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**MIDI SIGNAL INDICATOR**

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**MKS-900**

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**Owner's Manual**



## OUTLINE

The MKS-900 features 88 indicators that light when corresponding Key On messages are received on the MIDI Channel(s) currently selected (1 to 16, or All). The Display shows the MIDI Channel number or Program Change number currently in use. The Hold Indicator is also provided to tell you whether the Hold effect is on or off in the selected Channel(s).

The MKS-900 also has the Filter function that allows you to select one Channel from the several MIDI Channels, and send it out.

The Tune function is useful for tuning several sound modules at a time.

## IMPORTANT NOTES

### Power Supply

- The appropriate power supply for this unit is shown on its name plate. Please make sure that the line voltage in your country meets that.
- Please do not use the same socket used for any noise generating device (such as motor, variable lighting system).
- Before setting up the MKS-900 with other units, turn them off.
- This unit might not work properly if turned on immediately after turned off. If this happens, simply turn it off and turn it on again a few seconds later.
- This unit might get hot while operating, but there is no need to worry about it.

### Cleaning

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

### Location

- Avoid using the MKS-900 in excessive heat or humidity or where it may be affected by direct sunlight or dust.

### Radio and television interference

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**“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.”**

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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.

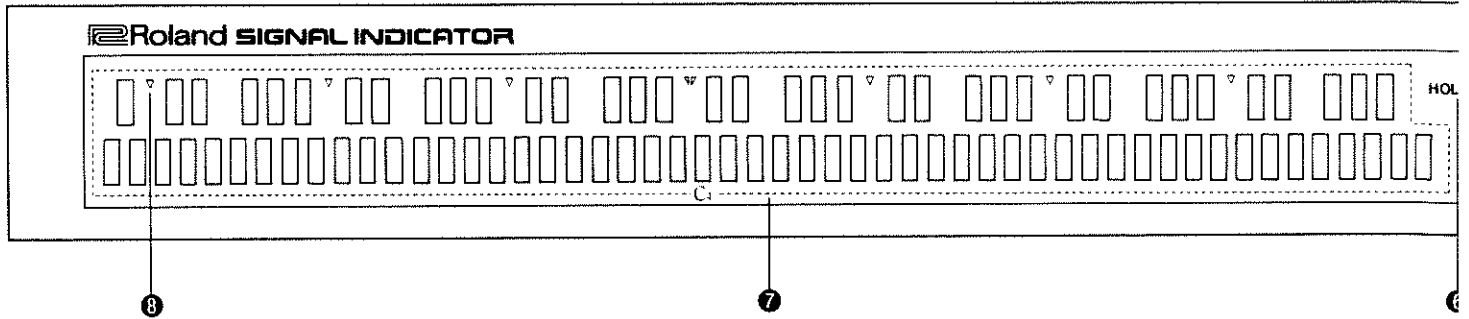
- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment 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.

## PANEL DESCRIPTION



### ① Power Switch

### ② Channel Selector

- 1 to 16 :** Select the MIDI Channel whose messages you wish the MKS-900 to display.
- ALL :** Messages of all the MIDI Channels will be seen on the MKS-900.
- TUNE :** The MKS-900 is set to the Tune mode.

### ③ Filter Switch

- ON :** The messages of the Channel number you have selected at the Channel Selector ② (or all the Channels if it is set to ALL) are transmitted from the MIDI OUT.
- OFF :** The messages of all the Channels will be transmitted.

### ④ Display Selector

This selects which of the Program Change or MIDI Channel number is to be shown in the Display Window ⑤.

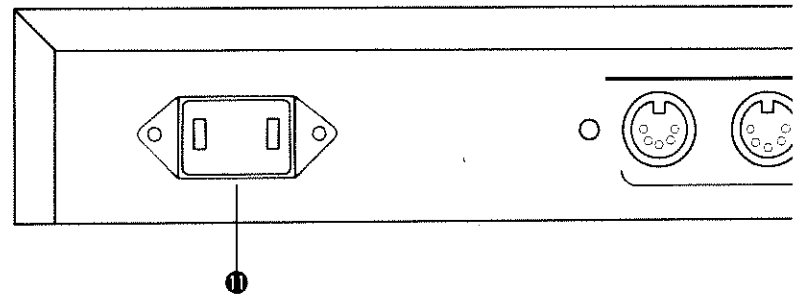
### ⑤ Display

### ⑥ Hold Indicator

If the Hold effect (Damper) is on in the selected Channel, this indicator lights up.

### ⑦ Key Indicator

This indicates Key On/Off of the MIDI messages of the selected Channel. If it is outside the range of A0 to C8, as many octaves will be added or subtracted until it falls in the range.

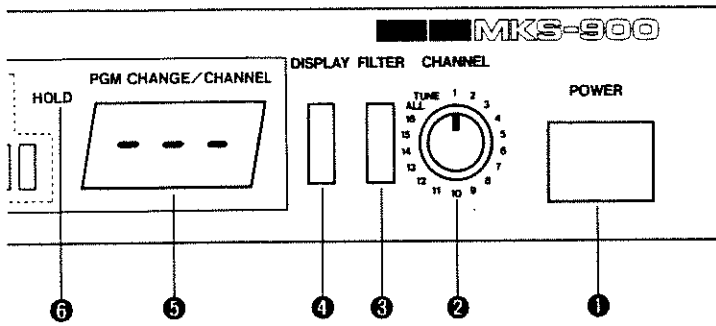


## Program Change Display

The Display shows the Program Change number of the MIDI Channel selected with the Channel Selector. When "ALL" position is selected, the number which is received last (most lately) is displayed.

\* Even after the MKS-900 is switched on, the Display will show "—" until any Program Change message is received.

\* When the Filter Switch is set to OFF, the MKS-900 receives the Program Change messages on all the Channels, therefore as you select any MIDI Channel with the Channel Selector, the Display shows the last program change number of that Channel. When the Filter Switch is set to ON, any program Change messages except for that of the selected Channel is ignored.



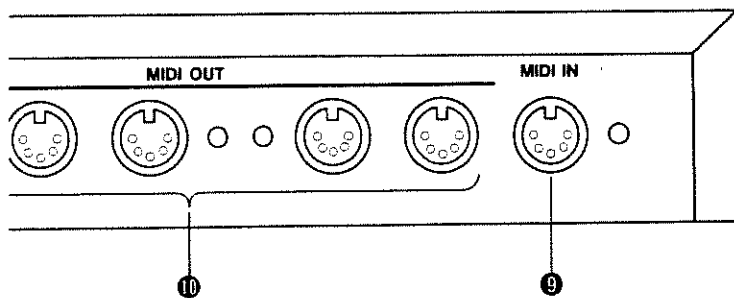
⑧ Octave Indicator

⑨ MIDI IN Connector

⑩ MIDI OUT Connector

Except when the Filter Switch ③ is on and the Channel Selector Switch ② is set to 1 to 16, the exact copy of the signal fed into the MIDI IN will be sent out from this socket.

① AC Inlet



Channel Selector \ Display Selector	■	▬
1   16	[ 1 ]   [ 16 ]	---
ALL	ALL	or 0-127
TUNE	A-4	A-4

## TUNE MODE

The MKS-900 features the Tune mode in which it can tune the connected sound modules. To turn to the Tune mode, simply set the Channel Selector to the TUNE. The Display will show flashing A-4 for about 3 seconds, and The Key Indicator A4 will light up. Then each sound module will output A4 note for you to use for tuning. Here, the MIDI Channel Request is also transmitted, so that tuning can be automatically done, if the sound module features Autotune function.

If the Filter Switch is set to ON, A note will be continuously heard. This is useful for tuning piano like sound.

When you have finished tuning, change the position of the Channel Selector Switch.

\* For about 3 seconds after the Channel Selector is set to the TUNE position, the connected sound module is muted. So if you do not want to be annoyed by the sound from the sound module, simply rotate the Channel Selector quickly enough.

\* The Tune Request is transmitted right after the MKS-900 is turned to the Tune mode or the Filter Switch is changed to ON.

## SPECIFICATIONS

### Indicators and Display

Key Indicators(88 keys : A0 to C8)  
Hold Indicator  
Octave Indicator  
Display (Channel/Program Change)

### Switches

Channel Selector(1 to 16, ALL, TUNE)  
Filter Switch  
Display Selector

### Connectors

MIDI IN × 1  
MIDI OUT × 5  
AC IN

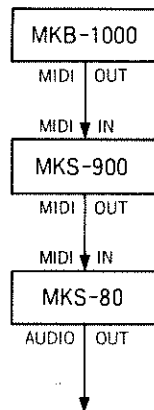
Dimension : 482(W) × 45(H) × 180(D)mm  
19" × 1-3/4" × 7-1/16"

Weight : 2.5kg / 5 lb 8 oz

Consumption : 10W(AC117V),  
12W(AC220, 240V)

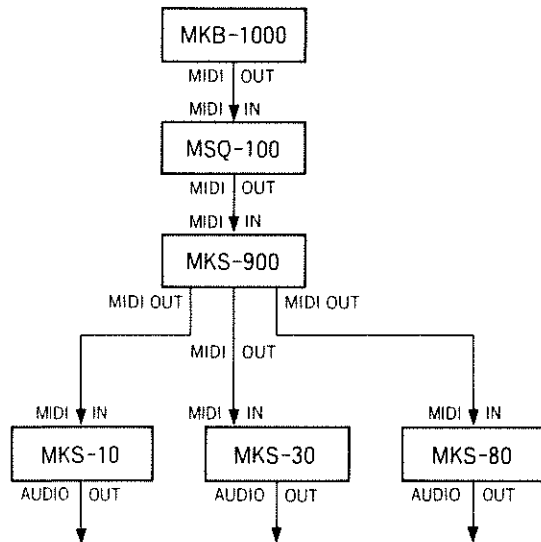
## CONNECTIONS

### Example Setup ①



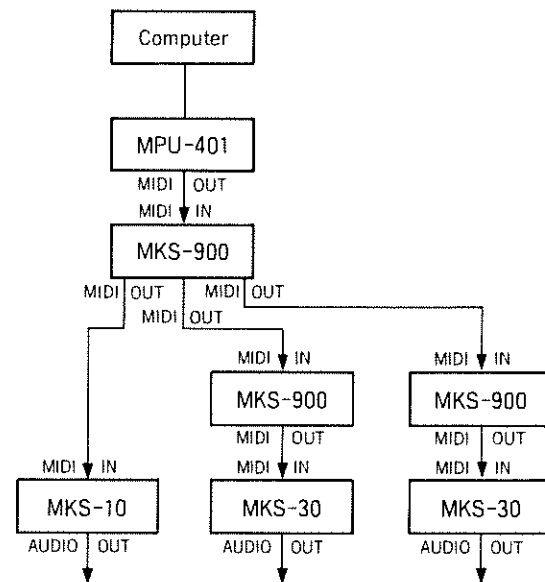
This is the most basic setup example. Set the Channel Selector ② to "ALL" or to the MIDI Channel number you wish to use. When the Display Selector is set to "PGM CHANGE", the Display Window will show the program change number 1 to 127. If, however, "----" is shown, there is no Program Change message transmitted.

### Example Setup ②



In this setup, a sequencer is used, and several MIDI channels are sent to the MKS-900. Set the Filter Switch to OFF and the Channel Selector Switch to the MIDI Channel number you like. The part of each instrument can be visually glimpsed without affecting the performance. When the Filter Switch is set to ON, only the sound of the selected Channel will be heard, therefore you can easily tell which synthesizer is played, on which channel.

### Example Setup ③



The MKS-900's are assigned to the sound modules which are to be driven by the computer. Set the Channel Selector of each MKS-900 to the appropriate Channel number that belongs to the connected sound module. Now, the performance of each sound module can be respectively glimpsed on the MKS-900.

### NOTE

\* If you change the positions of the Channel Selector with the Filter Switch set to ON, you may be annoyed by the Pitch Bender or Modulation effect which goes on undisturably. To avoid this, turn the Pitch Bender and Modulation effect off before moving the Channel Selector. This applies to the On/Off of the Filter Switch.

# MODEL MKS-900 MIDI Implementation Chart

Function.....	Transmitted			Recognized	Remarks	
	1-16	ALL	TUNE			
Basic Channel	Default	-	-	-	1-16	
	Changed	1-16	-	-	1-16	
Mode	Default	-	-	-	1, 3	
	Messages	○	○	-	×	
	Altered	*****				
Note Number	True voice	0-127	0-127	69	0-127	
		*****			21-108	
Velocity	Note ON	○	○	×	×	
	Note OFF	○	○	×	×	
After Touch	Key's	○	○	×	×	
	Ch's	○	○	×	×	
Pitch Bender		○	○	×	×	
Control Change	0- 63	○	○	×	×	Hold
	64	○	○	×	○	
	65-121	○	○	×	×	
Prog Change	True #	○	○	×	0 (0-127)	
		*****			0-127	
System Exclusive		○	○	×	×	
System Common	Song Pos	○	○	×	×	
	Song Sel	○	○	×	×	
	Tune	○	○	○	×	
System Real Time	Clock	○	○	×	×	
	Commands	○	○	×	×	
Aux Messages	Local ON/OFF	○	○	×	×	123-127
	All Notes OFF	○	○	○	○	
	Active Sense	○	○	○	○	
	Reset	○	○	×	×	
Notes	1-16 : Specified ch ALL : All ch's TUNE : Tune All the mess's are the ones which have been received in the function being 1-16 or ALL. All recognized mess's except Active Sensing are displayed.					

Mode 1 : OMNI ON, POLY  
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO  
Mode 4 : OMNI OFF, MONO

○ : Yes  
× : No

# MIDI Signal Indicator

## MODEL **MKS-900** MIDI Implementation

### 1. RECOGNIZED RECEIVE DATA

1.1 When the channel selector is at 1 - 16 or ALL, the next messages are displayed.

Status	Second	Third	Description	
1000 nnnn	0xxx xxxx	0vvv vvvv	Note OFF, velocity ignored	
1001 nnnn	0xxx xxxx	0000 0000	Note OFF	*1
			kkkkkkkk = 0 - 127 (21 - 100)	
1001 nnnn	0xxx xxxx	0vvv vvvv	Note ON, velocity ignored	*1
			kkkkkkkk = 0 - 127 (21 - 100)	
			vvvvvvv = 1 - 127	
1011 nnnn	0100 0000	0111 1111	Hold ON	
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 0000	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	

#### Notes :

The 'nnnn' + 1 is the channel number which is selected by the Channel Selector. (1 - 16)  
If the ALL is selected, these messages are displayed in all channels.

\*1 Note numbers outside the range 21 - 100 are transposed to the nearest octave inside this range.

\*2 Mode messages (123 - 127) are recognized only as ALL NOTES OFF

#### 1.2 Recognized only

Status	Second	Third	Description
1111 1110			Active Sensing

1.3 When the Channel Selector is at TUNE, no messages are recognized.

### 2. TRANSMITTED DATA

2.1 When FILTER switch is OFF or channel selector is ALL, the following messages are transmitted.  
a. All the System messages received except the Active Sensing  
b. All the channel messages received in all channels

#### 2.2 When FILTER switch is ON.

- All the System messages received except the Active Sensing
- All the channel messages received in the selected channel

#### 2.3 Created messages when the channel selector is at 1 - 16 or ALL.

Status	Second	Third	Description	
1001 nnnn	0xxx xxxx	0000 0000	Note OFF	*1,2
1011 nnnn	0100 0000	0000 0000	Hold OFF	*1
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF	*1
1111 1110			Active Sensing	

#### Notes :

\*1 When the FILTER switch is turned from OFF to ON, these messages are sent for all ON notes and the Holds in all channels except selected. When the Channel Selector is turned while the FILTER switch is ON, these messages are sent in the old channel(s).

\*2 When an ALL NOTES OFF message is received while any Notes are ON, the Note OFF messages are transmitted for those Notes before the ALL NOTES OFF is transferred.

#### 2.4 Created messages in TUNE mode.

Status	Second	Third	Description	
1001 nnnn	0xxx xxxx	0000 0000	Note OFF	*1
1011 nnnn	0100 0000	0000 0000	Hold OFF	*1
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF	*1
1111 0110			Tune Request	*2
1001 nnnn	0100 0101	0100 0000	Note #69 ON	*2
1001 nnnn	0100 0101	0000 0000	Note #69 OFF	*2
1111 1110			Active Sensing	

#### Notes :

\*1 When the TUNE is selected, these messages are sent for all ON notes and holds in the old channel(s), then the ALL NOTES OFFs are sent.

\*2 When the TUNE is selected, after #1 messages being sent, the Tune Request and Note #69 ONs in all channels are sent.

When the FILTER switch is pressed while in TUNE mode, Tune Request and Note #69 OFFs and ONs in all channels are sent.

When the FILTER switch is being pressed while in TUNE mode, Note #69 OFFs and ONs in all channels are transmitted in every second.

When the Channel Selector is turned from TUNE position, Note #69 OFFs in all channels are sent.





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