Roland

HDS-IF

HARD DISK INTERFACE

Owner's Manual

for S-550

Bescheinigung des Herstellers /Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND HD5-IF

(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

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 a 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 interferences 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.

Please read the separate volume "MIDI", before reading this owner's manual.

Thank you for purchasing the Roland HD5 – IF.

The HD5 – IF consists of an interface board for connecting a hard disk unit to the Roland S – 550, and the system disk. Using a specific hard disk unit, it is possible to store a large amount of data and to transfer data at extremely high speed.

When using a brand new hard disk unit, Setup the hard disk unit as explained on page 4 "Setup".

The system disk of the HD5 – IF is an updated version of the S – 550 Ver.1.0. Please study the table "Differences between the S – 550 Ver.1.0 and HD5 – IF" shown on page 16.

Functions altered from the S – 550 (Ver.1.0)	Descripiton
Conversion	A convert function that converts the S – 550's data for the S – 50 is added.
Name Entry	Name entry with the Mouse is easier.
Map Entry	The same values can be entered continuously.
Split Setting	Split can be set with the Tone List Display.
DC – Cut	A function that removes the DC contents from Wave.
Data Transfer with a Floppy Disk	Letters "FD" are added to a menu and command name.
Loading Patch	Load Tones (Tone Parameters and Wave Data) assigned to a Patch with Patch Parameters

NOTES

The Hard Disk Unit is extremely delicate and therefore needs careful handling. Read the owner's manual of the Hard Disk before using it.

*** Do not move the Hard Disk Unit while it is turned on.**

*** In transit, pack the Hard Disk Unit in the supplied box to avoid shock or vibration.**

*** While the S-550 or the Hard Disk Unit is turned on, do not connect or disconnect the Hard Disk Unit.**

CONTENTS

1. Hard Disks which can be used ····· 3
2. Setup ····· 4
3. Normal Booting and Completion ····· 13
4. Saving Sound Data onto the Hard Disk ····· 15
5. Differences between the HD5 – IF and S – 550 Ver.1.0 ····· 16
6. Backup of the HD5 – IF System Disk ····· 25
7. Data Transfer between the S – 550 and Hard Disk ····· 27

1. HARD DISKS WHICH CAN BE USED

The hard disk units which can be used with the S－550 are as shown below.
(SCSI specifications for the APPLE Mackintosh)

APPLE	M－2620 (20M Byte)
	M－2644 (40M Byte)
	M－2688 (80M Byte)
CMS	SD－20 (20M Byte)
	SD－80 (80M Byte)

＊No other hard disk unit can be used.

＊The APPLE hard disks are not provided with connecting cables. The APPLE connecting cable (M0206) should be purchased.

20M Byte Hard Disk

Sound data equivallent to 16 floppy disks can be saved.

40M Byte Hard Disk

Sound data equivallent to 32 floppy disks can be saved.

80M Byte Hard Disk

Sound data equivallent to 64 floppy disks can be saved.

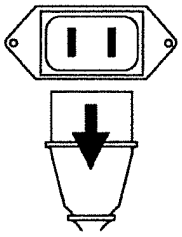
2. SETUP

The S－550 and the Hard Disk can be set up in sequence as follows.

1. **Install the interface board to the S－550.**
2. **Connect the S－550 to the Hard Disk.**
3. **Boot the S－550 up with the HD5－IF system disk.**
4. **Switch on the Hard Disk.**
5. **Format the Hard Disk.**
6. **Make the necessary settings for booting the Hard Disk.**

1. Installing the Interface Board

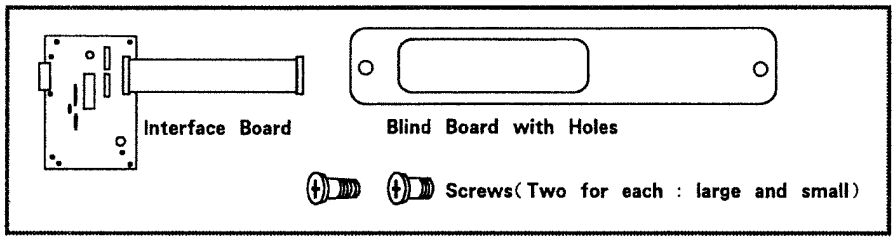
Turn the S－550 off, then disconnect the power cord from the AC inlet.



Attach the interface board using an appropriate screw－driver.

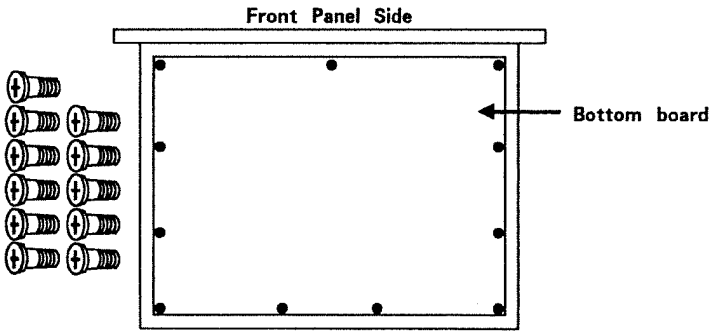
＊Do not loosen any screws other than shown below.
＊Do not touch the soldered face of the interface board
＊Interface board is easily damaged by statical electrified place. To preserve it on its own without connecting to the S－550, replace it into the supplied bag.

Prepare the following parts supplied with the HD5－IF.



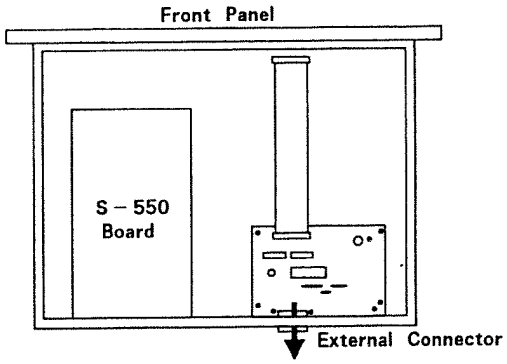
Procedure **①Remove the blind board on the rear panel.**

②Turn over the S－550, and remove the bottom.



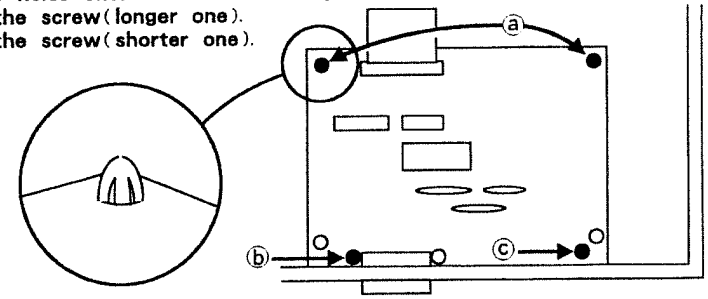
④ Locate the interface board as shown below.

* Do not touch the existing board of the S-550.

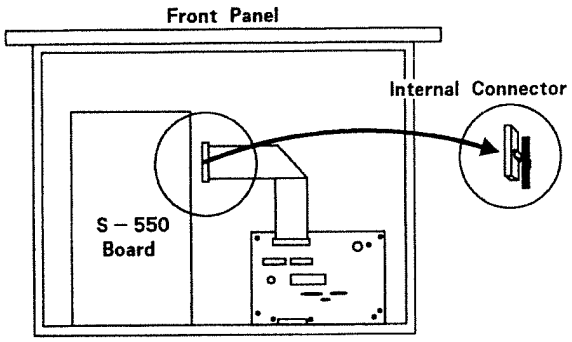


⑤ Fix the interface board with bushes and screws.

ⓐ Place the holes onto the bushes and push the interface board.
ⓑ Tighten the screw (longer one).
ⓒ Tighten the screw (shorter one).



⑥ Attach the Internal Connector.

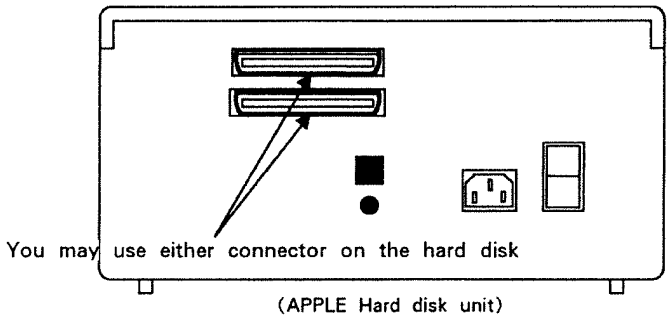


⑦ Replace the bottom board with screws.

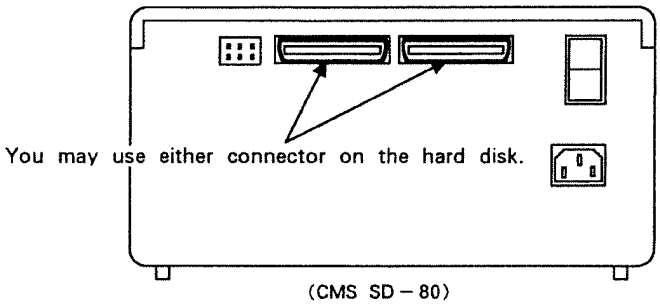
⑧ Attach the new blind board.

2. Connecting the S－550 to the Hard Disk

Connect the S－550's external connector to the connector on the hard disk.(You may use either connector on the hard disk.)



(APPLE Hard disk unit)



(CMS SD－80)

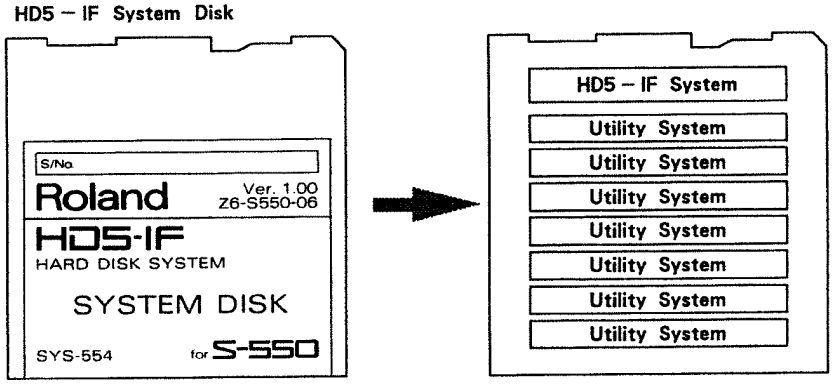
＊Please use the cable supplied with the hard disk or the specific one for the hard disk

＊Study the pin positions of the HD5－IF's external connector with the specifications at the back of this owner's manual.

3. Booting the S－550 up with the HD5－IF System Disk

Turn the S－550 on, then insert the HD5－IF system disk to boot up the S－550.

Two system disks are supplied with the HD5－IF, they are exactry the same. The system disk contains the system program and the utility system, just like the Utility Disk of the S－550.(Sound data is not included.)



The S－550 is automatically booted (= reads the system program of the HD5－IF then turns to the Play mode by inserting the HD5－IF system disk into the disk drive).

4. Switching on the Hard Disk

After the S-550 turnning to the Play mode, turn the hard disk on, then wait for 12 to 13 seconds.

5. Formatting the Hard Disk

When you are using a brand new hard disk, you need to format (= initialize) it. Before formatting, check the connections of the S−550 and hard disk.

Format : **1. Checking the Connections.**
2. Making the hard disk for the exclusive use of the S−550.
3. Initialize the parameter values.(= Default values)
4. Save the HD5−IF system program (including the utility system).

Procedure ① **Select "Setup" menu in the Disk mode.**
③ **Open the Command window, and execute "HD Format" command.**

When the connection is properly made, "**Formatting**" → "**Complete**" appears on the message line.
(It takes a few minutes.)

When formatting is completed, the maximum memory capacity of the connected hard disk is shown as "**HD Capacity**".

If "**HD Connection Error**" appears on the message line, check the following points.

● **If "NG" is shown in "Step 1" or "Step 2" of "Interface".**
The internal connector is not properly connected, or there is something wrong with the interface board.

● **If "NG" is shown in "Step 1" or "Step 2" of "Harddisk".**
The external connector and the hard disk are not securely connected or there is something wrong with the hard disk.

Check the connections, and repeat the above procedure.
If "HD Connection Error" appears again, consult your local Roland service center.

ABOUT THE AREA IN A HARD DISK

A hard disk of 20M byte memory capacity can store an amount of sound data equivallent to 16 floppy disks. An area in a hard disk corresponds to a floppy disk and is represented as H□□.

	1	2	3	4
1	H11	H21	H31	H41
2	H12	H22	H32	H42
3	H13	H23	H33	H43
4	H14	H24	H34	H44
5	H15	H25	H35	H45
6	H16	H26	H36	H46
7	H17	H27	H37	H47
8	H18	H28	H38	H48

	5	6	7	8
1	H51	H61	H71	H81
2	H52	H62	H72	H82
3	H53	H63	H73	H83
4	H54	H64	H74	H84
5	H55	H65	H75	H85
6	H56	H66	H76	H86
7	H57	H67	H77	H87
8	H58	H68	H78	H88

20M Byte Hard Disk

H11 to H28 Areas can be used (equivallent to 16 floppy disks).

40M Byte Hard Disk

H11 to H48 Areas can be used (equivallent to 32 floppy disks).

80M Byte Hard Disk

H11 to H88 Areas can be used (equivallent to 64 floppy disks).

6. Making the necessary settings for Booting

It is possible to write "how to boot up the S－550" onto the HD5－IF system disk.

Procedure

①Select "Setup" in the Disk mode.

②Set the following four parameters

● S/Load I ← Area **[H11～H＊＊]**

● S/Load II ← Area **[H11～H＊＊]**

When booting, Sound data can be loaded back from a certain Area in the hard disk. In each of the Block I and II, set the desired area to be loaded. If it is set to "Off", no loading is done at booting.

● S/Load (P.CHG) **[1～16ch、Off]**

While playing, sound data can be loaded back (Load Set) from the hard disk by receiving MIDI Program Change messages. Set the MIDI channel on which MIDI program change messages are received.

＊See page 37 for a detailed explanation of the Program Change numbers and the Areas to be loaded, etc.

＊If you set the same MIDI channel used for playing data, patches will be changed by receiving program change messages and sound data is not loaded. Make sure that you assign a different MIDI channel number.

● S/Load Controller **[Off、MU1、RC]**

This determines which of the controllers ; buttons on the S－550's panel, Mouse (MU－1) or the RC－100.

③Open the Command windpw, and execute "FD Save SYS" command.

The four parameter values you have set are saved in the system program section on the floppy disk, and will boot up the S－550 accordingly next time.

3. Normal Booting and Completion

1. Booting

Once a hard disk is setup, the procedure for the next time will be simple, as below.

Procedure

①Turn the hard disk on, then wait for 12 to 13 seconds.
②Turn the S－550 on.
③Insert the HD5－IF system disk into the disk drive.

When booting up is completed, the Play Mode display is shown.

＊When "HD Connection Error" is shown in the CRT display, check the connections as below.

Procedure

①Select "Setup" in the Disk mode
②Open the Command Window, then execute the "HD Connection" command.

If **"HD Connection Error"** appears on the message line, check the following points.

● **If "NG" is shown in "Step 1" or "Step 2" of "Interface".**
The internal connector is not properly connected, or there is something wrong with the interface board.

● **If "NG" is shown in "Step 1" or "Step 2" of "Harddisk".**
The external connector and the hard disk are not securely connected or there is something wrong with the hard disk.

Check the connections and repeat the above procedure.
When the connection is properly made, **"HD Connection OK"** appears on the message line.
If "HD Connection Error" appears again, consult your local Roland service center.

2. Completion

To turn the system off, be sure to take the following procedure.

Procedure

①Select "Setup" in the DISK mode.
②Open the command window, then execute the "Park Heads" command.

When the heads of the hard disk are properly parked, **"Complete"** is shown on the message line.

③Turn off the S — 550 and the hard disk unit.

Once the heads of the hard disk are parked, data can no longer be communicated between the hard disk and the S — 550. If you wish to retrieve the function of the hard disk without turning it off, do as follows.

①Select "Setup" in the DISK mode.
②Open the command window, then execute the "Restart" command.

"Complete" is shown on the message line, indicating that the hard disk is returned to the default condition.

4. Saving Sound Data onto the Hard Disk

To save sound data from a floppy disk onto the hard disk, first, load the data on the floppy disk into the internal memory of the S－550, then save it onto the hard disk.

Floppy disk ➡➡➡ Internal Memory

Procedure

①Insert the floppy disk that contains data you wish to save onto the hard disk into the disk drive.
②Select "FD Load" in the Disk mode.
③Select "FD Load Set I" command and execute.

"Now Loading" appears on the message line. When the number counts down to zero and **"Complete"** is shown on the message line, loading is done.

Internal Memory ➡➡➡ Hard Disk

Procedure

①Select "HD Save" in the Disk mode.
②Assign the appropriate Area on the destination Hard disk.

● I ➡ HD Area

Assign the Area (see page 11) where the sound data loaded in Block I is to be saved.

③Open the Command Window, and select "HD Save Set I" command, then execute it.

"Now Saving" then **"Now Verify"** is shown on the message line.

If **"Verify Error"** is shown on the message line, execute saving again. If the same error message appears no matter how many times you have tried, call your local Roland service center.

When the number counts down to zero and **"Complete"** is shown on the message line, saving is done.

5. Differences between the HD5 – IF system and the supplied system for S – 550

The HD5 – IF system program contains almost the same functions as the supplied system for S – 550 except for data transfer with a hard disk. However, some parameters and commands have been added as explained below. Regarding other functions, read the S – 550's owner's manual.

1. Name Entry

(S – 550's owner's manual Pages 73, 103 and 132)

When using the Mouse, Tone names, Patch names and Disk labels can be entered with the letters selected from a pallette.

Procedure

Move the cursor to the position where you wish to write a letter, then push the button at the left on the Mouse. This will cause the cursor to appear in the pallette. Select a letter, then push the button at the left on the Mouse. "I" is for inserting a space and "D" is for erasing a letter. ←, → can move the Name Cursor. To retrieve the cursor from the pallette, push he button at the left on the Mouse.

2. Map Entry

(S – 550 Owner's Manual on pages 96 and 109)

The same values can be entered continuously.

Procedure

First, enter a source value.

Move the cursor to "Normal", then turn it to "Copy". Move the cursor to the source value, and push the button on the right. This will copy the value in the internal memory temporarily. Move the cursor to the value to be copied, then push the button on the left to enter the same value.

3. DC – Cut

(S – 550's owner's manual on page 54)

If DC (direct current) content (= low range noise) is mixed with the sample, causing unclear sound, you can cut the DC content from the wave data.

Procedure

Open the Command Window in "D.Filter" menu in the UTIL mode, and execute "DC – Cut" command.

4. Split Setting

(S – 550's owner's manual on page 105)

You can assign Tones while watching the Tone List Display.

Procedure

To change the Tone assignment, set the "Type Select" to "1st & 2nd", "1st", "2nd" or "Off". If you wish to change the Tone assignment of both Tones, select" 1st & 2nd", to change only the first tone, select "1st", to change only the second tone, select "2nd" . If "Off" is selected, neither the first or second Tone is set, therefore, no sound is produced.

To monitor the Tone assignment, set the "Type Select" to "Info". When Key On messages are received, or Display Keys are assigned with the Mouse, an arrow is shown at the assigned Tone. "➡" represent the 1st Tone, while "⬅" is shown for the 2nd Tone.

5. Conversion

(S – 550's owner's manual on page 147)

The Convert function can convert S – 50 data into S – 550 or the S – 550 data into S – 50 (Ver. 2.0)

* The S – 50 and S – 550 do not feature exactry the same parameters, therfore, the converted data may sound different from each other.

* Data on the S – 330's disk can be loaded into the S – 550 without converting it.

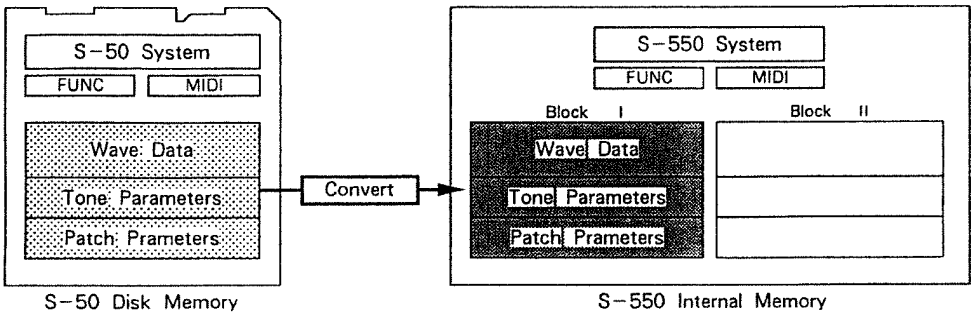
Procedure

Select the "Convert" in the UTIL mode. There are six types of Convert Commands.

Convert Load

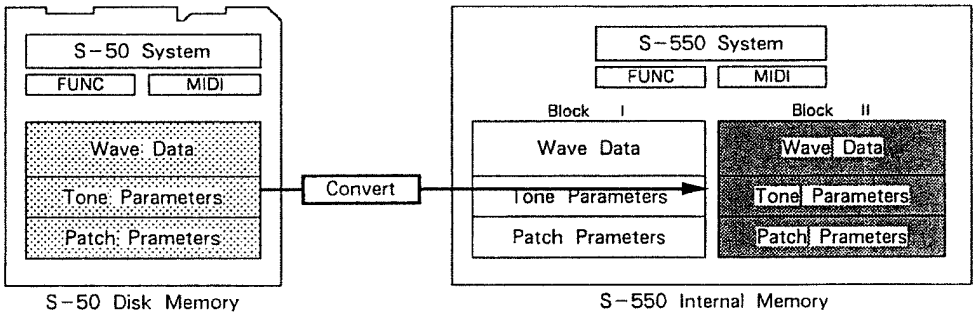
Load I ←← S50

Using this function, the Block data on an S–50 (Ver.1.0, 2.0) disk can be loaded into Block I in the S–550 memory.



Load II ←← S50

Using this function, the Block data on an S–50 (Ver.1.0, 2.0) disk can be loaded into Block II in the S–550 memory.



Step 1 Insert an S–50 disk into the Disk Drive.

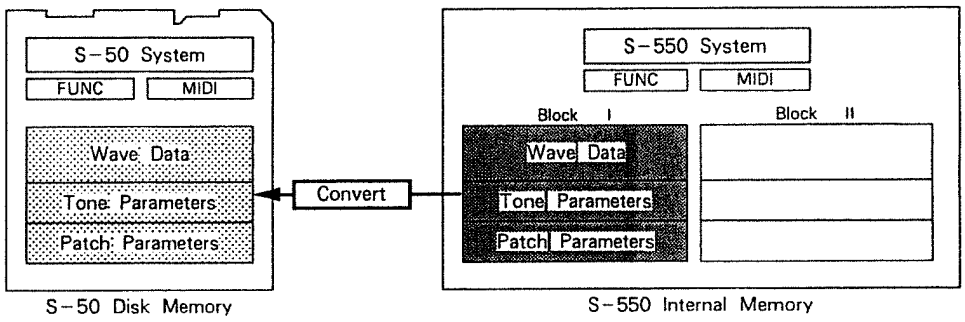
Step 2 Select the command you wish to execute, and push the EXECUTE button or the left side button on the Mouse.

"Now Loading" is shown on the Message Line, then the number counts down to 00. When finished, "Complete" is shown on the Message Line.

Convert Save

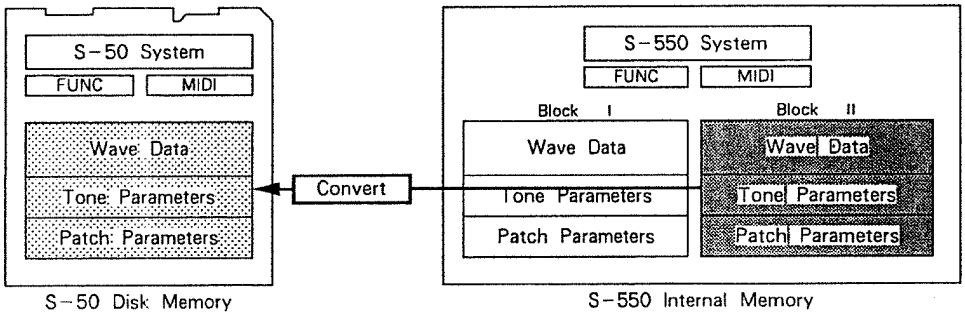
Save I→→S50

Using this function, the Block I data on the S−550 memory can be saved on the S−50 (Ver.2.0) disk.



Save II→→S50

Using this function, the Block II data on the S−550 memory can be saved on the S−50 (Ver.2.0) disk.



*Patches on the S−550 are numbered 11 through 18 and 21 through 28 .while those on the S−50 are P1 to P8. Therefore, Patches 21 to 28 on the S−550 are ignored in the Convert Save.

Step 1 Prepare a disk formatted with the S−50 (Ver.2.0), and set the Protect Tab on the disk to the WRITE position. Then insert the disk into the Disk Drive.

Step 2 Select the command you wish to execute, and push the EXECUTE button or the left side button on the Mouse.

"Now Saving" is shown on the Message Line, then the number counts down to 00. When finished, "Complete" is shown on the Message Line.

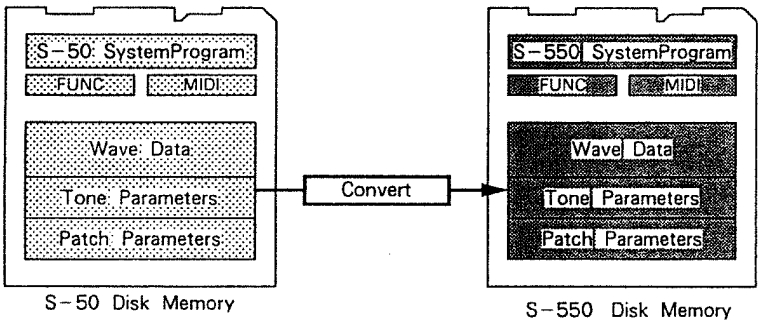
Convert Disk

Conv➡S550

This function updates a S–50 (Ver.1.0, 2.0) disk to the S–550.

*This function does not change the contents of Sound data on the S–550 memory.

***The converted disk can boot up the S–550.**



Step 1 **Prepare an S–50 disk to be converted into S–550, set the Protect Tab on the disk to the WRITE position, then insert it into the Disk Drive.**

Step 2 **Select the command "Conv➡S550", and push the EXECUTE button or the left side button on the Mouse.**

***When the disk is for other than the S–50, the Display shows "Insert S–50 Disk".**

"Working" is shown on the Message Line, and when finished,"Complete" .

Conv ➡ S50

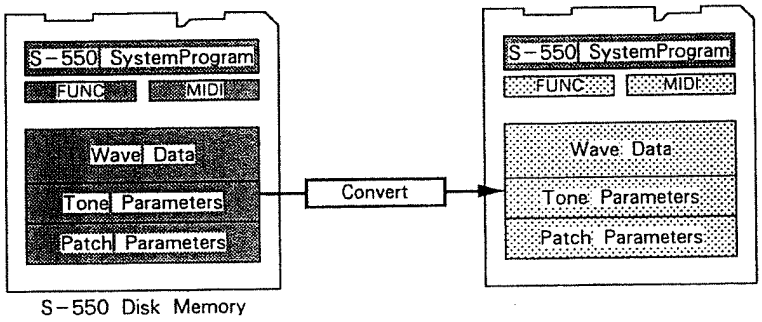
This function converts a S–550 disk into the S–50 (Ver.2.0).

*This function does not change the contents of Sound data on the S–550.

***This Convert Disk converts only the Sound data. The system program remains intact, therefore, it is not possible to boot up the S–50 with the converted disk. To do that, first boot the S–50 with the Ver.2.0 system disk, then execute SAVE SYS on this disk.**

***Patches on the S–550 are numbered 11 through 18 and 21 through 28 while those on the S–50 (Ver.2.0) are P1 to P8. Therefore, Patches 21 to 28 on the S–550 are ignored in the Convert DISK.**

***When the Multi Patch setting on the S–550 does not correspond to the S–50 (Ver.2.0), it will be modified automatically to match the S–50's. So, check the setting and correct it, if necessary.**



S–550 Disk Memory

Step 1 **Prepare an S–550 disk to be converted into S–50 (Ver.2.0), set the Protect Tab on the disk to the WRITE position, then insert it into the Disk Drive.**

Step 2 **Select the command "Conv➡S50", and push the EXECUTE button or the left side button on the Mouse.**

"Working" is shown on the Message Line, and when finished,"Complete" .

6. Data Transfer with a Floppy Disk

(**S – 550's owner's manual from page 121**)

In the HD5 – IF system, all the menus and commands for transfering data with a floppy disk have letters "**FD**" to be distinguished from the hard disk's menus and commands. The contents of these menus, and the necessary procedures are exactly the same as the S – 550's system disk. See the table below and the S – 550's owner's manual.

S – 550's System	S – 550 HD5 – IF System
Load	FD Load
Load P. PRM	FD Load P
Load Tone	FD Load T
Label Set	Set Label
Save	FD Save
Save P. PRM	* This does not exist.
Format	FD Save Command ; "FD Format"
Backup	FD Backup
Change SYS	Change SYS Command ; "FD Change SYS"

7. Load Patch

(S – 550's owner's manual from page 126)

This can load Tones (Tone Parameters and Wave Data) assigned to a Patch with Patch Parameters in empty space as much as possible but without erasing the existing Tones in the internal memory. Therefore, when a destination Patch has been used, Patch Parameters will be replaced with those of the loaded Patch, while Tones used in the Patch will remain intact. Tones are loaded in the same Block as the destination Patch Number, and the destination Tone Numbers are basically the same as the Tone numbers of the Tones to be loaded.

When the same Tone Numbers used in the Patch to be loaded are used in the internal memory

The S – 550 searches and loads unused Tone numbers. Patch Parameters will be rewritten, therefore, it is not necessary to change the Split settings.

When the number of unused Tones is smaller than that of the Tones used in the Patch to be loaded

"Memory full" is shown in the Dispay and loading is not executed.

When the Wave Data of the Tones to be loaded is larger than the empty space of the Wave Bank in the internal memory

Tones are loaded from Tone Number 11 until Wave Bank A then B become full.

When both Wave Banks are full, "Memory full" is shown in the Display and loading stops. The Tones which have not been loaded are shown in the Display.

If you wish to load those Tones, delete as many Tones in the same Wave Bank of the internal memory, then load one by one using "Load Tone" function.

Loading two Patches from the same disk

When the same Tone is used for two Patches, it will be loaded twice.

Loading Sub Tones

When loading the Sub Tone and it's Oliginal Tone in the same Patch , the Sub Tone will automatically become the Sub Tone related to the Oliginal Tone. When loading a Sub Tone whose Original Tone is not used in the same Patch, the Oligonal Tone related to the Sub Tone will also be automatically loaded.

Procedure **Load Patch from a Floppy Disk**

* See page 30 for Load Patch from a floppy disk.

① Select "FD Load P" in the Disk mode.
② Set the following parameters :

● FD P #
This selects the Patch to be loaded.

● Internal P #
This selects a Patch number (in the internal memory) where the Patch is to be loaded.

* The Tones used in the Patch to be loaded and the destination Patch can be monitored by opening the Command Window then executing "Tone List". Tone List [FD] displays the Tones used in the Patch selected with "FD P #" on the disk. "Org" represents the Original Tones used in the Patch. "Sub" represents Sub Tones, and " – – –" shows unused Tones. Tone List [I] shows the Tones used in the Internal memory. " * * *" are Tones which can be used, while Tones shown as " – – –" cannot be used.

③ Open the Command Window then execute "FD Load Patch".

When the Patch Parmeters and all the Tones are loaded, "Complete" is shown in the Display.

When all the Tones have not been loaded, the CRT Display shows the Tones which have not been loaded. If you wish to load those Tones, delete as many Tones in the same Wave Bank of the internal memory, then load one by one using "Load Tone" function.

6. Back up of the HD5 – IF System Disk

If you wish to make a backup of the HD5 – IF system disk, execute "SYS Backup" in the Utility mode.

***Taking the backup procedure will read the entire disk contents into the S – 550's internal memory, erasing any previous data. If you wish to retain data in the internal memory, save it onto a hard disk or floppy disk.**

Procedure

①Insert the HD5 – IF system disk into the disk drive.
②Select "SYS.Backup" in the UTIL mode.
③The following four parameters can be saved with the system program.

● S/Load I ⬅ Area , [H11~H＊＊]
● S/Load II ⬅ Area [H11~H＊＊]

When booting, Sound data can be loaded from a certain Area in the hard disk. Assign the Area for Block I and II. If "Off" is selected, loading is not done at booting.

● S/Load (P.CHG) [1~16ch、Off]

While playing, sound data can be loaded back (Load Set) from the hard disk by receiving MIDI Program Change messages. Set the MIDI channel on which MIDI program change messages are received.

***See page 36 for a detailed explanation of the Program Change numbers and the Areas to be loaded, etc.**

***If you set the same MIDI channel used for playing data, patches will be changed by receiving program change messages and sound data is not loaded. Make sure that you assign a different MIDI channel number.**

● S/Load Controller [Off、MU1、RC]

This determines which of the controllers : buttons on the S – 550's panel, Mouse (MU – 1) or the RC – 100.

④Open the Command window, then execute the "SYS Backup" command.

The Display shows "**Now Loading**", and the entire data on the HD5 – IF system disk is loaded into the internal memory.

⑤When loading is completed, "Change Disk" appears. Set the Proctect Tab on the disk for backup to the WRITE position and insert it into the disk drive.

"**Formatting**", then "**Now Saving**" is shown on the message line.
When saving is completed, "**Complete**" is shown on the message line.

7. Data Transfer between the S – 550 and Hard Disk

1. Loading Sound Data from a Hard Disk

Procedure ①**Select "HD Load" in the Disk mode.**

②**Set the following parameters.**

● I ← HD Area

Assign the Area (on the hard disk) to be loaded into Block I.

● II ← HD Area

Assign the Area (on the hard disk) to be loaded into Block II.

***By opening the Sub Menu, you can see the Disk Label Display for selecting an Area.**

● Select Chain

If you set this parameter to "**On**" when selecting "**I ← HD Area**" or "**II ← HD Area**", changing either Area will automatically change the other Area.

③**Open the Command Window.**

Load Chain	Two Areas are loaded continuously (= Chain Load).
Load Set I	Sound data (including parameters in the Play, FUNC or MIDI mode) selected with "I ← HD Area" is loaded into Block I.
Load Set II	Sound data (including parameters in the Play, FUNC or MIDI mode) selected with "II ← HD Area" is loaded into Block II.
Load Block I	Sound data (except for parameters in the Play, FUNC or MIDI mode) selected with "I ← HD Area" is loaded into Block I.
Load Block II	Sound data (except for parameters in the Play, FUNC or MIDI mode) selected with "II ← HD Area" is loaded into Block II.
Load Func I	Function data (= parameters in the Play and FUNC mode) selected with "I ← HD Area" is loaded.
Load MIDI I	MIDI data (= parameters in the MIDI mode) selected with "I ← HD Area" is loaded.

④**Select a command, and execute it.**

"**Now Loading**" is shown on the message line.
When loading is done, "**Complete**" is shown on the message line.

2. Loading Patch from a Hard Disk

Loading Patch Parameter

Parameters of a Patch selected on a hard disk can be loaded into the S－550's internal memory.

Procedure

①Select "HD Load P" menu in the Disk mode.
②Set the following parameters.

● HD Area
Assign the Area (on the hard disk) to be loaded.

＊By opening the Sub Menu, you can see the Disk Label Display for selecting an Area.

● HD P #
This selects what parameters of the Area you have selected with "HD Area" should be loaded.

● Internal P #
This selects the destination Patch number (where the parameters are to be loaded).

＊By opening the Sub Menu, you can see the Patch List Display for selecting "HD #" or "Internal #".

③Open the Command Window, and execute "HD Load Patch" command.

"**Now Loading**" is shown on the message line.
When loading is done, "**Complete**" is shown on the message line.

Loading a Patch with Tones

You can load Tones (Tone Parameters and Wave Data) assigned to a Patch with Patch Parameters in empty space as much as possible but without erasing the existing Tones in the internal memory. Therefore, when a destination Patch has been used, Patch Parameters will be replaced with those of the loaded Patch, while Tones used in the Patch will remain intact. Tones are loaded in the same Block as the destination Patch Number, and the destination Tone Numbers are basically the same as the Tone numbers of the Tones to be loaded.

When the same Tone Numbers used in the Patch to be loaded are used in the internal memory

The S – 550 searches and loads unused Tone numbers. Patch Parameters will be rewritten, therefore, it is not necessary to change the Split settings.

When the number of unused Tones is smaller than that of the Tones used in the Patch to be loaded

"Memory full" is shown in the Dispay and loading is not executed.

When the Wave Data of the Tones to be loaded is larger than the empty space of the Wave Bank in the internal memory

Tones are loaded from Tone Number 11 until Wave Bank A then B become full.

When both Wave Banks are full, "Memory full" is shown in the Display and loading stops. The Tones which have not been loaded are shown in the Display.

If you wish to load those Tones, delete as many Tones in the same Wave Bank of the internal memory, then load one by one using "Load Tone" function.

Loading two Patches from the same Area

When the same Tone is used for two Patches, it will be loaded twice.

Loading Sub Tones

When **loading the Sub Tone** and it's Oliginal Tone in the same Patch , the Sub Tone will automatically become the Sub Tone related to the Oliginal Tone. When loading a Sub Tone whose Original Tone is not used in the same Patch, the Oligonal Tone related to the Sub Tone will also be automatically loaded.

Procedure **Load Patch from a Hard Disk**

＊See page 24 for Load Patch from a floppy disk.

①Select "HD Load P" in the Disk mode.
②Set the following parameters :

● HD Area
This selects an Area (on the hard disk) of the Patch to be loaded.

● HD P #
This selects the Patch to be loaded.

● Internal P #
This selects a Patch number (in the internal memory) where the Patch is to be loaded.

＊The Tones used in the Patch to be loaded and the destination Patch can be monitored by opening the Command Window then executing "Tone List". Tone List " [HD]" displays the Tones used in the Patch selected with "HD P #" on the disk. "Org" represents the Original Tones used in the Patch, "Sub" represents Sub Tones, and " －－－" shows unused Tones. Tone List " [I]" shows the Tones used in the Internal memory. " ＊＊＊" are Tones which can be used, while Tones shown as " －－－" cannot be used.

③Open the Command Window then execute "HD Load Patch".

When the Patch Parmeters and all the Tones are loaded, "**Complete**" is shown in the Display.

When all the Tones have not been loaded, the CRT Display shows the Tones which have not been loaded. If you wish to load those Tones, delete as many Tones in the same Wave Bank of the internal memory, then load one by one using "**Load Tone**" function.

3. Loading a Tone from a Hard Disk

Wave data and Tone parameters of a Tone selected on a hard disk can be loaded into the S－550's internal memory.

Procedure

①Select "HD Load T" menu in the Disk mode.
②Set the following parameters.

●HD Area

Assign the Area (on the hard disk) to be loaded.

＊By opening the Sub Menu, you can see the Disk Label Display for selecting an Area.

●HD T

This selects what Tone parameters of the Area you have selected with "HD Area" should be loaded.

●Internal T

This selects the destination Tone number (where the Tone parameters are to be loaded) in the internal memory.

＊By opening the Sub Menu, you can see the Tone List Display for selecting "HD #" or "Internal #".

＊If you have loaded to a Tone number of an Original Tone, S－550 will respond as shown below :

・The original Wave data is erased, therefore the remaining time (empty space) increases.

・The loaded Wave data is written in an empty space.

・The loaded Tone parameters are copied.

・Any Sub Tone which had borrowed the wave data is initialized, and becomes an unused Sub Tone.

If there is no space to write data in the destination Wave Bank, "Cannot Execute" is shown and the command cannot be executed. When there is not sufficient space, the command is executed, but the Wave data will be incomplete.
Before loading, make sure that there is sufficient space with the aid of the Remaining Time Display (seconds at 30kHz) of each Wave Bank.

● Wave Bank **[A]、[B]**

Wave data is written into the Wave Bank of the Block selected by "Internal T #". Here, select Wave Bank A or B.

③Open the Command Window, and execute "HD Load Tone" command.

"**Now Loading**" is shown on the message line.
When loading is done, "**Complete**" is shown on the message line.

4. Saving Sound Data onto a Hard Disk

Procedure ①**Select "HD Save" in the Disk mode.**

②**Set the following parameters.**

● I ➡ HD Area

Assign the Area (on the hard disk) where Sound data in Block I is to be saved.

● II ➡ HD Area

Assign the Area (on the hard disk) where Sound data in Block II is to be saved.

***By opening the Sub Menu, you can see the Disk Label Display for selecting an Area.**

● Select Chain

If you set this parameter to "**On**" when selecting "**I ➡ HD Area**" or "**II ➡ HD Area**", changing either Area will automatically change the other Area.

● Wave Verify

This function verifies if the wave data has been properly saved onto a hard disk. Execute saving with this parameter set to "**On**".

③**Open the Command Window.**

Save Chain	Two Areas are saved continuously (= Chain Save).
Save Set I	Sound data (including parameters in the Play, FUNC or MIDI mode) of Block I is saved into the Area selected with "I ➡ HD Area".
Save Set II	Sound data (including parameters in the Play, FUNC or MIDI mode) of Block II is saved into the Area selected with "II ➡ HD Area".
Save Block I	Sound data (except for parameters in the Play, FUNC or MIDI mode) of Block I is saved into the Area selected with "I ➡ HD Area".
Save Block II	Sound data (except for parameters in the Play, FUNC or MIDI mode) of Block II is saved into the Area selected with "II ➡ HD Area".
Save Func I	Function data (= parameters in the Play and FUNC mode) is saved into the Area selected with "I ➡ HD Area".
Save MIDI I	MIDI data (= parameters in the MIDI mode) of Block I is saved into the Area selected with "I ➡ HD Area".

④ **Select a Command, and execute it.**

"**Now Saving**" is shown on the message line.
When the Wave Verify parameter is set to "**On**", "**Now Verify**" appears on the message line showing that the S－550 is now verifying the wave data.

If "**Verify Error**" is shown on the message line, execute saving again. If the same error message appears no matter how many times you have tried, call your local Roland service center.

When saving is done, "**Complete**" is shown on the message line.

5. Saving the System Program onto a Hard Disk

By taking the "**Setup**" procedure, the HD5－IF system has already been saved onto the hard disk. If, however, you wish to change the system, for any reasons, you can use this function to save the system programfrom a floppy disk onto the hard disk.

＊Four sets of system programs can be stored on a hard disk. The HD5－IF's system program is always saved as the first system program (System # 1).

Procedure

①insert the HD5－IF System disk into the disk drive.

②Select the "Setup" menu in the DISK mode.

③Open the Command window, and execute the "HD Backup SYS" Command.

When saving is done, "**Complete**" is shown on the message line.

6. Change Systems from a Hard Disk

A hard disk can store up to four sets of system programs which are compatible with hard disks. So, it is possible to load a different system program from a hard disk to change the system program in the S－550'.

Procedure

①Select "Change SYS" menu in the Disk mode.

The CRT display shows the four system names. The HD5－IF system is shown in System # 1 as **"S－550 HD5－IF System Ver.1.＊＊"**.

②Call the System to be Changed as HD System #.

③Open the Command Window, and execute "HD Change SYS" Command.

7. Loading Sound Data using Program Change

By receiving MIDI Program Change messages on the assigned MIDI channel, the S－550 can load Sound data from the hard disk (＝Load Set) in the PLAY Mode.

Channel Setting

Procedure

①Select "Message" in the MIDI mode.
②Set the following parameters :

● HD Load Set (P.Chg) **[1～16CH]**

This determines which channel's MIDI Program Change messages should be used for loading Sound data.

＊If you set the same MIDI channel used for playing data, patches will be changed by receiving program change messages and sound data is not loaded. Make sure that you assign a different MIDI channel number.

＊You can save this parameter to the HD5－IF System disk. see page 12.

＊While in loading, the S－550 cannot be played.

Areas correspond to Program Change Numbers as shown below.

When loading into Block I

H11	1	H21	9	H31	17	H41	25	H51	33	H61	41	H71	49	H81	57
H12	2	H22	10	H32	18	H42	26	H52	34	H62	42	H72	50	H82	58
H13	3	H23	11	H33	19	H43	27	H53	35	H63	43	H73	51	H83	59
H14	4	H24	12	H34	20	H44	28	H54	36	H64	44	H74	52	H84	60
H15	5	H25	13	H35	21	H45	29	H55	37	H65	45	H75	53	H85	61
H16	6	H26	14	H36	22	H46	30	H56	38	H66	46	H76	54	H86	62
H17	7	H27	15	H37	23	H47	31	H57	39	H67	47	H77	55	H87	63
H18	8	H28	16	H38	24	H48	32	H58	40	H68	48	H78	56	H88	64

When loading into Block II

H11	65	H21	73	H31	81	H41	89	H51	97	H61	105	H71	113	H81	121
H12	66	H22	74	H32	82	H42	90	H52	98	H62	106	H72	114	H82	122
H13	67	H23	75	H33	83	H43	91	H53	99	H63	107	H73	115	H83	123
H14	68	H24	76	H34	84	H44	92	H54	100	H64	108	H74	116	H84	124
H15	69	H25	77	H35	85	H45	93	H55	101	H65	109	H75	117	H85	125
H16	70	H26	78	H36	86	H46	94	H56	102	H66	110	H76	118	H86	126
H17	71	H27	79	H37	87	H47	95	H57	103	H67	111	H77	119	H87	127
H18	72	H28	80	H38	88	H48	96	H58	104	H68	112	H78	120	H88	128

DIGITAL SAMPLER
MODEL S – 550

MIDI Implementation Chart

Date : Apr. 1. 1988
HD5 – IF

Function...		Transmitted	Recognized	Remarks
Basic	Default	×	1 – 16 ＊4	＊2
Channel	Changed	×	1 – 16 ＊4	
Mode	Default	×	3	
	Messages	×	×	
	Altered	＊＊＊＊＊＊＊＊＊	×	
Note Number	True Voice	×	12 – 120 12 – 120	
Velocity	Note ON	×	＊1	V = 1 – 127
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	＊1	
Pitch Bender		×	＊1	
Control Change	1	×	＊1	Modulation
	7	×	＊1	Volume
	64	×	＊1	Hold 1
	100, 101		＊1	RPC LSB, MSB
	6, 38			DATA Entry LSB, MSB
				Number – 0 Pitch Bend Sensitivity
Prog Change	True #	＊＊＊＊＊＊＊＊＊	＊1 0 – 127 0 – 127	＊3
System Exclusive		＊1	＊1	
System Common	Song Pos	×	×	
	Song sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Message	Local ON/OFF	×	×	
	All Notes OFF	×	○ (123 – 127)	
	Active Sense	×	×	
	Reset	×	×	
Notes		＊1 Can be set to ○ or × manually, and memorized by disk. ＊2 Memorized by disk. ＊3 Patch numbers for each program change number can be set. By receiving Program Change messages on the assigned channel number, Sound data can be loaded from a disk. The Program Change numbers which correspond to Areas on a hard disk and destination Blocks cannot be altered. ＊4 MIDI Channel of each voice group can be set in Multi Channel Mode.		

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

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV):

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Maindata
F7H	End of exclusive

MIDI status : F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufactures-ID immediately after F0H (MIDI version1.0).

Manufactures-ID : 41H

The Manufactures-ID identifies the manufacturer of a MIDI instrument that triggeres an exclusive message. Value 41H represents Roland's Manufactures-ID.

Device-ID : DEV

The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H - 0FH, a value smaller by one than that of a basic channel, but value 00H - 1FH may be used for a device with multiple basic channels.

Model-ID : MDL

The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Command-ID : CMD

The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Main data : BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

2. Address-mapped Data Transfer

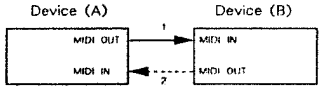
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records--waveform and tone data, switch status, and parameters, for example--to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures : one-way transfer and handshake transfer.

One-way transfer procedure (See Section3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

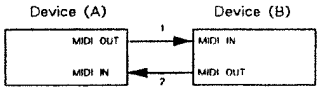


Connectionat point2 is essential for "Request data" procedures. (See Section3.)

Handshake-transfer procedure (See Section4 for details.)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connectionat points1 and 2 is essential.

Notes on the above two procedures

* There are separate Command-IDs for different transfer procedures.
* DevicesA and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

3. One-way Transfer Procedure

This procedure sends out data all the way until it stops when the messages are so short that answerbacks need not be checked.
For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

Request data # 1 : RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.

If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

* The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

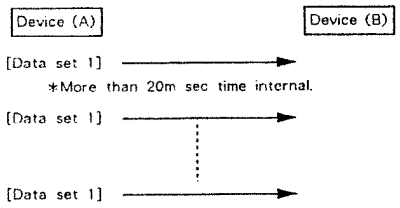
The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

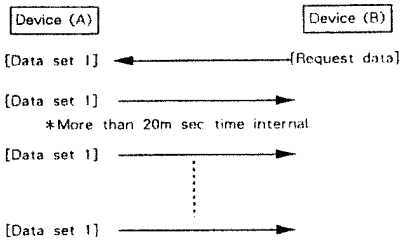
* A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The number of bytes comprising address data varies from one Model ID to another.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Example of Message Transactions

● Device A sending data to Device B
Transfer of a DT1 message is all that takes place.



● Device B requesting data from Device A
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



4. Handshake-Transfer Procedure

Handshaking is an interactive process where two devices exchange error checking signals before a message transaction takes place, thereby increasing data reliability. Unlike one-way transfer that inserts a pause between message transactions, handshake transfer allows much speedier transactions because data transfer starts once the receiving device returns a ready signal.

When it comes to handling large amounts of data--sampler waveforms and synthesizer tones over the entire range, for example--across a MIDI interface, handshaking transfer is more efficient than one-way transfer.

Types of Messages

Message	Command ID
Want to send data	WSD (40H)
Request data	RQD (41H)
Data set	DAT (42H)
Acknowledge	ACK (43H)
End of data	EOD (45H)
Communication error	ERR (4EH)
Rejection	RJC (4FH)

Want to send data : WSD (40H)

This message is sent out when data must be sent to a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of the data to be sent.

On receiving a WSD message, the remote device checks its memory for the specified data address and size which will satisfy the request. If it finds them and is ready for communication, the device will return an "Acknowledge (ACK)" message.
Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
40H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

* The size of the data to be sent does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the data should reside.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Request data : RQD (41H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQD message, the remote device checks its memory for the data address and size which satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set (DAT)" message, which contains the requested data. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
41H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes, that make up a "Data set (DAT)" message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set : DAT (42H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, the message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

Although the MIDI standards inhibit non-real time messages from interrupting an exclusive one, some devices support a "soft-through" mechanism for such interrupts. To maintaincompatibility with such devices, Roland has limited the DAT to 256bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
42H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

*A DAT message is capable of providing only the valid data among those specified by an RQD or WSD message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one model ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Acknowledge : ACK (43H)

This message is sent out when no error was detected on reception of a WSD, DAT, "End of data (EOD)", or some other message and a requested setup or action is complete. Unless it receives an ACK message, the device at the other end will not proceed to the next operation.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
43H	Command ID
F7H	End of exclusive

End of data : EOD (45H)

This message is sent out to inform a remote device of the end of a message. Communication, however, will not come to an end unless the remote device returns an ACK message even though an EOD message was transmitted.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
45H	Command ID
F7H	End of exclusive

Communications error : ERR (4EH)

This message warns the remote device of a communications fault encountered during message transmission due, for example, to a checksum error. An ERR message may be replaced with a "Rejection (RJC)" one, which terminates the current message transaction in midstream.

When it receives an ERR message, the sending device may either attempt to send out the last message a second time or terminate communication by sending out an RJC message.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
4EH	Command ID
F7H	End of exclusive

Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

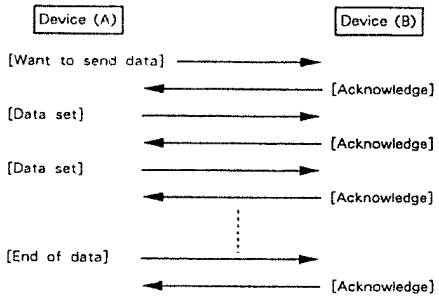
- a WSD or RQD message has specified an illegal data address or size,
- the device is not ready for communication,
- an illegal number of addresses or data has been detected,
- data transfer has been terminated by an operator,
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

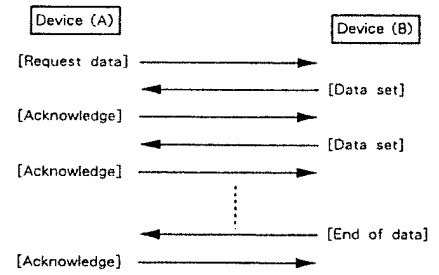
Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

Example of Message Transactions

●Data transfer from device (A) to device (B).

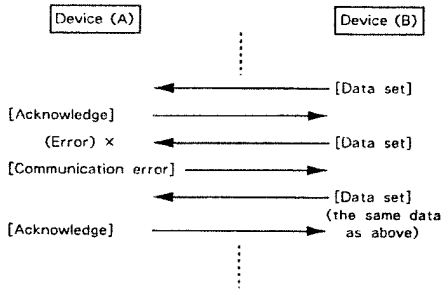


●Device (A) requests and receives data from device (B).

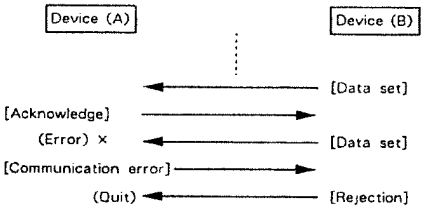


●Error occurs while device (A) is receiving data from device (B).

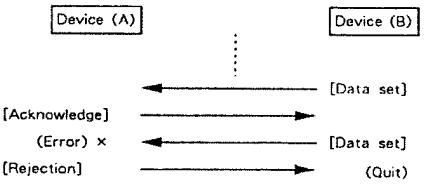
1) Data transfer from device (A) to device (B).



2) Device (B) rejects the data re-transmitied, and quits data transfer.



3) Device (A) immediately quits data transfer.



DIGITAL SAMPLER
MODEL S – 550

MIDI Implementation

Date : Apr. 1. 1988
HD5 – IF

1. TRANSMITTED DATA

■System exclusive

Status
F0H : System exclusive
F7H : EOX (End Of Exclusive)

Transmitted if the System exclusive switch is ON.

2. RECOGNIZED RECEIVE DATA

Up to eight different channels can be set on the S – 550.

■Note event

Note off

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

kk = Note number 0CH – 78H (12 – 120)
vv = Velocity igored
n = MIDI channel number 0H – FH (1 – 16)

Note on

Status	Second	Third
9nH	kkH	vvH

kk = Note number 0CH – 78H (12 – 120)
vv = Velocity 01H – 7FH (1 – 127)
n = MIDI channel number 0H – FH (1 – 16)

■Control change

Modulation

Status	Second	Third
BnH	01H	vvH

vv = 00H – 7FH (0 – 127)

Recognized if the Modelation recognition switch is ON.

Volume

Status	Second	Third
BnH	07H	vvH

vv = 00H – 7FH (0 – 127)

Recognized if the Volume recognition switch is ON.

Hold 1

Status	Second	Third
BnH	40H	vvH

vv = 00H – 3FH (0 – 63) : OFF
vv = 40H – 7FH (64 – 127) : ON

Recognized if the Hold recognition switch is ON.

Registerd parameter control

Status	Second	Third
BnH	64H	ppH
BnH	65H	qqH
BnH	06H	mmH
BnH	26H	llH

Bend range

pp = RPC LSB	00H
qq = RPC MSB	00H
mm = Data entry MSB	00H – 0CH
ll = Data entry LSB	ignored

Recognized if the Bend range recognition switch is ON.

■Program change

Status	Second
CnH	ppH

pp = Program change 00H – 7FH (0 – 127)

Recognized if the Program change recognition switch is ON. How to assign a Program change number to a patch can be freely selected.

■Channel aftertouch

Status	Second
DnH	vvH

vv = 00H – 7FH (0 – 127)

Recognized if the Aftertouch recognition switch is ON.

■Pitch bender

Status	Second	Third
EnH	llH	mmH

ll = LSB 00H – 7FH (0 – 127)
mm = MSB 00H – 7FH (0 – 127)

Recognized if the Pitch bender recognition switch is ON.

■Channel mode message

All notes off

Status	Second	Third
BnH	7BH	00H

Recognized as only All notes off. S – 550 doees not change mode, but remains in mode 3 (Omni off, Poly). When the All notes off is recognized, all the notes whitch have been turned ON only by MIDI IN note ON messages are turned OFF. However, if the damper ON message has been recognized, thees ON notes will be not turned OFF Damper OFF message is received.

OMNI OFF

Status	Second	Third
BnH	7CH	00H

OMNI ON

Status	Second	Third
BnH	7DH	00H

MONO

Status	Second	Third
BnH	7EH	0mH

POLY

Status	Second	Third
BnH	7FH	00H

Recognized if the System exclusive switch is ON.

■System Exclusive

Status
F0H : System exclusive
F7H : EOX (End Of Exclusive)

Recognized if the System exclusive switch is ON.

3. EXCLUSIVE COMMUNICATIONS

The Exclusive Messages can be transmitted or recognized only when the Exclusive switch on the S-550 is ON. Ignored when OFF.

The Model-ID number of the S-550 is [1EH].

Device-ID can be changed from the panel in MIDI Mode.
The numbers 1-16 on the display correspond to Device-ID codes 0-15, respectively.

Each Address and Size should be 4 bytes of data, respectively.

3.1 One way communication

3.1.1 Request RQ1 11H

Only when the recognized address and size in RQ1 match those on the S-550, it transmits the corresponding data.
It ignores Requests having illegal address or size. *3-1

The S-550 won't tranmit RQ1.

Byte	Description	
F0H	Exclusive status	
41H	Roland-ID	
DEV	Device-ID	
1EH	Model-ID (S-550)	
11H	Command-ID (RQ1)	
aaH	Address MSB	*3-1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3-1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.1.2 Data set DT1 12H

When the recognized Dataset message contains an appropriate address and size data, the S-550 stores the associated data that address.
It ignores any Data set having illegal address.

The S-550 transmits a Data set message when a Tone Parameter is edited on the pannel or when the S-550 recognizes RQ1.

Byte	Description	
F0H	Exclusive status	
41H	Roland-ID	
DEV	Device-ID	
1EH	Model-ID (S-550)	
12H	Command-ID (DT1)	
aaH	Address MSB	*3-1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ddH	Data	*3-2
:		
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2 Handshaking communication

3.2.1 Want to send data WSD 40H

When recognized WSD message has an appropriate address and size data, the S-550 transmits ACK and waits the associated data.
If not appropriate, it will transmit RJC. *3-1

The S-550 won't transmit WSD.

Byte	Description	
F0H	Exclusive status	
41H	Roland-ID	
DEV	Device-ID	
1EH	Model-ID (S-550)	
40H	Command-ID (WSD)	
aaH	Address MSB	*3-1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3-1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.2 Request data RQD 41H

When recognized RQD message has an appropriate address and size data, the S-550 transmits the corresponding data.
If not appropriate, it will trasnmit RJC. *3-1

The S-550 won't transmit RQD.

Byte	Description	
F0H	Exclusive status	
41H	Roland-ID	
DEV	Device-ID	
1EH	Model-ID (S-550)	
41H	Command-ID (RQD)	
aaH	Address MSB	*3-1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3-1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.3 Data set DAT 42H

Byte	Description	
F0H	Exclusive status	
41H	Roland-ID	
DEV	Device-ID	
1EH	Model-ID (S-550)	
42H	Command-ID (DAT)	
aaH	Address MSB	*3-1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ddH	Data	*3-2
:		
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.4 Acknowledge ACK 43H

Byte	Description
F0H	Exclusive status
41H	Roland-ID
DEV	Device-ID
1EH	Model-ID (S-550)
43H	Command-ID (ACK)
F7H	EOX (End of Exclusive)

3.2.5 End of data EOD 45H

Byte	Description
F0H	Exclusive status
41H	Roland-ID
DEV	Device-ID
1EH	Model-ID (S-550)
45H	Command-ID (EOD)
F7H	EOX (End of Exclusive)

3.2.6 Communication error ERR 4EH

The S-550 transmits ERR if a checksum error occurs.

When ERR message is recognized, the S-550 transmits RJD and ceases the current communication.

Byte	Description
F0H	Exclusive status
41H	Roland-ID
DEV	Device-ID
1EH	Model-ID (S-550)
4EH	Command-ID (ERR)
F7H	EOX (End of Exclusive)

3.2.7 Rejection RJC 4FH

The S-550 transmits RJC and ceases communication if it detects one of the following :

a) ERR is recognized,
b) address in the recognized Dat set is not continuous one and
c) ENTER is activated on the panel during communication.

Byte	Description
F0H	Exclusive status
41H	Roland - ID
DEV	Device - ID
1EH	Model - ID (S - 550)
4FH	Command - ID (RJC)
F7H	EOX (End of Exclusive)

Notes :

*3 - 1 Address and size should specify a memory space in which data exist. The lowest bit of LSB byte in address and size should be 0.

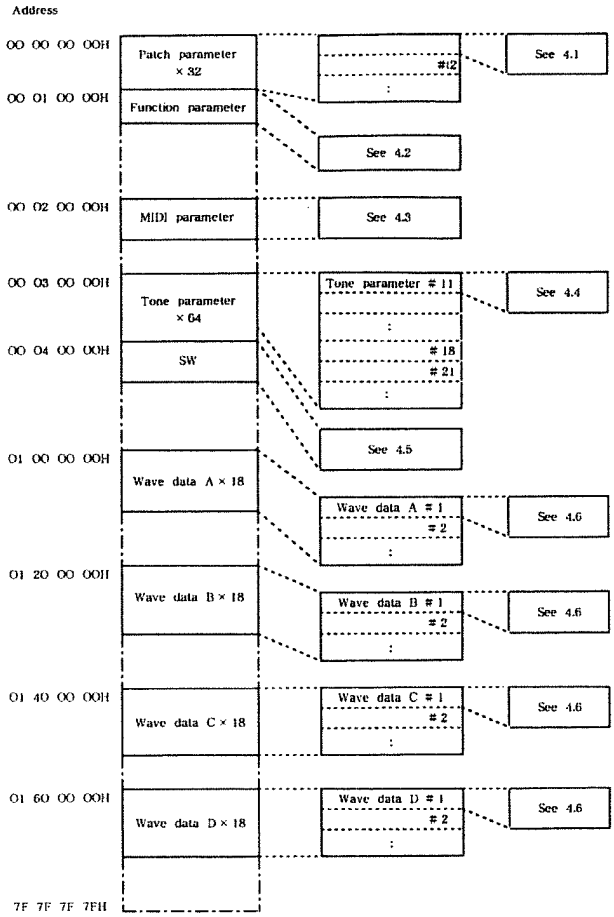
*3 - 2 The number of data bytes should be even number.

4. Address mapping of parameters

Address is represented from 00 to 7F by hexdecimal.

Address	MSB			LSB
binary	0aaa aaaa	0bbb bbbb	0ccc cccc	0ddd dddd
7 bit Hex	AA	BB	CC	DD

An offset address added to an address of each block makes a real address.



4.1 Patch parameter

Offset address	Description		
00 00H	0000 aaaa	PATCH NAME 1	
00 01H	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
:			
00 16H	0000 aaaa	PATCH NAME 12	
00 17H	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
00 18H	0000 aaaa	BEND RANGE	
00 19H	0000 bbbb	aaaa bbbb	0 - 12
00 1AH	0xxx xxxx	dummy	
00 1BH	0xxx xxxx		
00 1CH	0000 aaaa	AFTER TOUCH SENSE	
00 1DH	0000 bbbb	aaaa bbbb	0 - 127
00 1EH	0000 aaaa	KEY MODE	
00 1FH	0000 bbbb	aaaa bbbb	0 : Normal 1 : V - Sw 2 : X - Fade 3 : V - Mix 4 : Unison
00 20H	0000 aaaa	VELOCITY SW THRESHOLD	
00 21H	0000 bbbb	aaaa bbbb	0 - 127
00 22H	0000 aaaa	TONE TO KEY # 1 - 1	
00 23H	0000 bbbb	aaaa bbbb	- 1 - 31
:			- 1 : OFF
01 7AH	0000 aaaa	TONE TO KEY # 1 - 109	
01 7BH	0000 bbbb	aaaa bbbb	0 - 31
01 7CH	0000 aaaa	TONE TO KEY # 2 - 1	
01 7DH	0000 bbbb	aaaa bbbb	0 - 31
:			
03 54H	0000 aaaa	TONE TO KEY # 2 - 109	
03 55H	0000 bbbb	aaaa bbbb	0 - 31
03 56H	0000 aaaa	COPY SOURCE	
03 57H	0000 bbbb	aaaa bbbb	0 - 7
03 58H	0000 aaaa	OCTAVE SHIFT	
03 59H	0000 bbbb	aaaa bbbb	- 2 - + 2
03 5AH	0000 aaaa	OUTPUT LEVEL	
03 5BH	0000 bbbb	aaaa bbbb	0 - 127
03 5CH	0000 aaaa	0xxx xxxx dummy	
03 5DH	0000 bbbb	0xxx xxxx	
03 5EH	0000 aaaa	DETUNE	
03 5FH	0000 bbbb	aaaa bbbb	- 64 - + 63
03 60H	0000 aaaa	VELOCITY MIX RATIO	
03 61H	0000 bbbb	aaaa bbbb	0 - 127
03 62H	0000 aaaa	AFTER TOUCH ASSIGN	
03 63H	0000 bbbb	aaaa bbbb	0 : Modulation 1 : Volume 2 : Bend + 3 : Bend - 4 : Filter
03 64H	0000 aaaa	KEY ASSIGN	
03 65H	0000 bbbb	aaaa bbbb	0 : Rotary 1 : Fix
03 66H	0000 aaaa	OUPUT ASSIGN	
03 67H	0000 bbbb	aaaa bbbb	0 : OUTPUT 1 1 : OUTPUT 2 2 : OUTPUT 3 3 : OUTPUT 4 4 : OUTPUT 5 5 : OUTPUT 6 6 : OUTPUT 7 7 : OUTPUT 8 8 : TONE

03 68H	0xxx xxxx	dummy
:		
03 7FH	0xxx xxxx	
Total size	00 00 04 00H	

4.2 Function parameter

Offset address	Description		
00 00H	0000 aaaa	MASTER TUNE	
00 01H	0000 bbbb	aaaa bbbb	- 64 - + 63
00 02H	0xxx xxxx	dummy	
:			
00 1BH	0xxx xxxx		
00 1CH	0xxx xxxx	dummy	
00 1DH	0xxx xxxx		
00 1EH	0xxx xxxx	dummy	
00 1FH	0xxx xxxx		
00 20H	0000 aaaa	VOICE MODE	
00 21H	0000 bbbb	aaaa bbbb	0 - 23 0 : AUTO MODE LAST NOTE PRIORITY 1 : AUTO MODE FIRST NOTE PRIORITY 2 - 23 : FIX MODE 1 - 22
00 22H	0000 aaaa	MULTI MIDI RX - CH 1	
00 23H	0000 bbbb	aaaa bbbb	0 - 15
:			
00 30H	0000 aaaa	MULTI MIDI RX - CH 8	
00 31H	0000 bbbb	aaaa bbbb	0 - 15
00 32H	0000 aaaa	MULTI PATCH NUMBER 1	
00 33H	0000 bbbb	aaaa bbbb	0 - 31
:			
00 40H	0000 aaaa	MULTI PATCH NUMBER 8	
00 41H	0000 bbbb	aaaa bbbb	0 - 31
00 42H	0xxx xxxx	dummy	
:			
00 53H	0xxx xxxx		
00 54H	0000 aaaa	KEYBOARD DSPLAY	
00 55H	0000 bbbb	aaaa bbbb	0 : A 1 : B 2 : C 3 : D 4 : E 5 : F 6 : G 7 : H 8 : ALL
00 56H	0000 aaaa	MULTI LEVEL 1	
00 57H	0000 bbbb	aaaa bbbb	0 - 127
:			
00 64H	0000 aaaa	MULTI LEVEL 8	
00 65H	0000 bbbb	aaaa bbbb	0 - 127
00 66H	0000 aaaa	BLOCK 1 DISK LABEL 1	
00 67H	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
:			
01 5CH	0000 aaaa	BLOCK 1 DISK LABEL 60	
01 5DH	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
01 5EH	0xxx xxxx	dummy	
:			
01 65H	0xxx xxxx		
01 66H	0000 aaaa	EXTERNAL CONTROLER	
01 67H	0000 bbbb	aaaa bbbb	0 : OFF 1 : MOUSE 2 : RC - 100
01 68H	0xxx xxxx	dummy	
:			
04 65H	0xxx xxxx		
04 66H	0000 aaaa	BLOCK 2 DISK LABEL 1	
04 67H	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
:			
05 5CH	0000 aaaa	BLOCK 2 DISK LABEL 60	
05 5DH	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
05 5EH	0xxx xxxx	dummy	
:			
07 7FH	0xxx xxxx		
Total size		00 00 08 00H	

4.3 MIDI parameter

Offset address	Description		
00 00H	0xxx xxxx	dummy	
:			
00 3FH	0xxx xxxx		
00 40H	0000 aaaa	RX CHANNEL 1	
00 41H	0000 bbbb	aaaa bbbb	0 - 16 0 - 15 ··· 1 - 16 CH 16 ··· OFF
:			
:			
00 4EH	0000 aaaa	RX CHANNEL 8	
00 4FH	0000 bbbb	aaaa bbbb	0 - 16
00 50H	0000 aaaa	RX PROGRAM CHANGE 1	
00 51H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
:			
:			
00 5EH	0000 aaaa	RX PROGRAM CHANGE 8	
00 5FH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
00 60H	0000 aaaa	RX BENDER 1	
00 61H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
:			
:			
00 6EH	0000 aaaa	RX BENDER 8	
00 6FH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
00 70H	0000 aaaa	RX MODULATION 1	
00 71H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
:			
:			
00 7EH	0000 aaaa	RX MODULATION 8	
00 7FH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 00H	0000 aaaa	RX HOLD 1	
01 01H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
:			
01 0EH	0000 aaaa	RX HOLD 8	
01 0FH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 10H	0000 aaaa	RX AFTER TOUCH 1	
01 11H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
:			
01 1EH	0000 aaaa	RX AFTER TOUCH 8	
01 1FH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 20H	0000 aaaa	RX VOLUME 1	
01 21H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
:			
:			
01 2EH	0000 aaaa	RX VOLUME 8	
01 2FH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 30H	0000 aaaa	RX BEND RANGE 1	
01 31H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
:			
:			
01 3EH	0000 aaaa	RX BEND RANGE 8	
01 3FH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON

01 40H	0xxx xxxx	dummy	
01 41H	0xxx xxxx		
01 42H	0000 aaaa	SYSTEM EXCLUSIVE	
01 43H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 44H	0000 aaaa	DEVICE ID	
01 45H	0000 bbbb	aaaa bbbb	0 - 15
01 46H	0000 aaaa	RX PROGRAM CHANGE NUMBER 1	
01 47H	0000 bbbb	aaaa bbbb	0 - 127
:			
02 06H	0000 aaaa	RX PROGRAM CHANGE NUMBER 32	
02 07H	0000 bbbb	aaaa bbbb	0 - 127
02 08H	0xxx xxxx	dummy	
:			
03 7FH	0xxx xxxx		
Total size		00 00 04 0011	

4.4 Tone parameters

Offset address	Description		
00 00H	0000 aaaa	TONE NAME 1	
00 01H	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
:			
:			
00 0EH	0000 aaaa	TONE NAME 8	
00 0FH	0000 bbbb	aaaa bbbb	32 - 127 (ASCII)
00 10H	0000 aaaa	OUTPUT ASSIGN	
00 11H	0000 bbbb	aaaa bbbb	0 - 7
00 12H	0000 aaaa	SOURCE TONE	
00 13H	0000 bbbb	aaaa bbbb	0 - 31
00 14H	0000 aaaa	ORIG./SUB TONE	
00 15H	0000 bbbb	aaaa bbbb	0 : ORG 1 : SUB
00 16H	0000 aaaa	SAMPLING FREQUENCY	
00 17H	0000 bbbb	aaaa bbbb	0 : 30kHz 1 : 15kHz
00 18H	0000 aaaa	ORIG KEY NUMBER	
00 19H	0000 bbbb	aaaa bbbb	11 - 120 (MIDI FORMAT)
00 1AH	0000 aaaa	WAVE BANK	
00 1BH	0000 bbbb	aaaa bbbb	0 : A 1 : B
00 1CH	0000 aaaa	WAVE SEGMENT TOP	
00 1DH	0000 bbbb	aaaa bbbb	0 - 17
00 1EH	0000 aaaa	WAVE SEGMENT LENGTH	
00 1FH	0000 bbbb	aaaa bbbb	0 - 18
00 20H	0000 aaaa	START POINT	
00 21H	0000 bbbb		
00 22H	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
00 23H	0000 dddd		000000 - 221180
00 24H	0000 eeee		
00 25H	0000 ffff		
00 26H	0000 aaaa	END POINT	
00 27H	0000 bbbb		
00 28H	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
00 29H	0000 dddd		000004 - 221184
00 2AH	0000 eeee		
00 2BH	0000 ffff		
00 2CH	0000 aaaa	LOOP POINT	
00 2DH	0000 bbbb		
00 2EH	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
00 2FH	0000 dddd		000000 - 221184
00 30H	0000 eeee		
00 31H	0000 ffff		
00 32H	0000 aaaa	LOOP MODE	
00 33H	0000 bbbb	aaaa bbbb	0 : Fwd 1 : Alt 2 : 1Shot 3 : Reverse
00 34H	0000 aaaa	TVA LFO DEPTH	
00 35H	0000 bbbb	aaaa bbbb	0 - 127
00 36H	0xxx xxxx	dummy	
00 37H	0xxx xxxx		
00 38H	0000 aaaa	LFO RATE	
00 39H	0000 bbbb	aaaa bbbb	0 - 127
00 3AH	0000 aaaa	LFO SYNC	
00 3BH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
00 3CH	0000 aaaa	LFO DELAY	
00 3DH	0000 bbbb	aaaa bbbb	0 - 127
00 3EH	0xxx xxxx	dummy	
00 3FH	0xxx xxxx		
00 40H	0000 aaaa	LFO MODE	
00 41H	0000 bbbb	aaaa bbbb	0 : NORMAL 1 : ONE SHOT
00 42H	0000 aaaa	OSC LFO DEPTH	
00 43H	0000 bbbb	aaaa bbbb	0 - 127
00 44H	0000 aaaa	LFO POLARITY	
00 45H	0000 bbbb	aaaa bbbb	0 : Sine 1 : Peak hold
00 46H	0000 aaaa	LFO OFFSET	
00 47H	0000 bbbb	aaaa bbbb	0 - 127
00 48H	0000 aaaa	TRANSPOSE	
00 49H	0000 bbbb	aaaa bbbb	0 - 127
00 4AH	0000 aaaa	FINE TUNE	
00 4BH	0000 bbbb	aaaa bbbb	- 64 - + 63
00 4CH	0000 aaaa	TVF CUT OFF	
00 4DH	0000 bbbb	aaaa bbbb	0 - 127
00 4EH	0000 aaaa	TVF RESONANCE	
00 4FH	0000 bbbb	aaaa bbbb	0 - 127
00 50H	0000 aaaa	TVF KEY FOLLOW	
00 51H	0000 bbbb	aaaa bbbb	0 - 127
00 52H	0xxx xxxx	dummy	
00 53H	0xxx xxxx		
00 54H	0000 aaaa	TVF LFO DEPTH	
00 55H	0000 bbbb	aaaa bbbb	0 - 127
00 56H	0000 aaaa	TVF EG DEPTH	
00 57H	0000 bbbb	aaaa bbbb	0 - 127
00 58H	0000 aaaa	TVF EG POLARITY	
00 59H	0000 bbbb	aaaa bbbb	0 : NORMAL 1 : REVERSE
00 5AH	0000 aaaa	TVF LEVEL CURVE	
00 5BH	0000 bbbb	aaaa bbbb	0 - 5
00 5CH	0000 aaaa	TVF KEY RATE FOLLOW	
00 5DH	0000 bbbb	aaaa bbbb	0 - 127
00 5EH	0000 aaaa	TVF VELOCITY RATE FOLLOW	
00 5FH	0000 bbbb	aaaa bbbb	0 - 127
00 60H	0xxx xxxx	dummy	
00 61H	0xxx xxxx		
00 62H	0000 aaaa	TVF SWITCH	
00 63H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
00 64H	0000 aaaa	BENDER SWITCH	
00 65H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON

00 66H	0000 aaaa	TVA ENV SUSTAIN POINT	
00 67H	0000 bbbb	aaaa bbbb	0 - 7
00 68H	0000 aaaa	TVA ENV END POINT	
00 69H	0000 bbbb	aaaa bbbb	1 - 7
00 6AH	0000 aaaa	TVA ENV LEVEL 1	
00 6BH	0000 bbbb	aaaa bbbb	0 - 127
00 6CH	0000 aaaa	TVA ENV RATE 1	
00 6DH	0000 bbbb	aaaa bbbb	1 - 127
00 6EH	0000 aaaa	TVA ENV LEVEL 2	
00 6FH	0000 bbbb	aaaa bbbb	0 - 127
00 70H	0000 aaaa	TVA ENV RATE 2	
00 71H	0000 bbbb	aaaa bbbb	1 - 127
00 72H	0000 aaaa	TVA ENV LEVEL 3	
00 73H	0000 bbbb	aaaa bbbb	0 - 127
00 74H	0000 aaaa	TVA ENV RATE 3	
00 75H	0000 bbbb	aaaa bbbb	1 - 127
00 76H	0000 aaaa	TVA ENV LEVEL 4	
00 77H	0000 bbbb	aaaa bbbb	0 - 127
00 78H	0000 aaaa	TVA ENV RATE 4	
00 79H	0000 bbbb	aaaa bbbb	1 - 127
00 7AH	0000 aaaa	TVA ENV LEVEL 5	
00 7BH	0000 bbbb	aaaa bbbb	0 - 127
00 7CH	0000 aaaa	TVA ENV RATE 5	
00 7DH	0000 bbbb	aaaa bbbb	1 - 127
00 7EH	0000 aaaa	TVA ENV LEVEL 6	
00 7FH	0000 bbbb	aaaa bbbb	0 - 127
01 00H	0000 aaaa	TVA ENV RATE 6	
01 01H	0000 bbbb	aaaa bbbb	1 - 127
01 02H	0000 aaaa	TVA ENV LEVEL 7	
01 03H	0000 bbbb	aaaa bbbb	0 - 127
01 04H	0000 aaaa	TVA ENV RATE 7	
01 05H	0000 bbbb	aaaa bbbb	1 - 127
01 06H	0000 aaaa	TVA ENV LEVEL 8	
01 07H	0000 bbbb	aaaa bbbb	0 - 127
01 08H	0000 aaaa	TVA ENV RATE 8	
01 09H	0000 bbbb	aaaa bbbb	1 - 127
01 0AH	0xxx xxxx	dummy	
01 0BH	0xxx xxxx		
01 0CH	0000 aaaa	TVA ENV KEY - RATE	
01 0DH	0000 bbbb	aaaa bbbb	0 - 127
01 0EH	0000 aaaa	LEVEL	
01 0FH	0000 bbbb	aaaa bbbb	0 - 127
01 10H	0000 aaaa	ENV VEL - RATE	
01 11H	0000 bbbb	aaaa bbbb	0 - 127
01 12H	0000 aaaa	REC THRESHOLD	
01 13H	0000 bbbb	aaaa bbbb	0 - 127
01 14H	0000 aaaa	REC PRE - TRIGER	
01 15H	0000 bbbb	aaaa bbbb	0 : 0ms 1 : 10ms 2 : 50ms 3 : 100ms
01 16H	0000 aaaa	REC SAMPLING FREQUENCY	
01 17H	0000 bbbb	aaaa bbbb	0 : 30kHz 1 : 15kHz
01 18H	0000 aaaa	REC START POINT	
01 19H	0000 bbbb		
01 1AH	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 1BH	0000 dddd		000000 - 221180
01 1CH	0000 eeee		
01 1DH	0000 ffff		
01 1EH	0000 aaaa	REC END POINT	
01 1FH	0000 bbbb		
01 20H	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 21H	0000 dddd		000004 - 221184
01 22H	0000 eeee		
01 23H	0000 ffff		
01 24H	0000 aaaa	REC LOOP POINT	
01 25H	0000 bbbb		
01 26H	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 27H	0000 dddd		000000 - 221184
01 28H	0000 eeee		
01 29H	0000 ffff		
01 2AH	0000 aaaa	ZOOM T	
01 2BH	0000 bbbb	aaaa bbbb	0 - 5
01 2CH	0000 aaaa	ZOOM L	
01 2DH	0000 bbbb	aaaa bbbb	0 - 5
01 2EH	0000 aaaa	COPY SOURCE	
01 2FH	0000 bbbb	aaaa bbbb	0 - 31
01 30H	0000 aaaa	LOOP TUNE	
01 31H	0000 bbbb	aaaa bbbb	- 64 - + 63
01 32H	0000 aaaa	TVA LEVEL CURVE	
01 33H	0000 bbbb	aaaa bbbb	0 - 5
01 34H	0xxx xxxx	dummy	
:			
01 4BH	0xxx xxxx		
01 4CH	0000 aaaa	LOOP LENGTH	
01 4DH	0000 bbbb		
01 4EH	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 4FH	0000 dddd		000004 - 221184
01 50H	0000 eeee		
01 51H	0000 ffff		
01 52H	0000 aaaa	PITCH FOLLOW	
01 53H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 54H	0000 aaaa	ENV ZOOM	
01 55H	0000 bbbb	aaaa bbbb	0 - 5
01 56H	0000 aaaa	TVF ENV SUSTAIN POINT	
01 57H	0000 bbbb	aaaa bbbb	0 - 7
01 58H	0000 aaaa	TVF ENV END POINT	
01 59H	0000 bbbb	aaaa bbbb	1 - 7
01 5AH	0000 aaaa	TVF ENV LEVEL 1	
01 5BH	0000 bbbb	aaaa bbbb	0 - 127
01 5CH	0000 aaaa	TVF ENV RATE 1	
01 5DH	0000 bbbb	aaaa bbbb	1 - 127
01 5EH	0000 aaaa	TVF ENV LEVEL 2	
01 5FH	0000 bbbb	aaaa bbbb	0 - 127
01 60H	0000 aaaa	TVF ENV RATE 2	
01 61H	0000 bbbb	aaaa bbbb	1 - 127
01 62H	0000 aaaa	TVF ENV LEVEL 3	
01 63H	0000 bbbb	aaaa bbbb	0 - 127
01 64H	0000 aaaa	TVF ENV RATE 3	
01 65H	0000 bbbb	aaaa bbbb	1 - 127
01 66H	0000 aaaa	TVF ENV LEVEL 4	
01 67H	0000 bbbb	aaaa bbbb	0 - 127
01 68H	0000 aaaa	TVF ENV RATE 4	
01 69H	0000 bbbb	aaaa bbbb	1 - 127
01 6AH	0000 aaaa	TVF ENV LEVEL 5	
01 6BH	0000 bbbb	aaaa bbbb	0 - 127
01 6CH	0000 aaaa	TVF ENV RATE 5	
01 6DH	0000 bbbb	aaaa bbbb	1 - 127
01 6EH	0000 aaaa	TVF ENV LEVEL 6	
01 6FH	0000 bbbb	aaaa bbbb	0 - 127

01 70H	0000 aaaa	TVF ENV RATE 6	
01 71H	0000 bbbb	aaaa bbbb	1 - 127
01 72H	0000 aaaa	TVF ENV LEVEL 7	
01 73H	0000 bbbb	aaaa bbbb	0 - 127
01 74H	0000 aaaa	TVF ENV RATE 7	
01 75H	0000 bbbb	aaaa bbbb	1 - 127
01 76H	0000 aaaa	TVF ENV LEVEL 8	
01 77H	0000 bbbb	aaaa bbbb	0 - 127
01 78H	0000 aaaa	TVF ENV RATE 8	
01 79H	0000 bbbb	aaaa bbbb	1 - 127
01 7AH	0000 aaaa	AFTER TOUCH SWITCH	
01 7BH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 7CH	0xxx xxxx	dummy	
:			
01 7FH	0xxx xxxx		
Total size		00 00 02 00H	

4.5 SW

Offset address	Description		
00H	0000 aaaa	SW 1 (all)	
01H	0000 bbbb	aaaa bbbb	
02H	0000 aaaa	SW 2 (character)	
03H	0000 bbbb	aaaa bbbb	
04H	0000 aaaa	SW 3 (patch)	
05H	0000 bbbb	aaaa bbbb	
06H	0000 aaaa	ALPHA DIAL	
07H	0000 bbbb	aaaa bbbb	- 127 - + 127
Total size		00 00 00 08H	

4.6 Wave data

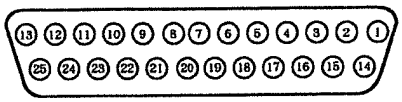
Offset address	Description	
00 00 00H	0aaa aaaa	aaaa aaab bbbb
00 00 01H	0bbb bb00	12 bit 2's complemet data
:		
:		
01 3F 7EH		
01 3F 7FH		
Total size		00 01 40 00H

SPECIFICATIONS

HD5 – IF

Interface Board
Blind Board with holes for installation
3 x 8 Metric Coarse Machine Screws (larger) x 1
3 x 6 Metric Coarse Machine Screws (smaller) x 1
HD5 – IF System Disk
(for Roland Digital Sampler S – 550)

HD5 – IF Interface Board External Connector : Pin Positions



13	12	11	10	9	8	7	6	5	4	3	2	1
$\overline{DB7}$	$\overline{DB6}$	$\overline{DB5}$	$\overline{DB3}$	GND	$\overline{DB0}$	GND	$\overline{BSY}$	$\overline{ACK}$	$\overline{RST}$	I/O	$\overline{MSG}$	$\overline{REQ}$

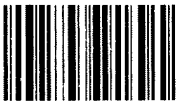
25	24	23	22	21	20	19	18	17	16	15	14
NC	GND	$\overline{DB4}$	$\overline{DB2}$	$\overline{DB1}$	$\overline{DBP}$	$\overline{SEL}$	GND	$\overline{ATN}$	GND	C/D	GND

Roland®

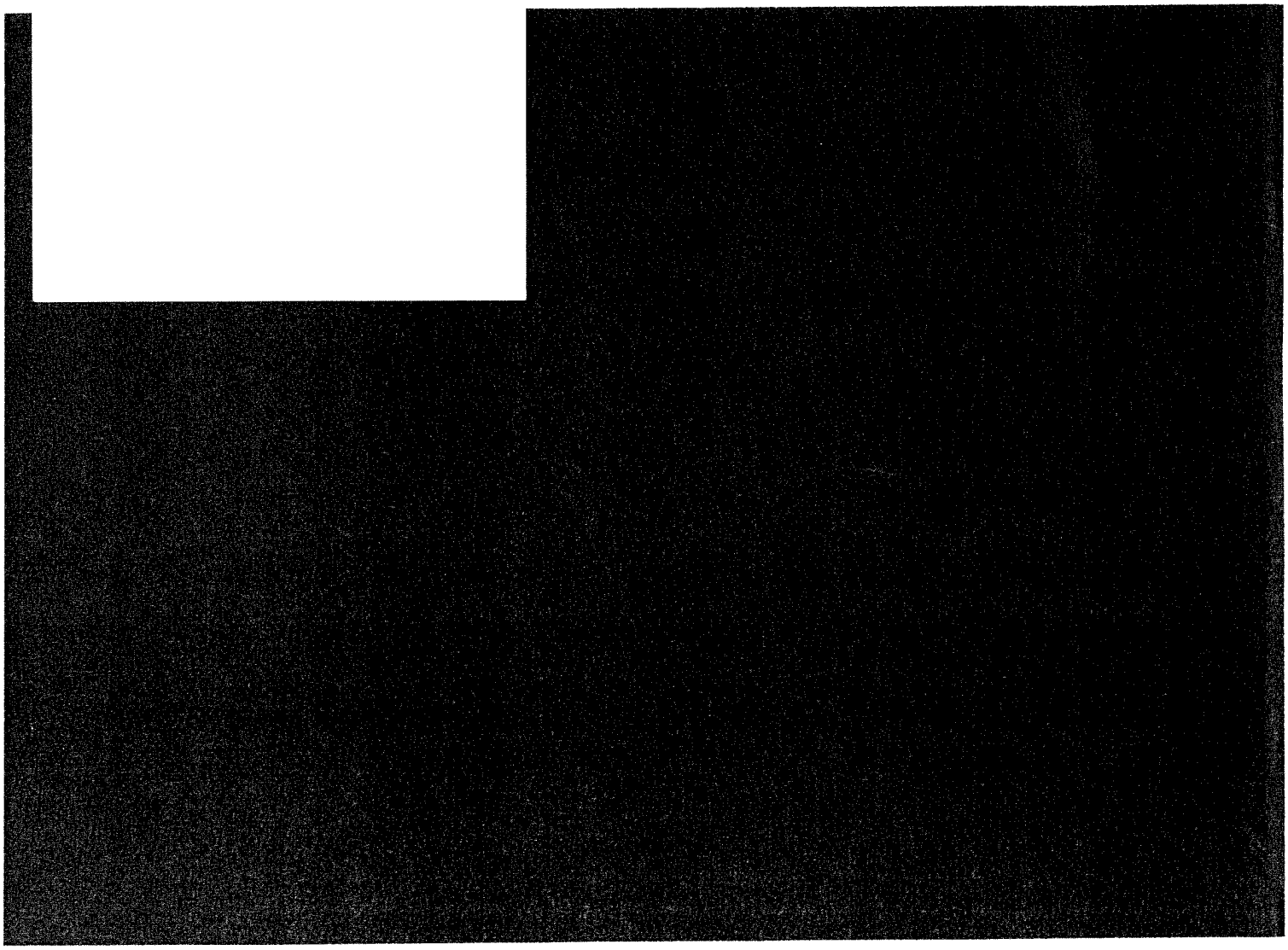
11066

HD5-IF

UPC 11066



10981



Roland

'88-4-BE2-1S