Roland

MIDI SOUND MODULE

SUPER QUARTET

MKS-7

Owner's Manual



Radio and television interference

"Warning – This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception."

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such an interference in a residential installation.

However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable.

These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

Bescheinigung des Herstellers /Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND SUPER QUARTET MKS-7

(Gerät, Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046 / 1984

(Amtsblattverfügung)

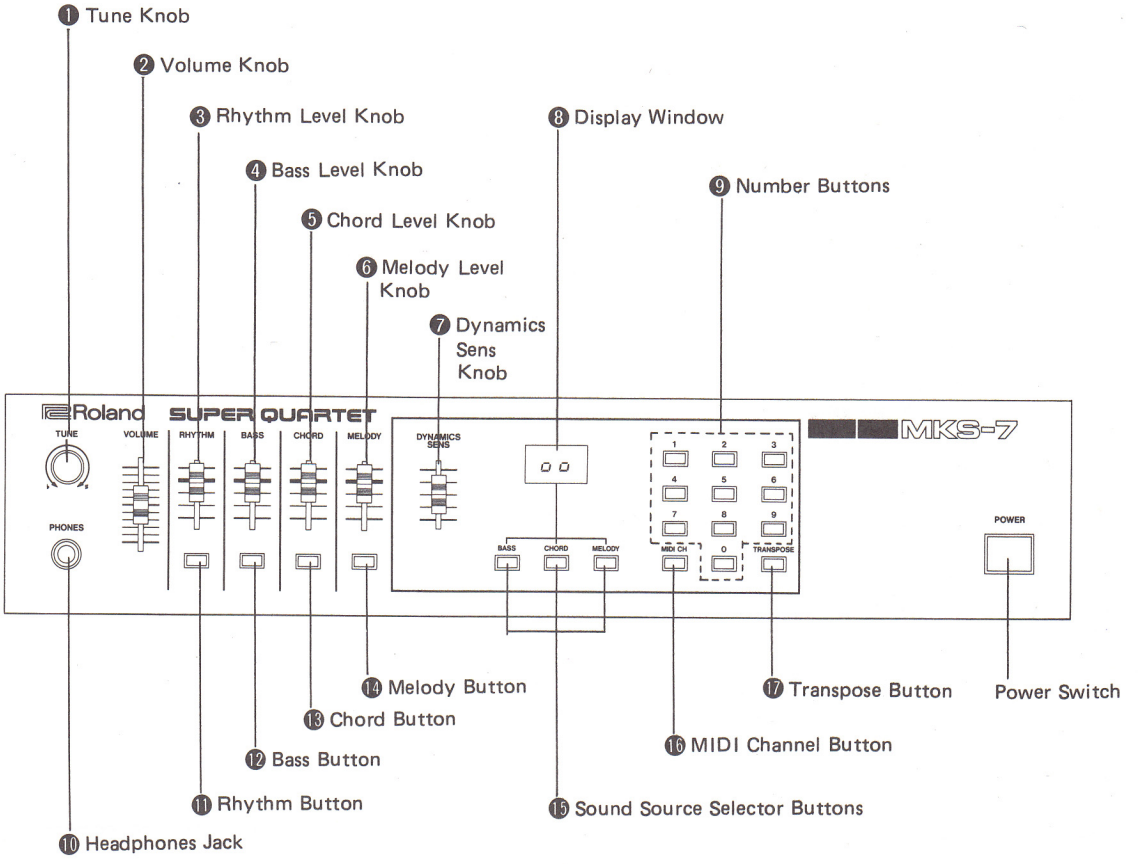
funk-entstört ist.

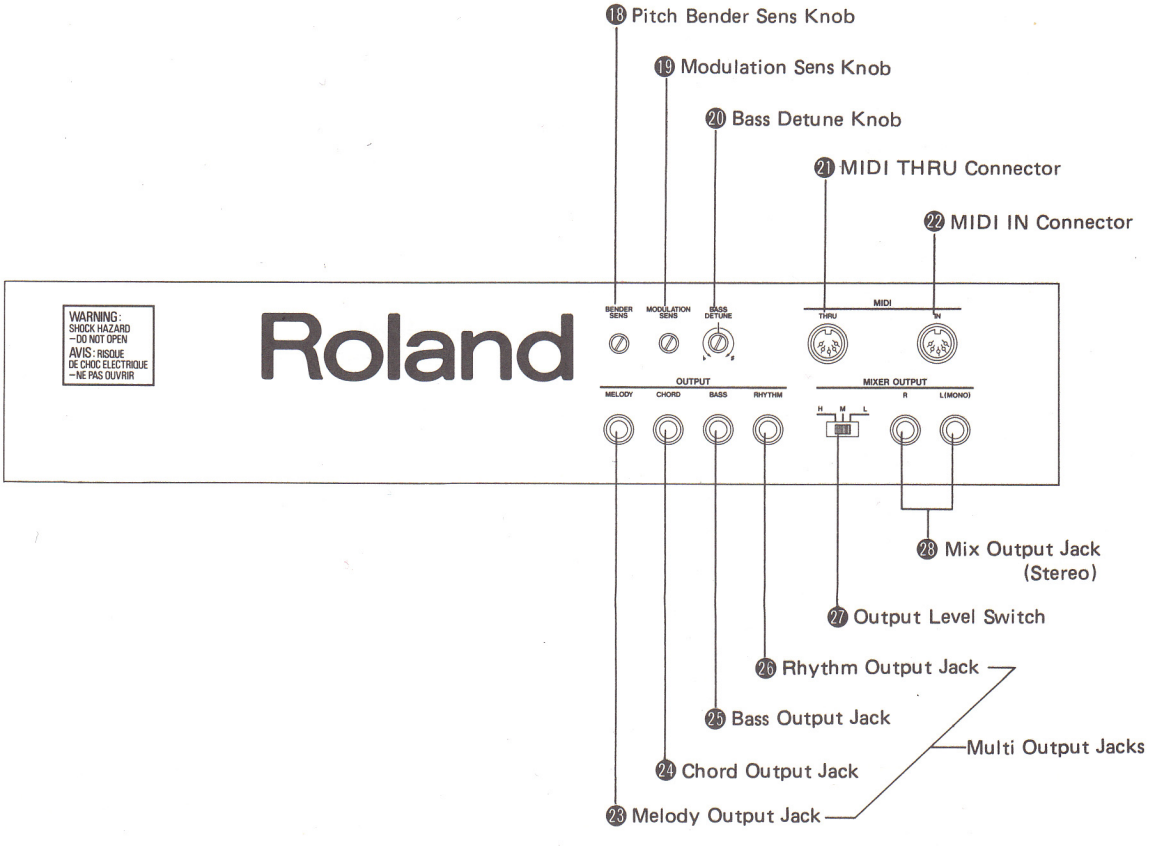
Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka / Japan

Name des Herstellers/Importeurs

1 PANEL DESCRIPTION





IMPORTANT NOTES

Power Supply

- The appropriate voltage to be used is shown on the name plate of the rear panel. Be sure that it meets the line voltage system in your country.
- Do not use the same socket that is used for any noise generating device, such as a motor, or variable lighting system.
- When setting up the MKS-7, be sure that all the units are turned off.
- This unit might not work properly if turned on immediately after turned off, or if the power cable is plugged in with the unit turned on. If this happens, simply turn the unit off, and turn it on again after a few seconds.
- This unit might get hot while operating, but there is nothing to worry about it.

Cleaning

- Use a soft cloth and clean only with a mild detergent.
- Do not use solvent such as paint thinner.

Location

- Operating the MKS-7 near a neon or fluorescent lamp may cause noise interference. If so, change the angle or position of the MKS-7.
- Avoid using the MKS-7 in extreme heat or humidity or where it may be affected by dust.

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Please read the separate volume "MIDI" before this manual.

OUTLINE

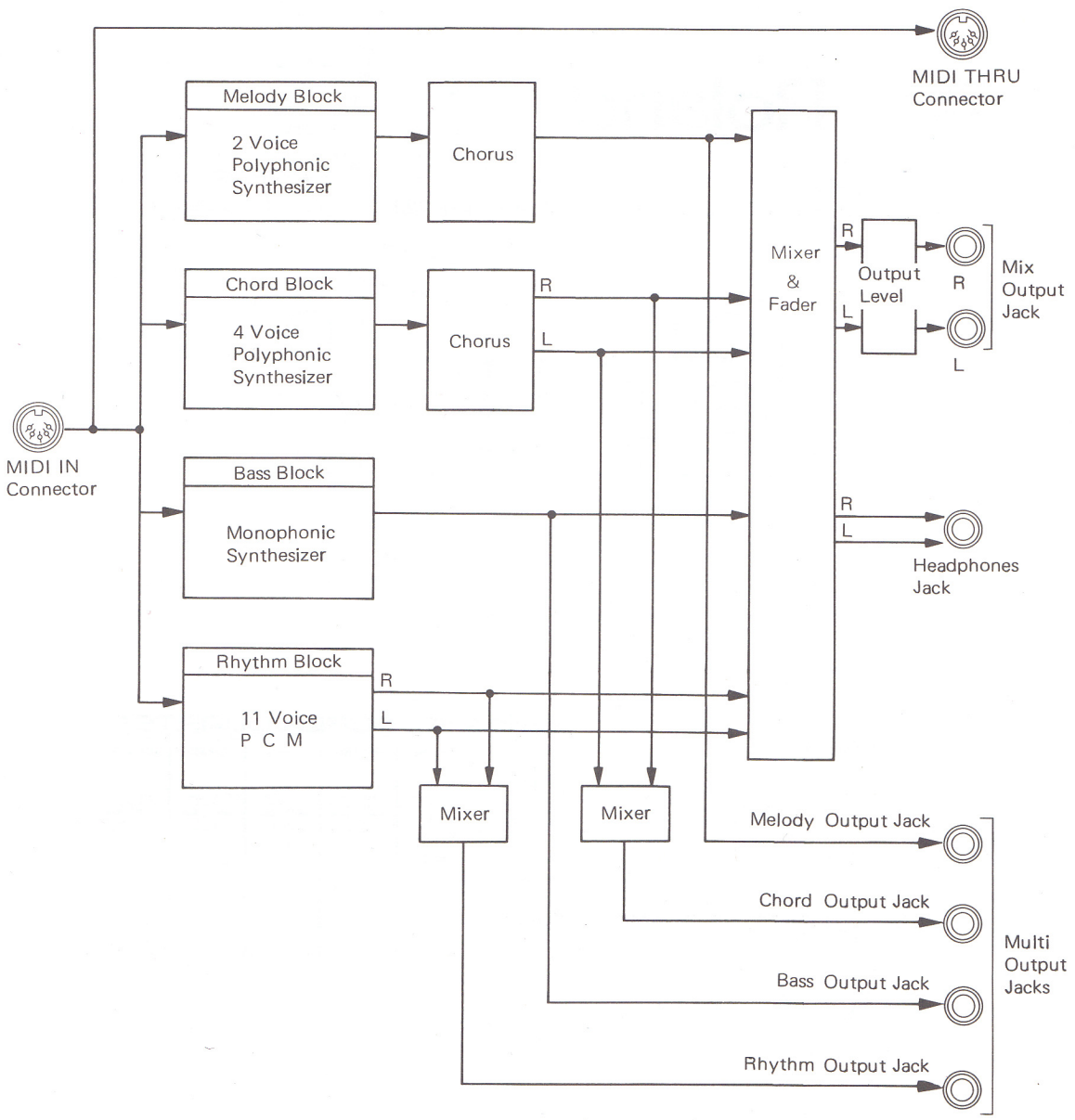
The Roland Super Quartet MKS-7 is a versatile sound module designed for MIDI devices.

The MKS-7 consists of 4 Blocks, Melody, Chord, Bass and Rhythm. Each block can operate in a different MIDI channel.

The Melody block is a 2 voice polyphonic synthesizer, the Chord is 4 voices, the Bass is monophonic, and the Rhythm, which is P C M sound module, is 11 voices.

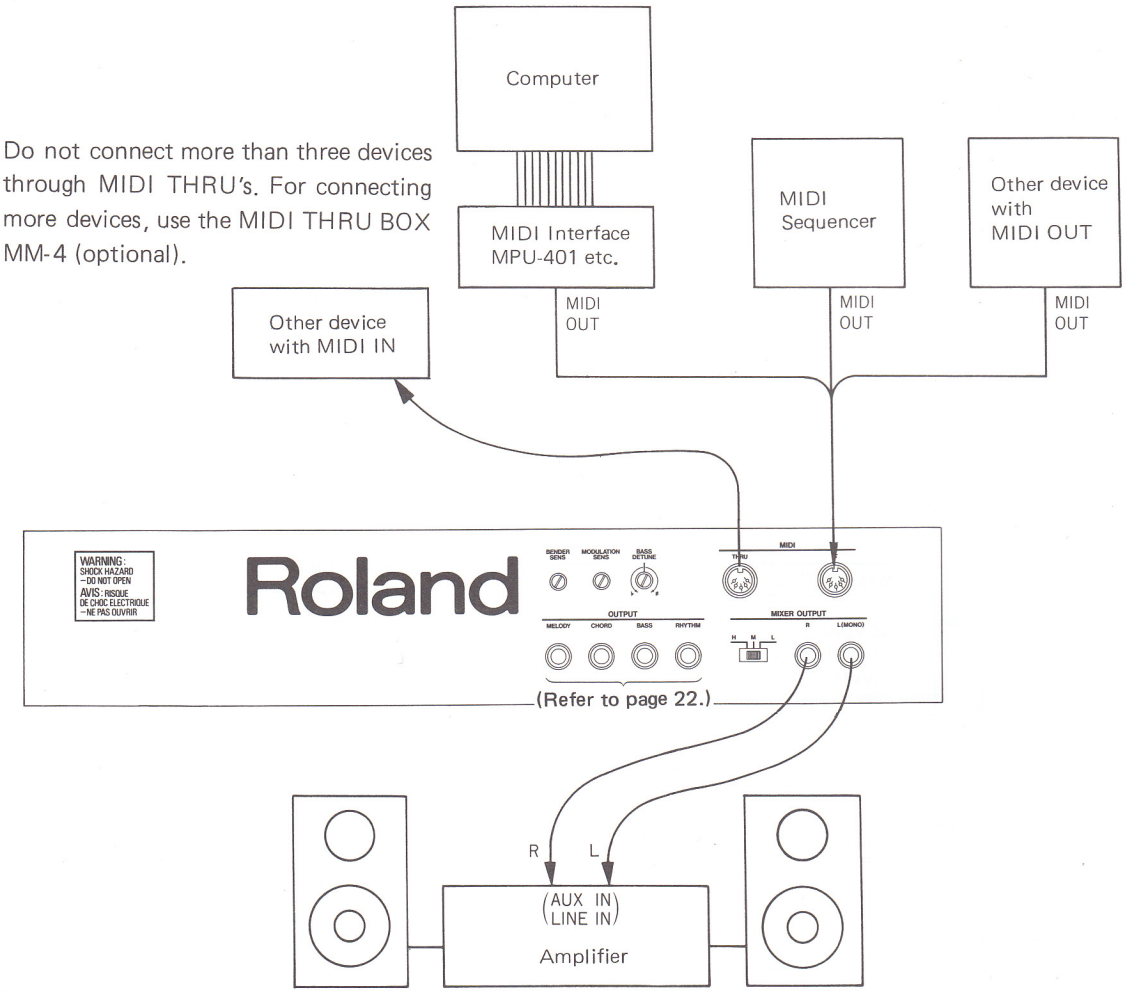
The MKS-7 has 100 different preset tone colors for Melody and Chord Blocks and another 20 for Bass. You can select any of these just by flick of a switch.

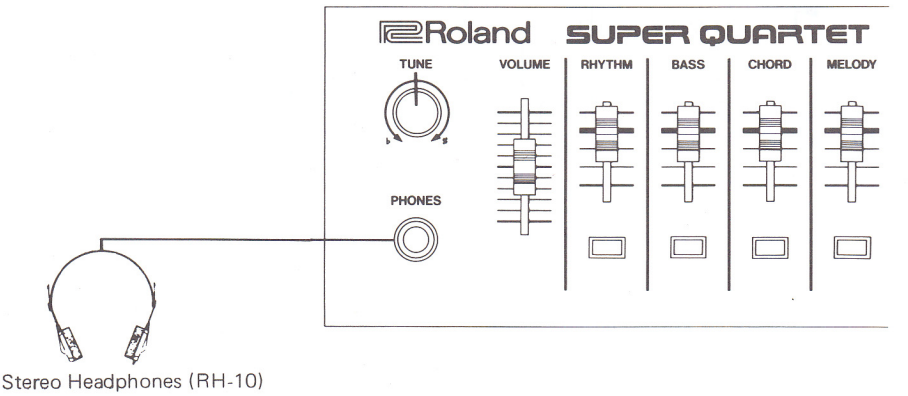
System Setup



2 CONNECTIONS

* Do not connect more than three devices through MIDI THRU's. For connecting more devices, use the MIDI THRU BOX MM-4 (optional).





Stereo Headphones (RH-10)

3 OPERATION

1. MIDI Channel Setting

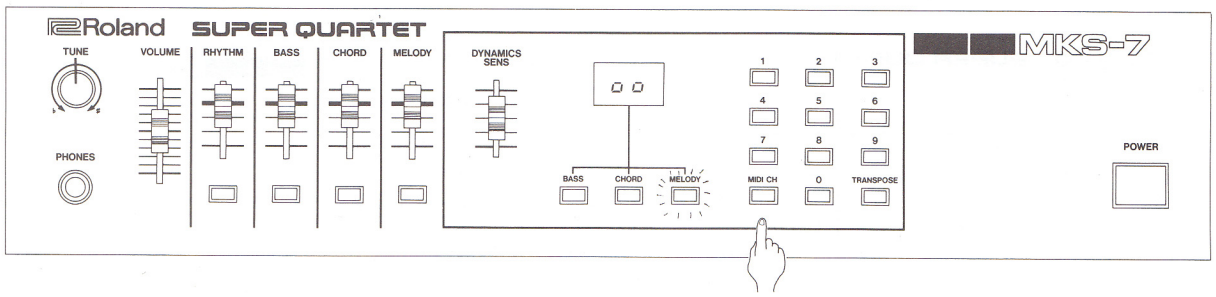
Each block can select a MIDI Channel of 1 to 16. To operate the MKS-7, it is essential to match the channel number of each block to that of the MIDI signal coming in the MKS-7.

When the power is applied, the MKS-7 defaults to the MIDI Channel numbers as shown in the right table.

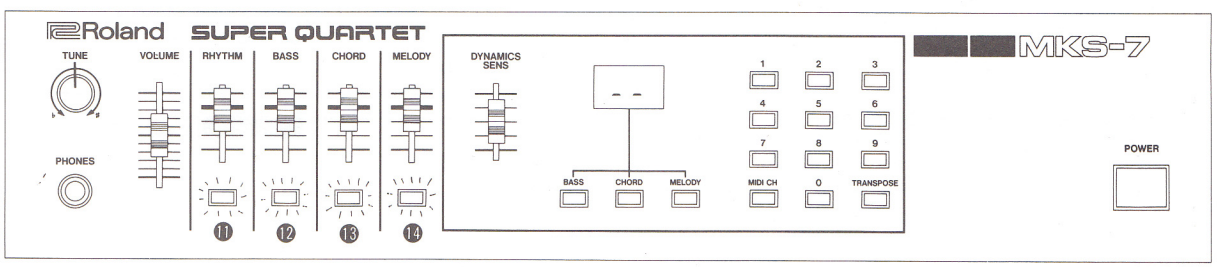
Block	MIDI Channel
Melody	1
Chord	3
Bass	2
Rhythm	10

Operation

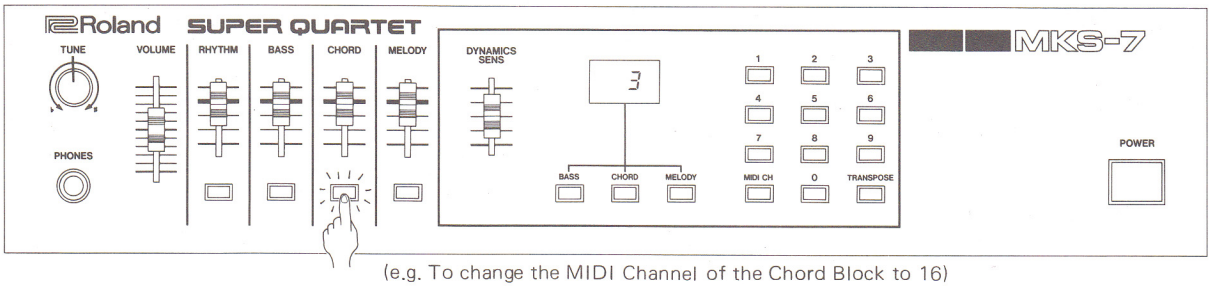
① Push the MIDI Channel Button ⑯.



The Display Window ⑧ shows [_ _], and the Rhythm Button ⑪, Bass Button ⑫, Chord Button ⑬, and the Melody Button ⑭ flash.



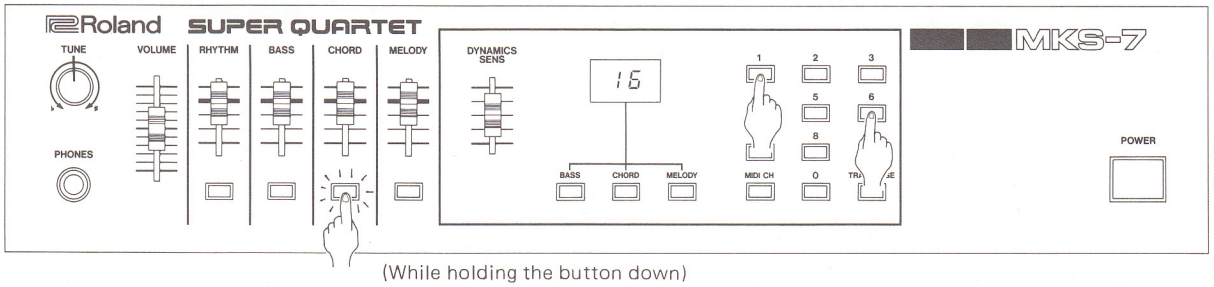
② Select the Block you like by pressing the corresponding button.



(e.g. To change the MIDI Channel of the Chord Block to 16)

The Display Window ❽ shows the current MIDI Channel number of the selected block.

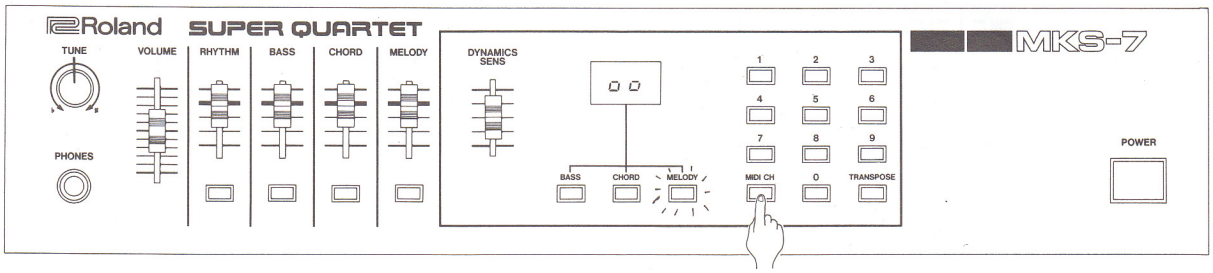
③ While still holding the corresponding Button down, set the MIDI Channel you want by using the Number Buttons ❾.



(While holding the button down)

The Display ❽ shows the MIDI Channel number you have set.

④ Press the MIDI Channel Button ⓰.



2. Tone Color Selection (1)

The MKS-7 has 100 different tone colors (00 to 99) for the Melody and Chord, and 20 (00 to 19) for the Bass. Any of these tone colors can be called easily by pushing buttons or externally with MIDI. (Refer to page 21.)

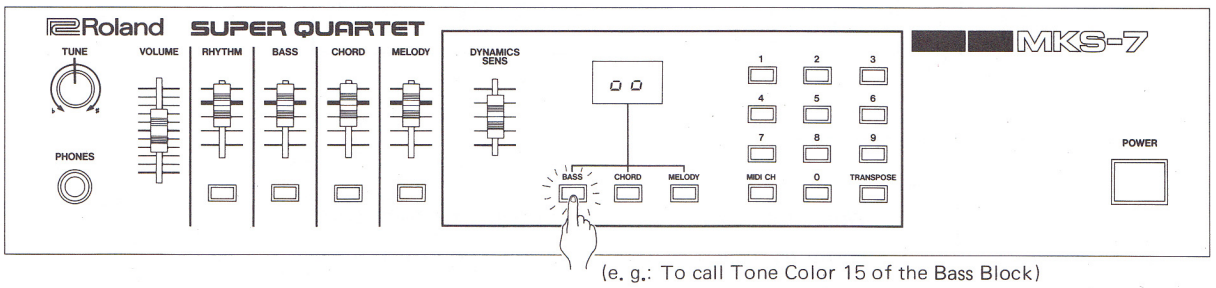
When power is applied, the MKS-7 defaults to the tone colors as shown in the right table.

Block	Tone Color Number
Melody	00
Chord	00
Bass	00

* The Melody and the Chord can take on a vibrato effect by using MIDI Control Change message (= Modulation message).

Operation

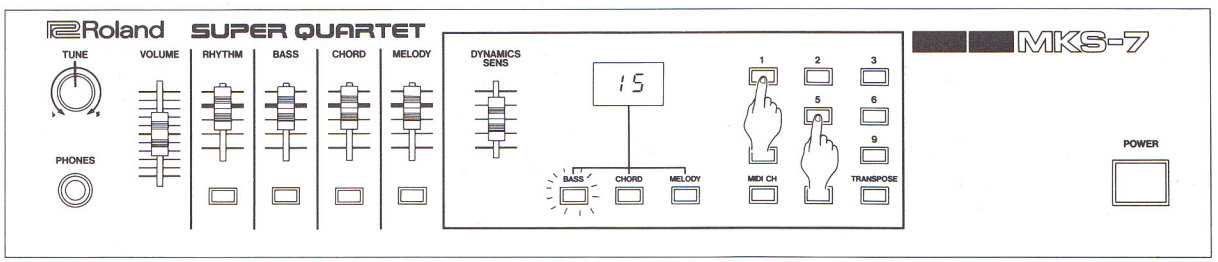
① Call the Block that contains the tone color you want, by pressing a Sound Source Selector Button ⓯ (Bass, Chord or Melody).



(e. g.: To call Tone Color 15 of the Bass Block)

The pressed button lights up, and the Display ❽ shows the current tone color number.

② Call the tone color you like by using the Number Buttons ❾.



The Display ❽ now shows the tone color number you have called.

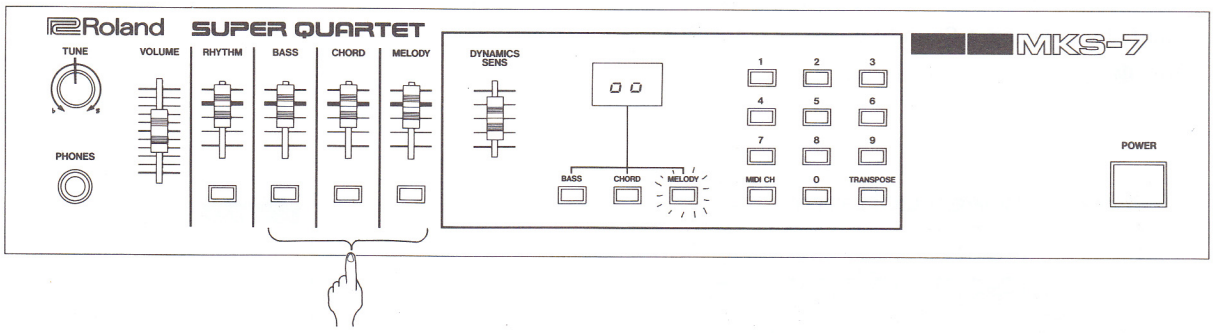
Sound Check

To listen to the tone color currently called in each Block, simply push the corresponding button: Rhythm Button ⓫, Bass Button ⓬, Chord Button ⓭ or Melody Button ⓮.

a. To listen to the tone color in the Melody, Chord or Bass Block.

Operation

① Press the relevant button of Bass ⓬, Chord ⓭ or Melody ⓮.



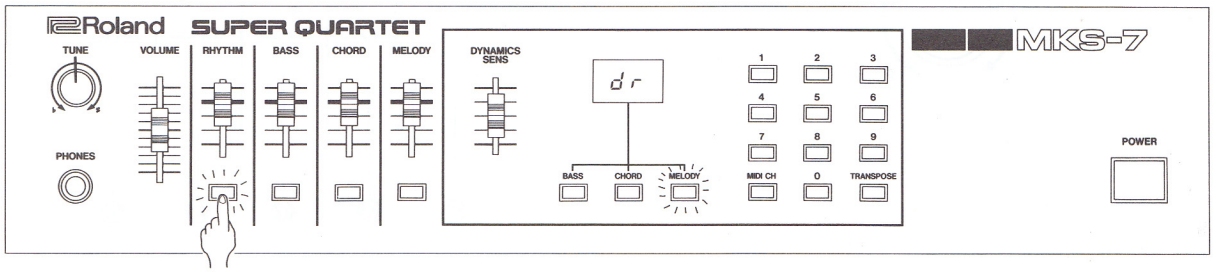
While the button is being pressed, the tone color currently called in that block will be heard in the pitch of A key.

* MIDI Program Change message has priority. That is, if program change message is received while a tone color is being selected on the panel, the tone color will inevitably change according to the program change message. To solve this, simply hold the Sound Source Selector Button ⓯ down through-out the tone color selecting operation.

b. To listen to the tone color in the Rhythm Block

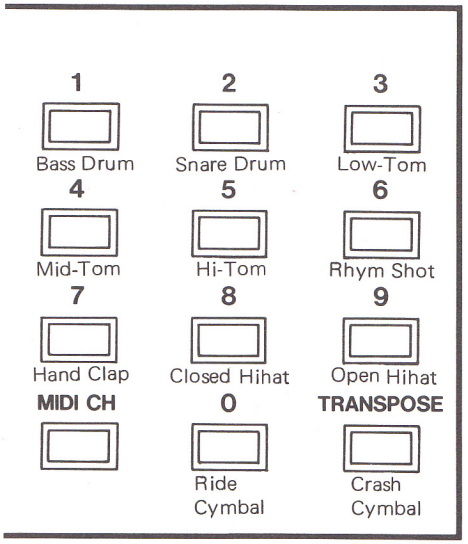
Operation

① Push the Rhythm Button ⓫ .



The Rhythm Button flashes, and the Display ❽ shows dr .

While the Display is showing dr , the Number Buttons ❾ and Transpose Button ⓱ serve as drum voice buttons as shown right.



② Hit the button which corresponds to the drum voice you want to listen to.

③ Press the Rhythm Button ⓫ .

The Display now returns to the tone color number.

* It is not possible to hear two voices at a time.

* Each of the Melody ⓫ , Bass ⓬ and Chord ⓭ Buttons usually serves as a Gate Indicator. That is, each button is lighted while sound is output, and stays dark while no sound is output. (It, however, does not light up while in the Hold mode.)

3. Tuning

The MKS-7 has the Bass Detune Knob ⓴ as well as a usual Tune Knob ❶.

a. Tune Knob ❶



Use this knob to tune the MKS-7 with other musical instrument. (This knob can simultaneously tune all the Blocks: Melody, Chord and Bass.)

* The Chord Block is set to 2 cent lower than the Melody, except when in the Whole mode (see page 19).

b. Base Detune Knob ⓴

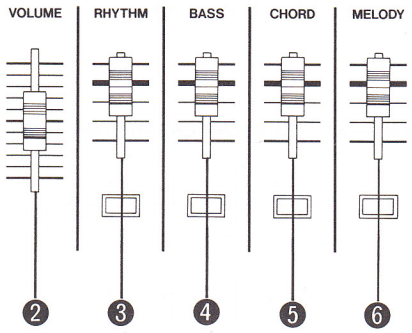


This knob can detune the pitch of the Bass Block by ±50 cent from the Chord and Melody.

* The pitch does not change while adjusting the Bass Detune Knob. First adjust the knob then play a key, and now the pitch of the sound is altered. You may need to repeat this procedure quite a few times to successfully complete tuning.

4. Level Setting

The MKS-7 has a separate level control for each Block of Melody, Chord, Bass and Rhythm enabling individual level setting.



a. Volume Knob ❷

This adjusts the overall volume of the MKS-7.

b. Rhythm Level Knob ❸

This adjusts the volume of Rhythm Block.

c. Bass Level Knob ❹

This adjusts the volume of Bass Block.

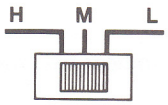
d. Chord Level Knob ❺

This adjusts the volume of Chord Block.

e. Melody Level Knob ❻

This adjusts the volume of Melody Block.

f. Output Level Switch ㉗



Select H (high), M (medium) or L (low) depending on the rated input level of the amplifier (or mixer) you use.

KEYBOARD AMP	M/H
AUDIO AMP	H
P.A. MIXER	L/M/H
GUITAR AMP	L/M
	etc.

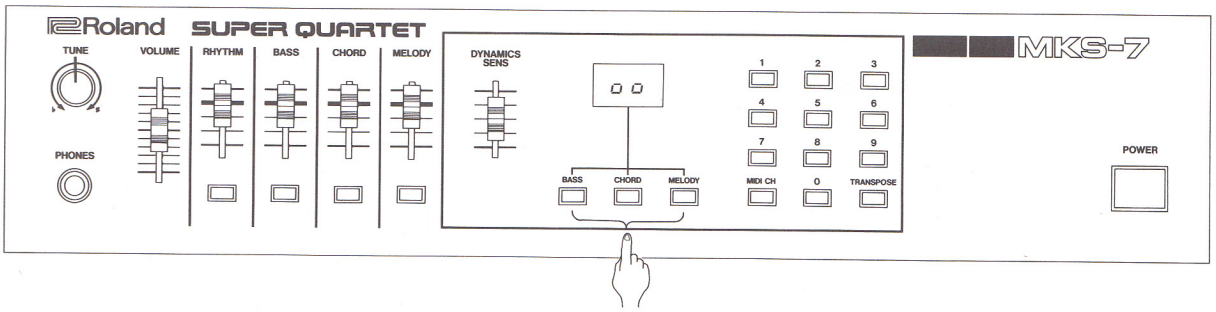
5. Setting the Dynamics Sensitivity

"Dynamics sensitivity" is the function that can alter the volume or tone color depending on how hard the key is attacked.
Each block of the Melody, Chord and Bass can be individually set the sensitivity of Dynamics effect.

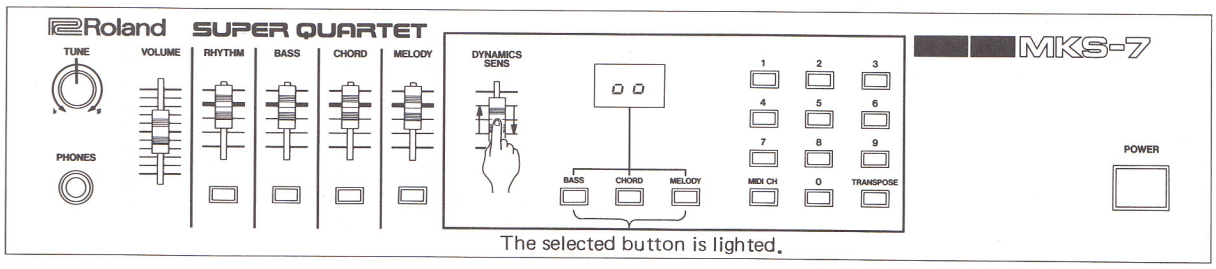
When the MKS-7 is turned on, the Dynamics sensitivity of each block is automatically set to a standard value.

Operation

① By pressing the Sound Source Selector Button ⓯, call the Block whose Dynamics sensitivity you want to change from the standard value.



② Set the Dynamics Sens Knob ❼ to your taste.
When the knob is moved even slightly, the previous setting will be deleted, and replaced with the current knob position.



The selected button is lighted.

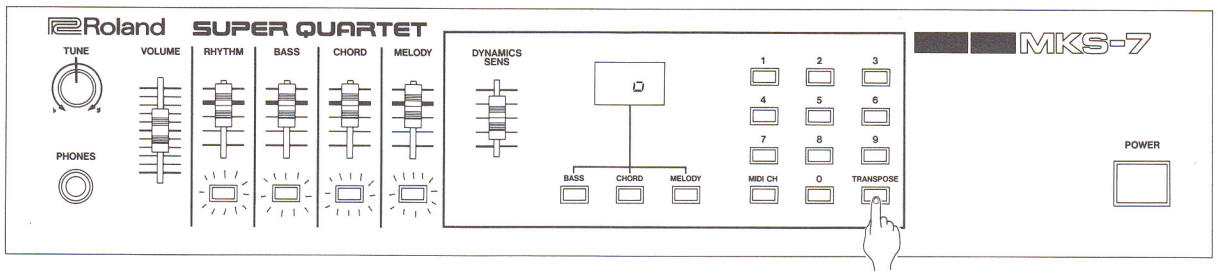
* Lowering the knob too low may decrease the volume.

6. Key Transpose

The MKS-7 features the Key Transpose function that allows transposition in semi-tone steps up to ±1 octave.

Operation

① Press the Transpose Button ⓱.



The Display ❽ shows the number that represents how many semi-tones are currently transposed from the C key.

② By using the Number Buttons ❾ and/or the MIDI Channel Button ⓰, enter a new number.

Transpose value 1 means a semi-tone transposition from the C key. To transpose to the key higher than C key, simply enter the appropriate number, but to transpose to lower than C, press the MIDI Channel Button first. For example, to transpose to the lower G, press the MIDI Channel Button ⓰, the Number Button 0, then 5.

③ Press the Transpose Button ⓱.

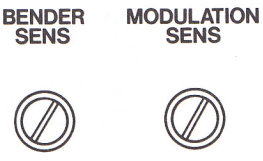
The Transpose function does not apply to the Rhythm Block.

Key Transpose

Display ❽	Transpose Value
12	+ 12
11	+ 11
10	+ 10
9	+ 9
8	+ 8
7	+ 7
6	+ 6
5	+ 5
4	+ 4
3	+ 3
2	+ 2
1	+ 1
0	0
1.	− 1
2.	− 2
3.	− 3
4.	− 4
5.	− 5
6.	− 6
7.	− 7
8.	− 8
9.	− 9
10.	− 10
11.	− 11
12.	− 12

7. Pitch Bender, Modulation Sensitivity

In the Melody and Chord Blocks, the sensitivity of the Pitch Bender and Modulation message which are sent with MIDI can be adjusted with the Pitch Bender, Modulation Sens Knob.



a. Pitch Bender Sens Knob ⑱

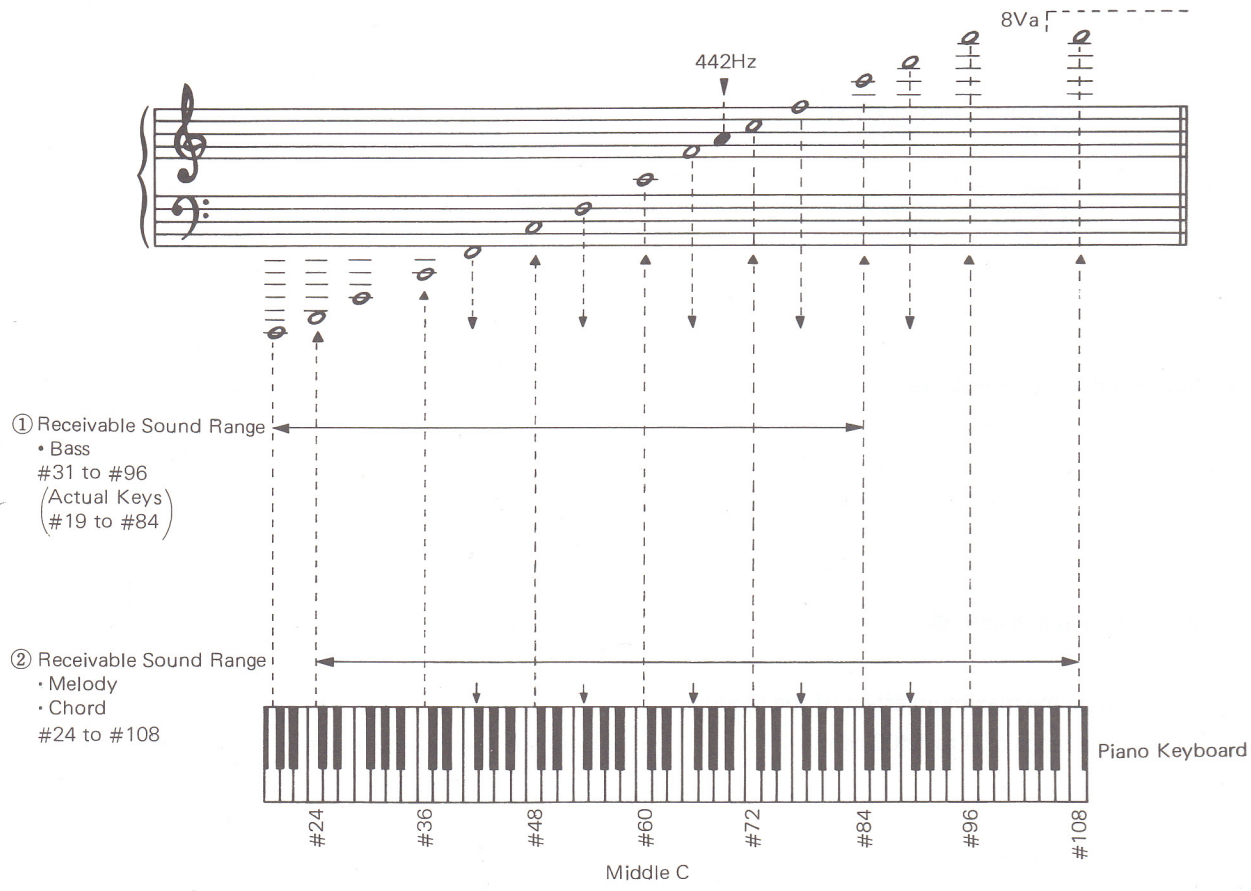
This knob can change the maximum effect of the Pitch Bender within the range of 0 to 1 octave.

b. Modulation Sens Knob ⑲

This can change the maximum effect of the Modulation within the range of 0 to ±400 cent.

8. Other Useful Information

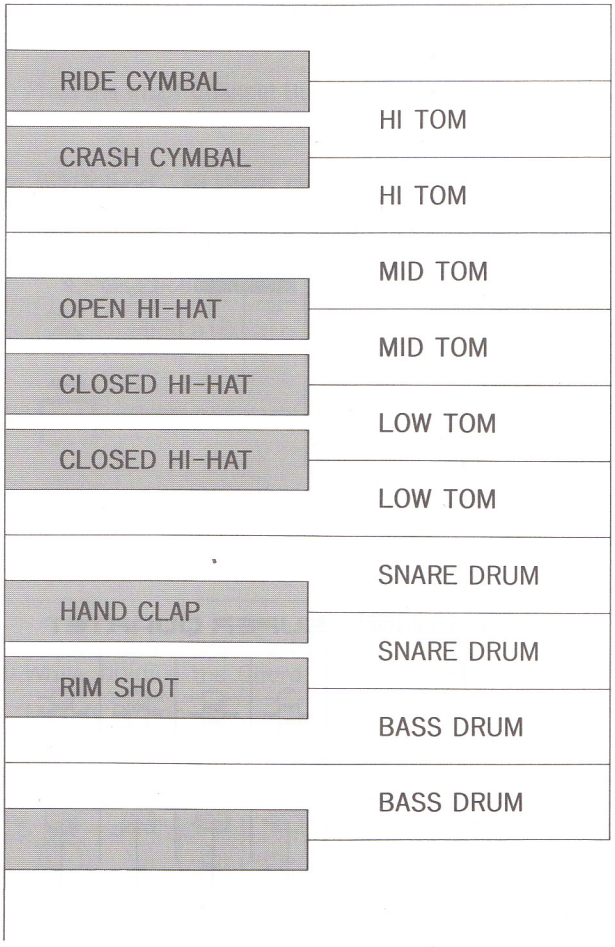
a. The sound range receivable with MIDI



Above picture shows the sound range (7 octaves) of Note On/Off message that can be received by the MKS-7. If the data sent exceeds this range, it will be automatically transposed up or down to fit in the range.

b. Rhythm and Note Number

The Rhythm Block of the MKS-7 operates by Note ON/OFF message. The relation between the keys and drum voices is shown below.



←NOTE#=48

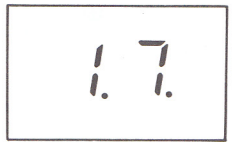
←NOTE#=36

NOTE#	DRUM VOICES
51	RIDE CYMBAL
50	HI TOM
49	CRASH CYMBAL
48	HI TOM
47	MID TOM
46	OPEN HI-HAT
45	MID TOM
44	CLOSED HI-HAT
43	LOW TOM
42	CLOSED HI-HAT
41	LOW TOM
40	SNARE DRUM
39	HAND CLAP
38	SNARE DRUM
37	RIM SHOT
36	BASS DRUM
35	BASS DRUM

c. The Display reaction at receiving Exclusive message

"Exclusive" is a kind of MIDI message. (Refer to the different volume "MIDI".) The MKS-7 uses this for editing the parameters of a tone color.

When the MKS-7 receives the Exclusive message, dots will be indicated in the Display ❽ as shown right.



4 APPLICATIONS

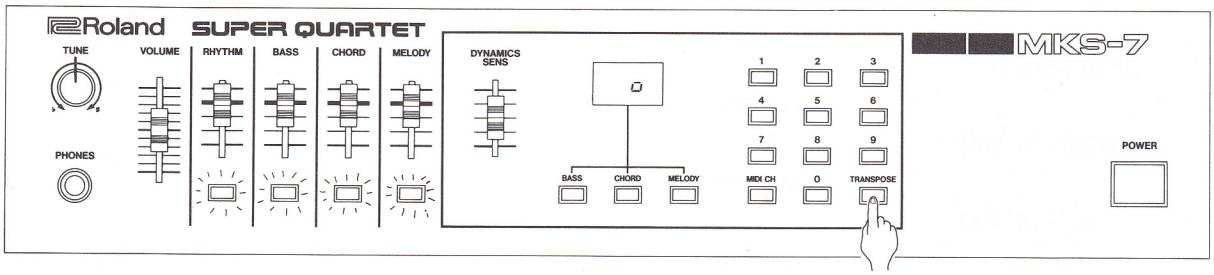
1. MIDI Functions

The MKS-7 can reject one or more than one of the following MIDI messages.

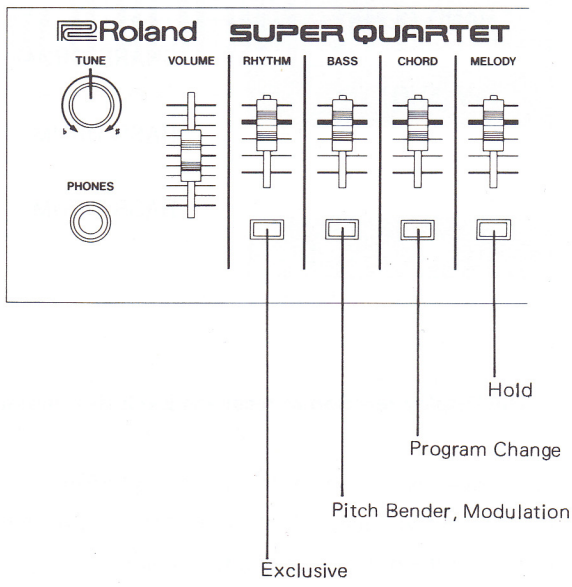
1 **Hold**
2 **Program Change** (Patch Selection message)
3 **Pitch Bender, Modulation**
4 **Exclusive** (used for editing the parameters of tone color)

Operation

① Push the Transpose Button ⑰.



The Rhythm Button ⑪, Bass Button ⑫, Chord Button ⑬ and Melody Button ⑭ will all light up. These four buttons now serve as On/Off switches of the above 4 MIDI messages as shown right. When the button is lighted, the corresponding message will be received.



② Push the button that corresponds to the MIDI message that you want the MKS-7 to ignore.

The pushed button goes out.

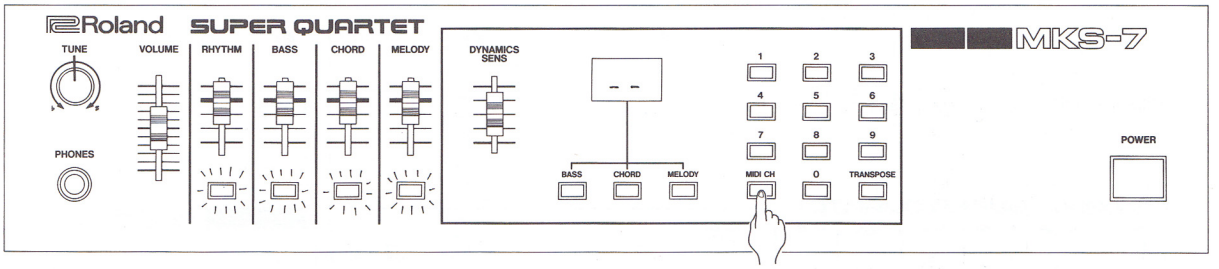
③ Push the Transpose Button ⑰.

2. Whole Mode

With the MKS-7 set to the Whole mode, the Melody and Chord Blocks are united and act as a six voice synthesizer. That is, the Chord Block becomes six voices, and there is no sound from the Melody Block. To turn the MKS-7 to the Whole mode, take the following operation.

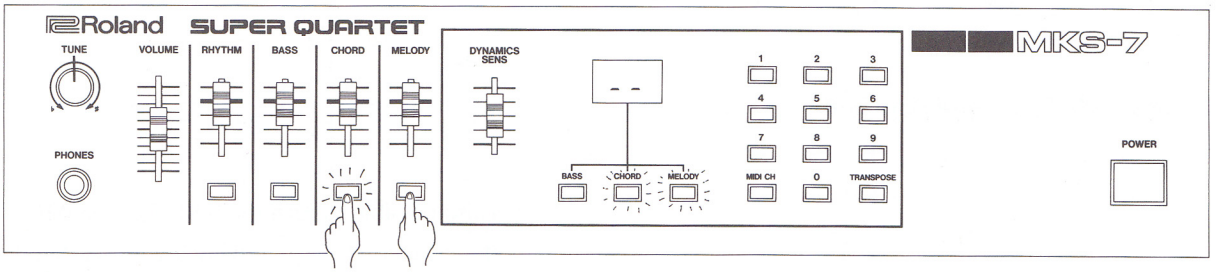
Operation

① Press the MIDI Channel Button ⑯.



The Display ⑧ shows [_ _] and the Rhythm Button ⑪, Bass Button ⑫, Chord Button ⑬ and Melody Button ⑭ flash.

② While holding the Chord Button ⑬, press the Melody Button ⑭.



(While holding this button down.)

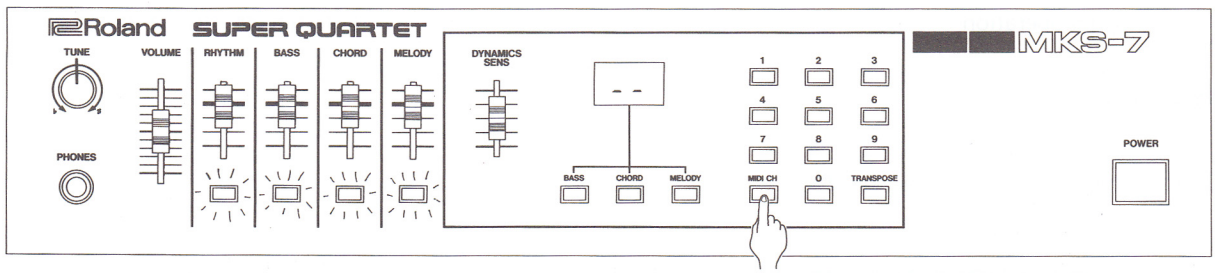
The both CHORD and MELODY of the Sound Selector Buttons ⑮ light, which shows that the MKS-7 is now in the Whole mode.

③ Press the MIDI Channel Button ⑯.

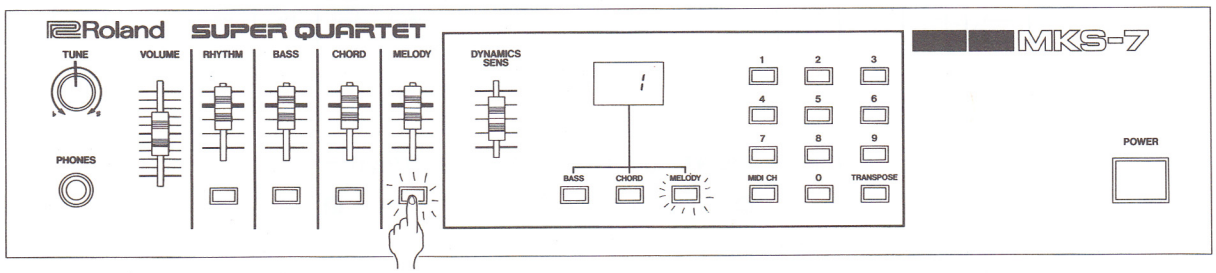
＜Cancelling the Whole Mode＞

Operation

① Press the MIDI Channel Button ⑯.



② Press the Melody Button ⑭.



The MELODY of the Sound Selector Button ⑮ lights up.

③ Press the MIDI Channel Button ⑯.

* It is also possible to turn the MKS-7 to the Whole mode or cancell it externally by using MIDI. (Refer to "MIDI Implimentation Chart".)

* The MIDI Channel set in the Chord Block will be used in the Whole mode. So, when you want to change the Channel number in the Whole mode, change that of the Chord Block.

3. Tone Color Selection (2)

"Program Change" is a MIDI message that can call a patch program stored in memory. The MKS-7 can receive Program Change numbers from 0 to 99 in the Melody and the Chord Blocks, and 0 to 19 in the Bass Block.

The reaction of the Display ❽ and the Program Change numbers are as shown in the table below.

Program Change	Display ❽	Program Change	Display ❽	Program Change	Display ❽	Program Change	Display ❽	Program Change	Display ❽
0	00	20	20	40	40	60	60	80	80
1	01	21	21	41	41	61	61	81	81
2	02	22	22	42	42	62	62	82	82
3	03	23	23	43	43	63	63	83	83
4	04	24	24	44	44	64	64	84	84
5	05	25	25	45	45	65	65	85	85
6	06	26	26	46	46	66	66	86	86
7	07	27	27	47	47	67	67	87	87
8	08	28	28	48	48	68	68	88	88
9	09	29	29	49	49	69	69	89	89
10	10	30	30	50	50	70	70	90	90
11	11	31	31	51	51	71	71	91	91
12	12	32	32	52	52	72	72	92	92
13	13	33	33	53	53	73	73	93	93
14	14	34	34	54	54	74	74	94	94
15	15	35	35	55	55	75	75	95	95
16	16	36	36	56	56	76	76	96	96
17	17	37	37	57	57	77	77	97	97
18	18	38	38	58	58	78	78	98	98
19	19	39	39	59	59	79	79	99	99

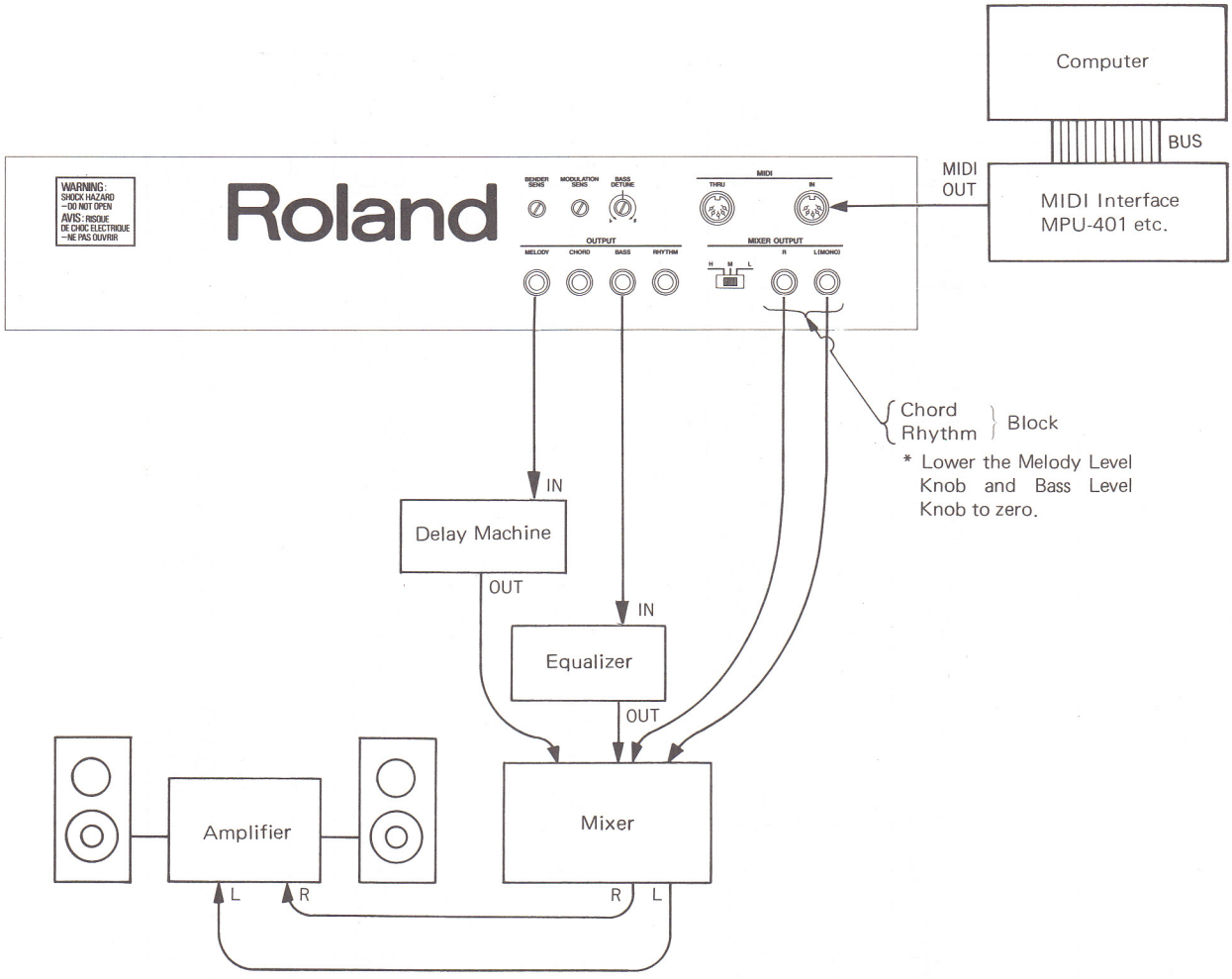
These apply to the Bass Block as well.

4. System Examples

a. Using the Multiple Outputs

The MKS-7 has a separate output jack (Multi Out) for each Block. The Multi Out Jack can be effectively used for attaining separate effect in each block.

(e.g.) Delay Machine to Melody Block, Equalizer to Bass



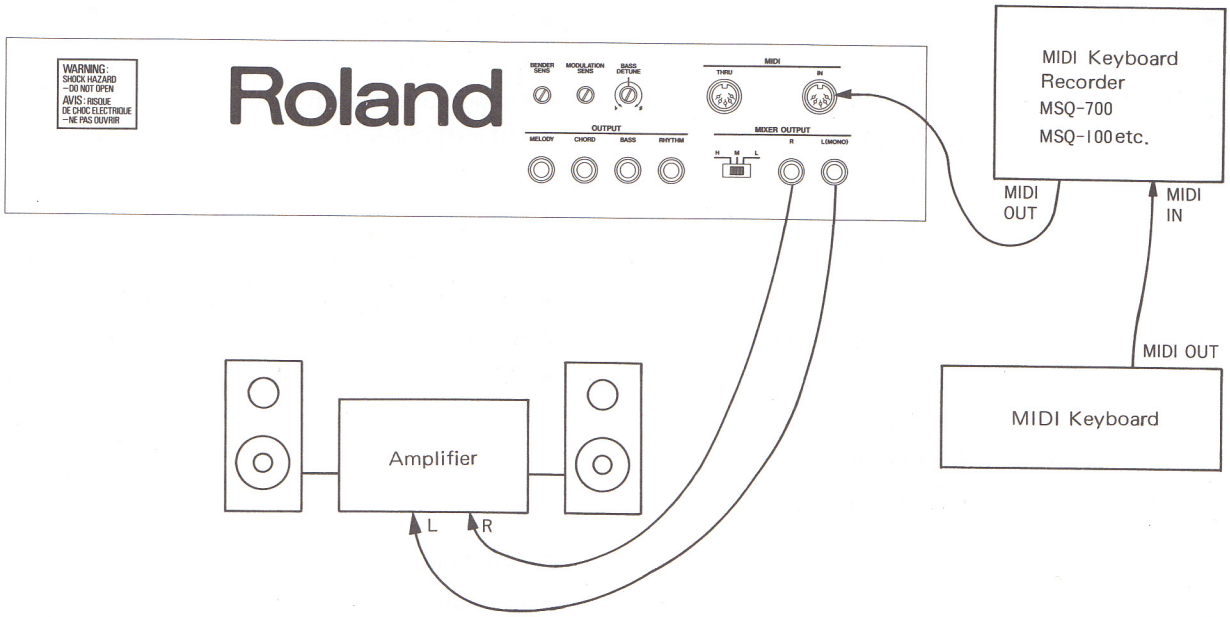
* The signal sent through the Multi Out Jack is not affected at all by the position of the Level Knob or Volume Knob, that is, a signal of a certain level is always sent out.

* Using the Multi Output does not affect the total output of the Mix Out. If you do not want to subtract the output of a certain block, lower the corresponding Level Knob to zero.

* The output from the Multi Output has a phase of exact inversion of the Mix Out.

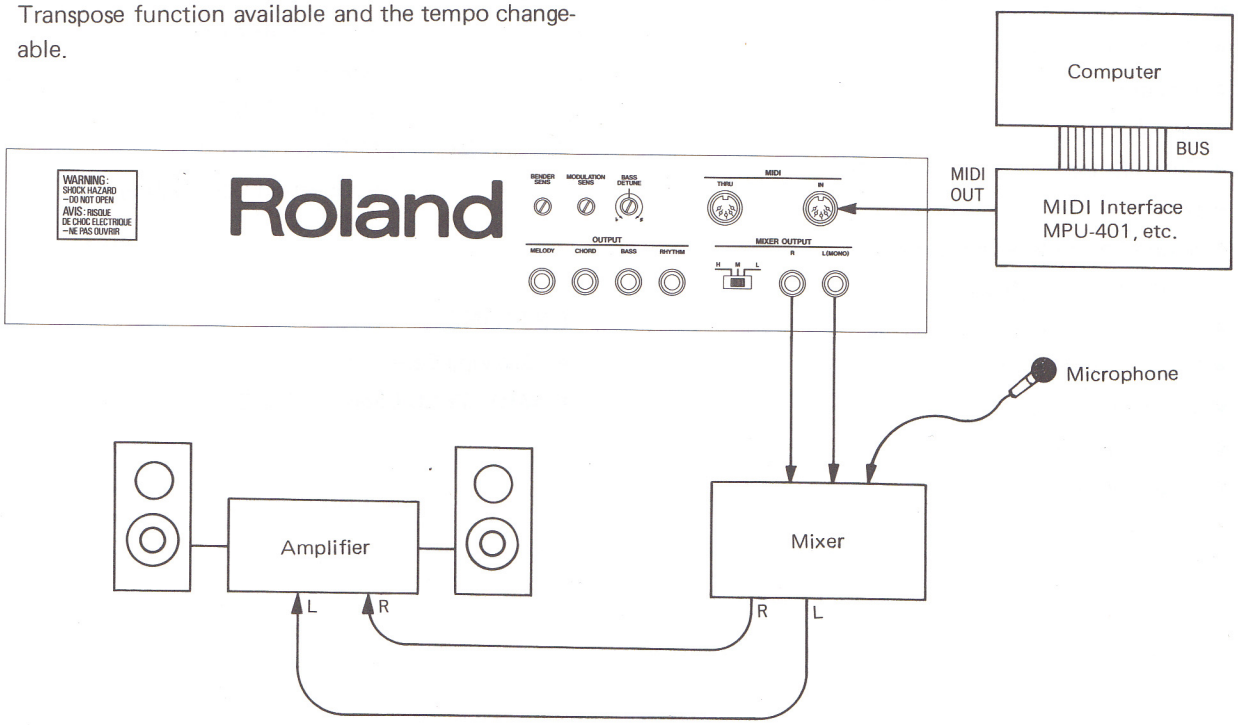
b. Using a Keyboard Recorder

The MKS-7 can be controlled by the keyboard recorder such as MSQ-100 or MSQ-700.



c. As a Minus-one Music

The MKS-7 plays accompaniment, with the Key Transpose function available and the tempo changeable.



5 SPECIFICATIONS

MKS-7: Sound Module

Preset

- Melody: } 100 Tone Colors
- Chord: }
- Bass: 20 Tone Colors
- Rhythm: 11 Drum Voices
  - o Bass Drum
  - o Snare Drum
  - o Hi-Tom
  - o Mid-Tom
  - o Low-Tom
  - o Open/Closed Hi-Hat's
  - o Hand Clap
  - o Rim Shot
  - o Ride Cymbal
  - o Clash Cymbal

Front Panel

- Tune Knob
- Volume Knob
- Rhythm Level Knob
- Bass Level Knob
- Chord Level Knob
- Melody Level Knob
- Dynamics Sens Knob
- Display Window
- Rhythm Button
- Bass Button
- Chord Button
- Melody Button
- Sound Source Selector Buttons (Bass, Chord, Melody)
- Number Button (0 to 9)
- MIDI Channel Button
- Transpose Button
- Headphones Jack
- Power Switch

Rear Panel

- Pitch Bender Sens Knob
- Modulation Sens Knob
- Bass Detune Knob
- Output Level Switch
- MIDI IN Connector
- MIDI THRU Connector
- Melody Output Jack
- Chord Output Jack
- Bass Output Jack
- Rhythm Output Jack
- Mix Output Jacks (L, R)

Consumption	25W
Dimensions	Black: 482(W) x 400(D) x 88(H) mm 18-15/16 x 15-3/4 x 3-7/16" Ivory: 430(W) x 400(D) x 88(H) mm 16-15/16" x 15-3/4" x 3-7/16"
Weights	Black: 7 kg / 15 lb 7 oz Ivory: 7.5 kg / 16 lb 9 oz
Accessories	MIDI Cable (1m) x 1 Connection Cord (2.5m) x 2

OPTIONS

- **Carrying Case** TB-2U
- **MIDI SYNC Cable** MSC-25/50

Sound module

MODEL **MKS-7 MIDI Implementation Chart**

Melody Block

Function.....		Transmitted	Recognized	Remarks
Basic	Default	×	1	
Channel	Changed	×	1 – 16	
Mode	Default	×	Mode 3	
	Messages	×	×	
	Altered	**********	×	
Note Number		×	0 – 127	
	True voice	**********	24 – 108	
Velocity	Note ON	×	○	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	○	
Control Change	1	×	○	Modulation
	64	×	○	Hold
Prog Change		×	○ (0–127)	
	True #	**********	0 – 99	
System Exclusive		×	○	Tone parameters
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Mes-sages	Local ON/OFF	×	×	
	All Notes OFF	×	○ (123–127)	
	Active Sense	×	○	
	Reset	×	×	
Notes		When the CHORD block is in 6 voice mode, the MELODY block cannot sound.		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

Chord Block

Function.....		Transmitted	Recognized	Remarks
Basic	Default	×	3	
Channel	Changed	×	1 – 16	
Mode	Default	×	Mode 3	
	Messages	×	×	
	Altered	**********	×	
Note Number		×	0 – 127	
	True voice	**********	24 – 108	
Velocity	Note ON	×	○	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	○	
Control Change	1	×	○	Modulation
	64	×	○	Hold
	121	×	○	Voice select (6/4 voices)
Prog Change		×	○ (0–127)	
	True #	**********	0–99	
System Exclusive		×	○	Tone parameters
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Mes-sages	Local ON/OFF	×	×	
	All Notes OFF	×	○ (123–127)	
	Active Sense	×	○	
	Reset	×	×	
Notes				

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

Bass Block

Function.....		Transmitted	Recognized	Remarks
Basic Channel	Default	×	2	
	Changed	×	1 – 16	
Mode	Default	×	Mode 4	
	Messages	×	×	
	Altered	**********	×	
Note Number		×	0 – 127	The actual keys are 1 octave lower.
	True voice	**********	31 – 96	
Velocity	Note ON	×	○	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	×	
Control Change				
Prog Change		×	○ (0–127)	
	True #	**********	0–19	
System Exclusive		×	○	Tone parameters
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Mes-sages	Local ON/OFF	×	×	
	All Notes OFF	×	○ (123–127)	
	Active Sense	×	○	
	Reset	×	×	
Notes				

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

Rhythm Block

Function.....		Transmitted	Recognized	Remarks
Basic	Default	×	10	
Channel	Changed	×	1 – 16	
	Default	×	Mode 3	
Mode	Messages	×	×	
	Altered	**********	×	
Note		×	35 – 51	
Number	True voice	**********	35 – 51	
Velocity	Note ON	×	○	
	Note OFF	×	×	
After	Key's	×	×	
Touch	Ch's	×	×	
Pitch Bender		×	×	
Control Change				
Prog		×	×	
Change	True #	**********		
System Exclusive		×	×	
System	Song Pos	×	×	
	Song Sel	×	×	
Common	Tune	×	×	
System	Clock	×	×	
Real Time	Commands	×	×	
Aux	Local ON/OFF	×	×	
	All Notes OFF	×	×	
Mes-	Active Sense	×	×	
sages	Reset	×	×	
Notes		Note # to instruments assignment. 35,36 – Bass Dr 48,50 – Hi Tom 46 – Opn HH 38,40 – Snr Dr 37 – Rim Sht 49 – Crsh Cym 41,43 – Low Tom 39 – Hnd Clp 51 – Ride Cym 45,47 – Mid Tom 42,44 – Cls HH		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

Sound module

MODEL MKS-7 MIDI Implementation

1. RECOGNIZED RECEIVE DATA

1.1 MELODY part

When the CHORD part is in 6 voice mode, the MELODY part is not available.

Status	Second	Third	Description	
1000 nnnn	0kkk kkkk	0vvv vvvv	Note OFF, velocity ignored	
1001 nnnn	0kkk kkkk	0000 0000	Note OFF kkkkkkk = 0 - 127 (24 - 108)	*1
1001 nnnn	0kkk kkkk	0vvv vvvv	Note ON kkkkkkk = 0 - 127 (24 - 108) vvvvvvv = 1 - 127	*1
1011 nnnn	0000 0001	0vvv vvvv	Modulation vvvvvvv = 0 - 127	
1011 nnnn	0100 0000	0111 1111	Hold ON (1 - 126 ignored)	
1011 nnnn	0100 0000	0000 0000	Hold OFF	
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1100	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1101	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1110	0000 mmmm	ALL NOTES OFF (m : ignored)	*2
1011 nnnn	0111 1111	0000 0000	ALL NOTES OFF	*2
1100 nnnn	0ppp pppp		Program Change ppppppp = 0 - 127 (0 - 99)	*3
1110 nnnn	0b00 0000	0bbb bbbb	Pitch Bender LS 6 bits are ignored	
1111 0000			Exclusive	*4
1111 0111			EOX	
1111 1110			Active Sensing	

Notes :

*1 Note numbers outside of the range 24 - 108 are transposed to the nearest octave inside this range.

*2 Mode Messages (123 - 127) are only recognized as ALL NOTES OFF.

* The receiver's mode is always OMNI OFF, POLY mode.

*3 Program Change assignments

Prog #	Number
0 - 99	0 - 99
100 - 127	0 - 27

*4 Refer to Section 2 RECOGNIZED EXCLUSIVE MESSAGES 2.2 CHORD part.

Sound module

MODEL MKS-7 MIDI Implementation

1.2 CHORD part

Status	Second	Third	Description	
1000 nnnn	0kkk kkkk	0vvv vvvv	Note OFF, velocity ignored	
1001 nnnn	0kkk kkkk	0000 0000	Note OFF kkkkkkk = 0 - 127 (24 - 108)	*1
1001 nnnn	0kkk kkkk	0vvv vvvv	Note ON kkkkkkk = 0 - 127 (24 - 108) vvvvvvv = 1 - 127	*1
1011 nnnn	0000 0001	0vvv vvvv	Modulation vvvvvvv = 0 - 127	
1011 nnnn	0100 0000	0111 1111	Hold ON (1 - 126 ignored)	
1011 nnnn	0100 0000	0000 0000	Hold OFF	
1011 nnnn	0111 1001	0111 1111	Voice select : 6 voice mode	
1011 nnnn	0111 1001	0000 0000	Voice select : 4 voice mode (1 - 126 ignored)	
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1100	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1101	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1110	0000 mmmm	ALL NOTES OFF (m : ignored)	*2
1011 nnnn	0111 1111	0000 0000	ALL NOTES OFF	*2
1100 nnnn	0ppp pppp		Program Change ppppppp = 0 - 127 (0 - 99)	*3
1110 nnnn	0b00 0000	0bbb bbbb	Pitch Bender LS 6 bits are ignored	
1111 0000			Exclusive	*4
1111 0111			EOX	
1111 1110			Active Sensing	

Notes :

*1 Note numbers outside of the range 24 - 108 are transposed to the nearest octave inside this range.

*2 Mode Messages (123 - 127) are only recognized as ALL NOTES OFF.

* The receiver's mode is always OMNI OFF, POLY mode.

*3 Program Change assignments

Prog #	Number
0 - 99	0 - 99
100 - 127	0 - 27

*4 Refer to Section 2 RECOGNIZED EXCLUSIVE MESSAGES 2.2 CHORD part.

Sound module

MODEL MKS-7 MIDI Implementation

1.3 BASS part

Status	Second	Third	Description	
1000 nnnn	0kkk kkkk	0vvv vvvv	Note OFF, velocity ignored	
1001 nnnn	0kkk kkkk	0000 0000	Note OFF kkkkkkk = 0 - 127 (19 - 96)	*1
1001 nnnn	0kkk kkkk	0vvv vvvv	Note ON kkkkkkk = 0 - 127 (19 - 96) vvvvvvv = 1 - 127	*1
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1100	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1101	0000 0000	ALL NOTES OFF	*2
1011 nnnn	0111 1110	0000 mmmm	ALL NOTES OFF (m : ignored)	*2
1011 nnnn	0111 1111	0000 0000	ALL NOTES OFF	*2
1100 nnnn	0ppp pppp		Program Change ppppppp = 0 - 127 (0 - 19)	*3
1111 0000			Exclusive	*4
1111 0111			EOX	
1111 1110			Active Sensing	

Notes :

*1 Note numbers outside of the range 19 - 96 are transposed to the nearest octave inside this range.

*2 Mode Messages (123 - 127) are only recognized as ALL NOTES OFF.

* The receiver's mode is always OMNI OFF, MONO mode.

*3 Program Change assignments

Prog #	Number
0 - 19	0 - 19
20 - 39	0 - 19
40 - 59	0 - 19
60 - 79	0 - 19
80 - 99	0 - 19
100 - 119	0 - 19
120 - 127	0 - 7

*4 Refer to Section 2 RECOGNIZED EXCLUSIVE MESSAGES
2.3 BASS part.

Sound module

MODEL MKS-7 MIDI Implementation

1.4 RHYTHM part

Status	Second	Third	Description
1001 nnnn	0kkk kkkk	0vvv vvvv	Note ON kkkkkkk = 35 - 51 vvvvvvv = 1 - 127

Notes :

* Received note number are assigned as follows:

kkkkkkk	Instrument
35,36	Bass Drum
37	Rim Shot
38,40	Snare Drum
39	Hand Clap
41,43	Low Tom
42,44	Closed Hi-Hat
45,47	Mid Tom
46	Open Hi-Hat
48,50	Hi Tom
49	Crash Cymbal
51	Ride Cymbal

Other note on numbers are ignored.

* The receiver's mode is always OMNI OFF, POLY mode.

Sound module

MODEL MKS-7 MIDI Implementation

2. RECOGNIZED EXCLUSIVE MESSAGES

2.1 MELODY part

* When changing a tone.

	Byte	Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0011 0000	Operation code = tone change mode
d	0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e	0xxx xxxx	Tone number xxxxxxx = 0 - 127
f	0zzz zzzz	Value zzzzzzz = 0 - 127 (18 bytes total for values)
g	1111 0111	End of Exclusive

*** Example ***

a	b	c	d	e	f	f	.	.	.	.	.	.	.
F0	41	30	00	00	39	2D	00	37	00	55	00	00	00

f	.	.	.	.	.	.	.	.	.	g
19	34	3B	20	56	28	00	1A	18	F7	

Sound module

MODEL MKS-7 MIDI Implementation

* When changing a tone parameter.

	Byte	Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0011 0010	Operation code = Tone parameter change
d	0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e	000y yyyy	Parameter number yyyyy = 0 - 17
f	0zzz zzzz	Value zzzzzzz = 0 - 127
g	1111 0111	End of Exclusive

*** Example ***

a	b	c	d	e	f	g
F0	41	32	00	03	40	F7

* Parameter number table

P #	Function	P #	Function
0	LFO rate	8	VCF LFO
1	LFO delay	9	VCF KYBD
2	DCO LFO	10	VCA level
3	DCO PWM	11	ENV attack
		12	ENV decay
5	VCF cutoff freq	13	ENV sustain
6	VCF resonance	14	ENV release
7	VCF ENV	15	Sub level

For switches

Bit	6	5	4	3	2	1	0
P #				Function			
4	dynamics affection VCF 0=off 1=on	VCA 0=off 1=on	x	x	x	x	x
16	x	chorus 1=off 0=on	saw 1=on 0=off	pulse 1=on 0=off	range 100 : 4' 010 : 8' 001 : 16'		
17	x	noise 1=on 0=off	HP filter 1=off 0=on	x	VCA 1=gate 0=ENV	ENV 1= - 0= +	PWM 1=MAN 0=LFO

x : ignored

MODEL MKS-7 MIDI Implementation

2.2 CHORD part

* When changing a tone.

	Byte	Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0011 0000	Operation code = tone change mode
d	0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e	0xxx xxxx	Tone number xxxxxxx = 0 - 127
f	0zzz zzzz	Value zzzzzzz = 0 - 127 (18 bytes total for values)
g	1111 0111	End of Exclusive

*** Example ***

a	b	c	d	e	f	f	.	.	.	.	.	.	.	.
F0	41	30	02	00	39	2D	00	37	00	55	00	00	00	

f	.	.	.	.	.	.	.	.	g
19	34	3B	20	56	28	00	1A	18	F7

* When changing a tone parameter.

	Byte	Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0011 0010	Operation code = Tone parameter change
d	0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e	000y yyyy	Parameter number yyyyy = 0 - 17
f	0zzz zzzz	Value zzzzzzz = 0 - 127
g	1111 0111	End of Exclusive

*** Example ***

a	b	c	d	e	f	g
F0	41	32	02	03	40	F7

Sound module

MODEL MKS-7 MIDI Implementation

* Parameter number table

P #	Function	P #	Function
0	LFO rate	8	VCF LFO
1	LFO delay	9	VCF KYBD
2	DCO LFO	10	VCA level
3	DCO PWM	11	ENV attack
		12	ENV decay
5	VCF cutoff freq	13	ENV sustain
6	VCF resonance	14	ENV release
7	VCF ENV	15	Sub level

For switches

Bit	6	5	4	3	2	1	0
P #				Function			
4	dynamics affection VCF 0=off 1=on	VCA 0=off 1=on	x	x	x	x	x
16	x	chorus 1=off 0=on	saw 1=on 0=off	pulse 1=on 0=off	range 100 : 4' 010 : 8' 001 : 16'		
17	x	x	HP filter 1=off 0=on	x	VCA 1=gate 0=ENV	ENV 1= - 0= +	PWM 1=MAN 0=LFO

x : ignored

MODEL MKS-7 MIDI Implementation

2.3 BASS part

* When changing a tone.

	Byte	Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0011 0000	Operation code = tone change mode
d	0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e	0xxx xxxx	Tone number xxxxxxx = 0 - 127
f	0zzz zzzz	Value zzzzzzz = 0 - 127 (18 bytes total for values)
g	1111 0111	End of Exclusive

*** Example ***

a	b	c	d	e	f	f	.	.	.	.	.	.	.
F0	41	30	01	00	39	2D	00	37	00	55	00	00	00

f	.	.	.	.	.	.	.	.	g
19	34	3B	20	56	28	00	1A	18	F7

* When changing a tone parameter.

	Byte	Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0011 0010	Operation code = Tone parameter change
d	0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e	000y yyyy	Parameter number yyyyy = 0 - 17
f	0zzz zzzz	Value zzzzzzz = 0 - 127
g	1111 0111	End of Exclusive

*** Example ***

a	b	c	d	e	f	g
F0	41	32	01	03	40	F7

Sound module

MODEL MKS-7 MIDI Implementation

* Parameter number table

P #	Function	P #	Function
0	x	8	x
1	x	9	VCF KYBD
2	x	10	VCA level
3	DCO PWM	11	ENV attack
4	x	12	ENV decay
5	VCF cutoff freq	13	ENV sustain
6	VCF resonance	14	ENV release
7	VCF ENV	15	x

For switches

Bit	6	5	4	3	2	1	0
P #	Function						
16	x	x	wave select 1=saw 0=pulse	x	x	x	x
17	x	x	x	x	x	x	x

x : ignored

Roland

DECIMAL - HEXADECIMAL - BINARY CONVERSION TABLE

The Roland MKS-7 MIDI implementation is detailed using binary values. Use this chart to convert from/to binary (documentation), hexadecimal (SysEx) and decimal (actual) values.

DEC	HEX	BIN
0	0	00000000
1	1	00000001
2	2	00000010
3	3	00000011
4	4	00000100
5	5	00000101
6	6	00000110
7	7	00000111
8	8	00001000
9	9	00001001
10	A	00001010
11	B	00001011
12	C	00001100
13	D	00001101
14	E	00001110
15	F	00001111
16	10	00010000
17	11	00010001
18	12	00010010
19	13	00010011
20	14	00010100
21	15	00010101
22	16	00010110
23	17	00010111
24	18	00011000
25	19	00011001
26	1A	00011010
27	1B	00011011
28	1C	00011100
29	1D	00011101
30	1E	00011110
31	1F	00011111

DEC	HEX	BIN
32	20	00100000
33	21	00100001
34	22	00100010
35	23	00100011
36	24	00100100
37	25	00100101
38	26	00100110
39	27	00100111
40	28	00101000
41	29	00101001
42	2A	00101010
43	2B	00101011
44	2C	00101100
45	2D	00101101
46	2E	00101110
47	2F	00101111
48	30	00110000
49	31	00110001
50	32	00110010
51	33	00110011
52	34	00110100
53	35	00110101
54	36	00110110
55	37	00110111
56	38	00111000
57	39	00111001
58	3A	00111010
59	3B	00111011
60	3C	00111100
61	3D	00111101
62	3E	00111110
63	3F	00111111

DEC	HEX	BIN
64	40	01000000
65	41	01000001
66	42	01000010
67	43	01000011
68	44	01000100
69	45	01000101
70	46	01000110
71	47	01000111
72	48	01001000
73	49	01001001
74	4A	01001010
75	4B	01001011
76	4C	01001100
77	4D	01001101
78	4E	01001110
79	4F	01001111
80	50	01010000
81	51	01010001
82	52	01010010
83	53	01010011
84	54	01010100
85	55	01010101
86	56	01010110
87	57	01010111
88	58	01011000
89	59	01011001
90	5A	01011010
91	5B	01011011
92	5C	01011100
93	5D	01011101
94	5E	01011110
95	5F	01011111

DEC	HEX	BIN
96	60	01100000
97	61	01100001
98	62	01100010
99	63	01100011
100	64	01100100
101	65	01100101
102	66	01100110
103	67	01100111
104	68	01101000
105	69	01101001
106	6A	01101010
107	6B	01101011
108	6C	01101100
109	6D	01101101
110	6E	01101110
111	6F	01101111
112	70	01110000
113	71	01110001
114	72	01110010
115	73	01110011
116	74	01110100
117	75	01110101
118	76	01110110
119	77	01110111
120	78	01111000
121	79	01111001
122	7A	01111010
123	7B	01111011
124	7C	01111100
125	7D	01111101
126	7E	01111110
127	7F	01111111

DEC	HEX	BIN
128	80	10000000
129	81	10000001
130	82	10000010
131	83	10000011
132	84	10000100
133	85	10000101
134	86	10000110
135	87	10000111
136	88	10001000
137	89	10001001
138	8A	10001010
139	8B	10001011
140	8C	10001100
141	8D	10001101
142	8E	10001110
143	8F	10001111
144	90	10010000
145	91	10010001
146	92	10010010
147	93	10010011
148	94	10010100
149	95	10010101
150	96	10010110
151	97	10010111
152	98	10011000
153	99	10011001
154	9A	10011010
155	9B	10011011
156	9C	10011100
157	9D	10011101
158	9E	10011110
159	9F	10011111

DEC	HEX	BIN
160	A0	10100000
161	A1	10100001
162	A2	10100010
163	A3	10100011
164	A4	10100100
165	A5	10100101
166	A6	10100110
167	A7	10100111
168	A8	10101000
169	A9	10101001
170	AA	10101010
171	AB	10101011
172	AC	10101100
173	AD	10101101
174	AE	10101110
175	AF	10101111
176	B0	10110000
177	B1	10110001
178	B2	10110010
179	B3	10110011
180	B4	10110100
181	B5	10110101
182	B6	10110110
183	B7	10110111
184	B8	10111000
185	B9	10111001
186	BA	10111010
187	BB	10111011
188	BC	10111100
189	BD	10111101
190	BE	10111110
191	BF	10111111

DEC	HEX	BIN
192	C0	11000000
193	C1	11000001
194	C2	11000010
195	C3	11000011
196	C4	11000100
197	C5	11000101
198	C6	11000110
199	C7	11000111
200	C8	11001000
201	C9	11001001
202	CA	11001010
203	CB	11001011
204	CC	11001100
205	CD	11001101
206	CE	11001110
207	CF	11001111
208	D0	11010000
209	D1	11010001
210	D2	11010010
211	D3	11010011
212	D4	11010100
213	D5	11010101
214	D6	11010110
215	D7	11010111
216	D8	11011000
217	D9	11011001
218	DA	11011010
219	DB	11011011
220	DC	11011100
221	DD	11011101
222	DE	11011110
223	DF	11011111

DEC	HEX	BIN
224	E0	11100000
225	E1	11100001
226	E2	11100010
227	E3	11100011
228	E4	11100100
229	E5	11100101
230	E6	11100110
231	E7	11100111
232	E8	11101000
233	E9	11101001
234	EA	11101010
235	EB	11101011
236	EC	11101100
237	ED	11101101
238	EE	11101110
239	EF	11101111
240	F0	11110000
241	F1	11110001
242	F2	11110010
243	F3	11110011
244	F4	11110100
245	F5	11110101
246	F6	11110110
247	F7	11110111
248	F8	11111000
249	F9	11111001
250	FA	11111010
251	FB	11111011
252	FC	11111100
253	FD	11111101
254	FE	11111110
255	FF	11111111

SYSEX HELP & EXAMPLES

In the **MKS-7 MIDI Implementation** chapter, look for section **2.1 Melody part**, and for the second asterisk ***When changing a tone parameter** (the page after, on top). You'll see a chart (Byte/Description), with one row equals one byte to construct your Sysex string. Values on the manual are in binary (sometimes in decimal), while your Sysex string requires hexadecimal. Your Sysex string is made of 7 bytes for the MKS-7. You only have to change the 5th byte (the parameter) and the 6th byte (the value of the parameter). The first row of the table of the MIDI implementation says "**a 1111 0000 Exclusive status**". 1111 0000 is the first byte for the Sysex string, it is in binary, it becomes F0 in hexadecimal, and it means "Start of Sysex string". Same conversion goes for the remaining rows.

When it comes to setting the 5th byte, to choose which parameter to change (e.g. LFO Rate, LFO Delay, etc.), look for the next asterisk ***Parameter number table**, still in section 2.1, it lists the parameters and their numbers. Note that parameters are listed using decimal values in the **MIDI Implementation** chapter! You'll have to convert these numbers into hexadecimal when constructing your Sysex string.

Special case: switches. Some parameters are grouped and you have to set their values all together; you can't just set one of these grouped parameters separately. In the end of section 2.1 of the **MIDI Implementation** chapter, there is a table named "For switches". A parameter number (1st column) gathers actually several parameters. For instance, the 1st parameter is P #4, called **dynamics affection**, and to assign dynamics to VCF or VCA, you need to set a value that encompasses both VCF and VCA dynamics values. You concatenate all binary values that belong to one group of parameters, and then you convert this concatenated value from binary to hexadecimal. If you want VCF ON and VCA OFF, you will have to set the value to 02 (zero-two, we converted "10" from binary to hexadecimal). Be careful, sometimes 1=OFF and 0=0N, as you can see in parameter #16, for chorus, or in parameter #17 for HP filter.

Note: The MKS-7 Sysex string counts MIDI channels from 0 to 15, not from 1 to 16. To set MIDI channel #1, you'll set it as 00 in your string. When you read a value in the manual, always ask if it's a binary, hexadecimal or decimal value.

	Start Sysex message	Manufacturer ID	Operation code (Tone parameter change)	MIDI channel (0-15)	Parameter number (example for VCF cutoff freq)	Value (for the parameter, e.g. let's set cutoff freq to 64)	End of Exclusive message
Decimal value					5	64	
Binary value	1111 0000	0100 0001	0011 0010	0000 0000			1111 0111
Hex. value	**F0**	**41**	**32**	**00**	**05**	**40**	**F7**

Another example, now for the Bass section on MIDI channel 3. Selecting the saw tooth and deselecting the Pulse wave:

F0 41 32 02 10 01 F7

Got it? Granted it's a little tricky, but it works. Good luck!