ASSIGNABLE SW is set to MONO_SW by either the program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) parameter "Assignable SW Function," if the "Voice Assign Mode" is POLY, a message of [Bn, 12, vv] (CC#18) will be transmitted whenever you switch to monophonic note assignment (MONO 1).

### UNISON ON/OFF (CC#75) *¹

When the function of the [SW1] key, [SW2] key, or the ASSIGNABLE SW is set to UNISON by either the program (Prg Common section) or MultiSet (Multi CMN SW & Pdl section) parameter "Assignable SW Function," a message of [Bn, 4B, vv] (CC#75) will be transmitted whenever you switch the "Unison SW" in any mode.

### Data increment / decrement (CC#96/CC#97) *¹

The Data Increment message is used in the same way as control changes #6/#38 (Data Entry), but only to increase the data value by one unit. Data Decrement is the opposite of Data Increment, and decreases the data value by one unit.

### NRPN (CC#98/CC#99)

NRPN (non-registered parameter number) messages are used to set sound parameters.

### All Sound Off (CC#120)

This message allows all sounds to be halted from an external device. When an All Sound Off message [Bn, 78, 00] (CC #120) is received, all sound will stop. While the All Note Off message allows the decay of the currently-sounding notes to continue, All Sound Off will silence the notes immediately.

This message is provided for emergency use, and is not something that should be used during a performance.

### Reset All Controllers (CC#121)

This message resets all controllers of the specified channel. When a Reset All Controllers message [Bn, 79, 00] (CC #121) is received, all controllers will be reset.

This message is provided for emergency use, and is not something that should be used during a performance.

### All Note Off (CC#123)

This message allows all sounds to be halted from an external device. When an All Note Off message [Bn, 7B, 00] (CC #123) message is received, all notes will be set to a key-off status.

This message is provided for emergency use, and is not something that should be used during a performance.

### Active Sensing

If for some reason the sound does not stop, you can re-select the program to turn off the "stuck" notes.

If the Z1 is receiving MIDI messages from an external MIDI device which transmits active sensing [FE] messages, the sound will automatically be turned off if for some reason messages stop coming for longer than a certain interval of time.

### MIDI system exclusive

System exclusive messages are a special category of MIDI messages that are used to convey information that is unique to a manufacturer or model. The Z1's system exclusive messages follow a format of [F0, 42, 3n, 41, ff, ..., F7] (n: Global MIDI Channel, ff: function code). These messages make possible the functionality that is described in "Transmitting settings such as sound data (About data dump)" and "Editing sounds etc."

Some system exclusive messages have been assigned common functions which are not dependent on manufacturer or model. These messages are called Universal System Exclusive messages.

The Z1 uses the following universal system exclusive messages.

When it receives an Inquiry Message Request [F0, 7E, nn, 06, 01, F7] (nn: MIDI channel), it will respond with an inquiry message of [F0, 7E, nn, 06, 02, (9 bytes), 7F] which means "Korg, Z1, system version xxxx."

This message is affected by the settings of the MIDI mode MIDI CChg Filter page, and for MultiSets is also affected by the settings of MultiSet Edit mode Mlt Ctl section. Refer to "MIDI filtering and message conversion."

## ❏ Transmitting settings such as sound data (About data dump)

Data such as programs, MultiSets, arpeggio patterns, and MIDI and Global mode settings can be transmitted as MIDI exclusive data to an external device.

Transmission is performed in the MIDI mode MIDI SystemEX page. You can specify the type of data which will be transmitted.

If the System Exclusive Transmit, "SystemExclusive Transmit" setting located in the same page is **ON**, data for an individual sound (program or MultiSet) will be transmitted when a program change occurs.

This data is also transmitted when a corresponding dump request is received.

This data is transmitted and received on the Global MIDI channel.

## ❏ Editing sounds etc.

By using MIDI system exclusive messages, individual parameters can be edited from an external device. In order for this to be possible, the MIDI mode MIDI SystemEX page setting System Exclusive Transmit, "System-Exclusive Transmit" must be **ON**, and System Exclusive Receive, "SystemExclusive Receive" set to **ENA**.

\* In the MIDI SystemEX page, if programs or MultiSets are dumped by bank or individually to a specified dump destination, the received data will be written directly into backed-up memory, so it will not be necessary to execute the Write operation. However a data dump that occurs when a program or MultiSet is selected or editing that occurs as a result of a parameter change will affect the data in editing memory, so the Write operation will be necessary if the modified data is to be saved. (The Write operation is not necessary for MIDI parameters or Global parameters.) The Write operation can be performed by a MIDI exclusive message Program Write Request, MultiSetup Write Request, or Arpeggio Pattern Write Request.

## ❏ Using MIDI to control an LFO

The cycle of an LFO can be synchronized to MIDI Clock messages. In the LFO section parameter "MIDI Sync," specify how the LFO will be synchronized. Set the "MIDI Sync Base" and "MIDI Sync Time" parameters to specify how the LFO cycle will relate to the MIDI Clock messages. Whether the Z1 will function as master (controlling device) or slave (controlled device) can be specified in the MIDI mode MIDI Basic page "Clock Source" parameter.

## ❏ About the Performance Editor

The performance editor allows you to edit assigned parameters while in Program Play mode and MultiSet Play mode. When you use the performance editor to modify the sound, the corresponding changes are also transmitted as system exclusive parameter change messages (if the MIDI System-EX page setting "SystemExclusive Transmit" is **ON**).

When these messages are received, the receiving device will execute the same performance editing operations. After editing, you can write the modified data into internal or card memory.

These messages are transmitted and received on the Global MIDI channel. Changes made using performance editor knobs [1] to [5] are transmitted and received as control change messages #19 to #23.

## ❏ Controlling the arpeggiator

### Arpeggiator synchronization

In Program Play mode or MultiSet Play mode, the arpeggiator can be operated in synchronization with an external device. Whether the Z1 will function as master (controlling device) or slave (controlled device) can be specified in the MIDI mode MIDI Basic page "Realtime Control" parameters.

When the Clock Source, "Clock Source" is set to **INT** (Internal), the Z1 will be the master, and the arpeggiator speed can be controlled from the front panel. The notes played by the arpeggiator will also be transmitted via MIDI, so they can be used to play an external MIDI tone generator or to control the tempo of a sequencer.

When the Clock Source, "Clock Source" is set to **EXT** (External), the Z1 will be the slave, and the arpeggiator speed will follow the incoming MIDI Clock messages. If "Realtime Control Receive" is set to **ENA**, MIDI realtime messages (Start, Stop, Continue) and Song Position Pointer messages will be received. In this case, be aware that the arpeggio will not play until a start or a continue message is received.

Arpeggiator operations can be transmitted and received via MIDI messages.

Pattern select (can be transmitted and received)
[Bn 63 00 Bn 62 01 Bn 06 nn]
nn: 00 to 13 (internal), 40 to 53 (card)

Arpeggio on/off [Bn 63 00 Bn 62 02 Bn 06 nn]
nn: 00 to 3F (off), 40 to 7F (on)

Arpeggio octave [Bn 63 00 Bn 62 03 Bn 06 nn]
nn: 00 to 03 (1 to 4 octaves)

Arpeggio latch [Bn 63 00 Bn 62 04 Bn 06 nn]
nn: 00 to 3F (off), 40 to 7F (on)

Arpeggio key sync [Bn 63 00 Bn 62 05 Bn 06 nn]
nn: 00 to 3F (off), 40 to 7F (on)

Arpeggio keyboard on/off
[Bn 63 00 Bn 62 06 Bn 06 nn]

nn: 00 to 3F (off), 40 to 7F (on)

### Arpeggiator resolution, gate and velocity

The arpeggio resolution, gate and velocity values can be controlled from a sequencer etc. by control changes #09, #14 and #15 respectively.

# 2. Z1     MIDI Implementation chart

Date : 1997. 07. 07

| Function... | | Transmitted | Recognized | Remarks |
|---|---|---|---|---|
| Basic channel | Default | 1 to 16 | 1 to 16 | Memorized |
| | Changed | 1 to 16 | 1 to 16 | |
| Mode | Default | | 3 to 4 | Memorized |
| | Messages | ✕ | Omni ON/OFF | |
| | Altered | ✱✱✱✱✱✱✱ | | |
| Note | | 0 to 127 | 0 to 127 | |
| Number: | True voice | ✱✱✱✱✱✱✱ | 0 to 127 | |
| Velocity | Note ON | ◯9n, V=1 to 127 | ◯9n, V=1 to 127 | ✱B |
| | Note OFF | ✕ | ✕ | |
| After | Key's | ✕ | ✕ | |
| Touch | Ch's | ◯ | ◯ | ✱A |
| Pitch Bender | | ◯ | ◯ | ✱C |
| Control | 0, 32 | ◯ | ◯ | Bank Select (MSB, LSB)   ✱P, ✱C |
| | 1 | ◯ | ◯ | Modulation   ✱C |
| | 5 | ✕ | ◯ | Portamento Time   ✱C |
| | 6 | ◯ | ◯ | Data Entry (MSB)   ✱C |
| | 7, 11, 10 | ◯ | ◯ | Volume, Expression, Pan Pot   ✱C |
| | 64, 66 | ◯ | ◯ | Sustain, Sostenuto   ✱C |
| | 65 | ◯ | ◯ | Portamento Switch   ✱C |
| | 91, 92, 94, 95 | ✕ | ◯ | Effect Depth, Effect Switch   ✱C |
| Change | 96, 97 | ✕ | ◯ | Data Increment/Decrement |
| | 98, 99 | ◯ | ◯ | NRPN (LSB, MSB) |
| | 120, 121 | ✕ | ◯ | All Sound Off, Reset All Controls |
| | 122, 124 | ✕ | ◯ | Local Control, Omni mode On/Off |
| | 0 to 95 | ◯ | ◯ | Wheel, X-Y Pad, Foot Pedal, Knob  ✱C |
| Program | | ◯ 0 to 127 | ◯ 0 to 127 | ✱P |
| Change: | True# | 0 to 127 | 0 to 127 | |
| System Exclusive | | ◯ | ◯ | ✱2, ✱E |
| System Common | : Song Pos | ✕ | ◯ | |
| | : Song Sel | ✕ | ✕ | |
| | : Tune | ✕ | ✕ | |
| System Real Time | : Clock | ◯ | ◯ | ✱1 |
| | : Commands | ✕ | ◯ | Start, Continue, Stop |
| Aux Messages | : Local ON/OFF | ✕ | ◯ | |
| | : All Notes OFF | ✕ | ◯ 123 to 127 | |
| | : Active Sense | ◯ | ◯ | |
| | : Reset | ✕ | ✕ | |

Notes  ✱A, ✱B, ✱C, ✱E, ✱P: Valid only when Global parameter settings permit transmission and reception.
　　　✱1: Only transmitted when Clock is Internal. Only received when Clock is External.
　　　✱2: In addition to Korg exclusive messages, also compatible with Enquiry messages.

Mode 1: OMNI ON, POLY　　　Mode 2: OMNI ON, MONO　　　　　　　◯: Yes
Mode 3: OMNI OFF, POLY　　　Mode 4: OMNI OFF, MONO　　　　　　✕: No
✱ Consult your local Korg distributor for more information on MIDI IMPLEMENTATION.

*Appendices*

# 3. Mod. Source List

**Mod. Source List 1**

| ID | Modulation Sources |
|----|-------------------|
| 0 | Off |
| 1 | EG1 |
| 2 | EG2 |
| 3 | EG3 |
| 4 | EG4 |
| 5 | Amp EG |
| 6 | LFO1 |
| 7 | LFO2 |
| 8 | LFO3 |
| 9 | LFO4 |
| 10 | Portamento |
| 11 | Note[Linear] |
| 12 | Note[Exp] |
| 13 | Note Split[High] |
| 14 | Note Split[Low] |
| 15 | Velocity[Soft] |
| 16 | Velocity[Medium] |
| 17 | Velocity[Hard] |
| 18 | Pitch Bend |
| 19 | After Touch |
| 20 | Modulation Wheel(CC#1) |
| 21 | ATouch+Mod.Wheel |
| 22 | Mod.Wheel+ATouch/2 |
| 23 | X[+/−](CC#16) |
| 24 | X[+](CC#16) |
| 25 | X[−](CC#16) |
| 26 | Y[+/−](CC#17) |
| 27 | Y[+](CC#17) |
| 28 | Y[−](CC#17) |
| 29 | Knob1(CC#19) |
| 30 | Knob2(CC#20) |
| 31 | Knob3(CC#21) |
| 32 | Knob4(CC#22) |
| 33 | Knob5(CC#23) |
| 34 | Mod.SW1(CC#80) |
| 35 | Mod.SW2(CC#81) |
| 36 | Foot SW(CC#82) |
| 37 | Foot Pedal(CC#4) |
| 38 | Damper(CC#64) |
| 39 | Sostenuto(CC#66) |
| 40 | MIDI Breath Control(CC#2) |
| 41 | MIDI Volume(CC#7) |
| 42 | MIDI Panpot(CC#10) |
| 43 | MIDI Expression(CC#11) |
| 44 | MIDI Portamento Time(CC#5) |
| 45 | MIDI Portamento SW(CC#65) |
| 46 | Master FX OFF/ON(CC#92) |
| 47 | FX1 OFF/ON(CC#94) |
| 48 | FX2 OFF/ON(CC#95) |

**Mod. Source List 2**

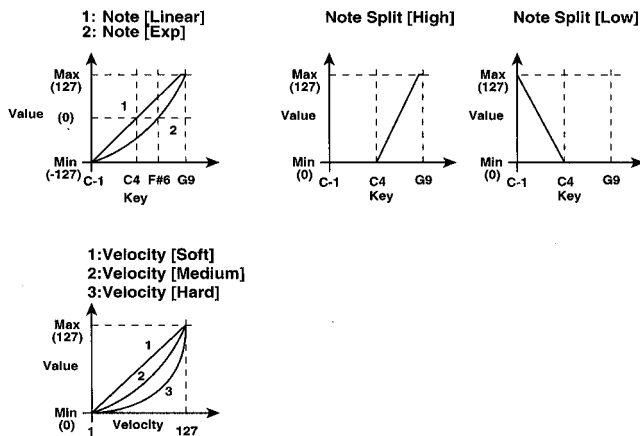| ID | Modulation Sources |
|----|-------------------|
| 0 | Off |
| 11 | Note[Linear] |
| 12 | Note[Exp] |
| 13 | Note Split[High] |
| 14 | Note Split[Low] |
| 15 | Velocity[Soft] |
| 16 | Velocity[Medium] |
| 17 | Velocity[Hard] |
| 18 | Pitch Bend |
| 19 | After Touch |
| 20 | Modulation Wheel(CC#1) |
| 21 | ATouch+Mod.Wheel |
| 22 | Mod.Wheel+ATouch/2 |
| 23 | X[+/−](CC#16) |
| 24 | X[+](CC#16) |
| 25 | X[−](CC#16) |
| 26 | Y[+/−](CC#17) |
| 27 | Y[+](CC#17) |
| 28 | Y[−](CC#17) |
| 29 | Knob1(CC#19) |
| 30 | Knob2(CC#20) |
| 31 | Knob3(CC#21) |
| 32 | Knob4(CC#22) |
| 33 | Knob5(CC#23) |
| 34 | Mod.SW1(CC#80) |
| 35 | Mod.SW2(CC#81) |
| 36 | Foot SW(CC#82) |
| 37 | Foot Pedal(CC#4) |
| 38 | Damper(CC#64) |
| 39 | Sostenuto(CC#66) |
| 40 | MIDI Breath Control(CC#2) |
| 41 | MIDI Volume(CC#7) |
| 42 | MIDI Panpot(CC#10) |
| 43 | MIDI Expression(CC#11) |
| 44 | MIDI Portamento Time(CC#5) |
| 45 | MIDI Portamento SW(CC#65) |

**Mod. Wheel & ATouch /2** Modulation wheel or aftertouch will apply the effect. At this time, the intensity of aftertouch will be half that of the modulation wheel, and only half of the depth can be obtained.
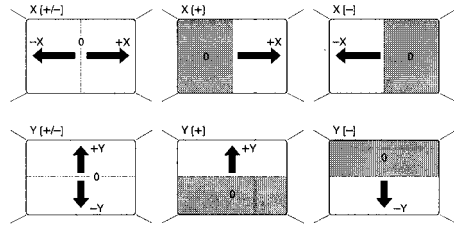


**Mod.SW1, Mod.SW2** If you wish to use the panel switches as a modulation source, make settings of SW1=Modulation (CC#80) and SW2= (CC#81) for the Prog CMN SW & Pdl page or MLT CMN SW & Pdl page parameters "SW1/2 Function."

**Foot SW** If you wish to use the assignable foot switch as a modulation source, set Foot Switch= Modulation (CC#82) in the Prog CMN SW&Pdl page or the MLT CMN SW&Pdl page. You can use a foot switch etc. connected to the ASSIGNABLE SW jack to control the effect.

**Foot Pedal** If you wish to use the assignable foot pedal as a modulation source, set Foot Pedal=Foot Controller (CC#04) in the Prog CMN SW&Pdl page or the MLT CMN SW&Pdl page. You can use a foot controller etc. connected to the ASSIGNABLE PEDAL jack to control the effect.



1: Note [Linear]
2: Note [Exp]

Note Split [High]

Note Split [Low]



1:Velocity [Soft]
2:Velocity [Medium]
3:Velocity [Hard]

* The above curves will be applied after the curve specified by GLB Basic page "After Touch Curve" has taken effect.

# 4. Utility list

Utility functions are provided to assist you with changes that would be tedious to make by performing individual edits. Appropriate utility menus are provided in several pages, allowing you to modify data in units of an entire block (mode, section, page).

[Init], [Copy] and [Swap] are typical utility operations which allow you to initialize, copy or exchange data in block units. Initialize [Init] lets you set the specified unit of data to standard settings. In some cases you can choose the desired type of settings.

Copy [Copy] allows data to be copied from another block, program, or MultiSet.

Exchange [Swap] lets you exchange settings of the currently-edited block.

In Program Edit mode, the display will indicate [PE Def] when the cursor is located at a parameter which can be assigned to the Performance Editor, allowing you to assign that parameter to a knob (see p.20).

For the procedure, refer to p.27.

## ❏ Program Play mode

UTILITY ................................. **UsrGrp, Categr, Init, Factry**

[2] UsrGrp: Search for a program by user group.
[3] Categr: Search for a program by category.
[4] Init: Initialize the currently-edited program.
[5] Factry: Load factory setting data into the currently-edited program.

## ❏ Program Edit mode

### OSC section

< OSC Set Up page >

UTILITY: .................................................. **CpySet**

[4] CpySet: Copy all OSC section settings from another program.

<OSC1 page> <OSC2 page> Pitch tab

UTILITY: .......................................... **Init, Copy**

[3] Init: Initialize the selected OSC type.
[4] Copy: Copy OSC1 or OSC2 settings from another program.

< SubOSC page >

UTILITY: ................................................ **Copy**

[3] Init: Initialize Sub OSC settings.
[4] Copy: Copy Sub OSC settings from another program.

< Noise Generator page >

UTILITY: ................................................ **Copy**

[4] Copy: Copy Noise Generator settings from another program.

## Prog Mixer section

< Mix Level page > < Mix Mod. page >

UTILITY ........................................ **Copy, Reset**

[4] Copy: Copy all Prog Mixer settings from another program.
[5] Reset: Set all values of the Prog Mixer section to 0.

## Filter section

< Filter Routing page >

UTILITY: ................................... **Copy, (Swp1-2)**

[4] Copy: Copy all settings of the Filter section from another program.
[5] Swp1-2: Exchange the contents of Filter 1 and Filter 2. Not available if "Link SW" is **ON**.

< Filter 1 page > < Filter 1 Kbd Track page > < Filter 2 page > < Filter 2 Kbd Track page >

UTILITY: ................................................ **Copy**

[4] Copy: Copy the Filter 1 or Filter 2 settings from another program.

## Amp section

< Amplitude page >

UTILITY: ......................... **Copy, Duplic, Swp1-2**

[3] Copy: Copy all Amp section settings from another program.
[4] Duplic: Copy the currently-edited Amp1 or Amp2 settings to the other Amp.
[5] Swp1-2: Exchange the Amp1 and Amp2 settings.

< AmpEG page >

UTILITY: ......................................... **Init, Copy**

[3] Init: Initialize the AmpEG using eleven templates (Default, Piano, Bell, Guitar, Percussion, Organ, SoftAttack, SlowAttack, SoloStrings, Sweep, Pressure).
[4] Copy: Copy EG 1 to 4 or AmpEG settings from another program.
[5] Swap: Exchange AmpEG settings with the settings of another EG.

## EG section

< EG1 page > < EG2 page > < EG3 page > < EG4 page >

UTILITY: ................................ **Init, Copy, Swap**

[3] Init: Initialize the selected EG using eleven templates (Default, Piano, Bell, Guitar, Percussion, Organ, SoftAttack, SlowAttack, SoloStrings, Sweep, Pressure).
[4] Copy: Copy the EG1 to 4 or AmpEG settings from another program.
[5] Swap: Exchange EG settings with the contents of another EG.

## LFO section

< LFO1 page > < LFO1 page > < LFO3 page > < LFO4 page >

UTILITY: .................................... **Copy, Swap**

[4] Copy: Copy the LFO1 to 4 settings from another program.
[5] Swap: Exchange LFO settings with the contents of another LFO.

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## Prog Fx section

### < Effect Set Up page >
**UTILITY:** ...................................... (Swp1-2), CpyPrg, CpyMlt

[3] Swp1-2: Exchange Fx1 and Fx2. However this is not available if Fx1 is TalkingMod. to RotarySP(L).
[4] CpyPrg: Copy all settings from the Prog Fx section of another program.
[5] CpyMlt: Copy MultiSet effect data of a specified section.

### < Fx1 page > < Fx2 page >
**UTILITY:** ........................................... Init, CpyPrg, CpyMlt

[3] Init: Initialize the settings for the specified effect.
[4] CpyPrg: Copy Fx1 or Fx2 settings from another program.
[5] CpyMlt: Copy Fx1 or Fx2 settings from a MultiSet.

### < MasterFx page >
**UTILITY:** ........................................... Init, CpyPrg, CpyMlt

[3] Init: Initialize settings for the selected effect.
[4] CpyPrg: Copy MasterFx settings from another program.
[5] CpyMlt: Copy MasterFx settings from a MultiSet.

### < MasterEQ page >
**UTILITY:** ...................................................... CpyPrg, CpyMlt

[4] CpyPrg: Copy MasterEQ settings from another program.
[5] CpyMlt: Copy MasterEQ settings from a MultiSet.

## Prog Common section

### < CMN Mod.Src List page >
**UTILITY:** ....................................... Refrsh, Change, Exchng

[3] Refrsh: After editing, sort the list by Mod.Source.
[4] Change: Replace a Mod.Source with another Mod.Source. However, this will be invalid for parameters whose value would exceed their range as a result of the change. After execution, the list order will automatically be sorted by Mod.Source.
[5] Exchng: Exchange two types of Mod.Source.

### < CMN PE Define page >
**UTILITY:** ...................................... (Return), Init, Copy, Swap

[2] Return: This will appear if you use UTILITY:[PE Def] to enter this page. This utility function will return you to the previous page.
[3] Init: Initialize PE settings.
[4] Copy: Copy PE settings from another program.
[5] Swap: Exchange the PE settings of a knob with the PE settings of another knob.

## ❏ MultiSet Play mode

**UTILITY:** ......................................................... [Init] [Factry]

[4] Init: Initialize the currently-edited MultiSet.
[5] Factry: Load factory setting data into the currently-edited MultiSet.

## ❏ MultiSet Edit mode

### Multi Fx section

### < Effect Set Up page >
**UTILITY:** ...................................... (Swp1-2), CpyPrg, CpyMlt

### < Fx1 page > < Fx2 page >
**UTILITY:** ........................................... Init, CpyPrg, CpyMlt

### < MasterFx page >
**UTILITY:** ........................................... Init, CpyPrg, CpyMlt

### < MasterEQ page >
**UTILITY:** ...................................................... CpyPrg, CpyMlt

Refer to the Prog Fx section of Program Edit mode.

## ❏ Arpeggio mode

### < PAT Step Param page >
**UTILITY:** ..................................... Init, Stp Cpy, Delete, Insert

[2] Init: Initialize the arpeggio pattern step parameters (Step Tone, Step Offset, Step Gate, Step Velocity, Step Split).
[3] Stp Cpy: Copy the step parameters of the currently selected Step Number to another step.
[4] Delete: Delete the step parameters of the currently selected Step Number. Subsequent steps will be shifted one step toward the left.
[5] Insert: Insert a blank step at the currently selected Step Number. Subsequent steps will be shifted one step toward the right.

## ❏ MIDI mode

### < MIDI Prog Map page >
**UTILITY:** ...................................................................... Equal

### < MIDI Multi Map page >
**UTILITY:** ...................................................................... Equal

[4] Equal: Set the "External Program #" to the internal Program / MultiSet numbers.

### < MIDI CChg Filter page >
**UTILITY:** .......................................... SetAll, SetAll, Regula

[3] SetAll: Set all "Transmit" settings of the list to either OFF or ON.
[4] SetAll: Set all "Receive" settings of the list to either DIS or ENA.
[5] Regula: Regularize the "Translation." The Z1's MIDI messages and the messages transmitted/received will be the same.

## ❏ Global mode

### < GLB User Scale page >
**UTILITY:** ............................................................ Reset, Reset

[2] Reset: Set all values of "UserScale1 Detune" to 0 (same as EQUAL_TEMP).
[5] Reset: Set all values of "UserScale2 Detune" to 0 (same as EQUAL_TEMP).

# 5. PE (Performance Editor) list

OSC1 OSC2 Parameter Name

0 Off

[OSC Common]
1 Common Pitch Mod. Intensity
2 Portamento Time
3 (Pitch Bend) Intensity(+)
4 Intensity(-)

[OSC1]
5 (Pitch)Octave
6 Semi Tone
7 Fine Tune
8 (Pitch Mod.) Mod.1 Intensity
9 Mod.1 Int.Control Intensity
10 Mod.2 Intensity

[OSC2]
11 (Pitch)Octave
12 Semi Tone
13 Fine Tune
14 (Pitch Mod.) Mod.1 Intensity
15 Mod.1 Int.Control Intensity
16 Mod.2 Intensity

[SUB OSC]
17 (Pitch)Octave
18 Semi Tone
19 Fine Tune
20 (Pitch Mod.) Mod.1 Intensity
21 Mod.1 Int.Control Intensity
22 Mod.2 Intensity
23 Wave Form

[Noise Generator]
24 Noise Filter Type
25 Noise Filter Input Trim
26 Noise Filter Cutoff
27 Noise Filter Cutoff Mod.1 Intensity
28 Noise Filter Cutoff Mod.2 Intensity
29 Noise Filter Resonance

[Mixer]
30 (OSC1 Out1)Level
31 Level Mod.Intensity
32 (OSC1 Out2)Level
33 Level Mod.Intensity
34 (OSC2 Out1)Level
35 Level Mod.Intensity
36 (OSC2 Out2)Level
37 Level Mod.Intensity
38 (SUB OSC Out1Level
39 Level Mod.Intensity
40 (SUB OSC Out2Level
41 Level Mod.Intensity
42 (NOISE Out1) Level
43 Level Mod.Intensity
44 (NOISE Out2) Level
45 Level Mod.Intensity
46 (FB Out1)Level
47 Level Mod.Intensity
48 (FB Out2)Level
49 Level Mod.Intensity

[Filter 1]
50 Filter Type
51 (Filter-A) Input Trim
52 Cutoff Frequency
53 Cutoff Frequency Mod.EG Intensity
54 Cutoff Frequency Mod.1 Intensity
55 Cutoff Frequency Mod.2 Intensity
56 Resonance
57 Resonance Mod.Intensity
58 (Filter-B) Input Trim
59 Cutoff Frequency
60 Cutoff Frequency Mod.EG Int.
61 Cutoff Frequency Mod.1 Int.

OSC1 OSC2 Parameter Name

62 Cutoff Frequency Mod.2 Int.
63 Resonance
64 Resonance Mod.Intensity

[Filter 2]
65 Filter Type
66 (Filter-A) Input Trim
67 Cutoff Frequency
68 Cutoff Frequency Mod.EG Int.
69 Cutoff Frequency Mod.1 Int.
70 Cutoff Frequency Mod.2 Int.
71 Resonance
72 Resonance Mod.Intensity
73 (Filter-B) Input Trim
74 Cutoff Frequency
75 Cutoff Frequency Mod.EG Int.
76 Cutoff Frequency Mod.1 Int.
77 Cutoff Frequency Mod.2 Int.
78 Resonance
79 Resonance Mod.Intensity

[Amp 1]
80 Amplitude
81 Amplitude Mod.Intensity

[Amp 2]
82 Amplitude
83 Amplitude Mod.Intensity

[Amp EG]
84 Attack Time
85 Attack Level
86 Decay Time
87 Break Level
88 Slope Time
89 Sustain Level
90 Release Time

[EG1]
91 Start Level
92 Attack Time
93 Attack Level
94 Decay Time
95 Break Level
96 Slope Time
97 Sustain Level
98 Release Time
99 Release Level

[EG2]
100 Start Level
101 Attack Time
102 Attack Level
103 Decay Time
104 Break Level
105 Slope Time
106 Sustain Level
107 Release Time
108 Release Level

[EG3]
109 Start Level
110 Attack Time
111 Attack Level
112 Decay Time
113 Break Level
114 Slope Time
115 Sustain Level
116 Release Time
117 Release Level

[EG4]
118 Start Level
119 Attack Time
120 Attack Level
121 Decay Time
122 Break Level
123 Slope Time

OSC1 OSC2 Parameter Name

124 Sustain Level
125 Release Time
126 Release Level

[LFO1]
127 Wave Form
128 Frequency
129 Frequency Mod.1 Intensity
130 Frequency Mod.2 Intensity
131 Fade In

[LFO2]
132 Wave Form
133 Frequency
134 Frequency Mod.1 Intensity
135 Frequency Mod.2 Intensity
136 Fade In

[LFO3]
137 Wave Form
138 Frequency
139 Frequency Mod.1 Intensity
140 Frequency Mod.2 Intensity
141 Fade In

[LFO4]
142 Wave Form
143 Frequency
144 Frequency Mod.1 Intensity
145 Frequency Mod.2 Intensity
146 Fade In

[Panpot]
147 Panpot
148 Panpot Mod.Intensity

[Output]
149 Output Level

[Effect Send]
150 Effect Send
151 Effect Send Mod.Intensity

[Master EQ]
152 Low Freq
153 Low Gain
154 High Freq
155 High Gain

[Program Common]
156 (Unison) Unison Type
157 Unison Detune

OSC1OSC2OSC Type
[Standard OSC]
158 179 Wave
159 180 Wave Level
160 181 Triangle Level
161 182 Sine Level
162 183 Wave Form
163 184 Wave Form Mod. LFO Intensity
164 185 Wave Form Mod. Intensity
165 186 Wave Shape Input Level
166 187 Wave Shape Input Level Mod. Intensity
167 188 Wave Shape Table
168 189 Wave Shape
169 190 Wave Shape Mod. Intensity
170 191 Wave Shape Balance
171 192 Wave Shape Balance Mod. Intensity

[Comb Filter OSC]
158 179 Input Wave Level
159 180 Noise Level
160 181 Width
161 182 Input Level Mod. Intensity
162 183 Comb Filter Feedback

OSC1 OSC2 Parameter Name

163 184 Feedback Mod.1 Intensity
164 185 Feedback Mod.2 Intensity
165 186 High Damp
166 187 High Damp Mod. Intensity

[VPM OSC]
158 179 (Carrier)Wave
159 180 Level
160 181 Level Mod.1 Intensity
161 182 Level Mod.2 Intensity
162 183 Wave Shape
163 184 Wave Shape Mod.1 Intensity
164 185 Wave Shape Mod.2 Intensity
165 186 Feedback
166 187 Frequency Coarse
167 188 Frequency Mod.1 Intensity
168 189 Frequency Mod.2 Intensity
169 190 (Modulator)Wave
170 191 Level
171 192 Level Mod.1 Intensity
172 193 Level Mod.2 Intensity

[Resonance OSC]
158 179 Input Level
159 180 Input Level Mod.1 Intensity
160 181 Input Level Mod.2 Intensity
161 182 (BPF1) Resonance1
162 183 Harmonics1
163 184 Frequency Fine1
164 185 Level1
165 186 (BPF2) Resonance2
166 187 Harmonics2
167 188 Frequency Fine2
168 189 Level2
169 190 (BPF3) Resonance3
170 191 Harmonics3
171 192 Frequency Fine3
172 193 Level3
173 194 (BPF4) Resonance4
174 195 Harmonics4
175 196 Frequency Fine4
176 197 Level4
177 198 Resonance Mod. Intensity

[Ring Mod.OSC]
158 179 Carrier Wave
159 180 Modulation Depth
160 181 Modulation Depth Mod.1 Intensity
161 182 Modulation Depth Mod.2 Intensity

[Cross Mod.OSC]
158 179 Carrier Wave
159 180 Modulation Depth
160 181 Modulation Depth Mod.1 Intensity
161 182 Modulation Depth Mod.2 Intensity

## OSC1 OSC2 Parameter Name

[Sync Mod.OSC]
| OSC1 | OSC2 | Parameter Name |
|---|---|---|
| 158 | 179 | Slave Wave |
| 159 | 180 | Wave Edge |

[Organ Model]
| OSC1 | OSC2 | Parameter Name |
|---|---|---|
| 158 | 179 | (Drawbar1) Wave |
| 159 | 180 | Harmonics |
| 160 | 181 | Fine |
| 161 | 182 | Level |
| 162 | 183 | Level Mod. Intensity |
| 163 | 184 | Percussion Level |
| 164 | 185 | (Drawbar2) Wave |
| 165 | 186 | Harmonics |
| 166 | 187 | Fine |
| 167 | 188 | Level |
| 168 | 189 | Level Mod. Intensity |
| 169 | 190 | Percussion Level |
| 170 | 191 | (Drawbar3) Wave |
| 171 | 192 | Harmonics |
| 172 | 193 | Fine |
| 173 | 194 | Level |
| 174 | 195 | Level Mod. Intensity |
| 175 | 196 | Percussion Level |
| 176 | 197 | (Percussion) Trigger Mode |
| 177 | 198 | Decay |
| 178 | 199 | Percussion Level Mod.Intensity |

[Electric Piano Model]
| OSC1 | OSC2 | Parameter Name |
|---|---|---|
| 158 | 179 | (Hammer) Force |
| 159 | 180 | Force Velocity Curve |
| 160 | 181 | Width |
| 161 | 182 | Click Level |
| 162 | 183 | (Tone Gen.) Decay |
| 163 | 184 | Release |
| 164 | 185 | Overtone Level |
| 165 | 186 | Overtone Freq |
| 166 | 187 | Overtone Decay |
| 167 | 188 | (Pickup) Pickup Position |
| 168 | 189 | Pickup Position Mod. Intensity |
| 169 | 190 | (Low EQ) Low EQ Freq |
| 170 | 191 | Low EQ Gain |

[Brass Model]
| OSC1 | Parameter Name |
|---|---|
| 158 | Pitch Bend+ |
| 159 | Pitch Bend– |
| 160 | Pressure EG Intensity |
| 161 | Pressure Mod.1 Intensity |
| 162 | Pressure Mod.2 Intensity |
| 163 | Lip Character |
| 164 | Lip Character Mod. Intensity |
| 165 | Bell Tone |
| 166 | Bell Resonance |
| 167 | Noise Level |
| 168 | PEQ Freq |
| 169 | PEQ Q |
| 170 | PEQ Gain |
| 171 | Strength |

[Reed Model]
| OSC1 | Parameter Name |
|---|---|
| 158 | Pitch Bend+ |
| 159 | Pitch Bend– |
| 160 | Pressure EG Intensity |
| 161 | Pressure Mod.1 Intensity |
| 162 | Pressure Mod.2 Intensity |
| 163 | Noise Level |
| 164 | Reed Mod.Intensity |
| 165 | HPF Fc |
| 166 | HPF Resonance |
| 167 | Offset |
| 168 | Shape |
| 169 | Shape Mod.Intensity |
| 170 | PEQ Freq |
| 171 | PEQ Q |
| 172 | PEQ Gain |

[Plucked String Model]
| OSC1 | Parameter Name |
|---|---|
| 158 | Attack Curve Up |
| 159 | Attack Curve Down |

## OSC1 OSC2 Parameter Name

| OSC1 | Parameter Name |
|---|---|
| 160 | String Position |
| 161 | String Position Mod. Intensity |
| 162 | Dispersion |
| 163 | Dispersion Mod.Intensity |
| 164 | Damping |
| 165 | Decay |
| 166 | Release |
| 167 | Harmonics Position |
| 168 | Harmonics Mod.Intensity |
| 169 | Pickup Position |
| 170 | Pickup Position Mod. Intensity |
| 171 | Low EQ Freq |
| 172 | Low EQ Gain |
| 173 | Low Boost |

[Bowed String Model]
| OSC1 | Parameter Name |
|---|---|
| 158 | Bow Speed EG Intensity |
| 159 | Bow Speed Mod.1 Intensity |
| 160 | Bow Speed Mod.2 Intensity |
| 161 | Bow Differential |
| 162 | Pressure EG Intensity |
| 163 | Pressure Mod. Intensity |
| 164 | Rosin Amount |
| 165 | String Position |
| 166 | String Position Mod. Intensity |
| 167 | Damping |
| 168 | Dispersion |
| 169 | Reflection |
| 170 | Reflection Mod. Intensity |
| 171 | PEQ Freq |
| 172 | PEQ Q |
| 173 | PEQ Gain |

## Fx1 Fx2 Effect1/2 Type

[Overdrive]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Drive |
| 202 | 214 | Output Level |
| 203 | 215 | Low EQ Freq |
| 204 | 216 | Low EQ Gain |
| 205 | 217 | Mid Low EQ Freq |
| 206 | 218 | Mid Low EQ Gain |
| 207 | 219 | Mid High EQ Freq |
| 208 | 220 | Mid High EQ Gain |
| 209 | 221 | High EQ Freq |
| 210 | 222 | High EQ Gain |

[Compressor]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Sensitivity |
| 202 | 214 | Attack |
| 203 | 215 | Pre Low EQ Gain |
| 204 | 216 | Pre High EQ Gain |
| 205 | 217 | Output Level |

[Parametric EQ]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Low EQ Freq |
| 202 | 214 | Low EQ Gain |
| 203 | 215 | Mid Low EQ Freq |
| 204 | 216 | Mid Low EQ Gain |
| 205 | 217 | Mid High EQ Freq |
| 206 | 218 | Mid High EQ Gain |
| 207 | 219 | High EQ Freq |
| 208 | 220 | High EQ Gain |

[Wah]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Frequency Bottom |
| 202 | 214 | Frequency Top |
| 203 | 215 | Sweep Response |
| 203 | 215 | Resonance |
| 204 | 216 | Envelope Sens |
| 205 | 217 | Envelope Shape |

[Exciter]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Blend |
| 202 | 214 | Blend Mod. Intensity |
| 203 | 215 | Emphatic Point |
| 204 | 216 | Pre Low EQ Gain |

## OSC1 OSC2 Parameter Name

| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 205 | 217 | Pre High EQ Gain |

[Decimator]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Sampling Frequency |
| 202 | 214 | Output Level |
| 203 | 215 | Resolution |

[Chorus]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | LFO Frequency |
| 202 | 214 | Depth |
| 203 | 215 | Depth Mod. Intensity |
| 204 | 216 | Pre Low EQ Gain |
| 205 | 217 | Pre High EQ Gain |

[Flanger]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | LFO Frequency |
| 202 | 214 | Depth |
| 203 | 215 | Delay Time |
| 204 | 216 | Feedback |

[Phaser]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | LFO Frequency |
| 202 | 214 | Depth |
| 203 | 215 | Manual |
| 204 | 216 | Resonance |

[Rotary Speaker(S)]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Speed |
| 202 | 214 | Horn Acceleration |
| 203 | 215 | Horn Rate |
| 204 | 216 | Horn/Rotor Balance |
| 205 | 217 | Mic Distance |

[Delay(Mono)]
| Fx1 | Fx2 | Effect Name |
|---|---|---|
| 200 | 212 | Effect Balance |
| 201 | 213 | Input Level Mod. Intensity |
| 202 | 214 | Delay Time |
| 203 | 215 | Feedback |
| 204 | 216 | Low Damp |
| 205 | 217 | High Damp |

[Talking Modulator]
| Fx1 | Effect Name |
|---|---|
| 200 | Effect Balance |
| 201 | Manual Control |
| 202 | Voice Top |
| 203 | Voice Center |
| 204 | Voice Bottom |
| 205 | Formant Shift |
| 206 | Resonance |

[Multitap Delay]
| Fx1 | Effect Name |
|---|---|
| 200 | Effect Balance |
| 201 | Type |
| 202 | Input Level Mod.Intensity |
| 203 | Tap1 Time |
| 204 | Tap1 Level |
| 205 | Tap2 Time |
| 206 | Feedback |
| 207 | High Damp |
| 208 | Spread |

[Ensemble]
| Fx1 | Effect Name |
|---|---|
| 200 | Effect Balance |
| 201 | Speed |
| 202 | Shimmer |
| 203 | Depth |

[Rotary Speaker(L)]
| Fx1 | Effect Name |
|---|---|
| 200 | Effect Balance |
| 201 | Speed |
| 202 | Horn Acceleration |
| 203 | Horn Rate |
| 204 | Horn/Rotor Balance |
| 205 | Mic Distance |
| 206 | Mic Spread |

## OSC1 OSC2 Parameter Name

| Fx1 | Effect Name |
|---|---|
| 207 | Rotor Acceleration |
| 208 | Rotor Rate |
| 209 | Mode |

## Master Fx Type

[Stereo Delay]
| MFx | Effect Name |
|---|---|
| 224 | Effect Balance |
| 225 | Input Level Mod. Intensity |
| 226 | Left Delay Time |
| 227 | Right Delay Time |
| 228 | Feedback(L) |
| 229 | Feedback(R) |
| 230 | High Damp |

[Reverb-Hall]
| MFx | Effect Name |
|---|---|
| 224 | Effect Balance |
| 225 | Reverb Time |
| 226 | Pre Delay |
| 227 | High Damp |
| 228 | Pre Low EQ Gain |
| 229 | Pre High EQ Gain |

[Reverb-Room]
| MFx | Effect Name |
|---|---|
| 224 | Effect Balance |
| 225 | Reverb Time |
| 226 | Pre Delay |
| 227 | High Damp |
| 228 | Pre Low EQ Gain |
| 229 | Pre High EQ Gain |

# 6. About the optional <DI-TRI digital I/F board>

The separately sold <DI-TRI digital I/F board> option provides an ADAT™ compatible optical output which digitally outputs the audio signal from the Z1, and also allows the digital signal to be synchronized with another digital audio device.

⚠ If you have questions regarding installation, contact a nearby Korg dealer.

## ❑ DIGITAL OUT connector

This is a digital output connector in ADAT Optical format. Connect it to the DIGITAL IN connector of an ADAT optical format-compatible mixer or recorder. The output of the Z1's R and L/MONO output jacks and of the audio signals that have bypassed the master effects will be output from the DIGITAL OUT connector, occupying channels 1, 2, 3 and 4 respectively of the eight channels of the ADAT Optical format. At this time, audio signals will also be output from the analog jacks.

## ❑ WORD CLOCK IN connector

This is an input jack for the system clock. When the Z1's WORD CLOCK IN connector is connected to an ADAT Optical format mixer or remote controller which has a WORD CLOCK OUT connector, the Z1 will synchronize to the sampling frequency of the connected device.

## ❑ Example connections

### Digitally recording the sound of the Z1 to an ADAT

① Use an ADAT-OPTICAL cable (sold separately) to connect the Z1's DIGITAL OUT connector to the ADAT's Digital INPUT.
For connections, use an ADAT-OPTICAL cable manufactured by Alesis Corporation or an optical cable for CD/DAT (both sold separately).

② Press the DIGITAL INPUT switch of the ADAT.
If you are using an ADAT XT, set the CLOCK SOURCE of the ADAT XT to "DIG 48K."

③ Set the Z1's Global mode GLB Ctrl SetUp page setting "Word Clock Source" to INT.



adat

DIGITAL IN

DIGITAL OUT

KORG Z1
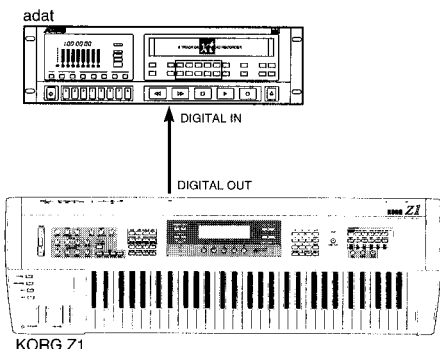
### Digitally recording the sound of the Z1 that has been mixed on a digital mixer to the ADAT

① Use an ADAT-OPTICAL cable to connect the Z1's DIGITAL OUT connector to the ADAT OPTICAL IN connector of the ADAT Optical format-compatible mixer.

② Use ADAT-OPTICAL cables to connect the respective IN and OUT connectors of the ADAT Optical format-compatible mixer and the ADAT.

③ In order to use an ADAT Optical format-compatible mixer or remote controller as the master for synchronization of the digital signals, make connections as shown in the diagram below, and connect the mixer's WORD CLOCK OUT connector to the Z1's WORD CLOCK IN connector.
For connections, use a BNC Coax cable made by Alesis Corporation or a BNC cable made for video (both sold separately).

④ Press the DIGITAL INPUT switch of the ADAT.
If you are using an ADAT XT, set the CLOCK SOURCE of the ADAT XT to "DIG 48K."

⑤ Set the Z1's Global mode GLB Ctrl SetUp page setting "Word Clock Source" to EXT.

The digital audio signal that is output from the DIGITAL OUT connector is output in synchronization with the clock signal received at the WORD CLOCK IN jack, allowing the digital signals of the two devices to be synchronized.

⚠ If the clock cannot be detected correctly due to a disconnected BNC cable or for some other reason, a error message will appear in the LCD. If this occurs, check whether a problem has occurred with the BNC cable.



ADAT

ADAT BRC

DIGITAL OUT    DIGITAL IN

WORD CLOCK OUT

ADAT OPTICAL IN A    ADAT OPTICAL OUT A    WORD CLOCK IN    ADAT OPTICAL IN B

WORD CLOCK OUT    WORD CLOCK IN    DIGITAL OUT

KORG 168RC    KORG Z1
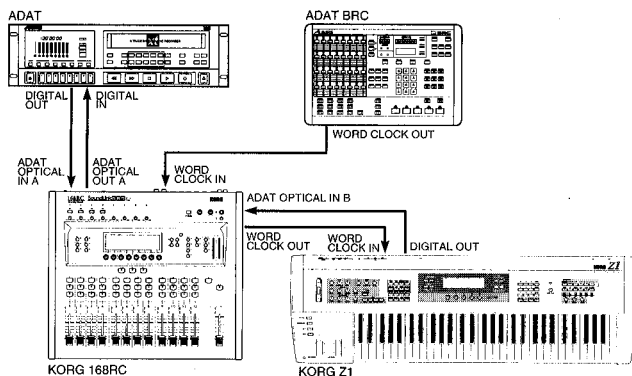
# 7. About the optional <DSPB-Z1 option board>

By installing a separately sold <DSPB-Z1 option board> you can add six voices to the Z1's polyphony, providing a maximum of 18 voices of polyphony.

⚠ If you have questions regarding installation, contact a nearby Korg dealer.

# 8. About the Memory Card

A memory card inserted into the CARD slot located on the rear panel of the Z1 can store programs, MultiSets, Global settings and arpeggio patterns.

## ❑ Memory cards that can be used with the Z1

• PC CARD ATA specification Flash ROM

• PC CARD Device Type: Flash EPROM

Either of these two types of card can be used as long as their capacity is between 256 Kbytes and 4M bytes.

## ❑ Memory card handling

While a memory card procedure is taking place, do not remove the card or transmit MIDI data dumps, etc. If any of these events occur, data may be lost.
For details on memory card handling, refer to the owner's manual that was included with your memory card.

## ❑ Formatting a memory card

Before a new memory card can be used by the Z1, the card must be formatted. The format operation is performed by the GLB Data Utility "(Format Card) Target Card Area" (refer to p.95).
When you format a memory card, all data which was previously on the card will be lost forever.

## ❑ Saving data to a memory card

To save data to a card, use the GLB Data Utility (Save) (refer to p.95). The data will be written to the area that has been specified by GLB Basic "Card Area Select" (refer to p.91). If you are using an ATA specification Flash ROM card, you will also be able to use the program, MultiSet, or arpeggio pattern Write operations to write data to the card.

When using a Device Type: Flash EPROM memory cards, it is not possible to use the Write operation (refer to p.26) to write edit buffer data directly into the memory card. You must first save the data to internal memory, and then in the GLB Data Utility "Save Source" select **All_Data** to save it (refer to p.95).

## ❑ Reading data from a memory card

Programs, MultiSets and arpeggio patterns from a card can be selected for playing in Program Play mode or MultiSet Play mode by pressing the [INT/CARD] key (refer to p.4, 5, 10). The data will be read from the area that has been specified by GLB Basic "Card Area Select" (refer to p.91).
If you wish to load data from a memory card into internal memory, use the GLB Data Utility (Load) Card (refer to p.94).

# 9. Troubleshooting

**LCD display does not appear when you press the POWER switch.**

• Is the power cable connected to an electrical outlet?
.................................................................................. p.xiii

**No sound!**

• Is the amp or headphones connected correctly? ... p.xiii
• Is the Z1's master volume raised? ................................. p.2
• Is the MIDI Basic page "Local Control" turned **ON**?
.................................................................................. p.86
• Are the GLB Basic page "Polarity" settings correct?
.................................................................................. p.91

• Make sure that none of the level-related parameters in each section have been set to 0.
• If you have connected only the L/MONO OUTPUT jack, make sure that the GLB Ctrl & Fx page parameter "Output Mode" is set to **MONO**. ....................................... p.94

**Sound does not stop!**

• Is the Prog CMN Voice page "HOLD" setting **OFF**?
.................................................................................. p.60
• Are the GLB Basic page "Polarity" settings correct?
.................................................................................. p.91

**The sound does not match the settings!**

• Did you execute the Write operation after editing?
.................................................................................. p.26
• Was the program sound changed when a MultiSet was saved? ................................................................................ p.9

**Can't write programs, MultiSets or patterns!**

• Make sure that the GLB Basic page parameter "Memory Protect" is **OFF**. ...................................................... p.25, 91

**Transpose and velocity curve settings are not transmitted/received correctly!**

• Is the GLB Basic page parameter "Transpose Position" set correctly? ................................................................. p.90

**Arpeggiator does not start!**

• Is the ARPEGGIATOR [ON/OFF] turned on (LED lit)?
.................................................................................. p.10
• Is the MIDI Basic page parameter "Clock Source" set correctly? .............................................................................. p.86
• Are the Arpeggio mode "Kbd Scan Zone Bottom/Top" parameters set correctly? ............................................. p.83

**Arpeggiator does not link to programs or MultiSets!**

• Make sure that the GLB Ctrl SetUp page "Auto Arpeggiator Program/MultiSet" setting is **ON**. ....... p.94

**The specified effect does not apply!**

• Make sure that the GLB Ctrl SetUp page parameter "Master Effect" is set to **AVAIL**. ......................................... p.94

**Cannot control via MIDI!**

• Are MIDI cable connections correct? ...................... p.97
• Make sure that the MIDI channel of the data being transmitted from the external MIDI device matches the Global MIDI channel of the Z1. ...................................... p.97

**Cannot format a memory card!**
- Is the memory card a type which the Z1 can use? .. p.95
- Is the memory card inserted correctly? .................... p.xii

**Cannot save data to a memory card!**
- Is the memory card inserted correctly? .................... p.xii
- Is the memory card formatted? ................................. p.95
- If you are using a Flash EPROM device type memory card, several restrictions will apply to saving. ....... p.110

**Cannot load data from a memory card!**
- Is the memory card inserted correctly? .................... p.xii
- Does the memory card contain data? ...................... p.110
- Is the correct area of the memory card selected? .... p.91

**When using the DI-TRI option, undesired noise occurs or sound is distorted!**
- If the Z1 is the master, make sure that the ADAT clock setting is correct. ................................................. p.93, 109
- If the Z1 is the slave, make sure that the word clock signal is being input correctly. ................................ p.93, 109

**When using the DI-TRI option, cannot send/receive digital audio!**
- Is the cable connected correctly? .............................. p.109
- Is the GLB Ctrl SetUp page parameter "Word Clock Source" set correctly? ......................................... p.93, 109

## 10. Error messages

**WARNING! Internal battery is LOW**
> The backup battery has run down. Contact a nearby Korg service center or your dealer.

**!Data Dump Error! <Found Illegal Data>**
> Reception could not be performed correctly, since inappropriate MIDI dump data was received. All of the received contents have been discarded.

**!Dump Data Error! <Memory is Protected>**
> Since the Z1's "Memory Protect" is ON, MIDI dump data could not be received correctly. All of the received contents have been discarded.

**!! No Area !!**

**!! No Card !!**
> No card was inserted when you attempted to write data etc. to a card.

**! Protected Card !**
> The memory card is write protected.

**Not a valid Card!**
> When you attempted to read data from a memory card, the card format was inappropriate.

**!! Card Error !!**
> A malfunction has been detected in the memory card.

**Card Type ERR!**
> Since the memory card is a Flash EPROM type device, it was not possible to write data from the edit buffer directly into the card. You must first save the data to internal memory, and then use the GLB page Data Utility to save all data to the memory card.

## 11. Other messages

**<Execute?>**
> This message asks you to confirm that you wish to execute an operation. Press the [ENTER] key to execute, or press the [EXIT] key to cancel the operation.

**<Are you sure?>**

**<Sure?>**
> This message asks you to confirm that you wish to execute an operation. Press the [ENTER] key to execute, or press the [EXIT] key to cancel the operation.

**<Format?>**
> The memory card is not formatted. This message will appear when you attempt to write to a new card (or a new card area), or to a card which has been formatted differently.

**<<<<Completed!>>>>**
> The process has been completed successfully.

*Appendices*

**111**

### <!Memory Protected!>

"Memory Protect" was ON when you attempted to write to internal memory, etc.

### Can't access CARD Change to INT Program?

### Can't access CARD Change to INT Multi?

### Can't access CARD Change to INT Pattern?

The card has been removed after you selected a memory card program, etc. It is not possible to select programs etc. from the card. Either re-insert the memory card, or press the [ENTER] key or the [INT/CARD] key to select internal data. Pressing any other key will cause the previous display to reappear.

### Di-tri clock error

When using the optional <DI-TRI>, this message will appear if the required external clock input cannot be detected. Either check the clock generating source, or set "Word Clock Source" EXT (external clock) to INT.

### Recall previous edit?

After editing, this message will appear to ask whether you wish to recall unsaved data. To recall the data, press the [ENTER] key.

### Now Receiving Data!

MIDI dump data is being received. This message will appear if a significant time interval elapses before reception is completed, such as when the volume of data is large etc. While this message is displayed, some operations such as program changes or editing will be restricted.

### "✳✳✳DATA"Received          <<<<Completed!>>>>

Reception of a MIDI data dump has been completed, and ✳✳✳ data (for example, ALL DATA, Program A000 etc.) has been received. Verify that the correct data is shown, and press any key to return to the previous display.

### DUMP RECEIVED

This message will appear after MIDI dump data has been received for the program or MultiSet which is currently being played or edited. This data is treated as an edit, so you will need to write it into memory if you wish to keep it.

### Executing Dump Required

Data is being transmitted in response to a MIDI data dump request that was received from an external device. This message will appear if a significant time interval elapses before transmission is completed.

### MIDI Write Request Received Program Write <<Completed!>>

Data has been written in response to a MIDI write request that was received from an external device, subject to the same conditions that apply for conventional Write operations (such as "Memory Protect" being OFF, etc.). This message will appear if the operation ended normally.

## 12. Specifications

| System | MOSS (Multi-Oscillator Synthesis System) |
|---|---|
| Tone generator section | 12 voice (6 voices can be added with an optional board, expanding the total to 18 voices), 2 oscillators (max.) + suboscillator + noise generator |
| Keyboard | 61 note (with initial and aftertouch) |
| Effects | Digital multi-effects Fx1 / Fx2 = 15 types, Mst.Fx= 3 types |
| Programs | 128 programs x 2 banks |
| MultiSets | 16 setups x 2 banks |
| Arpeggiator | 5 preset patterns, 15 user patterns |
| Controllers | Pitch bender, Modulation wheel, X-Y pad, Modulation SW1 & 2, X-Y Hold SW, Portamento SW, Knobs 1 to 5, Filter knobs (Cutoff, Resonance, EG intensity), Filter EG knobs (ADSR), Amp EG knobs (ADSR), Arpeggiator control knobs (Resolution, Gate, Velocity, Speed) |
| Control inputs | Damper pedal, Assignable switch, Volume pedal, Assignable pedal |
| Outputs | L/Mono, R, Headphones |
| MIDI | IN, OUT, THRU |
| Card slot | Program data, MultiSets, Arpeggio patterns |
| Display | 64 x 240 dots LCD |
| Power supply | AC, Local Voltage |
| Power consumption | 23 W |
| Dimensions | 1,090.1 (W) x 348.3 (D) x 118.7 (H) mm |
| Weight | 13.9 kg |
| Included items | AC cable |

### ❑ Options

| | |
|---|---|
| DSPB-Z1 | option board (6 additional voices) |
| DI-TRI | digital I/F board (ADAT compatible optical) |
| XVP-10 | EXP/VOL pedal |
| KVP-002 | Volume pedal |
| EXP-2 | foot controller |
| PS-1 / PS-2 | pedal switch |
| DS-1H | damper pedal |

# 13. Index

## Symbol

## A

## B

## C

## D

## E

## F

## G

## H

## I

## J

## K

## L

*Appendices*

## T

## U

## V

## W

## X

# Voice Name List

## ❏ Program

| | | | |
|---|---|---|---|
| A000 This is Zee One! | A064 Hyper Boost Bass | B000 Fantasy Bell | B064 Rubbing Glass |
| A001 Studio E.P. | A065 Digi Rez Bass | B001 Dream Bell | B065 * Interstate * |
| A002 Square Hollow | A066 Freaky Rez Bass | B002 Digi Morphious | B066 Quizical Lead |
| A003 New Solo Reed | A067 M Power Bass | B003 Morph 3003 | B067 Memories in Air |
| A004 ** Z'Future ! ** | A068 Deep Top Bass | B004 Tekno SquareHead | B068 Cold Winter Day |
| A005 Digital Dulcimer | A069 Funky Z Bass | B005 Craft Werk | B069 Victory Pad |
| A006 Raver 3003 Bass | A070 Flash Light | B006 Tech Flasher | B070 * Zee World * |
| A007 Male Ahhs | A071 ResoWah Bass | B007 Shorty | B071 Stinger |
| A008 Syndicate Lead | A072 Square 3003 Bass | B008 Tekno Leader | B072 Sunflower |
| A009 Touch FingerBass | A073 TeeBee Faked | B009 Deep Space Sine | B073 Mysterious Winds |
| A010 Rich Strings | A074 Rump Bass | B010 DigiDitty | B074 Glass Container |
| A011 VPM Bell | A075 Splat Bass | B011 'Peggiate Me! | B075 Reso Motion |
| A012 Bold Trumpet | A076 Dark Pop Bass | B012 Percussive Ring | B076 Genetic Sequence |
| A013 Phased Clav | A077 Deep Jungle Bass | B013 Pinger | B077 Techno Sequence |
| A014 Dimension | A078 Sub Bass | B014 Makalimba | B078 Sample&Hold |
| A015 Perc. Organ | A079 Dream Strings | B015 Digi Glass Vibe | B079 Techno S&H Pad |
| A016 Giant REZ Sweep | A080 Royal Strings | B016 Osiris | B080 Rhythmic Seq1 |
| A017 Rave Tom | A081 Ana Marcato | B017 War Birds | B081 Rhythmic Seq2 |
| A018 Dyna Expressive | A082 OberString Pad | B018 Vowel Phase Mod | B082 Time & Space |
| A019 Digi-Clear E.P. | A083 Old Rec.Strings | B019 Full Synth Comp | B083 Bird Ambience |
| A020 Direct E.P. | A084 Sweet String Pad | B020 Zee Zuper Sawz! | B084 Aboriginist |
| A021 Whirly E.P. | A085 Glisten Strings | B021 Sweeper Keeper | B085 * Pink Mud * |
| A022 VPM Piano 1 | A086 Phasing Strings | B022 Wave Tron | B086 Vision Makers |
| A023 VPM Piano 2 | A087 Zee Solo Violin | B023 Pop Chord Synth | B087 Sync Comp |
| A024 Bell Piano | A088 Cellone | B024 Polyphecy | B088 DWGS Lead |
| A025 Misty Piano | A089 Zee Synth Choir | B025 Fat Synth | B089 Deep Sync Lead |
| A026 MIDI Piano Pad | A090 Morphing Vox | B026 Sassy Squares | B090 Comb*Sync Lead |
| A027 MellowSyn & E.P. | A091 Female Voice | B027 House Synthin' | B091 Distorted Thang |
| A028 Strings E.P. | A092 Digi Vox | B028 Pulsed Man | B092 Analog Lead |
| A029 Comb Piano | A093 Nazca Vox Birds | B029 Power Synth Hit | B093 High Reso Lead |
| A030 Comb Clav | A094 Classical TP | B030 Power Stab Synth | B094 Emmer's Sun Syn |
| A031 Pulse Clav | A095 Mute Trumpet | B031 Zippercord | B095 Pan & Saw Lead |
| A032 Clavitude | A096 Bold Trombone | B032 70's Poly Synth | B096 P.M 300 |
| A033 Neo Clav | A097 Frenchy Horns | B033 POP Rez Synth | B097 Tunisia Lead |
| A034 Bow Wow Clav | A098 Brass Fall (SW2) | B034 Pulse Mod Master | B098 mini KORG 700s |
| A035 Rubbery Comp | A099 Pop Brass Ens. | B035 Digi Wave (SW1) | B099 Light Brass Lead |
| A036 DigiClav & Pad | A100 Sizzle Brass | B036 Bright Synth | B100 Das Mini Lead |
| A037 Harpsichord | A101 Trombone Ens. | B037 Big Saw Pad | B101 SquaredMini Lead |
| A038 Dark Organ | A102 Brass Ensemble | B038 New Power Synth | B102 Physical Lead |
| A039 Jazz Organ | A103 Warm Brass Ens. | B039 Squirt Synth | B103 Phunk Rez Lead |
| A040 Rockin Bee! | A104 AnaOrch Ensemble | B040 Analog Sitar | B104 Flying Soul |
| A041 Full Organ | A105 Brass/Strings | B041 Slow Arkestra | B105 Summer Time Lead |
| A042 Pipe Mixture | A106 Soprano Sax | B042 Comb Flute Pad | B106 Reed Lead |
| A043 Pipe Organ Full | A107 Saxy Reed | B043 Living Tubes | B107 Wave Drum (XY) |
| A044 Reed Pipe Organ | A108 Sharp Alto | B044 Dreams in Motion | B108 Physical Udu |
| A045 Thin Air Organ | A109 Blue Sax | B045 Soft Pad | B109 BD/SD 1 (C2/C7) |
| A046 Nylon Guitar | A110 Soft Tenor | B046 Ocean Calm | B110 BD/SD 2 (C2/C7) |
| A047 Warm A.Guitar | A111 Breathy Saxes | B047 GhostlyOrgan Pad | B111 Ring Hi Hat |
| A048 TownerCrombie | A112 Joe's Talkin' | B048 Pad of Warmth | B112 Zapper/HH (SW1) |
| A049 Blue Guitar | A113 Solo Flute | B049 Chronos Pad | B113 Noise Burst |
| A050 Real Jazz Guitar | A114 Hard Flute | B050 Warm Saw Pad | B114 Noise Drums |
| A051 Clean Strato | A115 Pan Piper | B051 Wind Evolves | B115 Steel Drum |
| A052 Single Coil | A116 Solo Oboe | B052 Ring Streamer | B116 Frozen Planet |
| A053 Psychedelic Gtr. | A117 Solo Clarinet | B053 Dream Flute | B117 Back in Time.... |
| A054 Super Dist Gtr. | A118 Bass Clarinet | B054 Rich Sweeper | B118 Desert Winds |
| A055 ROK Guitar | A119 Solo Harmonica | B055 Brook of Eden | B119 Radio Tuning |
| A056 Lion's Harp | A120 New Noise Bell | B056 BPF Sweep | B120 Explosion |
| A057 Techno Shami | A121 Additive Bell | B057 Glassy Pad | B121 Space Ship Trip |
| A058 Dyna Slap Bass | A122 Sweet Bell | B058 Slo Pan | B122 Scratch MW & Pad |
| A059 Chocolate Bass | A123 Reso Bell (SW) | B059 Glowing Nights | B123 TREXvsHELICOPTER |
| A060 Real Fingers | A124 Top End Vibes | B060 {*Sonus*} | B124 Aliens Chitchat |
| A061 Fat Fingers | A125 Digi Vibes | B061 Pure Pad | B125 Deep Forest (XY) |
| A062 Deep Pick Bass | A126 Deep Tubular | B062 Haunting Winds | B126 Laughter (SW1) |
| A063 New Wood Bass | A127 Bali Bells | B063 Silky Synstring | B127 ANALOG INIT |

## MultiSet

| | | | |
|---|---|---|---|
| A00 | Techno Tonic | B00 | New Legends |
| A01 | Light & Shadow | B01 | Big Sprit |
| A02 | Brass Section | B02 | Orchestra |
| A03 | New Soul Split | B03 | X Over E.P. |
| A04 | Ocean Depth | B04 | Dark Of Night |
| A05 | Rave & Pop | B05 | Techno/BassSplit |
| A06 | Garden Bell Pad | B06 | Cooled Surface |
| A07 | Fun Key Bass | B07 | Guitar & Flute |
| A08 | Vox Travelerz | B08 | Neo Brass Pad |
| A09 | Baroque | B09 | Zee Film Strings |
| A10 | Mellow Scream | B10 | Hammer & Toot |
| A11 | Squirt Wave | B11 | X/Y Padd |
| A12 | Borealis | B12 | Lunar Dust |
| A13 | Hyper Comp Synth | B13 | 3 AM Mood |
| A14 | BlueNylon Guitar | B14 | Clavi Comp Pad |
| A15 | Mystery Z-one | B15 | JazzClub Roswell |

# Arpeggio Pattern List

| | |
|---|---|
| PRESET: UP | U2-1 : Pattern Z |
| PRESET: DOWN | U2-2 : 5 Tone Climb |
| PRESET: ALTERNATE1 | U2-3 : 70's Disco Bass |
| PRESET: ALTERNATE2 | U2-4 : Syncopation |
| PRESET: RANDOM | U2-5 : Stepping Note |
| U1-1 : Retro Pattern | U3-1 : Happy Dog |
| U1-2 : Euro Bass | U3-2 : Flashin' Arp |
| U1-3 : Chaser Bass | U3-3 : Techno Tonic |
| U1-4 : Funky Tekno Bass | U3-4 : Bossa Guitar |
| U1-5 : New Soul Bass | U3-5 : Slap & Strum |

# Effect List

| Fx1•2 | Delay (Mono) |
|---|---|
| Overdrive | |
| Compressor | **Fx1** |
| Parametric EQ | Talking Modulator |
| Wah | Multitap Delay |
| Exciter | Ensemble |
| Decimator | Rotary Speaker (Large) |
| Chorus | |
| Flanger | **Master Fx** |
| Phaser | Stereo Delay |
| Rotary Speaker (Small) | Reverb-Hall |
| | Reverb-Room |

# Demo Song List

01 : "Z" Saves the Day
02 : Nature Cry
03 : Physical Slapper
04 : Maybe Someday
05 : Modeling E.Piano Session
06 : 1st. Grade Band
07 : * HyperMedia *
08 : Magical Moment
09 : Sexy Sax Band
10 : Last Train Home
11 : Pipe Invention
12 : Brass Funk
13 : Alien Comes !!

"* HyperMedia *, 1st. Grade Band, "Z" Saves the Day, Magical Moment, Last Train Home and Maybe Someday" demo songs by John "Skippy" Lehmkuhl and copy right ©1997 RealKuhl Productions.
(e.mail:realkuhl@pacificnet.net)

"Nature Cry, Physical Slapper, Modeling E.Piano Session, Sexy Sax Band, Pipe Invention, Brass Funk and Alien Comes !!" demo songs by Taiki Imaizumi @KORG Inc.

**KORG**

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