Multimode Expansion for:
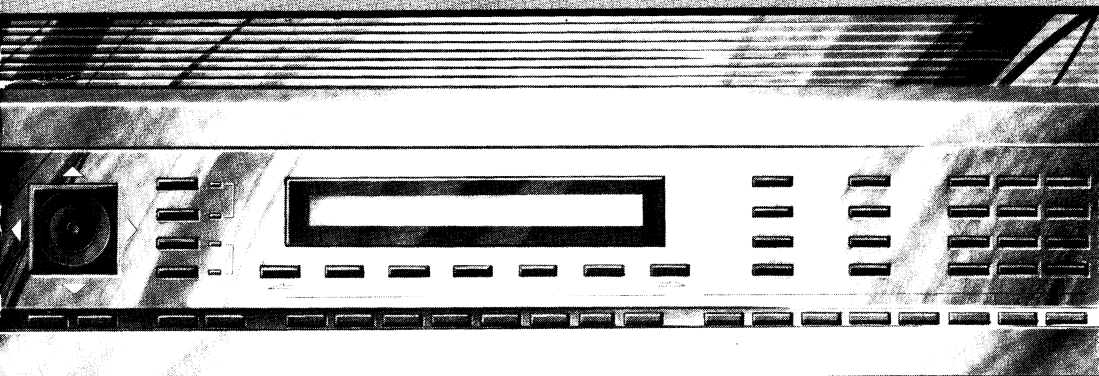# D-50/D-550

mex
multi | expansion

by musitronics

Owner's Manual

D–50/D–550 Multi Expansion

Contents

Contents (contd.)

copyright 1989 by MUSITRONICS Oliver Schwarz

1.0 General introduction

Dear Customer,

Thank you for purchasing our D–50 Multi Expansion which will prove to be THE expansion for the Roland D–50 Synthesizer. Upon installing the board you will gain access to the following additional features:

- two different 8–part multi–timbral modes

- freely definable Key Windows for achieving multi–sample sounds

- expanded master keyboard functions on two separate MIDI transmit channels

- memory expansion of up to 128 patches, accessible via MIDI or front panel.

Five additional displays and 28 new parameters offer you new ways of programming sounds, expressive playing and multi–timbral sequencing. Our expansion will not cut the number of voices, giving you access to 16 dynamically allocated voices even in multi mode. The two new key modes also offer you six LFOs, two chorus units, two equalizers and one reverb section. You will find all details in this manual; therefore, please keep on reading even when tempted to just move on and fiddle around a bit.

Put a little expansion into your D–50....

2.0 Installation

2.1 General information, safety precautions

Installing the expansion board does not require specific talents and can be done by anyone observing the following guidelines. *However, if you feel insecure about installing such a device or have never done any soldering, ask a qualified technician to install the expansion board for you.*

Work only in a clean and dry evironment.

Keep in mind that there are delicate components inside the D-50 that might be destroyed by electrostatic discharge; under certain conditions your body can be charged with thousands of volts that could easily do the job of blowing the guts out of your synth. Therefore, try not to touch any components within the D-50. Ground yourself before installing the board by touching the plumbing of your water or heating system. You need the following tools: a soldering iron suitable for electronic work (about 30 watts, fine soldering tip), a few inches of solder (acid free, flux), a regular and a Phillips screwdriver. It is also a good idea to ground the soldering iron as well as the interior frame of the synth.

We cannot be held responsible nor take any liability for direct or indirect damages caused by incorrect installation of the D-50 Multi Expansion board.

STOP WARNING

The Roland D-50 has been manufactured differently depending on the date of the production run. Although in most cases the EPROM that needs to be removed is mounted in a socket, there are some units in which the EPROM has been soldered directly onto the main board. Please check your D-50, and should the EPROM not be mounted on a socket we urgently suggest the board be installed by an authorized Roland service center.

2.2 Installing the board

a) You should back up all sounds in your D–50 by saving them to a RAM card or downloading them to a librarian program running on your computer. Sounds will not usually be lost during installation, but it doesn't pay to take chances.

b) Unplug ANY connections to and from the D–50, including the audio and MIDI. Most important, however: UNPLUG THE POWER CORD!
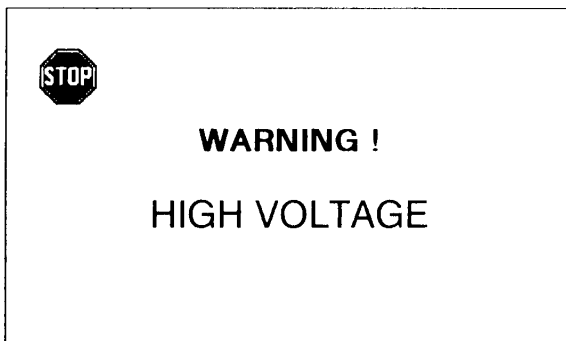
c) Turn the D–50 upside down, being careful of the bender and joystick. Unscrew all 15 screws from the bottom panel and the 5 screws from the back of the synth (see picture 1 on page 8).

d) Remove the bottom panel. Now you will see the big green circuit board, the D–50 main board.

e) In the middle of this board you will find an IC with a silver sticker attached to it. This is IC 22 and should be socketed. Remember in which direction the "nose" of the IC points (mark it) and remove it; using a small screwdriver, pry up gently on either end of the IC until it is free of the socket. Store the IC in a safe place.

f) Next, connect the control wire of the expansion board to the main board. The control wire must be soldered to pin 27 of IC 24 which is mounted parallel to IC 22 and is labeled "HM 62256 LP–12". First put

some solder on pin 27 of IC 24 before carefully soldering the control wire itself. IMPORTANT: Never leave the soldering iron in contact with pin 27 for more than 5 seconds. Be careful of shortcircuiting any neighboring pins on IC 24.
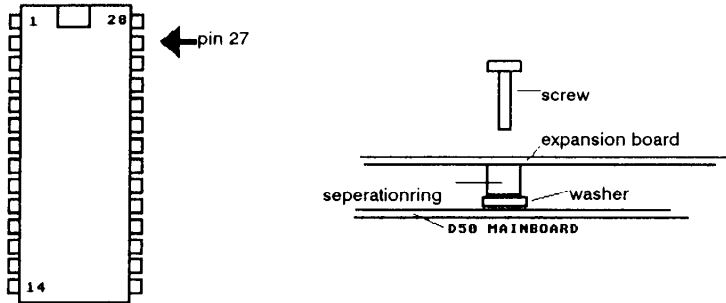
g) Now remove the screw next to IC 22 and mount the expansion board in the empty socket of IC 22. Make sure that the expansion board's IC with the red label sits directly above the socket and that its "nose" points in the same direction that the original IC 22's nose did. Check (and double check!) that ALL pins of the expansion board are aligned with the socket before firmly pressing down on the board so that the pins lock into place in the socket.

h) The hole used to secure the expansion board must line up exactly with the hole of the previously removed screw, next to IC 22. Use the supplied material to fasten the expansion board to the main board. Look for details as shown in the above picture. The washer must have contact with the main board.

i) Put the D–50 back together.

j) Connect the power cord and switch the D–50 on. The display must show the following start–up message:

```
*** Expanded Linear Synthesizer D-50 ***
Roland Corporation        Musictronics
```

Switch the D–50 off immediately in case this message doesn't show up. Repeat steps a) through j).

If the following message appears

```
****** Control Wire Error !! ******
```

repeat steps a) through j) and in particular check the soldered control wire for proper contact.

That's it. Should you have any questions, contact your local Musitronics distributor for further explanation.

picture 1

DISASSEMBLING

1. Remove screws (A)
2. Remove screws (B)
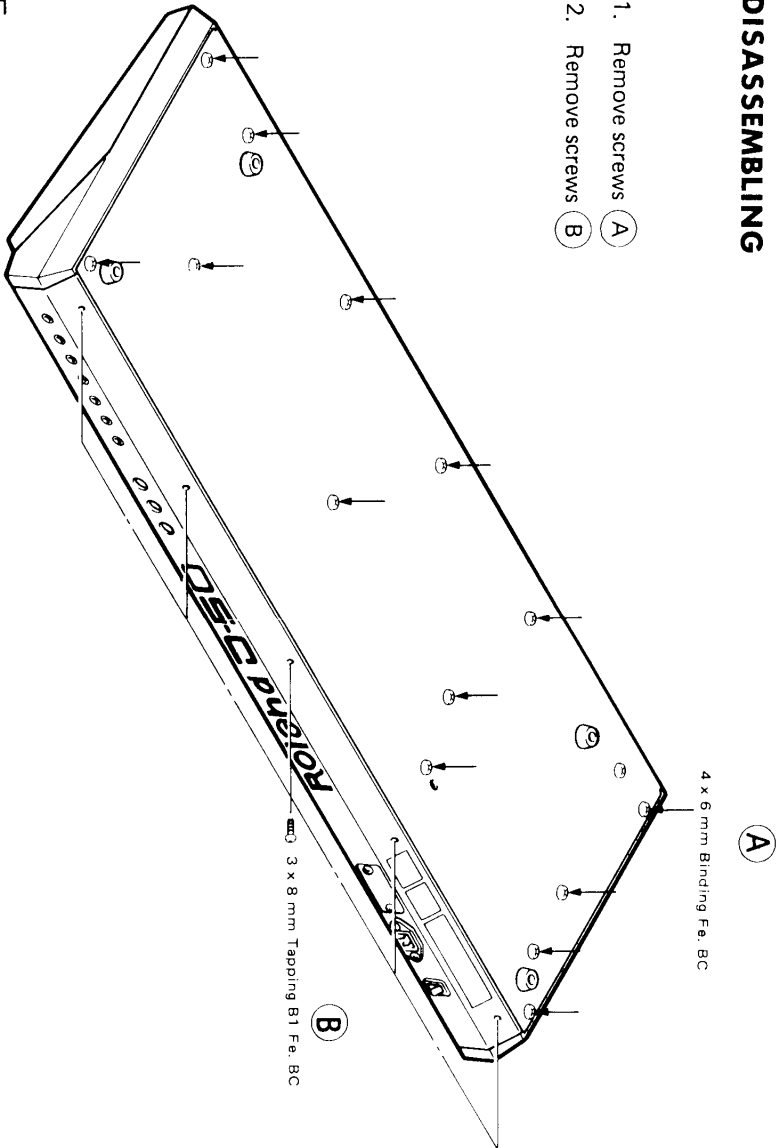
(This diagram has been printed with the kind consent of the Roland Corporation).

4 x 6 mm Binding Fe. BC (A)

3 x 8 mm Tapping B1 Fe. BC (B)

picture 2
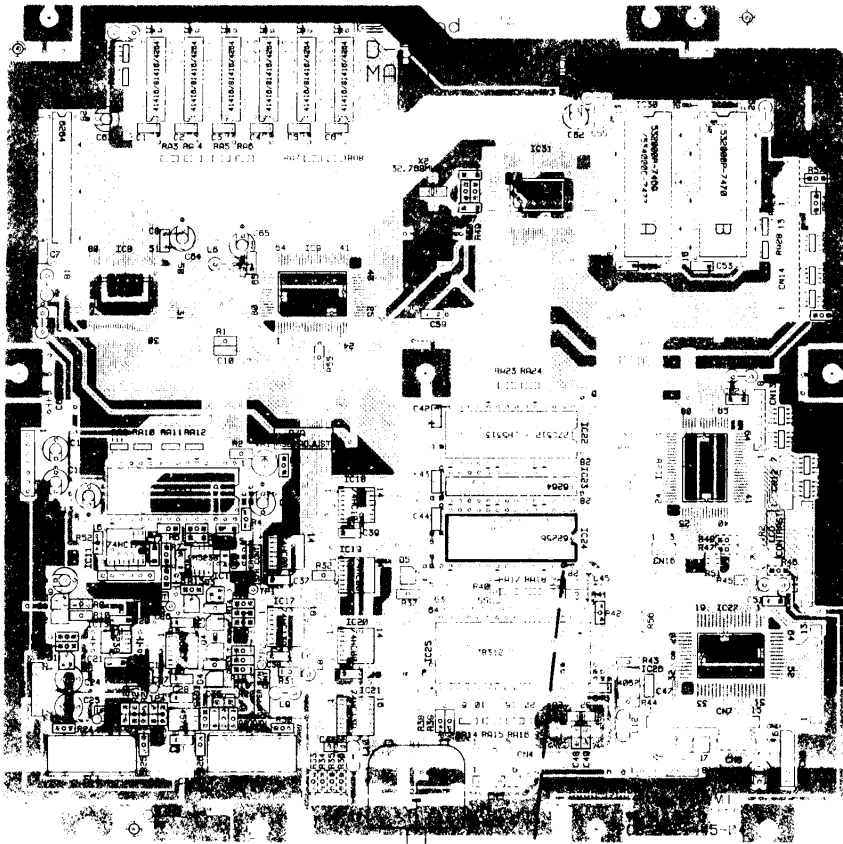
PIN 27, IC 24

(This diagram has been printed with the kind consent of the Roland Corporation).

3.0 The memory expansion

Depending on the version of your expansion board, you have up to 128 additional memory locations for patches at your disposal. The standard version comes with 64 additional patch memories.

3.1 Bank selection

```
┌──────────────────────────────────────────────┐
│ I-83 Piano-3-Grand   ps    U: Piano 3          │
│ DUAL   SP C4   Bal 68      L: Steinway .        │
└──────────────────────────────────────────────┘
```

TONE DETUNE	KEY MODE	SPLIT POINT	TONE BALANCE	L-TONE EDIT	U-TONE EDIT	PATCH EDIT

PATCH-BANK

INTERNAL	CARD	1	2	3	4	5	6	7	8
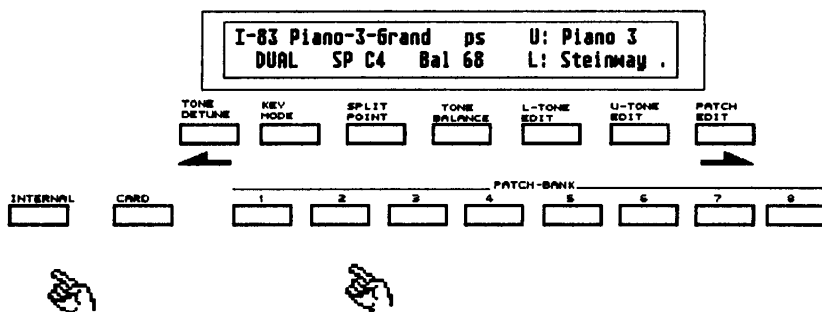
Press the INTERNAL button and at the same time one of the Patch Bank buttons 1, 2, or 3 to switch between Banks. The selected Bank of the memory expansion will be displayed as I, X, or Y.

3.2 Loading by memory card

This is done as usual with the DATA TRANSFER function. Sounds on the memory card will be loaded into the currently displayed Bank.

3.3 Loading and saving via MIDI

Again, use DATA TRANSFER as usual. Transfer of sounds is done from/to

the displayed Bank.

3.4 Moving individual Patches

Use the WRITE button to freely copy Patches between Banks. Select the desired Bank with the INCREMENT/DECREMENT buttons or the joystick.

3.5 Bank selection via MIDI

You can change Banks with MIDI controller data. The following MIDI data must be sent:

binary	hex	bank
1011 nnnn 0110 0010 0000 0000	Bn 62 00	I
1011 nnnn 0110 0010 0000 0001	Bn 62 01	X
1011 nnnn 0110 0010 0000 0010	Bn 62 02	Y

n = basic channel −1

4.0 The multi timbral mode

Two new key modes allow the simultaneous use of up to 8 different Tones. These Tones may be triggered externally via sequencer or internally from the keyboard. MIDI channels can be freely set for any of the 8 Tones.

4.1 Memory structure of the D–50

In general the D–50 utilizes two distinct memory sections: the Patch memory, where all Patch data is stored (the Banks), and the working memory. By selecting a Patch with the PATCH BANK and PATCH NUMBER buttons, all data associated with that Patch is copied to the working memory. The Patch can now be played by the keyboard or via MIDI. A Patch will always be copied from the Bank currently selected, that
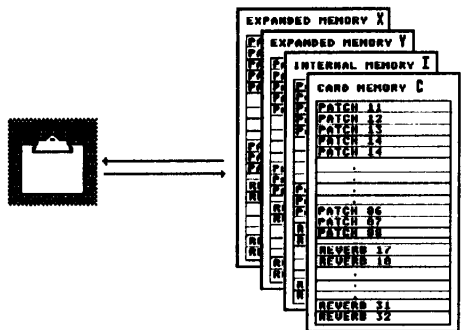
4.2 Accessing Tones in multi-timbral mode

Memory access in multi-timbral mode is slightly different than the procedure explained above. The working memory has only room for two tones. In multi-timbral mode, however, up to 8 Tones can sound simultaneouslzy Therefore, when switched to this mode, the D-50 will play a Tone directly from the Bank in which it is stored. This difference is noticeable only when editing a Tone in multi-timbral mode. Since editing is done in the working memory, you won't be able to hear your edits until you store that Patch permanently at a Patch memory destination using the WRITE button. The following picture shows the structure of a Patch set to MULTI-DUAL in Key Mode. A Patch set to MULTI or MULTI-DUAL in Key Mode will be referred to as a multi-patch from now on.

The
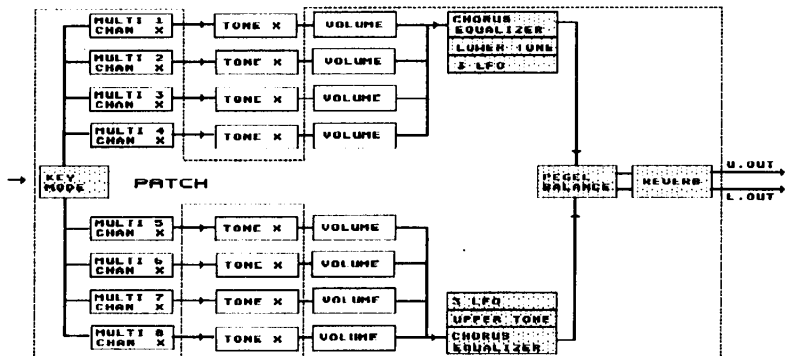
A MIDI receive channel, the Tone driven by that channel and the volume of that Tone together form a multi–tone. Which chorus, equalizer or effect sectioncan be used for this multitone depends on the panorama setting. Multi–tones 1 through 4 are affected by the three LFOs of the Lower Master Tone.

The same holds true for multi–tones 5 through 8, except that they are attached to the Upper Master Tone.

In Key Mode MULTI all eight multi–tones are fed to the Upper Master Tone. In MULTI mode all 16 voices are dynamically allocated to the eight multi–tones, while in MULTI–DUAL mode 8 voices are assigned to each of the two master tones, yet are dynamically allocated within that master tone.

4.3 Tone configuration

4.3.1 Tone (normal)

As long as the D–50 is not switched to one of the two multi–timbral modes, all parameters including the Tone parameters are unaltered.
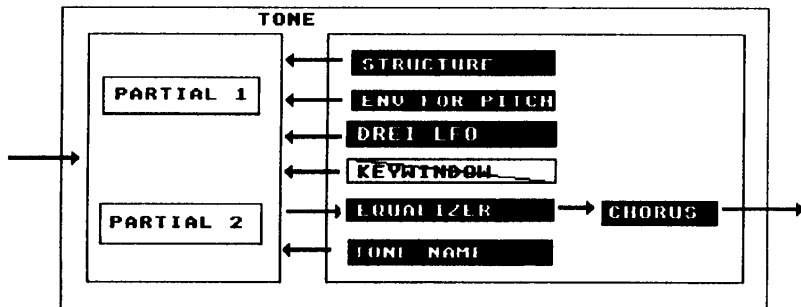
4.3.2 Master Tone

This is the Upper or Lower Tone of a multi–patch. This master tone
places its equalizer, chorus and three LFOs at the disposal of the
multi–patch. Partials 1 and 2 of this tone are inactive.
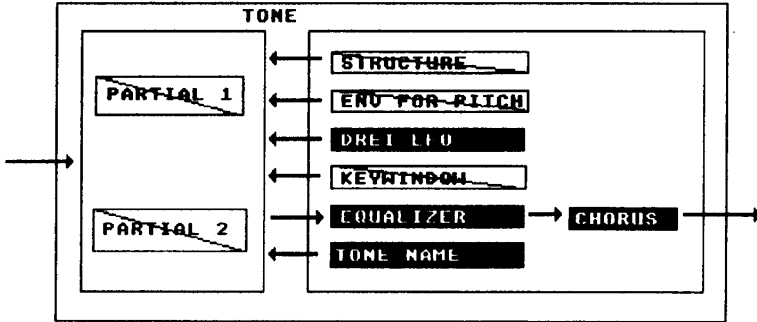
4.3.3 Tone in a multi–tone

These Tones are assigned to slots in the multi–patch together with MIDI
receive channels to form a multi–tone. EQ, chorus and LFO parameter
settings are all inactive since they are controlled by the Master Tone.
However, a Key Window is active for each individual tone (see below).
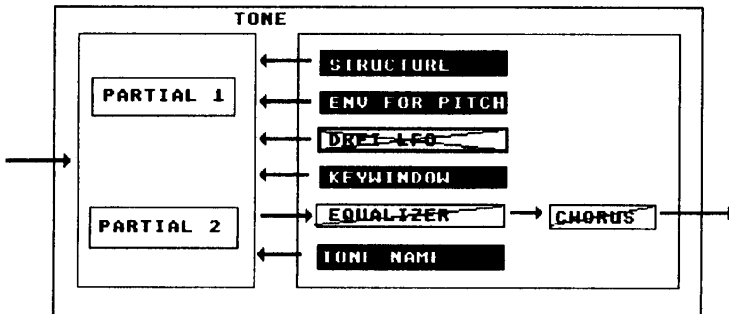
4.4 Key Modes

In addition to the nine regular Key Modes, the two multi–timbral modes MULTI and MULT–D (dual) are now at your disposal. While MULTI feeds all eight multi–tones to the Upper effects section, MULT–D splits the multi–tones between the Upper and Lower effects sections.

4.4.1 Selecting a Key Mode

Press the Key Mode button of your D–50 and select the desired mode in the usual fashion using either the INCREMENT/DECREMENT buttons or the joystick. (These can be used to adjust all of the following parameters.) Use the EXIT button to quit the current display.

```
X-83 Piano-3-Grand   ps   U: Piano 3
MULTI   SP C4   Bal 68   L: Steinway .
```

```
TONE    KEY    SPLIT   TONE    L-TONE  U-TONE  PATCH
DETUNE  MODE   POINT   BALANCE EDIT    EDIT    EDIT
[  ]    [  ]   [  ]    [  ]    [  ]    [  ]    [  ]
```
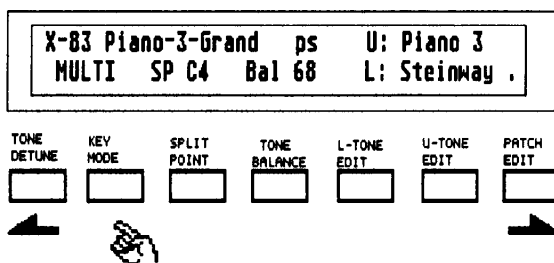
4.5 Multi–timbral mode

Press the PATCH EDIT button twice to gain access to the Multi–Mode Edit display.

```
X-83 Piano-3-Grand   ps   U: Piano 3
MULTI   SP C4   Bal 68   L: Steinway .
```

```
TONE    KEY    SPLIT   TONE    L-TONE  U-TONE  PATCH
DETUNE  MODE   POINT   BALANCE EDIT    EDIT    EDIT
[  ]    [  ]   [  ]    [  ]    [  ]    [  ]    [  ]
```

```
┌─────────────────────────────────────────┐
│  X-83 Piano-3-Grand   ps Multi Mode Edit │
│ (Midi-L)(Tone-L)(Midi-U)(Tone-U)(Output) │
└─────────────────────────────────────────┘
```

```
TONE      KEY      SPLIT    TONE     L-TONE   U-TONE   PATCH
DETUNE    MODE     POINT   BALANCE    EDIT     EDIT     EDIT
┌───┐   ┌───┐    ┌───┐    ┌───┐    ┌───┐    ┌───┐    ┌───┐
└───┘   └────┘   └───┘    └───┘    └───┘    └───┘    └───┘
```
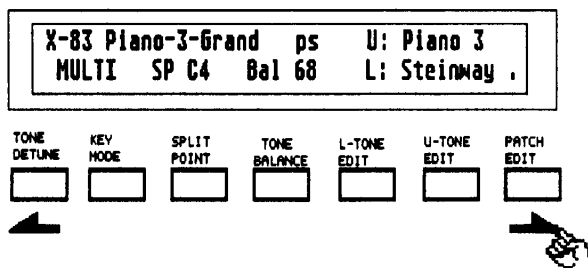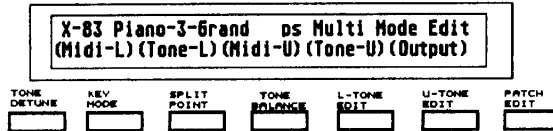
4.5.1 Assigning MIDI receive channels to a multi–tone

Use the D–50 menus (MIDI–L) or (MIDI–U) to assign MIDI receive
channels (OFF, 1...16) to the eight multi–tone slots. Select the menu
topics with the buttons below the display or by using the cursor keys at
either side.

```
┌─────────────────────────────────────────┐
│  X-83 Piano-3-Grand   ps L-Multi Midi    │
│        M.1  05 M.2  03 M.3  09 M.4 OFF    │
└─────────────────────────────────────────┘
```
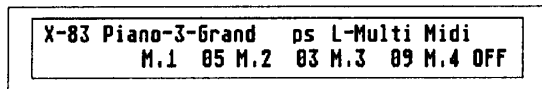
Multi Tone 1 ↑   ↑ MIDI–Channel

In the display shown above multi–tone M.1 is assigned MIDI channel 5,
multi–tone M.2 receives on channel 3 while M.4 is switched to "OFF".

4.5.2 Assigning a Tone to a multi–tone

Each multi–tone (M.1 through M.8) can be assigned a Tone from the selected memory Bank. Tones between Lower Tone, Patch 11 and Upper Tone, Patch 88 are selectable at random; all combinations, including eight different Tones or eight times the same Tone, are possible. Use the buttons below (Tone–L) and (Tone–U) to assign Tones to the multi–tone slots.

```
X-83 Piano-3-Grand   ps L-Multi Midi
         M.1 U14 M.2 L32 M.3 L56 M.4 U75
```

Multi Tone 1   ◀ ▶   Multi Tone 1

IMPORTANT! While in the process of setting up a multi–patch, you may wish to check on the position or composition of Tones in other Patches. *Remember to save your edits with the WRITE button before leaving the multi–patch.* Otherwise when you return to the Multi–Mode Edit screen, all values will be initialized.

4.5.3 Adjusting multi–tone volume

The menu topic (Volume) that you find at the far right of the Multi–Mode Edit screen allows you to adjust the volume of each multi–tone separately. Loudness values range from 0 (very soft) to 100 (maximum).

```
X-83 Piano-3-Grand   ps L-Multi Volume
        M.1 100 M.2  35 M.3  80 M.4  75
```

4.5.4 Adjusting multi-tone panpot

Here you can adjust the volume of a tone between the right and left output.

5.0 MIDI transmit channels

You may regard the D-50 as being a master keyboard with a built-in sound expander; both are internally connected as long as the machine is set to Local ON.
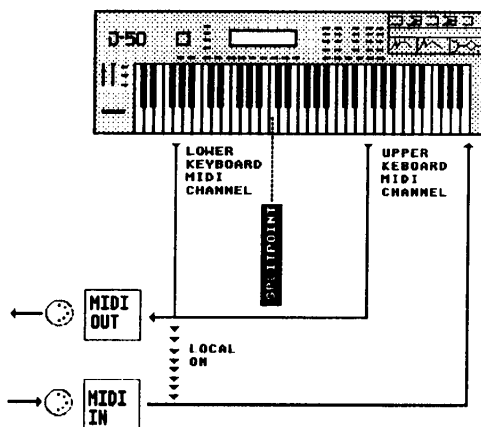
As you can see from the figure above, you now have two completely independent MIDI transmit channels in every Key Mode. They are called Transmit Channel Upper and Transmit Channel Lower, the names indicating upper and lower keyboard zones as defined by the split point; they have no relation to the Upper or Lower Tones. The permanently displayed split point shows the first key of the upper keyboard zone. In multi-timbral mode, for example, you now have the option of playing a DUAL sound (two Tones driven by one MIDI channel) on the lower keyboard zone while using a QUATTRO sound (four Tones assigned to one MIDI channel) on the upper zone, quite a sound!

5.1 Selecting MIDI transmit channels

Press PATCH EDIT followed by the (MIDI) menu topic.

```
┌─────────────────────────────────────────────┐
│ X-83 Piano-3-Grand   ps MIDI Edit            │
│ TChU B  TChL12 TxPCOFF          SepCHOFF      │
└─────────────────────────────────────────────┘
```

The MIDI transmit channel for the upper keyboard zone is set by parameter TChU (Basic, 1...16). Accordingly the MIDI transmit channel for the lower zone is set using parameter TChL (OFF, 1...16); if OFF is selected, the entire keyboard will transmit on the MIDI channel set by parameter TChU.

5.2 Panic (all notes off) button

In the unbelievable event of a never-ending MIDI note (the missing note off), press SHIFT to kill all notes still sounding inside your D-50.

6.0 Key Windows

Each Tone can have its own Key Window. A Key Window defines the key range in which a Tone will sound, for instance, C4 – C5. No other keys will trigger the Tone but will remain "silent". Key Windows can be programmed to any range of keys and can overlap one another. Using this technique you may program multi-sample sounds by assigning a different Tone with a different PCM waveform to each Key Window.

The Key Window parameter is applicable only in a multi-timbral mode.
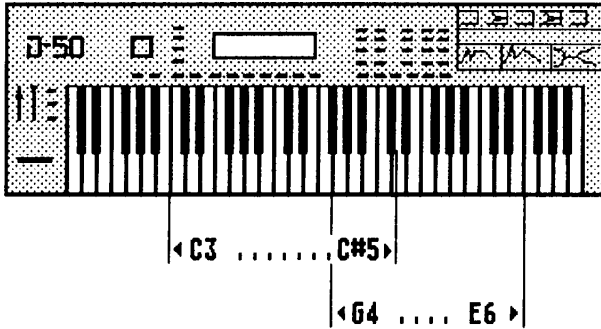
The above example illustrates how the Key Window parameter works: one Tone will sound only in the key range C3 to C5, the other in the range of G4 to E6.

6.1 . Programming Key Windows

The Key Window is programmed as part of a Tone. After calling the desired Patch, press either the L-TONE EDIT or the R-TONE EDIT button. Next, select the menu topic COMMON and finally STRUCTURE.

```
X-83 U: Piano 3          Structure-Window
 Str 81    Left-Key C2   Right-Key C7
```
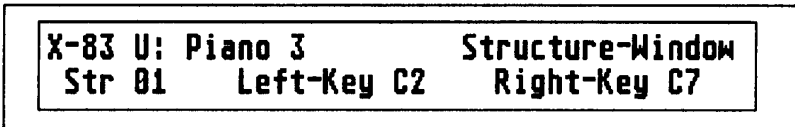
Use the Left Key/Right Key buttons to select the lowest/highest sounding note respectively. As usual, use the INCREMENT/DECREMENT buttons or the joystick to set the parameters.

IMPORTANT! Again, save all edits before leaving a multi–patch to set or change Key Windows for Tones in other Patches.

7.0 The new PCM Loop waveforms

There are 10 new PCM Loop waveforms available. This is possible by combining already existing PCM waveforms in different ways, just as Roland did with their standard PCM Loop waveforms. You can access them via the PCM waveform parameter, values 100 through 110.

7.1 The new output modes

In addition to the standard four output modes you now have four more at your disposal for a total of eight different output modes. The following figure will illustrate the new modes:
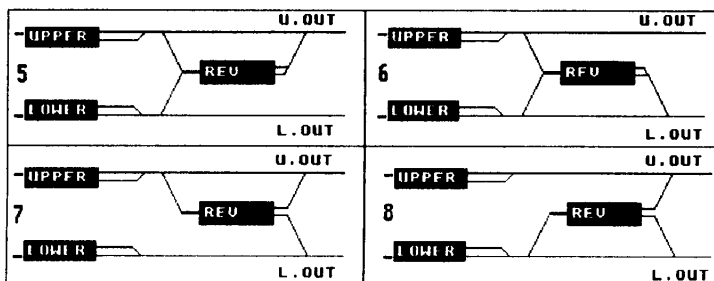
These new output modes can be selected in the Patch Edit menu by recalling values 5 through 8.

8.0 Important: Batteries

A lithium battery is used for backup of the sounds in our memory expansion. It should last approximately 5 years. However, due to storage at the manufacturer or dealer the true lifetime of your battery may be

shorter. If the battery should be replaced, the following message will appear in the D–50 display:

```
┌─────────────────────────────────────────────┐
│  ┌──────────────────────────────────────┐   │
│  │  Check Expansion Battery and Code    │   │
│  │                                      │   │
│  └──────────────────────────────────────┘   │
└─────────────────────────────────────────────┘
```

In this case please contact your dealer or distributor for replacement of the battery.

IMPORTANT: NEVER UNPLUG THE BATTERY WITHOUT REASON!! IT WILL ERASE ALL ONBOARD SOUNDS

Appendix 1:   MIDI transmitted data

Appendix 2:   MIDI received data

Appendix 3:   Patch memory data

Appendix 4:   Common memory data

Appendix 5:   Partial memory data

Appendix 1 MIDI transmitted Data for Second Channel

STATUS SECOND THIRD DESCRIPTION

1001	nnnn	0kkk	kkkk	0000	0000	Note OFF
1001	nnnn	0kkk	kkkk	0vvv	vvvv	Note ON
1011	nnnn	0000	0001	0vvv	vvvv	Modulation depth
1011	nnnn	0000	0111	0vvv	vvvv	Main Volume
1011	nnnn	000c	cccc	0vvv	vvvv	External Control
1011	nnnn	0100	0000	0000	0000	Hold 1 OFF
1011	nnnn	0100	0000	0111	1111	Hold 1 ON
1011	nnnn	0100	0001	0000	0000	Portamento OFF
1011	nnnn	0100	0001	0111	1111	Portamento ON
1011	nnnn	0sss	ssss	0000	0000	Pedal Switch OFF
1011	nnnn	0sss	ssss	0111	1111	Pedal Switch ON
1101	nnnn	0vvv	vvvv			Channel After Touch
1110	nnnn	0vvv	vvvv	0vvv	vvvv	Pitch Bend Change

nnnn nnnn = Second Channel

Appendix 2 Recognized Data for each Channel in Multi Mode

1000	nnnn	0kkk	kkkk	0vvv	vvvv	Note OFF vel. ignored
1001	nnnn	0kkk	kkkk	0000	0000	Note OFF
1001	nnnn	0kkk	kkkk	0vvv	vvvv	Note ON
1011	nnnn	0000	0111	0vvv	vvvv	Tone Volume
1011	nnnn	0100	0000	00vv	vvvv	Hold 1 OFF
1011	nnnn	0100	0000	01vv	vvvv	Hold 2 ON
1100	nnnn	0vvv	vvvv			Multi Mode Change
1110	nnnn	0vvv	vvvv	0vvv	vvvv	Pitch Bend Change

The rest of the Parameters are allways recognized from Main Channel

Appendix 3 PATCH MEMORY AREA

Offset	Funktion	Value	Remark
0	Patch Name 1		
1	Patch Name 2		
2	Patch Name 3		
3	Patch Name 4		
4	Patch Name 5		
5	Patch Name 6		
6	Patch Name 7		
7	Patch Name 8		
8	Patch Name 9		
9	Patch Name 10		
10	Patch Name 11		
11	Patch Name 12		
12	Patch Name 13		
13	Patch Name 14		
14	Patch Name 15		
15	Patch Name 16		
16	Patch Name 17		
17	Patch Name 18		
18	Key Mode		
19	Split Point		
20	Portamento Mode		
21	Hold Mode		
22	Upper Tone Key Shift		
23	Lower Tone Key Shift		
24	Upper Tone Fine Tune		
25	Lower Tone Fine Tune		
26	Bender Range		
27	After touch Bender Range		
28	Portamento Time		
29	Output Mode		
30	Reverb Type		

Offset	Funktion	Value	Remark
31	Reverb Balance		
32	Total Volume		
33	Total Balance		
34	Chase Mode		
35	Chase Level		
36	Chase Time		
37	MIDI Transmit Channel		
38	MIDI Separate Rec Channel		
39	MIDI Transmit PRG Change	OFF, 1 – 125	
40	Second MIDI Channel	OFF, 1 – 16	
41	(for Extension)		
42	(for Extension)		
43	(for Extension)		
44	(for Extension)		
45	(for Extension)		
46	(for Extension)		
47	(for Extension)		
48	Multi MIDI Channel 1	OFF , 1 – 16	
49	Multi MIDI Channel 2	''	
50	Multi MIDI Channel 3	''	
51	Multi MIDI Channel 4	''	
52	Multi MIDI Channel 5	''	
53	Multi MIDI Channel 6	''	
54	Multi MIDI Channel 7	''	
55	Multi MIDI CHannel 8	''	
56	Multi MIDI TONE 1	U 11 – L 88	
57	Multi MIDI TONE 2	''	
58	Multi MIDI TONE 3	''	
59	Multi MIDI TONE 4	''	
60	Multi MIDI TONE 5	''	
61	Multi MIDI TONE 6	''	
62	Multi MIDI TONE 7	''	
63	Multi MIDI TONE 8	''	

Appendix 4 LOWER/UPPER COMMON AREA

Offset	Funktion	Value	Remark
0	Tone Name 1		Multi Timbral
1	Tone Name 2		Multi Timbral
2	Tone Name 3		Multi Timbral
3	Tone Name 4		Multi Timbral
4	Tone Name 5		Multi Timbral
5	Tone Name 6		Multi Timbral
6	Tone Name 7		Multi Timbral
7	Tone Name 8		Multi Timbral
8	Tone Name 9		Multi Timbral
9	Tone Name 10		Multi Timbral
10	Structure No.		Multi Timbral
11	P–ENV Velocity Range		Multi Timbral
12	P–ENV Time Keyfollow		Multi Timbral
13	P–ENV Time 1		Multi Timbral
14	P–ENV Time 2		Multi Timbral
15	P–ENV Time 3		Multi Timbral
16	P–ENV Time 4		Multi Timbral
17	P_ENV Level 1		Multi Timbral
18	P_ENV Level 2		Multi Timbral
19	P_ENV Level 3		Multi Timbral
20	P_ENV Sustain Level		Multi Timbral
21	P_ENV End Level		Multi Timbral
22	P–Mod LFO Depth		Global Upper / Lower
23	P–Mod Lever		Global Upper / Lower
24	P_Mod After touch		Global Upper / Lower
25	LFO–1 Wave Form		Global Upper / Lower
26	LFO–1 Rate		Global Upper / Lower
27	LFO–1 Delay Time		Global Upper / Lower
28	LFO–1 Sync		Global Upper / Lower
29	LFO–2 Wave Form		Global Upper / Lower
30	LFO–2 Rate		Global Upper / Lower
31	LFO–2 Delay Time		Global Upper / Lower

Offset	Funktion	Value	Remark
32	LFO–2 Sync		Global Upper / Lower
33	LFO–3 Wave Form		Global Upper / Lower
34	LFO–3 Rate		Global Upper / Lower
35	LFO–3 Delay Time		Global Upper / Lower
36	LFO–3 Sync		Global Upper / Lower
37	Low EQ Frequency		Global Upper / Lower
38	Low EQ Gain		Global Upper / Lower
39	High EQ Frequency		Global Upper / Lower
40	High EQ Gain		Global Upper / Lower
41	High EQ Q		Global Upper / Lower
42	Chorus Type		Global Upper / Lower
43	Chorus Rate		Global Upper / Lower
44	Chorus Depth		Global Upper / Lower
45	Chorus Balance		Global Upper / Lower
46	Partial Mute		Global Upper / Lower
47	Partial Balance		Uneffektive in Multi
48	Lower Key Window	C1 – C8	Works only in Multi
49	Upper Key Window	C8 – C1	Works only in Multi
50	MULTI MODE Volume M1,M5	100 – 1	Works only in Multi
51	MULTI MODE Volume M2,M6	100 – 1	Works only in Multi
52	MULTI MODE Volume M3,M7	100 – 1	Works only in Multi
53	MULTI MODE Volume M4,M8	100 – 1	Works only in Multi
54	MULTI MODE Panpot M1,M5	L4–U4	Works only in Multi
55	MULTI MODE Panpot M2,M6	L4–U4	Works only in Multi
56	MULTI MODE Panpot M3.M7	L4–U4	Works only in Multi
57	MULTI MODE Panpot M4,M8	L4–U4	Works only in Multi
58	Extension (for future)		
59	Extension (for future)		
60	Extension (for future)		
61	Extension (for future)		
62	Extension (for future)		
63	Extension (for future)		

Appendix 5 PARTIAL MEMORY AREA

Offset	Funktion	Value	Remark
0	WG Pitch Coarse		Multi Timbral
1	WG Pitch Fine		Multi Timbral
2	WG Pitch Keyfollow		Multi Timbral
3	WG Mod LFO Mode		Multi Timbral
4	WG Mod P-ENV Mode		Multi Timbral
5	WG Mod Bend Mode		Multi Timbral
6	WG Wave Form		Multi Timbral
7	WG PCM Wave No.		Multi Timbral
8	WG Pulse Width		Multi Timbral
9	WG PW Velocity Range		Multi Timbral
10	WG PW LFO Select		Global Upper / Lower
11	WG PW LFO Depth		Global Upper / Lower
12	WG PW After touch Range		Global Upper / Lower
13	TVF Cutoff Frequency		Multi Timbral
14	TVF Resonance		Multi Timbral
15	TVF Keyfollow		Multi Timbral
16	TVF Bias Point/Dir		Multi Timbral
17	TVF Bias Level		Multi Timbral
18	TVF ENV Depth		Multi Timbral
19	TVF ENV Velocity Range		Multi Timbral
20	TVF ENV Depth Keyfollow		Multi Timbral
21	TVF ENV Time Keyfollow		Multi Timbral
22	TVF ENV Time 1		Multi Timbral
23	TVF ENV Time 2		Multi Timbral
24	TVF ENV Time 3		Multi Timbral
25	TVF ENV Time 4		Multi Timbral
26	TVF ENV Time 5		Multi Timbral
27	TVF ENV Level 1		Multi Timbral
28	TVF ENV Level 2		Multi Timbral
29	TVF ENV Level 3		Multi Timbral
30	TVF ENV Sustain Level		Multi Timbral
31	TVF ENV End Level		Multi Timbral

Offset	Funktion	Value	Remark
32	TVF MOD LFO Select		Global Upper / Lower
33	TVF MOD LFO Depth		Global Upper / Lower
34	TVF MOD After touch Range		Global Upper / Lower
35	TVA Level		Multi Timbral
36	TVA Velocity Range		Multi Timbral
37	TVA Bias Point		Multi Timbral
38	TVA Bias Level		Multi Timbral
39	TVA ENV Time 1		Multi Timbral
40	TVA ENV Time 2		Multi Timbral
41	TVA ENV Time 3		Multi Timbral
42	TVA ENV Time 4		Multi Timbral
43	TVA ENV Time 5		Multi Timbral
44	TVA ENV Level 1		Multi Timbral
45	TVA ENV Level 2		Multi Timbral
46	TVA ENV Level 3		Multi Timbral
47	TVA ENV Sustain Level		Multi Timbral
48	TVA ENV End Level		Multi Timbral
49	TVA ENV Velocity Follow		Multi Timbral
50	TVA ENV Time Keyfollow		Multi Timbral
51	TVA Mod LFO Select		Global Upper / Lower
52	TVA Mod LFO Depth		Global Upper / Lower
53	TVF Mod After touch		Global Upper / Lower
54	(for Extension)		
55	(for Extension)		
56	(for Extension)		
57	(for Extension)		
58	(for Extension)		
59	(for Extension)		
60	(for Extension)		
61	(for Extension)		
62	(for Extension)		
63	(for Extension)		

SUPPLEMENT FOR D50 / D550 EXPANSION

If you have a D-550 you should please consider the following:

Installing: Set the D50 on it's top panel and unscrew the
8 screws at the border of the bottom panel, the
5 screws at the border of the back panel, and the
6 screws at the border of the side panels.
Turn it around and pull the panel off the back.
Then continue at POINT (e) of the regular manual.
the washer is not needed for the D-550.

After installation you should reset your machine as follows.
* D-50 : While holding "DATA TRANSFER" switch machine on.
  D-550 : While holding "ENTER" switch machine on.

With the exception of the second MIDI SEND channel, all the
parameters are the same as in the D-50. You can select them by
pushing the "EDIT" button and then calling up "MULTI" in the
menu. You can now call up all the new parameters as usual.

For D-50 / D-550 :

The menu PANPOT determines the assignment to the right or left
effect channel. With TUNE you can determine the pitch of each
Multi-Tone.

Bn Oa kk   Panpot via MIDI.
Bn Ob kk   Expression via MIDI.

How the D-50 / D-550 should react to MIDI Program Changes can
be determined as Follows :

OFF   No Program Change accepted.
ON   Program Change switches patches on the main channel.
MULTI Program Change switches tones in Multi Patches.
BOTH Program Change switches patches in Multi Tones.

Should you have any further questions please contact your
MUSITRONICS dealer or your national MUSITRONICS distributor.