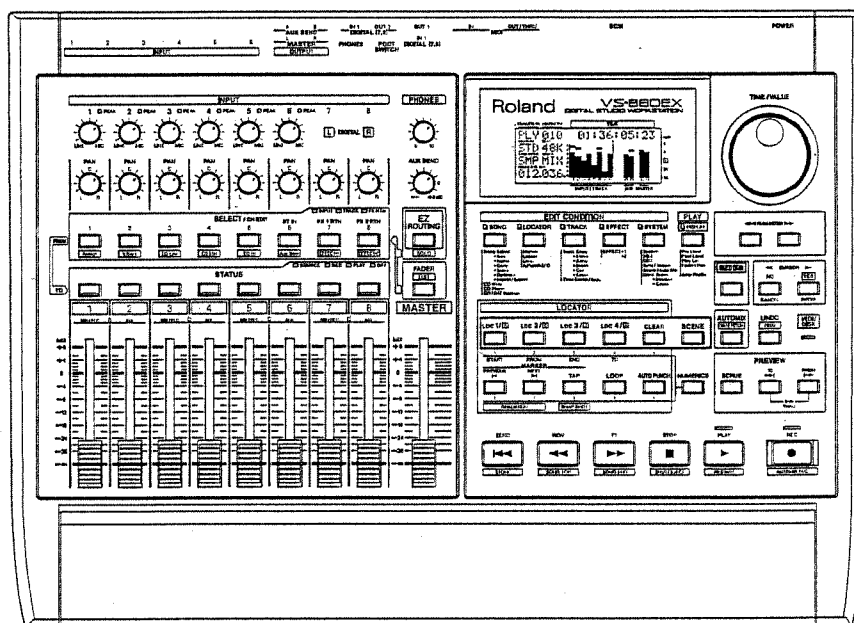


Roland®

VS-880EX DIGITAL STUDIO WORKSTATION

OWNER'S MANUAL



Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3, 4), and "IMPORTANT NOTES" (p. 5). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, Quick Start, Owner's Manual, and Appendices should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

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Roland Homepage <http://www.rolandcorp.com/>



CAUTION
 RISK OF ELECTRIC SHOCK
 DO NOT OPEN



ATTENTION: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

WARNING - When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
8. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
9. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
10. The product should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

For the USA

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product — if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

For the U.K.

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.
GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

The product which is equipped with a THREE WIRE GROUNDING TYPE LINE PLUG must be grounded.

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About WARNING and CAUTION Notices

 WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
 CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The  symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
	The  symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
	The  symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual. 
- Do not open or perform any internal modifications on the unit. (The only exception would be where this manual provides specific instructions which should be followed in order to put in place user-installable options; see Quick Start p. 49.) 
- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces. 
- Avoid damaging the power cord. Do not bend it excessively, step on it, place heavy objects on it, etc. A damaged cord can easily become a shock or fire hazard. Never use a power cord after it has been damaged. 
- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit. 
- Protect the unit from strong impact. (Do not drop it!) 

WARNING

- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through. 
- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page. 
- Always turn the unit off and unplug the power cord before attempting installation of the Hard disk drive unit (HDP88 series: Quick Start p. 49). 

USING THE UNIT SAFELY

CAUTION

- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet or this unit. 
- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children. 
- Never climb on top of, nor place heavy objects on the unit. 
- Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit. 
- Before moving the unit, disconnect the power plug from the outlet, and pull out all cords from external devices. 
- Before cleaning the unit, turn off the power and unplug the power cord from the outlet (p. 33). 
- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet. 
- When installing the Hard disk drive unit (HDP88 series), remove only the specified screws (Quick Start p. 49). 
- If you use the optical connector, be sure that the connector cover you removed is placed out of the reach of children. 

IMPORTANT NOTES

In addition to the items listed under "IMPORTANT SAFETY INSTRUCTIONS" and "USING THE UNIT SAFELY" on pages 2–4, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Repairs and Data

- Please be aware that all data contained in the unit's memory may be lost when the unit is sent for repairs. Important data should always be backed up on a storage device (e.g., hard disk or Zip disk) or DAT recorder, or written down on paper (when possible). During repairs, due care is taken to avoid

the loss of data. However, in certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data, and Roland assumes no liability concerning such loss of data.

Additional Precautions

- Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of losing important data, we recommend that you periodically save a backup copy of important data you have stored in the unit's memory on a storage device (e.g., hard disk or Zip disk), or DAT recorder.
- Unfortunately, it may be impossible to restore the contents of data that was stored on a storage device (e.g., hard disk or Zip disk), or DAT recorder once it has been lost. Roland Corporation assumes no liability concerning such loss of data.
- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- Never strike or apply strong pressure to the display.
- A small amount of noise may be heard from the display during normal operation.
- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- A small amount of heat will radiate from the unit during normal operation.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

If an internal IDE hard disk (HDP88 series) is installed, then remove the hard disk. Place the hard disk in its carton and set this in the specified place inside the VS-880EX shipping carton. The unit is now ready to be transported. Moving the VS-880EX with the hard disk installed may result in loss of song data or damage to the hard disk.

Handling the Disk Drive

For details on hard disk handling, refer also to the instructions that accompanied your hard disk.

- Before performing any of the following actions, be sure to perform the shutdown procedure. Failure to do so may result in loss of song data or damage to the hard disk.
 - Turning off the power of the VS-880EX
 - Turning off the power of the Zip drive connected with SCSI connector
 - Removing a disk from a Zip drive connected with SCSI connector

? Shutdown (Appendices p. 124)

When the VS-880EX MIDI/DISK indicator or Zip drive status indicator is lit, it means that data is being written to or from the hard disk. If you are using a Zip drive, confirm that this indicator is not lit before removing disks.

- While using the VS-880EX, be careful not to subject the unit to vibration or shock, and avoid moving the unit while the power is turned on.
- Install the unit on a solid, level surface in an area free from vibration. If the unit must be installed at an angle, be sure the installation does not exceed the permissible range.
- Avoid using the unit immediately after it has been moved to a location with a level of humidity that is greatly different than its former location. Rapid changes in the environment can cause condensation to form inside the drive, which will adversely affect the operation of the drive and/or damage removable disks. When the unit has been moved, allow it to become accustomed to the new environment (allow a few hours) before operating it.

Concerning Copyright

The law prohibits the unauthorized recording, public performance, broadcast, sale, or distribution etc. of a work (CD recording, video recording, broadcast, etc.) whose copyright is owned by a third party.

Roland will take no responsibility for any infringement of copyright that you may commit in using the VS-880EX.

About SCMS

The VS-880EX does not implement SCMS. This design decision was made with the intent that SCMS should not restrict the creation of original compositions which do not violate copyright law. Do not use this device in a way which would infringe on copyrights held by another.

? SCMS (Appendices p. 124)

Disclaimer of Liability

Roland will take no responsibility for any direct damages, consequential damages, or any other damages which may result from your use of the VS-880EX. These damages may include but are not limited to the following events which can occur when using the VS-880EX.

- Any loss of profit that may occur to you.
- Permanent loss of your music or data.
- Inability to continue using the VS-880EX itself or a connected device.

About the License Agreement

The VS-880EX and its CD-R capability are designed to allow you to reproduce material to which you have copyright, or material which the copyright owner has granted you permission to copy. Accordingly, reproduction of music CDs or other copyrighted material without the permission of the copyright owner, other than for your own personal use and enjoyment (private use) constitutes copyright infringement, which may incur penalties. Consult a copyright specialist or special publications for more detailed information on obtaining such permission from copyright holders.

CONTENTS

Preparations	12
About the Package Contents	12
Main Features	12
Front and Rear Panels	14
Mixer Section	14
Recorder Section	16
Display section	18
Rear Panel	19
Chapter 1 Before You Start (VS-880EX Terminology)	21
Saving and Managing Data	21
Managing Disk Contents (Partitioning)	21
The Location Where a Performance is Recorded (Song)	22
Sources, Tracks, and Channels	22
About Events	23
Mixer Section	24
Signal Flow (Buses)	24
Input Mixer	26
Track Mixer	27
Effect Return Mixer	27
Switching the Fader Functions	28
Master Block	28
Recorder Section	28
Differences with a Tape-Type MTR	28
Track Minutes and Recording Time	29
Auxiliary Tracks for Each Track	30
Effects Section	31
About the Effect Expansion Board	31
Connecting Effects	31
Chapter 2 Basic Operation	32
Before You Begin	32
Turning On the Power	32
If You Have Trouble Understanding Displays or Operations	32
Before You Finish Operations	32
Saving the Performance to Disk (Song Store)	32
Turning Off the Power	33
Restarting	33
Basic Operations on the VS-880EX	34
Display Each of the Condition Menus	34
Selecting Pages Contained in Functions and Settings	34
Select the Setting You Want to Change	35
Change the Settings Values	35
Execute the Operation	35
Switching Track Conditions	35
Changing the Current Time	36
Moving in Frame Units	36
Moving in Measure/Beat Units	36
Moving to the Beginning or End of the Performance	36
Storing a Time Location	36
Using the Locator	37
Using Markers	38
Chapter 3 Multi-Track Recording	40
Recording	40
Items Necessary for Multi-Track Recording	40
Creating a New Song (Song New)	40

CONTENTS

General Course of the Recording Process	41
Connecting Instruments	41
Recording to the Tracks	42
Saving a Recorded Performance (Song Store)	43
Recording Over a Portion of a Performance (Punch-In/Punch-Out)	44
Using the RECORD Button (Manual Punch-In 1)	44
Using the Foot switch (Manual Punch-In 2)	44
Specifying Beforehand the Location for Rerecording (Auto Punch-In)	45
Repeatedly Recording Over the Same Area (Loop Recording)	47
Recording to Other Tracks (Overdubbing)	49
Recording on V-Track 2	49
Using Effects	50
Applying Effects to the Playback	50
Applying Effects While Recording (Send/Return)	51
Applying Effects While Recording (Insert)	52
Recording Digital Signals	55
Items Necessary for Digital Recording	55
Make the Digital Connections	55
Match the Sample Rates	55
Select the Master Clock	56
Select an Input Source	56
Adjusting the Tone (Equalizer)	57
Using the 3-Band Equalizer	57
Adjusting the Equalizer	57
Combining the Contents of Tracks (Track Bouncing)	60
Applying Reverb While Track Bouncing	61
Creating a Master Tape	63
To Record to a Cassette Tape	63
Recording with DAT and MD Recorders	63
Protecting Songs (Song Protect)	64
Protecting Performances	65
To Remove Song Protect	65
Selecting a Song (Song Select)	65
Chapter 4 Using the Internal Effects	66
Composition of the Effects	66
Connecting the Effects	66
Changing the Source Sound Itself (Insert)	66
Inserting with Input and Track Channels	67
Inserting an Effect into the Master Block	67
Adding the Sound with the Effect Applied to the Direct Sound (Send/Return)	68
Selecting Effects (Patch)	70
Creating New Effects Sounds	71
When Saving to User Patches	72
When Storing to a Scene	72
Chapter 5 Storing Mixer Settings	73
Recording the Current Condition of the Mixer (Scene)	73
Making Mixer Settings Automatically(EZ Routing)	74
Recalling Recording Settings (Recording/Template)	75
Recalling Track Bouncing Settings (Bouncing/Template)	75
Recalling Mixdown Settings (Mixdown/Template)	76
Storing Recording Settings (Recording/Step Edit)	77
Storing Track Bouncing Settings (Bouncing/Step Edit)	81
Storing Mixdown Settings (Mixdown/Step Edit)	84
Saving the Current Routing (User Routing)	87
Recalling User Routing	87
Deleting User Routings	87

Chapter 6 Editing a Recorded Performance (Track Editing) ... 88

About Editing Operations	88
Track Edit	88
About the Bar Display	88
Repeating Performance Data (Track Copy)	89
Moving Performance Data (Track Move)	91
Exchanging Performance Data Between Tracks (Track Exchange)	92
Inserting a Blank Space Into Performance Data (Track Insert)	93
Deleting Performance Data (Track Cut)	94
Erasing Performance Data (Track Erase)	95
Modifying the Playback Time of the Performance Data (Time Compression/Expansion)	96

Chapter 7 Use with a Zip Drive 99

Before You Use a Zip Drive	99
Handling the Zip Drive	99
Handling Zip Disks	99
Connecting the Zip Drive	99
Initializing the Disk (Drive Initialize)	100
Checking Disk Reliability	101
Saving Performance Data to a Zip Drive (Song Copy)	102
Saving a Song to a Single Disk (Playable)	103
To Load Data from Disks (Drive Select)	104
When You Cannot Save a Song to a Single Disk (Archives)	105
Saving to Disks (Store)	105
Loading Data From Disks (Extract)	106
About power-save mode	106

Chapter 8 Use with a CD-RW Drive 107

Before You Use a CD-RW Drive	107
Handling the CD-RW Drive	107
Handling CD-RW Discs	107
Connecting the CD-RW Drive	107
Creating an Audio CD	108
Items Necessary for Creating an Audio CD	108
Creating a Master Data	108
Writing Songs to CD-R Discs	109
Auditioning (Test Listening) Songs Written to CDs (CD Player Function)	110
Writing Additional Songs to the Disc	111
Arranging and Writing Multiple Songs to Disc	111
Writing the Song Data (Finalize)	112
Arranging and Writing Songs and Song Data	113
Saving Songs to CD-RW Discs (CD-R Backup)	113
Items Necessary for CD-R Backup	114
Saving Songs to CD-RW Discs	114
Loading Songs From CD-RW Discs	115
How to Erase the Data in the CD-RW Disc	115

Chapter 9 Use with MIDI Devices 116

Synchronizing with MIDI Sequencers	116
Items Necessary for Synchronization	116
Master and Slave	116
Using MTC	116
Synchronization with the VS-880EX as the Reference (Master)	117
Synchronization with the MIDI Sequencer as the Reference (Slave)	118
Synchronizing with an External MIDI Device	119
Using the Sync Track (Master)	119
Using the Tempo Map (Master)	121

CONTENTS

Various Operations Related to Synchronized Operation	123
Use with a MIDI Controller	126
Switching Track Status	126
Switching Scenes	127
Switching Effects	127
Adjusting Effects	127
Chapter 10 Use with a DAT Recorder (DAT Backup)	128
Before Backing Up with DAT	128
Items Necessary for DAT Backup	128
About the Devices Used in DAT Backup	128
Saving Song Data to a DAT Recorder (Backup)	129
Loading Performance Data from a DAT Recorder (Recover)	131
When Canceling the Recover Operation	132
Checking Names of Saved Performance Data (Name)	133
Checking the Recording Condition of Saved Performance Data (Verify)	134
Chapter 11 Compatibility	136
Disk Compatibility	136
VS-880 → VS-880EX	136
VS-880EX → VS-880	136
VS-1680 → VS-880EX	136
VS-880EX → VS-1680	137
VS-840 ↔ VS-880EX	137
Song Data Compatibility	137
Loading VS-880 Performance Data into the VS-880EX (Song Import)	137
Converting VS-880EX Song Data for Use with the VS-880 (Song Export)	138
Chapter 12 Other Convenient Functions	140
Previewing Techniques (Preview)	140
Using [TO] [FROM]	140
Using [SCRUB]	141
Recalling a Specific Location (Jump)	142
Recording Mixer Settings (Auto Mix)	142
Preparations for Auto Mix	143
Recording the Mixer Settings, Method 1 (Snapshot)	143
Recording the Mixer Settings, Method 2 (Gradation)	144
Recording Fader Operations (Realtime)	144
If You Don't Want to Record Fader Settings (Mask Fader)	145
Playing Back the Auto Mix	145
Disabling Auto Mix Only on Specified Channels	145
Disabling Auto Mix on All Channels	146
Undoing Recordings and Edits (Undo)	146
Recording and Editing Operations Which Can Be Undone (Undo)	147
Canceling the Last-Performed Undo (Redo)	147
Canceling Only the Very Last-Performed Operation	147
Listening Only to a Specific Channel (Solo/Mute)	148
Listening Only to a Specific Channel	148
Muting Only to a Specific Channel	148
Simultaneously Adjusting a Stereo Source (Channel Link)	149
Adjusting the Faders	149
Adjusting the Pan	150
Linking Only the Faders (Fader Link)	151
Mixing In a Stereo Source (Stereo In)	152
Changing the Pitch During Playback (Vari-Pitch)	152
Record/Playback Tracks When Using Vari-Pitch	153
Directly Inputting Numeric Characters	153
Selecting the Method for Numeric Input	153

Sounding the Metronome	154
Using an External MIDI Sound Source to Play the Metronome	155
When the Disk Has Little Remaining Space	156
Deleting Only Unneeded Performance Data (Song Optimize)	156
Deleting One Song of Performance Data (Song Erase)	157
Changing the Name of Performance Data (Song Name)	157
Adjusting the Levels for Each Track	157
When Using Balanced Inputs	158
Determining Output	158
MASTER Jacks	158
AUX Jacks	159
DIGITAL OUT Connectors	159
DIRECT OUT	160
Confirming That a Drive is Not Damaged (Drive Check)	160
Chapter 13 Making Global Settings and Checking Conditions ..	163
Switching the Display Content	163
Pre Level	163
Post Level	163
Play List	163
Feder/Pan	163
Checking the Size of a Recorded Performance	164
System Settings for Each Song	164
Having the Volume Change as Soon as the Faders are Moved	164
Holding Level Meter Peaks	164
Checking the Remaining Disk Space	165
When Using the Foot Switch	165
Overall Settings for the VS-880EX	166
Holding the function of [SHIFT] (Shift Lock)	166
Displaying Measures and Beats	166
Adjusting the Button Sensitivity	167
Changing the VS-880EX's SCSI ID Number	167
When There Is No Hard Disk Installed	167
Changing at the Level at Which the Peak Indicator Lights	168
Overall Settings for Playback and Recording	168
Constantly Monitoring the Input Source	168
Stopping Automatically	168
If Noise Between Segments is Obtrusive	169
Resetting Mixer and System Settings to Their Original State	169
Chapter 14 Takein Advantages of the VS-880EX (idea and examples)	170
Synchronizing the Operations of Two VS-880EX Units	170
Settings for the Master VS-880EX	170
Settings for the Slave VS-880EX	172
Synchronizing with Cakewalk Pro Audio (MMC)	173
Settings for the VS-880EX	174
Settings for Cakewalk Pro Audio	175
Making Digital Connections with Cakewalk	177
Using an External MIDI Device to Adjust the Mixer (Compu Mix)	180
The Correspondence Between MIDI Channels and Controller Numbers	181
Preparations for Compu Mix	182
Recording with Compu Mix	183
To Have the Fader Movements Ignored	183
Synchronizing with Video Equipment	184
Using External Effects Devices	185

Preparations

About the Package Contents

The following items are included with the VS-880EX. Please check to make sure you have all the items.

- VS-880EX
- AC cord
- Quick Start
- Owner's Manual (this manual)
- Appendices

Main Features

The Latest in Compact Home Studio Environments

The VS-880EX retains all of the features of Roland's VS-880 workstation; a revolution in the world of the home studio, with the disk recorder, digital mixer, and multi effects systematically and more organically integrated. From when you start picking mics to when you actually record to mixdown, adding effects, and on to creating the master data for playing through a PA or mastering on a CD, you can get a handle on every aspect of the recording process with the VS-880EX in your home studio.

Disk Recorder Section

The digital disk recorder section provides eight playback tracks, and allows eight tracks to be recorded simultaneously. Each track has eight supplementary tracks (V-tracks), and each song can have two sets of these 64 tracks (8 tracks x 8 V-tracks). This means that a song can have a total of 128 tracks (64 V-tracks x 2 banks), giving you flexibility when you need to record multiple takes, or need a location for temporary storage for editing.

You can instantly find the location of sections in a song you want to hear repeatedly or places that you wish to record over (Locator) by placing marks at such points (Marker). These Markers are recalled by simple procedure, and you will never wait for any rewinding or fast-forwarding time.

The VS-880EX uses "non-destructive editing." This allows you to cancel and recover up to 999 previous recording and editing operations (Undo/Redo).

Digital Mixer Section

You can store all mixer settings, including fader levels, pan, and effects. Stored settings can be recalled very simply, making it convenient in adjusting balances during mixdown and comparing mixes with effects.

Changes in settings over time, such as fader levels and pan, can also be stored (Auto Mix), so you can realize easy fade-ins and fade-outs in your mixes.

You can easily make the most appropriate mixer condition settings, including those for recording, track bouncing, and mixdown (EZ Routing).

Effects Section

A Effect is built in. This allows you to use up to two stereo effects when the VS-880 EX is used by itself.

The effect provides not only basic effects such as reverb and delay, but also effects ideal for vocals and guitar (such as guitar amp simulator) and even special effects such as RSS. The way in which each of these effects are organized by the 34 "algorithms" so that you can create new sounds easily.

The effect provides 210 read only effects setting (Preset Patches) which designed for various uses. In addition, the effect provides 100 read and write effects setting (User Patches) for changing and saving that contents. You can instantly switch between a variety of effects simply by selecting a patch.

Simple Operation

The VS-880EX can be operated as easily as conventional multi-track recorders. You will be able to enjoy the advantages of home studio from the day that you purchase it.

The custom LCD screen provides visual confirmation of many settings at once. In particular, the bar display provides a graphical indication of the level meter, pan and fader settings, and the track record status.

The LCD screen is backlit and inclined, so it is easy to read when used on stage or wherever high visibility is required.

Connectivity

There are six sets of balanced input jacks, handling a wide input sensitivity range, from line level (+4 dBu) to mic level (-50 dBu).

Besides the RCA phono type (stereo) MASTER jacks, the (mono) AUX A and AUX B jacks are provided.

The VS-880EX provides both coaxial and optical digital I/O connectors. With these, you can make digital connections with popular consumer electronic devices such as CD players, DAT recorders, MD recorders, and so on.

A SCSI connector (DB-25 type) is also provided, allowing you to connect to external SCSI devices such as the Zip drive and the CD-R drive.

MIDI IN and MIDI OUT/THRU connectors are also provided. You can synchronize the VS-880EX with an external MIDI sequencer, use the MIDI sequencer to control the VS-880EX's mixer, sound an external MIDI sound generator with the metronome, and more.

Besides tracks for recording audio signals, the VS-880EX has sync track for storing MIDI clock message. You can even synchronize MIDI sequencers that are not compatible with MTC (MIDI Time Code) or MMC (MIDI Machine Control).

Substantial Options

Internal Hard Disk (designated by Roland):

An internal 2.5-inch IDE hard disk. Having this internal hard disk installed makes the VS-880EX system compact and easy to transport. Furthermore, there is no need to make complex settings and no problems with faulty connections (unlike those which could occur when an external disk is used). We recommend that you install an internal hard disk when using the VS-880EX.

** For simultaneous recording or playback of a number of tracks, for getting more out of the available hard disk space, and in order to get the fullest performance in general from the VS-880EX, we recommend using the 2.1 GB or larger Hard Disk.*

CD-R Drive (designated by Roland):

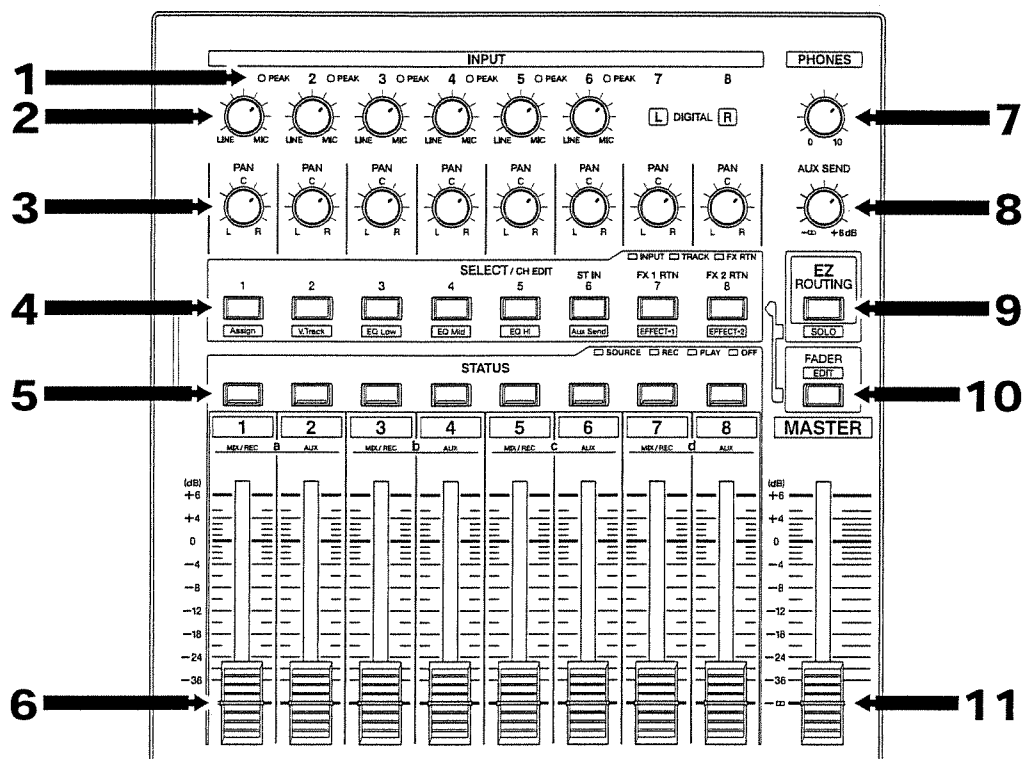
A CD-R drive connected with a SCSI connector. With this drive, you can write songs created on the VS-880EX as well as create your own original audio CDs. Additionally, you can use it for backing up songs to CD-R discs.

SI-80S:

This is a video/MIDI sync interface for connection to the MIDI connector. VS-880EX operations such as play/stop/forward can be synchronized from a video device with a LANC connector.

Front and Rear Panels

Mixer Section



1. PEAK Indicators

These indicators allow you to confirm the sound level input at the input jacks (1–6). They help you to determine the correct input level when adjusting the INPUT knobs. You will need to specify the level at which the indicators light beforehand (p. 61). The indicators are set at the factory to -6 dB.

2. INPUT Knobs

These knobs adjust the sensitivity of the input jacks (1–6). Turn a knob fully to the right for mic level (-50 dBu), and fully to the left for line level (+4 dBu).

3. PAN Knobs

These knobs adjust the pan (location in the stereo output) of each channel.

4. SELECT/CH EDIT (Select/Channel Edit) buttons

Use these buttons when you wish to make settings for a mixer channel. The names of the parameter groups that can be set for each channel are printed below CH EDIT. To directly specify a particular group, you can hold down [SHIFT] and press the button for that group name.

When editing a song, use these buttons to select tracks for editing.

5. STATUS Buttons

These buttons switch the status of each track. The current status is shown by the button indicator.

SOURCE (orange):

The input source or track assigned to the channel is being output.

REC (blinking red):

Recording is selected for the track assigned to the channel. During playback, the track data is normally output.

REC (blinking red and orange):

Recording is selected for the track assigned to the channel. During playback, you will be able to listen to the source.

PLAY (green):

The track assigned to the channel will playback.

OFF (off):

The channel is muted (silent).

When pressed in combination with the SELECT/CH EDIT button, this selects the source or track to be assigned to a track for recording.

6. Channel Faders

Use these faders to adjust the volume level of each channel or track.

7. PHONES Knob

This knob adjusts the volume of the headphones.

8. AUX SEND knob

This knob adjusts the output level of the AUX SEND jacks.

9. EZ ROUTING/SOLO Button

This button opens the EZ Routing screen.

In conjunction with [SHIFT], this switches the Solo function on/off.

10. FADER/EDIT Button

Pressing this button alternately assigns each channel's input mixer, track mixer and effect return mixer to the fader for that channel. The button indicator shows the current status.

INPUT (orange): Input Mixer

TRACK (green): Track Mixer

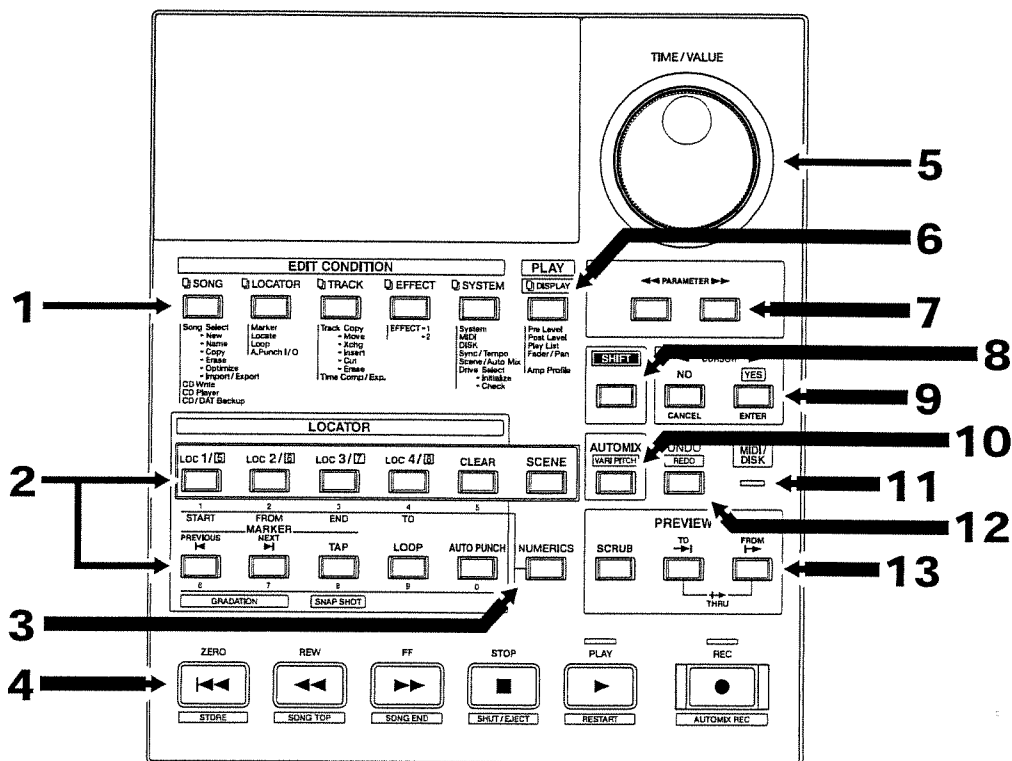
RETURN (red): Effect Return Mixer

In conjunction with [SHIFT], this accesses the Master Block setting page.

11. Master Fader

Use this fader to adjust the overall output level.

Recorder Section



1. EDIT CONDITION Buttons

The functions and parameters of the VS-880EX are organized within these buttons. To use a desired operation, press the appropriate button.

2. LOCATOR Button

Pressing this button allows you to store or recall Locators and Markers or to store or recall Scenes (the mixer settings).

[LOC1/5]–[LOC4/8]: This button selects Locators and Scenes.

[CLEAR]: This button deletes Locators, Markers, and Scenes.

[SCENE]: This is pressed when storing, recalling, and deleting Scenes.

[PREVIOUS]: This button recalls the previous Marker.

[NEXT]: This button recalls the next Marker.

[TAP]: This button is pressed to set Markers.

[LOOP]: This button turns Loop Recording on and off. Pressed with the [LOC1/5]–[LOC4/8] buttons, it specifies the range to be recorded in Loop Recording.

[AUTO PUNCH]: This button turns Auto Punch-In Recording on and off. Pressed with the [LOC1/5]–[LOC4/8] buttons, it specifies the range to be recorded in Auto Punch-In Recording.

3. NUMERICS Button

Press this when you want to use the LOCATOR button for 10-key entry of Western numerals.

4. Transport Control Buttons

These buttons are used to operate the recorder.

- [ZERO]:** This returns the current time to "00h00m00s00" (zero return).
- [REW]:** The current time is moved back only while this button is held down. This corresponds to the rewind button on a tape recorder.
- [FF]:** While the button is held down, the current time is moved forward. This corresponds to the fast-forward button on a tape recorder.
- [STOP]:** Stops recording or playback of the song.
- [PLAY]:** Starts recording or playback from the current time.
- [REC]:** Press this button to record a song.

5. TIME/VALUE Dial

In normal (playback) status, this dial adjusts the time of playback.

This is used to change the settings values for each parameter when settings are changed.

6. PLAY (DISPLAY) Button

Press this button to return to the screen that appears when the VS-880EX is turned on (normal playback status).

In conjunction with [SHIFT], this switches the item shown in the bar display.

7. PARAMETER Buttons

Use these buttons to switch the parameter display.

8. SHIFT Button

This button is pressed in conjunction with other buttons to access additional functions of those buttons.

9. CURSOR Buttons

Normally (i.e. in Play Condition), this dial is used to move the current time. When making settings (i.e. in Edit Condition), this dial is used to modify parameter values.

When a YES/NO response is required during an operation, use these button to reply.

- [NO (CANCEL)]:** This is pressed to cancel the current operation or exit the current screen.
- [YES (ENTER)]:** This is pressed to execute the current operation or select the current screen.

10. AUTOMIX (VARI PITCH) Button

This button switches the Auto Mix function on and off. The button indicator lights when Auto Mix is on.

In conjunction with [SHIFT], this switches the Vari-pitch function on/off.

11. MIDI/DISK Indicator

This indicator lights green when MIDI messages are being received, and red when data is being written or read on the disk drive. If both of these are occurring, the indicator lights orange.

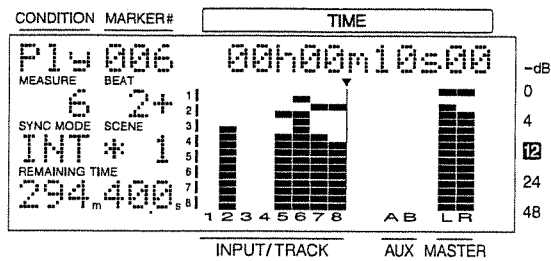
12. UNDO (REDO) Button

Press this button to cancel a recording or editing step that you have made (Undo function). Pressed with [SHIFT], this button cancels the last performed Undo function (Redo function).

13. PREVIEW Button

Press this button to use the Preview function that plays back a specific length before and after the current location.

Display section



1. CONDITION

This indicates the current condition.

- PLY:** Normal status (Play condition).
- INn:** Change the input mixer settings (n=1-8, a-d).
- TRn:** Change the track mixer settings (n=1-8 to a-d).
- RTN:** Change the return mixer settings.
- MST:** Change the master block settings.
- SNG:** Song edit
- LOC:** Locator edit
- TRK:** Track edit
- FX:** Effect edit
- SYS:** System edit

* If Song Protect (p.64) is turned on, the Play Condition display will be "Ply."
* The input/track mixer display will indicate 1-8 for channels whose Channel Link is OFF, and a-d for channels which are turned ON.

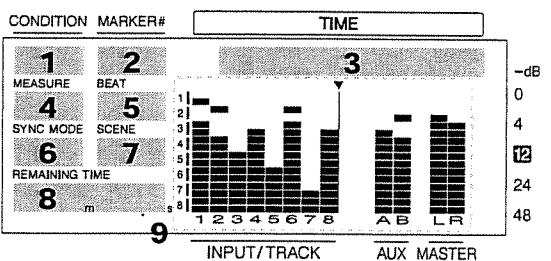
2. MARKER # (marker number)

This shows the marker number for the current time. If a mark point has not been assigned to the current time, the closest marker number located before the current time will be shown.

3. TIME

The current time of the song is displayed as SMPTE time code.

? SMPTE Time Code (Appendices p. 124)



4. MEASURE

This shows the current measure of the song.

5. BEAT

This shows the current beat of the song.

6. SYNC MODE

This indicates the current sync mode (method of synchronization).

7. SCENE

This shows the currently used scene number (mixer setting). An asterisk "*" shown at the beginning of the scene number indicates that the current mixer settings have been modified since the scene was recalled.

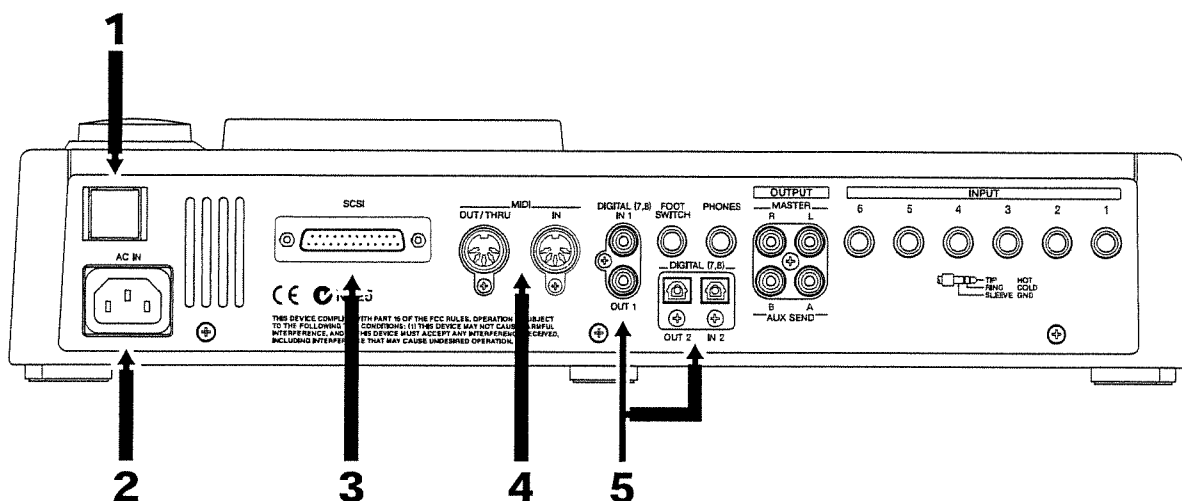
8. REMAINING TIME

This shows the remaining length of time available for recording.

9. Bar display

In normal condition, the item selected by [DISPLAY (PLAY)] are shown graphically. While you are making a setting, data for the setting being made is displayed graphically.

Rear Panel



1. POWER Switch

This switch turns power of the VS-880EX on and off.

2. AC IN (AC Inlet)

Connect the included power cable here.

3. SCSI Connector

This is a DB-25 type SCSI connector for connecting disk drives such as a Zip disk drive or a CD-R drive.

4. MIDI Connectors (IN, OUT/THRU)

External MIDI devices (MIDI controllers, MIDI sequencers, etc.) can be connected here.

IN: This connector receives MIDI messages. Connect it to the MIDI OUT connector of the external MIDI device.

OUT/THRU: This connector can be used either as a MIDI OUT or as a MIDI THRU connector. With the factory settings, it will function as a MIDI OUT connector, which means it is set to transmit MIDI messages.

5. DIGITAL Connectors

The VS-880EX features both coaxial and optical digital I/O connectors (conforming to S/P DIF).

IN: This inputs a digital audio signal (stereo). You can select either the coaxial input connection or the optical connection.

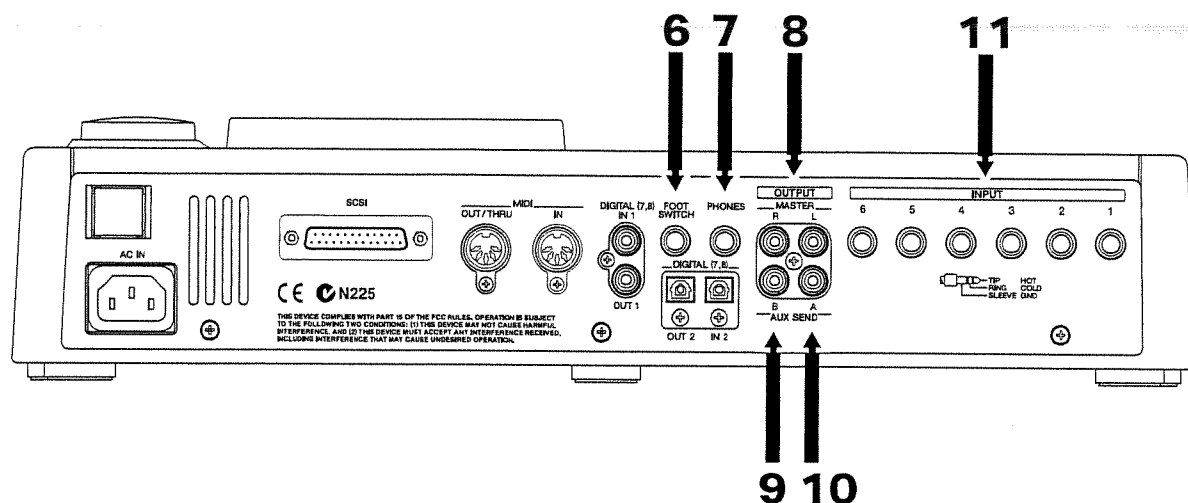
OUT: This outputs a digital audio signal (stereo). Here you can use both the coaxial connector and the optical connector simultaneously, and each can carry a different signal.

? S/P DIF (Appendices p. 124)

* To record a digital audio signal, it is not sufficient to simply connect a digital audio device to the DIGITAL IN connector. When inputting a digital audio signal, refer to "Recording Digital Signals" (p. 55).

* It is not able to input or output analog audio signals.

Preparations



6. FOOT SWITCH Jack

An optional foot switch (such as the DP-2 or the BOSS FS-5U) can be connected here when you want to control recorder operations, mark point settings, and punch in/out operations, and so on with a foot switch. With the factory settings, a foot switch is set to start and stop the recorder.

7. PHONES Jack

An optional set of headphones can be connected here. The PHONES jack outputs the same sound as the MONITOR jack.

8. MASTER Jacks (L, R)

9. AUX SEND Jack A

10. AUX SEND Jack B

These are output jacks for analog audio signals (RCA phono type).

With the factory settings, all signals are output from the MASTER OUT jacks, and there is no output from the AUX (A and B) SEND jacks. The output is determined by the block settings of the mixer's master section and the settings of each channel.

11. INPUT Jacks (1-6)

These are input jacks for analog audio signals. These are balanced phone jacks, the input sensitivity of each jack is adjusted by the INPUT knobs on the top panel.

Chapter 1 Before You Start (VS-880EX Terminology)

This chapter explains basic concepts, internal structure, and basic operation that you will need to know in order to operate the VS-880EX. Please read this chapter thoroughly to gain a better understanding of the VS-880EX.

Saving and Managing Data

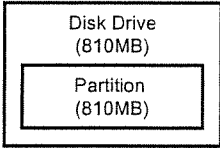
Managing Disk Contents (Partitioning)

The VS-880EX saves all of the data such as — performance data, mixing data, system data, etc. — on the disk drive. Thus, it cannot operate without either having an internal disk or being connected to a Zip drive with a SCSI connector. Furthermore, **the hard disk or Zip drive used by the VS-880EX cannot be used by another device.**

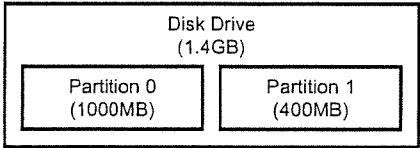
The VS-880EX is able to manage which 500 MB or 1000 MB of disk space at once. If you use a disk drive with a capacity that is larger than this, you will need to divide it into two or more.

Each of these area is referred as the “partition.” Up to 4 partitions can be created in one disk drive. For creating songs in a enough space, we recommend you to set the partitions to 1000 MB.

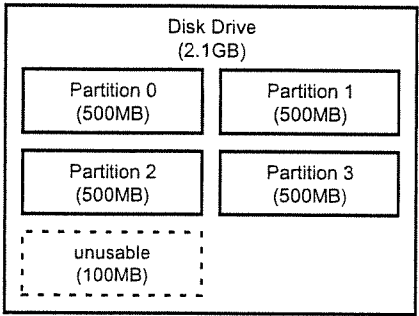
Ex. 1: When the disk drive is 810 MB, and the partition size is 1000 MB.



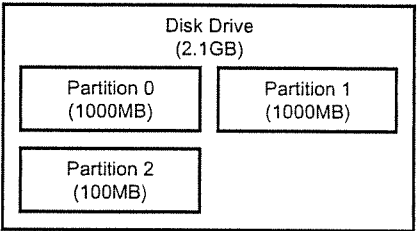
Ex. 2: When the disk drive is 1.4 GB, and the partition size is 1000 MB.



Ex. 3: When the disk drive is 2.1 GB, and the partition size is 500 MB.



Ex. 4: When the disk drive is 2.1 GB, and the partition size is 1000 MB.



Each partition on the VS-880EX's disk drive is treated as an independent drive, with each partition automatically given a partition number (0–3). When a single hard disk has multiple partitions, you can specify which partition of which drive will be used. This disk drive partition currently used is referred to as the **current drive**.

Specify the Disk Which will be Used for Recording/Playback (Drive Select)

1. Press [SYSTEM] several times until "SYS Drive Select" appears in the display.
2. Press [YES].
3. Use the TIME/VALUE dial to select the desired disk drive. The internal hard disk is shown as "IDE:*" and external disk drives are shown as "SC0:*-SC7:*" (the number is the SCSI ID number). The number following each disk drive name is the partition number. For example if you wish to select internal hard disk partition 1, you would select "IDE:1."

4. Press [YES].

A confirmation message appears on the screen.

5. Press [YES].

"STORE Current?" (Store the current song?) appears in the display.

6. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**

7. After you have switched the current drive, return to Play condition.

* If you wish to use hard disks or song data on both the VS-880EX and the VS-880/840/1680, because of factors such as differing partition sizes and numbers of tracks, there will be limitations as to what you can do. For more detailed information, please see "Compatibility" (p. 136).

* The VS-880EX accepts installation of Internal hard disks (desinated by Roland). For simultaneous recording or playback of a number of tracks, for getting more out of the available hard disk space, and in order to get the fullest performance in general from the VS-880EX, **we recommend using the 2.1 GB or larger Internal Hard Disk.**

The Location Where a Performance is Recorded (Song)

The location where a performance data is recorded is referred to as the **song**. For example on a cassette MTR, this would correspond to cassette tape. Up to 200 songs can be created in each partition. Normally, you should set the partition size at 1000 MB. When dealing with large numbers of songs at the same time, setting the partition size to 500 MB is recommended. The song currently being recorded, played back, or edited is referred to as the **current song**. Following data are included in a song.

- All data recorded on V-tracks
- MIDI clocks of the sync track
- Points specified within songs (locator, marker, punch-in/out points, loop-in/out points) (p. 36)
- Scenes (mixer settings)
- Vari Pitch settings (p. 152)
- System settings (system, MIDI, disk, sync, Scene) (p. 164)
- Effect settings
- Auto Mix Data

Sources, Tracks, and Channels

On the VS-880EX, the recorder section and mixer section use term **sources**, **tracks**, and **channels**. These terms may appear similar to each other, and will be confusing unless their differences are clarified.

Source: A signal which is input to the mixer section or recorded in the recorder section. On the VS-880EX, this term refers in particular to the signals of the analog input jacks (1-6) and the digital in connector.

Track: A signal that is being input to or output from the recorder section. It also refers to the location of a signal that is being recorded onto or played back from the hard disk.

Channel: A signal that is being input to or output from the mixer section. This term refers in particular to the faders and buttons of the mixer section on the top panel.

Chapter 1 Before You Start (VS-880EX Terminology)

About Events

The smallest unit of memory used by the VS-880EX to store recorded results on disk is called an **event**. A newly created song is provided approximately 12,800 events.

For each track, one recording pass uses two events. Operations such as punch-in/out or track copy also use up events. The number of events that are used up will fluctuate in a complex way. For example, auto mix (p. 142) uses up 5 events for each Marker.

Even when your disk has ample free space, one song can use up all the available events, in which case no more data could be recorded to the song.

Remaining number of Events can be saved with the following procedures. Please try the most appropriate one with your situation.

● Execute Song Store (p. 32)

Please Execute Song Store if in UNDO condition ([UNDO] indicator is lit.). Events served for REDO will be released. But please note that you cannot cancel (REDO) the last UNDO if you once execute STORE.

● Execute Song Optimize (p. 156)

Please execute Song Optimize if you have done a lot of Punch In recording. Events served for unnecessary audio data will be released. But please note that you can only do single level UNDO.

● Erase AutoMix data (p. 146)

If you have recorded AutoMix data, erase unnecessary data. Events served for unnecessary AutoMix data will be released.

Mixer Section

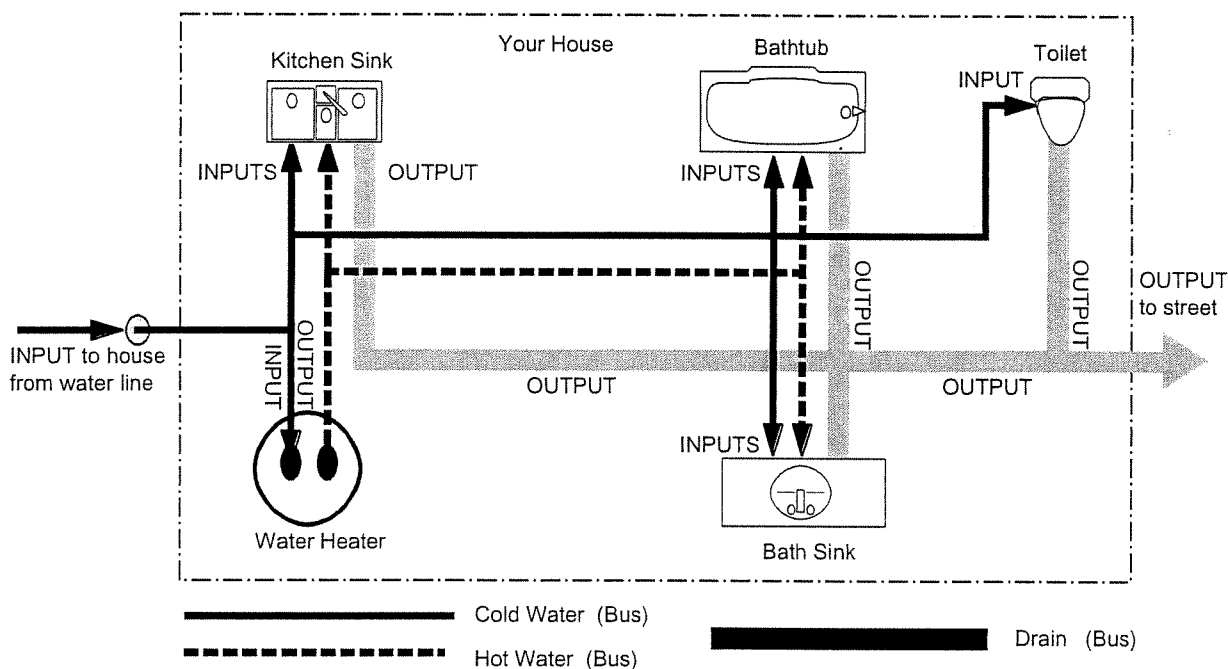
The digital mixer specifies input or output status of the recorder section. The VS-880EX contains an **Input Mixer** located before the recorder section, a **Track Mixer** located after the recorder section, an **Effect Return Mixer** which controls the effect return and Stereo In (p. 152), and a **Master Block** which determines the output jacks from which the signal of each mixer will be output.

* For more detailed information about the mixer section, please refer to the "Mixer Section Block Diagram" (Appendices p. 120).

Signal Flow (Buses)

On the VS-880EX, signals flow through buses. buses are **shared lines through which multiple signals can be routed efficiently to multiple tracks or channels**. It may be easier to understand this if we use the analogy of water pipes.

For example, the water that is supplied by the water company to your house is branched to a variety of locations within the house (kitchen, bathroom, toilet, etc.). The water that is used at each of these locations is then collected into the sewer, and carried away.



If we think of the VS-880EX as the house, the water being supplied from the water company corresponds to inputs such as mic or guitar. Some of these inputs are sent to recording tracks and are recorded. Other portions are sent to the effects, and reverb or chorus are applied before they are output.

The basic principle of the VS-880EX is that by specifying in this way **from where** and **to where** the common lines run, you can determine which input signals will be recorded on which track or sent to which effects, and where they will be output.

Chapter 1 Before You Start (VS-880EX Terminology)

The VS-880EX has the following buses.

RECORDING Bus:

Signals assigned to the RECORDING bus are routed to the recorder section to be recorded. There are eight channels which can be assigned to the output of the input mixer, track mixer, and effects (Return). Signals assigned to the RECORDING bus cannot be routed to the MIX bus.

MIX Bus:

Signals assigned to the MIX bus are sent to the MASTER jacks for monitoring. It has two channels (L and R), and can take output signals from the input mixer, track mixer, and effects (Return). Signals assigned to the MIX bus cannot be routed to the RECORDING bus.

EFFECT Bus:

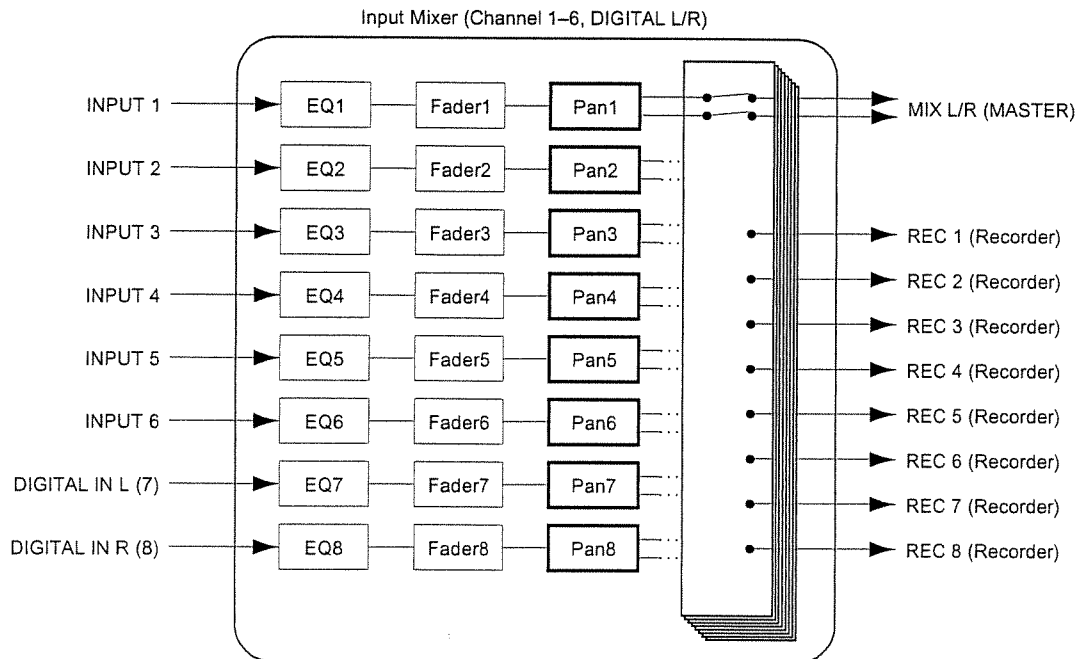
Signals assigned to the EFFECT bus are sent to the effect to apply effects added to them. It has two channels (FX1, FX2), and can process signals from the input mixer and the track mixer. Signals assigned to the RECORDING bus as well as the MIX bus can also be routed to the EFFECT bus.

AUX Bus:

Signals assigned to the AUX bus are routed to the AUX SEND jacks to allow addition mixes for monitoring. This bus features two channels (AUX A, AUX B), and can take signals from the input mixer and the track mixer. Signals assigned to the RECORDING bus as well as the MIX bus can also be routed to the AUX bus. This is convenient if, for example, you want to connect an external effects device, or when you want an addition output separate from that of the MASTER Out jacks (individual out).

Input Mixer

Input mixer is placed before the recorder section, and correspond to the external input sources (INPUT 1–6, DIGITAL IN L/R).



The output of each channel is assigned to tracks to be recorded. Channels not assigned to tracks are output directly from the MASTER jacks. Additionally, the status of tracks with signals assigned to them when not in record standby (STATUS indicator blinking red), also are output from the MASTER jacks. At this time, the following signals are assigned to the channel faders.

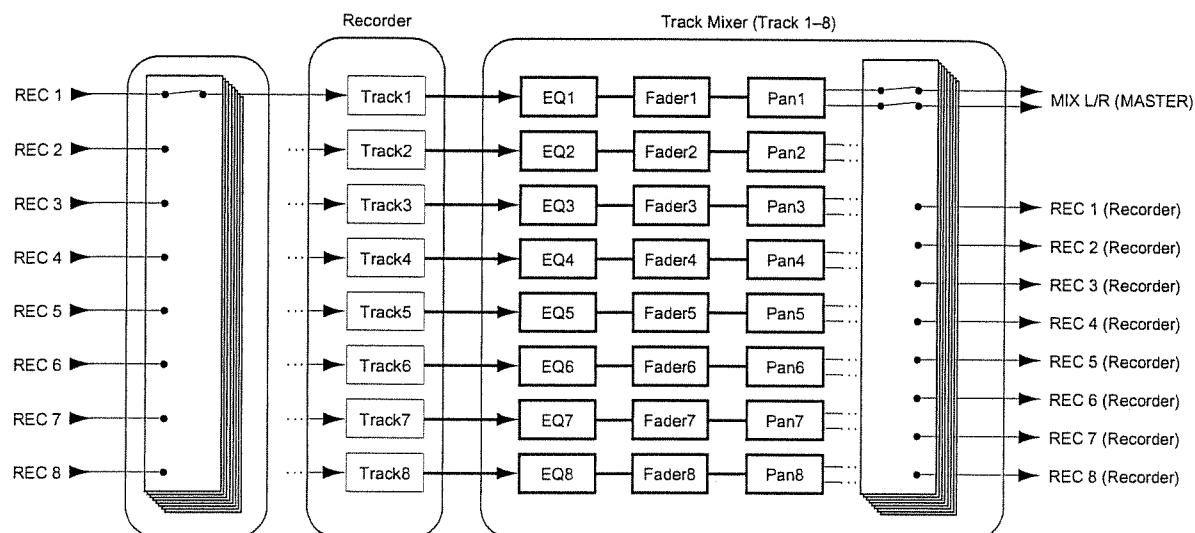
Channels 1–6: INPUT jacks 1–6

Channels 7–8: DIGITAL IN connector L/R

Chapter 1 Before You Start (VS-880EX Terminology)

Track Mixer

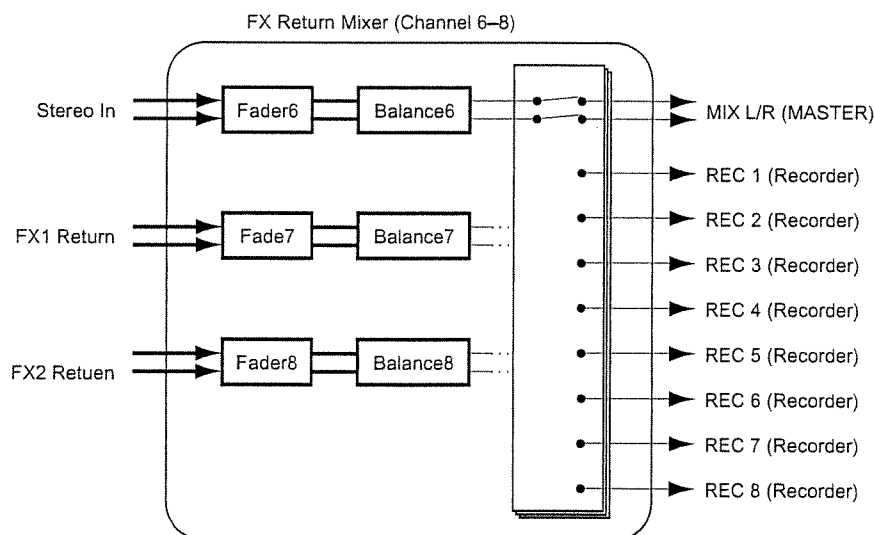
Track mixer is placed after the recorder section, and correspond to the tracks (1–8).



All of the tracks are output from the MASTER jacks. Additionally, tracks can also be routed back to the RECORDING bus for overdubbing, or re-rerecording. In this status, the channel faders 1–8 correspond respectively to Tracks 1–8.

FX Return Mixer

This mixer adjusts the return level/balance from effects connected in send/return fashion, and the level/balance of the stereo input.



Each channel is output from the MASTER jacks. It is also possible to assign them to the recording bus for recording. In this case, the channel faders correspond to the following signals.

- Channel 6:** The INPUT jack assigned to Stereo In
- Channel 7:** FX1 return
- Channel 8:** FX2 return

Switching the Fader Functions

On the VS-880EX, it is able to adjust Input mixer or Track mixer by switching the function of the channel faders on the top panel. Pressing [FADER] on the top panel toggles between the input mixer and the track mixer. The FADER indicator indicates which mixer is currently selected.



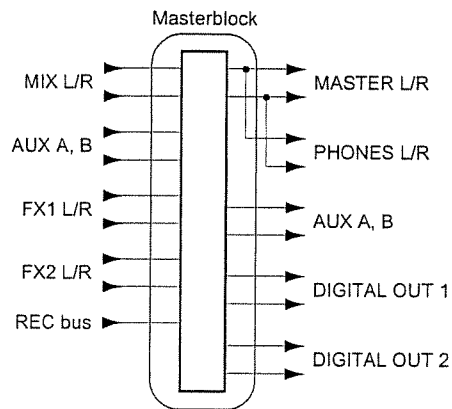
lighting orange: Input Mixer

lighting green: Track Mixer

lighting red: Effect Return Mixer

Master Block

This selects the jacks or connectors connected to external equipment to which the output of each mixer is sent.

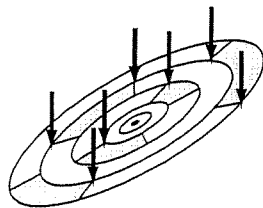


Recorder Section

Differences with a Tape-Type NLR

Unlike DAT recorders, which use tape, **digital disk recorders record performances (sounds) on a disk**, as do MD recorders. Music that is recorded on disk can be recalled and played back immediately, no matter where it is located on the disk. This is also obvious from the difference in speed at which you can move to the beginning of a song on a DAT recorder and on an MD recorder.

The ability to freely move to data regardless of the time or sequence at which it was recorded is known as **random access**. In contrast, having to move to data in the order of the time or sequence at which it was recorded is known as **sequential access**.



random access

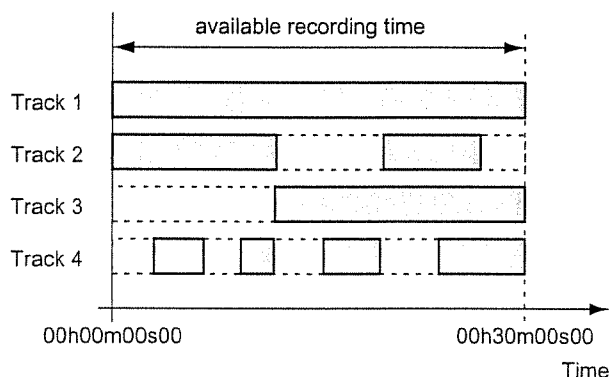


sequential access

Chapter 1 Before You Start (VS-880EX Terminology)

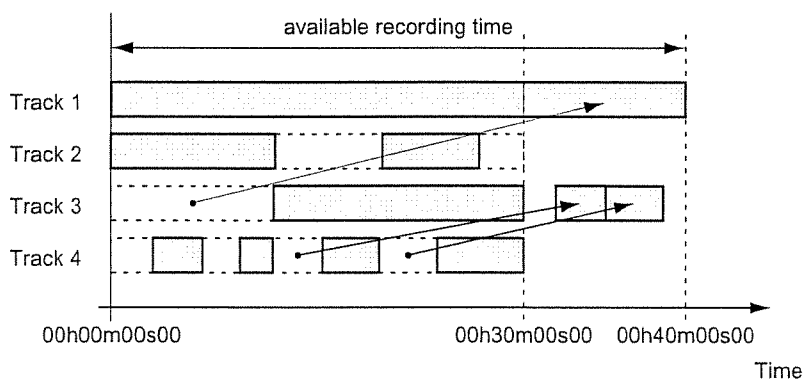
Track Minutes and Recording Time

With cassette tape recorders, the amount of time you can record on a tape is predetermined by the length of that tape. Moreover, any unused portion of the tape is wasted.



In Case of Tape Recording (using 30-minute tape)

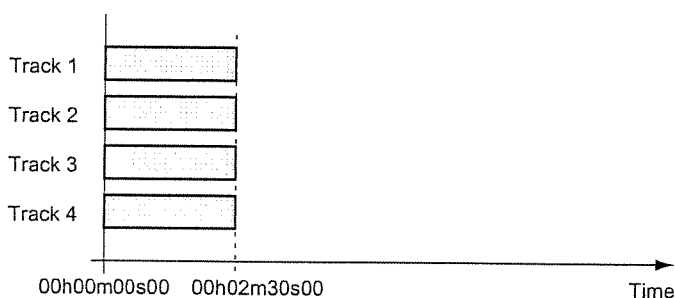
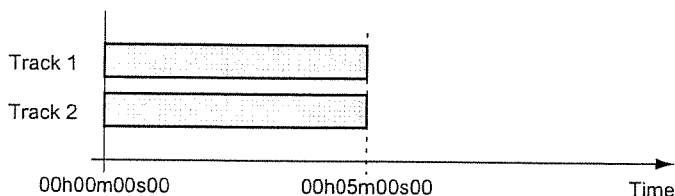
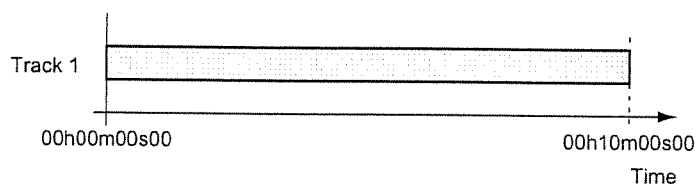
In contrast, with disk recording, although available recording time is determined by the amount of disk space, only the disk space used in recording is taken, and beyond that, has no affect on the disk's remaining free space. Thus, depending on how you use tracks and phrases, the amount of available recording time will vary. Thus, this calls for a standard unit corresponding to the time of one continuous monaural signal recorded to one track. This unit is referred to as a **track minute**.



In Case of Disk Recording

Chapter 1 Before You Start (VS-880EX Terminology)

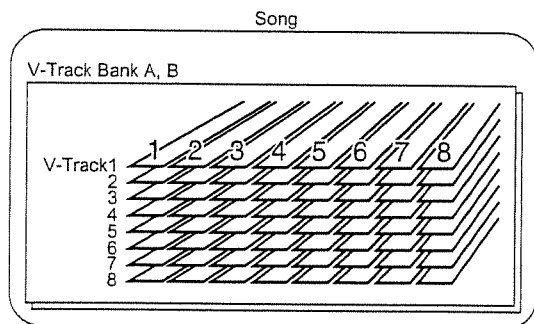
For example, 10 track minutes be used for 10 minutes of monaural recording, 5 minutes of stereo recording, 2 minutes and 30 seconds of recording on four tracks, and so on.



Auxiliary Tracks By Each Track

The VS-880EX provides 8 playback tracks, and allows 8 tracks to be recorded simultaneously. Each track is composed from the features 8 supplementary tracks, each one of which can be used for recording or playback. These auxiliary tracks are called **V-tracks**.

One song can contain two sets (banks) of 64 V-tracks (these 8 tracks x 8 V-tracks). In other words, a maximum of 8 tracks x 8 V-tracks x 2 banks = 128 performance tracks can be recorded. For actual recording/playback, you will specify the bank that you wish to use, and then select one of the V-tracks.



* This Owner's Manual provides a blank virtual track sheet to help you keep track of your virtual track recordings (p. 129). Feel free to copy the sheet to use when you record.

Effects Section

About the Effect Expansion Board

The VS-880EX contains effect. This allows you to use up to two stereo effects (FX1 and FX2) simultaneously.

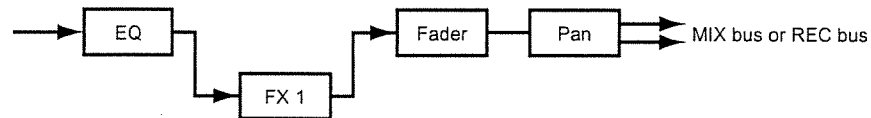
Connecting Effects

On the VS-880EX, there are two ways to connect the effects devices. Please read and understand these differences described below.

Insert:

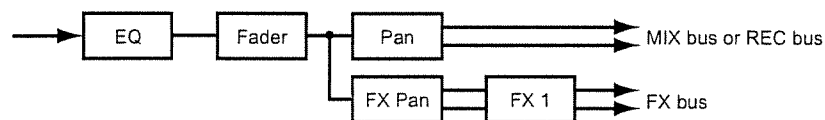
The effect is directly added either between each channel's equalizer and fader or before the master fader. Connect the effect in this manner if you want to use effects applied to change the output of the sound itself, such as when using distortion or overdrive effects.

When inserting an effect into one of the channels or into the Master Block, that effect cannot be used in another channel. For example, you insert FX1 into Channel 1, then no other channel can access FX1.



Send/Return:

Besides the RECORDING bus and the MIX bus, the output of each channel can also be sent to the EFFECT bus. Use this routing with effects such as reverb and delay, when you want to mix the sound without effects and the sound after effects have been applied.



Chapter 2 Basic Operation

This chapter explains the basic operation of the VS-880EX. This covers all of the fundamental processes, including recording and editing, so please read and understand this chapter.

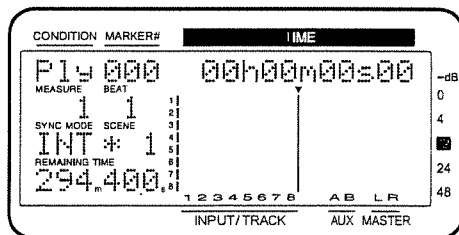
Before You Begin

Turning On the Power

- * To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.
- * Once the connections have been completed (Quick Start p. 3), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.
- * Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.

1. Turn on the power with the POWER switch on the rear panel of the VS-880EX.

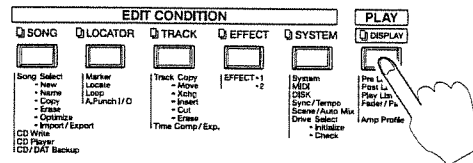
When the VS-880EX starts up properly, the following display will appear.



- * When you turn on the power of the VS-880EX, the disk drive must be recognized and certain required data must be loaded. Thus, it takes a short while for the unit to start up.
2. Turn on the power of connected audio equipment.
 3. Raise the volume of the audio devices to appropriate levels.
 4. If the display screen is difficult to read, hold down [PLAY(DISPLAY)] and rotate the TIME/VALUE dial.

If You Have Trouble Understanding Displays or Operations

If you are unfamiliar with what is displayed on a screen or find you are having difficulty understanding a certain procedure, press [PLAY (DISPLAY)]. This allows you to return immediately to the screen that appears when the power is turned on. Try whatever procedure you were working on from the beginning once more.



- If an operation has been performed incorrectly or cannot be executed correctly, **an error message appears in the display**. When this occurs, please refer to "Error Messages" (Appendices p. 9), and perform the specified measure.
- If even after you perform an operation using the prescribed procedure the result differs from that stated in Quick Start or in the Owner's Manual, please refer to "Troubleshooting" (Appendices p. 6).
- If the above steps do not resolve your problem, contact a nearby Roland Service Center, or authorised Roland distributor.

Before You Finish Operations

Saving the Performance to Disk (Song Store)

Song data that you recorded or edited will be lost if you simply turn the power off. Thus, you must execute the Shutdown procedure before turning the power off.

When you switch songs or change disks, a message will ask you to confirm whether the song should be saved (STORE Current?) (p. 33).

Additionally, the contents of a recorded performance can be lost because of unforeseen accidents, or even if there is an accidental power failure or power outage. **Once lost, the contents of a recorded performance cannot be restored to the previous conditions.** To avoid this from happening, use the following procedure to save your songs to the disk drive.

? Current Song (Appendices p. 123)

- * When handling important song data, or when using the VS-880EX for extended periods, we strongly recommend you to execute the Song Store procedure frequently.

1. Hold down [SHIFT] and press [STORE (ZERO)].
2. "STORE OK?" appears in the display. Press [YES]. If the song is saved properly, the initial display reappears. If you wish to cancel the saving, press [NO].

Turning Off the Power

The contents of any recorded performance will be lost if you simply turn the power off. This may also result in damage to the hard disk. To safely turn off the power and be sure that your recorded performances are saved, always be sure to follow the shutdown procedure when you finish working with the VS-880EX.

? Shutdown (Appendices p. 124)

1. While holding down [SHIFT], press [SHUT/EJECT (STOP)].
2. "SHUT/EJECT?" appears in the display. Press [YES].
3. "STORE Current?" then appears in the display. If you wish to save the current song, press [YES]. If you do not wish to save it (if you want to undo the contents of recording editing), press [NO]. **If you have selected a demo song, press [NO].**
4. When shut down has been completed properly, "PowerOFF/RESTART" appears in the display.
5. Turn down the volume of your audio equipment.
6. Turn off the power of the audio equipment.
7. Turn off the power of the VS-880EX with the POWER switch on the rear panel.

** After the power is turned off, the momentum of the hard disk causes it to continue spinning for a short while. Any physical shock to the unit during this time may damage the hard disk. Avoid moving the VS-880EX with a hard disk installed for at least 30 seconds after turning off the power.*

If "STORE Current?" is Displayed

When you begin to execute the various operations such as shutdown, the message "STORE Current?" (Save the current song?) is displayed. This message asks you whether you wish to save the currently selected song to the disk drive. If you wish to save the song before continuing with the shutdown, press [YES]. If you want to proceed with the shutdown without saving the song, press [NO].

If you press [YES] in response to the "STORE Current?" message when Song Protect is on, or when if you have selected a demo song, the message "Song Protected" is displayed, and you will be unable to save the song. Before editing a song, set Song Protect to "Off" (p. 65). Otherwise, press [NO].

Restarting

You can restart the VS-880EX without turning off the rear panel POWER switch. This is convenient when switching disks in drives (such as the Zip drive) connected to the VS-880EX's SCSI connector. Use the following procedure.

1. Perform the shutdown procedure as described in "Turning Off the Power" (p. 33).
 2. Confirm that "PowerOFF/RESTART" appears in the display.
 3. Hold down [SHIFT] and press [RESTART (PLAY)].
- This restarts the VS-880EX.

Basic Operations on the VS-880EX

The VS-880EX features a wide variety of abilities (functions) and settings (parameters). These are organized by type, function, operation, and so on. The major organizational grouping within the song is referred to as a **condition**. A list of the different conditions described below.

Play Condition:

Here you can perform normal playback/recording. The VS-880EX is put in Play condition whenever the power is turned on.

Channel Condition:

This is the condition in which input mixer, track mixer, or effect return mixer-related settings are made.

Master Block Condition:

This is where you make settings for the mixer's Master Block.

Song Condition:

Executes the operations related to each of the songs.

Locator Condition:

This is where you make settings for the locator or marker.

Track Condition:

Executes the operations related to each of the tracks.

Effect Condition:

In this status, you can make effects settings.

System Condition:

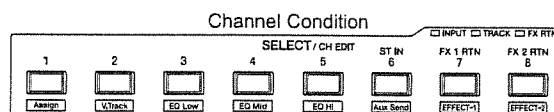
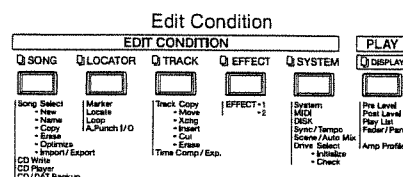
Here you can make settings that affect the entire environment of the VS-880EX.

Here is the general process used when executing the functions and changing the settings included in each condition. Please take a look.

1. Display the menu for each condition.
2. Select the page containing the desired function or setting.
3. Select the setting to be changed.
4. Change the settings values.
5. Execute the operation.

Display Each of the Condition Menus

To select the desired condition, press either the EDIT CONDITION button, CH EDIT button, or [SHIFT]+[EDIT(FADER)].

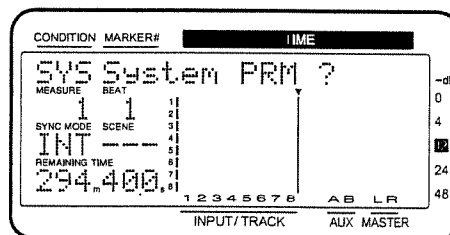


Master Block Condition



Selecting Pages Contained in Functions and Settings

The menu for the corresponding page is displayed. Use PARAMETER [◀◀] [▶▶] to select the desired page, and press [YES]. It is also possible to switch the menu display by repeatedly pressing the EDIT CONDITION button.

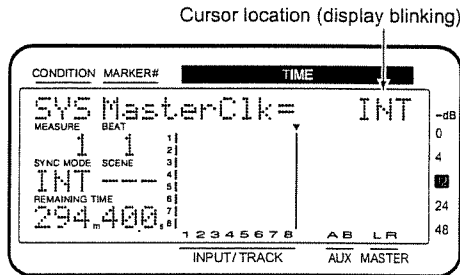


When System Condition is Selected

In some cases when System condition is selected, the parameters themselves will be displayed directly (rather than the System menu). This allows you to immediately select the parameter which was last modified. If you wish to view the System menu, press [SYSTEM] once again.

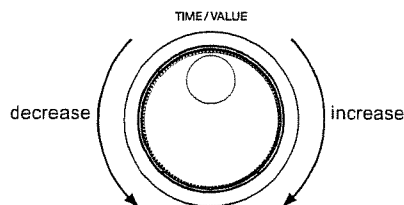
Select the Setting You Want to Change

Use PARAMETER [◀] [▶] to access the setting (parameter) that you wish to modify. If two or more settings are displayed simultaneously, use CURSOR [◀] [▶] to move the cursor.



Change the Settings Values

Use the TIME/VALUE dial for this operation. Rotating the dial counterclockwise decreases the values, rotating clockwise increases them. Although usually, increases and decreases in values are in single unit steps, by holding down [SHIFT] while rotating the TIME/VALUE dial, depending on the parameter, you can make values increase or decrease ten times (or one tenth) the normal rate.



Execute the Operation

After changing the value, to create the new song, select the different song, or otherwise set or execute the specified task or operation, press [YES]. A confirmation message will appear in the display. When the message appears, press [YES]. If you want to cancel the operation, then press [NO].

Switching Track Conditions

The condition for each track switches each time the STATUS button is pressed. You can check the condition by looking at the button indicators.

SOURCE (orange):

Allows you to monitor the input source or track assigned to each channel.

REC (blinking red):

Specifies what is recorded to each track. In playback, tracks are monitored. You can directly specify what is to be recorded by pressing the STATUS button while holding down [REC].

REC (blinking red and orange):

Specifies what is recorded to each track. In playback, sources are monitored. During playback, once again press the STATUS button whose STATUS indicator is blinking red.

PLAY (green):

Plays back each track. You can directly specify what is to be played back by pressing the STATUS button while holding down [STOP].

OFF (darkness):

The track is muted (silent).

* The VS-880EX can record up to eight tracks simultaneously.

Changing the Current Time

The current playback time in the display is shown in SMPTE time code. The current measure, beat, and Marker number are also displayed. Use the following procedure to change the current playback time.

? SMPTE Time Code (Appendices p. 124)

Moving in Frame Units

- To move in one-frame units, rotate the TIME/VALUE dial.
- To move in ten-frame units, hold down [SHIFT] and rotate the TIME/VALUE dial.
- To move in units of approximately 1/10 frame, first press CURSOR [▶] until "" appears. The frame numerical display will switch to sub-frame units (approximately 1/100 frame). Then rotate the TIME/VALUE dial. To return to the frame units, press CURSOR [▶].
- To move in units of approximately 1/100 frame, hold down [SHIFT] and rotate the TIME/VALUE dial.

Moving in Measure/Beat Units

The MEASURE field in the display will indicate the measure number of the current location, and the BEAT field will indicate the beat number of the current location. For details on setting the measure and beat, and how they correspond to the song, refer to "Sounding the Metronome" (p. 154).

- To move in measure units, use CURSOR [◀] [▶] to move the cursor to the MEASURE field, and rotate the TIME/VALUE dial.
- To move in beat units, use CURSOR [◀] [▶] to move the cursor to the BEAT field, and rotate the TIME/VALUE dial.
- * A "+" shown following the beat display indicates that this time location is not at the beginning of the measure/beat. When the time location is at the beginning of the measure/beat, the "+" indication will disappear.

Moving to the Beginning or End of the Performance

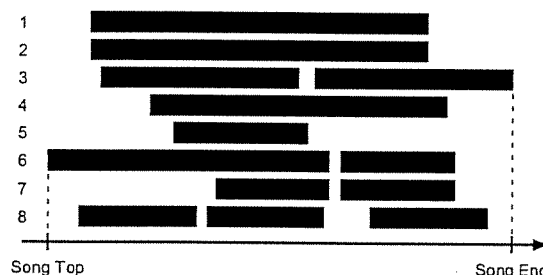
You can move directly from within any of the V-tracks in the currently selected track to the first or last location in the song that contains recorded sound. Use the following procedure.

To go to the first location in the song containing recorded sound:

Hold down [SHIFT] and press [SONG TOP (REW)].

To go to the last location in the song containing recorded sound:

Hold down [SHIFT] and press [SONG END (FF)].



Storing a Time Location

With the VS-880EX, there are two ways you can mark and easily recall sections of a song that you want to record over or listen to repeatedly. One is called the **Locator** function, and the other one is referred to as the **Marker** function. Use each method according to its intended function.

Locator:

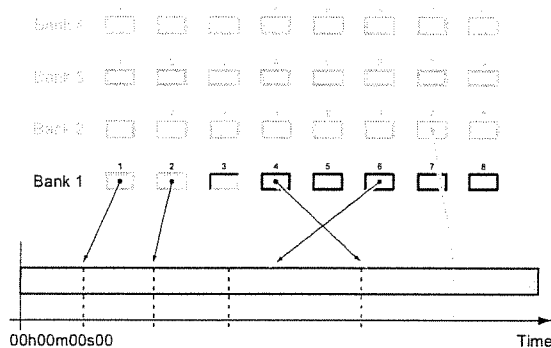
Store "locator," or time locations to the LOCATOR ([1/5]–[4/8]) buttons on the top panel of the VS-880EX. In conjunction with [SHIFT], you can register up to eight time locations, and move immediately to a registered location simply by pressing a button. There are four banks for each button, providing you with up to 32 (8 x 4) locators.

Marker:

Up to 1000 locate points (000–999) can be set in rapid succession in each song. You can also store Auto Mix data (p. 143), and there is a sync track provided as well (p. 123).

Using the Locator

Time locations are stored with the LOC buttons ([1/5]–[4/8]) on the top panel of the VS-880EX. In conjunction with [SHIFT], you can register up to eight time locations, and move immediately to a registered location simply by pressing a button. There are four banks for each button, providing you with up to 32 (8 x 4) locators. The locators are also a useful and convenient way to define sections of a song to be repeated in Loop Recording or for marking points in Punch-In Recording.



Storing Locators

1. Move to the location in a song where you want to set a locator.
2. Press a LOC button ([1/5]–[4/8]). For example, if you wish to set Locator 1, press [1/5]. If you wish to store the location in Locator 5, hold down [SHIFT] and press [1/5].

These can be used in recording/playback or while the song is stopped. When a locate point is set, the corresponding indicator lights.

Moving to a Stored Time Location

1. Press the LOCATOR button for the locate point to which you want to move. For example, if you wish to move to the Locator 1, then press [1/5]. If you wish to move to the location registered in Locator 5, hold down [SHIFT] and press [1/5].

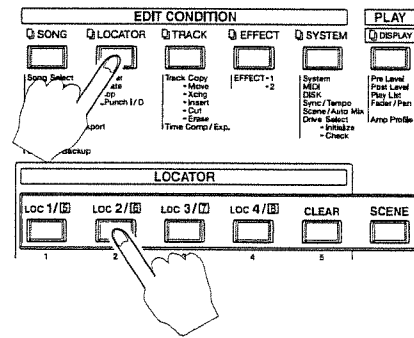
Changing the Locator Bank

1. Press [LOCATOR].

The current locator bank number will be displayed as "Locate Bank = 1" etc. Simultaneously, the LOC indicator corresponding to the current bank number will blink.

2. Continue holding [LOCATOR], and press the LOC button ([1/5]–[4/8]) for the bank number that you wish to change.

[LOCATOR] is used both to recall the Locator condition and to switch the Locator Bank. If you take your finger off [LOCATOR] without changing the Locator Bank, the display screen may change.



3. Release your finger from [LOCATOR].
4. As described in the procedure for "Storing a Time Location," register the locator point.

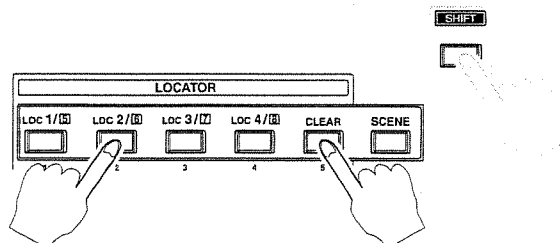
Making Fine Adjustments to Stored Locators

1. Move to the locator whose time you wish to change. Use the LOC buttons ([1/5]–[4/8]).
2. Press [LOCATOR] several times until "LOC Loc*" (* is the locator number that you wish to change) is displayed.
3. Use the TIME/VALUE dial to input the desired time.
4. When you finish making adjustments, press [PLAY(DISPLAY)].

Return to Play condition.

Deleting a Stored Time Location

1. While holding down [CLEAR], press the LOC button ([1/5]–[4/8]) for locate point that you wish to delete. For example, if you wish to delete the LOCATOR 1's located point, then press [CLEAR] and [1/5] simultaneously. If you wish to delete the time that was registered in Locator 5, hold down [SHIFT] and press [CLEAR] and [1/5].



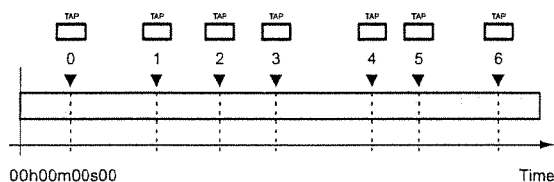
Using Markers

Along with the playback locate points, you can set up to 1000 Markers in sequence. The Markers are also a useful and convenient way to define sections of a song to be repeated in Loop Recording or for marking points in Punch-In Recording.

* An interval of at least 0.1 seconds must be left between markers. It will not be possible to add a new markers if a markers already exists at a location less than 0.1 seconds away.

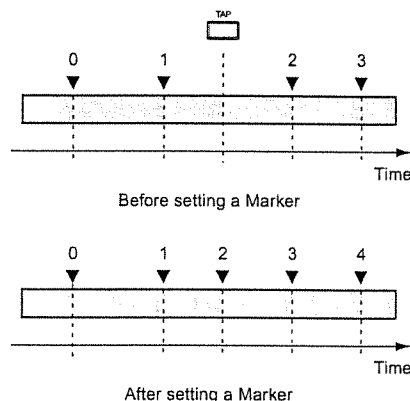
Marking a Time Location

Press [TAP], and a marker will be added to the current location. This can be done during recording or playback of the song as well as when the song is stopped.



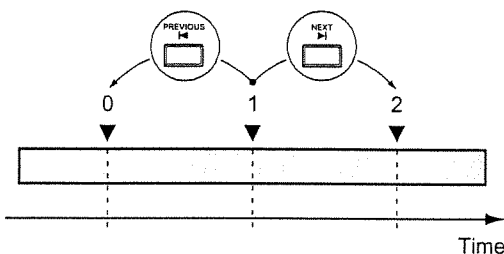
About Marker Numbers

Each marker is assigned a number 000-999, in the order of its time location. This means that if you add a new marker at a location earlier than an existing marker, the numbers of the subsequent markers will be incremented.



Moving the Location of Markers

To move to the Marker immediately preceding the current playback time, press [PREVIOUS]. You move ahead one marker at a time in the order they are placed each time the button is pressed. To move to the Marker immediately following the current playback time, press [NEXT].



Displaying Markers

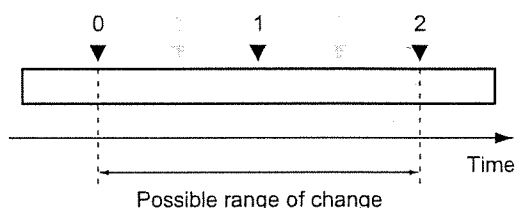
The Marker number at any playback location is indicated in the display. If there is no Marker number in the current location, then the closest preceding Marker number is displayed. If there are no markers in the song, "—" is indicated. If "****" is shown in the display, it indicates that although there are markers placed in the song, the current location is before the first marker.

Moving the Location of Markers

1. Press [PLAY (DISPLAY)].
2. In the display, the "MARKER" field will indicate the marker number of the current location. Use CURSOR [◀] [▶] to move the cursor to the MARKER field, and rotate the TIME/VALUE dial.

Making Fine Adjustments to Marked Locations

1. Move to the marker where you want to change. Press [PREVIOUS] or [NEXT] to move the marker.
2. Press [LOCATOR] several times until "LOC ***" appears in the display (** is the marker number that you wish to modify).
3. Set the marker where you wish to change. Use the TIME/VALUE dial. The time of a marker can be modified only within the range between the preceding and following markers.

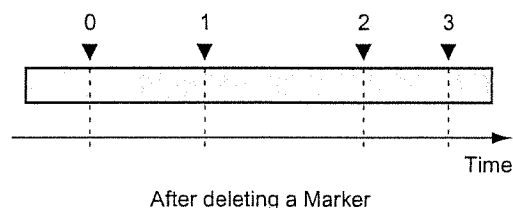
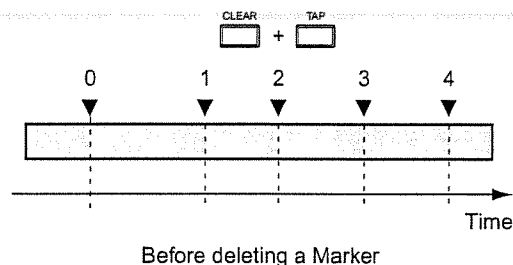


4. Press [PLAY (DISPLAY)].
Return to Play condition.

Deleting a Marked Location

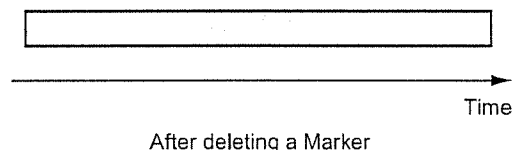
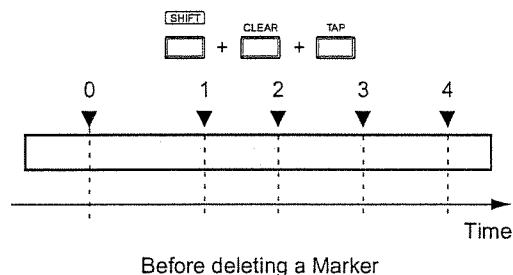
Setting markers makes it much easier to search for places within a song, but having too many of them actually can make it more difficult to find the location you're looking for. It is a good idea to delete unneeded markers whenever you can.

1. Move to the marker you wish to delete. Press [PREVIOUS] or [NEXT] to move the marker.
2. While holding down [CLEAR], press [TAP].
Delete the marker. Marker numbers for any markers after the deleted mark point shift one number ahead.



To Delete All Markers Simultaneously

1. Hold down [SHIFT] and [CLEAR] and [TAP] at the same time.
2. "Clear ALLMarker ?" appears in the display. If you want to delete the markers, press [YES]. If you want to cancel the procedure, the press [NO].



Chapter 3 Multi-Track Recording

This chapter explains the operations necessary for recording with the VS-880EX. Try out each operation as you read these instructions.

Recording

Items Necessary for Multi-Track Recording

- VS-880EX (1)
- Internal IDE hard disk
- Audio equipment for the Master Out signal, or stereo headphones
- Recording source (electric guitar, synthesizer, CD player, etc.) or microphone

Creating a New Song (Song New)

Recording cannot take place while a demo song is selected. **This is because the contents of the demo songs are protected from being changed or overwritten** (p. 64). Use the following procedure to prepare a new song. This process is analogous to exchanging cassettes on a multi-track tape recorder.

1. Press [SONG] several times until "SNG Song New ?" appears in the display.
2. Press [YES].
3. "SNG SampleRate=" appears in the display. Use the TIME/VALUE dial to select a sample rate.

Sample Rate

Select a sample rate (32 kHz, 44.1 kHz, or 48.0 kHz). When you want to use a digital connection to a digital audio device, match the sample rate to that of the connected device. Furthermore, **when making an original audio CD, select 44.1 kHz**. You cannot change the sample rate after the song is recorded. In addition, you cannot mix different sample rates in the same song.

4. Press PARAMETER [◀◀].
5. "Record Mode=" appears in the display. Use the TIME/VALUE dial to select a recording mode.

Record Mode (Recording Mode)

Select the sound's quality and time based on the recorded contents. Once a song is recorded, these settings cannot be changed.

MAS (Mastering):

With this setting, you can get the high-quality sounds compatible to that's quality of CD player or DAT recorder. However a song for which this mode is selected will function as a 6-track recorder (1-6). This mode is appropriate when recording edited two-channel stereo songs.

MT1 (Multi-Track 1):

While maintaining high-quality sound, recording time is approximately twice that available in "Mastering" mode. This mode is good when doing a lot of track bouncing.

MT2 (Multi-Track 2):

While maintaining high-quality sound, recording time is longer than that available in "Multi-Track 1" mode. This mode is good for normal operations.

LIV (Live):

Recording time is longer than with "Multi-Track 2" mode. This mode is appropriate when your hard disk lacks much free space or when recording live performances.

6. Press [YES].
"Create New - Sure?" appears in the display.
7. Press [YES].
"STORE Current?" appears in the display.
8. If you wish to save the current song, press [YES]; if not, press [NO]. **If you have selected a demo song, then press [NO].**
9. When a new song has been created, you will return to Play condition. The newly created song will be selected as the song for recording/playback.

About Recording Time

The recording time (track minutes) of both sampling rate and recording mode are as shown below (for one track, with 2 GB free space).

? Track Minutes (Appendices p. 125)

Recording Mode	Sample Rate		
	48.0 kHz	44.1 kHz	32.0 kHz
MAS	185+185 mins.	202+202 mins.	278+278 mins.
MT1	371+371 mins.	404+404 mins.	557+557 mins.
MT2	495+495 mins.	539+539 mins.	742+742 mins.
LIV	594+594 mins.	646+646 mins.	891+891 mins.

(All times approximate)

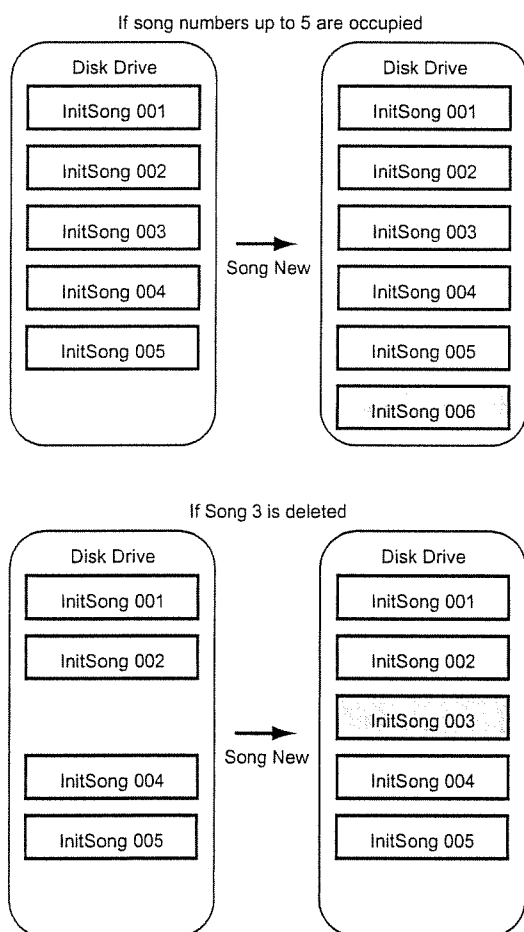
* The above chart is a general yardstick for estimating recording times. Actual times may be somewhat shorter depending on your hard disk's specifications or the number of songs created.

If "Drive Busy!" is Displayed

If this message appears during recording or playback, it means that the disk drive cannot catch up with the data read/write speed. In such instances, create a new song which lower the sample rate or recording mode from their current settings, and record over.

Song Numbers

On the VS-880EX, management of song data is accomplished by assigning a song number to every song that is saved. Newly created songs are given the lowest currently available number. For example, if all numbers up to song number 5 are already assigned, then the number 6 is taken by the new song. Furthermore, even if song numbers up to 5 are occupied, if Song 3 is deleted, then the new song is given that now lowest vacant number.

**General Course of the Recording Process**

The procedure for recording with the VS-880EX is roughly as same as record process by multi-track recorders as mentioned before. This general process of recording a song is outlined below. Please take a moment to read through the steps.

1. Connect instruments and microphones to the VS-880EX.
2. Record the basic part of the song; drums and bass, etc.
3. Record other parts (electric guitars, synthesizers, vocals, etc.) while playing back the basic part.
4. If there are any mistakes during the process, record over the places where they occurred (punch-in/punch-out).
5. Adjust the volume level, pan, equalization, and other settings for each part.
6. If you run out of empty tracks, you can marge the contents of two or more tracks onto a different track (track bouncing).
7. Mix down the tracks to your recorder and make a master tape.

Well, it's time to try multi-track recording. This will be explained using concrete examples.

Connecting Instruments

1. Turn down the master fader as low as possible.
2. Connect instruments and microphones to the INPUT jacks.

* *Howling could be produced depending on the location of microphones relative to speakers. This can be remedied by:*

1. *Changing the orientation of the microphone(s).*
2. *Relocating microphone(s) at a greater distance from speakers.*
3. *Lowering volume levels.*

Recording to the Tracks

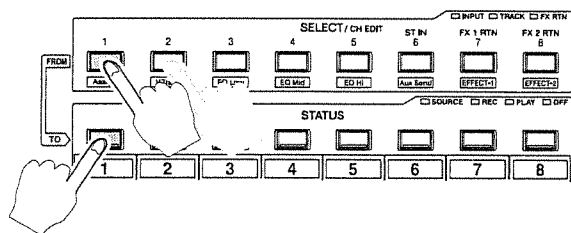
1. Select a recording track. While holding down [REC], press the STATUS button for the track to which you want to record.

The STATUS indicator blinks red.

2. Switch to the input mixer. Press [FADER (EDIT)] several times to let the FADER indicator light orange.

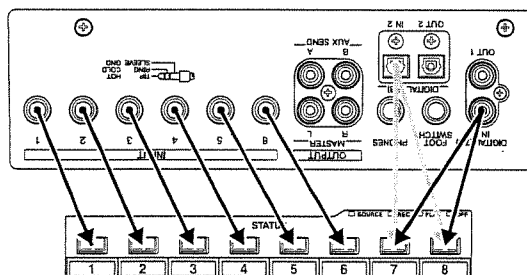
3. Select source to be recorded to the track. While holding down the STATUS button for the track to which you want to record, press the SELECT button for the input channel whose source you want assigned to the track.

The SELECT indicator blinks.



Sources Assigned to Tracks

In a newly created song, sources are assigned to tracks as shown below.



4. Determine the source volume. Since what is recorded is the sound after it passes through the fader, the faders should normally be set to around 0 dB.
5. Adjust the input sensitivity, with the INPUT knob of the channel input assigned as the source. Get a strong input signal by having instrument volumes as high as possible. At this time, raise the volume level as much as possible without making the PEAK indicator light up. Normally, **this range is adjusted that the level meter moves within -12 to 0 dB when the channel fader is set to 0 dB.**

6. Press [REC].

The REC indicator blinks red.

7. Press [PLAY].

The PLAY indicator lights green, and recording starts. Now begin playing.

8. When the performance is finished, press [STOP]. The song then stops.

9. Listen to the recorded performance. Press [ZERO] to return to the beginning of the song.

10. Switch to the track mixer. Press [FADER] several times to let the FADER indicator **light green**.

11. Press [PLAY] to begin playback of the song.

12. Use the channel faders and the master fader to adjust the volume to a comfortable level.

13. Does the recording sound as you thought it would? If you are satisfied with the results of your recording, then save the song to the disk, using the procedure described in "Saving a Recorded Performance" (p. 43).

To cancel track assignments

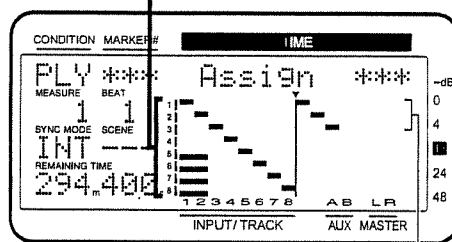
You can cancel all assignments (routings) of sources or tracks to tracks (i.e., to a state where nothing is connected).

1. Press [PLAY (DISPLAY)].
2. Hold down the STATUS button and press [CLEAR].

Viewing the Assign screen

In Play Condition, hold down the STATUS button to view the source/track/effect which is assigned to that track.

Assigned source 1-8 (upper line)
Assigned track 1-8 (lower line)



Recording Tracks (1-8)

Stereo In (first line)
Effect 1 (second line)
Effect 2 (third line)

When You Are Recording in Stereo

When recording in stereo, or when recording to tracks with Channel Link (p. 149) on, you can set the pan for each input channel. After Step 5, perform the procedure described below.

5-1. Press the SELECT button for the input channel you want assigned as the source.

The SELECT indicator lights.

5-2. Press PARAMETER [◀◀] [▶▶] several times until "MIX Sw" appears in the display.

5-3. Rotate the TIME/VALUE dial.

MIX Sw (Mix Switch)

This selects the bus to which the source or track output will be assigned. For this example select "On."

On: The source or track will be sent to the mix bus. Set this to "On" when, for example, you simply want to mix the inputs without recording the source. However, the sources that are assigned to the RECORDING bus are disabled.

Off: The source or track will not be assigned to the mix bus. If it is not assigned to a recording bus either, then that source/track will not be output anywhere.

5-4. Press PARAMETER [▶▶].

5-5. Rotate the TIME/VALUE dial.

MIX Pan

This adjusts the pan setting (L63–0–R63) of the signal sent to the MIX bus and the RECORDING bus.

5-6. Repeat Steps 5-1 through 5-3 for all input channels to which you want to make pan settings.

5-7. After making the pan setting, press [PLAY (DISPLAY)].

Return to Play condition.

Saving a Recorded Performance (Song Store)

The contents of any recorded performance will be lost if you simply turn the power off, or even if there is an accidental power failure or power outage. **Once lost, the contents of a recorded performance cannot be restored to the previous conditions.** To avoid this from happening, use the following procedure to save your songs to the disk.

** When handling important song data, or when using the VS-880EX for extended periods, we recommended that you to perform this procedure frequently.*

1. Hold down [SHIFT] and press [STORE (ZERO)].
2. "STORE OK?" appears in the display. If you are satisfied with the results of your recording, press [YES]. If you wish to cancel the save, press [NO].

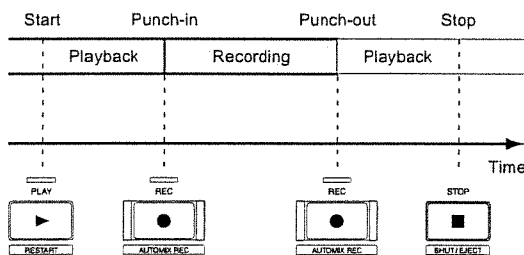
** The contents of the demo songs are protected from being changed or overwritten (Song Protect (p. 64)). You cannot save operation with the demo songs. This means if you press [YES] at Step 2 when a demo song is selected, the message "Song Protected" will appear, and the procedure cannot be continued.*

Recording Over a Portion of a Performance (Punch-In/Punch-Out)

Sometimes, when listening to a recorded performance, even if you don't find it necessary to discard the entire song, there may be sections containing mistakes or lyrics that are hard to hear. In such instances, you will find the following procedure convenient for rerecording only selected parts of a recording. The switching from playback to recording status is called **punch-in**, and the switch back from recording to playback is referred to as **punch-out**.

Using the RECORD Button (Manual Punch-In 1)

Use Transport Control Buttons to punch in and out.

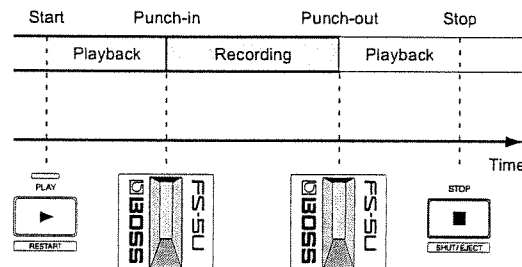


1. Hold down [REC] and press the STATUS button which you wish to re-record.
2. Press [ZERO] to return to the beginning of the song.
3. Press [PLAY] to begin playback of the song. At this point, the **performance that has already been recorded** on the track or tracks that you want to re-record is monitored.
4. Press the STATUS buttons again. The STATUS indicator alternately blinks red and orange. Now, confirm that you can hear **source you want recorded to the track** coming from the monitors.
5. During playback of the song, each time the button is pressed, the monitor switches between source and track. Using the input sensitivity knob, adjust the volume of the source so that it matches that of the prerecorded performance.
6. Once you have adjusted the input sensitivity, press [STOP].

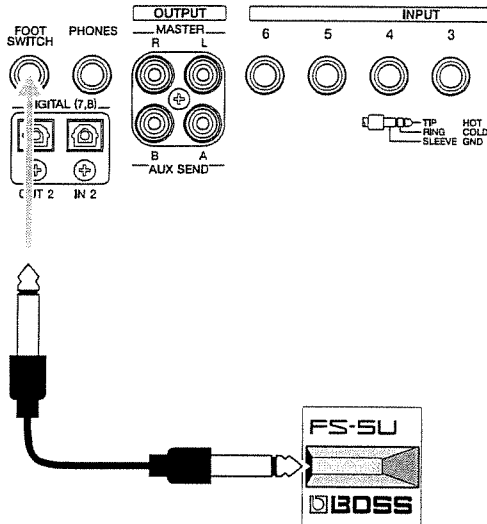
7. Move to previous located point where you want to re-record.
8. Press [PLAY] again to playback the song.
9. When you reach the point in the performance you want to re-record, press [REC]. The VS-880EX goes in to record mode; start rerecording the song or performance.
10. When you have finished recording, press [REC] once more (or press [PLAY] to playback the song).
11. Each time the [REC] button is pressed, the unit alternately punches in and out. Repeat Steps 9 and 10 for any other tracks you wish to re-record.
12. Press [STOP] to stop the song.
13. Listen to the results of the rerecording. Return to the beginning of the song and press [PLAY].

Using the Foot switch (Manual Punch-In 2)

Use a foot switch to punch in and out. Using Punch-In/Punch-Out when both performing on an instrument and recording at the same time is difficult. In such instances, it is convenient to use a foot switch (such as the DP-2 or the BOSS FS-5U) to do your switches.



1. Connect an optional foot switch (such as the DP-2 or the BOSS FS-5U) to the VS-880EX's FOOT SWITCH jack.



2. Press [SYSTEM] several times until "SYS System PRM?" appears in the display.
3. Press PARAMETER [▶▶] several times until "SYS FootSw=" appears in the display.

FootSw (Foot switch icon)

Set the function of the foot switch connected to the FOOT SWITCH jack.

Play/Stop: Repeats playback and recording each time the foot switch is pressed.

Record: Performs the same function as [REC]. This is used for switching between recording and playback during manual Punch-In Recording.

TapMarker: Performs the same function as [TAP]. Pressing the foot switch sets a Marker at the mark point.

Next: Performs the same function as [NEXT]. Moves to the beginning or end of the following phrase each time the foot switch is pressed.

Previous: Performs the same function as [PREVIOUS]. Moves to the beginning or end of the previous phrase each time the foot switch is pressed.

GPI: Controls playback and recording of the song depending on the GPI trigger signal received from the FOOT SWITCH jack.

4. Select "Record" with the TIME/VALUE dial.
5. Press [PLAY (DISPLAY)].
Return to Play condition.

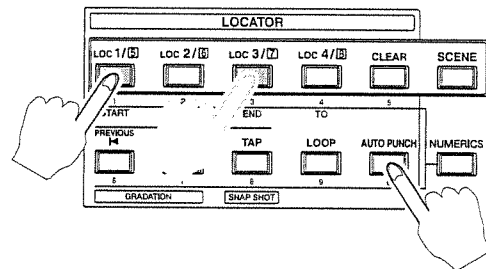
Now, you can switch the setting of the FOOT SWITCH jack between Punch-In and Punch-Out by the foot switch. Carry out Manual Punch-In as described in "Using the RECORD Button (Manual Punch-In 1" (p. 44). However, use the foot switch instead of the [REC] button to perform the operation.

Specifying Beforehand the Location for Rerecording (Auto Punch-In)

You can automatically punch in and punch out at previously specified locations. This function is called **Auto Punch-In**. This is convenient when you need to punch in or out at a precise time. Before you begin recording, set the times for punch-in/punch-out. There are three ways to set these times as described below. Use the method appropriate for your situation.

Using Locators

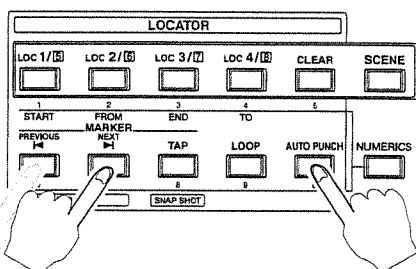
1. Preset locate points where you want to punch in/punch out.
2. While holding down [AUTO PUNCH], press the LOC button ([1/5]–[4/8]) specifying the locate point for the time at which you want to punch in.
3. Then, without releasing [AUTO PUNCH], press the LOC button ([1/5]–[4/8]) specifying the locate point for the punch-out time.



Using Markers

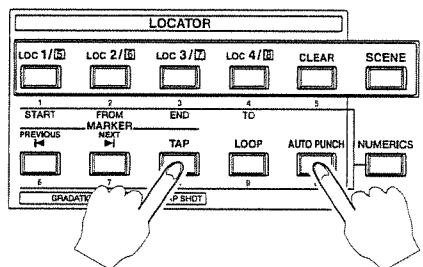
The space between two adjacent mark points can be used to define the segment for Punch-In Recording.

1. Preset Markers where you want to punch in and then punch out.
2. Move to the mark point located at the desired punch-in time.
3. While holding down [AUTO PUNCH], press [NEXT].
4. Without releasing [AUTO PUNCH], press [PREVIOUS].



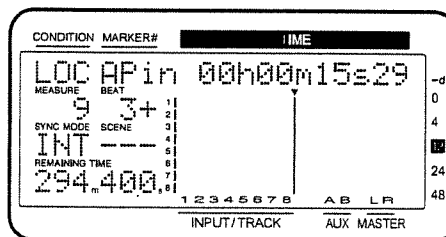
Specifying the Points While the Song Plays Back

1. Press [PLAY] to begin playback of the song.
2. When you reach the desired punch-in location, hold down [AUTO PUNCH] and press [TAP].
3. Continue holding down [AUTO PUNCH], wait for the desired punch-out location, and then press [TAP] once again.
4. Press [STOP].



Making Fine Adjustments to the Punch-In Segment

1. Press [LOCATOR] several times until "LOC APin" appears in the display.



2. The punch-in time will be displayed. (If no punch-in time has been specified, the display will indicate "-h-m-s-f-".) Use the TIME/VALUE dial to adjust the time.
3. Press PARAMETER [▶▶]. "LOC APot" appears in the display.
4. The punch-out time will be displayed. (If no punch-out time has been specified, the display will indicate "-h-m-s-f-".) Use the TIME/VALUE dial to adjust the time.
5. Press [PLAY (DISPLAY)].
Return to Play condition.

Recording Procedure:

1. Hold down [REC] and press the STATUS button for the track you wish to re-record.
2. Press [ZERO] to return to the beginning of the song.
3. Press [PLAY] to begin playback of the song.
At this point, the **performance that has already been recorded** on the track or tracks that you want to re-record is monitored.
4. Press the STATUS buttons again.
The STATUS indicator alternately blinks red and orange. Now, confirm that you can hear **source you want recorded to the track** coming from the monitors.
5. During playback of the song, each time the button is pressed, the monitor switches between source and track. Using the input sensitivity knob, adjust the volume of the source so that it matches that of the prerecorded performance.
6. Once you have adjusted the input sensitivity, press [STOP].

7. Press [AUTO PUNCH].

The AUTO PUNCH indicator lights, and Auto Punch-In Recording is enabled.

8. Move to a previous locate point where you want to re-record.

9. Press [REC].

10. Press [PLAY] again.

Playback of the song begins.

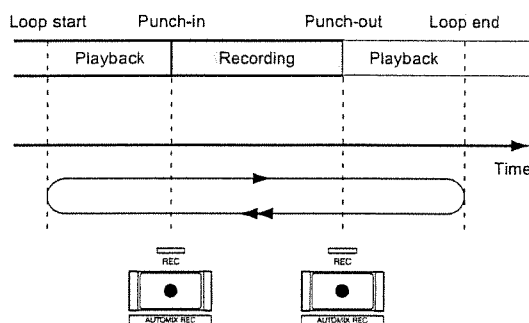
11. The VS-880EX automatically goes into record mode at the point where the punch-in is set. Start the song or performance now.

12. When you reach the point where the punch-out is set, the VS-880EX automatically returns to playback mode. Press [STOP] to stop the song.

13. Listen to the results of the rerecording. Return to the beginning of the song and press [PLAY].

Repeatingly Recording Over the Same Area (Loop Recording)

You can repeatedly play back a specified area (the loop) and use Auto Punch-In Recording in that area. This is called **Loop Recording**. This is convenient for when you want to check the results immediately after recording, or if you want to record a number of takes of a guitar solo and compare the different takes.



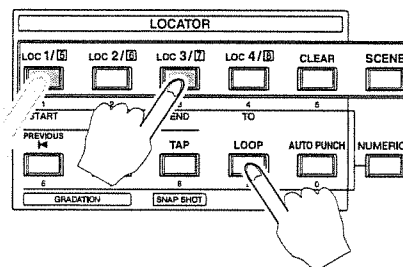
Before you begin recording, specify the begin and end times for the loop. There are three ways to specify the loop times. Use the method appropriate for your situation.

* To specify the area re-recording (the punch-in point and punch-out point), refer to the previous section "Auto Punch-In."

* Make settings so that the loop completely includes the area to be rerecorded (i.e., from the punch-in point to the punch-out point). If the area to be rerecorded is not completely within the loop, recording may not start at the specified location, or may be interrupted in the middle of the area for recording.

Using Locators

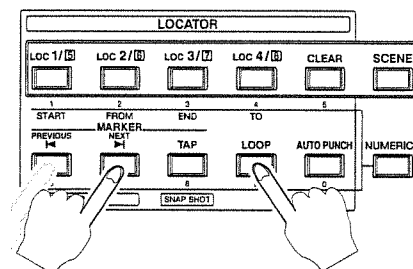
1. First store locate points where you want to begin and end the loop.
2. While holding down [LOOP], press the LOCATOR button for the locate point where you want the loop to begin.
3. Without releasing [LOOP], press the LOCATOR button which specified the end of the loop.



To Use Markers

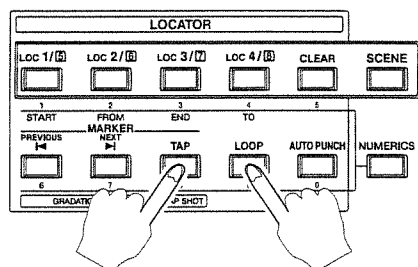
Adjacent mark points can be used to set the beginning and end of the loop.

1. First, set mark points where you want to punch in and punch out.
2. Move to the mark point at the beginning of the loop.
3. While holding down [LOOP], press [NEXT].
4. Without releasing [LOOP], press [PREVIOUS].



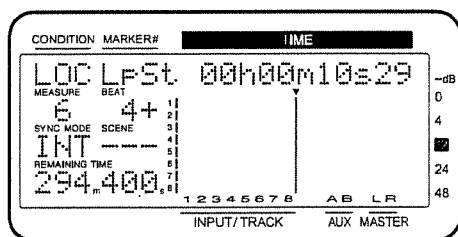
Specifying The Points While the Song Plays Back

1. Press [PLAY] to begin playback of the song.
2. When you reach the desired location for the beginning of the loop, hold down [LOOP] and press [TAP].
3. Continue holding down [LOOP], and when you reach the desired location for the end of the loop, press [TAP] once again.
4. Press [STOP].



Making Fine Adjustments to the Loop

1. Press [LOCATOR] several times until "LOC LpSt" appears in the display.



2. The loop start time will be displayed. (If no loop start time has been specified, the display will indicate "-h-m-s-f-.") Use the TIME/VALUE dial to adjust the time.
3. Press PARAMETER [▶▶].
"LOC LpEd" appears in the display.
4. The loop end time will be displayed. (If no loop end time has been specified, the display will indicate "-h-m-s-f-.") Use the TIME/VALUE dial to adjust the time.
5. Press [PLAY (DISPLAY)].
Return to Play condition.

Recording Procedure

1. Hold down [REC] and press the STATUS button for the track you wish to re-record.
2. Press [ZERO] to return to the beginning of the song.
3. Press [PLAY] to begin playback of the song.
At this point, the **performance that has already been recorded** on the track or tracks that you want to re-record is monitored.

4. Press the STATUS buttons again.
The STATUS indicator alternately blinks red and orange. Now, confirm that you can hear **source you want recorded to the track** coming from the monitors.

5. During playback of the song, each time the button is pressed, the monitor switches between source and track. Using the input sensitivity knob, adjust the volume of the source so that it matches that of the prerecorded performance.

6. Once you have adjusted the input sensitivity, press [STOP].

7. Press [LOOP].
The LOOP indicator lights, and Auto Punch-In Recording is enabled.

8. Press [AUTO PUNCH].
The AUTO PUNCH indicator lights. You are now set to do Loop Recording.

9. Press [PLAY].
Playback of the song begins. The song is played back until the end of the loop is reached, playback will return to the loop start point, and repeat.

10. Press [REC] where you want to re-record. The VS-880EX will then automatically go into record mode at the point where the punch-in is set. Start the song or performance then.

11. When you reach the point where the punch-in is set, the VS-880EX automatically returns to playback mode. Playback continues until the end of the loop, and the loop repeats from the start point once again.

12. With the next playback of the loop, listen to what you recorded to check the result. If the recording hasn't turned out as you intended, repeat Steps 10 and 11.

13. Press [STOP] to stop the song.

14. Listen to the results of the recording once more. Press [LOOP].

The LOOP indicator goes off.

15. Press [AUTO PUNCH].

The AUTO PUNCH indicator goes off.

16. Return to the beginning of the song and press [PLAY].

Recording to Other Tracks (Overdubbing)

In multi-track recording, the normal process is to record new tracks while listening to the performance on previously recorded tracks played back. This is referred to as **overdubbing**.

1. Select the tracks you want to play back. While holding down [STOP], press the STATUS buttons for the tracks you want to play back (i.e., that you want to hear while overdubbing).

The STATUS indicators light green.

2. Select the tracks to which you want to record. While holding down [REC], press the STATUS buttons for the tracks to which you want to record.

The STATUS indicators blink red.

3. Select the sources to record to the tracks. While holding down the STATUS buttons for the tracks you want to record to, press the SELECT buttons for the input channels whose sources you want assigned to the tracks.

The SELECT indicators blink.

4. Now you are ready for overdubbing. Follow the Steps of "Recording to the Tracks" (p. 42), to record and then check the content.

Recording on V-Track 2

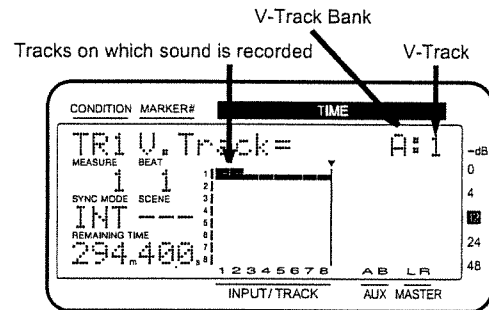
The VS-880EX features 8 tracks, each of which contains 8 auxiliary tracks. These subsidiary tracks are referred to as **V-tracks**.

Each song can have two sets (A and B) of these 64 V-tracks (8 tracks x 8 V-tracks), and each such set is referred to as a **V-track bank**.

By using all of these tracks to their full potential, you can create recordings of up to 128 (64 (V-track) x 2 (V-track bank)) tracks.

Switching V-Tracks

1. Press [CH EDIT (SELECT)] for the track whose V-track you wish to switch.
2. Hold down [SHIFT] and press the channel 2 [V.Track (CH EDIT)].
3. "V.Track=" appears in the display. Using the TIME/VALUE dial to select the V-track.



4. Press [PLAY (DISPLAY)].
Return to Play condition.
5. As described in "Recording to the Tracks" (p. 42), record and check the contents.

Switching V-Track Bank

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "V-Track Bank =" appears in the display.
4. Rotate the TIME/VALUE dial. Select "A" or "B."
5. Press [PLAY (DISPLAY)].
Return to Play condition.
6. As described in "Recording to the Tracks" (p. 42), record and check the contents.

Using Effects

Applying Effects to the Playback

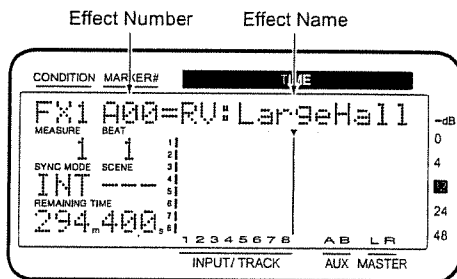
When you playback a song, you will frequently want to apply effects such as reverb or delay. Here we will explain how to apply reverb as you playback previously recorded tracks.

Select an Effect

1. Press [EFFECT] several times until "EFFECT-1 PRM?" appears in the display.

2. Press [YES].

The number and name of the currently selected effect will be displayed, and you can select the desired effect.

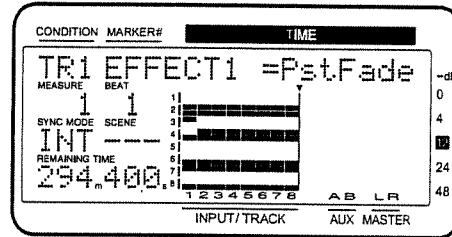


3. Use the TIME/VALUE dial to select the effect you wish to use. Here, select "A00 RV:LargeHall."
4. After selecting the effect, press [YES].

Specify the Tracks for Playback

5. Press [FADER (EDIT)] several times to let the FADER indicator **light green**.
6. Hold down [STOP] and press the STATUS button for the track you want played back. The STATUS indicator lights green.
7. Press [CH EDIT (SELECT)] for the track to which you want to apply reverb. The CH EDIT indicator lights.
8. Hold down [SHIFT] and press the channel 7 [EFFECT-1 (CH EDIT)]. "EFFECT1=" appears in the display.

9. Rotate the TIME/VALUE dial.



EFFECT1 (Effect 1 Send Select Switch)

This sets how the signal is sent to the EFFECT 1 bus. Here, select "PstFade" (post-fader) to apply reverb to the sound after the output of the channel fader.

Off: The signal is not sent.

PreFade: The signal before passing through the channel fader is sent.

PstFade: The signal after passing through the channel fader is sent.

If the effect has been inserted into another channel, the effect cannot be used. But, the signal from the channel will be sent to EFFECT bus.

10. Press PARAMETER [▶▶]. "EFFECT1 Send=" appears in the display.

11. Rotate the TIME/VALUE dial.

EFFECT1 Send (Effect 1 Send Level)

This adjusts the level (0-127) of the signal sent to the EFFECT 1 bus. Set the initial value to "100."

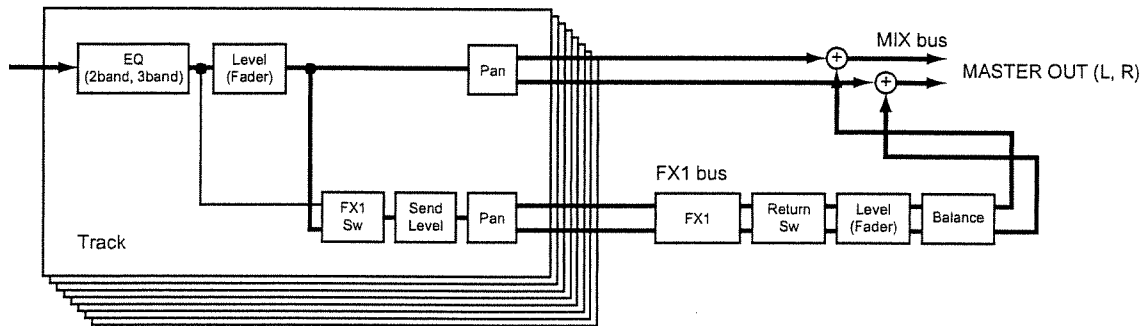
12. Press PARAMETER [▶▶]. "EFFECT1 Pan=" appears in the display.

13. Rotate the TIME/VALUE dial.

EFFECT1 Pan (Effect 1 Send Pan)

This adjusts the stereo placement of the signal (L63-0-R63) sent to the EFFECT 1 bus.

- Now reverb will be applied. The signal flow will be as follows.



- Press [PLAY (DISPLAY)].

Return to Play condition. Playback the song and verify that the effect is being applied.

Applying Effects While Recording (Send/Return)

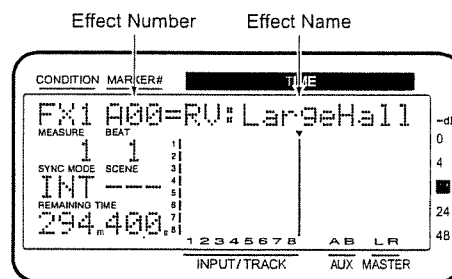
Now we will see how to add affects to the source at the INPUT 1 jack, and then record the direct sound and the sound with effects to Track 1. This is convenient when you want to record vocals with reverb.

Select an Effect

- Press [EFFECT] several times until "EFFECT-1 PRM?" appears in the display.

- Press [YES].

The number and name of the currently selected effect will be displayed, and you can select the desired effect.



- Use the TIME/VALUE dial to select the effect you wish to use. Here, select "A00 RV:LargeHall."
- After selecting the effect, press [YES].

Specify the Input to Which the Effect is to be Applied

5. Press [FADER (EDIT)] several times to let the FADER indicator **light orange**.
6. Press the channel 1 [CH EDIT (SELECT)].
7. Hold down [SHIFT] and press the channel 7 [EFFECT-1 (CH EDIT)].
"EFFECT1=" appears in the display.
8. Rotate the TIME/VALUE dial.

EFFECT1 (Effect 1 Send Select Switch)

This sets how the signal is sent to the EFFECT 1 bus. Here, select "PstFade" (post-fader) to apply reverb to the sound after the output of the channel fader.

- Off:** The signal is not sent.
- PreFade:** The signal before passing through the channel fader is sent.
- PstFade:** The signal after passing through the channel fader is sent.

If the effect has been inserted into another channel, the effect cannot be used. But, the signal from the channel will be sent to EFFECT bus.

9. Press PARAMETER [▶▶].
"EFFECT1 Send=" appears in the display.

10. Rotate the TIME/VALUE dial.

EFFECT1 Send (Effect 1 Send Level)

This adjusts the level (0–127) of the signal sent to the EFFECT 1 bus. Set the initial value to "100."

11. Press PARAMETER [▶▶].
"EFFECT1 Pan=" appears in the display.

12. Rotate the TIME/VALUE dial.

EFFECT1 Pan (Effect 1 Send Pan)

This adjusts the stereo placement of the signal (L63–0–R63) sent to the EFFECT 1 bus.

13. Hold down [REC] and press the Track 1 STATUS button.
The STATUS indicator blinks red.
14. While holding down the Track 1 STATUS button, press the Input Channel 1 [SELECT (CH EDIT)].
The SELECT indicator blinks.

15. Press [FADER (EDIT)] several times to let the FADER indicator **light red**.

16. While holding down the Track 1 STATUS button, press the Channel 7 [SELECT (CH EDIT)].
The SELECT indicator blinks.

17. At this point, the mixer is set up so that both the direct sound and the sound with effects can be recorded to Track 1. Record and check the content as described in "Recording to the Tracks" (p. 42).

Applying Effects While Recording (Insert)

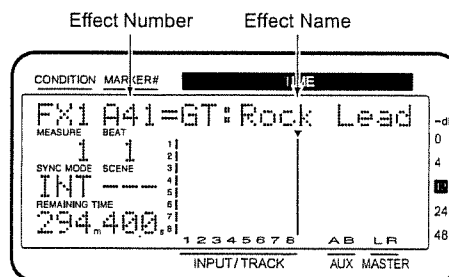
Many recordings of electric guitar, vocals, or the like contain the insertion of effects such as "Guitar Multi" and "Vocal Multi."

Here we will explain how you can connect an electric guitar to the INPUT 1 jack, add a stereo effect using the Guitar Multi effect, and record it to Tracks 1 and 2.

Select an Effect

1. Connect your electric guitar to the INPUT 1 jack.
2. Press [EFFECT] several times until "EFFECT-1 PRM?" appears in the display.
3. Press [YES].

The number and name of the currently selected effect will be displayed, and you can select the desired effect.



4. Use the TIME/VALUE dial to select the effect you wish to use. Here, select "A41 GT:Rock Lead."
5. After selecting the effect, press [YES].

Specify the Input Channel to Which the Effect is to be Applied

6. Press [FADER (EDIT)] several times to let the FADER indicator light orange.
7. Press the channel 1 [CH EDIT (SELECT)].
8. Press PARAMETER [◀◀] [▶▶] until "FX1 Ins =" appears in the display.
9. Rotate the TIME/VALUE dial.

FX1 Ins (Effect 1 Insert Switch)

This sets how the Insert functions. In this case, select "InsertL."

- Off:** There is no Insert.
- Insert:** Inserts in both channels of the stereo effect.
- InsertL:** Inserts in the left channel of the stereo effect.
- InsertR:** Inserts in the right channel of the stereo effect.
- InsertS:** Inserts in the left and right channels of the stereo effect in series.

10. Press PARAMETER [▶▶].
- "FX1 InsSend=" appears in the display.

11. Rotate the TIME/VALUE dial.

FX1 InsSend (Effect 1 Insert Send Level)

This adjusts the level of the signal (0–127) sent to the Insert effect.

12. Press PARAMETER [▶▶].
- "FX1 InsRtn=" appears in the display.

13. Rotate the TIME/VALUE dial.

FX1 InsRtn (Effect 1 Insert Return Level)

This adjusts the level of the signal (0–127) returned from the Insert effect.

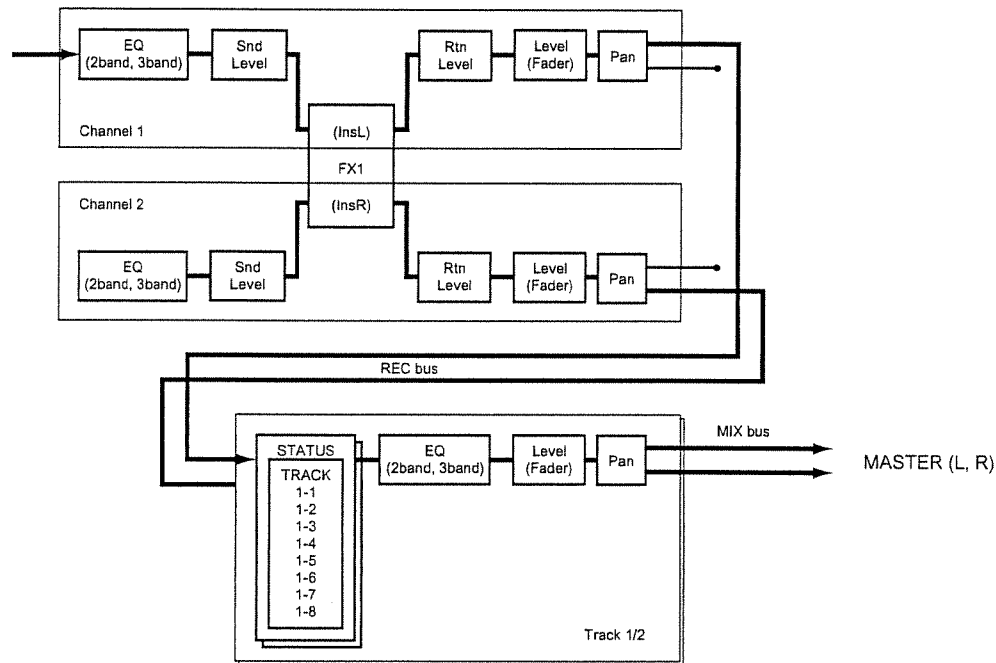
14. Press PARAMETER [◀◀] several times until "MIX Pan" appears in the display.
15. Rotate the TIME/VALUE dial.

MIX Pan

This adjusts the pan setting (L63–R63) of the signal sent to the MIX bus and the RECORDING bus. For now select "L63."

16. Press the channel 2 [CH EDIT (SELECT)].
17. Repeat the Steps 7–15 to make the settings for Channel 2 as same as those for Channel 1. However, select "InsertR" and "R63" for Steps 9 and 15, respectively.

- 18.** Now the setup is completed. In this case, the signal flow will be as the follows.



- 19.** Hold down [REC] and press the Track 1 and 2 STATUS buttons. The STATUS indicator blinks red.
- 20.** Hold down the Track 1 STATUS button and channel 1 SELECT buttons.
- 21.** Hold down the Track 2 STATUS button and channel 2 SELECT buttons.
- 22.** Record and check the content as described in "Recording to the Tracks" (p. 42).

Recording Digital Signals

With the VS-880EX, you can record the digital signals output by CD players, DAT and MD recorders, Roland VS-1680, and other digital audio devices as is.

* *The VS-880EX's digital interface conforms to S/P DIF. When recording digital signals, be sure to digital audio devices conforming to the same standards.*

? S/P DIF (Appendices p. 124)

Items Necessary for Digital Recording

- VS-880EX (1)
- CD player, DAT and MD recorder, or other digital audio device or devices
- Digital connector cable (coaxial or optical)

Make the Digital Connections

Connect the digital output connector of your audio device with the VS-880EX's DIGITAL IN connector. DIGITAL IN1 is a coaxial connector, DIGITAL IN2 an optical connector. Use the appropriate connector for your audio device.

DIGITAL IN1 (coaxial) and DIGITAL IN2 (optical) cannot be used simultaneously. Select one of the connectors for use.

Match the Sample Rates

It can record the digital signals when the sample rate of the song is set to match the sample rate of the input source.

The song created when a disk drive is initialized will have a sample rate of 44.1 kHz. If the sample rate of the input source is other than 44.1 kHz, create a new song with that sample rate (p. 40). Then, if you wish to create original audio CDs, select that sample rate for 44.1 kHz (p. 40).

In Order to Make a Digital Connection with Your CD Player

At the time of purchase, the VS-880EX is not able to record the output of CD players via its DIGITAL IN connectors. Perform the following procedure when you wish to make a digital connection with your CD player.

1. Press [SYSTEM] several times until "System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "CD DigiREC → On ?" appears in the display.
4. Press [YES].
"Obey Copyrights?" appears in the display.
5. Carefully read the conditions for permission that are listed on the back cover of this manual, and if you agree to the conditions, press [YES].

After the display indicates "— Complete —," you will return to Play condition. Now you will be able to make digital connections with your CD player. If you do not agree to the conditions, press [NO], and you will immediately return to Play condition.

To Prevent Digital Connections with CD Players

Use the following procedure when you want to prevent digital connections with CD players.

1. Press [SYSTEM] several times until "System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "CD DigiREC → Off ?" appears in the display.
4. Press [YES].

After the display indicates "— Complete —," you will return to Play condition. Subsequently it will no longer be possible to make digital connections with your CD player.

Chapter 3 Multi-Track Recording

Select the Master Clock

Synchronize the VS-880EX's reference clock (the master clock) with the digital signal from the digital audio device.

1. Press [SYSTEM] several times until "System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MasterClk=" appears in the display.
4. Rotate the TIME/VALUE dial.

MasterClk (Master Clock)

This sets the VS-880EX's reference clock. In this case, select "DIGIN1" or "DIGIN2."

DIGIN1: Based on the digital signal received from the DIGITAL IN connector (coaxial).

INT: Based on the VS-880EX's reference clock.

DIGIN2: Based on the digital signal received from the DIGITAL IN connector (optical).

** When you change the master clock value, clicking noise may happen. Please turn down the master fader of the VS-880EX, or the volume of the amplifier beforehand.*

5. Press [PLAY (DISPLAY)].

Return to Play condition.

If "Digital In Lock" is Displayed

This indicates that the reference clock for the sample rate is set by the digital signal from the DIGITAL IN connector. You can record using the digital connection.

If "Digital In Unlock" is Displayed

This indicates that no digital signal is being received from the DIGITAL IN connector. Alternatively, it may indicate that the sample rate selected for the song does not match the sample rate of the digital device connected to the DIGITAL IN connector. In this state, you cannot record using the digital connection.

Select an Input Source

Here we will explain how to select an input source, using the example of recording a digital signal on tracks 1 and 2. Here we will explain how to select input sources, using the example of recording a digital signal (stereo) to tracks 1 and 2. The left channel will be recorded on track 1, and the right channel on track 2.

Using [STATUS]

1. Press [FADER (EDIT)] several times to let the FADER indicator **light orange**. (Input Mixer)
2. While pressing [REC], press the STATUS buttons for Tracks 1 and 2.

The STATUS indicators light red.

3. While pressing the STATUS button for Track 1, press [SELECT (CH EDIT)] on Channel 8.
4. While pressing the STATUS button for Track 2, press [SELECT (CH EDIT)] on Channel 7.
5. As described in "Recording to the Tracks" (p. 42), record and check the contents.

Using [YES]/[NO]

1. Press [FADER (EDIT)] several times to let the FADER indicator **light green**. (Track Mixer)
2. Press [SELECT (CH EDIT)] on Channel 1.
3. Press PARAMETER [◀◀] [▶▶] to let "TR1 Assign" appears in the display.
4. Rotate the TIME/VALUE dial to let "TR1 Assign IN7" appears in the display.
5. Press [YES].

Assign ***

Specify the source/track/effect return which will be assigned to each track for recording. If you press [YES] the display will indicate "On," showing that it has been assigned for recording. If you press [NO], the display will indicate "Off," and the signal will not be assigned (it will not be recorded).

The symbols displayed in "****" indicate the following signals.

IN1-IN8: INPUT Jack 1-INPUT Jack 8 (DIGITAL IN)
TR1-TR8: Track 1-Track 8 (Track Bouncing)
FX1: Effect 1 Return
FX2: Effect 2 Return
StIn: Stereo In

For example, a display of "TR1 Assign IN7= On" indicates that "the source from INPUT jack 7 has been assigned to track 1 for recording."

6. Press [SELECT (CH EDIT)] on Channel 2.
7. Rotate the TIME/VALUE dial to let "TR2 Assign IN8" appears in the display.
8. Press [YES].
9. Press [PLAY (DISPLAY)].
Return to Play condition.
10. As described in "Recording to the Tracks" (p. 42), record and check the contents.

Adjusting the Tone (Equalizer)

A two-band (low, high) or three-band (low, mid, high) parametric equalizer is provided for each channel.

First make equalizer adjustments separately for each channel. If you have recorded any stereo pairs, be sure that the same settings are made for both tracks. Then, while paying attention to the overall balance, make final adjustments for equalizer, pan, and volume level for each channel.

** If you adjust the equalizer while listening to the sound, you may notice a clicking noise. This is not a malfunction. If the noise is objectionable, make adjustments while the sound is not playing.*

Using the 3-Band Equalizer

1. Hold down [SHIFT] and press [EDIT (FADER)].
2. Press PARAMETER [◀◀] [▶▶] to let "EQ Sel=" appears in the display.
3. Rotate the TIME/VALUE dial. Select "3BandEQ."

EQ Sel (Equalizer Select)

Select the type of equalizer that you wish to use.

2BandEQ: 2-band equalizer.

3BandEQ: 3-band equalizer.

4. Press [PLAY (DISPLAY)].
Return to Play condition.

Adjusting the Equalizer

1. If you wish to adjust the equalizer for the input source, press [FADER (EDIT)] several times to make the FADER indicator **light orange** (Input Mixer). If you wish to adjust the equalizer for an already-recorded track, press [FADER (EDIT)] several times to make the FADER indicator **light green** (Track Mixer).
2. Press [CH EDIT (SELECT)] for the channel or track whose equalizer setting you wish to adjust. The CH EDIT indicator lights.
3. Hold down [SHIFT] and press the channel 3 [EQ Low (CH EDIT)].

Chapter 3 Multi-Track Recording

4. Press PARAMETER [◀◀] [▶▶] several times until "EQ Switch=" appears in the display.
5. Rotate the TIME/VALUE dial.

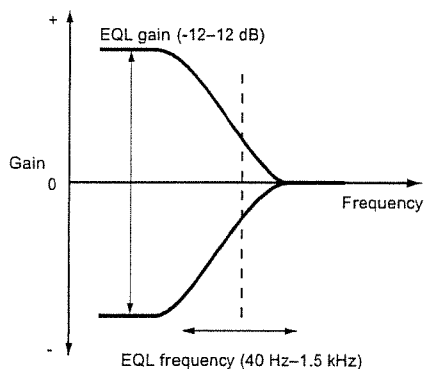
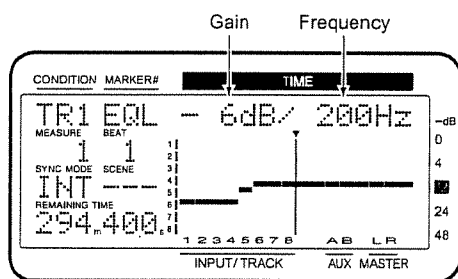
EQ Switch (Equalizer Switch)

If you wish to use the equalizer, set this "On." If not, set this "Off." When equalizer settings are being made, the equalization curve will be shown graphically in the bar display. If this is "Off" the equalizer-related parameters will not be available. For this example, select "On" so that the equalizer will be applied.

6. Hold down [SHIFT] and press the channel 3 [EQ Low (CH EDIT)].
7. Use CURSOR [◀] [▶] and the TIME/VALUE dial to make the setting.

EQL (Equalizer Low)

This adjusts the gain (-12–12 dB) and the center frequency (40 Hz–1.5 kHz) of the low-range (shelving) equalizer.



8. Hold down [SHIFT] and press the channel 4 [EQ Mid (SELECT)].

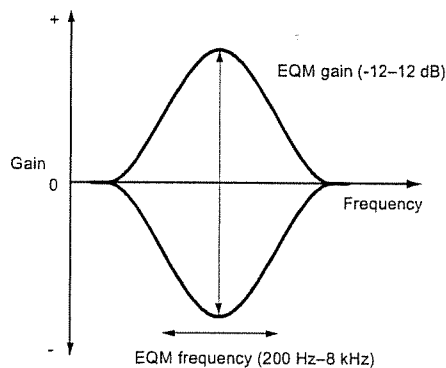
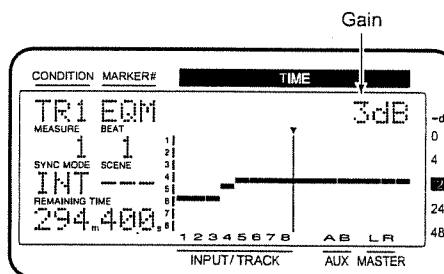
If the Display Indicates "Not 3band EQ"

If "Not 3band EQ" is displayed, the EQ Mode (equalizer mode) is set to "2 band EQ." In this case, it will not be possible to adjust the mid-range equalizer.

9. Rotate the TIME/VALUE dial.

EQM (Equalizer Mid)

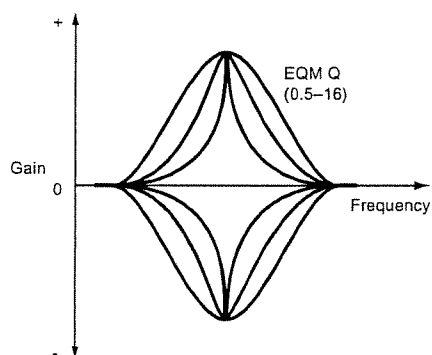
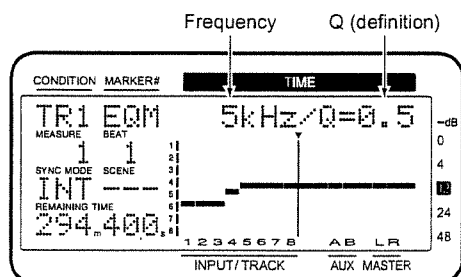
This adjusts the gain (-12–12 dB) of the mid-range (peaking) equalizer.



10. Press PARAMETER [▶▶].
11. Use CURSOR [◀] [▶] and the TIME/VALUE dial to make the setting.

EQM (Equalizer Mid)

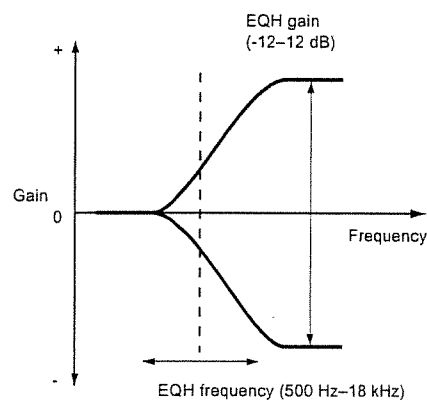
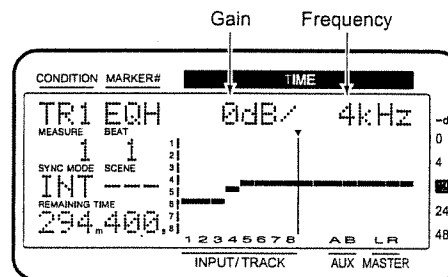
This adjusts the center frequency (200 Hz–8 kHz) and Q (definition: 0.5–16) of the mid-range (peaking) equalizer.



12. Hold down [SHIFT] and press the channel 5 [EQ Hi (SELECT)].
13. Use CURSOR [◀] [▶] and the TIME/VALUE dial to make the setting.

EQH (Equalizer High)

This adjusts the gain (-12–12 dB) and the center frequency (500 Hz–18 kHz) of the high-range (shelving) equalizer.



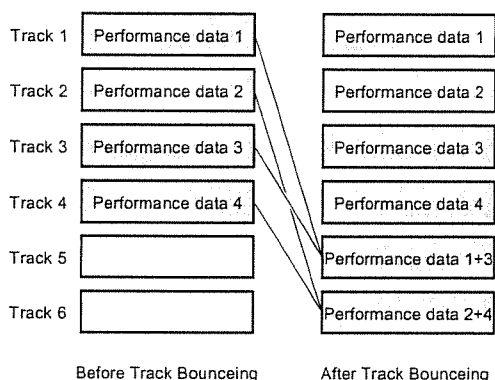
14. Repeat Steps 1–12 if you wish to make adjustments to other equalizers.
15. When you are finished making the adjustments, press [PLAY (DISPLAY)]. Return to Play condition. If necessary, save the song (p. 43).

* The 3-band (low, mid, high) equalizer can be used on channel faders in only one mixer mode — either the Track mixer or Input-mixer — at a time. You cannot use the equalizer in both mixers simultaneously on the same channel. For example, if you are using the 3-band equalizer on Track 1, then you cannot use it on Input 1.

Combining the Contents of Tracks (Track Bouncing)

You can mix the performances recorded on two or more tracks and rerecord them onto a different empty track. This operation is known as **track bouncing**. It is a convenient technique to use when you have run out of free tracks.

In this section, we will mix the performances recorded on tracks 1–4, and rerecord the result in stereo on tracks 5 and 6.



** Volume, pan, equalizer, effects, and other settings cannot be adjusted on tracks mixed with track bouncing. Do not use track bouncing with tracks to which you want to apply the equalizer and effects separately.*

Specify the Tracks for Playback and Recording

1. Press [CH EDIT (SELECT)] for Track 5.
2. Press PARAMETER [◀◀] [▶▶] until "Channel Link=" appears in the display.
3. Use the TIME/VALUE dial to select "On."
4. Press [PLAY (DISPLAY)].
5. While pressing [STOP], press the STATUS buttons for Tracks 1–4.

The STATUS indicators light green.

6. Press the STATUS buttons for Track 5 (or 6) several times to let the STATUS indicators light orange.
7. Press [FADER (EDIT)] several times to let the FADER indicators light green. (Track Mixer)
8. While pressing the STATUS button for Track 5 (or 6), press the SELECT buttons on Channels 1–4.

The SELECT indicators blink green.

9. Usually, the source entering the INPUT 5–6 jacks is also assigned for recording on Tracks 5–6. When you want to record only the material on Tracks 1–4, use the following procedure.

10. Press [FADER (EDIT)].

The FADER indicators light orange. (Input Mixer)

11. While pressing the STATUS button for Track 5 (or 6), press the SELECT buttons on Channels 5 and 6.

The SELECT indicator which had been blinking orange will go dark.

12. Now Tracks 1–4 can be monitored on Channels 5–6.

Adjust the Pan for Each Track

13. Press the Channel 1 [CH EDIT (SELECT)].

The CH EDIT indicator lights.

14. Press PARAMETER [▶▶] several times until "MIX Sw" appears in the display.

15. Rotate the TIME/VALUE dial.

MIX Sw (Mix Switch)

This selects the bus to which the source or track output will be assigned. For this example select "On."

On: The source or track will be sent to the mix bus. Set this to "On" when, for example, you simply want to mix the inputs without recording the source. However, the sources that are assigned to the RECORDING bus are disabled.

Off: The source or track will not be assigned to the mix bus. If it is not assigned to a recording bus either, then that source/track will not be output anywhere.

16. Press PARAMETER [▶▶].

17. Rotate the TIME/VALUE dial.

MIX Pan

This adjusts the pan setting (L63–0–R63) of the signal sent to the MIX bus and the RECORDING bus.

18. Repeat Steps 13–17 if you wish to make adjustments to other pans.

19. Press [PLAY (DISPLAY)].

Return to Play condition.

20. Press [FADER (EDIT)].

The FADER indicators light green. (Track Mixer)

21. Press [PLAY] to begin playback of the song.
22. Adjust the volume balance with the faders for Channels 1–4. The presently monitored sound (volume levels, pan) will be recorded to Tracks 5 and 6 just as you hear it. You can raise the volume as much as possible without causing distortion.
23. Press [STOP] to stop playback of the song.

Record and Check the Content

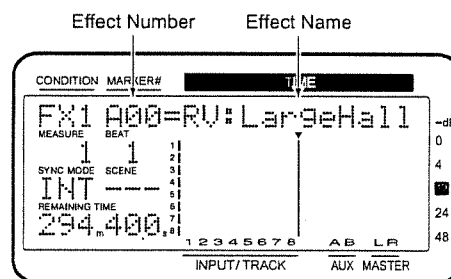
24. Press [ZERO] to return to the beginning of the song.
25. While pressing [REC], press the STATUS button for Track 5 (or 6).
The STATUS indicator blinks red.
26. Press [REC].
The REC indicator blinks red.
27. Press [PLAY].
The PLAY indicator lights green, and starts recording.
28. When recording is finished, press [STOP].
This stops the song.
29. Check the content of the recording. Press [ZERO] to return to the beginning of the song.
30. Mute (sound is prevented from playing) Tracks 1–4. Press the STATUS buttons for Tracks 1–4.
The STATUS indicators go off.
31. Press [PLAY] to begin playback of the song.
Use the channel faders 5 and the master fader to adjust the volume to a comfortable level.

Applying Reverb While Track Bouncing

Sometimes you may want to record previously-recorded tracks to another track while apply the effects to them. Here is how to add reverb to Tracks 1–4 while bouncing these tracks to Tracks 5 and 6. This can be convenient when you want to add spatial effects such as reverb and delay to each track while mixing down.

Select an Effect

1. Press [EFFECT] several times until "EFFECT-1 PRM?" appears in the display.
2. Press [YES].
The number and name of the currently selected effect will be displayed, and you can select the desired effect.



3. Use the TIME/VALUE dial to select the effect you wish to use. Here, select "A00 RV:LargeHall."
4. After selecting the effect, press [YES].

Specify the Track to Which the Effect is to be Applied

5. Press [FADER (EDIT)] to light the TR (Track) indicator.
6. Hold down [SHIFT] and press the channel 7 [EFFECT-1 (CH EDIT)].
"EFFECT1=" appears in the display.
7. Press the channel 1 [CH EDIT (SELECT)].
8. Rotate the TIME/VALUE dial.

Chapter 3 Multi-Track Recording

EFFECT1 (Effect 1 Send Select Switch)

This sets how the signal is sent to the EFFECT 1 bus. Here, select "PstFade" (post-fader) to apply reverb to the sound after the output of the channel fader.

Off: The signal is not sent.

PreFade: The signal before passing through the channel fader is sent.

PstFade: The signal after passing through the channel fader is sent.

** If the effect has been inserted into another channel, the effect cannot be used. But, the signal from the channel will be sent to EFFECT bus.*

9. Press PARAMETER [▶▶].
"EFFECT1 Send=" appears in the display.

10. Rotate the TIME/VALUE dial.

EFFECT1 Send (Effect 1 Send Level)

This adjusts the level (0–127) of the signal sent to the EFFECT 1 bus. Set the initial value to "100."

11. Press PARAMETER [▶▶].
"EFFECT1 Pan=" appears in the display.

12. Rotate the TIME/VALUE dial.

13. In the same way as in steps 7–12, make settings so that reverb is applied to tracks 2–4 as well.

14. Press [PLAY (DISPLAY)].
Return to Play condition.

EFFECT1 Pan (Effect 1 Send Pan)

This adjusts the stereo placement of the signal (L63–0–R63) sent to the EFFECT 1 bus.

Specify the Tracks for Playback and Recording

15. Press [CH EDIT (SELECT)] for Track 5.

16. Press PARAMETER [◀◀] [▶▶] until
"Channel link =" appears in the display.

17. Use the TIME/VALUE dial to select "On."

18. Press [PLAY (DISPLAY)].

19. While pressing [STOP], press the STATUS buttons for Tracks 1–4.

The STATUS indicators light green.

20. Press the STATUS buttons for Track 5 (or 6) to let the STATUS indicators light orange.

21. While pressing the STATUS button for Track 5 (or 6), press the SELECT buttons on Track Channels 1–4.

The SELECT indicators blink.

22. Press [FADER (EDIT)] several times to light red the FADER indicator.

23. While pressing the STATUS button for Track 5 (or 6), press the Channel 7 [FX RTN (SELECT)].

The SELECT indicators blink.

24. Usually, the source entering the INPUT 5–6 jacks is also assigned for recording on Tracks 5. When you want to record only the material on Tracks 1–4, use the following procedure.

25. Press [FADER (EDIT)].

The FADER indicators light orange. (Input Mixer)

26. While pressing the STATUS button for Track 5, press the SELECT buttons on Channels 5 and 6.

The SELECT indicator which had been blinking orange will go dark.

27. Now you have set it up so that you can monitor Tracks 1–4 and Effect 1 Return on Channels 5–6.

Record and Check the Content

28. Carry out track bouncing by following the procedure described in "Combining the Contents of Tracks" (p. 60).

Creating a Master Tape

When you finish recording a song, adjust the balance of each track (equalizer, pan, and volume level), and using your stereo recorder, record a two-channel stereo master mix to a stereo cassette, DAT, MD, or other media. This process is called **mixdown**.

Prepare for Mixdown

1. Hold down [STOP] and press the STATUS buttons for all tracks you want to have mixed down. The STATUS light goes green.
2. Press [FADER] several times to light green the FADER indicator.
3. Use the channel faders and pan knobs on the top panel to adjust the effect volume and pan of each track. First determine the volume of the song's main tracks (usually the vocals or perhaps a guitar melody). Then, set levels for the other tracks. It is a good idea to create a balance in which the volume of the other tracks is lower than the main tracks. Afterwards, make final adjustments to the pan and equalizer settings for each track as you listen to the overall mix.

To Record to a Cassette Tape

1. Connect the VS-880EX's MASTER jacks to the input jacks of your cassette recorder.
2. Adjust the recording levels for the cassette recorder. Adjust the output volume with the VS-880EX's master fader, making it as high as possible without causing any input overload on the recorder. Set the recording levels on the cassette recorder as high as possible before causing distortion, with the level meter moving a lot.
3. Press [ZERO] on the VS-880EX.
4. Put the cassette recorder in record mode.
5. Press [PLAY] on the VS-880EX to begin playback of the song.
If you want to fade in or out, use the VS-880EX's master fader for this.
6. When you have finished recording, stop the cassette recorder.
7. Press [STOP] on the VS-880EX.
8. Listen to the recorded result. Rewind the tape and play back the recording.

Recording with DAT and MD Recorders

The VS-880EX features two types of digital out connectors, coaxial and optical, either of which is ready to use. At the factory settings, these connectors are set to output the same sound as the MASTER jacks.

1. Connect the digital input connector of your digital recorder with the VS-880EX's DIGITAL OUT connector.
2. Set your digital recorder to enable it to record digital signals. Match the recorder's sample rate to that of song recorded on the VS-880EX (normally at 44.1 kHz). Many digital recorders can determine the sample rate automatically. Match the rates manually only when special settings are necessary.
** There are some DAT recorders that cannot record digital signals at 44.1 kHz. If such instances, change to an analog connection and set the recorder to enable it to record analog signals.*
3. Press [ZERO] on the VS-880EX.
4. Put the digital recorder in record mode.
5. Press [PLAY] on the VS-880EX.
Playback of the song begins. If you want to fade in or out, use the VS-880EX's master fader for this.
6. When you have finished recording, stop the cassette recorder.
7. Press [STOP] on the VS-880EX.
8. Listen to the recorded result. Rewind the tape and play back the recording.

To Prohibit Digital Copying

When mixing down from the VS-880EX to a DAT recorder or similar recorder via a digital connection, you can prevent digital copying of the tape to which the mixdown has been recorded.

For example, you are allowed to make only one copy of a regular audio CD onto a DAT tape. Once the digital copy has been made to the DAT tape, you cannot make further copies onto other digital devices using digital connections. This function makes DAT tapes copied digitally from the VS-880EX behave as those copied digitally from CDs.

1. Press [SYSTEM] several times until "SYS System PRM?" appears in the display.
2. Press PARAMETER [▶▶] several times until "D.CpyProtect" appears in the display.
3. Rotate the TIME/VALUE dial.

Digital Copy Protect (Digital Copy Protect Switch)

This setting determines whether or not the digitally mixed down tape can be later copied digitally. If you wish to prohibit digital copying, set this "On."

Off: Digital copying is not prohibited.

On: Digital copying is prohibited.

4. Press [PLAY (DISPLAY)].
Returns to Play condition.

With this procedure, you have made it so that your digitally mixed master tapes cannot be later copied digitally onto DAT tapes or similar digital media.

** Some DAT recorders do not conform to SCMS standards or cannot be connected digitally to CD players. If you are using such a DAT recorder, then if you set the Digital Protect Switch to "On," the digital output from the VS-880EX cannot be copied to the DAT recorder. In such instances, set the Digital Protect Switch to "Off."*

? SCMS (Appendices p. 124)

Protecting Songs (Song Protect)

The possibility that a performance saved to the disk may still be mistakenly overwritten (recorded over), or that the song itself may be accidentally deleted has been considered. You can protect songs from being rewritten in situations such as these. The function is called **Song Protect**.

Turning on Song Protect disables the following operations.

- Recording
- Undo (and Redo)
- Song Name, Song Optimize
- Track Edit
- Recording to Sync Tracks
- Creating Tempo Maps
- Song Store

About Effective Use

Song Protect performs the same function as the protect tab or switch on floppy disks and magnet-optical disks. Thus, even if Song Protect is turned on, you can still store locate points and mark points, and carry out operations such as changing Scenes. However, when you try to save the work you have done, "Song Protected" appears in the display, and you are prevented from continuing any further with the save. However, when you remove Song Protect, any settings made when Song Protect was on are lost.

After you have finished all work for the day, turn on Song Protect immediately before shutting off the power to the VS-880EX. Furthermore, right after turning on the power to the VS-880EX at the beginning the day's operations, you should immediately turn off Song Protect.

Protecting Performances

1. Make the current song the one to which you want to apply Song Protect.
2. Press [SONG] several times until "SNG Song Name/Prtct?" appears in the display.
3. Press [YES].
Song name appears in the display.
4. Press PARAMETER [▶▶].
"SNG ChangePrtct → On?" appears in the display.
5. Press [YES]. If you wish to cancel, press [NO].
6. "STORE Current?" appears in the display. If you wish to save the current song and then protect it, press [YES]. If you wish to protect the state in which Song Store was last executed without saving the current song, press [NO].
7. The song will be protected.
"SNG Complete" appears in the display, and return to Play condition.

To Remove Song Protect

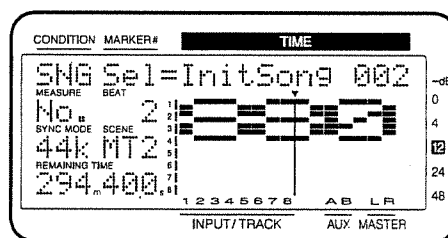
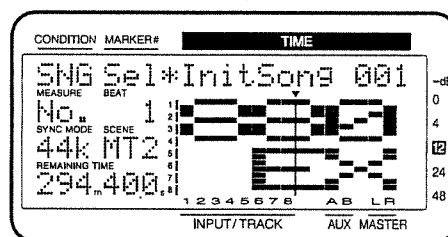
1. Select the song from which you currently want to remove the protect function.
2. Press [SONG] several times until "SNG Song Name/Prtct?" appears in the display.
3. Press [YES].
Song name appears in the display.
4. Press PARAMETER [▶▶].
"SNG ChangePrtct → Off?" appears in the display.
5. Press [YES]. If you wish to cancel, press [NO].
6. Song protect will be disabled.
"SNG Complete" appears in the display, and return to Play condition.

Selecting a Song (Song Select)

If the VS-1680 contains multiple songs, use the following procedure to select a song.

1. Press [SYSTEM] several times until "Song Select?" appears in the display.
2. Press [YES].
3. Use the TIME/VALUE dial to appear the song name that you wish to select. An asterisk "*" will be displayed at the beginning of the current song.

Different types of songs (for the VS-880 and VS-880EX) are distinguished.



4. Press [YES]. "Select Song, Sure?" (Are you sure that you want to select this song?) will be displayed.
5. Press [YES] again.
6. "STORE Current?" (Store the current song?) will be displayed. If you wish to save the current song, press [YES]. If not, press [NO].
7. The song will be selected, and you will return to the Play Condition.

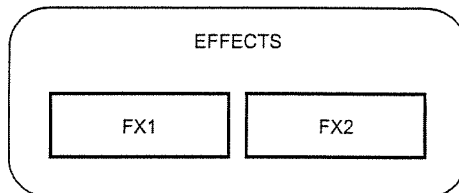
Chapter 4 Using the Internal Effects

The VS-880EX contains effects, allowing up to two stereo effects to be applied without using any equipment other than the VS-880EX itself.

This chapter explains how to use these internal effects.

Composition of the Effects

The VS-880EX has two effect units which allow two types of effect to be applied simultaneously (FX1 and FX2). For each channel of the mixer you can specify the effect which will be used.

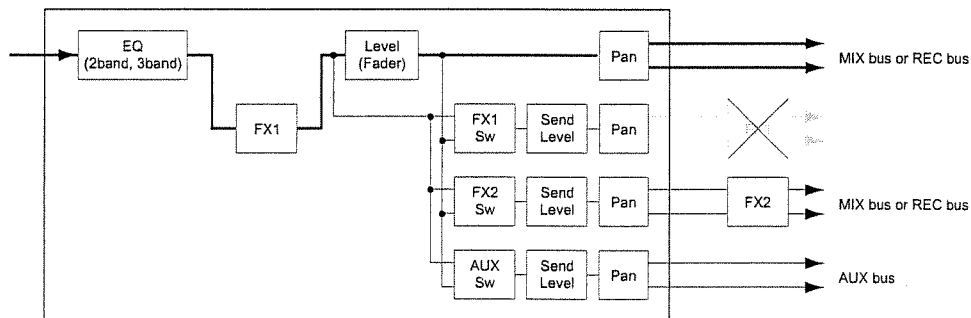


Connecting the Effects

Changing the Source Sound Itself (Insert)

The effect is directly added either between each channel's equalizer and fader or before the master fader. Connect the effect in this way if you want to use effects applied to change the output of the sound itself, such as when using distortion or overdrive effects.

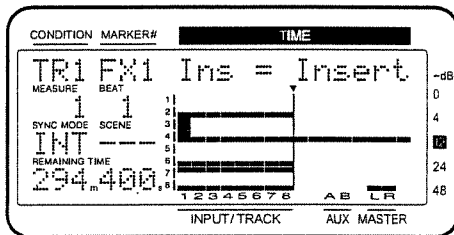
When inserting an effect into one of the channels or into the Master Block, that effect cannot be used in send/return.



* Depending on the effects used, when mixing with different effects inserted into each channel, or mixing channels having effects inserted with other channels having no effects, timing shifts may occur, or you may not be able to achieve the effect you desire.

Inserting with Input and Track Channels

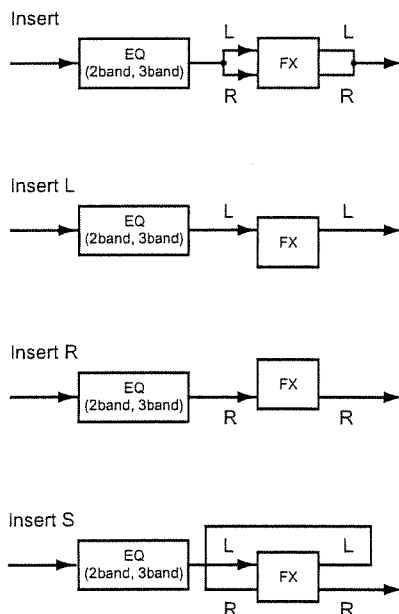
1. Press [CH EDIT (SELECT)] for the channel to which you want to apply the effect.
The CH EDIT indicator lights.
2. Press PARAMETER [◀◀] [▶▶] until "FX1 Ins=" appears in the display.
Now you can make settings for effect 1.
3. Select how the effect will be connected. Rotate the TIME/VALUE dial.



FX1 Ins (Effect 1 Insert Switch)

This sets how the effects are connected.

- Insert:** Inserts in the between the equalizer and fader.
- InsertL:** Inserts in the left channel of the stereo effect.
- InsertR:** Inserts in the right channel of the stereo effect.
- InsertS:** Inserts in the combined left and right channels of the stereo effect in series.



* When Insert or Insert S is selected, that effect cannot be used on any other channel. Furthermore, when Insert L or Insert R is selected, that effect can be inserted on only one other channel.

4. Press PARAMETER [▶▶].
"FX1 Ins Send=" appears in the display.
5. Rotate the TIME/VALUE dial.

Ins Send (Insert Send Level)

This adjusts the level of the signal (0–127) sent to the Insert effect. Set the initial value to "100."

6. Press PARAMETER [▶▶].
"FX1 Ins Rtn=" appears in the display.
7. Rotate the TIME/VALUE dial.

Ins Rtn (Insert Return Level)

This adjusts the level of the signal (0–127) returned from the Insert effect. Set the initial value to "100."

8. At this point, you are ready to insert FX1 into the selected channel. Press [PLAY (DISPLAY)].
Return to Play condition.
 9. You can insert FX2 in the same way. In this case, perform step 2 so that "FX2 Ins=" is displayed.
- * Steps 4–7 can be adjusted only when the effect is being used as an insertion effect.

Inserting an Effect into the Master Output

This inserts the effect into the MASTER Out. After the mix for each channel is completed, the entire song is put through the compressor, which is convenient at such times as when you listen to the total volume while mixing down.

1. Hold down [SHIFT] and press [EDIT (FADER)].
2. Press PARAMETER [◀◀] [▶▶] until "MST FX1 INS Sw=" appears in the display.
If FX1 has been inserted into another channel, the display will indicate "MST FX1 INS Sw=—" (the setting cannot be made).
3. Rotate the TIME/VALUE dial.

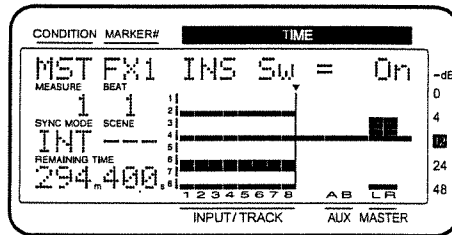
Chapter 4 Using the Internal Effects

MST FX1 INS Sw (Master Effect 1 Insert Switch)

This sets how the effects are connected.

Off: There is no Insert.

On: Inserts in both channels of the stereo effect.



4. Press PARAMETER [▶▶].
"MST FX1 Ins Send=" appears in the display.
5. Rotate the TIME/VALUE dial.

MST FX1 Ins Send (Master Effect 1 Insert Send Level)

This adjusts the level of the signal (0–127) sent to the Insert effect. Set the initial value to "100."

6. Press PARAMETER [▶▶].
"MST FX1 Ins Rtn=" appears in the display.
7. Rotate the TIME/VALUE dial.

MST FX1 Ins Rtn (Master Effect 1 Insert Return Level)

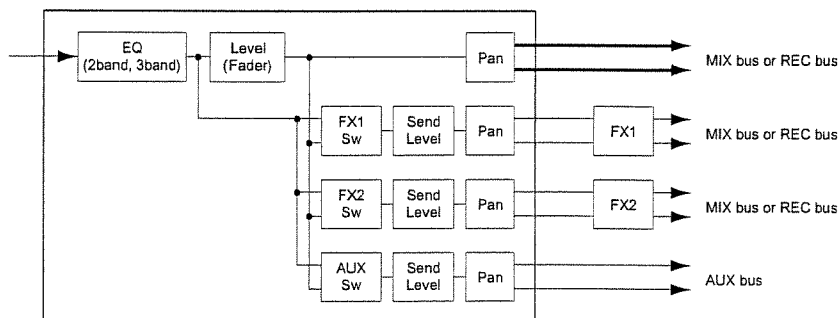
This adjusts the level of the signal (0–127) returned from the Insert effect. Set the initial value to "100."

8. Press [PLAY (DISPLAY)].
Return to Play condition.
9. You can insert FX2 in the same way. In this case, perform step 1 so that "MST FX2 INS Sw=" is displayed.

Adding the Sound with the Effect Applied to the Direct Sound (Send/Return)

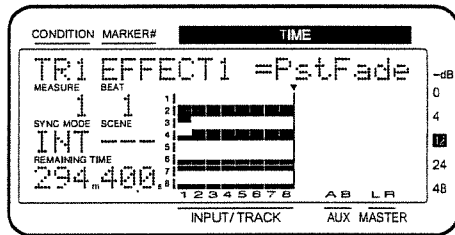
When adding the sound with effect to the direct sound, such as is done with reverb or delay, use the EFFECT bus.

With some effects, while you can have output of both the direct sound and effect sound, it's usually better to have the effect sound output separately. The direct sound and effect sound are adjusted with each channel fader. The present signal flow is shown below.



Settings for Each Channel

1. Press [CH EDIT (SELECT)] for the channel to which you want to apply the effect.
The CH EDIT indicator lights.
2. Hold down [SHIFT] and press the channel 7 [EFFECT-1 (CH EDIT)].
The upper line of the display will indicate "EFFECT 1," and you can make settings for effect 1.
3. Select how the effect will be connected. Rotate the TIME/VALUE dial.



EFFECT 1 (Effect 1 Send Select Switch)

This selects the how the signal is sent to the EFFECT 1 bus (send).

- Off:** The signal is not sent.
- PreFade:** The sound before passing through the channel fader is sent.
- PstFade:** The sound after passing through the channel fader is sent.

4. Press PARAMETER [▶▶].
"EFFECT1 Send=" appears in the display.
5. Rotate the TIME/VALUE dial.

EFFECT1 Send (Effect 1 Send Level)

This adjusts the volume level of the signal (0–127) sent to the EFFECT 1 bus. Set the initial value to "100."

6. Press PARAMETER [▶▶].
"EFFECT1 Pan=" appears in the display.
7. Rotate the TIME/VALUE dial.

EFFECT1 Pan (Effect 1 Send Pan)

This adjusts the stereo placement of the signal (L63–0–R63) sent to the EFFECT 1 bus.

8. Press [PLAY (DISPLAY)].
Return to Play condition.
9. You can use the same method to make settings for each channel for FX2 as well. In this case, hold down [SHIFT] and press channel 8 [EFFECT-2 (CH EDIT)] in step 2.

Master Block Settings 1 (Send Level Adjustment)

You can adjust the balance of the total effect send level for each effect with the effect send level and send pan settings that are assigned to each individual channel left as they are.

** If FX1 has been inserted into another channel, or if it has been inserted into the MASTER OUT jacks, these displays will not appear (settings cannot be made).*

1. Hold down [SHIFT] and press [EDIT (FADER)].
2. Press PARAMETER [◀◀] [▶▶] until "MST FX1 SND Lev=" appears in the display.
3. Rotate the TIME/VALUE dial.

MST FX1 SND Lev (Master Effect 1 Send Level)

This adjusts the total volume level of the signal (0–127) sent to the effect. Set the initial value to "100."

4. Press PARAMETER [▶▶].
"MST FX1 SND Bal=" appears in the display.
5. Rotate the TIME/VALUE dial.

MST FX1 SND Bal (Master Effect 1 Send Balance)

This adjusts the balance (L63–0–R63) of the total signal sent to the effect. Set the initial value to "0" (center).

6. Press [PLAY (DISPLAY)].
Return to Play condition.
7. You can adjust the send level in the same way for FX2 as well. In this case, access the "MST FX2 SND Lev=" display in step 2.

Master Block Settings 2 (Return Level Adjustment)

Use the channel faders and pan knobs on the top panel to adjust the effect on volume (return level).

1. Press [FADER (EDIT)] several times until the FADER indicator lights red.
2. Press the channel 7 [EFFECT-1 (CH EDIT)].
The CH EDIT indicator lights.

3. Press **PARAMETER** [**◀◀**] [**▶▶**] until "RTN FX1 RTNLev=" appears in the display.

4. Rotate the **TIME/VALUE** dial.

RTN FX1 RTNLev (Master Effect 1 Return Level)

Adjust the return level (0–127) of the effect sound. Set the initial value to "100."

5. Press **PARAMETER** [**▶▶**].
"RTN FX1Bal=" appears in the display.

6. Rotate the **TIME/VALUE** dial.

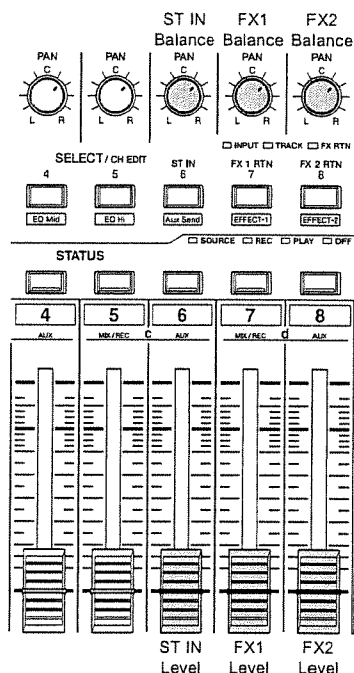
RTN FX1 RTNBal (Master Effect 1 Return Balance)

Adjust the left/right balance (L63–0–R63) of the effect sound. Set the initial value to "0" (center).

7. Press [**PLAY (DISPLAY)**].

Return to Play condition.

8. You can make master block settings in the same way for FX2 as well. For step 2 in this case, press channel 8 [**CH EDIT (EFFECT-2)**]. At this time, the channel faders on the top panel will function as follows.



Selecting Effects (Patch)

An effect settings is referred to as a **patch**. The VS-880EX provides 210 (A00–A99, B00–B99, C00–C09) read-only effects (Preset Patches) and 100 (U00–U99) read and write effects (User Patches). Please take a moment to check these effects.

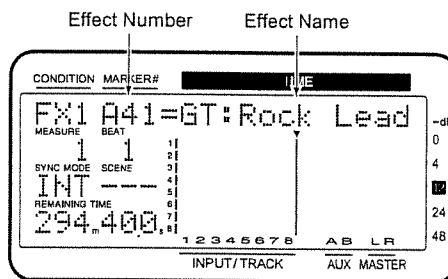
** If used in combination with the Vari Pitch function (p. 152), delay times may change somewhat, and for distortion effects (distortion, overdrive, etc.), there may be some change in the quality of the tone.*

** With some of the effects, you may not want the direct sound output, or other special setting may be required. Please refer to "Algorithm List" (Appendices p. 26) when making these settings.*

1. Press [**EFFECT**] several times until "EFFECT-1 PRM?" appears in the display.

2. Press [**YES**].

The number and name of the currently selected effect will be displayed, and you will be able to select the effect.



3. Use the **TIME/VALUE** dial to select the effect you wish to use.

4. After selecting the effect, press [**YES**].

5. Check the effect to make sure that the sound is actually being played. Repeat Steps 3–5 for any other patches whose effects you want to confirm.

** Noise may occur with some types of effects when the effect patches are selected.*

If the audio device is at high volume levels, then protect the speakers and other device from damage, turn off the [EFFECTS ON/OFF] or lower the volume on the audio device before selecting the effect patches.

6. After you have checked the patches, press [**PLAY (DISPLAY)**].

Return to Play condition.

7. You can use the same procedure to hear the effect of FX2 as well. For step 1 in this case, make the display read "EFFECT-2 PRM?"

* Patches using the following algorithms can not be selected for FX2. A horizontal line is drawn through the effect name in such cases. Please select patches using these algorithms for use with FX1.

- Reverb
- Gated Reverb
- Vocorder 2
- Voice Transformer

Creating New Effects Sounds

When creating a new effect, first select the existing patch whose sound is closest to the "image" of the patch you wish to create, and then alter that patch settings.

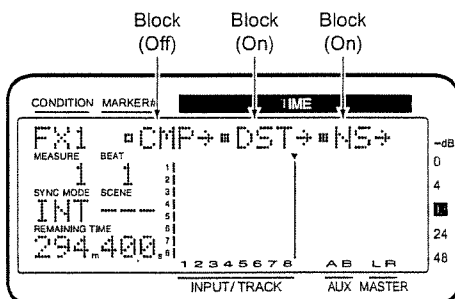
Since changes to effects settings are temporary, they are lost once you select another patch or recall a different Scene. When saving changed effects settings, either save them to the User Patches or store the mixer settings as a Scene.

About Algorithms

An **algorithm** determines the composition or structure of an effect. The VS-880EX features 34 different algorithms. The settings for the effects in each patch use at least one of these algorithms. Check the algorithms used in each patch in "Preset Patch List" (Appendices p. 19). For details on each algorithm, refer to "Algorithm List" (Appendices p. 26).

1. Using the procedure described in "Selecting Effects (Patch)" (p. 70), call up the patch containing the effect on which you will base your new effect.
2. Press PARAMETER [▶▶].

When you select a patch with an algorithm in which the effect can be turned on and off, the following screen is displayed.



An effect block which is currently ON is displayed as "■" and an effect block which is currently OFF is displayed as "□".

3. Use CURSOR [◀] [▶] to move the cursor to the effect block that you wish to turn on/off.
4. Rotate the TIME/VALUE dial. If an effect block is turned off, parameters related to that effect cannot be set.
5. Use PARAMETER [◀◀] [▶▶] to access the parameter that you wish to adjust.
6. Rotate the TIME/VALUE dial. Check the effect.
7. Repeat the Steps 5–6 to create new effects sounds.
8. Press PARAMETER [▶▶] several times until "FX1 Nam=" appears in the display.
9. Assign a patch name. Use CURSOR [◀] [▶] so that the character you wish to change is blinking. Use the TIME/VALUE dial to select the desired character. A name of up to 12 characters can be assigned.
10. Save the effect. If you wish to keep the effect settings that you have modified, you must save the settings either as a User Patch or as mixer settings in a Scene. If you wish to use the effect settings in another song, save them as a User Patch. If you wish to use the effect settings in the currently selected song, save them as a Scene.

Convenient Operations

- You can hold down [SHIFT] and press [EFFECT] to alternate between the Effect Select page, Effect Name page, and Effect On/Off page.
- In the Effect On/Off page, you can move directly to the setting page for the effect that is blinking by pressing PARAMETER [▶▶].
- In the Effect Setting page, you can display the parameters of the next effect block by holding down [SHIFT] and pressing PARAMETER [▶▶]. To display the parameters of the previous effect block, hold down [SHIFT] and press PARAMETER [◀◀].

About Effect Levels

Many algorithms include parameters for effect level, which adjusts the output level of the effect sound, and direct level, which adjusts the output level of the direct sound. When these parameters are preceded by a minus sign, the phase is inverted.

The direct level of the Preset Patches, which were created with careful consideration given to the connection to the EFFECT bus, is set to "0." When inserting an effect into a channel, raise the direct level. To determine the type for each Preset Patch, please refer to "Preset Patch List" (Appendices p. 19).

When Saving to User Patches

When you save effect settings to a User Patch, the User Patch that had previously been in that location is lost. At the time of purchase, the effects in the VS-880EX's User Patches are the same as those stored in the Preset Patches.

1. Press **PARAMETER** [**▶▶**].
"Save User Patch?" appears in the display.
2. Press **[YES]**.
3. Rotate the **TIME/VALUE** dial to select the destination patch number (U00–U99).

4. Press **[YES]**.

When the User Patch has been saved, the display will indicate "Complete."

5. Press **[PLAY (DISPLAY)]**.
Return to Play condition.

When Storing to a Scene

For more detailed information, please refer to "Recording the Current Condition of the Mixer (Scene)" (p. 73).

1. Press **[SCENE]**.
The SCENE indicator lights.
2. Press the **LOC** buttons ([1/5]–[4/8]) whose indicators are not blinked. For example, if you want to store the settings to Scene 1, then press [1/5]. If you wish to store the settings in Scene 5, hold down **[SHIFT]** and press [1/5].
3. Hold down **[SHIFT]** and press **[STORE (ZERO)]**.
"STORE OK?" appears in the display.
4. Press **[YES]**.
5. Press **[SCENE]** once more.
The SCENE indicator will go dark. If you wish to halt the registration procedure, press **[SCENE]** before step 2.
6. Press **[PLAY (DISPLAY)]**.
Return to Play condition.

Chapter 5 Storing Mixer Settings

With the VS-880EX, there are two functions to recall mixer settings easily. One is referred to as the **Scene**, and the other one is referred to as the **EZ Routing**. According to the circumstances, please use each function.

Scene:

A Scene stores the current mixer settings, include that setting values in a song. For example, during mix-down, you can create a number of mixes with different settings for volume, pan, equalizer, etc., and compare those mixes, each one with all of its settings preserved. This is a very convenient feature.

EZ Routing:

The VS-880EX can store settings related to its mixer connections. These include settings for routing of inputs to tracks for recording, for determining where signals are output, and for determining which output is to be monitored. For example, these settings, which stay the same, regardless of the song, include playback and recording track settings during track bouncing, and effects settings during mixdown. This makes EZ Routing convenient in such situations.

Recording the Current Condition of the Mixer (Scene)

Up to 8 sets of settings, values included, that define the total condition of the mixer can be stored for each song, and can be recalled instantly at the touch of a button. A stored set of mixer settings is called a **Scene**. A Scene includes not only the volume and pan settings, but also connections (e.g., the track to which the source from the INPUT 1 jack is recorded), V-track settings (the track to which each is recorded), and effects (such as the selection of the effect to be applied). This feature is convenient when you want to compare different balances of volume, pan, equalizer, and other settings during mixdown.

Storing a Scene

1. Press [SCENE].

The SCENE indicator lights.

2. At this point, the LOC button ([1/5]–[4/8]) act to store or recall scene.

Indicators light for any LOC buttons ([1/5]–[4/8]) storing scene.

3. Press a LOC button ([1/5]–[4/8]) whose button indicator does not light. For example, if you want to record to Scene 1, then press [1/5]. If you wish to store the settings in Scene 5, hold down [SHIFT] and press [1/5].

4. Press [SCENE] once more..

The SCENE indicator will go dark. If you wish to halt the registration procedure, press [SCENE] before step 3.

Recalling a Scene

1. Press [Stop].

* You cannot select a Scene during recording or playback.

2. Press [SCENE].

The SCENE indicator lights.

3. At this point, the LOC button ([1/5]–[4/8]) act to store or recall scene. Indicators light for any LOC buttons ([1/5]–[4/8]) storing scene.

4. Press a LOC button ([1/5]–[4/8]) whose button indicator lights. For example, if you want to recall the Scene 1, then press [1/5]. If you wish to recall Scene 5, hold down [SHIFT] and press [1/5].

5. Press [SCENE] once more.

The SCENE indicator will go dark. If you wish to halt the recall procedure, press [SCENE] before step 4.

Recalling a Scene Without Affecting the Current Fader Values

When a Scene is recalled, the fader values will change to the recalled settings. However, the positions of the top panel's faders themselves do not change. This means that the locations of the faders will not match their actual values.

If you want just the fader values to remain unchanged when you recall a Scene, make the following settings.

1. Press [SYSTEM] several times until "SYS Scene/Auto Mix ?" appears in the display.
2. Press [YES].
"SYS Scene Mode=" appears in the display.
3. Use the TIME/VALUE dial to select "KeepF."

SYS Scene Mode

This setting determines the fader settings when a Scene is recalled.

All: This changes the mixer settings to those of the Scene being recalled. In this case, when a Scene is recalled, the location of the faders on the top panel may no longer match the actual fader settings.

KeepF: This changes the mixer settings to those of the Scene being recalled, with the exception of the fader settings. This means that even when a Scene is recalled, fader settings will still match the fader positions on the top panel.

4. Press [PLAY (DISPLAY)].
Return to Play condition.

Deleting a Scene

1. Press [SCENE].
The SCENE indicator lights.
2. The indicators for the LOC buttons ([1/5]–[4/8]) to which scene are stored then light.
3. Hold down [CLEAR], and press the LOC button ([1/5]–[4/8]) for the scene that you wish to clear. For example if you wish to clear the mixer settings that were stored in scene 1, hold down [CLEAR] and press [1/5]. If you wish to clear the mixer settings that were stored in scene 5, hold down both [CLEAR] and [SHIFT], and press [1/5].
4. Press [SCENE] once more.
The SCENE indicator will go dark. If you wish to halt the Clear procedure, press [SCENE] before step 3.

Making Mixer Settings Automatically (EZ Routing)

Settings related to mixer connections, including settings for routing of inputs to tracks for recording, for determining where signals are output, and for determining which output is to be monitored can be stored and recalled easily with the VS-880EX. This is referred to as **EZ Routing**.

For example, when setting tracks to be played back or recorded during track bouncing, or when dealing with effects settings during mixdown there are settings which remain the same, regardless of the song. In such situations, by preparing stored mixer settings to be recalled later, you can easily get the most effective and appropriate mixer settings for each parameter.

At the time of purchase, your VS-880EX came with three read-only EZ Routing settings (Preset Routings) already configured. In addition to these, the VS-880EX offers 29 rewritable EZ Routing settings (User Routings), allowing you to make changes to the settings provided and then save these to the User Routings.

Easy Routing can be used in the following situations.

Recording:

When you want to record the performance input via the INPUT jacks.

Mixdown:

When you want adjust the balance of each track or to record a MD player or similar input in two-channel stereo.

Bouncing:

When recording the performance data from multiple tracks onto a number of other tracks.

Easy Routing can be set in the following two ways for recording, mixdown, and track bouncing, respectively.

Template:

Recall a read-only setting (preset routing) or a previously stored setting (user routing) without change.

Step Edit:

Reply to questions in dialog format to make settings in a logical sequence.

Recalling Recording Settings (Recording/Template)

Select this when you want to record the performance input via the INPUT jacks. Recall a preset routing (recording) which has been pre-registered when the VS-880EX was shipped.

1. Press [EZ ROUTING] several times until "EZR Recording?" appears in the display.
2. Press [YES].
"EZR Use Template" (do you wish to apply the template?) appears in the display.
3. Press [YES].
4. When the routing has been recalled, "Complete" appears in the display, and return to Play condition. At this time, the mixer settings will be as follows.

INPUT Jack	Recording Track
INPUT 1	1
INPUT 2	2
INPUT 3	3
INPUT 4	4
INPUT 5	5
INPUT 6	6
DIGITAL IN1 (7)	7
DIGITAL IN1 (8)	8

Display (parameter name)	Input Mixer	Track Mixer
ATT	current value	current value
Phase	current value	current value
MIX Sw	Off	On
MIX Level	100	100
MIX Pan	0 (IN7=InsertL, IN8=InsertR)	0
V.Track	-	currently selected V-track
EQ Switch	On	-
EQL (Gain)	0 dB	-
EQL (Frequency)	300 Hz	-
EQM (Gain)	0 dB	-
EQM (Q)	0.5	-
EQM (Frequency)	1.4 kHz	-
EQH (Gain)	0 dB	-
EQH (Frequency)	4 kHz	-
FX1 Ins	Off (IN3=InsertL, IN4=InsertR)	Off
FX2 Ins	Off	Off
AUX Sw	Off	Off

Display (parameter name)	Input Mixer	Track Mixer
Fader Link	Off	Off
Channel Link	Off	Off
EFFECT1	Off	Off
EFFECT2	Off	Off

Display (parameter name)	Master Block
Master Sel	MIX
EQ Mode	3band
Direct Out	Off
Master FX1 Ins	-
Master FX2 Ins	-

Display (parameter name)	Effect
FX1 Sel	A96:DualComp/Lim
FX2 Sel	A96:DualComp/Lim

Recalling Track Bouncing Settings (Bouncing/Template)

Select this when recording the performance data from multiple tracks onto a number of other tracks. Recall a preset routing (bouncing) which has been pre-registered when the VS-880EX was shipped.

1. Press [EZ ROUTING] several times until "EZR Bouncing?" appears in the display.
2. Press [YES].
"EZR Use Template" (do you wish to apply the template?) appears in the display.
3. Press [YES].
4. When the routing has been recalled, "Complete" appears in the display, and return to Play condition. At this time, the mixer settings will be as follows.

Recording Track: TRACK 7-8

Input jack/track/effect assigned to the recording track:

- INPUT 1-6
- DIGITAL IN1 (7/8)
- TRACK 1-6
- FX1 Return
- FX2 Return

Chapter 5 Storing Mixer Settings

Display (parameter name)	Input Mixer	Track Mixer
ATT	current value	current value
Phase	current value	current value
MIX Sw (TRd=On)	Off	0
MIX Level (TRd Ofs Level=100)	100	100
MIX Pan	0	0 (TR7=L63, TR8=R63, TRd Ofs Bal=0)
V.Track	-	Currently selected V-track
EQ Switch	-	On
EQL (Gain)	-	0 dB
EQL (Frequency)	-	300 Hz
EQM (Gain)	-	0 dB
EQM (Q)	-	0.5
EQM (Frequency)	-	1.4 kHz
EQH (Gain)	-	0 dB
EQH (Frequency)	-	4 kHz
FX1 Ins	Off	Off
FX2 Ins	Off	Off
AUX Sw	Off	Off
Fader Link	Off	Off
Channel Link	Off	Off
EFFECT1	PstFade	PstFade (TRd=Off)
EFFECT1 Send	100	100
EFFECT1 Pan	0	0
EFFECT2	PstFade	PstFade (TRd=Off)
EFFECT2 Send	0	0
EFFECT2 Pan	0	0

Display (parameter name)	Return Mixer
StereoIn	Off
FX1 RTN Lev	100
FX1 RTN Bal	0
FX2 RTN Lev	100
FX2 RTN Bal	0

Display (parameter name)	Master Block
Master Sel	MIX
EQ Mode	3band
Direct Out	Off
Master FX1 Ins	Off
Master FX2 Ins	Off

Display (parameter name)	Effect
FX1 Sel	A00:LargeHall
FX2 Sel	A22:Short Dly

Recalling Mixdown Settings (Mixdown/Template)

Select this when you want adjust the balance of each track or to record a MD recorder or similar input in two-channel stereo. Recall a preset routing (mixdown) which has been pre-registered when the VS-880EX was shipped.

1. Press [EZ ROUTING] several times until "EZR Mix Down ?" appears in the display.
2. Press [YES].
"EZR Use Template" (do you wish to apply the template?) appears in the display.
3. Press [YES].
4. When the routing has been recalled, "Complete" appears in the display, and return to Play condition. At this time, the mixer settings will be as follows.

Playback Track: TRACK 1-8

Input jack/track/effect assigned to the master out:

INPUT 1-6
DIGITAL IN1 (7/8)
TRACK 1-8
FX1 Return
FX2 Return

Display (parameter name)	Input Mixer	Track Mixer
ATT	current value	current value
Phase	current value	current value
MIX Sw	On	On
MIX Level	100	100
MIX Pan	0 (IN7=L63, IN8=R63)	0
V.Track	-	Currently selected V-track
EQ Switch	On	On
EQL (Gain)	0 dB	0 dB
EQL (Frequency)	300 Hz	300 Hz
EQH (Gain)	0 dB	0 dB
EQH (Frequency)	4 kHz	4 kHz
FX1 Ins	Off	Off
FX2 Ins	Off	Off
AUX Sw (AUX Switch)	Off	Off
Fader Link	Off	Off

Display (parameter name)	Input Mixer	Track Mixer
Channel Link	Off	Off
EFFECT1	PstFade	PstFade
EFFECT1 Send	100	100
EFFECT1 Pan	0	0
EFFECT2	PstFade	PstFade
EFFECT2 Send	100	100
EFFECT2 Pan	0	0

Display (parameter name)	Return Mixer
StereoIn	Off
FX1 RTN Lev	100
FX1 RTN Bal	0
FX2 RTN Lev	100
FX2 RTN Bal	0

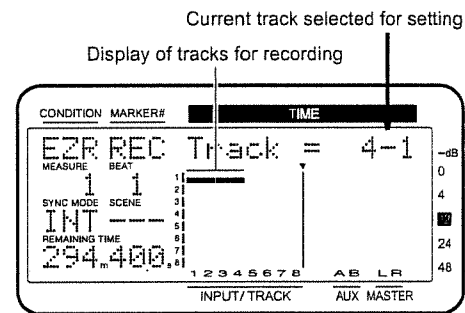
Display (parameter name)	Master Block
Master Sel	MIX
EQ Mode	2band
Direct Out	Off
Master FX1 Ins	Off
Master FX2 Ins	Off

Display (parameter name)	Effect
FX1 Sel	A00:LargeHall
FX2 Sel	A22:Short Dly

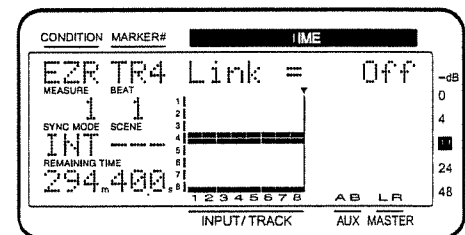
Storing Recording Settings (Recording/Step Edit)

Select this when you want to record the performance input via the INPUT jacks.

1. Press [EZ ROUTING] several times until "EZR Recording?" appears in the display.
2. Press [YES].
"EZR Use Template" (do you wish to apply the template?) appears in the display.
3. Press [NO].
4. "REC Track =" appears in the display. Specify the track on which you will record. Press the STATUS button of the track that you wish to record. The STATUS indicator will blink red. Each time you press the STATUS button, you will cycle between recording and not recording. You can rotate the TIME/VALUE dial to select the V-track that you wish to record.



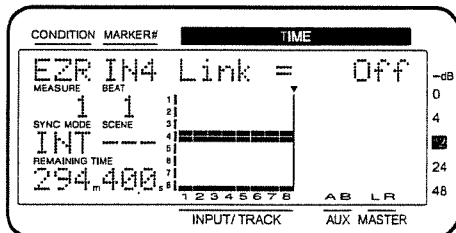
5. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
6. "TR* Link=" ("*" is the displayed track) appears in the display. Specify the tracks for which you will turn Channel Link ON. Press the STATUS button of the tracks for which you wish to turn Channel Link ON, and rotate the TIME/VALUE dial.



7. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

Chapter 5 Storing Mixer Settings

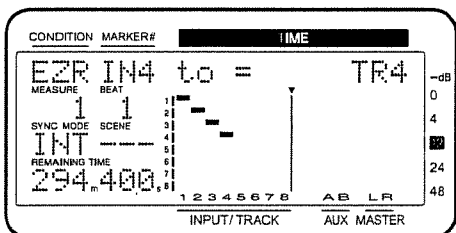
8. "IN* Link=" ("*" is the displayed input) appears in the display. Specify the inputs for which you will turn Channel Link ON. Press the SELECT (CH EDIT) button of the inputs for which you wish to turn Channel Link ON, and rotate the TIME/VALUE dial.



9. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

10. "IN* to =" appears in the display. Specify which source is to be recorded on each track. First press the source input SELECT (CH EDIT) button, then press the track STATUS button for the track to which the source is to be recorded.

You can also use the TIME/VALUE dial to select the recording destination track. If you select "---," that input will not be output anywhere (i.e., the sound will not be heard). If you select "MIX," the source will be assigned to a mix bus (i.e., sound will be heard but will not be recorded).

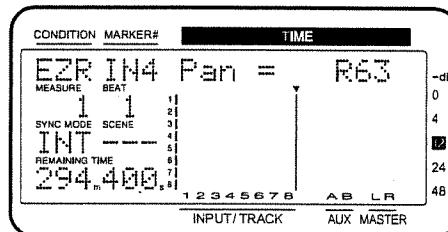


* Sources that have Channel Link set to "On" cannot be recorded to tracks on which Channel Link is set to "Off" with the EZ Routing.

11. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

12. "IN* Pan =" appears in the display. Adjust the pan of the source. Press the SELECT (CH EDIT) button for the input whose pan you wish to adjust, and use the TIME/VALUE dial. You can also use the pan knobs on the top panel to adjust the pan.

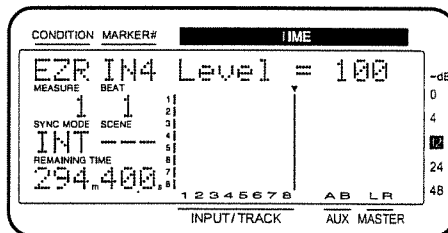
* When Channel Link is on, adjust the Offset Balance of the sources. (p. 151)



13. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

14. "IN* Level =" appears in the display. Adjust the level of the source. Press the SELECT (CH EDIT) button for the input whose level you wish to adjust, and use the TIME/VALUE dial. You can also use the channel faders on the top panel to adjust the level.

* When Channel Link is on, adjust the Offset Level of the sources. (p. 150)



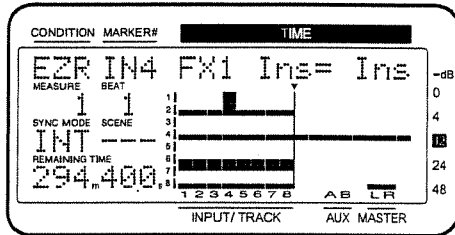
15. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

16. "Use EFFECT1 ?" appears in the display. If you wish to use effect 1, press [YES], and proceed to step 17. If you do not wish to use effect 1, press [NO] and proceed to step 31.

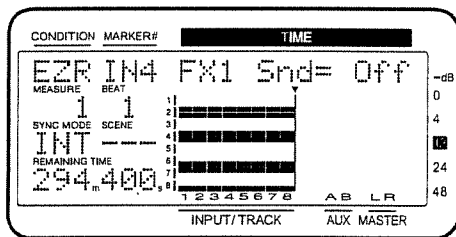
17. The effect patch will be displayed. Use the TIME/VALUE dial to select the effect patch that you wish to use.

18. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

19. "IN* FX1 Ins=" appears in the display. Rotate the TIME/VALUE dial. If you wish to insert effect 1, select either "Ins," "InsL," "InsR," or "InsS," and proceed to step 20. If you wish to use effect 1 in a send/return configuration, select "Off" and proceed to step 23.

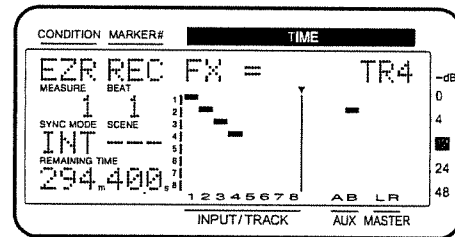


20. "IN* InsSnd =" appears in the display. Use the TIME/VALUE dial to adjust the insert send level.
21. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
22. "IN* InsRtn =" appears in the display. Use the TIME/VALUE dial to adjust the insert return level.
23. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
24. "IN* FX1Snd=" appears in the display. Rotate the TIME/VALUE dial. If you wish to send the input to the effect 1 bus, select either "Pre" or "Pst," and proceed to step 25. If you do not wish to send the input to the effect 1 bus, select "Off," and proceed to step 31.

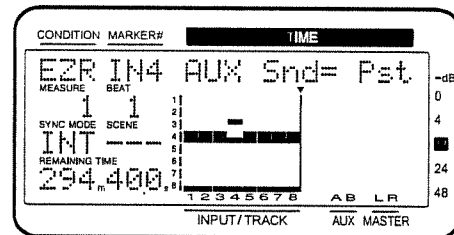


25. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
26. "IN* SndLev =" appears in the display. Use the TIME/VALUE dial to adjust the send level. If in step 19 you selected either "Ins," "InsL," "InsR," or "InsS," the sound already processed by the effect will be sent to the effect bus. (It will not be re-input to effect 1.)

27. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
28. "IN* SndPan" appears in the display. Use the TIME/VALUE dial to adjust the send pan.
29. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
30. "REC FX1 =" appears in the display. If you wish to record the effect which you are using in a send/return configuration, press the STATUS button for the recording destination track. However if in step 19 you selected either "Ins," "InsL," "InsR," or "InsS," this display will not appear. (The sound with the inserted effect will be recorded.)



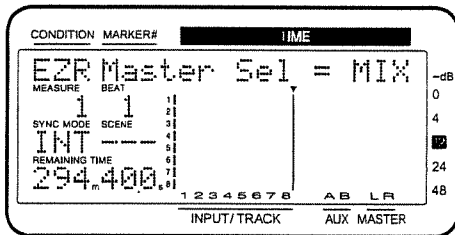
31. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
32. "Use EFFECT2 ?" appears in the display. If you wish to use effect 2 press [YES], and make settings for effect 2 as described in steps 17-30. If you do not wish to use effect 2, press [NO] and proceed to step 33.
33. "IN* AUX Snd" appears in the display. Rotate the TIME/VALUE dial. If you wish to send the input to the AUX bus, select either "Pre" or "Pst," and proceed to step 34. If you do not wish to send the input to the AUX bus, select "Off," and proceed to step 31.



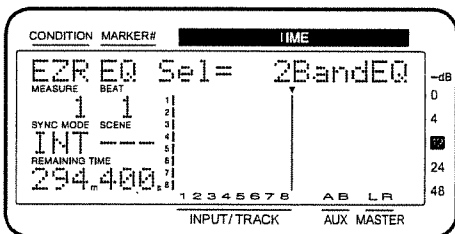
34. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
35. "IN* SndLev =" appears in the display. Use the TIME/VALUE dial to adjust the send level.

Chapter 5 Storing Mixer Settings

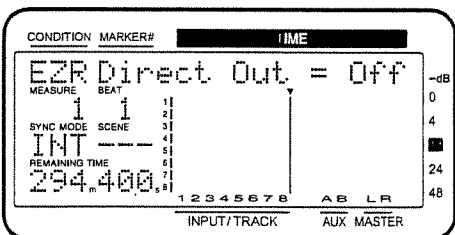
36. Press **PARAMETER** [▶▶]. You can return to the previous screen by pressing **PARAMETER** [◀◀].
37. "IN* SndPan" appears in the display. Use the **TIME/VALUE** dial to adjust the send pan.
38. Press **PARAMETER** [▶▶]. You can return to the previous screen by pressing **PARAMETER** [◀◀].
39. "Master Sel=" appears in the display. Use the **TIME/VALUE** dial to select the bus (MIX, AUX, FX1, FX2, REC) that you wish to output from the MASTER jacks.



40. Press **PARAMETER** [▶▶]. You can return to the previous screen by pressing **PARAMETER** [◀◀].
41. "EQ Sel=" appears in the display. Rotate the **TIME/VALUE** dial.

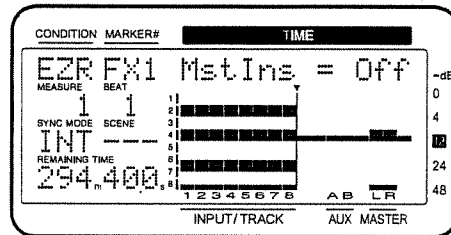


42. Press **PARAMETER** [▶▶]. You can return to the previous screen by pressing **PARAMETER** [◀◀].
43. "Direct Out =" appears in the display. Rotate the **TIME/VALUE** dial. If you do not wish to use Direct OUT, select "Off." If you wish to output tracks 1-4, select "1-4." If you wish to output tracks 5-8, select "5-8."

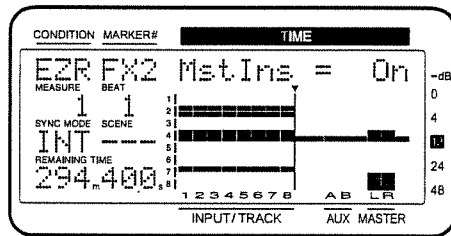


44. Press **PARAMETER** [▶▶]. You can return to the previous screen by pressing **PARAMETER** [◀◀].

45. "FX1 MstIns=" appears in the display. Rotate the **TIME/VALUE** dial. If you wish to insert effect 1 into the master out, select "On." If not, select "Off." If effect 1 has been inserted in another channel, the display will indicate "—" and this item cannot be set.



46. Press **PARAMETER** [▶▶]. You can return to the previous screen by pressing **PARAMETER** [◀◀].
47. "FX2 MstIns=" appears in the display. Rotate the **TIME/VALUE** dial. If you wish to insert effect 2 into the master out, select "On." If not, select "Off." If effect 2 has been inserted in another channel, the display will indicate "—" and this item cannot be set.

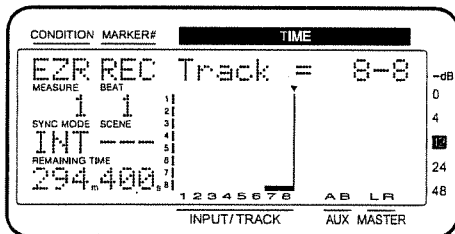


48. Press **PARAMETER** [▶▶]. You can return to the previous screen by pressing **PARAMETER** [◀◀].
49. "Change Routing ?" appears in the display. Press [YES]. When the routing has been finalized, "Complete" appears in the display, and you will return to Play condition. If you decide to discard the routing that was set, press [NO].

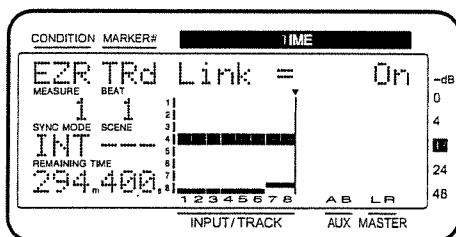
Storing Track Bouncing Settings (Bouncing/Step Edit)

Select this when recording the performance data from multiple tracks onto a number of other tracks.

1. Press [EZ ROUTING] several times until "EZR Bouncing?" appears in the display.
2. Press [YES].
"EZR Use Template" (do you wish to apply the template?) appears in the display.
3. Press [NO].
4. "REC Track =" appears in the display. Specify the track on which you will record. Press the STATUS button for the track that you wish to record. The STATUS indicator will blink red. Each time you press the STATUS button, you will alternate between recording and not recording. Use the TIME/VALUE dial to select the V-track on which you will record.



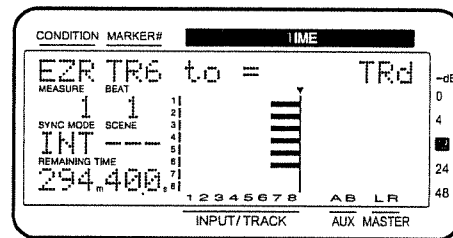
5. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
6. "TR* Link=" ("*" is the displayed track) appears in the display. Specify the playback tracks/recording tracks for which you will turn Channel Link ON. Press the SELECT (CH EDIT) button of the tracks for which you wish to turn Channel Link ON, and rotate the TIME/VALUE dial.



7. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

8. "TR* to =" appears in the display. Specify which track will be recorded to which track. First press the SELECT (CHEDIT) button for the playback track, and then press the STATUS button for the track that you wish to record.

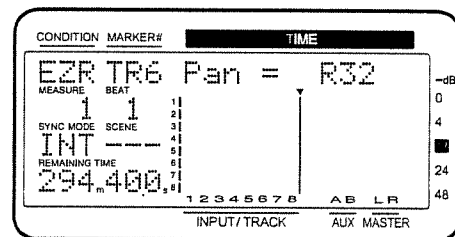
You can also use the TIME/VALUE dial to select the recording destination track. If you select "---," that track will not be played back (it will not be heard). If you select "MIX," the playback track will be assigned to the mix bus (it will be heard but not recorded).



* Playback tracks that have Channel Link set to "On" cannot be recorded to tracks on which Channel Link is set to "Off" with the EZ Routing.

9. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
10. "TR* Pan =" appears in the display. Adjust the pan of the playback track. Press the SELECT (CH EDIT) button for the playback track whose pan you wish to adjust, and use the TIME/VALUE dial. You can also adjust the pan using the pan knobs on the top panel.

* When Channel Link is on, adjust the Offset Balance of the sources/tracks. (p. 151)

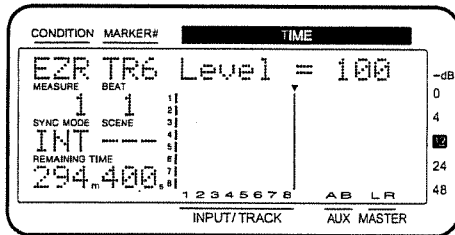


11. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

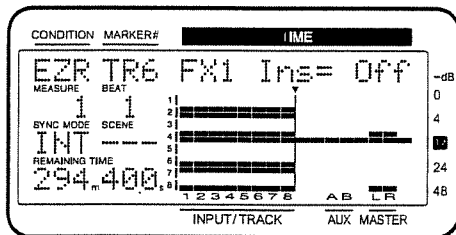
Chapter 5 Storing Mixer Settings

12. "TR* Level =" appears in the display. Adjust the level of the playback track. Press the SELECT (CH EDIT) button for the playback track whose level you wish to adjust, and use the TIME/VALUE dial. You can also adjust the level using the channel faders on the top panel.

* When Channel Link is on, adjust the Offset Level of the tracks. (p. 150)



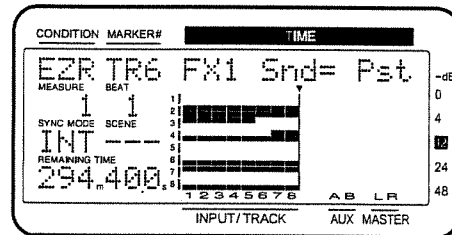
13. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
14. "Use EFFECT1 ?" appears in the display. If you wish to use effect 1, press [YES], and proceed to step 15. If you do not wish to use effect 1, press [NO] and proceed to step 29.
15. The effect patch will be displayed. Use the TIME/VALUE dial to select the effect patch that you wish to use.
16. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
17. "TR* FX1 Ins=" appears in the display. Rotate the TIME/VALUE dial. If you wish to insert effect 1, select either "Ins," "InsL," "InsR," or "InsS," and proceed to step 18. If you wish to use effect 1 in a send/return configuration, select "Off" and proceed to step 21.



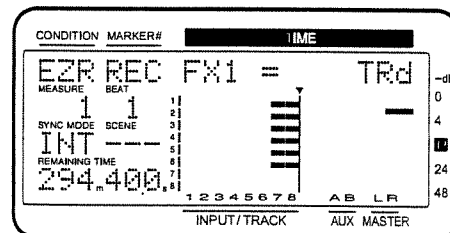
18. "TR* InsSnd =" appears in the display. Use the TIME/VALUE dial to adjust the insert send level.
19. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
20. "TR* InsRtn =" appears in the display. Use the TIME/VALUE dial to adjust the insert return level.

21. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

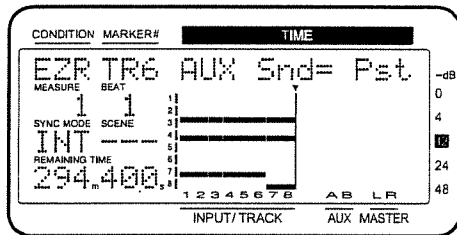
22. "TR* FX1 Snd=" appears in the display. Rotate the TIME/VALUE dial. If you wish to send the playback track to the effect 1 bus, select either "Pre" or "Pst," and proceed to step 23. If you do not wish to send the playback track to the effect 1 bus, select "Off," and proceed to step 29.



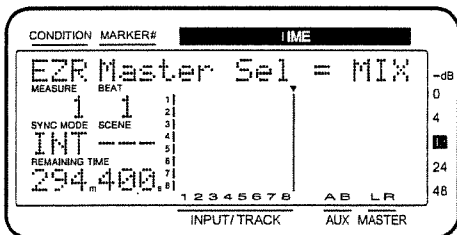
23. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
24. "TR* SndLev =" appears in the display. Use the TIME/VALUE dial to adjust the send level. If in step 17 you selected either "Ins," "InsL," "InsR," or "InsS," the sound already processed by the effect will be sent to the effect bus. (It will not be re-input to effect 1.)
25. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
26. "TR* SndPan" appears in the display. Use the TIME/VALUE dial to adjust the send pan.
27. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
28. "REC FX1 =" appears in the display. If you wish to record the effect which you are using in a send/return configuration, press the STATUS button for the recording destination track. However if in step 17 you selected either "Ins," "InsL," "InsR," or "InsS," this display will not appear. (The sound with the inserted effect will be recorded.)



29. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
30. "Use EFFECT2 ?" appears in the display. If you wish to use effect 2 press [YES], and make settings for effect 2 as described in steps 15–28. If you do not wish to use effect 2, press [NO] and proceed to step 31.
31. "TR* AUX Snd" appears in the display. Rotate the TIME/VALUE dial. If you wish to send the playback track to the AUX bus, select either "Pre" or "Pst," and proceed to step 32. If you do not wish to send the playback track to the AUX bus, select "Off," and proceed to step 36.

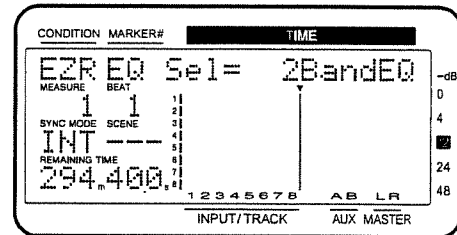


32. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
33. "TR* SndLev =" appears in the display. Use the TIME/VALUE dial to adjust the send level.
34. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
35. "TR* SndPan" appears in the display. Use the TIME/VALUE dial to adjust the send pan.
36. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
37. "Master Sel=" appears in the display. Use the TIME/VALUE dial to select the bus (MIX, AUX, FX1, FX2, REC) that you wish to output from the MASTER jacks.

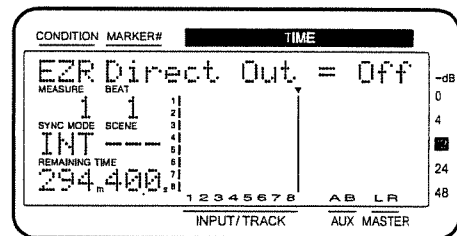


38. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

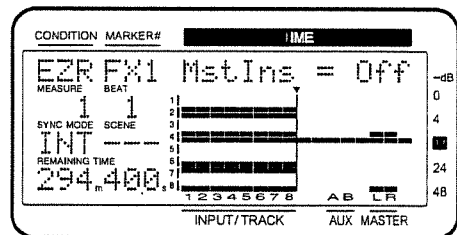
39. "EQ Sel=" appears in the display. Rotate the TIME/VALUE dial.



40. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
41. "Direct Out =" appears in the display. Rotate the TIME/VALUE dial. If you do not wish to use Direct OUT, select "Off." If you wish to output tracks 1–4, select "1-4." If you wish to output tracks 5–8, select "5-8."



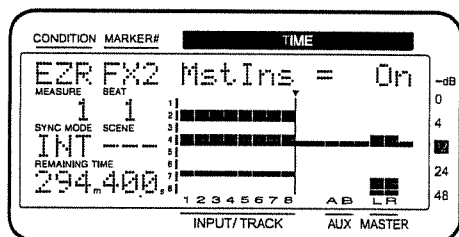
42. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
43. "FX1 MstIns=" appears in the display. Rotate the TIME/VALUE dial. If you wish to insert effect 1 into the master out, select "On." If not, select "Off." If effect 1 has been inserted in another channel, the display will indicate "—" and this item cannot be set.



44. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

Chapter 5 Storing Mixer Settings

45. "FX2 MstIns=" appears in the display. Rotate the TIME/VALUE dial. If you wish to insert effect 2 into the master out, select "On." If not, select "Off." If effect 2 has been inserted in another channel, the display will indicate "—" and this item cannot be set.



46. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
47. "Change Routing ?" appears in the display. Press [YES]. When the routing has been finalized, "Complete" appears in the display, and you will return to Play condition. If you decide to discard the routing that was set, press [NO].

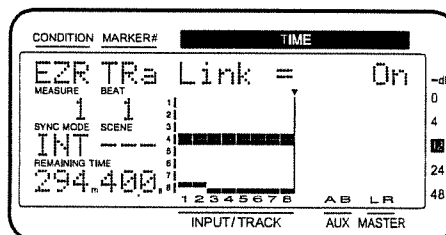
Storing Mixdown Settings (Mixdown/Step Edit)

Select this when you want adjust the balance of each track or to record a MD recorder or similar input in two-channel stereo. Additionally, when playing back all 16 tracks, by mixing the output of the VS-880EX along with the output of a synchronized MIDI sequencer or other such device, you can also record to MD recorders or similar devices.

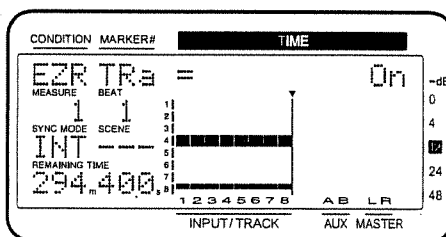
** By Step Editing a mixdown, you can change the track and source settings to be the same. If you wish to change the track settings, press [FADER (EDIT)] to make the FADER indicator light green. If you wish to change the source settings press [FADER (EDIT)] to make the FADER indicator light orange. Here we will explain the example of how to change the track settings.*

1. Press [EZ ROUTING] several times until "EZR Mix Down ?" appears in the display.
2. Press [YES].
"EZR Use Template" (do you wish to apply the template?) appears in the display.
3. Press [NO].

4. "TR* Link=" or "IN* Link=" ("*" is the displayed track/source) appears in the display. Select the tracks/sources for which you wish to turn Channel Link ON. Press the STATUS button for the track/source for which you wish to turn on Channel Link, and use the TIME/VALUE dial.

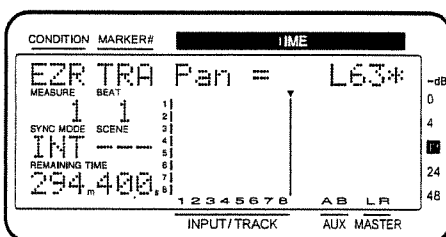


5. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
6. "TR* =" or "IN* =" appears in the display. Specify the tracks/sources that you wish to output to the mix bus. Press the SELECT (CH EDIT) button for the corresponding track/source, and use the TIME/VALUE dial. Tracks/sources which are turned "On" will be output.



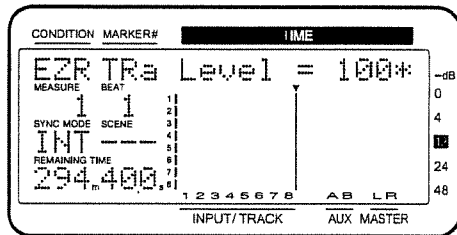
7. "Pan =" appears in the display. Adjust the pan of the track/source. Press the SELECT (CH EDIT) button for the track/source whose pan you wish to adjust, and use the TIME/VALUE dial. You can also adjust the pan using the pan knobs on the top panel.

** When Channel Link is on, adjust the Offset Balance of the sources/tracks. (p. 151)*

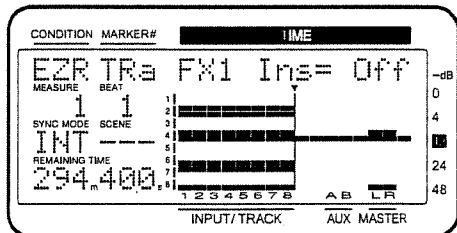


8. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
9. "Level =" appears in the display. Adjust the level of the track/source. Press the SELECT (CH EDIT) button for the track/source whose level you wish to adjust, and use the TIME/VALUE dial. You can also adjust the level using the channel faders on the top panel.

* When Channel Link is on, adjust the Offset Level of the sources/tracks. (p. 150)

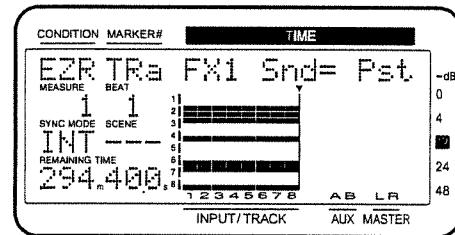


10. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
11. "Use EFFECT1 ?" appears in the display. If you wish to use effect 1, press [YES], and proceed to step 12. If you do not wish to use effect 1, press [NO] and proceed to step 24.
12. The effect patch will be displayed. Use the TIME/VALUE dial to select the effect patch that you wish to use.
13. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
14. "FX1 Ins=" appears in the display. Rotate the TIME/VALUE dial. If you wish to insert effect 1, select either "Ins," "InsL," "InsR," or "InsS," and proceed to step 15. If you wish to use effect 1 in a send/return configuration, select "Off" and proceed to step 18.



15. "InsSnd =" appears in the display. Use the TIME/VALUE dial to adjust the insert send level.
16. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

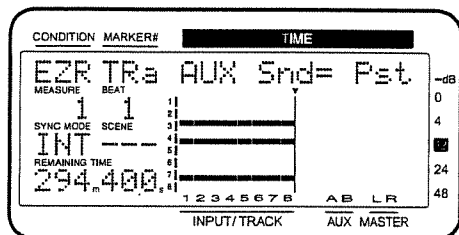
17. "InsRtn =" appears in the display. Use the TIME/VALUE dial to adjust the insert return level.
18. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
19. "FX1 Snd=" appears in the display. Rotate the TIME/VALUE dial. If you wish to send the track/source to the effect 1 bus, select either "Pre" or "Pst," and proceed to step 20. If you do not wish to send the track/source to the effect 1 bus, select "Off," and proceed to step 24.



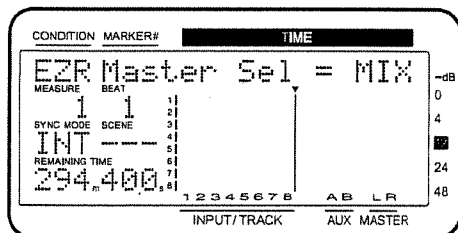
20. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
21. "SndLev =" appears in the display. Use the TIME/VALUE dial to adjust the send level. If in step 14 you selected either "Ins," "InsL," "InsR," or "InsS," the sound already processed by the effect will be sent to the effect bus. (It will not be re-input to effect 1.)
22. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
23. "SndPan" appears in the display. Use the TIME/VALUE dial to adjust the send pan.
24. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
25. "Use EFFECT2 ?" appears in the display. If you wish to use effect 2 press [YES], and make settings for effect 2 as described in steps 12–23. If you do not wish to use effect 2, press [NO] and proceed to step 26.

Chapter 5 Storing Mixer Settings

26. "AUX Snd=" appears in the display. Rotate the TIME/VALUE dial. If you wish to send the track/source to the AUX bus, select either "Pre" or "Pst," and proceed to step 27. If you do not wish to send the track/source to the AUX bus, select "Off," and proceed to step 31.

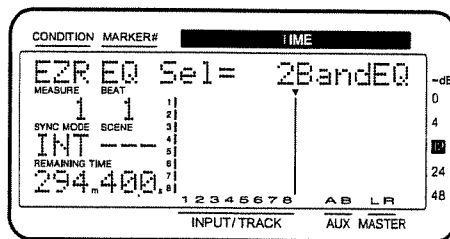


27. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
28. "TR* SndLev =" appears in the display. Use the TIME/VALUE dial to adjust the send level.
29. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
30. "TR* SndPan" appears in the display. Use the TIME/VALUE dial to adjust the send pan.
31. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
32. "Master Sel=" appears in the display. Use the TIME/VALUE dial to select the bus (MIX, AUX, FX1, FX2, REC) that you wish to output from the MASTER jacks.

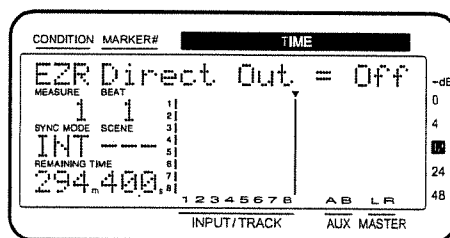


33. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

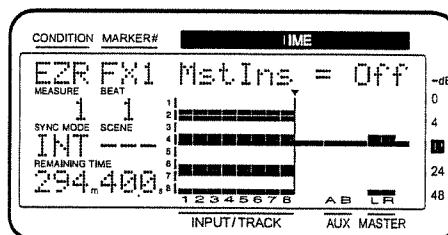
34. "EQ Sel=" appears in the display. Rotate the TIME/VALUE dial.



35. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
36. "Direct Out =" appears in the display. Rotate the TIME/VALUE dial. If you do not wish to use Direct OUT, select "Off." If you wish to output tracks 1-4, select "1-4." If you wish to output tracks 5-8, select "5-8."

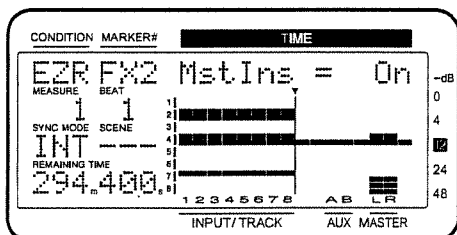


37. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
38. "FX1 MstIns=" appears in the display. Rotate the TIME/VALUE dial. If you wish to insert effect 1 into the master out, select "On." If not, select "Off." If effect 1 has been inserted in another channel, the display will indicate "—" and this item cannot be set.



39. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].

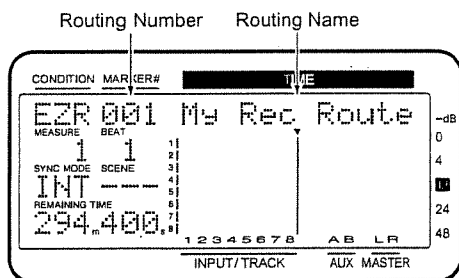
40. "FX2 MstIns=" appears in the display. Rotate the TIME/VALUE dial. If you wish to insert effect 2 into the master out, select "On." If not, select "Off." If effect 2 has been inserted in another channel, the display will indicate "—" and this item cannot be set.



41. Press PARAMETER [▶▶]. You can return to the previous screen by pressing PARAMETER [◀◀].
42. "Change Routing?" appears in the display. Press [YES]. When the routing has been finalized, "Complete" appears in the display, and you will return to Play condition. If you decide to discard the routing that was set, press [NO].

Saving the Current Routing (User Routing)

1. Use Template or Step Edit to finalize the routing that you wish to save.
2. Press [EZ ROUTING] several times until "SaveCurRouting?" appears in the display.
3. Press [YES].
The number and name of the user routing will be displayed.



4. Use the TIME/VALUE dial to select the routing number for the desired save destination.
5. Press PARAMETER [▶▶].
6. Use CURSOR [◀] [▶] to move the cursor. Use the TIME/VALUE dial to assign a name to the user routing.

7. Press PARAMETER [◀◀].
The cursor will move to the routing number.

8. Press [YES].
9. If you are overwriting a previously saved user routing, a message will ask for confirmation. Press [YES].
10. When the user routing has been saved, "Complete" appears in the display, and return to Play condition.

Recalling User Routing

1. Press [EZ ROUTING] several times until "User Routing?" appears in the display.
2. Press [YES].
The number and name of the user routing will be displayed.
3. Use the TIME/VALUE dial to select the routing number that you wish to recall. If not even one user routing has been saved, "EZR No User Routing" appears in the display, and return to step 1.
4. Press [YES].
5. When the user routing has been recalled, "Complete" appears in the display, and return to Play condition.

Deleting User Routings

1. Press [EZ ROUTING] several times until "DelUserRouting?" appears in the display.
2. Press [YES].
The number and name of the user routing will be displayed.
3. Use the TIME/VALUE dial to select the routing number that you wish to delete. If not even one user routing has been saved, "EZR No User Routing" appears in the display, and return to step 1.
4. Press [YES].
A confirmation message is displayed.
5. Press [YES].
6. When the user routing has been deleted, "Complete" appears in the display, and you will return to Play condition.

Chapter 6 Editing a Recorded Performance (Track Editing)

This chapter explains the content and procedures for editing sound that has been recorded. Please read this chapter to gain an understanding of the concepts of "editing" described in this section.

About Editing Operations

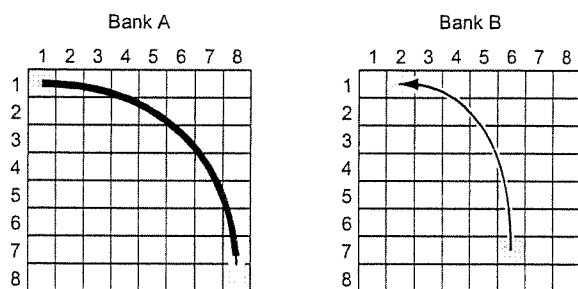
On a tape recorder, in order to modify a performance that has been recorded you have to erase the performance which you recorded previously. Additionally, if you wish to change the composition of a song, you must re-record it from the beginning, or use scissors and tape to splice sections or the recording. In either case, with the tape itself subject to handling, it can never be returned to its original condition. This type of editing is known as **destructive editing**.

Compare with a tape recorder, with digital disk recording, since copying data has negligible effect on the sound, you can copy the original data before editing and back it up. It is also easy to copy parts of the data to different locations, or to erase specified portions of the data (Track Edit). Furthermore, even if you make a mistake during Punch-In Recording or Track Bouncing, you can restore data to its condition any number of steps before the edit, without the edited content being deleted (Undo function). Editing of this type which allows the original data to be recovered is known as **non-destructive editing**.

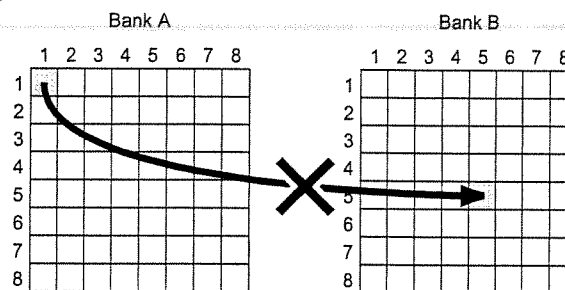
Track Edit

To edit the sound, you will need to specify the track or V-track and the location where you wish to edit.

Only tracks or V-tracks within the same V-track bank can be selected for track editing. For example, it is not possible to copy or move track 1 / V-track 1 of V-track bank A to V-track bank B.



Example of when track editing is possible

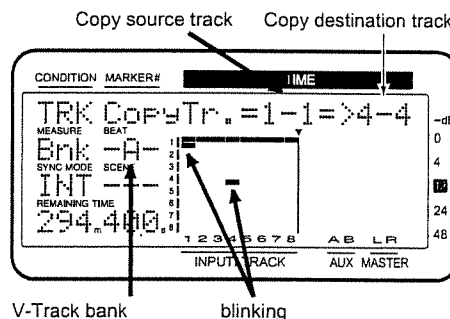


Example of when track editing is not possible

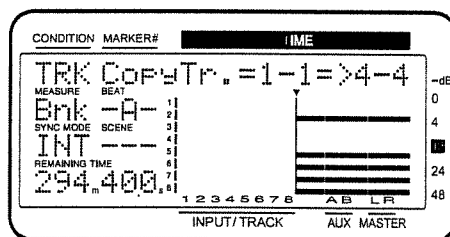
However, Track Exchange (p. 92) is able to edit between different V-track banks.

About the Bar Display

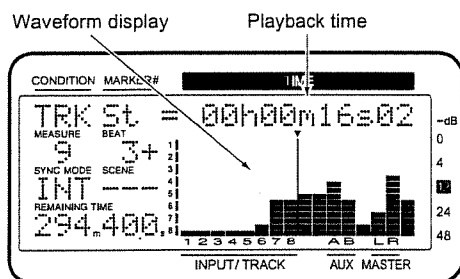
When you are selecting a track, the bar display will indicate the track selection status. The numbers on the horizontal axis are the track numbers, and the numbers on the vertical axis are the V-track numbers. Locations corresponding to tracks which contain data will light. Tracks which are selected for modification will blink.



At this time, you can view a Play List in the bar display. Hold down [SHIFT] and press [PLAY (DISPLAY)]. To return to the previous display, once again hold down [SHIFT] and press [PLAY (DISPLAY)].



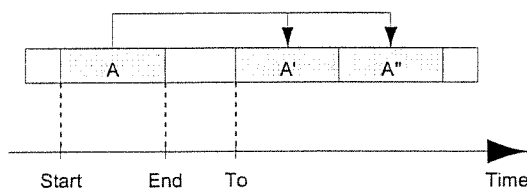
If you have selected an item which specifies a time, a play list will appear in the bar display. In this case if you wish to view an amplitude profile or the track selection status in the bar display, hold down [SHIFT] and press [PLAY (DISPLAY)]. The amplitude profile allows you to view the sound recorded in the selected track as a waveform. Use [SELECT (CH EDIT)] to select the track which will be viewed as an amplitude profile.



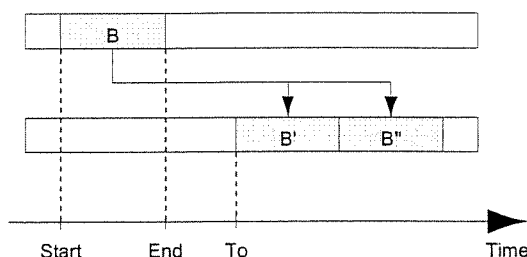
Repeating Performance Data (Track Copy)

This operation copies the playback data of a specified area to another location. For example, this is convenient when you play the same chorus both at the beginning and end of a song. If playback data exists at the copy destination, that data will be overwritten.

Example1: Copying twice to the same track



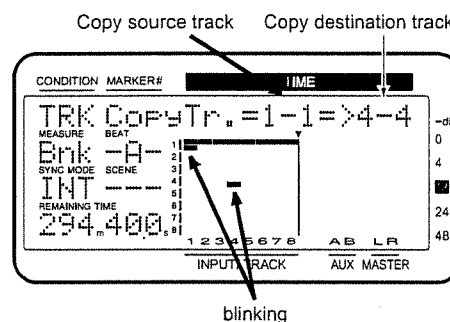
Example2: Copying twice to a different track



* Playback data of a track for which Channel Link is ON cannot be copied to a track whose channel has a Channel Link setting of OFF. In the same way, playback data of a track for which Channel Link is OFF cannot be copied to a track whose channel has a Channel Link setting of ON.

* The length of the data to be copied must be greater than 0.5 seconds. If data shorter than 0.5 seconds is copied, the sound will not playback.

1. You can use Track Copy with the tracks that are currently audible. Select the V-track that contains the copy source playback data, and prepare that data for playback.
2. Press [TRACK] several times until "TRK Track Copy ?" appears in the display.
3. Press [YES].
4. Press CURSOR [◀] several times until "TRK CopyTr.=?-?=>?-?" appears in the display.
5. Press [SELECT (CH EDIT)] for the copy source track. The SELECT indicator will light orange. You can also use the TIME/VALUE dial to select the copy source track.
6. Press [STATUS] for the copy destination track. The STATUS indicator will light red.
7. Rotating the TIME/VALUE dial allows you to specify the copy destination V-track. For example, "1-1" indicates "Track 1, V-track 1."



8. If you want to copy multiple tracks simultaneously, repeat Steps 5-7.
- * Do not designate V-tracks that have already been specified as copy destinations for other Tracks.
9. If there are any tracks which you decide not to copy, press that track's [SELECT (CH EDIT)] once again. The SELECT indicator will blink orange. Alternatively, you can use PARAMETER [◀◀] [▶▶] to access the settings for that track, and press [CANCEL (NO)] twice.
10. Press PARAMETER [▶▶] several times until "TRK St=" appears in the display.

Chapter 6 Editing a Recorded Performance (Track Editing)

11. Rotate the TIME/VALUE dial.

St (Start point)

Specifies the starting time of the copy range.

12. Press PARAMETER [▶▶].
"TRK Frm=" appears in the display.

13. Rotate the TIME/VALUE dial.

Frm (From point)

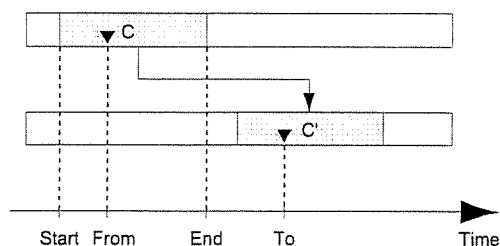
Specifies the time of the copy source playback data in relation to the "To" point. Normally you will set this to be the same as the Start point.

Using "Frm" Effectively

Normally, the data is copied starting at the specified copy destination time. However, if you want to have the copy made with reference to a point within the designated range where a specific sound occurs, set this with "Frm."

For example, suppose that you wish to copy a sound effect of a time bomb ticking and then exploding, and that you want to place the explosion at a specific timing location. Normally, in order to specify the copy destination time, you would have to calculate the time until the explosion occurs. In such cases, however, you can specify "Frm" as "the copy source time at which the explosion begins" and "TO" (the reference time of the copy destination) as "the copy destination time at which you want the explosion to occur." This lets you copy the data with the explosion placed with precisely the right timing.

Example 3: Copying using the "Frm" setting



14. Press PARAMETER [▶▶].
"TRK End=" appears in the display.

15. Rotate the TIME/VALUE dial.

End (End point)

Specifies the ending time of the copy range.

16. Press PARAMETER [▶▶].
"TRK To =" appears in the display.

17. Rotate the TIME/VALUE dial.

To (To point)

Specifies the reference time of the copy destination.

18. Press PARAMETER [▶▶].
"TRK Copy Time=" appears in the display.

19. Rotate the TIME/VALUE dial.

Copy Time

This specifies the number of times (1-99) the data is to be copied.

20. Press PARAMETER [▶▶].
"TRK Track Copy OK ?" appears in the display.

21. Press [YES].
This executes Track Copy. If you wish to cancel, press [NO].

22. When the copy is completed correctly, "Complete" appears in the display, and return to Play condition.

An Easy Way to Specify the Time Settings

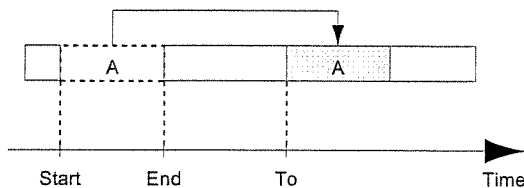
Times for the "St," "Frm," "End," and "To" can be specified directly without having to display the Track Copy page. In Play condition, use the following procedure.

1. Move to the beginning ("St") of the copy source performance data.
 2. Hold down [TRACK] and press [LOC1/5].
 3. Move to the time location in the destination to which the performance data will be copied ("Frm").
 4. Hold down [TRACK] and press [LOC2/6].
 5. Move to the end location of the copy source performance data ("End").
 6. Hold down [TRACK] and press [LOC3/7].
 7. Move to the basic time of the copy destination ("To").
 8. Hold down [TRACK] and press [LOC4/8].
- If you now access the Track Copy page, the times that were specified in steps 1-8 will be input as the time settings for the respective points.

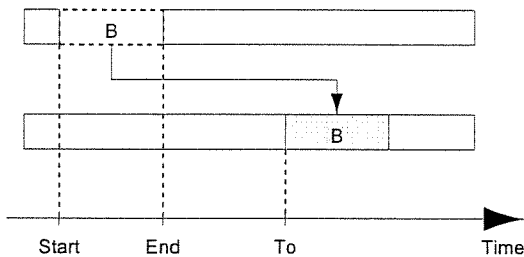
Moving Performance Data (Track Move)

This operation moves the playback data in a specified range to another location. This is convenient for correcting timing mistakes that can occur during recording. If playback data exists at the move destination, that data will be overwritten.

Example 1: Moving within the same track



Example 2: Moving to a different track



* Playback data of a track for which Channel Link is ON cannot be moved to a track whose channel has a Channel Link setting of OFF. In the same way, playback data of a track for which Channel Link is OFF cannot be moved to a track whose channel has a Channel Link setting of ON.

* The length of the data to be moved must be greater than 0.5 seconds. If data shorter than 0.5 seconds is moved, the sound will not playback.

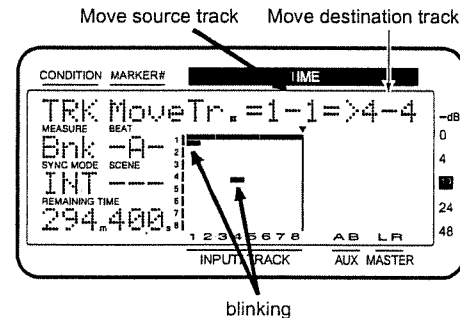
* Do not leave sound within 0.5 seconds before or after the section of data that is moved. Any sound which was within 0.5 seconds of the moved data will not playback.

1. You can move the tracks that are currently audible. Select the V-track that contains the move source playback data, and prepare that data for playback.
2. Press [TRACK] several times until "TRK Track Move?" appears in the display.
3. Press [YES].
4. Press CURSOR [◀] several times until "TRK MoveTr.=?-?=>?-?" appears in the display.
5. Press [SELECT (CH EDIT)] for the channel containing the move source track.

The SELECT indicator will light orange.

You can also use the TIME/VALUE dial to select the move source track.

6. Press [STATUS] for the move destination track. The STATUS indicator will light red.
7. Rotating the TIME/VALUE dial allows you to specify the move destination V-track. For example, "1-1" indicates "Track 1, V-track 1."



8. If you want to move multiple tracks simultaneously, repeat Steps 5-7.

* Do not designate V-tracks that have already been specified as move destinations for other Tracks.

9. If there are any tracks which you decide not to move, press that track's [SELECT (CH EDIT)] once again.

The SELECT indicator will blink orange.

Alternatively, you can use PARAMETER [◀◀] [▶▶] to access the settings for that track, and press [CANCEL (NO)] twice.

10. Press PARAMETER [▶▶] several times until "TRK St=" appears in the display.

11. Rotate the TIME/VALUE dial.

St (Start point)

Specifies the starting time of the move range.

12. Press PARAMETER [▶▶]. "TRK Frm=" appears in the display.

13. Rotate the TIME/VALUE dial.

Frm (From point)

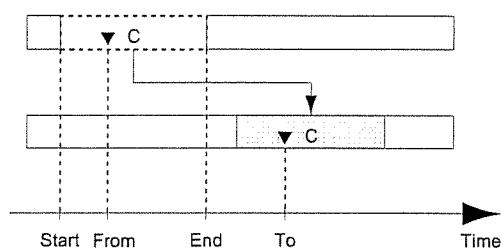
Specifies the time of the move source playback data in relation to the To point. Normally you will set this to be the same as the Start point.

Using "Frm" Effectively

Normally, the data is copied starting at the specified move destination time. However, if you want to have the move made with reference to a point within the designated range where a specific sound occurs, set this with "Frm."

For example, suppose that you wish to move a sound effect of a time bomb ticking and then exploding, and that you want to place the explosion at a specific timing location. Normally, in order to specify the move destination time, you would have to calculate the time until the explosion occurs. In such cases, however, you can specify "Frm" as "the move source time at which the explosion begins" and "TO" (the reference time of the move destination) as "the move destination time at which you want the explosion to occur." This lets you move the data with the explosion placed with precisely the right timing.

Example 3: Moving using the "Frm" setting



14. Press **PARAMETER** [▶▶].
"TRK End=" appears in the display.

15. Rotate the **TIME/VALUE** dial.

End (End point)

Specifies the ending time of the move range.

16. Press **PARAMETER** [▶▶].
"TRK To =" appears in the display.

17. Rotate the **TIME/VALUE** dial.

To (To point)

Specifies the reference time of the move destination.

18. Press **PARAMETER** [▶▶].
"TRK Track Move OK ?" appears in the display.

19. Press **[YES]**.

This executes Track Move. If you wish to cancel, press **[NO]**.

20. When the move is completed correctly, "Complete" appears in the display, and return to Play condition.

An Easy Way to Specify the Time Settings

Times for the "St," "Frm," "End," and "To" can be specified directly without having to display the Track Move page. In Play condition, use the following procedure.

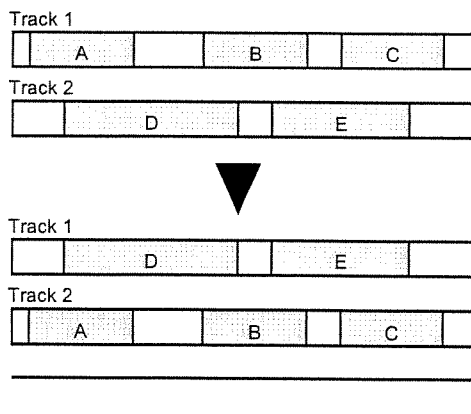
1. Move to the beginning ("St") of the move source performance data.
2. Hold down **[TRACK]** and press **[LOC1/5]**.
3. Move to the time location in the destination to which the performance data will be moved ("Frm").
4. Hold down **[TRACK]** and press **[LOC2/6]**.
5. Move to the end location of the move source performance data ("End").
6. Hold down **[TRACK]** and press **[LOC3/7]**.
7. Move to the basic time of the move destination ("To").
8. Hold down **[TRACK]** and press **[LOC4/8]**.

If you now access the Track Move page, the times that were specified in steps 1-8 will be input as the time settings for the respective points.

Exchanging Performance Data Between Tracks (Track Exchange)

This operation exchanges the playback data of two tracks.

Example: Exchanging tracks 1 and 2



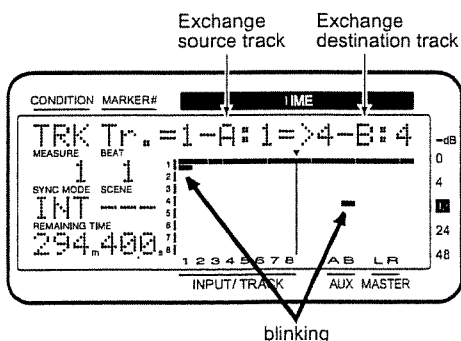
* Playback data of a track for which **Channel Link** is **ON** cannot be exchanged to a track whose channel has a **Channel Link** setting of **OFF**. In the same way, playback data of a track for which **Channel Link** is **OFF** cannot be exchanged to a track whose channel has a **Channel Link** setting of **ON**.

Track Exchange with a different V-track bank

You can use Track Exchange to swap tracks or V-tracks of different V-track banks. For example if you wish to copy track 1 / V-track 1 of V-track bank A (hereafter referred to as A-1-1) to track 1 / V-track 1 of V-track bank B (referred to as B-1-1), you can use the following procedure.

1. Track exchange A-1-1 and B-1-8.
2. Copy B-1-8 to B-1-1.
3. Once again, track exchange B-1-8 and A-1-1.

1. You can exchange the tracks that are currently audible. Select the V-track containing the source playback data to be exchanged.
2. Press [TRACK] several times until "TRK Track Exchange ?" appears in the display.
3. Press [YES].
4. Press CURSOR [◀] several times until "TRK Tr.=?:?:?=>?:?:?" ("*" is the current V-track bank) appears in the display.
5. Press [SELECT (CH EDIT)] for the channel containing the exchange source track.
The SELECT indicator will light orange.
You can also use the TIME/VALUE dial to select the exchange source track.
6. Press [STATUS] for the exchange destination track.
The STATUS indicator will light red.
7. Rotating the TIME/VALUE dial allows you to specify the exchange destination V-track. For example, "1-A:1" indicates "V-track 1 of track 1 in V-track bank A."



8. If you want to exchange multiple tracks simultaneously, repeat Steps 5-7.

* Do not designate V-tracks that have already been specified as exchange destinations for other Tracks.

9. If there are any tracks which you decide not to exchange, press that track's [SELECT (CH EDIT)] once again.

The SELECT indicator will blink orange.

Alternatively, you can use PARAMETER [◀◀] [▶▶] to access the settings for that track, and press [CANCEL (NO)] twice.

10. Press PARAMETER [▶▶].

"TRK TrackExchangeOK ?" appears in the display.

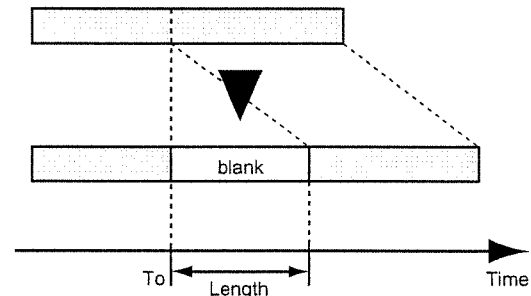
11. Press [YES].

This executes Track Exchange. If you wish to cancel, press [NO].

12. When the exchange is completed correctly, "Complete" appears in the display, and return to Play condition.

Inserting a Blank Space Into Performance Data (Track Insert)

This operation inserts blank space at the specified location.

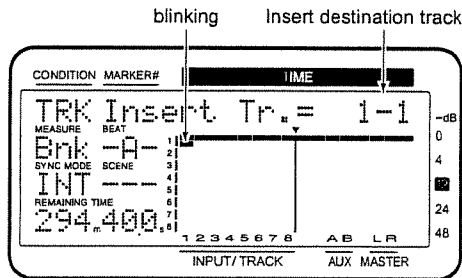


* Do not leave sound within 0.5 seconds before or after the area into which the data will be inserted. Any sound which was within 0.5 seconds of the inserted data will not playback.

1. Press [TRACK] several times until "TRK Track Insert ?" appears in the display.
2. Press [YES].
3. Press CURSOR [◀] several times until "TRK Insert Tr.=?:?" appears in the display.
4. Press [STATUS] for the channel containing the insert source track.
The STATUS indicator will light red.

Chapter 6 Editing a Recorded Performance (Track Editing)

- Rotating the TIME/VALUE dial allows you to specify the insert destination V-track. For example, "1-1" means "V-track 1 of track 1," "1-*" means "all V-tracks of track 1," and "*-*" means "all V-tracks of all tracks."



- If you want to insert multiple tracks simultaneously, repeat Steps 4 and 5.
- If there are any tracks which you decide not to insert, press that track's [STATUS] once again. The STATUS indicator will blink green.

Alternatively, you can use PARAMETER [◀◀] [▶▶] to access the settings for that track, and press [CANCEL (NO)].

- Press PARAMETER [▶▶] several times until "TRK To=" appears in the display.
- Rotate the TIME/VALUE dial.

To (To point)

Specify the time location at which the blank will be inserted.

- Press PARAMETER [▶▶]. "TRK Len=" appears in the display.

- Rotate the TIME/VALUE dial.

Len (Length)

Specify the time (length) length of the blank.

- Press PARAMETER [▶▶]. "TRK Track Insert OK ?" appears in the display.

- Press [YES]. This executes Track Insert. If you wish to cancel, press [NO].

- When the insert is completed correctly, "Complete" appears in the display, and return to Play condition.

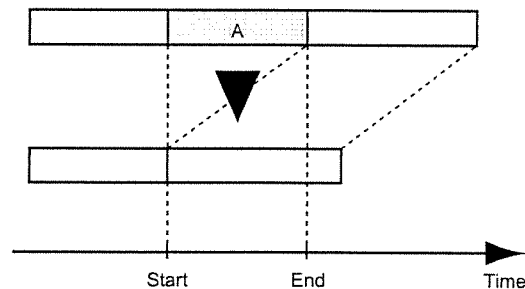
An Easy Way to Specify the Time Settings

The time for the "To" can be specified directly without having to display the Track Insert page. In Play condition, use the following procedure.

- Move to the time location into which you wish to insert the blank ("To").
- Hold down [TRACK] and press [LOC4/8]. If you now access the Track Erase page, the time that was specified in steps 1-2 will be input as the time setting for the To point. Just specify the length of the blank (Length), and execute Track Erase.

Deleting Performance Data (Track Cut)

This operation cuts playback data from the specified area. When playback data is cut using this operation, any playback data following the data that was cut will move forward to fill the gap. To use the analogy of a tape recorder, this operation is like cutting an unwanted portion out of an audio tape, and splicing the ends.



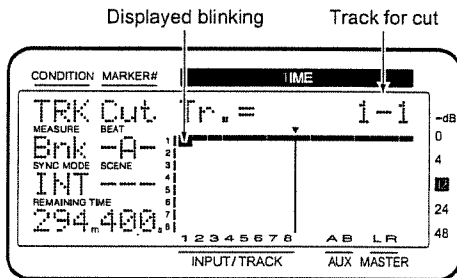
* Do not leave sound within 0.5 seconds before or after the area to be cut. Any sound which was within 0.5 seconds of the cut data will not playback.

* While it may seem that the performance data has disappeared, the data itself is not deleted from the hard disk. Thus, even when you carry out the Track Cut procedure, the free disk space shown in the display does not change.

- Press [TRACK] several times until "TRK Track Cut ?" appears in the display.
- Press [YES].
- Press CURSOR [◀] several times until "TRK Cut Tr.=?-?" appears in the display.
- Press [STATUS] for the track on which you want to carry out Track Cut.

The STATUS indicator will light red.

5. You can use the TIME/VALUE dial to specify the V-track that you wish to delete. For example, "1-1" means "V-track 1 of track 1," "1-*" means "all V-tracks of track 1," and "*-*" means "all V-tracks of all tracks."



6. If you want to cut multiple tracks simultaneously, repeat Steps 4 and 5.
7. If there are any tracks which you decide not to cut, press that track's [STATUS] once again. The STATUS indicator will blink green.

Alternatively, you can use PARAMETER [◀◀] [▶▶] to access the settings for that track, and press [CANCEL (NO)].

8. Press PARAMETER [▶▶] several times until "TRK St=" appears in the display.
9. Rotate the TIME/VALUE dial.

St (Start point)

Specifies the starting time of the segment to be cut.

10. Press PARAMETER [▶▶].
"TRK End=" appears in the display.

11. Rotate the TIME/VALUE dial.

End (End point)

Specifies the ending time of the segment to be cut.

12. Press PARAMETER [▶▶].
"TRK Track Cut OK ?" appears in the display.
13. Press [YES].
This executes Track Cut. If you wish to cancel, press [NO].
14. When the cut is completed correctly, "Complete" appears in the display, and return to Play condition.

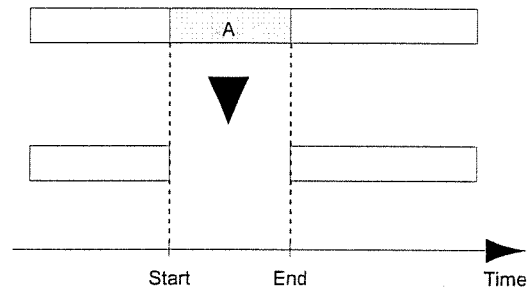
An Easy Way to Specify the Time Settings

Times for the "St" and "End" can be specified directly without having to display the Track Cut page. In Play condition, use the following procedure.

1. Move to the beginning of the area that you wish to cut ("St").
 2. Hold down [TRACK] and press [LOC1/5].
 3. Move to the end of the area that you wish to cut ("End").
 4. Hold down [TRACK] and press [LOC3/7].
- If you now access the Track Cut page, the times that were specified in steps 1-4 will be input as the time settings for the respective points.

Erasing Performance Data (Track Erase)

This operation erases playback data from the specified area. If this operation is used to erase playback data, even if playback data exists after the area that was erased, it will not be moved forward. To use the analogy of a tape recorder, this operation is like recording silence over an unwanted section of the tape.



* Do not leave sound within 0.5 seconds before or after the area to be erased. Any sound which was within 0.5 seconds of the erased data will not playback.

* While it may seem that the performance data has disappeared, the data itself is not deleted from the hard disk. Thus, even when you carry out the Track Erase procedure, the free disk space shown in the display does not change.

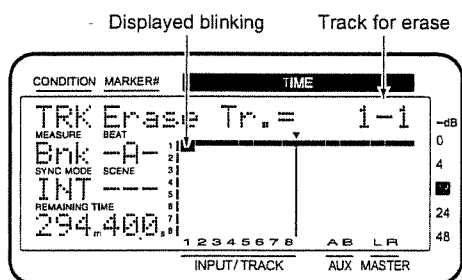
1. Press [TRACK] several times until "TRK Track Erase ?" appears in the display.
2. Press [YES].
3. Press CURSOR [◀] several times until "TRK Erase Tr.=?-?" appears in the display.

Chapter 6 Editing a Recorded Performance (Track Editing)

4. Press [STATUS] for the track on which you want to carry out Track Erase.

The STATUS indicator will light red.

5. You can use the TIME/VALUE dial to specify the V-track that you wish to erase. For example, "1-1" means "V-track 1 of track 1," "1-*" means "all V-tracks of track 1," and "*-*" means "all V-tracks of all tracks."



6. If you want to erase multiple tracks simultaneously, press repeat Steps 4 and 5.

7. If there are any tracks which you decide not to erase, press that track's [STATUS] once again.

The STATUS indicator will blink green.

Alternatively, you can use PARAMETER [◀◀] [▶▶] to access the settings for that track, and press [CANCEL (NO)].

8. Press PARAMETER [▶▶].
- "TRK St=" appears in the display.

9. Rotate the TIME/VALUE dial.

St (Start point)

Specifies the starting time of the segment to be erased.

10. Press PARAMETER [▶▶].
- "TRK End=" appears in the display.

11. Rotate the TIME/VALUE dial.

End (End point)

Specifies the ending time of the segment to be erased.

12. Press PARAMETER [▶▶].
- "TRK Track Erase OK ?" appears in the display.

13. Press [YES].

This executes Track Erase. If you wish to cancel, press [NO].

14. When the erase is completed correctly, "Complete" appears in the display, and return to Play condition.

An Easy Way to Specify the Time Settings

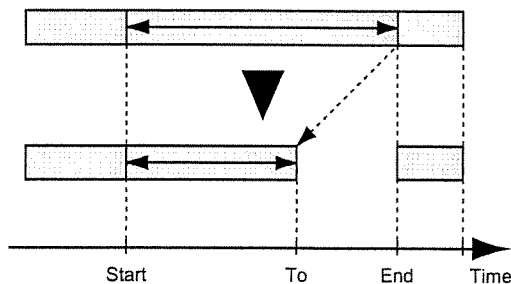
Times for the "St" and "End" can be specified directly without having to display the Track Erase page. In Play condition, use the following procedure.

1. Move to the beginning of the area that you wish to erase ("St").
 2. Hold down [TRACK] and press [LOC1/5].
 3. Move to the end of the area that you wish to erase ("End").
 4. Hold down [TRACK] and press [LOC3/7].
- If you now access the Track Erase page, the times that were specified in steps 1-4 will be input as the time settings for the respective points.

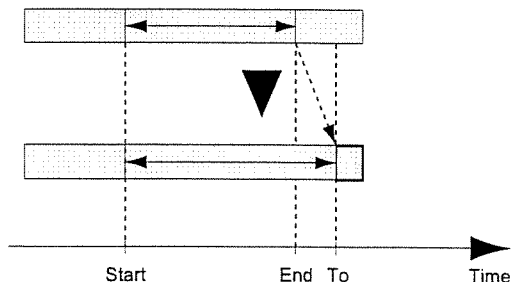
Modifying the Playback Time of the Performance Data (Time Compression/Expansion)

This operation allows you to expand or compress the playback time of a song to a specified length of time. You can specify the amount of compression or expansion in a range of 75-125%, but the more extreme the settings, the more adverse the effect will be on the sound quality. We recommend that you normally keep compression and expansion within a range of 93-107 %.

Example 1: Compression



Example 2: Expansion



In general, when you compress or expand the playback time, the pitch changes in proportion to the amount of compression or expansion. For example, if the playback time is shortened, the pitch of the sound played back then rises. On the VS-880EX, you can select whether the playback pitch changes in accordance with the ratio of compression or expansion, or whether the original playback pitch is preserved.

* *Time Compression/Expansion creates new performance data with a different playback time. For this reason, it cannot be executed if there is not sufficient space on the current drive.*

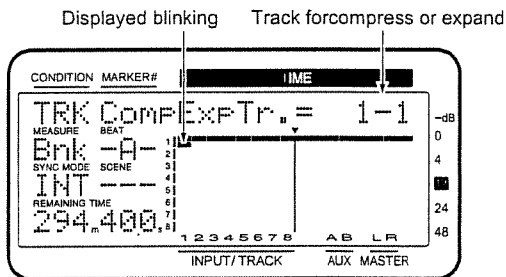
* *It is not possible to make Track Compression/Expansion settings when the elapsed time from the Start Point to the End Point or from the Start Point to the To Point is less than 0.5 seconds.*

* *Do not compress data to a period of 0.5 seconds or shorter. If it is compressed to 0.5 seconds or less, the sound will not be played.*

1. Press [TRACK] several times until "TRK Time Comp/Exp. ?" appears in the display.
2. Press [YES].
3. Press CURSOR [◀] several times until "TRK CompExpTr.=?-?" appears in the display.
4. Press [STATUS] for the track on which you want to compress or expand.

The STATUS indicator will light red.

5. You can use the TIME/VALUE dial to specify the V-track that you wish to compress or expand. For example, "1-1" means "V-track 1 of track 1," "1-*" means "all V-tracks of track 1," and "*-*" means "all V-tracks of all tracks."



6. If you want to compress or expand multiple tracks simultaneously, repeat Steps 4 and 5.
7. If there are any tracks which you decide not to compress or expand, press that track's [STATUS] once again.

The STATUS indicator will blink green.

Alternatively, you can use PARAMETER [◀◀] [▶▶] to access the settings for that track, and press [CANCEL (NO)].

8. Press PARAMETER [▶▶].
"TRK St=" appears in the display.

9. Rotate the TIME/VALUE dial.

St (Start point)

This specifies when compression or expansion of the playback time starts.

10. Press PARAMETER [▶▶].
"TRK End=" appears in the display.

11. Rotate the TIME/VALUE dial.

End (End point)

This specifies when compression or expansion of the playback time ends.

12. Press PARAMETER [▶▶].
"TRK To=" appears in the display.

13. Rotate the TIME/VALUE dial.

To (To point)

This specifies the ending time location that will result from the compression or expansion.

14. Press PARAMETER [▶▶].
"TRK Pitch Mode=" appears in the display.

15. Rotate the TIME/VALUE dial.

Pitch Mode

If you want the playback pitch to change as a result of the compression or expansion, set this to "Variable"; if not, set this to "Fixed."

16. Press PARAMETER [▶▶].
"TRK Type=" appears in the display.

17. Rotate the TIME/VALUE dial.

Type

This specifies the type of conversion. Select the setting that fits your needs or that matches the type song you are working with.

- A: For vocals or narration.
- B: For slow-tempo songs such as slow ballads.
- C: For fast-tempo songs such as rock.

18. Press PARAMETER [▶▶].
"TRK Amplitude=" appears in the display.

19. Rotate the TIME/VALUE dial.

Chapter 6 Editing a Recorded Performance (Track Editing)

Amplitude

This specifies the volume level ratio (50, 60, 70, 80, 90, 100%) that will result from the conversion. Normally, the default value of 60% is recommended. If the volume level after conversion is too low, use the Undo function to return to the original data, increase the amplitude settings, and try the operation again. However, excessively high settings can introduce noise in the data.

20. Press PARAMETER [▶▶].

"TRK TimeComp/Exp. OK ?" appears in the display.

21. Press [YES].

This executes Time Compression/Expansion. If you wish to cancel, press [NO].

** Be aware that, depending on conditions, it may take some time for compression or expansion to be completed. This is not a malfunction. Progress of the operation is shown in the display: **do not turn off the power until the compression or expansion the track is completed**. You can cancel compression or expansion by pressing [NO].*

22. When the compression or expansion is completed correctly, "Complete" appears in the display, and return to Play condition.

Chapter 7 Use with a Zip Drive

A Zip drive can be connected to the SCSI connector of the VS-880EX. Be sure to read the owner's manual for your Zip drive as well.

This chapter will explain the procedures for saving songs to Zip disks and for returning songs saved to Zip disks back to the internal hard disk.

Before You Use a Zip Drive

Handling the Zip Drive

- Install the unit on a solid, level surface in an area free from vibration. If the unit is tilted excessively, the Zip drive may malfunction or require service.
- Avoid using the unit immediately after it has been moved to a location with a level of humidity that is greatly different than its former location. Rapid changes in the environment can cause condensation to form inside the Zip drive, which will adversely affect the operation of the Zip drive and/or damage Zip disks. When the unit has been moved, allow it to become accustomed to the new environment (allow a few hours) before operating it.
- To insert a Zip disk, push it gently but firmly into the Zip drive—it will click into place. To remove a Zip disk, press the EJECT button firmly. Do not use excessive force to remove a Zip disk which is lodged in the Zip drive.
- Never attempt to remove a Zip disk from the Zip drive while the Zip drive is operating (the indicator is lit); damage could result to both the Zip disk and the Zip drive.
- Remove any Zip disk from the Zip drive before powering up or down.
- To prevent damage to the Zip disk drive's heads, always try to hold the Zip disk in a level position (not tilted in any direction) while inserting it into the Zip drive. Push it in firmly, but gently. Never use excessive force.
- Do not insert disks other than the specified Zip disks.

Handling Zip Disks

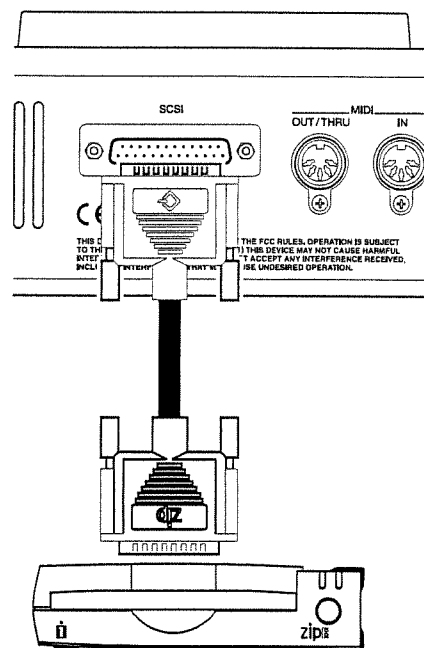
- Zip disks contain a plastic disk with a thin coating of magnetic storage medium. Microscopic precision is required to enable storage of large amounts of data on such a small surface area. To preserve their integrity, please observe the following when handling Zip disks:
 - Never touch the magnetic medium inside the Zip disk.
 - Do not use or store Zip disks in dirty or dusty areas.

- Do not subject Zip disks to temperature extremes (e.g., direct sunlight in an enclosed vehicle). (Storage temperature: -22–51° C, storage humidity: 10–90%)
- Do not expose Zip disks to strong magnetic fields, such as those generated by loudspeakers.
- The identification label should be firmly affixed to the Zip disk. Should the label come loose while the Zip disk is in the Zip drive, it may be difficult to remove the Zip disk.
- Put the Zip disk back into its case for storage.
- Zip disks do not have a protect tab to prevent data from being erased accidentally. If necessary, use Song Protect to protect your data (p. 65).

Connecting the Zip Drive

Use the following procedure to connect the Zip drive to the VS-880EX.

- * To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.
- * Once the connections have been completed, turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.
- * Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.



1. Turn on the power of the Zip drive.
2. Turn on the power of the VS-880EX with the POWER switch on the rear panel.
3. Turn on the power of connected audio equipments.
4. Raise the volume of the audio devices to appropriate levels.

* For more detailed information regarding Zip drive connections, including the necessary settings, please refer to "About SCSI" (Appendices p. 5).

Initializing the Disk (Drive Initialize)

A new disk just purchased at computer store or a disk that was used by another device **cannot be used on the VS-880EX as is**. You must initialize the disk so that it can be used by the VS-880EX. When a disk is initialized, **the entire contents are irretrievably lost**. Check any such disk you plan to initialize to make sure that it does not contain anything that you don't want deleted. Additionally, **disks used with the VS-880EX cannot be used on other devices (such as personal computers)**.

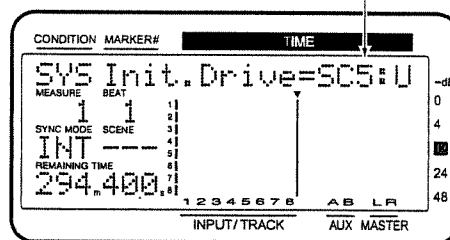
* If you accidentally delete data that you need, that data cannot be restored to its previous condition. Roland Corporation assumes no liability concerning such loss of data.

If you are using a drive or disk that has been partitioned, please note that **you will not be able to choose a particular partition that you wish to initialize**. When you carry out a drive initialization, the whole drive and all its partitions will be initialized at once.

Here is an example how to initialize new Zip disks.

1. Confirm that power of the Zip drive and the VS-880EX is turned on.
2. Insert a disk into the Zip drive.
3. Press [SYSTEM] several times until "SYS DriveInitialize" appears in the display.
4. Press [YES].
"Init.Drive=" appears in the display.
5. Rotate the TIME/VALUE dial.

Drive for initialize
(In the example, a Zip drive)



Init Drive (Initialize Drive)

Select the disk drive (IDE, SCSI0-SCSI7). "The internal hard disk will be shown as "IDE," and external disk drives will be shown as "SC0-SC7." The number following each disk drive indicates the partition number. For example, select "SCSI5" when selecting the Zip drive connection.

6. Press PARAMETER [▶▶].
"PhysicalFmt" appears in the display.

7. Rotate the TIME/VALUE dial.

Physical Format

Select whether or not to use physical formatting. For new disks or disks that have been used by another device, select "On." For new hard disks or when formatting disks for Windows or Macintosh platforms, select "Off".

8. Press PARAMETER [▶▶].
"Partition" appears in the display.

9. Rotate the TIME/VALUE dial.

Partition

Select the partition size (500 MB or 1000 MB). In normal circumstances, select "1000 MB."

10. Press PARAMETER [▶▶].
"Surface Scan" appears in the display.

11. Rotate the TIME/VALUE dial.

Surface Scan

This confirms that the read and write functions in all of the disk drive's partitions are operating correctly when the drive is initialized. In normal circumstances, set this to "Off." When you particularly want to conduct a test of the read/write functions, the set this to "On" (p. 101).

12. Press [YES].

"SYS Init.***:* OK ?" appears in the display. "***:*" refers to the drive's SCSI ID number. For example, "SC5:U" indicates a Zip drive.

13. Press [YES].

"SYS Init.***:* Sure ?" (Really initialize the disk?) appears in the display.

14. Press [YES].

"STORE Current?" (Store the current song?) appears in the display.

15. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**

16. After the initialization is completed correctly, the VS-880EX restarts automatically, and return to Play condition.

** Be aware that initializing a drive requires some time. This is not a malfunction. For example, when physical formatting is turned on, the time required to format one Zip disk is approximately 10 minutes. The progress of initialization will be shown in the display. **Be sure not to turn the power off until initialization is complete.***

Checking Disk Reliability

When initializing a hard disk or other disk, you can confirm that the read and write functions in all of the disk partitions are operating correctly. This is referred to as **Surface Scan**. If there are any places on the disk where the reading or writing of data cannot be performed, the VS-880EX **registers this as unusable memory**. Recording and playback then become unavailable at that location.

Performing this procedure deletes all contents saved on the disk. Conduct this check when initializing newly purchased disks or disks which previously have been used with a personal computer or other device. Be sure to make a backup copy of any disk you are presently using on the VS-880EX before carrying out the procedure on it.

1. Set Surface Scan to "On," and as described in "Initializing the Disk" (p. 111), carry out the Drive Initialize procedure.
2. After initialization of the disk is completed, Surface Scan begins automatically.

** The Surface Scan procedure takes a certain amount of time. Be aware that Surface Scan requires some time. This is not a malfunction. For example, the time required to conduct Surface Scan on one Zip disk (100 MB) is approximately 10 minutes. The time it will take to conduct Surface Scan on your disk drive should be based on the size (capacity) of the disk. The progress of the Surface Scan procedure is shown in the display.*

3. When Surface Scan is completed, one of the following messages appears in the display.

"File System Err":

A read or write failure has occurred in a location which stores basic data used by the VS-880EX for recording and playback. **This disk drive cannot be used by the VS-880EX.**

"____ Defect":

The underlined portion will indicate the number of unusable memory locations in this drive. The larger this number is, the lower the reliability of this drive.

"— Complete —":

This drive has no unusable memory.

4. Press [YES].

The VS-880EX will restart.

Canceling Surface Scan

You may cancel Surface Scan by performing the following procedure.

1. Press [EXIT (NO)].

"Cancel?" appears in the display.

2. Press [YES].

Surface Scan is now canceled. However, the memory found to be unusable up to that point is not registered.

3. The VS-880EX restarts automatically.

Saving Performance Data to a Zip Drive (Song Copy)

You can save song data created on the VS-880EX to an external disk. This is a convenient way to have song data backed up in the event of possible disk drive problems or to save data when there is little free disk space.

Furthermore, since Zip disks are easy to handle and manage, you can use them when sharing song data with friends or when you have a VS-880EX both in the studio and at home. We recommend keeping copies of important song data on multiple disks.

** Incorrectly conducting the Song Copy procedure may result in loss of data. Roland Corporation assumes no liability concerning such loss of data. Furthermore, Roland does not warrant any copied data, regardless of the performance or condition of the Zip Drive.*

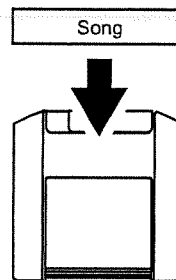
Backing Up Song Data with a CD-R Drive or DAT Recorder

You can use a CD-R drive or DAT recorder to back up song data from the VS-880EX. Song data backed up onto a CD-R disc cannot be overwritten. Thus, this method is appropriate for backing up completely finished songs or other such data. Song data backed up on DAT tapes can be overwritten any number of times, but considering the time required for saving data, and because of reliability issues, it is more convenient to back up data using a Zip drive. Roland recommends backing up data (Song Copy) with a Zip drive.

There are two ways to carry out the Song Copy procedure. Select the method depend on the amount of free space on the destination disk (100 MB for Zip disks). The size of the current song is shown in the display. To see the size of the current song, hold down [SHIFT] and press [SONG] (p. 164).

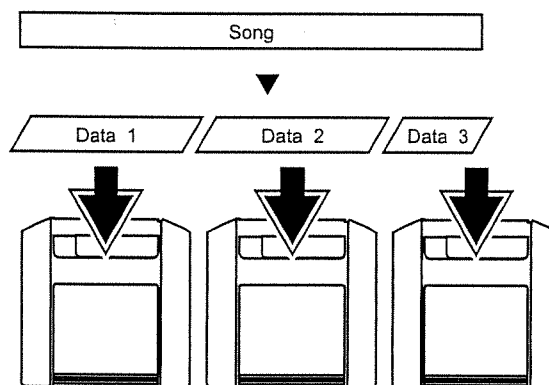
Playable:

Use this method to copy songs that use relatively little data onto disks with sufficient memory to hold them. If the destination drive or disk already has saved song data on it, then you can copy additional songs that will fit within the remaining free space.



Archives:

Use this method to copy songs that are too large to be saved on a single disk. The song data is converted into a data format specifically for saving (archives format), and is copied onto multiple disks according to the free space on the disks. This means that it will not be possible to directly play back the song data. If you wish to play back song data copied in archive format, you will need to reload the archive data into the current drive using the appropriate procedure. Furthermore, song data cannot be copied onto disks that already have songs recorded on them.



About Optimize

When operations such as punch-in recording are repeated, old (now unused) performance data still remains on the disk drive. By erasing this unnecessary data from the disk drive, you can free up a significant amount of disk space.

When you find that you cannot save something to a single disk, then try the "Song Optimize" procedure (p. 156). This way, you can reduce the memory required to save a song, enabling you to save to a single disk.

Saving a Song to a Single Disk (Playable)

Here, the procedure for saving a playable copy of a song on the VS-880EX's internal hard disk to a Zip disk which is set to SCSI ID Number 5 is explained.

The approximate times which can be copied to one Zip disk (100 Mbyte) are as follows (calculated as one track).

Recording Mode	Sample Rate		
	48.0kHz	44.1kHz	32.0kHz
MAS	17mins.	18mins.	26mins.
MT1	34mins.	37mins.	52mins.
MT2	46mins.	50mins.	69mins.
LIV	55mins.	60mins.	83mins.

(All times approximate)

1. Select the disk containing the source song you want to copy as the current drive.
2. Press [SONG] several times until "SNG Song Copy ?" appears in the display.
3. Press [YES].
"SNG CpyMode=" appears in the display.
4. Rotate the TIME/VALUE dial. Here, select "Playable."

CpyMode

Select how the song will be copied.

Playable: Playable type.

Archives: Archives type.

5. Press PARAMETER [▶▶].
"SNG CpyTarget=" appears in the display.
6. Rotate the TIME/VALUE dial. If you wish to copy the current song, select "1 Song." To copy all songs from the current drive, select "All."
7. Press PARAMETER [▶▶].
"SNG Dest.Drive=" appears in the display.
8. Rotate the TIME/VALUE dial. Select the copy destination disk drive. The internal hard disk will be shown as "IDE," and external disk drives will be shown as "SC0-SC7." The number following each disk drive indicates the partition number. For example if you wish to copy to a Zip disk, select "SC5:0."

9. Press [YES].

A message asking if you want to continue appears in the display.

10. If "ALL" is specified as the target in step 6, a confirmation message will ask you whether you want to initialize the copy destination disk drive. If you wish to initialize the copy destination disk drive and copy the song data, press [YES]. In this case, all song data that had been saved on the copy destination disk drive will be lost. If you wish to copy without initializing, press [NO].

11. Press [YES].

"STORE Current?" (Store the current song?) appears in the display.

12. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**

13. When the Playable Copy procedure is finished, return to Play condition.

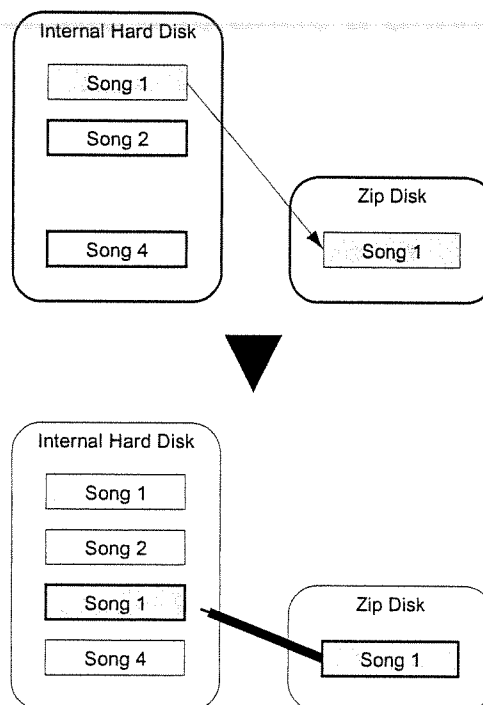
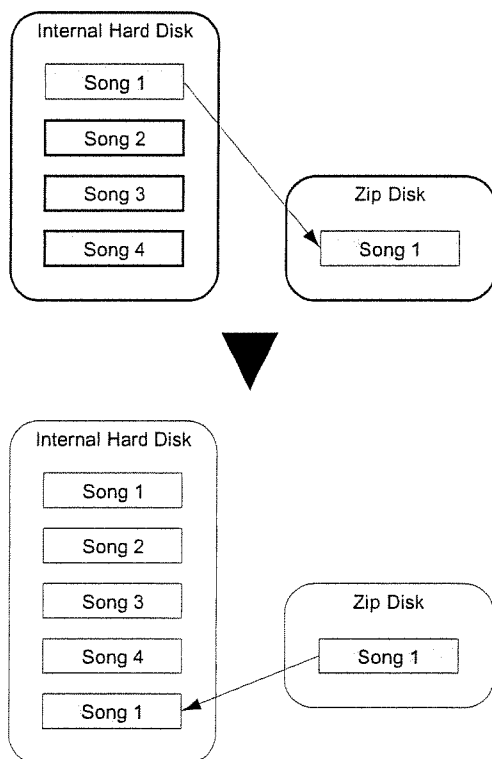
If "Disk Memory Full" Appears in the Display

This indicates that the destination disk has insufficient free space, or that the number of songs on the disk has exceeded the maximum number (200 songs) that can be stored on the disk, and that the copy procedure was canceled. However, you can still use the song data copied up to that point.

To Load Data from Disks (Drive Select)

If you want to take playable songs that have been copied to Zip disks and load them onto the VS-880EX's hard disk, first switch the current drive to the Zip drive (Drive Select). This is referred to as **Drive Select**. Afterwards, you can make playable copies onto the internal hard disk from the Zip disk.

** Even if you remake a playable copy of a song from the Zip disk to the internal hard disk without first deleting an existing playable copy of the song from the hard disk (even if you return it to the hard disk), the original song is not overwritten. In this case, a new song is created with the same song name as that of the original and is written to the lowest available song number.*



1. Confirm that power of both the Zip drive and the VS-880EX is turned on.
2. Insert a disk into the Zip drive.
3. Press [SYSTEM] several times until "SYS Drive Select" appears in the display.
4. Press [YES].
The connected disk drives will be detected.
5. Rotate the TIME/VALUE dial. Select the disk drive to which you want to change. The internal hard disk will be shown as "IDE," and external disk drives will be shown as "SC0-SC7." The number following each disk drive indicates the partition number. For example if you wish to switch to the Zip drive, select "SC5:0."
6. Press [YES].
A confirmation message appears on the screen.
7. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
8. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
9. After you have switched the current drive, return to Play condition.

10. Following the procedure described in "Saving a Song to a Single Disk" (p. 103), make a playable copy of the song on the Zip disk to the internal hard disk.
11. After you have made the copy, repeat Steps 3–9 to reselect the internal hard disk as the current drive.

When You Cannot Save a Song to a Single Disk (Archives)

Handling of Archives Copy Disks

To save songs in archives format, the destination disk must be initialized. This initialization procedure differs from the usual Drive Initialize formatting (p. 111). This procedure lets you carry out Archives Copy with newly purchased disks, disks which previously have been used with a personal computer or other device, or other disks which have not been formatted with Drive Initialize. However, any song data saved to the disk is lost once the Archives Copy procedure is performed.

Additionally, you cannot designate a disk containing archive format songs as the current drive. If you try to do this, the disk is identified as being an **uninitialized disk**.

Saving to Disks (Store)

Here we will explain the example of when a Zip drive with SCSI ID number 5 is connected as an external disk drive.

1. Make the drive (internal hard disk) containing the song you want to copy the current drive.
2. Insert a disk into the Zip drive.
3. Press [SONG] several times until "SNG Song Copy ?" appears in the display.
4. Press [YES].
"SNG CpyMode=" appears in the display.
5. Rotate the TIME/VALUE dial. Here, select "Archives."

CpyMode

Select how the song will be copied.

Playable: Playable type.

Archives: Archives type.

6. Press PARAMETER [▶▶].
"SNG ArcTarget=" appears in the display.
7. Rotate the TIME/VALUE dial. If you wish to copy the current song, select "1 Song." To copy all songs from the current drive, select "All."
8. Press PARAMETER [▶▶].
"SNG Arc.Drive=" appears in the display.
9. Rotate the TIME/VALUE dial. Select the copy destination disk drive. For this operation, you will be able to select only removable disk drives which are connected to the SCSI connector. It is not possible to select the current drive (the internal hard disk) as the copy destination drive. For example if you wish to copy to a Zip disk, select "SC5:0."
10. Press PARAMETER [▶▶].
"SNG Arc.Func=" appears in the display.
11. Rotate the TIME/VALUE dial. Here, select "Store."

Arc.Func (Archives Function)

Select the Archive Type copy method.

Store: Saving to Zip Disks.

Extract: Loading from Zip Disks.

12. Press [YES].
A message asking if you want to continue appears in the display.
13. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
14. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
15. The display will ask, "You'll Lose Data/Continue ?." Press [YES]. If you decide to cancel the Archives Copy operation, press [NO].
* All data saved on the Zip disk will be deleted. Do not use any Zip disk containing song data that you need.
16. If the song holds a large amount of data, and cannot be contained on a single Zip disk, the disk is ejected, and the message "Please Insert Disk" appears in the display. Insert the next disk and press [YES]. At this time, be sure to write the disk numbers on the labels so that you can keep track of the order in which the disks were inserted into the drive.

17. When copying over multiple Zip disks, "Insert Disk #" (# indicates the number in the order of insertion) appears in the display. Insert each of the disks once more in the proper order and press [YES].
18. When the Archives Store procedure is finished, return to Play condition.

Loading Data From Disks (Extract)

1. Select the load (restore) destination drive (internal hard disk) as the current drive.
2. Insert a disk that was copied by Archives Store into the Zip drive.
3. Press [SONG] several times until "SNG Song Copy ?" appears in the display.
4. Press [YES].
"SNG CpyMode=" appears in the display.
5. Rotate the TIME/VALUE dial. Here, select "Archives."

CpyMode

Select how the song will be copied.

Playable: Playable type.

Archives: Archives type.

6. Press PARAMETER [▶▶].
"SNG ArcTarget=" appears in the display.
7. Rotate the TIME/VALUE dial. If you wish to copy the current song, select "1 Song." To copy all songs from the current drive, select "All."
8. Press PARAMETER [▶▶].
"SNG Arc.Drive=" appears in the display.
9. Rotate the TIME/VALUE dial. select the disk drive from which the data will be loaded. For this operation, you will be able to select only removable disk drives which are connected to the SCSI connector. It is not possible to select the current drive (the internal hard disk) as the copy destination drive. For example if you wish to copy from a Zip disk, select "SC5:0."
10. Press PARAMETER [▶▶].
"SNG Arc.Func=" appears in the display.
11. Rotate the TIME/VALUE dial. Here, select "Extract."

Arc.Func (Archives Function)

Select the Archive Type copy method.

Store: Saving to Zip Disks.

Extract: Loading from Zip Disks.

12. Press [YES].
A message asking if you want to continue appears in the display.
13. Press [YES].
In step 7, select "1 Song." If two or more songs were saved to the Zip disk, the names of the saved songs will also be displayed. Use the TIME/VALUE dial to select the name of the song you wish to copy.
14. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
15. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
16. If you have selected "All" in step 3, the display will ask "Init. IDE:0 OK?" This message is asking you to confirm that you wish to initialize the loading destination drive (the internal hard disk). If you wish to initialize the drive and then load, press [YES]. If you decide not to initialize, press [NO].
** If at this point you press [YES], all songs saved on the internal hard disk will be lost. Normally you should press [NO]. If the loading destination hard disk does not have sufficient space, you should first make a backup copy of the internal hard disk, and then press [YES].*
17. Execute the load. When copying over multiple disks, "Insert Disk #" (# indicates the number in the order of insertion) appears in the display. Insert the next disk and press [YES].
18. When the Archive Extract procedure is finished, return to Play condition.

About power-save mode

If approximately thirty minutes pass without data being written to or read from a disk, a Zip drive will automatically stop rotation of the disk. This is referred to as **Auto Power Save mode (Sleep mode)**. This function limits the power consumption and extends the life of the disk. When you perform a read or write operation on the disk, it will return to its normal state. This will take two or three seconds.

Chapter 8 Use with a CD-RW Drive

You can connect a CD-RW drive which is designated by Roland, to the VS-880EX's SCSI connector. This chapter explains the procedures involved in creating your own original audio CDs and in backing up song data to CD-RW discs. Refer to the owner's manual of CD-RW drive as you proceed.

Before You Use a CD-RW Drive

Handling the CD-RW Drive

- Install the unit on a solid, level surface in an area free from vibration. If the unit must be installed at an angle, be sure the installation does not exceed the permissible range: upward, 5°; downward, 5°.
- Avoid using the unit immediately after it has been moved to a location with a level of humidity that is greatly different than its former location. Rapid changes in the environment can cause condensation to form inside the CD-RW drive, which will adversely affect the operation of the CD-RW drive and/or damage CD-RW discs. When the unit has been moved, allow it to become accustomed to the new environment (allow a few hours) before operating it.
- Remove any disc from the loading tray before powering up or down.
- When transporting the CD-RW drive, remove the disc from the loading tray. Also, avoid having the loading tray face downwards when carrying it.

Handling CD-RW Discs

- DO NOT play a CD-ROM disc (CD-R disc on which song data has been backed up) on a conventional audio CD player. The resulting sound may be of a level that could cause permanent hearing loss. Damage to speakers or other system components may result. 
- Please observe the following when handling discs:
 - Never touch the shiny underside (encoded surface) the disc.
 - Do not use or store discs in dirty or dusty areas.
 - Do not subject discs to temperature extremes (e.g., direct sunlight in an enclosed vehicle). Recommended temperature range: 10 to 50° C (50 to 122° F).
- Put the disc back into its case for storage.
- Do not leave discs in the CD-RW drive for extended periods.
- Do not affix stickers, labels, or other such items to the face of discs.
- Avoid touching or scratching the shiny underside (encoded surface) of the disc. Damaged or dirty CD-

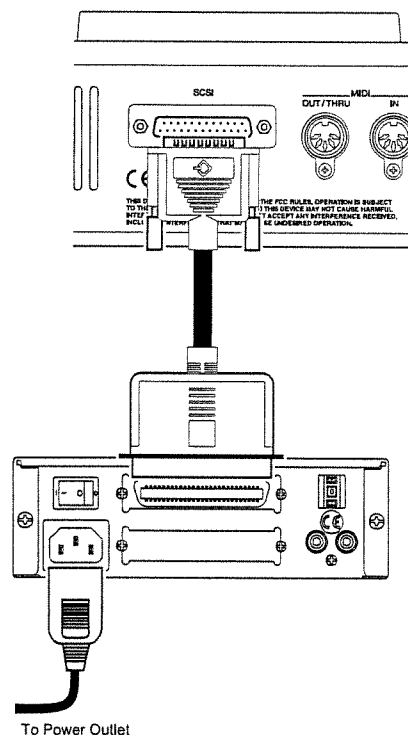
ROM discs may not be read properly. Keep your discs clean using a commercially available CD cleaner.

- Using a soft, dry cloth, wipe the disc from the center to the outer rim. Do not wipe the disc about the center in a circular direction.
- Do not apply record cleaners or sprays, benzene, or other solvents.
- Avoid bending or twisting discs, as this can adversely affect them to extent that data can no longer be read from, nor written to them. Device malfunction can be caused as well.

Connecting the CD-RW Drive

Use the following procedure to connect the CD-RW drive to the VS-880EX.

- * To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.
- * Once the connections have been completed, turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.
- * Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.



1. Turn on the power of the CD-RW drive.
2. Turn on the power of the VS-880EX.
3. Turn on the power of connected audio equipment.
4. Raise the volume of the audio devices to appropriate levels.

* For details on connecting a CD-RW drive and on the required settings, refer to "About SCSI" (appendices p.5).

Creating an Audio CD

You can create your own audio CD by writing sound data that from two specified tracks on the VS-880EX to a CD-R disc.

The VS-880EX first creates a CD-R image data file on its internal IDE hard disk, then writes that image data to the CD-R disc. Thus, **an internal IDE hard disk is necessary for this procedure**. Furthermore, internal IDE hard disk must have enough free space on the hard disk for the creation of the image data file.

* Regardless of partition settings, all free space on the internal hard disk may be accessed by the image data file. After writing of the image data file to the CD-R disc is completed, it is automatically deleted.

* With the CD-RW disc, you can record the audio data and create audio CDs. But it is impossible to play back this audio data recorded in the CD-RW disc, with the common CD players, even if the disc is finalized. (Please use CD-R disc to play back with the common CD players. Audio data in the CD-RW disc can be played back with "CD Player Function" on VS series.) You can overwrite the audio data in the CD-RW disc repeatedly. So it is convenient for making a trial copy before you create final audio CDs with the multiple CD-R discs.

Items Necessary for Creating an Audio CD

- VS-880EX (1)
- CD-RW drive (designated by Roland) (1)
- Internal IDE hard disk (1)
- Blank CD-R (Compact Disc-Recordable) disc
- Audio equipment to be connected to the MASTER jacks, or stereo headphones

Creating a Master Data

What is written to the CD-R disc is performance data of the current song in two tracks (stereo tracks). This is not the performance data that can be heard from the output from the MASTER jacks or PHONES jack. Song data that can be written to CD-R discs for the creation of original audio CDs must satisfy the following conditions. Check the disc you plan to use.

Sample rate and recording mode

Only **songs with a sample rate of 44.1 kHz** can be written to CD-R discs. Songs with sample rates other than this cannot be written to CD-R discs. While any recording mode may be used, for the higher-quality original CDs, either MTP (Multi-Track Pro), MAS (Mastering), or MT1 (Multi-Track 1) is recommended (p. 40).

Mixing

The content of adjustments made to mixer settings during playback are not recorded to the CD-R disc.

For example, in a normal performance, even if you control fade-ins and fade-outs with the master fader, this is not reflected in what is written to CD-R disc; rather, it ends up sounding as if the song is cutting in and out. Adjust equalizer, level, pan, and other settings during track bouncing.

Setting up Auto Mix beforehand can make the track bouncing operation simpler (p. 142).

Effects

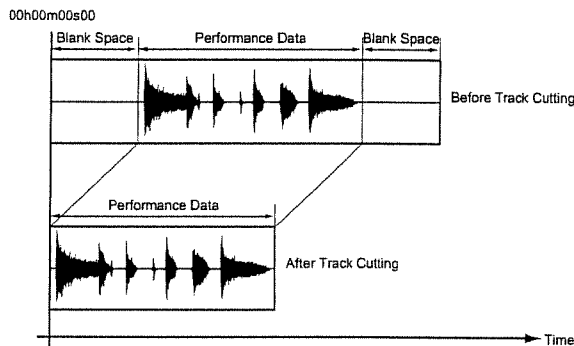
Effects that are operating during playback are not recorded on CD-R discs. For example, in a normal performance, even if you have reverb or delay applied to the output of each track, this is not reflected in what is written to CD-R disc; rather, it ends up sounding as if no effect has been applied. Add effects during track bouncing. (p. 61)

Track bouncing

Two V-tracks, one as the left track and one as the right, can be written to a CD-R disc. Bounce the tracks of song data that has not been mixed down to two-channel stereo tracks (p. 60). Designate these tracks as the master tracks (V-track write sources) to be written to the CD-R disc when writing is to be carried out.

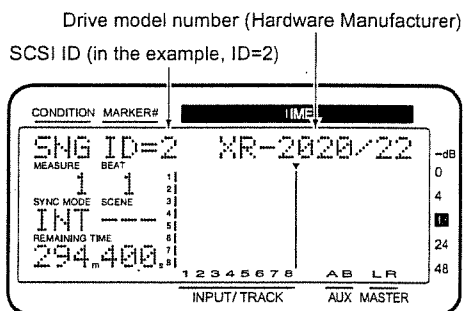
Range

The two tracks designated by the VS-880EX for writing to the CD-R disc are written from the beginning of the tracks (normally "00h00m00s00") to the end (song end). Thus, any blank space on the tracks before or after the actual performance results in wasted space on the CD-R disc. To avoid this, use Track Cut to remove any unused portions on the tracks.



Writing Songs to CD-R Discs

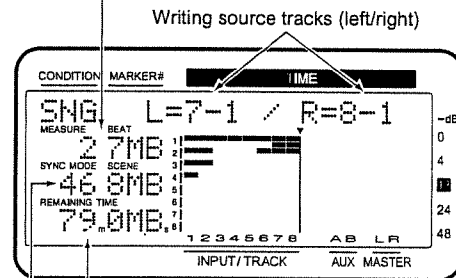
1. Place a blank CD-R disc in the CD-RW drive.
2. Press [SONG] several times until "SNG CD-R Write ?" appears in the display.
3. Press [YES].
"-Scanning CD-R -" appears in the display. The VS-880EX is checking the SCSI ID of the connected CD-RW drive, and displays the next ID number for a set time.



4. "SNG Write+Finalize?" appears in the display. Press PARAMETER [▶▶].
"Write w/o Fin.?" (Write without finalize?) appears in the display.
5. Press [YES].
6. Press [SEL (CH EDIT)] for the tracks to be written to the CD-R L track.
7. Press CURSOR [▶].

8. Press [SEL (CH EDIT)] for the track to be written to the CD-R R track.
9. The display appears as shown below. Check each of the capacity.

Disk space occupied by a song when written to a disc (27MB)



CD-R disc free space (790 MB)

Internal hard disk free space (468 MB)

- "MEASURE" "BEAT" field:
Disk space required for the song being written to the CD-R disc.
- "SYNC MODE" "SCENE" field:
Free space on the internal IDE hard disk.
- "REMAINING TIME" field:
Free space on the CD-R disc.

* If "the space required for the song being written to the CD-R disc" exceeds the total of the "free space on the internal IDE hard disk" and the "free space on the CD-R disc," you cannot write the song to the CD-R disc.

Disk space required for the song being written to the CD-R disc

The disk space occupied by a song when written to a CD-R disc may not be equivalent to the size of the song itself (the space is indicated when [SHIFT] + [SONG] are pressed). This is something that varies with the number of tracks and recording mode used. You can make a rough estimate of the space required for a song when written to a CD-R disc as shown below.

Size (bytes) = 44,100 (Hz) x 2 (stereo tracks) x 2 (bytes) x "song length" (in seconds)

* The used capacity of the song is displayed as 1 MB = 1,000,000 bytes. The displayed value is the approximate standard value.

10. Press PARAMETER [▶▶].
"SNG CD-R Write Sure?" appears in the display.

Chapter 8 Use with a CD-RW Drive

11. Press [YES].

"SNG CD Track No. OK?" is displayed.

12. Press [YES].

"Obey Copyrights?" is displayed.

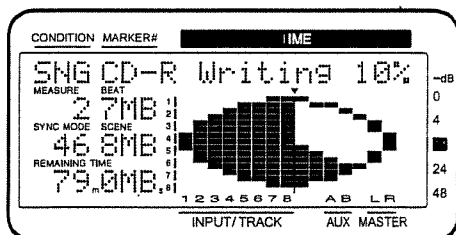
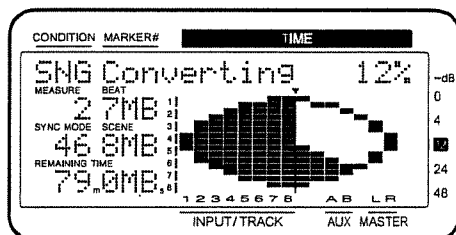
13. Carefully read the License Agreement (detailed on the back cover of this manual); if you agree to the terms, press [YES.] Writing to the CD-R disc begins. If you do not agree to the terms, press [NO]. The VS-880EX just returns to the condition at Step 2.

If "Not 44.1k Song!" Appears in the Display

The sample rate is not 44.1 kHz, so the song cannot be written to the CD-R disc. Press [ENTER (YES)] to return to Step 1. Please refer to "Creating a New Song" (p. 40).

If "Please Insert Disc!" Appears in the Display

This indicates that the CD-RW drive's loading tray is open, that there is no disc loaded, or that the CD-RW drive is in some other way not ready for use. Insert a CD-R disc, and press [YES].



14. After the write procedure has been carried out normally, "Write Another?" appears in the display. When you want to write the same song information to another CD-R disc, insert another disc in the CD-RW drive and press [YES].

Repeat Steps 10-14. Press [NO] to return to the condition at Step 2.

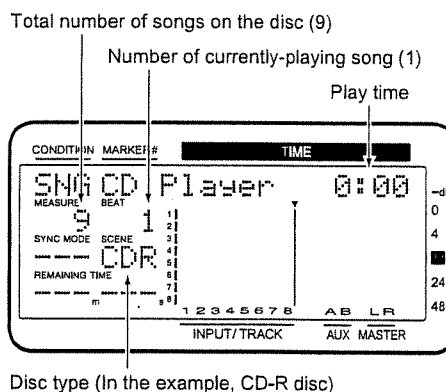
Auditioning (Test Listening) Songs Written to CDs (CD Player Function)

You cannot playback CD-RW discs or CD-R discs that have just had written songs to them with regular commercial CD players. To listen to songs that have been just written to a disc in order to check them, carry out the following operation.

* Other commercially-available CD software can also be played using the CD player function.

* You can listen to the contents of the disc through the VS-880EX's MONITOR jacks or the PHONES jack. You cannot output the contents through the CD-R drive's PHONES jack or AUDIO OUT jacks.

1. Insert the CD-R disc or commercial CD software onto the CD-RW drive.
2. Press [SONG] until "SNG CD Player?" appears in the display.
3. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
4. If you want to store the current song press [YES]; if not, press [NO].
"Scanning CD-RW -" appears in the display. The VS-880EX scans for the SCSI ID of the connected CD-RW drive. When it finds it, the ID number is displayed for a few moments. The CD-R disc information is then displayed.



If "Please Insert Disc!" Appears in the Display

There is no disc in the CD-RW drive. Insert a commercial software CD or a CD-R disc on which recording has been completed, press [YES], and try the operation once more.

If "Blank Disc" Appears in the Display

You are attempting to use the CD player function with a CD-R disc that has no performance data written to it. Insert a commercial software CD or a CD-R disc on which recording has been completed, and try the operation once more.

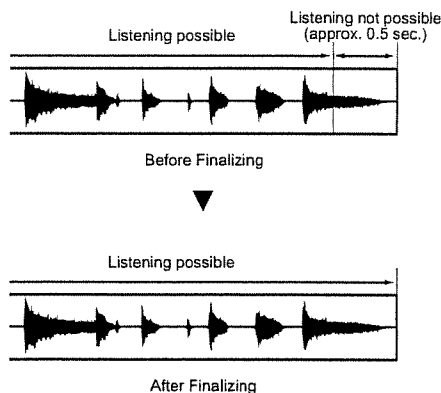
5. Only the following buttons, knobs, and faders effect the sound. Try listening to the contents of the disc.

- [ZERO]:** Goes to the start of the first song.
- [REW]:** Rapidly rewinds as long as the button is held down.
- [FF]:** Rapidly advances as long as the button is held down.
- [STOP]:** Stops the CD.
- [PLAY]:** Begins playing back from the present location.
- [PREVIOUS]:** Returns to the previous song.
- [NEXT]:** Advances to the next song.
- MASTER Fader:** Adjusts overall volume.
- PHONES Knob:** Adjusts headphone volume.

* Button, knob, and fader response may be slow, but this does not indicate any malfunction. For example, expect to wait about five seconds after pressing [PLAY] or [NEXT] before you hear sound.

* Transport control buttons are used in controlling the CD control. They are not controls for the VS-880EX's songs. Furthermore, the content of the CD currently listened to cannot be recorded by the VS-880EX.

* When listening to discs that have not been finalized, the last approximately 0.5 seconds of the song cannot be played back. Finalizing makes this portion audible.



6. When you are finished listening to the material, press [STOP].

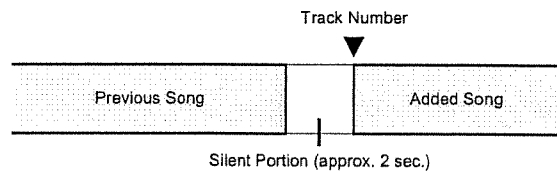
7. Press [CANCEL].

This returns you to the status at Step 2. Pressing [SONG] also returns you to Step 2.

Writing Additional Songs to the Disc

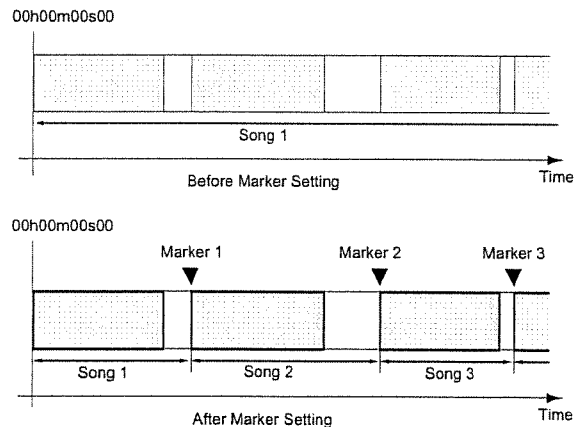
To the extent that any remaining free space allows, you can add songs to CD-R discs that have not yet been finalized. Repeat the procedure described in "Writing Songs to CD-R Discs" (p. 106).

Here you can insert approximately two seconds of blank space between the new song and the song before it. The track number is also recorded automatically.



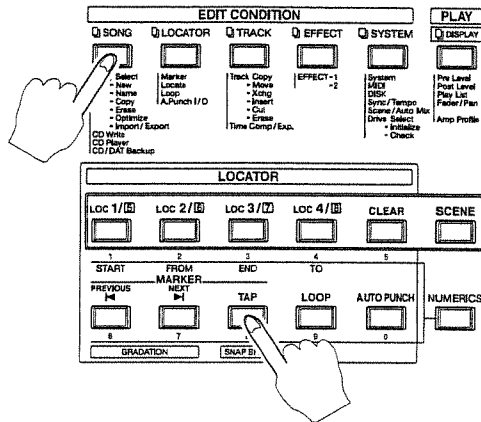
Arranging and Writing Multiple Songs to Disc

By sequencing a number of songs on one track, you can arrange those songs and write them to a CD-R disc. In this case, by presetting markers at the song boundaries to function as track numbers, you can write track numbers like those used in ordinary audio CDs, using the CD-RW drive to write an audio CD. If desired, then carry out the following procedure.

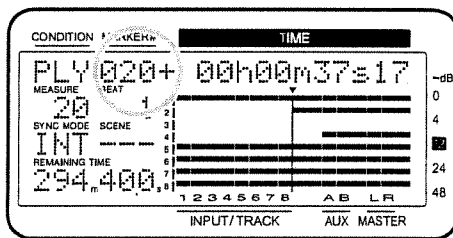


1. While listening to the song, move the track number to the location in the song you want. If called for, we recommend the use of the preview and scrub functions (p. 140).

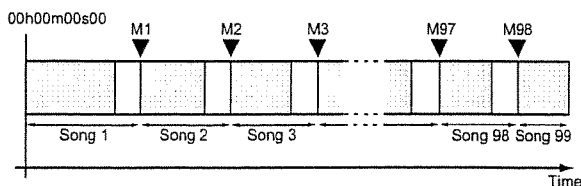
2. Hold down [SONG] and press [TAP].
Set a track number mark point at the present location on the track.



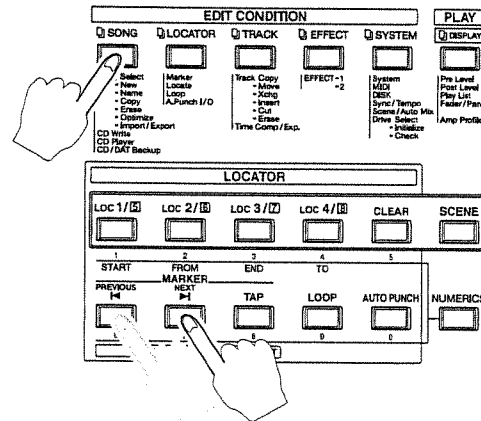
A "+" (plus sign) appears at the end of the track number mark point.



- * You cannot set markers for four seconds from the top of songs ("00h00m00s00").
- * Due to audio CD standards, songs must be at least four seconds long. Thus, if you try to set two markers as track numbers within four seconds of each other, "Can't Set Marker" appears on the display, and the process cannot be carried out. Reset the track number markers so there is an interval greater than four seconds between them.
- * Audio CD standards allow up to 99 songs to be stored on one disc. Furthermore, even if no track number marker is set at the beginning of the song, it is still used for the beginning of the first song. Thus, you can set up to 98 markers as track numbers.



3. Pressing [PREVIOUS] while also pressing [SONG] moves you to the previous track number marker. Pressing [NEXT] while also pressing [SONG] moves you to the next track number marker. Please check the time at the track number.



4. Store the song to the CD-R disc by following procedure as described in "Writing Songs to CD-R Discs" (p. 109).

To Delete Track Number Markers

Delete markers used as track numbers the same way you would regular markers (p. 39).

1. Move to the marker you want to delete.
2. Hold down [CLEAR] and press [TAP].

Writing the Song Data (Finalize)

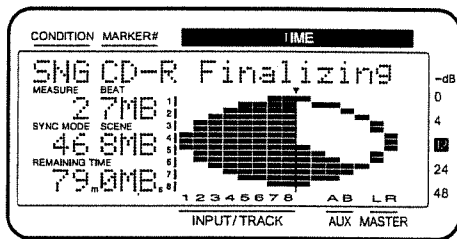
To make CD-R discs prepared with the VS-880EX playable on ordinary CD players, write a TOC (Table of Contents). This is referred to as **Finalize**. CD-R discs that have undergone the finalize procedure can no longer have additional material written to them.

? **Finalize** (Appendices p. 123)

? **TOC** (Appendices p. 125)

1. Press [SONG] until "SNG CD-R Write?" appears in the display.
2. Press [YES].
"Scanning CD-R -" appears in the display. The VS-880EX is checking the SCSI ID of the connected CD-RW drive, and displays the next ID number for a set time. "SNG Write+Finalize?" appears in the display.

3. Press PARAMETER[▶▶] until "SNG Finalize?" appears in the display.
4. Press [YES].
"Finalize Sure?" appears in the display.
5. Press [YES].
"Obey Copyrights?" is displayed.
6. Carefully read the License Agreement (p. 39); if you agree to the terms, press [YES.]



7. After "--- Complete ---" appears in the display, the VS-880EX returns to conditions at Step 1. If you do not agree to the terms of the license, press [NO]. The VS-880EX returns to conditions at Step 1

Arranging and Writing Songs and Song Data

Now you can arrange the writing and finalization of the song data as has been described thus far. Carry out the procedure as follows.

1. Insert the CD-R disc into the CD-RW drive.
2. Press [SONG] until "SNG CD-R Write?" appears in the display.
3. Press [YES].
"-Scanning CD-R -" appears in the display. The VS-880EX is checking the SCSI ID of the connected CD-RW drive, and displays the next ID number for a set time. "SNG Write+Finalize?" then appears in the display.
4. Press [YES].
5. Store the song to the CD-R disc by following procedure as described in "Writing Songs to CD-R Discs" (p. 109).

Saving Songs to CD-RW Discs (CD-R Backup)

You can save song data stored on the VS-880EX's hard disk to CD-RW discs. This procedure is called **backup**. Conversely, the process of loading backed up song data onto the internal hard disk is referred to as **recover**. Besides all V-track performance data, backed up data also includes Locator, Marker, and Scene settings made in the songs.

In CD-R backup, the song data is converted into a data format specifically for saving. This means that it will not be possible to directly play back the song data. If you wish to play back song data copied in archive format, you will need to reload the backed up data into the current drive using the appropriate procedure. Furthermore, when copying a song that does not fit on a single disc, it is copied onto multiple discs according to the free space on the discs.

- It is impossible to save any additional song data to the CD-RW discs or the CD-R discs that already have songs backed up on them. When you back up onto the CD-RW discs, existing contents should be totally erased before the new contents are saved.
- Song data backed up on CD-R discs cannot be rewritten. Thus, this is an appropriate procedure for backing up completed song data in its final form.
- Song data recorded onto Zip disks cannot be backed up onto CD-R discs or CD-RW discs.
- Incorrectly conducting the backup procedure may result in the loss of data. Roland Corporation assumes no liability concerning such loss of data.
- Roland does not warrant any copied data, regardless of the performance or condition of the CD-R drive.

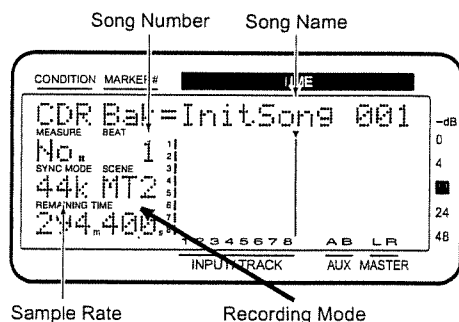
Items Necessary for CD-R Backup

- VS-880EX (1)
- CD-RW drive (1)
- Internal IDE hard disk (HDP88 series)
- CD-RW (Compact Disc-ReWritable) disc

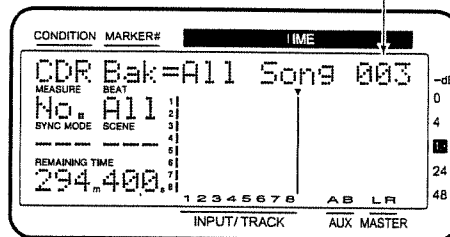
Saving Songs to CD-RW Discs

1. Select the disk (internal IDE hard disk) containing the source song you want to back up as the current drive.
2. Place a CD-RW disc in the CD-RW drive.
3. Press [SONG] several times until "CD-R Backup?" appears in the display.
4. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
5. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
"CDR Bak=" appears in the display.
6. Use the TIME/VALUE dial to select the song (only one song or all songs on the current drive) that you wish to save. To backup all songs from the current drive, select "All."

* It is impossible to save any additional song data to the CD-RW discs or the CD-R discs that already have songs backed up on them. When you back up onto the CD-RW discs, existing contents should be totally erased before the new contents are saved.



Total number of songs in the current drive (3 songs)



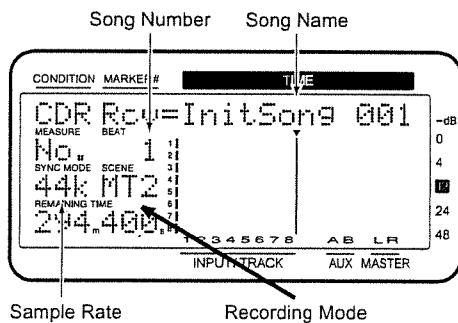
7. Press [YES].

If a CD-RW Disc which Contains Data is Placed

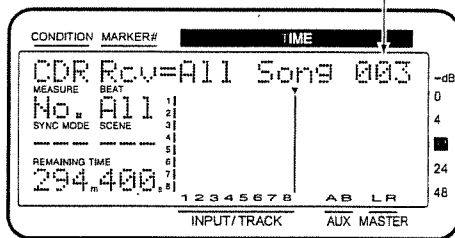
- 7-1. If a CD-RW disc which contains data is placed in the above step 2, "Finalized CD!" or "Not Blank CD!" appears in the display.
- 7-2. Press [Enter] and "CD-RW Erase?" appears.
- 7-3. Press [YES]. "CD-RW Erasing..." appears in the display and all the contents in the CD-RW disc is erased. If you do not wish to erase the data, press [NO], then place another CD-RW disc and press [YES].
- 7-4. When erase is finished, "Continue?" appears in the display. Press [YES]. If you do not wish to save the song data but only wish to erase the contents in the CD-RW disc, press [NO].
8. If the song holds a large amount of data, and cannot be contained on a single CD-RW disc, the disc is ejected, and the message "Insert Disc #" (# indicates the number in the order of insertion) appears in the display to check the total amount of necessary discs. Insert the next CD-RW disc and press [YES]. At this time, we recommend that you write the disc numbers on the labels so that you can keep track of the order in which the discs were inserted into the drive.
9. When copying over multiple CD-RW discs, "Insert Disc #" (# indicates the number in the order of insertion) appears in the display. Insert each of the discs once more in the proper order and press [YES].
10. When the CD-R backup procedure is finished, return to Play condition.

Loading Songs From CD-RW Discs

1. Select the disk (internal IDE hard disk) containing the song you want to load as the current drive.
2. Place the CD-R disc to which the song data has been backed up in the CD-RW drive.
3. Press [SONG] several times until "CD-R Recover?" appears in the display.
4. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
5. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
"CDR Rcv=" appears in the display.
6. Use the TIME/VALUE dial to select the song (only one song or all songs on the CD-RW disc) that you wish to load. To recover all songs from the current drive, select "All."



Total number of songs backed up to CD-R (3 songs)



7. Press [YES].
8. If you selected "All" in step 6, the display will indicate "INIT ***.* OK ?" (OK to initialize the disk drive?). "***.*" is the ID number and partition number of the recover destination disk drive. For example when recovering to partition 0 of the internal hard disk drive, the display would indicate "IDE:0."

9. If you wish to initialize the current drive and then recover, press [YES]. If at this point you press [YES], all songs saved on the internal hard disk will be lost. If you decide not to initialize, press [NO]. Normally you should press [NO].
10. Execute the load. When over multiple discs, the disc is ejected, "Insert Disc #" (# indicates the number in the order of insertion) appears in the display. Insert the next disc and press [YES].
11. When the CD-R recover procedure is finished, return to Play condition.

How to Erase the Data in the CD-RW Disc

It is impossible to write audio data to the CD-R discs in which the song data is saved. To write audio data to the finalized CD-RW discs, erase the existing data as follows.

1. Place the CD-RW disc which includes the data you wish to erase in the CD-RW drive.
2. Press [SONG] several times until "CD-R Backup?" appears in the display.
3. Press [YES] and "STORE Current?" appears.
4. Press [YES] to save the current song, or [NO] if not. If the current song is the demo song, press [NO]. "CDR Bak=" appears in the display.
5. Press [YES] and "Finalized CD!" or "Not Blank CD!" appears.
6. Press [ENTER (Yes)] and "CD-RW Erase?" appears.
7. Press [YES] and "CD-RW Erasing..." appears and the contents in the CD-RW disc is erased.
8. "Continue?" appears and press [NO].

Chapter 9 Use with MIDI Devices

This chapter describes the MIDI messages that can be handled by the VS-880EX and the operations that the VS-880EX can perform using MIDI messages.

For more detailed information about MIDI, please refer to "About MIDI" (Appendices p. 4).

Synchronizing with MIDI Sequencers

The VS-880EX can be operated in synchronization with a MIDI sequencer. Refer to the owner's manual for your sequencer in conjunction with this manual. There are two main ways to accomplish synchronization, **one is method using MTC (MIDI time code)** and **the other one is method using MIDI Clock**, with MIDI Clock further divided into two types, Sync Track and Tempo Map, either of which can be selected. Use the method that is appropriate for your situation.

? MTC (Appendices p. 124)

- Using MTC (MIDI time code) (p. 116)
- Using the sync track (p. 119)
- Using the tempo map (p. 121)

Items Necessary for Synchronization

- VS-880EX (1)
- Internal IDE hard disk (HDP88 series)
- Audio equipment to be connected to the MASTER jack, or stereo headphones
- External MIDI sequencer or computer sequencer software (such as Cakewalk Pro Audio)
- MIDI cables

Master and Slave

When synchronizing the VS-880EX with a MIDI sequencer, the device that sends, or transmits MTC or MIDI Clock and acts as the reference device is referred to as the **master**. Conversely, the device that receives the MTC or MIDI Clock signals from the controlling device is called the **slave**.

When using MTC, you can choose whether to have the MIDI sequencer be the master that controls the VS-880EX, or to have the VS-880EX be the master that controls the MIDI sequencer. In contrast, when you use MIDI Clock, whereas you can synchronize a MIDI sequencer from the VS-880EX (VS-880EX as master), it will not be possible to synchronize the VS-880EX from the sequencer (VS-880EX as slave).

Using MTC

This section explains how the VS-880EX can be synchronized with a MIDI sequencer that implements MTC (MIDI Time Code). When using MTC, you can choose to have the VS-880EX be the master that controls the MIDI sequencer, or to have the MIDI sequencer be the master that controls the VS-880EX.

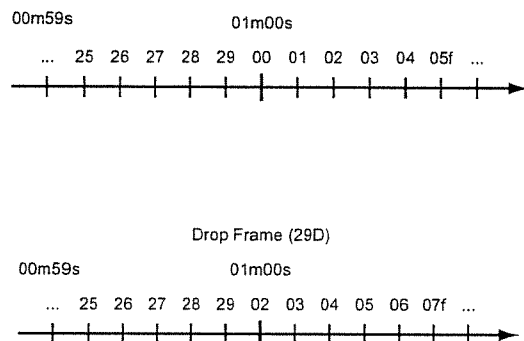
MTC Type

The VS-880EX can work with the following types of MTC. Check the specifications of the MIDI devices that you are using, and select the appropriate type of MTC on the VS-880EX.

- 30:** 30 frames per second non-drop format. This is used by audio devices such as analog tape recorders, and for NTSC format black and white video.
- 29N:** 29.97 frames per second non-drop format. This is used for NTSC format color video.
- 29D:** 29.97 frames per second drop format. This is used for NTSC format broadcast color video.
- 25:** 25 frames per second. This is used for SECAM or PAL format video, audio equipment, and film.
- 24:** 24 frames per second. This is used for video, audio devices, and film in the US.

Drop Frame and Non-Drop Frame

There are two types of time code used by NTSC format video cassette recorders, **drop**, in which the time code is not continuous, and **non-drop**, which features continuous time code. In drop, which is used for NTSC color video format, the first two frames of every minute are dropped, except for those at ten-minute intervals.



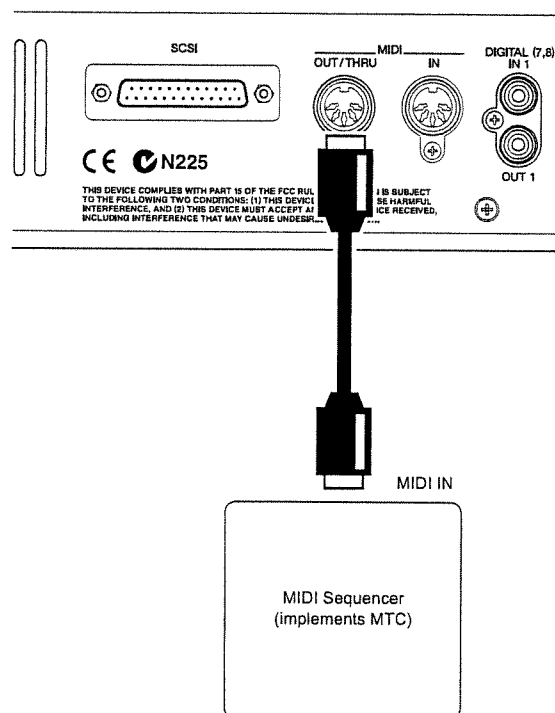
In most video and audio production, since formats with continuous frames are easier to deal with, non-drop is generally used. In contrast, in situations such as in broadcast, where the time code must match actual clock time, drop is used.

- ? **Frame** (Appendices p. 123)
- ? **NTSC Format** (Appendices p. 124)
- ? **SECAM Format/PAL Format** (Appendices p. 124)

Synchronization with the VS-880EX as the Reference (Master)

When you are having the VS-880EX act to control the MIDI sequencer, use the following procedure.

1. Connect the VS-880EX and the MIDI sequencer as shown below.



2. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
3. Press [YES].
4. Press PARAMETER [▶▶] several times until "SYS MID: MIDIThr=" appears in the display.
5. Rotate the TIME/VALUE dial.

MIDI Thru (MIDI Thru Switch)

This selects the function of the MIDI OUT/THRU connector. For now, select "Out."

Out: The connector transmits MIDI messages from the VS-880EX. Select this when you want to transmit metronome Note messages or mixer parameter settings (control change messages or exclusive messages).

Thru: MIDI messages received at the MIDI IN connector will be retransmitted from the connector without change.

Chapter 9 Use with MIDI Devices

6. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
7. Press [YES].
8. Press PARAMETER [▶▶] several times until "SYS Gen.=" appears in the display.
9. Rotate the TIME/VALUE dial.

Gen. (Generator)

This selects the type of synchronization signal that will be transmitted from the MIDI OUT connector. At this point, select "MTC."

Off: Synchronization signals are not transmitted.

MTC: MIDI Time Code is transmitted.

MIDIClk: MIDI Clock according to the Tempo Map is transmitted.

SyncTr: MIDI Clock data recorded on the sync track is transmitted.

10. Press PARAMETER [▶▶].
"SYS MTC Type=" appears in the display.

11. Rotate the TIME/VALUE dial.

MTC Type

This selects the MTC type (30, 29N, 29D 25, 24). Select the MTC that matches your MIDI sequencer.

12. Press [PLAY (DISPLAY)].
Return to Play condition.

13. Set your MIDI sequencer so that it can operate according to the MIDI Clock messages received from external devices, and set it so that it can play back MIDI song data. When playback begins on the VS-880EX, the MIDI sequencer begins playback as well.

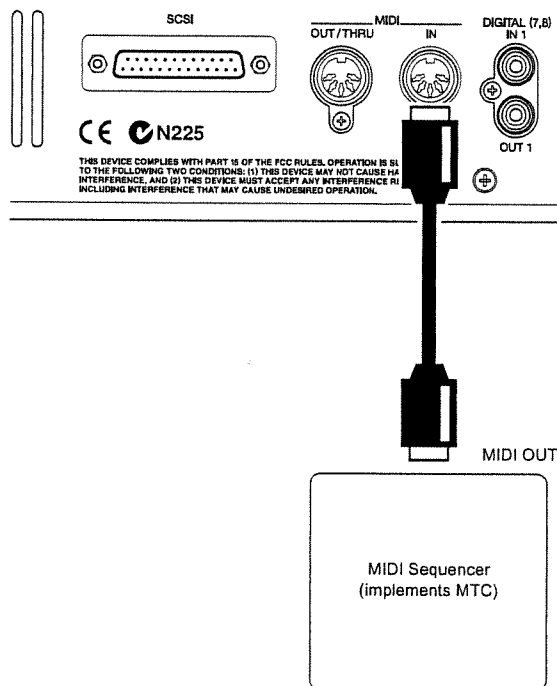
Synchronization with the MIDI Sequencer as the Reference (Slave)

When the MIDI sequencer is used as the basis to control the VS-880EX, use the following procedure.

When using MIDI sequencer software for personal computers

When using MIDI sequencer software for personal computers, then depending on the hardware specifications and the playing conditions, the MTC signal sent to the VS-880EX may be unstable. As much as possible, **try to synchronize using the VS-880EX as the master.**

1. Connect the VS-880EX and the MIDI sequencer as shown below.



2. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
3. Press [YES].
4. Press PARAMETER [▶▶] several times until "SYS Sync/Tempo ?" appears in the display.
5. Rotate the TIME/VALUE dial.

ErrLevel (Error Level)

This sets the interval (0–10) for checking MTC reception when synchronizing the VS-880EX as MTC is transmitted by an external MIDI device. When MTC is not sent continuously, the VS-880EX checks the MTC and cancels synchronization if there is an error. By setting a longer interval under such circumstances, synchronization can continue, even if there is a certain degree of error.

6. Press PARAMETER [▶▶].
"SYS MTC Type=" appears in the display.
7. Rotate the TIME/VALUE dial.

MTC Type

This selects the MTC type (30, 29N, 29D 25, 24). Select the MTC that matches your MIDI sequencer.

8. Press [PLAY (DISPLAY)].

Return to Play condition.

9. Set your MIDI sequencer to send MTC.

10. Hold down [SHIFT] and press [SYSTEM].

The "SYNC MODE" field of the display will show "EXT," indicating that the unit will now operate in synchronization with MTC received from a MIDI sequencer.

11. Press [PLAY].

The PLAY indicator blinks green, indicating that the VS-880EX is in MTC receive standby mode. When the MIDI sequencer begins playback, then playback also begins on the VS-880EX. During synchronization, the PLAY indicator are lit.

12. When you stop the MIDI sequencer, the VS-880EX will also stop.

The PLAY indicator blinks green.

13. Press [STOP].

The PLAY indicator goes off.

14. Hold down [SHIFT] and press [SYSTEM].

The "SYNC MODE" field of the display will show "INT," indicating that the unit will no longer operate in synchronization.

Synchronizing with an External MIDI Device

When the VS-880EX is running under the control of the MTC from an external MIDI device, you can synchronize the song's playback time and the MTC time. This time is called the **offset**. For example, if the MTC time is "01h00m00s00f00," and the song's time is "00h10m00s00f00," the "offset" is as follows.

(Offset)

= (MTC time) - (destined time of the song)

= (01h00m00s00f00) - (00h10m00s00f00)

= (00h50m00s00f00)

If the offset value turns out to be negative, add "24h00m00s00f00" to the MTC time before subtracting the destined time of the song. For example, if the MTC time transmitted is 00h00m50s00f00," and you want the song to play back at "00h01m00s00f00," then the offset works out as shown below.

(Offset)

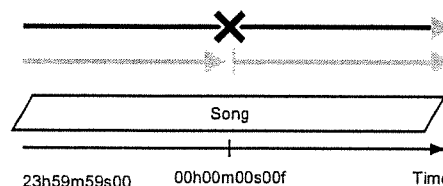
= (MTC time) - (destined time of the song)

= (00h00m50s00f00) - (00h01m00s00f00)

= ((24h00m00s00f00) + (00h00m50s00f00)) - (00h01m00s00f00)

= (23h59m50s00f00)

* With the VS-880EX, continuous playback from "23h59m59s29f99" to "00h00m00s00f00" does not correspond to (overnight mode). The song that crosses over "00h00m00s00f00" momentarily stops at "23h59m59s29f99" then resumes playback.



1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.

2. Press [YES].

3. Press PARAMETER [▶▶].

4. "TimeDispFmt=" appears in the display. Rotate the TIME/VALUE dial.

TimeDispFmt (Time Display Format)

Select one of the reference times (REL, ABS) that appear in the display. For now, choose "ABS."

REL: The starting time of the song is displayed as "00h00m00s00f00."

ABS: The time displayed includes the addition of the offset time.

5. Press PARAMETER [▶▶].

6. "Ofs=" appears in the display. Rotate the TIME/VALUE dial.

Ofs (Offset)

When the VS-880EX is running under the control of the MTC from an external MIDI device, you can synchronize the song's playback time and the MTC time. The offset settings range varies depending on the MTC type selected for the current song.

7. Press [PLAY (DISPLAY)].

Return to Play condition.

Using the Sync Track (Master)

If your MIDI sequencer supports Song Position Pointer messages, you can use the MIDI Clock to synchronize operations. There are two methods of synchronization using the MIDI Clock: one is using the sync track, and the other one is using the tempo map. Here is an explanation of how to control the MIDI sequencer from the VS-880EX using the sync track.

What is the Sync Track?

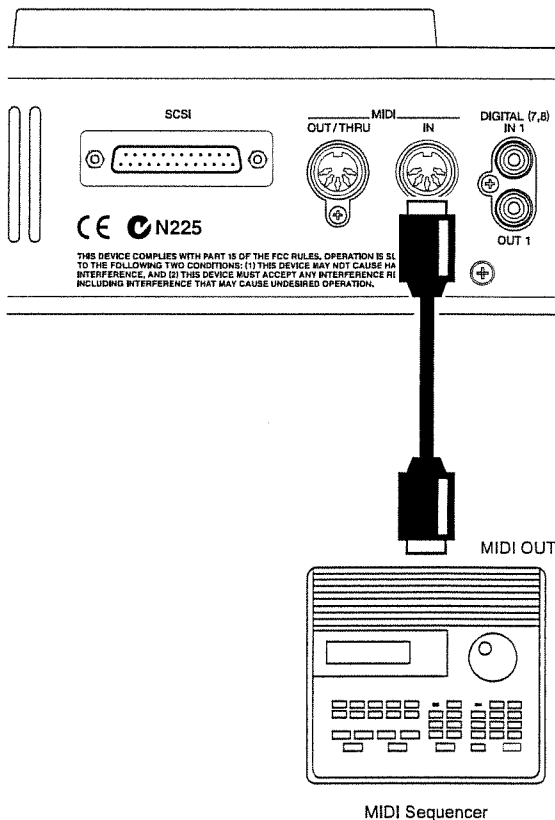
In addition to the tracks for recording audio signals, the VS-880EX has a separate track for recording MIDI Clock signals. This is called the **sync track**. Unlike conventional multi-track recorders, it is not necessary to reserve one of the audio tracks for recording the sync signal.

To use the sync track, first the MIDI clock of the MIDI song data to which you want to synchronize must first be recorded onto the sync track. Then, transmit the recorded MIDI clock data to the MIDI sequencer to synchronize the MIDI song data. This is a convenient method to use when the MIDI song data has been created earlier than the VS-880EX song.

In particular, when synchronizing to MIDI song data in which the tempo gradually increases or decreases, using the tempo map allows more precise following of tempo changes, compared to the tempo map in which tempo is set for each measure.

Recording MIDI Clock Messages

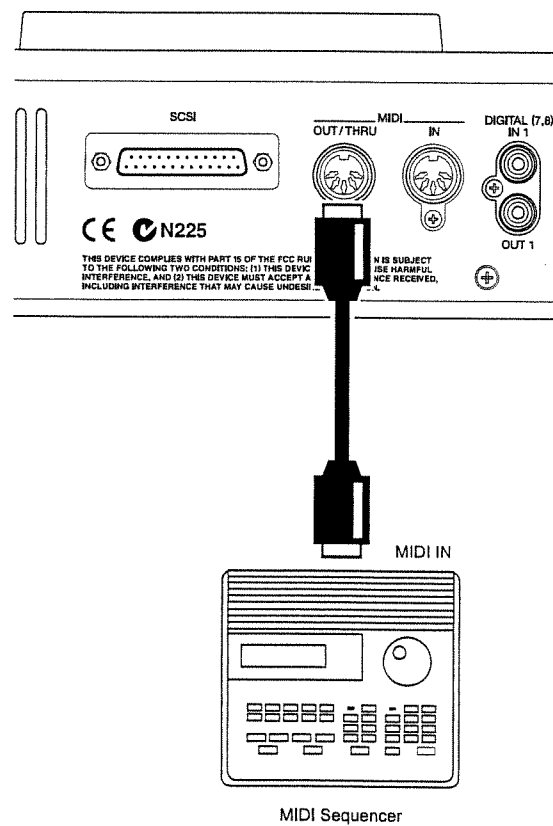
1. Connect the VS-880EX and the MIDI sequencer as shown below.



2. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
3. Press [YES].
4. Press PARAMETER [▶▶] several times until "SYS SYN: Sync Tr. Rec?" appears in the display.
5. Press [YES].
"Wait for Start" appears in the display, and the sync track is ready for record MIDI clock data.
6. Start playback of the MIDI song data.
The MIDI clock data is recorded on the sync track. While MIDI clock data is being recorded onto the sync track, the input sources can be monitored, but audio tracks cannot be recorded or played back.
7. When the MIDI song data is finished playing back, the VS-880EX automatically stops recording MIDI clock data. Return to Play condition.

Synchronized Operation

1. Connect the VS-880EX and the MIDI sequencer as shown below.



2. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
3. Press [YES].
4. Press PARAMETER [▶▶] several times until "SYS MID: MIDIThr=" appears in the display.
5. Rotate the TIME/VALUE dial.

MIDI Thru (MIDI Thru Switch)

This selects the function of the MIDI OUT/THRU connector. For now, select "Out."

Out: The connector transmits MIDI messages from the VS-880EX. Select this when you want to transmit metronome Note messages or mixer parameter settings (control change messages or exclusive messages).

Thru: MIDI messages received at the MIDI IN connector will be retransmitted from the connector without change.

6. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
7. Press [YES].
8. Press PARAMETER [▶▶] several times until "SYS Gen.=" appears in the display.
9. Rotate the TIME/VALUE dial.

Gen. (Generator)

This selects the type of synchronization signal that will be transmitted from the MIDI OUT connector. At this point, select "SyncTr."

Off: Synchronization signals are not transmitted.

MTC: MIDI Time Code is transmitted.

MIDIClk: MIDI Clock according to the Tempo Map is transmitted.

SyncTr: MIDI Clock data recorded on the sync track is transmitted.

10. Press [PLAY (DISPLAY)].

Return to Play condition.

11. Set your MIDI sequencer so that it can operate according to the MIDI Clock messages received from external devices, and set it so that it can play back MIDI song data. When playback begins on the VS-880EX, the MIDI sequencer begins playback as well.

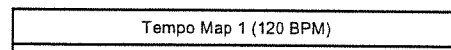
Using the Tempo Map (Master)

If your MIDI sequencer supports Song Position Pointer messages, you can use the MIDI Clock to synchronize operations. There are two methods of synchronization using the MIDI Clock: one is using the sync track, and the other one is using the tempo map. This section gives an explanation of how to control the MIDI sequencer from the VS-880EX using the tempo map.

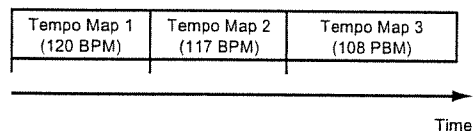
What is a Tempo Map?

A tempo map is a song's measure, beat, and tempo information. Transmitting this information to MIDI sequencers and other devices, it can be used in synchronizing operations with external MIDI devices. The tempo map sets tempo changes for each measure, so you can record information specifying changes in rhythm and tempo to be played from any designated measure. With the VS-880EX, tempo maps are numbered sequentially from the beginning of the song, with Tempo Map 1 first, followed by Tempo Map 2, Tempo Map 3, and so on. Tempo Map 1 is already specified at the beginning of the song, and determines the initial tempo of the song. To change the tempo at a subsequent measure, create a new tempo map at each location where you want the tempo to change. Up to 50 tempo maps can be created.

Example 1: Song with no tempo changes



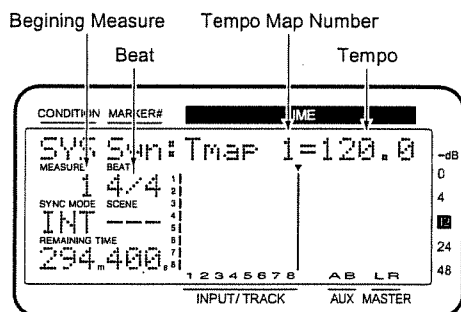
Example 2: Song with tempo changes occurring during the song



Creating a Tempo Map

1. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Syn: Tmap1=" appears in the display.

- Tempo Map 1 (the song's initial tempo) is displayed. The measure appearing in the display and its beat, metronome sound, and MIDI Clock transmitted from the VS-880EX follow the tempo map settings. The following example indicates that a tempo map with time signature of 4/4 and quarter note=120 begins at measure 1.



- Press CURSOR [▶].
The cursor will move to the tempo display.

- Rotate the TIME/VALUE dial.

(Tempo)

Sets the tempo map tempo (25.0–250.0).

- Press CURSOR [▶].
The cursor will move to the measure display ("MEASURE" field).
- Rotate the TIME/VALUE dial.

Measure (Measure)

Selects the beginning measure (1–999) for each tempo map.

* *Tempo Map 1 is the song's initial tempo. You cannot be changed or deleted the beginning measure setting of "1."*

- Press CURSOR [▶].
The cursor will move to the time signature display ("BEAT" field).
- Rotate the TIME/VALUE dial.

Beat

This sets the tempo map time signature (1/1–8/1, 1/2–8/2, 1/4–8/4, 1/8–8/8).

- If you wish to change the tempo during the song, press CURSOR [▶].
The cursor will move to the tempo map number display.

- Rotate the TIME/VALUE dial clockwise.
"<New>" appears in the display.

- Press [YES].

- Repeat steps 4–13 to specify the tempo map. By rotating the TIME/VALUE dial counterclockwise in step 12, you can modify a previously-specified tempo/starting measure/time signature.

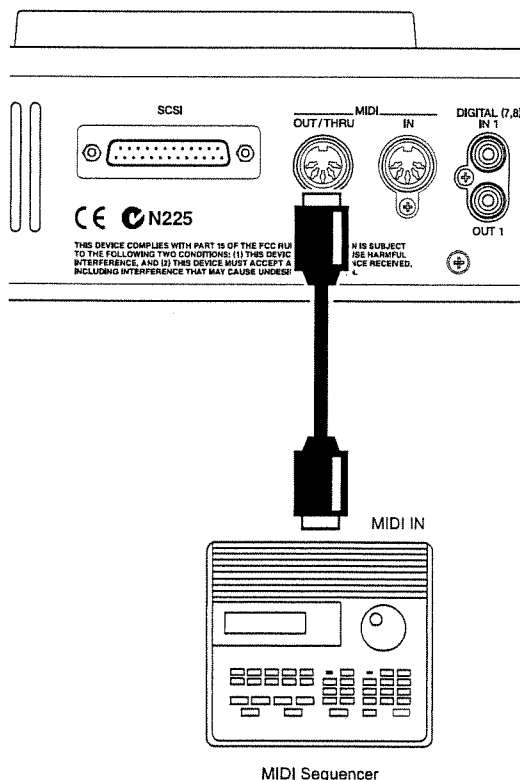
Limitations on changing the starting measure

Tempo maps are numbered from the beginning of the song as tempo map 1, tempo map 2, tempo map 3, etc. This means that it is not possible to modify the starting measure of a tempo map to make it earlier than the starting measure of the previous tempo map, or later than the starting measure of the following tempo map. For example if tempo map 2 has a starting measure of "8" and tempo map 4 has a starting measure of "16," the starting measure of tempo map 3 can be modified only in the range of "9–15."

- When you are finished making tempo map settings, press [PLAY (DISPLAY)].
Return to Play condition.

Synchronized Operation

- Connect the VS-880EX and the MIDI sequencer as shown below.



2. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
3. Press [YES].
4. Press PARAMETER [▶▶] several times until "SYS MID: MIDIThr=" appears in the display.
5. Rotate the TIME/VALUE dial.

MIDI Thru (MIDI Thru Switch)

This selects the function of the MIDI OUT/THRU connector. For now, select "Out."

Out: The connector transmits MIDI messages from the VS-880EX. Select this when you want to transmit metronome Note messages or mixer parameter settings (control change messages or exclusive messages).

Thru: MIDI messages received at the MIDI IN connector will be retransmitted from the connector without change.

6. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
7. Press [YES].
8. Press PARAMETER [▶▶] several times until "SYS Gen.=" appears in the display.
9. Rotate the TIME/VALUE dial.

Gen. (Generator)

This selects the type of synchronization signal that will be transmitted from the MIDI OUT connector. At this point, select "MIDIClk."

Off: Synchronization signals are not transmitted.

MTC: MIDI Time Code is transmitted.

MIDIClk: MIDI Clock according to the Tempo Map is transmitted.

SyncTr: MIDI Clock data recorded on the sync track is transmitted.

10. Press [PLAY (DISPLAY)].

Return to Play condition.

11. Set your MIDI sequencer so that it can operate according to the MIDI Clock messages received from external devices, and set it so that it can play back MIDI song data. When playback begins on the VS-880EX, the MIDI sequencer begins playback as well.

Various Operations Related to Synchronized Operation

There may be times when you want to use MIDI Clock to synchronize with an external MIDI sequencer or other device, even without recording using the metronome. In such instances, to synchronize with the tempo of the recorded song, first set a Marker. You can then create a sync track or tempo map beginning at that Marker.

Setting Markers Along with the Tempo

1. Press [ZERO].
2. Press [PLAY] to begin playback of the song.
3. While listening to the song, press [TAP] at the downbeat at the each beat.
4. When you have finished setting the Markers, press [STOP].

** To correctly place Markers on the downbeats of other song, we recommend using the Preview and Scrub functions.*

Creating a Sync Track from the Marker

A sync track can be generated from markers that were assigned according to the tempo of a previously recorded performance. This is convenient when you have already recorded a performance of an acoustic instrument such as guitar or vocal, and now you wish to synchronize a MIDI sequencer etc. to the recording.

1. Press [SYSTEM] several times until "SYS Sync/Tempo?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MIDI PRM ?" appears in the display.
4. Press [YES].
5. Rotate the TIME/VALUE dial.

CV (Convert)

Here you can select how the sync track / tempo map will be created. For this example, select "CV1."

CV1=Tap→S.Tr: Create the sync track from mark points.

CV2=Tap→T.Map: Create the tempo map from mark points.

CV3=S.Tr→T.Map: Create the tempo map from the sync track.

CV4=Time→S.Tr: Automatically create the sync track.

6. Press **PARAMETER [▶▶]**.

"SYS CV:Beat=" appears in the display.

7. Rotate the **TIME/VALUE** dial.

Beat

Specify the number of beat (1/1-8/1, 1/2-8/2, 1/4-8/4, 1/8-8/8) in one measure.

8. Press **PARAMETER [▶▶]**.

"SYS CV:Tap Beat=" appears in the display.

9. Rotate the **TIME/VALUE** dial.

Tap Beat

Specify the number of marks (1-8) in each measure.

10. Press **[YES]**.

11. A confirmation message asking if you want to save the changes to the sync track appears in the display. If you want to save the changes, press **[YES]**. If you wish to cancel, then press **[NO]**.

12. When the sync track has been completed, "--- Complete ---" appears in the display.

13. Press **[PLAY (DISPLAY)]**.

Return to Play condition.

Creating a Sync Track from the Marker

A sync track can be generated from markers that were assigned according to the tempo of a previously recorded performance. This is convenient when you have already recorded a performance of an acoustic instrument such as guitar or vocal, and now you wish to synchronize a MIDI sequencer etc. to the recording.

1. Press **[SYSTEM]** several times until "SYS Sync/Tempo?" appears in the display.

2. Press **[YES]**.

3. Press **PARAMETER [▶▶]** several times until "SYS Sync.Tr Cnv?" appears in the display.

4. Press **[YES]**.

5. Rotate the **TIME/VALUE** dial.

CV (Convert)

Here you can select how the sync track / tempo map will be created. For this example, select "CV2."

CV1=Tap→S.Tr: Create the sync track from mark points.

CV2=Tap→T.Map: Create the tempo map from mark points.

CV3=S.Tr→T.Map: Create the tempo map from the sync track.

CV4=Time→S.Tr: Automatically create the sync track.

6. Press **PARAMETER [▶▶]**.

"SYS CV:Beat=" appears in the display.

7. Rotate the **TIME/VALUE** dial.

Beat

Specify the number of beat (1/1-8/1, 1/2-8/2, 1/4-8/4, 1/8-8/8) in one measure.

8. Press **PARAMETER [▶▶]**.

"SYS CV:Tap Beat=" appears in the display.

9. Rotate the **TIME/VALUE** dial.

Tap Beat

Specify the number of marks (1-8) in each measure.

10. Press **[YES]**.

11. A confirmation message asking if you want to save the changes to the tempo map appears in the display. If you want to save the changes, press **[YES]**. If you wish to cancel, then press **[NO]**.

12. When the tempo map has been completed, "--- Complete ---" appears in the display.

13. Press **[PLAY (DISPLAY)]**.

Return to Play condition.

Creating a Tempo Map from a Sync Track

You can create a tempo map from sync track stored in the VS-880EX. This is convenient when you want to change a sync track's MIDI Clock with the VS-880EX.

1. Press **[SYSTEM]** several times until "SYS Sync/Tempo?" appears in the display.

2. Press **[YES]**.

3. Press **PARAMETER [▶▶]** several times until "YS Sync.Tr Cnv?" appears in the display.

4. Press **[YES]**.

5. Rotate the **TIME/VALUE** dial.

CV (Convert)

Here you can select how the sync track / tempo map will be created. For this example, select "CV3."

- CV1=Tap→S.Tr:** Create the sync track from mark points.
- CV2=Tap→T.Map:** Create the tempo map from mark points.
- CV3=S.Tr→T.Map:** Create the tempo map from the sync track.
- CV4=Time→S.Tr:** Automatically create the sync track.

6. Press **PARAMETER** [▶▶].
"Sync Trk Beat=" appears in the display.

7. Rotate the **TIME/VALUE** dial.

Sync Trk Beat (Sync Track Beat)

Specify the number of beats (1/1–8/1, 1/2–8/2, 1/4–8/4, 1/8–8/8) per measure in the MIDI clock that is recorded in the sync track.

8. Press **[YES]**.
9. A confirmation message asking if you want to save the changes to the tempo map appears in the display. If you want to save the changes, press **[YES]**. If you wish to cancel, then press **[NO]**.
10. When the tempo map has been completed, "--- Complete ---" appears in the display.
11. Press **[PLAY (DISPLAY)]**.
Return to Play condition.

Creating a Sync Track Automatically

You can automatically create a sync track by specifying the start and end times of the song, and the number of measures that it contains. This is convenient when you already know the length of the song, such as with commercials.

- Press **[SYSTEM]** several times until "SYS Sync/Tempo?" appears in the display.
- Press **[YES]**.
- Press **PARAMETER** [▶▶] several times until "SYS Sync.Tr Cnv?" appears in the display.
- Press **[YES]**.
- Rotate the **TIME/VALUE** dial.

CV (Convert)

Here you can select how the sync track / tempo map will be created. For this example, select "CV4."

- CV1=Tap→S.Tr:** Create the sync track from mark points.
- CV2=Tap→T.Map:** Create the tempo map from mark points.
- CV3=S.Tr→T.Map:** Create the tempo map from the sync track.
- CV4=Time→S.Tr:** Automatically create the sync track.

6. Press **PARAMETER** [▶▶].
"Start Time=" appears in the display.

7. Rotate the **TIME/VALUE** dial.

Start Time

Specify the song start time.

8. Press **PARAMETER** [▶▶].
"End Time=" appears in the display.
9. Rotate the **TIME/VALUE** dial.

End Time

Specify the song end time.

10. Press **PARAMETER** [▶▶].
"Measure=" appears in the display.
11. Rotate the **TIME/VALUE** dial.

Measure

Specify the number of measures (1–999) within a specified time.

12. Press **PARAMETER** [▶▶].
"Beat=" appears in the display.
13. Rotate the **TIME/VALUE** dial.

Beat

Specify the number of beat (1/1–8/1, 1/2–8/2, 1/4–8/4, 1/8–8/8) in one measure.

14. Press **[YES]**.
15. A confirmation message asking if you want to save the changes to the sync track appears in the display. If you want to save the changes, press **[YES]**. If you wish to cancel, then press **[NO]**.
16. When the sync track has been completed, "--- Complete ---" appears in the display.
17. Press **[PLAY (DISPLAY)]**.
Return to Play condition.

Delaying Sync Track and Tempo Map Start Times

Usually, a sync track or tempo map is created with "00h00m00s00f00" as the beginning of the song. However, recording usually doesn't actually start from "00h00m00s00f00." In this kind of situation, you can determine how much later recording begins after the start of the song. This time is referred to as **offset**. For example, if you want recording to begin ten seconds after the start of the song (with time to spare), set the offset time to "00h00m10s00f00."

** During recording or playback, when the beginning of a sync track or tempo map is reached, the start message is sent from the MIDI OUT connector. This is convenient when you wish to synchronize operation with an external MIDI sequencer.*

1. Press [SYSTEM] several times until "SYS Sync/Tempo?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Ofs=" appears in the display.
4. Rotate the TIME/VALUE dial.

Ofs (Offset)

Specify the time at which the sync track/tempo map will begin.

Using [NUMERICS]

[NUMERICS] allows you to use the ten LOCATOR buttons as numeric keys to input numbers directly. Refer to "Directly Inputting Numeric Characters" (p. 153).

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Use with a MIDI Controller

The VS-880EX can transmit its mixer settings and functions as MIDI messages. Conversely, MIDI messages from an external MIDI controller can be used to control the VS-880EX's track status and mixer settings.

Switching Track Status

Switching Track Status

You can use MIDI control change messages to switch the status of each track (track status). MIDI channels 1-8 correspond to Tracks 1-8 respectively. Use controller number 29 to switch the track status.

Depending on the value of controller number 3, the track status changes as shown below.

When stopped

VALUE	0-31	32-63	64-95	96-127
STATUS	MUTE →OFF	MUTE →PLAY	MUTE →REC	MUTE →SOURCE
	PLAY →MUTE	PLAY →PLAY	PLAY →REC	PLAY →SOURCE
	REC →MUTE	REC →PLAY	REC →REC	REC →SOURCE
	SOURCE →MUTE	SOURCE →PLAY	SOURCE →REC	SOURCE →SOURCE

During playback or recording

VALUE	0-31	32-63	64-95	96-127
STATUS	-(*)	MUTE →PLAY	-(*)	-(*)
	PLAY →MUTE	PLAY →PLAY	-(*)	-(*)
	-(*)	-(*)	REC →REC	REC →SOURCE (*2)
	SOURCE →MUTE	-(*)	SOURCE →REC (*2)	SOURCE →SOURCE

(*1) Ignored.

(*2) Cannot be switched while recording. Also, "SOURCE" here indicates "the status in which the track indicator blinks alternately red and orange," and is valid only when Record Monitor is set to "AUTO" (p. 168).

Switching Scenes

You can switch Scenes with MIDI Program Change messages sent by the external MIDI controller.

During Playback of a Song

Scenes cannot be switched during playback of a song. Because of this, the VS-880EX stops momentarily if it receives a program change message during playback instructing it to change scenes. While it is stopped, the scene is switched, and then playback resumes.

Furthermore, during recording, only effect program change messages can be received. Scenes cannot be switched during recording.

1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MID:P.C.Scne=" appears in the display.
4. Rotate the TIME/VALUE dial.

P.C.Scene (Program Change Scene)

With this set to "On," the scene is changed when program change messages are received. For now, select "On."

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Use MIDI channel 15 for switching scenes. The relationship between the program change number received by the VS-880EX and the Scene Number it switches to is shown below.

Program Number	Scene Number
1-8	1-8

* For more detailed information, please refer to "MIDI Implementation" (Appendices p. 74).

Switching Effects

You can use MIDI control change messages transmitted from an external MIDI controller to switch effects.

1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MID:P.C.Eff=" appears in the display.
4. Rotate the TIME/VALUE dial.

P.C.Eff (Program Change Effect)

With this set to "On," the effect is switched when program change messages are received. For now, select "On."

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Use MIDI channel 1 to switch effect 1, and MIDI channel 2 to switch effect 2. The relationship between the bank number received by the VS-880EX and the Effect Patch Number it switches to is shown below.

Bank No.MSB	Bank No.LSB	Program No.	Patch No.
0	0	0-99	Preset A00-A99
0	1	0-99	Preset B00-B99
0	2	0-99	User U00-U99
0	3	0-99	Prset C00-C09

* For more detailed information, please refer to "MIDI Implementation" (Appendices p. 74).

Adjusting Effects

You can use MIDI control change messages transmitted from an external MIDI controller to control effects.

1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MID:C.C.Eff=" appears in the display.
4. Rotate the TIME/VALUE dial.

C.C.Eff (Control Change Effect)

With this set to "On," the effect is adjusted when control change messages are received. For now, select "On."

5. Press [PLAY (DISPLAY)].
Return to Play condition.

* If you wish to use control change messages to switch effects, use NRPN (Non Registered Parameter Numbers). For more detailed information, please refer to "MIDI Implementation" (Appendices p. 74).

Chapter 10 Use with a DAT Recorder (DAT Backup)

This chapter explains the procedures for using a DAT recorder in conjunction with the VS-880EX. Refer to the owner's manual for your DAT recorder as you read this manual.

Before Backing Up with DAT

With a DAT recorder connected to the VS-880EX's DIGITAL OUT connector (coaxial or optical), song data created on the VS-880EX can be saved using a DAT recorder. This procedure is referred to as backup. Conversely, the procedure of loading the previously backed up song data into the VS-880EX is referred to as recover. The song data that is backed up includes the data of all V-tracks, and song settings such as locate points, mark points, and scene settings. You should make backups of your data as a precaution against unforeseen problems, or when your disk drive is full and no more recording is possible. Furthermore, since DAT tapes are easily transported, this is convenient when you wish to exchange song data with a friend who also has a VS-880EX, or when you have a VS-880EX both at home and in the studio. We recommend that important data be backed up onto multiple tapes.

? DAT (Appendices p. 123)

* *Incorrectly conducting the DAT Backup procedure may result in loss of data. Roland Corporation assumes no liability concerning such loss of data. Furthermore, Roland does not warrant any copied data, regardless of the performance or condition of the DAT recorder.*

Backing Up Song Data with a CD-R Drive or Zip Drive

You can use a CD-R drive or Zip drive to back up song data from the VS-880EX. Song data backed up onto a CD-R disc cannot be overwritten. Thus, this method is appropriate for backing up completely finished songs or other such data. Song data backed up on Zip disks can be overwritten any number of times, but considering the time required for saving data, and because of reliability issues, it is more convenient to back up data using a Zip drive. Roland recommends backing up data (Song Copy) with a Zip drive.

Items Necessary for DAT Backup

- VS-880EX (1)
- Internal IDE hard disk (HDP88 series)
- DAT recorder (1)
- DAT tape (as many as needed)
- Digital connection cables (coaxial or optical)

About the Devices Used in DAT Backup

DAT recorder:

You can use a conventional DAT recorder.

Other digital recording devices, including MD recorders or DCC recorders, cannot be used to back up data. Furthermore, you cannot back up data if you are using a DAT recorder, for example one featuring external digital signal processing, whose playback data differs from the data as it was recorded.

* *Portable DAT recorders may require a special adapter when connecting to the VS-880EX. Please check the owner's manual for your DAT recorder, or consult your dealer or service center to see what your model may require.*

Tape:

You can use a conventional DAT tapes.

However, 180-minutes tapes are very thin, and may easily stretch or become tangled in the recorder. Avoid using 180-minutes tapes.

When you need more than one tape to do the backup, prepare whatever number of tapes you need, making sure that all of the tapes feature the same recording time. It is recommended that you write the numbers of the tapes to indicate the order in which they are backed up.

Audio equipment:

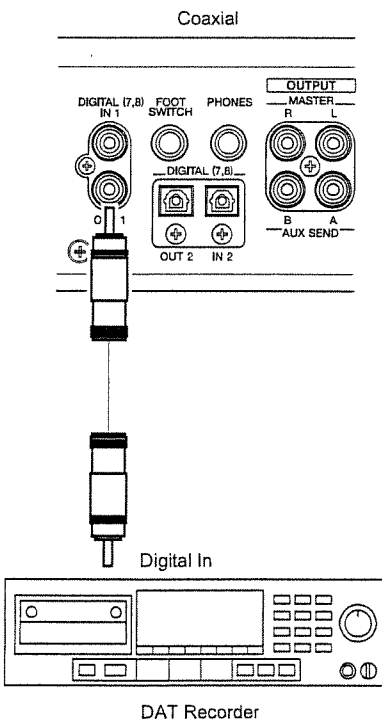
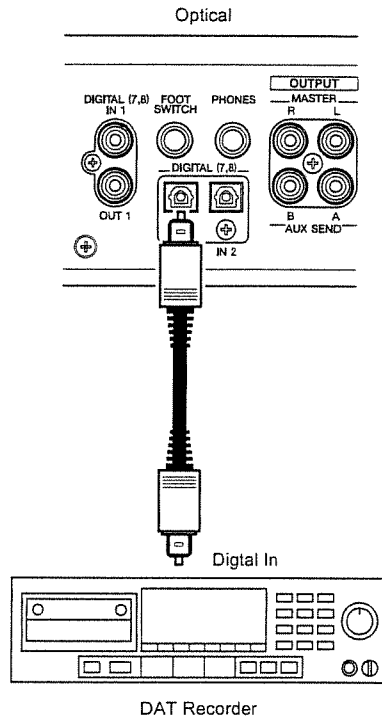
During DAT backups, no sound is output from the VS-880EX analog output jacks.

Additionally, turn down the volume of any connected audio devices at minimum level while song data is being backed up. The song data sent to the DAT recorder from the VS-880EX is a particular signal recorded on the disk. Monitoring this with the DAT recorder's volume raised may result in damage to your speakers, and may adversely affect your hearing.

Saving Song Data to a DAT Recorder (Backup)

Use the following procedure to back up the song data on the current drive.

1. Connect the VS-880EX and the DAT recorder as shown below.



2. Set the DAT recorder so that it is able to record digital signals.

* Normally, the sample rate at which song data is transmitted is set at 48 kHz. This sample rate has no relation to the sample rate of the song data. If your DAT recorder requires you to set the sample rate, set it to 48 kHz.

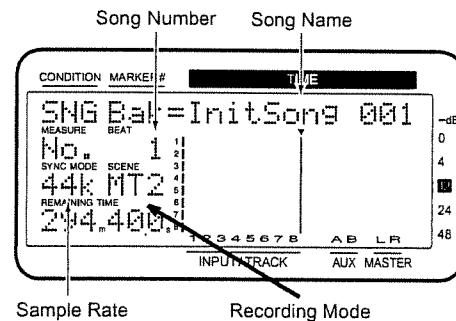
3. Press [SONG] several times until "SNG DAT Backup ?" appears in the display.

4. Press [YES].

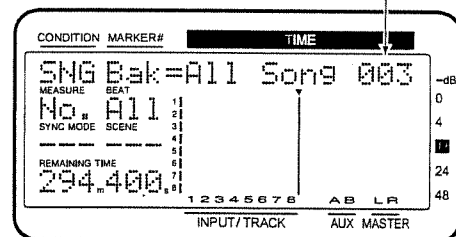
"STORE Current?" (Store the current song?) appears in the display.

5. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**

6. "SNG Bak=" appears in the display. Use the TIME/VALUE dial to select the song that you wish to save. To save all songs from the current drive, select "All."



Total number of songs in the current drive (3 songs)



7. Press PARAMETER [▶▶].

"Tape Len=" appears in the display.

8. Rotate the TIME/VALUE dial.

Tape Len (Tape Length)

Specify the interval at which backup will be paused. Set this so that the interval is no less than about five minutes shorter than the length of tape on which you are recording. When using tapes with different recording times, set this to the recording time of the shortest tape.

Chapter 10 Use with a DAT Recorder (DAT Backup)

9. Press **PARAMETER** [▶▶].

"Backup Wait=" appears in the display.

10. Rotate the **TIME/VALUE** dial.

Backup Wait

When this is set to "On," the data transmission speed will be slower. Turn this on when using a disk drive (such as a Zip drive) whose data read/write speed is slower. When this is set to "On," although it takes longer for the backup to finish, problems arising from the data transfer (such as data loss) are minimized. Normally, this is set to "Off."

11. Press **PARAMETER** [▶▶].

"Sample Rate=" appears in the display.

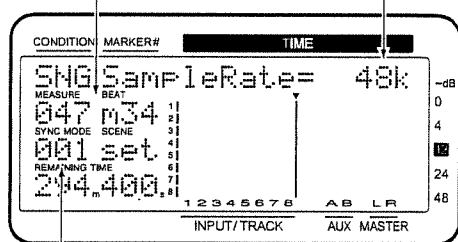
12. Rotate the **TIME/VALUE** dial.

Sample Rate

This sets the sample rate (48 kHz, 44.1 kHz) during DAT backup. This sample rate has no relation to the sample rate of the song data. Normally, this is set to 48 kHz.

13. The approximate time it will take and the number of tapes needed to back up the data are indicated in the display. Please prepare the necessary number of tapes.

Required time (47 minutes 34 seconds) Sample Rate



Required number of tapes (1 tape)

14. Press **PARAMETER** [▶▶].

"D.Out Sel=" appears in the display.

15. Rotate the **TIME/VALUE** dial.

D.OUT Sel (Digital Out Select)

Select either "DIGOUT1" (coaxial) or "DIGOUT2" (optical) if you are going to back up data using the DIGITAL OUT connector.

16. Press **[YES]**.

A confirmation message appears in the display.

17. Press **[YES]**.

"Please Rec DAT" appears in the display.

18. Put the DAT recorder in record standby, and press **[YES]** once more.

Backup will begin.

** If you wish to cancel the backup, then press [CANCEL (NO)]. This cancels the process, even if done during the backup itself. However, the song data recorded up to that point cannot be loaded into the VS-880EX.*

19. If you cannot back up everything on one tape, the operation is carried out for the length of time designated in "Tape Len." Insert the next tape into the DAT recorder and again put it in record standby, then press **[YES]**.

The backup procedure continues in this fashion. At this time, we recommend that you write the tape numbers on the labels in the order they are backed up.

20. When the backup procedure is finished, "Please Stop DAT" appears in the display. Stop the DAT recorded and press **[YES]**.

21. Press **[PLAY (DISPLAY)]**.

Return to Play condition.

** To check whether or not a backup has been performed correctly, we recommend that you carry out the Verify procedure (p. 134).*

Disk Capacity Needed for Backup

One 60-minutes tape can back up approximately 330 MB of song data. For example, you need four 60-minutes (or two 120-minutes) tapes to back up 1000 MB of song data. However, the disk space available for each song decreases as the number of songs save increases. Look at the display to see the number of tapes needed to do the backup.

Time Needed for Backup

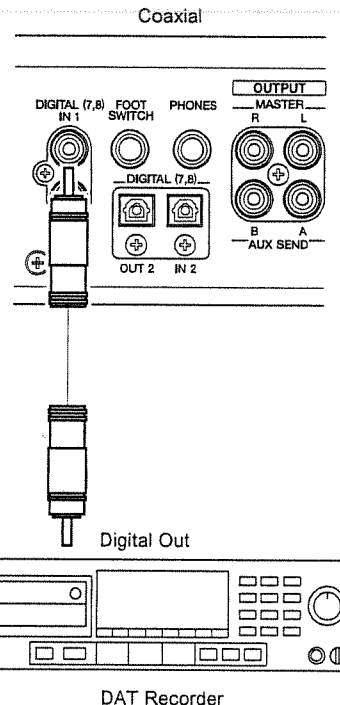
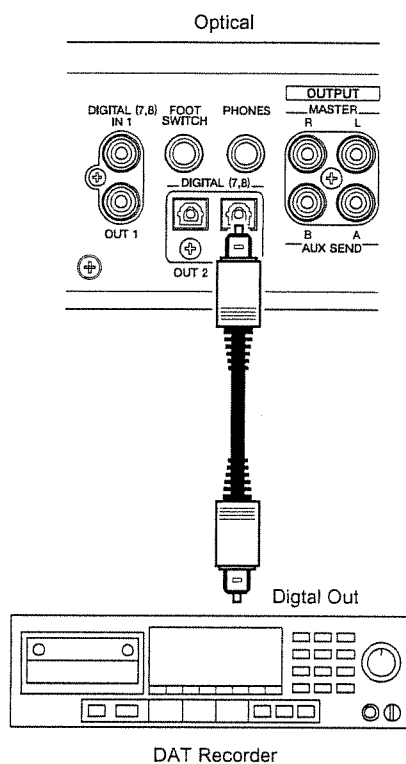
It takes about 60 minutes to back up 330 MB of song data. For example, backing up 1000 MB of data takes about 190 minutes. However, the higher the number of songs backed up, the longer it takes.

Loading Performance Data from a DAT Recorder (Recover)

Use the following procedure to load song data that was backed up on a DAT recorder. If two or more songs were saved together during the backup, the data of all songs will be loaded.

* You can recover VS-880 song data backed up using DAT backup. For more detailed information, please see "Compatibility" (p. 136).

1. Connect the DAT recorder to the VS-880EX as following.



2. Insert the tape which contains the song data into the DAT recorder. If the song data is backed up on two or more tapes, insert the first tape.
3. Prepare the tape for playback from the beginning of the song data.
4. Press [SONG] several times until "SNG DAT Recover?" appears in the display.
5. Press [YES]. "STORE Current?" (Store the current song?) appears in the display.
6. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
7. "D.IN Sel =" appears in the display. Rotate the TIME/VALUE dial.

D.IN Sel (Digital In Select)

Select either "DIGIN1" (coaxial) or "DIGIN2" (optical) if you are going to recover data using the VS-880EX's DIGITAL IN connector.

8. Press PARAMETER [▶▶]. "Recover Ready?" appears in the display.
9. Press [YES].

10. The display will indicate "Init ***:* OK ?" (OK to initialize the current drive?). "***:*" will show "IDE:*" for the internal hard disk, or "SC0:~SC7:*" for an external drive (the number is the SCSI ID number). The number following the disk drive name is the partition number. For example when recovering to partition 0 of the internal hard disk, the display will indicate "IDE:0."
11. If you wish to initialize the current drive and then recover, press [YES]. If at this point you press [YES], all songs saved on the internal hard disk will be lost. If you decide not to initialize, press [NO].
12. "Please Play DAT" appears in the display. Put the DAT recorder in play mode.
13. Load the data. If you have backed up the data to multiple tapes, then the operation is suspended when the end of each tape is reached. Insert the number tape indicated in the display, press [YES], and start the DAT recorder playing again.
14. When the recover procedure is finished, "Please Stop DAT" appears in the display. Stop the DAT recorder, then press [YES].
15. Press [PLAY (DISPLAY)].
Return to Play condition.

When Canceling the Recover Operation

You can stop the recover operation by pressing [EXIT (NO)] during the recover. Moreover, when there is an error in song data backed up on a tape, the recover operation is temporarily halted. In such instances, you can choose whether to leave or delete the (unfinished) song data recovered up to that point.

** This procedure **does not correct the disk error**, but tries to restore the song data while keeping as much possible of the non-error data. Depending on the location in which the error occurred, some noises may generated or settings for mixer, tempo map and sync track may be lost.*

** Loud noises may damage your audio equipment such as amplifier and speakers. Please make sure to turn down the headphones level and master volume of the VS-880EX when you check errors in the song data.*

Canceling a DAT Recovery Operation in Progress

1. Press [EXIT (NO)] during the DAT recovery. Recovery is stopped, and "Delete Err Song?" (Delete the song containing the error?) appears in the display.
2. If you would like to delete from the hard disk the song data that stopped the recovery operation, press [YES]. If you would like to keep it as it is though the recovery is not completed, press [NO].

When an Error is Found in the Song Data

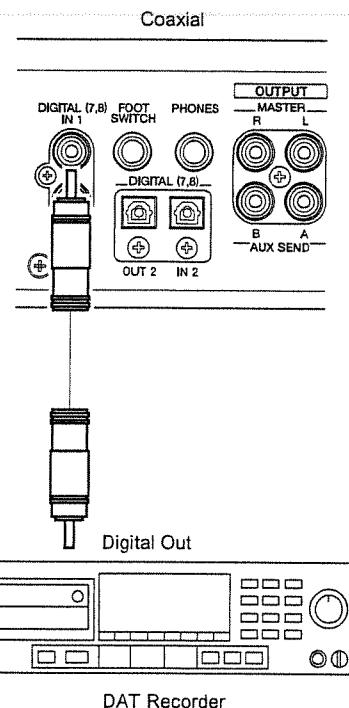
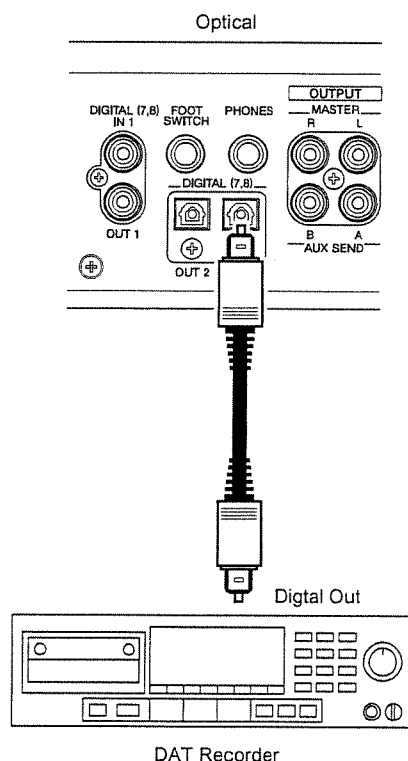
1. If an error is found in the song data which was recovered with the DAT recovery operation, "Recover Err Retry?" (An error was found. Retry the song?) appears in the display.
2. If you want to try to recover the data, press [YES]. If you want to cancel the recovery, press [NO].
3. If you press [NO] in Step 2, "Delete Err Song?" then appears in the display.
4. If you would like to delete the song data with the error from the hard disk, press [YES]. If you would like to keep it as it is though the error is included, press [NO].

Checking Names of Saved Performance Data (Name)

This operation lets you check the names of song data that was saved to a DAT tape. Even if you have saved the data of two or more songs in a single backup operation, you can check the name of each song.

This operation also allows you to load selected song data into the VS-880EX. When the recover operation is used, the data for all songs which were saved together by the backup operation are loaded. In contrast, with the Name procedure, only the song data that you specify is loaded.

1. Connect the DAT recorder to the VS-880EX as following.



2. Insert the tape which contains the song data into the DAT recorder. If the song data is backed up on two or more tapes, insert the first tape.
3. Prepare the tape for playback from the beginning of the song data.
4. Press [SONG] several times until "SNG DAT Recover?" appears in the display.
5. Press [YES]. "STORE Current?" (Store the current song?) appears in the display.
6. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
7. "D.IN Sel =" appears in the display. Rotate the TIME/VALUE dial.

D.IN Sel (Digital In Select)

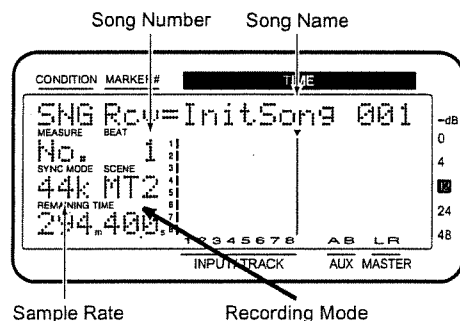
Select either "DIGIN1" (coaxial) or "DIGIN2" (optical) if you are going to recover data using the VS-880EX's DIGITAL IN connector.

8. Press PARAMETER [▶▶] twice. "Name Ready?" appears in the display.
9. Press [YES]. "Please Play DAT" appears in the display.
10. Put the DAT recorder in play mode. This executes the loading of the song name.

Chapter 10 Use with a DAT Recorder (DAT Backup)

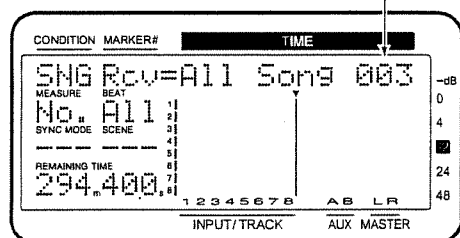
11. When the load procedure is finished, "Please Stop DAT" appears in the display. Stop the DAT recorder, then press [YES].

The DAT Name screen appears in the display. If data for two or more songs was saved together, you can rotate the TIME/VALUE dial to view the song names.



Sample Rate Recording Mode

Total number of songs backed up to DAT (3 songs)



12. If you wish to end the operation after merely checking the, press [PLAY (DISPLAY)].
Return to Play condition.

13. If you wish to recover only the data for a specific song, use the TIME/VALUE dial to display the name of the song that you wish to recover.

14. Press [ENTER (YES)].
"STORE Current?" (Store the current song?) appears in the display.

15. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**

16. "Please Play DAT" appears in the display.
Rewind the tape and then put the DAT recorder in play mode.

17. Loading of the song data begins. If you have backed up the data to multiple tapes, then the operation is suspended when the end of each tape is reached. Insert the number tape indicated in the display, press [YES], and start the DAT recorder playing again.

18. When the recover procedure is finished, "Please Stop DAT" appears in the display. Stop the DAT recorder, then press [YES].

19. Press [PLAY (DISPLAY)].
Return to Play condition.

* To cancel this operation, press [CANCEL (NO)].

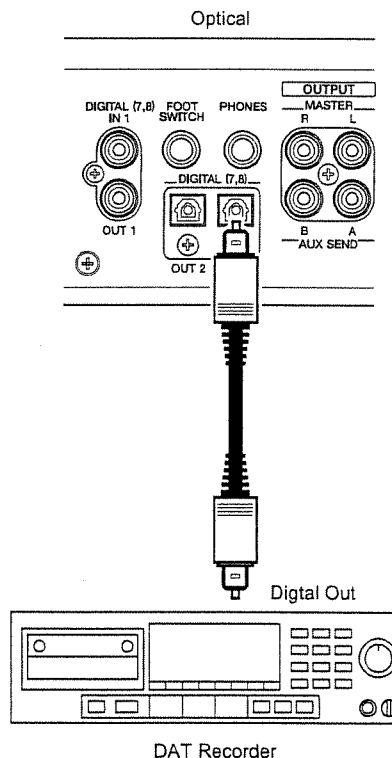
Checking the Recording Condition of Saved Performance Data (Verify)

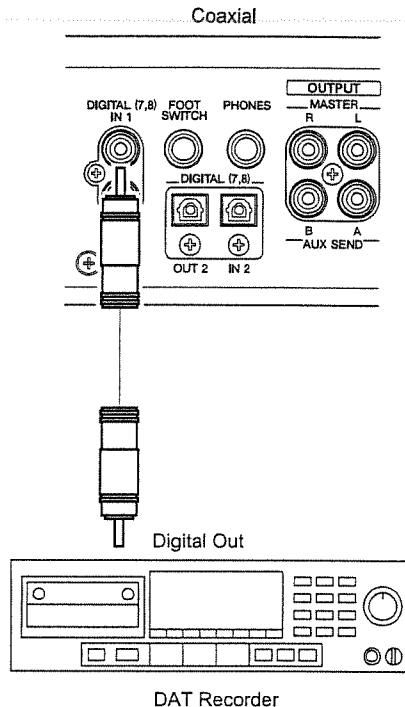
This operation checks the condition of song data that was recorded to DAT tape. However, it does not perform a comparison of the song data on the hard disk and the tape.

If results of the DAT verify operation warns that data is not recorded correctly, it is possible that the tape has been scratched or stretched. If the original song data still exists in the disk drive, perform the backup operation once again to a different DAT tape.

* When performing DAT backups, in order to confirm that the data indeed has been properly backed up, we recommend that you carry out the Verify procedure as well.

1. Connect the DAT recorder to the VS-880EX as following.





2. Insert the tape which contains the song data into the DAT recorder. If the song data is backed up on two or more tapes, insert the first tape.
3. Prepare the tape for playback from the beginning of the song data.
4. Press [SONG] several times until "SNG DAT Recover?" appears in the display.
5. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
6. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
7. "D.IN Sel =" appears in the display. Rotate the TIME/VALUE dial.

D.IN Sel (Digital In Select)

Select either "DIGIN1" (coaxial) or "DIGIN2" (optical) if you are going to recover data using the VS-880EX's DIGITAL IN connector.

8. Press PARAMETER [▶▶] thrice.
"Verify Ready?" appears in the display.
9. Press [YES].
"Please Play DAT" appears in the display.

10. Put the DAT recorder in play mode.

Verify the tape. If you have backed up the data to multiple tapes, then the operation is suspended when the end of each tape is reached. Insert the number tape indicated in the display, press [YES], and start the DAT recorder playing again.

11. When loading is finished, "Please Stop DAT" appears in the display. Stop the DAT recorder, then press [YES].
12. If there is no problem with the condition of the recorded song data, "Complete" appears in the display. If "Verify Error, Retry?" appears when the song data is loaded, then that song data cannot be loaded correctly. If you wish to check a tape again, insert the number tape indicated in the display, press [YES], and start the DAT recorder playing again. Press [NO] if you want to finish the procedure without checking the tape again.

* To cancel this operation, press [CANCEL (NO)].

Chapter 11 Compatibility

Disks used with Roland's VS-880 and VS-840 models can also be used by the VS-880EX. Additionally, song data recorded on such disks can be loaded by the VS-880EX. However, because differences in the structure of disk space and song data on disks that can be used, there are a number of precautions concerning the loading and saving of data that should be observed.

Disk Compatibility

VS-880 → VS-880EX

When internal hard disks that have been used by a VS-880 are installed in the VS-880EX, or when Zip disks that have been used by a VS-880 are inserted into a Zip drive connected to the VS-880EX, they are recognized as the initialization disk. In this case, the VS-880EX can be used for playing back songs recorded with the VS-880 and creating new songs as well. However, **you cannot use the VS-880EX to edit songs that were recorded on the VS-880 or save new versions of songs.**

If you wish to edit VS-880 song data with VS-880EX, convert it to VS-880EX song data (Song Import).

Song data that has been saved using the Archive Copy procedure on the VS-880 can be restored (archive extracted) with the VS-880EX. However, **the VS-880EX cannot edit or save new versions of the extracted songs.** In this case, you should first execute Song Archive Extract (p. 106). Then convert the extracted song data for use with the VS-880EX (Song Import).

You can recover VS-880 song data backed up using DAT backup. However, **you cannot edit or resave the recovered data on the VS-880EX.** In this case, you should first execute DAT Recover (p. 131). Then convert the extracted song data for use with the VS-880EX (Song Import).

VS-880EX → VS-880

When internal hard disks that have been used by a VS-880EX are installed in the VS-880, or when Zip disks that have been used by a VS-880EX are inserted into a Zip drive connected to the VS-880, they are recognized as the initialization disk. In this case, however, **the VS-880 can create new songs on the disk.** Furthermore, the VS-880 cannot recognize songs recorded on the VS-880EX.

If you wish to playback or edit VS-880EX song data with VS-880, convert it to VS-880 song data (Song Export).

Song data that has been saved using the Archive Copy procedure on the VS-880EX cannot be restored (archive extracted) by the VS-880.

Song data that has been saved using the DAT Backup procedure on the VS-880EX cannot be restored (DAT recovered) by the VS-880.

VS-1680 → VS-880EX

When internal hard disks that have been used by a VS-1680 are installed in the VS-880EX, or when Zip disks that have been used by a VS-1680 are inserted into a Zip drive connected to the VS-880EX, they are recognized as the initialization disk, provided they meet the conditions below. In this case, however, **the VS-880EX can create new songs on the disk.** Furthermore, **the VS-880EX cannot recognize songs recorded on the VS-1680.**

Partition space:

1 GB or less (Even if the disk has been initialized with the "Partition" set to "2000 MB," the disk can be used if the actual partition is 1 GB or less.)

Partition numbers: 1-4 (5-8 cannot be used)

If you wish to edit/playback a VS-1680 song on the VS-880EX, you must first convert the VS-1680 song data into the VS-880 format, and save it on a Zip disk etc. (the VS-1680's Song Export function). Then you must convert that song data into the VS-880EX format (the VS-880's EX Song Import function).

Song data that has been saved using the Archive Copy procedure on the VS-1680 cannot be restored (archive extracted) by the VS-880EX.

Song data that has been saved using the DAT Backup procedure on the VS-1680 cannot be restored (DAT recovered) by the VS-880EX.

VS-880EX → VS-1680

When internal hard disks that have been used by a VS-880EX are installed in the VS-1680, or when Zip disks that have been used by a VS-880EX are inserted into a Zip drive connected to the VS-1680, they are recognized as the initialization disk. In this case, the VS-1680 can be used for playing back songs recorded with the VS-880EX and creating new songs as well. However, **you cannot use the VS-1680 to edit songs that were recorded on the VS-880EX or save new versions of songs.**

If you wish to edit/playback a VS-880EX song on the VS-1680, you must first convert the VS-880EX song data into the VS-880 format, and save it on a Zip disk etc. (the VS-880EX's Song Export function). Then you must convert that song data into the VS-1680 format (the VS-1680's Song Import function).

Song data that has been saved using the Archive Copy procedure on the VS-880EX cannot be restored (archive extracted) by the VS-1680.

Song data that has been saved using the DAT Backup procedure on the VS-880EX cannot be restored (DAT recovered) by the VS-1680.

VS-840 → VS-880EX

Zip disks used on the VS-840 and VS-880EX are not mutually compatible. When a Zip disk used by a VS-840 is inserted in a Zip drive connected to the VS-880EX, it is recognized as an uninitialized disk.

When a Zip disk used by a VS-880EX is inserted in a Zip drive connected to the VS-840, it is recognized as an uninitialized disk.

If you wish to playback/edit an VS-840 song on the VS-880EX, you must first convert the VS-840 song data into VS-880 format, and save it on a Zip disk (the VS-840's Song Convert function). Then you must convert that song data into the VS-880EX format (the VS-880EX's Song Import function). However in this case, only the **performance data (audio data)** and the **data specifying the track on which each audio data is recorded** will be converted.

If you wish to playback/edit an VS-880EX song on the VS-840, you must first convert the VS-880EX song data into VS-880 format, and save it on a Zip disk (the VS-880EX's Song Export function). Then you must convert that song data into the VS-840 format (the VS-840's Song Convert function). However in this case, only the **performance data (audio data)** and the **data specifying the track on which each audio data is recorded** will be converted.

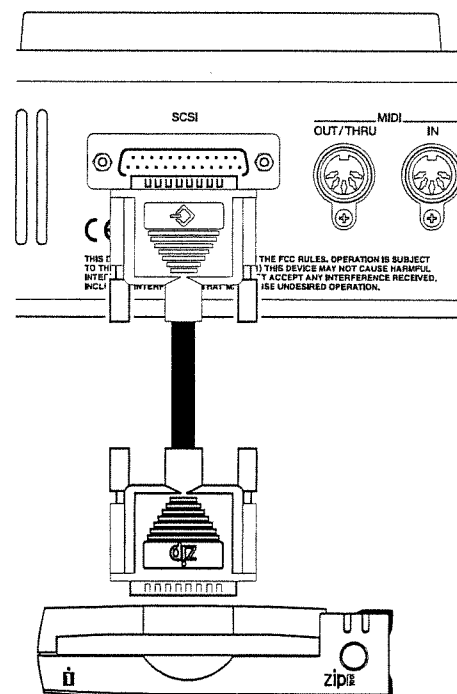
Song Data Compatibility**Loading VS-880 Performance Data into the VS-880EX (Song Import)**

You can convert songs created on a VS-880 or VS-840 for use with the VS-880EX and copy them as new songs to the current drive. This is referred to as **Song Import**.

- All the data such as mixer setting including equalizer and stereo link, system setting including sync track and tempo map, locators and markers, and effect setting will be copied.
- The sample rate and recording mode of the newly created song will be the same as the original song.
- If there is insufficient free space on the current drive, Song Import cannot be carried out.

Here we will explain the procedure of how a VS-880 song which was copied as a playable copy to a Zip disk can be read from a Zip drive connected to the VS-880EX and converted for use with the VS-880EX. If you need to use Song Archive Extract, or to convert a song which was recovered from DAT, read from step 3.

1. Make settings as shown below.

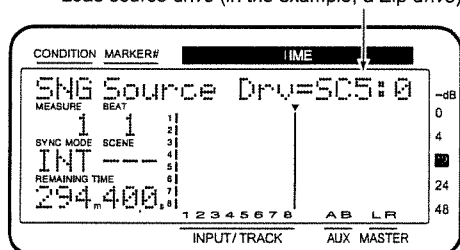


2. Insert the disk onto which VS-880 song data has been recorded into the Zip drive.

Chapter 11 Compatibility

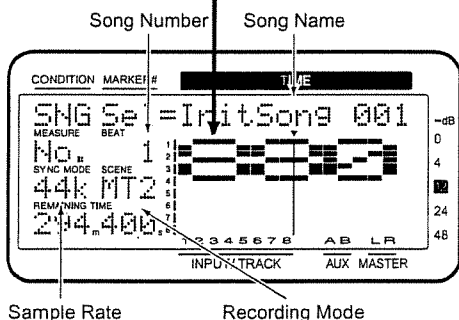
3. For the current drive, select the drive (internal IDE hard disk) you want to be the load destination.
4. Press [SONG] several times until "Song Import ?" appears in the display.
5. Press [YES].
6. "Source Drv=" (the drive from which the data will be read) appears in the display. Use the TIME/VALUE dial to select the drive which contains the song you wish to convert. For example if the source drive is the Zip drive, select "SC5:0."

Load source drive (in the example, a Zip drive)



7. Press PARAMETER [▶▶].
8. "Sel=" appears in the display. Use the TIME/VALUE dial to select the song you want to convert.

Song Type (In the example, VS-880 EX's song)



9. Press [YES].
A confirmation message appears in the display.
10. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
11. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
12. After Song Import is completed, return to Play condition.

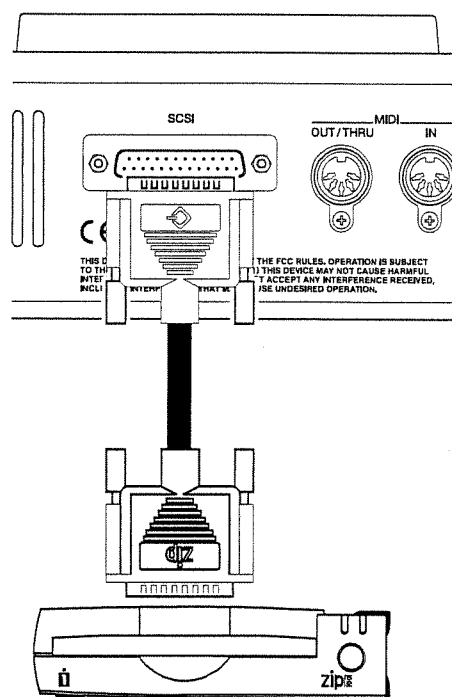
Converting VS-880EX Song Data for Use with the VS-880 (Song Export)

You can convert the current song for use with a VS-880 and copy it as a new song to a Zip drive connected to the VS-880EX's SCSI connector. This is referred to as Song Export.

- All song data, including mixer settings such as equalizer and Stereo Link, system settings such as sync tracks and Tempo Maps, locate and mark points, effects settings, and so on are copied.
- Song data in the V-track bank A (Tracks 1-8, V-tracks 1-8) is Song Exported. Please copy the data in the V-track bank B to the V-track bank A beforehand, by using Track Exchange. (P. 92)
- The sample rate and recording mode of the newly created song will be the same as the original song.
- If there is insufficient free space on the conversion destination drive, Song Export cannot be carried out.

Here we will explain the procedure of converting a VS-880EX song for use by the VS-880, and saving it in playable format to a Zip disk.

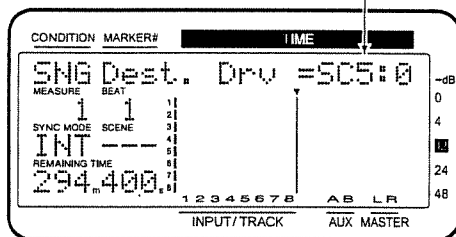
1. Make settings as shown below.



2. Select the song you want to convert as the current song.
3. Insert a disk into the Zip drive.

4. Press [SONG] several times until "Song Export ?" appears in the display.
5. Press [YES].
6. "Dest. Drv=" (the save destination drive) appears in the display. Use the TIME/VALUE dial to select the drive on which you wish to save the converted song data. For example if you wish to save the data to the Zip drive, select "SC5:0."

Write destination drive (in the example, a Zip drive)



7. Press [YES].
A confirmation message appears in the display.
8. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
9. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
10. After Song Export is completed, return to Play condition.

Chapter 12 Other Convenient Functions

Previewing Techniques (Preview)

When editing a song, you will likely want to find precise points in the song, for example the point where sound begins or where the climax begins, when using Auto Punch-In Recording, and in other editing situations. In such instances, you can specify the amount of time for playback leading up to or following a designated point as well as monitor the data on the tracks while gradually shifting the current time in the song. This is referred to as the **Preview function**.

There are four Preview buttons, and each one works differently. Select the one whose function is most appropriate for what you are trying to accomplish.

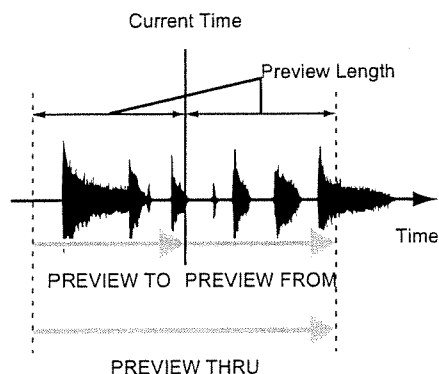
Using [TO] [FROM]

You can set the length of playback time for the tracks you want to monitor for 1.0–10.0 seconds leading up to or starting from the current point in the song. Press each buttons while the song is stopped.

[TO]: A preview of the song is played back one time for the specified period of time up to the current time in the song (Preview To).

[FROM]: A preview of the song is played back one time for the specified period of time starting from the current time in the song (Preview From).

[TO] + [FROM]: A preview of the song is played back for the specified period of time both up to and from the designated point in the song, i.e., with the current time placed at the center of the playback (Preview To + Preview From).

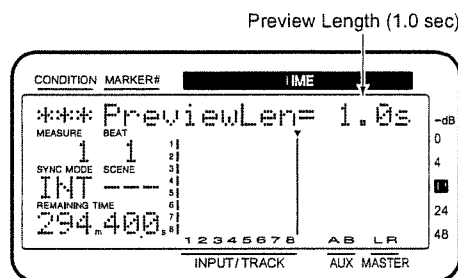


Finding the Location Where the Sound Begins (example)

1. While pressing [STOP], press the STATUS button for the track you want to monitor. The STATUS indicator lights green.
2. Press [PLAY] to begin playback of the song.
3. Play back the song until you reach the point you are looking for. Press [STOP] to stop playback.
4. Alternately press [TO] and [FROM]. The song before and after the current time is played back. Determine whether the beginning of the sound is earlier or later than the current time.
5. Next, rotate the TIME/VALUE dial to move the current time until you can hear a bit of the beginning of the sound when you press [TO].
6. Finally, rotate the TIME/VALUE dial to move the current time until the sound begins precisely when you press [FROM].
7. Now you can easily find the precise location where the sound begins. Place a mark point at the current time or store the current time in a locate point so that you will be able to easily find it later.

Adjusting the Preview Length

1. Hold down [SHIFT] and press [TO] or [FROM].
2. The "PreviewLen" is displayed. Rotate the TIME/VALUE dial to adjust the time. Press [TO] or [FROM] to check the actual playback time.



PreviewLen (Preview Length)

It sets a length of playback time in the preview function.

3. After you have finished making the settings, press [PLAY (DISPLAY)]. The initial display reappears.

Using [SCRUB]

This function is used to repeat playback of the song before and after a designated point on a selected track for a more precisely specified length of time (25–100 msec). Press [SCRUB] while the song is stopped. The button indicator lights, and the specified section is played back repeatedly.

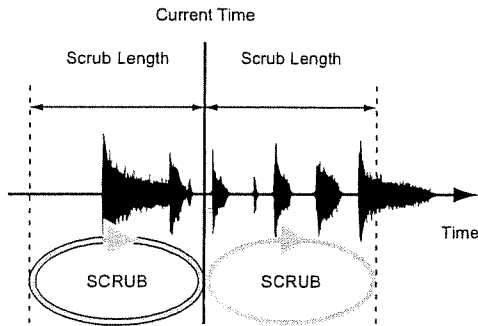
The playback time (25–100 msec) is shorter than when Preview as used.

Press the following buttons while their button indicators are lit.

STATUS button: Selects the track to be played back.

[TO]: The song is played back repeatedly up to the designated point.

[FROM]: The song is played back repeatedly starting from the designated point.



Finding the Location Where the Sound Begins (example)

1. While pressing [STOP], press the STATUS buttons for all tracks that you want to monitor. The STATUS indicator lights green.

2. Press [PLAY] to begin playback of the song.

3. Play back the song until you reach the point you are looking for. Press [STOP] to stop playback.

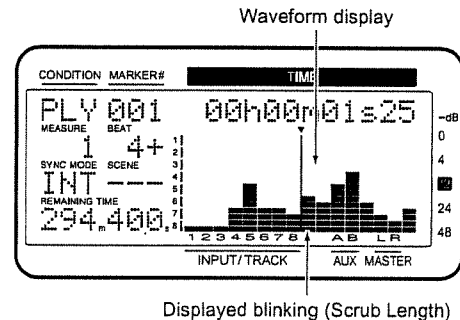
4. Press [SCRUB].

The SCRUB indicator lights, and the specified section is played back repeatedly. Press [TO] or [FROM] to select the range before or after the current time that you want to play back.

5. Press STATUS button for the track on which you want to use Scrub playback.

6. If you pressed [TO] in Step 4, rotate the TIME/VALUE dial to move the current time until you can just hear the very beginning of the sound. If you pressed [FROM] in Step 4, rotate the TIME/VALUE dial to move the current time until the sound begins precisely.

The sound (waveform) being played back will be displayed for your reference.



7. Now you can easily find the precise location where the sound begins. Press [SCRUB] once more.

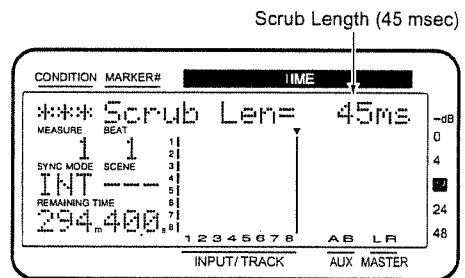
The SCRUB indicator light goes off.

8. Place a marker at the current time or store the current time in a locator so that you will be able to easily find it later.

Adjusting the Scrub Length

1. Hold down [SHIFT] and press [SCRUB].

2. The "Scrub Length" is displayed. Rotate the TIME/VALUE dial to adjust the time. Press [SCRUB] to check the actual playback time.



Scrub Length

This sets a length (25–100 msec) of playback time when the Preview function [SCRUB] button is pressed.

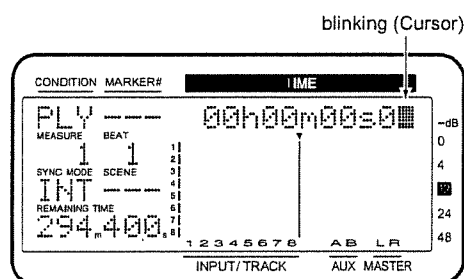
3. After you have finished making the settings, press [PLAY (DISPLAY)].

The initial display reappears.

Recalling a Specific Location (Jump)

Besides using the TIME/VALUE dial, markers and locators to move the current time of the song, you can also directly specify a location or measure and beat to be recalled. This is convenient when designating locations during Track Edit.

1. Press [PLAY (DISPLAY)].
2. If you wish to directly recall a marker time location, use CURSOR [◀] [▶] to make the "MARKER" field blink. If you wish to directly recall the time location of a specific measure, make the "MEASURE" field blink.
3. Press [NUMERICS].
4. The LOCATOR buttons will function as numeric keys to directly input a numerical value (p. 153). Input the desired value.



5. Press [ENTER (YES)].
The designated time location is recalled, and you are returned to Play condition.

Recording Mixer Settings (Auto Mix)

With the VS-880EX, you can record the present status or condition of the mixer as a **Scene**. Unlike with Scenes, you can alternatively store information at specific times during playback to markers. Referred to as **Auto Mix**, this includes the mixer settings, time-based channel fader movements, and other settings. When during playback you reach a point where a marker is set, the mixer settings automatically switch to those stored at the marker. This is convenient when mixing with complicated settings that are difficult to reproduce manually.

The following mixer settings can be recorded in Auto Mix.

** Items printed in bold are those that can be adjusted directly with the faders on the top panel. You can record the time-based movements of the faders by moving the faders during playback of the song.*

INPUT/TRACK

Fader

Pan

FX1 Lev (Effect 1 Send Level)

FX1 Pan (Effect 1 Send Pan)

FX2 Lev (Effect 2 Send Level)

FX2 Pan (Effect 2 Send Pan)

AUX Lev (AUX Level)

AUX Pan

STEREO IN

(Fader)

(Balance)

EFFECT RETURN

(Effect 1 Return Level)

(Effect 1 Return Balance)

(Effect 2 Return Level)

(Effect 2 Return Balance)

Master Block

(Master Level)

Master Balance

(Master Effect 1 Send Level)

(Master Effect 1 Send Balance)

(Master Effect 2 Send Level)

(Master Effect 2 Send Balance)

(Master AUX Send Level)

(Master AUX Send Balance)

EFFECT

FX1 (Effect 1 Program Number)

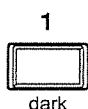
FX2 (Effect 2 Program Number)

Preparations for Auto Mix

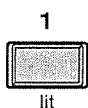
Press [AUTOMIX]. The button indicator lights, indicating that Mix mode is on.



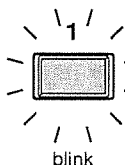
At this time, while holding down the [AUTOMIX] button once more, each time the each channel SELECT button or [EZ ROUTING] (Master Block) is pressed, the status



Indicator off:
Auto Mix is disabled.



Indicator on:
Auto Mix playback is enabled.

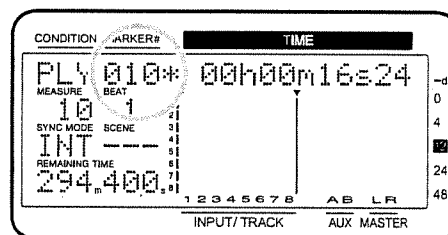


Indicator blinking:
Auto Mix is enabled for recording and playback.

Recording the Mixer Settings, Method 1 (Snapshot)

Mixer settings recorded with Auto Mix can be recorded directly to markers. This method is known as taking a Snapshot. When you move to that marker, the mixer settings that were recorded will be reproduced. For example, this is convenient when you want the intro and ending to have different volume levels or different effect send levels for guitar parts during intros or solos.

1. Move to the time location where you wish to record the auto mix.
2. Confirm that Auto Mix mode is on.
3. Select the **channels which you want to record using Auto Mix**. While pressing [AUTOMIX], so that the button indicators to blink, press the each channel SELECT button or [EZ ROUTING] (Master Block).
4. Hold down [AUTOMIX] and press [TAP]. A marker is added at the current time location. At the same time, a Snapshot of the mixer settings is recorded at the marker. A marker in which mixer settings are recorded will be indicated by an "*" following it.



* If a marker already exists within 0.1 seconds before the time location where you are attempting to place a new marker (i.e., the current time), the Snapshot is recorded at the earlier marker. A marker will not be newly assigned. If a marker already exists within 0.1 seconds after the time location at which you are attempting to place a new marker (i.e., the current time), the Snapshot is recorded at the later marker.

5. Press [AUTOMIX].
The AUTOMIX indicator light goes off.

Recording the Mixer Settings, Method 2 (Gradation)

This creates an auto mix that smoothly connects Snapshots recorded in two adjacent markers. This method is called **Gradation**.

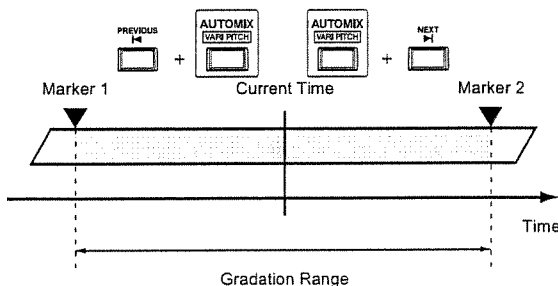
For example, this is convenient when you wish to specify the length of a fade-in or fade-out.

1. Follow the operation as described in "Recording the Mixer Settings, Method 1," record a Snapshot with the time locations at which you want Gradation to begin and end.
2. Confirm that Auto Mix mode is on.
3. Select the **channels which you want to record using Auto Mix**. While pressing [AUTOMIX], so that the button indicators to blink, press the each channel SELECT button or [EZ ROUTING] (Master Block).
4. Hold down [AUTOMIX] and press [PREVIOUS] or [NEXT].
5. A confirmation message appears on the screen. Press [YES].

A new mark point is automatically added between the two mark points, and Gradation is executed. Press [CANCEL (NO)] if you wish to cancel Gradation.

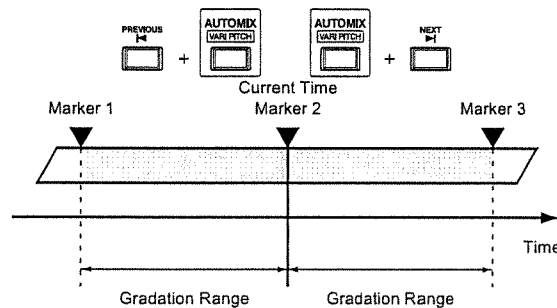
When the current time is included in an adjacent marker

Press either [AUTOMIX] and [PREVIOUS] or [AUTOMIX] and [NEXT], the gradation range will be specified in a same range.



When the current time matches with a marker

When you press [AUTOMIX] and [PREVIOUS], the gradation includes the preceding marker; pressing [AUTOMIX] and [NEXT] creates a gradation including the following marker.



6. Press [AUTOMIX].
The AUTOMIX indicator light goes off.

Recording Fader Operations (Realtime)

With this method, time-based both channel fader and master fader movement during play back song are recorded to the marker directly. This method is referred to as **Realtime**. This is convenient when, for example, you want to freely adjust the volume levels of individual tracks.

1. Move to the time location at which you wish to record in Realtime.
2. Confirm that Auto Mix mode is on.
3. Select the **channels which you want to record using Auto Mix**. While pressing [AUTOMIX], so that the button indicators to blink, press the each channel SELECT button or [EZ ROUTING] (Master Block).
4. Hold down [AUTOMIX] and press [REC].
The AUTOMIX indicator blinks, indicating that Auto Mix Realtime recording is ready.
5. Press [FADER] to select the faders that will be in effect with the input mixer or track mixer.
6. Adjust the top panel channel faders, master fader, and PAN knobs to the desired positions.

* When the Fader Match (p. 164) in the System parameters is set to "Null," and the current fader positions of do not match the actual volume levels, if you don't first move the channel faders to their actual values, you will be unable to record the data using Auto Mix.

7. Press [PLAY] to begin playback.
8. Operate the channel faders, master fader, and PAN knobs on the top panel.
Auto mix data will be recorded only for those channels that are modified.
9. When the mix is finished, press [STOP].
markers will be automatically created in the area which was played back. If you wish to re-do realtime, repeat steps 3–8.

If You Don't Want to Record Fader Settings (Mask Fader)

You can specify that the settings adjustable from the top panel will not be recorded, as described in "Recording the Mixer Settings, Method 1 (Snapshot)." For example, this is effective when you have made fade-in settings as in "Recording the Mixer Settings, Method 2 (Gradation)", and then wish to modify effect send levels or other settings.

1. Press [SYSTEM] several times until "SYS Scene/Auto Mix?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS A.Mix Snap=" appears in the display.
4. Rotate the TIME/VALUE dial.

A.Mix Snap (Auto Mix Snapshot Mode)

This selects the settings that will be recorded by the snapshot.

All: All settings are recorded.

MaskF: Settings which can be adjusted from the top panel (channel faders etc.) will be ignored.

5. Press [PLAY (DISPLAY)].
Return to Play condition.
6. Record the Snapshot as described in "Recording the Mixer Settings, Method 1."

Playing Back the Auto Mix

1. Press [AUTOMIX].
The AUTOMIX indicator lights, indicating that the VS-880EX is in Auto Mix mode.
2. Select the **channels for which you want Auto Mix played back**. While pressing [AUTOMIX], so that each button indicators light, press the each channel SELECT button or [EZ ROUTING] (Master Block).
3. Press [PLAY].
Playback of Auto Mix begins. Moving the channel faders, master fader, or PAN knobs while Auto Mix is being played back cancels the Auto Mix for that fader. If you stop and then start playback again, Auto Mix will once again take effect. Alternatively, you can temporarily disable Auto Mix during playback and then enable it by turning it on again.
4. When the playback is finished, press [STOP].

Disabling Auto Mix Only on Specified Channels

1. Move to the point where you want to disable Auto Mix.
2. Confirm that Auto Mix mode is on.
3. Select the **channels for which you want Auto Mix disabled**. While pressing [AUTOMIX], so that the button indicators to blink, press the each channel SELECT button or [EZ ROUTING] (Master Block).
4. Hold down [AUTOMIX] and press [CLEAR].
Auto Mix is disabled on the selected channels.
5. Press [AUTOMIX].
The AUTOMIX indicator light goes off.

Disabling Auto Mix on All Channels

1. Press [SYSTEM] several times until "SYS Scene/Auto Mix?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS A.Mix Erase?" appears in the display.
4. Press [YES].
5. Use the TIME/VALUE dial to specify the first marker in the range that you want Auto Mix erased.

Erase From

Specify the first marker in the range that you want Auto Mix erased.

6. Press CURSOR [▶].
The cursor will move toward the right.
7. Use the TIME/VALUE dial to specify the last marker in the range that you want Auto Mix erased.

Erase To

Specify the last marker in the range that you want Auto Mix erased.

8. Press PARAMETER [▶▶].
"SYS EraseMode=" appears in the display.
9. Rotate the TIME/VALUE dial.

Erase Mode

Select the auto mix data which will be erased.

Event: Only Auto Mix events will be erased.

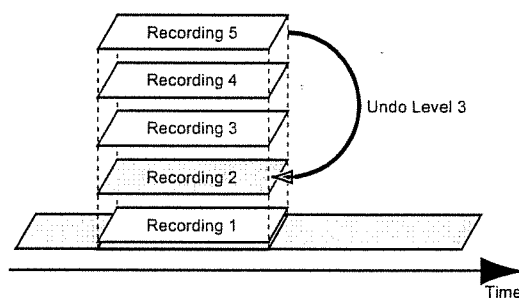
Marker: Both markers and Auto Mix events will be erased.

10. Press PARAMETER [▶▶].
"SYS Erase__<=>__?" appears in the display. The marker you specified in steps 5–7 will be displayed in the underlined area.
11. Press [ENTER (YES)]. A confirmation message appears on the screen. Press [YES]. If you wish to cancel the erase, press [NO].
12. Press [PLAY (DISPLAY)].
Return to Play condition.

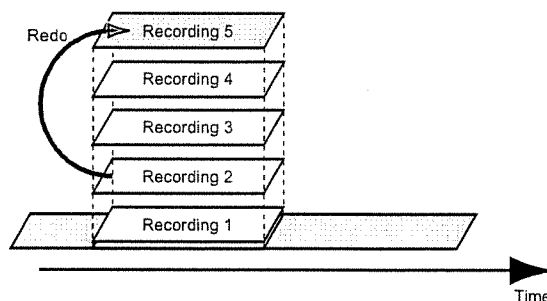
Undoing Recordings and Edits (Undo)

When using the VS-880EX, recordings may not sound as you intend, settings for editing may be made incorrectly, or there may be other situations where you want to go back and try something again. In such instances, you can restore the previous conditions at each of the steps where something was changed. This is referred to as the **Undo function**. Moreover, you can restore conditions as they were before the last undo. This is called the **Redo function**.

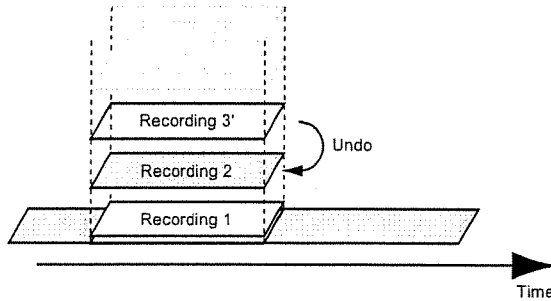
When using the Undo function, you will specify the number of previous steps that will be undone. For example, suppose that you use punch-in recording to perform five consecutive re-recordings of the same location. If you later decide to return to the condition of the second recording (step 2), you would set the Undo function to return to the condition of three steps earlier (Undo Level 3).



If, after executing the Undo operation, you decide to return to the condition of step 5, execute the Redo operation.



However if you once again record (step 3') after returning to the condition of recording number 2, the recordings 3-5 that were canceled by the Undo operation will be lost. This means that if after step 3' you use the Undo operation to return to the previous step, you will return to the condition of step 2.



Recording and Editing Operations Which Can Be Undone (Undo)

Recording or editing operations performed after creating a song are recorded together with the song data as its operation history, and the data itself is also preserved without being erased. For example, suppose that you perform 10 recording operations on song 1 and then create song 2. The operation history of song 2 is newly recorded from the time when song 2 was created. If you subsequently select song 1 again, the history of the 10 previous recording operations will still be there.

The Undo function refers to the operation history of the currently selected song, and restores the song to the condition in which it was the specified number of operations ago. In the case of song 1 in this example, you will be able to cancel the 10 recording operations that were performed. A maximum of 999 levels of operation history may be recorded for each song.

Operations That Can Be Undone

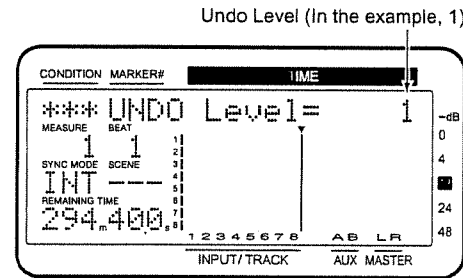
Operations that can be undone are **recording operations** and **each of the Track Edit operations**. Check the list below for operations that cannot be undone.

- Song Edit operations (Optimize/Erase/etc.)
- Saves to User Effect Patches
- System operations (mixer initialization/Drive Initialize/Sync Track Recording/etc.)
- Auto Mix operations (Snapshot/Gradation/Realtime Recording/etc.)
- Storing in EZ Routing
- Stored Locators/Markers/Scenes

1. Press [UNDO].

"Level=" appears in the display.

2. Rotate the TIME/VALUE dial to select the number of previous steps the conditions of which you want to have restored.



3. Press [YES] to execute Undo.

The UNDO indicator lights. If you want to cancel the Undo, press [CANCEL (NO)].

Canceling the Last-Performed Undo (Redo)

The Redo function can be executed when the UNDO indicator is lit. When the song data is saved, for example by your doing Song Store or selecting another song, the UNDO indicator will go out, indicating that the Undo function will no longer be available.

1. While the UNDO indicator is lit, hold down [SHIFT] and press [UNDO].

2. "Cancel the last UNDO?" appears in the display. Press [F4 (Exec)].

The UNDO indicator light goes off. If you wish to cancel, press [CANCEL (NO)].

Canceling Only the Very Last-Performed Operation

If you most frequently use the Undo function to undo just the previously performed recording/editing operation (i.e., undo level 1), you may prefer not to be bothered with the messages that appear when the [UNDO] button is pressed. In this case, make the following settings so that just the previous operation will be undone immediately when the [UNDO] button is pressed.

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.

2. Press [YES].

3. Press PARAMETER [▶▶] several times until "SYS UNDO MSG=" appears in the display.

Chapter 12 Other Convenient Functions

4. Rotate the TIME/VALUE dial. For now select "Off."

UNDO MSG (UNDO message)

This selects whether or not the Undo confirmation message is displayed.

On: The message is displayed, asking how many levels you want to undo.

Off: The message is not displayed, and only the immediately preceding operation is undone.

5. Press [PLAY (DISPLAY)].

Return to Play condition.

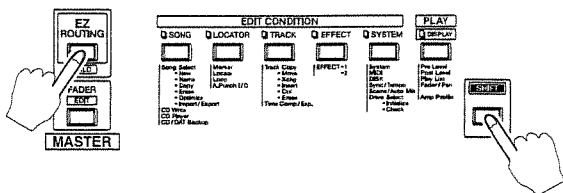
Listening Only to a Specific Channel (Solo/Mute)

When making equalizer adjustments or checking the balance during mixdown, it is often desirable to be able to monitor the sound of one specific channel. Although it would be possible to individually mute each of the channels that you didn't want to hear with STATUS buttons, this is inconvenient. In such cases, you can monitor only a specific channel and mute all the other channels. This is called the **Solo function**. To use the Solo function, use the following procedure. If, in contrast to the Solo function, you wish to mute only specific channels, this is called the **Mute function**.

Listening Only to a Specific Channel

1. Hold down [SHIFT] and press [SOLO (EZ ROUTING)] in the master section.

The display will briefly indicate "SOLO Mode ON," indicating that the Solo function is on. The display in the CONDITION field will alternate between the name of the current condition and "sol," also indicating that the Solo function is on. At the same time, the SELECT indicators for each channel are blink. In the present status, all channels are monitored.



2. Press the SELECT button for the channel you wish to monitor.

The SELECT indicator stays blink, and only that channel is now monitored. At this time you can make adjustments to fader, balance, equalizer, effects, and other settings.

3. Monitor and Mute alternate each time you press SELECT button. Furthermore, you can monitor two or more channels. However, channels which were muted before the Solo function was turned on cannot be monitored even when their SELECT buttons are pressed. Additionally, when you are monitoring just one channel, pressing the SELECT button of that channel allows you to then monitor all channels. At this time, you will be able to hear the automix status of each channel while you continue pressing [AUTOMIX].

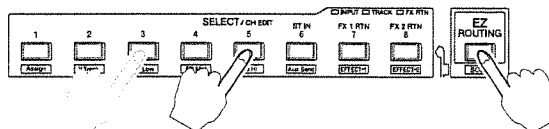
4. To turn off the Solo function, hold down [SHIFT] and press the [SOLO (EZ ROUTING)] once again. Return to Play condition.

Muting Only to a Specific Channel

1. Hold down [SOLO (EZ ROUTING)]. This turns the Mute function on; the SELECT button indicators are all blink. In the present status, all channels are monitored.

2. While holding down [SOLO (EZ ROUTING)], press the SELECT button for the channel you wish to mute.

The button indicator goes off, and only that channel is now muted. You can also mute two or more channels.

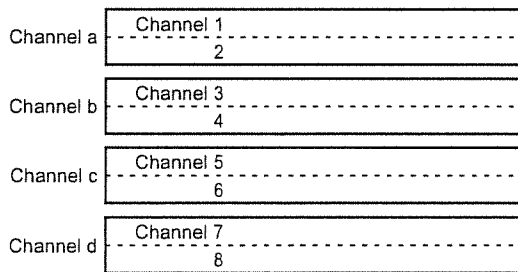


3. Monitor and Mute alternate each time you press [SOLO (EZ ROUTING)] and SELECT button. The muted state will remain valid even if you take your hand off [SOLO (EZ ROUTING)] or the SELECT button. If you wish to switch the input/track/effect return, press [FADER (EDIT)].
4. If you wish to monitor all channels, hold down [SOLO (EZ ROUTING)] and press [CLEAR].

Simultaneously Adjusting a Stereo Source (Channel Link)

When recording or playing back a stereo source, normal mixer operations require you to control the left and right channels separately, which can make it inconvenient to adjust equalizer, effects, and other settings. In such cases, you can have the settings for a pair of channels, with the exception of the fader and pan settings, linked so that they adjusted in the same way. This is called the **Channel Link**.

When Channel Link is on, adjacent odd- and even-numbered channels are paired as shown below. The settings of each odd-numbered channel will be the same as the settings of the corresponding even-numbered channel. When the setting of one channel are modified, the settings of the paired channel will change in the same way.



At this time, you can use the channel faders and pan knobs to make the following adjustments.

Odd-numbered channel faders:

Overall volume level of the signal that is output to the mix bus or the recording bus (Offset Level)

Off-numbered channel pan knobs:

Overall left/right balance of the signal that is output to the mix bus or the recording bus (Offset Balance)

Even-numbered channel faders:

Overall volume level of the signal that is output to the AUX bus (AUX level)

Even-numbered channel pan knobs:

Overall left/right balance of the signal that is output to the AUX bus (AUX balance)

1. Press [CH EDIT (SELECT)] for the channels for which you wish to have Channel Link turned on.
2. Press PARAMETER [◀◀] [▶▶], so that "Channel Link=" appears in the display.
3. Rotate the TIME/VALUE dial. For now, select "On."

Channel Link

This turns the Channel Link function on and off.

4. Press [PLAY (DISPLAY)].
Return to Play condition.

Adjusting the Faders

When Channel Link is on, the balance of both channels is preserved, and the total volume level controlled with fader for the odd-numbered channel. If you want the channel faders to act independently, use the following procedure.

1. Press [CH EDIT (SELECT)] for the channels for which you wish to adjust that channel's fader.
2. Press PARAMETER [◀◀] [▶▶], so that "MIX Sw =" appears in the display.
3. Rotate the TIME/VALUE dial.

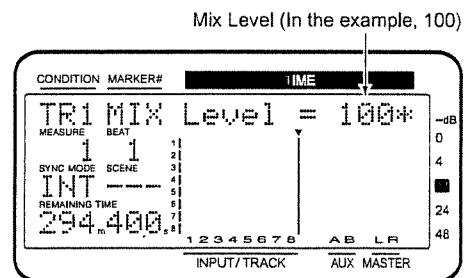
MIX Sw (Mix Switch)

This selects the bus to which the source or track output will be assigned. For this example select "On."

On: The source or track will not be assigned to a recording bus, but will be sent directly to the mix bus. Set this to "On" when, for example, you simply want to mix the inputs without recording the source. However, the sources that are assigned to the RECORDING bus are disabled.

Off: The source or track will not be assigned to the mix bus. If it is not assigned to a recording bus either, then that source/track will not be output anywhere.

4. Press PARAMETER [▶▶], so that "MIX Level" appears in the display.
5. Rotate the TIME/VALUE dial.



MIX Level

Adjust the volume level (0-127) of the signal that is output to the mix bus or the recording bus.

Chapter 12 Other Convenient Functions

6. Press [CH EDIT (SELECT)] for the other channel.
7. Repeat steps 2–5 to make the same settings for the other channel.
8. Press PARAMETER [◀◀].
“Ofs Level =” appears in the display.
9. Rotate the TIME/VALUE dial.

Ofs Level (Offset Level)

Adjust the overall volume level (0–127) while maintaining the volume balance of the two channels. This will operate linked with the channel fader of the odd-numbered channel.

10. If you wish to assign the output of a source or track to the AUX bus, press PARAMETER [▶▶] to make the display read “AUX Sw =.”
11. Rotate the TIME/VALUE dial.

AUX Sw (AUX Switch)

This sets how the signal is sent to the AUX bus. Here, select “PstFade.”

Off: The signal is not sent. (This will not be output from the AUX jacks.)

PreFade: The signal before passing through the channel fader is sent.

PstFade: The signal after passing through the channel fader is sent.

12. Press PARAMETER [▶▶].
“AUX Level=” appears in the display.

13. Rotate the TIME/VALUE dial.

AUX Level (AUX Level)

This adjusts the level (0–127) of the signal sent to the AUX bus.

14. Press [CH EDIT (SELECT)] for the other channel.
15. Repeat steps 11–14 to make the same settings for the other channel.
16. Press [PLAY (DISPLAY)].
Return to Play condition.

Adjusting the Pan

When Channel Link is on, this adjusts the total left-right balance while preserving the pan settings for both channels. If you want to adjust the pan for each channel independently, use the following procedure.

1. Press [CH EDIT (SELECT)] for the channels whose pan settings you wish to adjust.
2. Press PARAMETER [◀◀] [▶▶], so that “MIX Sw =” appears in the display.
3. Rotate the TIME/VALUE dial.

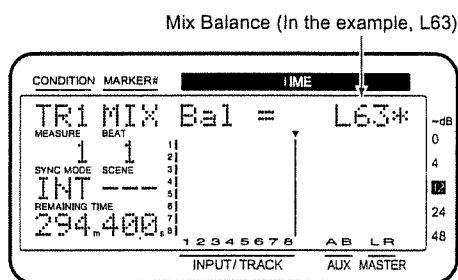
MIX Sw (Mix Switch)

This selects the bus to which the source or track output will be assigned. For this example select “On.”

On: The source or track will be sent to the mix bus. Set this to “On” when, for example, you simply want to mix the inputs without recording the source. However, the sources that are assigned to the RECORDING bus are disabled.

Off: The source or track will not be assigned to the mix bus. If it is not assigned to a recording bus either, then that source/track will not be output anywhere.

4. Press PARAMETER [▶▶], so that “MIX Bal” appears in the display.
5. Rotate the TIME/VALUE dial.



MIX Bal (Mix Balance)

Adjust the pan (L63–R63) of the signal that is output to the mix bus or the recording bus.

6. Press [CH EDIT (SELECT)] for the other channel.
7. Repeat steps 2–5 to make the same settings for the other channel.

8. Press PARAMETER [◀◀].
“Ofs Bal =” appears in the display.

9. Rotate the TIME/VALUE dial.

Ofs Bal (Offset Balance)

Adjust the overall left/right level (L63–0–R63) while maintaining the panning of both channels. This will operate linked with the pan knob of the odd-numbered channel.

10. If you wish to assign the output of a source or track to the AUX bus, press PARAMETER [▶▶] to make the display read “AUX Sw =.”
11. Rotate the TIME/VALUE dial.

AUX Sw (AUX Switch)

This sets how the signal is sent to the AUX bus. Here, select “PstFade.”

Off: The signal is not sent. (This will not be output from the AUX jacks.)

PreFade: The signal before passing through the channel fader is sent.

PstFade: The signal after passing through the channel fader is sent.

12. Press PARAMETER [▶▶] twice.
“AUX Bal=” appears in the display.

13. Rotate the TIME/VALUE dial.

AUX Bal (AUX balance)

This adjusts the pan setting (L63–0–R63) of the signal sent to the AUX bus.

14. Press [CH EDIT (SELECT)] for the other channel.
15. Repeat steps 10–13 to make the same settings for the other channel.
16. Press [PLAY (DISPLAY)].
Return to Play condition.

Linking Only the Faders (Fader Link)

The faders alone of adjacent odd- and even-numbered channels can be linked so that the volume balance of the channel pair can be maintained as you adjust the overall volume level. This is referred to as **Fader Link**. When fader link is turned on, equalizer settings and effect send level settings etc. for the two channels can be made (independently) for either channel.

** Fader Link is valid only when Channel Link is turned OFF. If Channel Link is also turned on, settings such as equalizer and effect send level will also be linked.*

1. Press [CH EDIT (SELECT)] for the channels for which you wish to have Fader Link turned on.
2. Press PARAMETER [◀◀] [▶▶], so that “Fader Link=” appears in the display.
3. Rotate the TIME/VALUE dial. For now, select “On.”

Fader Link

This turns the Fader Link function on and off.

4. Press [PLAY (DISPLAY)].
Return to Play condition.
5. As described in “Adjusting the Faders (p. 149),” adjust the volume balance of each channel and the overall volume level.

Mixing In a Stereo Source (Stereo In)

You can assign input signals from the INPUT jacks or DIGITAL IN connector to the MIX bus or RECORDING bus, without having them pass through the input mixer. You can also monitor these signals without having them pass through the input mixer or output mixer. This is referred to as **Stereo In**. This can be convenient when, for example, the same input source features sounds with effects and sounds without effects recorded on separate tracks. Use the following procedure for Stereo In.

1. Press [FADER (EDIT)] several times to let the FADER indicator lights red.
2. Press channel 6 [ST IN (CH EDIT)] several times until "RTN StereoIn=" appears in the display.
3. Rotate the TIME/VALUE dial.

StereoIn

This selects the external input connector or jack using Stereo In.

Off: Stereo In is not used.

Input 12: Selects INPUT jacks 1/2 for use with Stereo In.

Input 34: Selects INPUT jacks 3/4 for use with Stereo In.

Input 56: Selects INPUT jacks 5/6 for use with Stereo In.

Digital: Selects the DIGITAL IN connector (coaxial or optical) for use with Stereo In.

4. Press PARAMETER [▶▶].
"RTN StIn Level=" appears in the display.
5. Rotate the TIME/VALUE dial.

StIn Level (Stereo In Level)

This adjusts the volume level (0–127) for Stereo In.

6. Press PARAMETER [▶▶].
"RTN StIn Bal=" appears in the display.
7. Rotate the TIME/VALUE dial.

StIn Bal (Stereo In Balance)

This adjusts the balance (L63–0–R63) for Stereo In.

8. Press [PLAY (DISPLAY)].
Return to Play condition. The volume level of Stereo In can be adjusted directly with the channel fader 6 when the effect return mixer is in effect (when the FADER indicator is lit red).

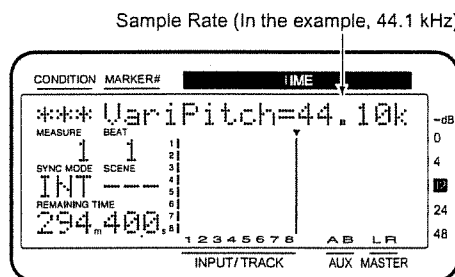
Changing the Pitch During Playback (Vari-Pitch)

When recording an ensemble performance, all the instruments normally tune to an instrument such as an acoustic piano whose tuning cannot easily be changed. However, it is sometimes necessary to record (over-dub) an acoustic piano onto an existing recording. In this case, if the pitch of the recording is different than that of the acoustic piano, something must be done about it.

In such cases, by changing the playback speed of the recorder, you can change the pitch of the performance being played back to match the pitch of the instrument you want to record. This is referred to as the **Vari-Pitch function**. Vari-Pitch can be used not only to compensate for pitch differences, but can also be used when you want to purposely produce special effects. To use the Vari-Pitch function, use the following procedure.

1. Hold down [SHIFT] and press [VARI PITCH (AUTOMIX)].

The current sample rate appears in the display.



2. Press [PLAY] to begin playback of the song.
3. Rotate the TIME/VALUE dial to change the pitch of the playback. Check the playback to see how the pitch actually sounds.
4. Press [PLAY (DISPLAY)].
Return to Play condition. Now, Vari-Pitch turns on and off each time [SHIFT] + [VARI PITCH] is pressed. If vari-pitch is on, the VARI PITCH indicator will light when you continue holding [SHIFT].

Record/Playback Tracks When Using Vari-Pitch

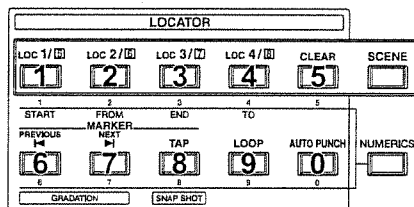
When vari-pitch is on, the number of tracks which can be simultaneously recorded/played back may be limited, depending on the range of pitch change.

Directly Inputting Numeric Characters

When modifying the time locations of a locator or punch-in point, you can use the LOCATOR buttons as numeric keys to input numbers directly.

Not only can you use the normal process of rotating the TIME/VALUE dial to enter text, but you can also use the buttons on the top panel like an ASCII keyboard, for example when editing markers or locators (using numerals).

1. Press [NUMERICS].
The NUMERICS indicator lights.
2. Press the LOCATOR button.
The buttons can be used to enter numerals as indicated below.



* Depend on parameters (effect etc.), you can enter "-" (a minus sign) by pressing [0] twice.

3. After you have finished entering the numbers, press [ENTER (YES)].
This sets the numbers.

Selecting the Method for Numeric Input

When using the numeric keys for input, you can select whether to input the digits starting from the upper place or from the lower place. Use the method with which you are most comfortable.

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS NUMERICSType=" appears in the display.
4. Rotate the TIME/VALUE dial.

NUMERICSType (Numeric key type)

Select the input method for when using the LOCATOR buttons as numeric keys.

Up: Input from the lowest place.

Dwn: Input from the highest place.

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Example of entering numerals from lower to higher place digits

For example, let's see how "01h23m45s00f" is input when the NUMERICS Type is set to "Up."

1. Press [NUMERICS].
The NUMERICS indicator lights.
2. The cursor appears at the digit furthest to the right (in the lowest place). Press the LOCATOR buttons [1], [2], [3], [4], [5], [0], and [0], in that order.
The numerals appear in the place furthest to the right and shift to higher places as other numerals are entered. You can also move the cursor to the desired place by pressing the CURSOR [◀] and [▶].
3. When you are finished inputting the number, press [ENTER (YES)].
The numerical value is set, and the button indicator goes off.

Example of entering numerals from higher to lower place digits

Now let's see how "01h23m45s00f" is input when the NUMERICS Type is set to "Down."

1. Press [NUMERICS].
The button indicator lights, and the current time in the song is displayed.
2. The cursor appears in the digit furthest to the left (the highest place). Press the LOCATOR buttons [0], [1], [2], [3], [4], [5], [0], and [0], in that order.
The numerals appear from left to right, just as they are entered. You can also move the cursor to the desired place by pressing the CURSOR [◀] and [▶].
3. When you are finished inputting the number, press [ENTER (YES)].
The numerical value is set, and the button indicator goes off.

Sounding the Metronome

No matter how accurately one tries to play, listening to the recording play back sometimes reveals inaccuracies in rhythm or tempo. The VS-880EX provides a metronome (click track) that can be sounded at a specified tempo. By listening to the metronome as you play your instrument, you will be able to record your performance with more accurate timing. At the same time, since this allows you to specify segments for song editing by measure and beat, you can edit songs in a more musical way.

The metronome tempo can be controlled by the Tempo Map or Sync Track MIDI Clock. When using this feature, set up the Tempo Map (p. 121) or Sync Track (p. 119) beforehand. When you create a new song, the Tempo Map default settings include a 4/4 rhythm and tempo of 120.

Using the Metronome During Recording

The metronome will begin sounding when recording or playback begins. However you may sometimes wish to hear a count-in on the metronome to help you catch the tempo before recording begins. In such cases, you can set aside the first few measures of the recording to be only for the count-in, and not record on those measures.

The metronome sound is only for the purpose of helping you keep your playing in time.

1. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Gen.=" appears in the display.
4. Rotate the TIME/VALUE dial.

Gen. (Generator)

This selects the MIDI Clock on which the Metronome will be based. Select "MIDIclk" if you wish to use the Tempo Map, and "SyncTr" if you are going to use Sync Track.

Off: The MIDI Clock is not transmitted.

MTC: MIDI Time Code is transmitted (the metronome does not sound).

MIDIclk: The Tempo Map MIDI Clock is transmitted.

SyncTr: The Sync Track MIDI Clock is transmitted.

5. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
6. Press [YES].
7. Press PARAMETER [▶▶] several times until "SYS MetroOUT=" appears in the display.
8. Rotate the TIME/VALUE dial.

MetroOUT (Metronome Out)

This selects how the metronome is output. For now, select "INT."

Selecting "Off" prevents you from making any settings related to the Metronome.

Off: The metronome sound is not output.

INT: The metronome sound is output from the MONITOR jacks.

MIDI: The metronome signal is transmitted via the MIDI OUT connector.

9. Press PARAMETER [▶▶].
"MetroLevel" appears in the display.

10. Rotate the TIME/VALUE dial.

MetroLevel (Metronome Level)

This adjusts the volume level (0-127) of the metronome sound.

11. Press PARAMETER [▶▶].
"MetroMd" appears in the display.

12. Rotate the TIME/VALUE dial.

MetroMd (Metronome Mode)

This is for selecting when the metronome sound is played.

Rec Only: The metronome sounds only during recording.

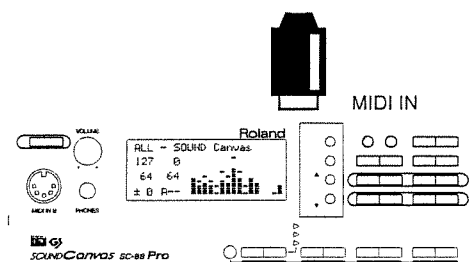
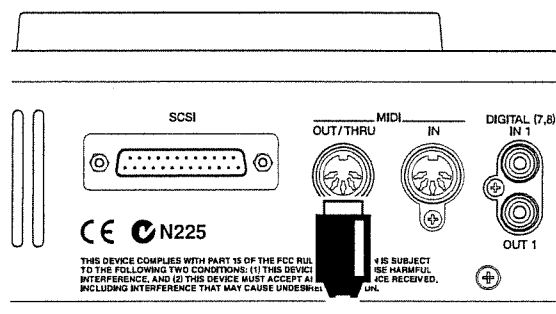
Rec&Play: The metronome sounds during both recording and playback.

13. This completes the metronome settings. Press [PLAY (DISPLAY)] to return to Play condition.

Using an External MIDI Sound Source to Play the Metronome

A MIDI sound source can be used to play the metronome with a sound of your choosing. To do this, use the following procedure.

1. Connect the VS-880EX and the MIDI sound generator as shown below.



MIDI Sound Generator

2. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
3. Press [YES].
4. Press PARAMETER [▶▶] several times until "SYS MID: MIDIThr=" appears in the display.
5. Rotate the TIME/VALUE dial.

MIDIThr (MIDI Thru Switch)

This switches the function of the MIDI OUT/THRU connector. Here, select "Out."

Out: MIDI messages are sent from the VS-880EX. Select this when sending metronome sound note messages or mixer parameter settings (Control Change messages or Exclusive messages).

Thru: This sends MIDI messages received via the MIDI IN connector without change.

6. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.

7. Press [YES].
8. Press PARAMETER [▶▶] several times until "SYS Gen.=" appears in the display.
9. Rotate the TIME/VALUE dial.

Gen. (Generator)

This selects the MIDI Clock on which the Metronome will be based. Select "MIDIclk" if you wish to use the Tempo Map, and "SyncTr" if you are going to use Sync Track.

Off: The MIDI Clock is not transmitted.

MTC: MIDI Time Code is transmitted (the metronome does not sound).

MIDIclk: The Tempo Map MIDI Clock is transmitted.

SyncTr: The Sync Track MIDI Clock is transmitted.

10. Press PARAMETER [▶▶] several times until "SYS MetroOUT=" appears in the display.
11. Rotate the TIME/VALUE dial.

MetroOUT (Metronome Out)

This selects how the metronome is output. For now, select "MIDI."

Selecting "Off" prevents you from making any settings related to the Metronome.

Off: The metronome sound is not output.

INT: The metronome sound is output from the MONITOR jacks.

MIDI: The metronome signal is transmitted via the MIDI OUT connector.

12. Press PARAMETER [▶▶] several times until "MetroMd" appears in the display.
13. Rotate the TIME/VALUE dial.

MetroMd (Metronome Mode)

This is for selecting when the metronome sound is played.

Rec Only: The metronome sounds only during recording.

Rec&Play: The metronome sounds during both recording and playback.

14. Press PARAMETER [▶▶]. "MetroCh" appears in the display.

15. Rotate the TIME/VALUE dial.

MetroCh (Metronome Channel)

This sets the MIDI channel (1-16) for transmitting Metronome sound Note Messages.

Chapter 12 Other Convenient Functions

16. Press PARAMETER [▶▶].

"Acc.Note" appears in the display.

17. Rotate the TIME/VALUE dial.

Acc.Note (Accent Note)

This sets note numbers (C0–G9) for the downbeat. When the Drum set is playing, this selects specific percussion sounds.

18. Press PARAMETER [▶▶].

"Nrm.Note" appears in the display.

19. Rotate the TIME/VALUE dial.

Nrm.Note (Normal Note)

This sets note numbers (C0–G9) for the upbeats. When the Drum set is playing, this selects specific percussion sounds.

20. Press PARAMETER [▶▶].

"Acc.Velo" appears in the display.

21. Rotate the TIME/VALUE dial.

Acc.Velo (Accent Velocity)

This sets the velocity (1–127) for the downbeat.

22. Press PARAMETER [▶▶].

"Nrm.Velo" appears in the display.

23. Rotate the TIME/VALUE dial.

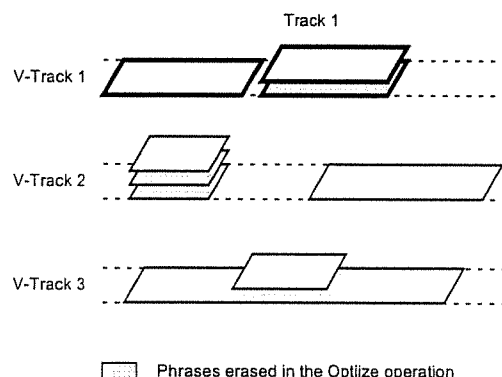
(Normal Velocity)

This sets the velocity (1–127) for the upbeats.

24. This completes the settings for sounding the metronome with an external MIDI device. Press [PLAY (DISPLAY)].

Return to Play condition.

The Optimize operation searches all V-tracks on the target song, and when playing back those V-tracks, **erases the phrases that cannot be heard**. For example, even if you execute the Optimize with the V-track 1 of Track 1 selected, the phrases that are heard when V-tracks 2–8 are selected for playback are not deleted.



1. Select the song you want to optimize as the current song.
2. Press [SONG] several times until "Song Optimize ?" appears in the display.
3. Press [YES].
4. "Song Optimize, Execute?" (Execute Song Optimize?) appears in the display. Press [YES]. If you wish to cancel Song Optimize, the press [CANCEL (NO)].
5. A confirmation message appears in the display. Press [YES]. If you wish to cancel the procedure, press [NO].
6. When the optimize is finished, return to Play condition.

* Be aware that, depending on conditions, it may take some time for the Optimize operation to be completed. This is not a malfunction. Do not turn the power off until the Optimize operation is completed.

When the Disk Has Little Remaining Space

Deleting Only Unneeded Performance Data (Song Optimize)

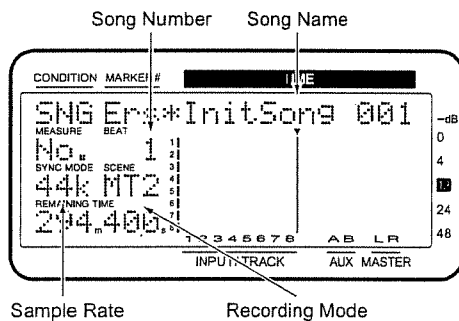
When operations such as overdubbing and Punch-In Recording are repeated, the old data will remain in the disk drive. In some cases, significant amounts of memory can be occupied by this unnecessary data, decreasing the available space on the current drive, and shortening the length of time available for recording.

Deleting this unnecessary data from the disk drive and thus freeing up available disk space on the drive is referred to as **Song Optimize**. This operation cannot be undone with the Undo function.

Deleting One Song of Performance Data (Song Erase)

When you are making a master tape or backing up songs to a Zip disk, this operation deletes song data that has become unnecessary. This operation cannot be undone with the Undo function.

1. Select the drive contains the song you want to erase as the current drive.
2. Press [SONG] several times until "SNG Song Erase?" appears in the display.
3. Press [YES].
The names of the songs stored on the current drive will appear. An asterisk "Q" will appear at the beginning of the current song.
4. Rotate the TIME/VALUE dial. Select the song that you wish to erase.



5. Press [YES].
6. A confirmation message appears in the display. Press [YES]. If you wish to cancel the procedure, then press [CANCEL (NO)].
7. If the song you are erasing is not the current song, "STORE Current?" then appears in the display.
8. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
9. When the song has been erased, return to Play condition.

* If the current song has been erased, the lowest-numbered song in the current drive will be selected as the current song.

Changing the Name of Performance Data (Song Name)

When you create a song, it will automatically be given a name like "InitSong001." However this makes it difficult to remember what song it is. We recommend that you assign a unique name to your song so that data management will be easier.

1. Make the song whose name you want to change the current song.
2. Press [SONG] several times until "SNG Song Name/Prtct?" appears in the display.
3. Press [YES].
The name of the song (Song Name) appears in the display.
4. Move the cursor so that the character that you wish to modify will blink. Use CURSOR[◀] [▶].
5. Modify the character. Rotate the TIME/VALUE dial. By holding down [SHIFT] as you rotate the TIME/VALUE dial you can make the characters change more rapidly.
6. When you have finished writing the song name or comments, hold down [SHIFT] and press [STORE (ZERO)].
"STORE OK?" appears in the display.
7. Press [YES].
The song is saved.
8. Press [PLAY (DISPLAY)].
Return to Play condition.

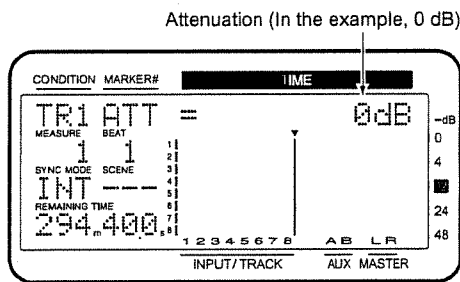
Adjusting the Levels for Each Track

You can adjust the volume level of each input and track channel without using the channel faders. You can raise the volume when playing back tracks that were recorded at low levels, avoid distorted sound that may occur when adjusting the channel equalizers, and be able to operate with the channel faders near 0 dB. Use the following procedure.

1. Press [CH EDIT (SELECT)] for the channels whose volume levels you wish to adjust.
2. Press PARAMETER [◀◀] [▶▶] to let "ATT =" appears in the display.

Chapter 12 Other Convenient Functions

3. Rotate the TIME/VALUE dial.



ATT (Attenuation)

Adjusts the volume level (-12--+12 dB) of each channel's digital signal.

4. Press [PLAY (DISPLAY)].
Return to Play condition.

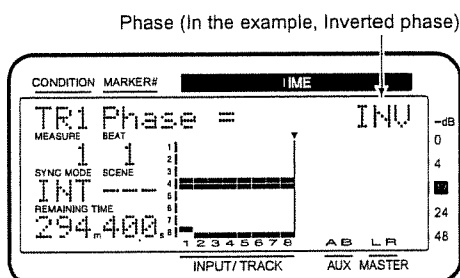
When Using Balanced Inputs

The VS-880EX features balanced (TRS) INPUT jacks, each one configure as follows.



However, some audio devices have the opposite HOT (TIP) and COLD (RING) configuration. Using such equipment as is may result in poor sound placement, disintegration of the left-right balance, and a loss of the separation between left and right sounds when using stereo inputs. In such instances, you need to switch the phase of each channel.

1. Press [CH EDIT (SELECT)] for the channels whose phase you wish to switch.
2. Press PARAMETER [◀◀] [▶▶] to let "Phase" appears in the display.
3. Rotate the TIME/VALUE dial.



Phase

This selects the phase (NRM, INV) for each channel. Usually, "NRM" is selected.

NRM: Normal phase (same phase as the input)

INV: Inverted phase (opposite phase)

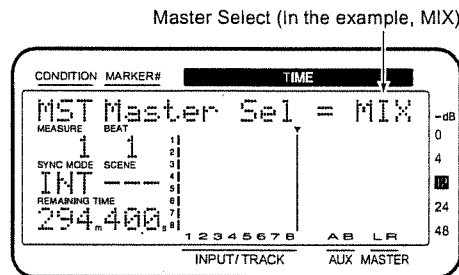
4. Press [PLAY (DISPLAY)].
Return to Play condition.

Determining Output

The VS-880EX features four analog output jacks (MASTER jacks L/R, AUX jacks L/R) and two digital connectors (DIGITAL OUT1, DIGITAL OUT2), each of which can have various signals assigned to it. Set the output for each output jacks or connectors using the following procedure.

MASTER Jacks

1. Hold down [SHIFT] and press [EDIT (FADER)].
2. Press PARAMETER [◀◀] [▶▶] to let "Master Sel =" appears in the display.
3. Determine what is to be output from the MASTER jacks by rotate the TIME/VALUE dial.



Master Sel (Master Select)

This selects what sounds are heard through the MASTER jacks.

MIX: The sounds assigned to the MIX bus.

AUX: The sounds assigned to the AUX bus.

FX1: The sounds assigned to the (FX1) EFFECT bus.

FX2: The sounds assigned to the (FX2) EFFECT bus.

REC: All sounds assigned to the RECORDING bus.

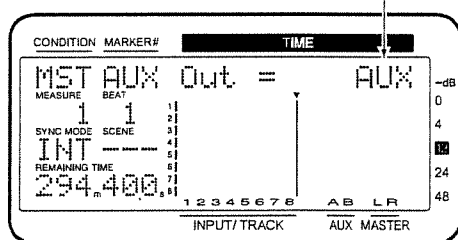
4. Press PARAMETER [▶▶].

5. "MasterLevel=" appears in the display. Use the TIME/VALUE dial to adjust the volume of the sound that is output from the MASTER jacks. This value is linked with master fader on the top panel.
6. Press PARAMETER [▶▶].
7. "Master Bal=" appears in the display. Use the TIME/VALUE dial to adjust the left/right balance of the sound that is output from the MASTER jacks.
8. Press [PLAY (DISPLAY)].
Return to Play condition.

AUX Jacks

1. Hold down [SHIFT] and press [EDIT (FADER)].
2. Press PARAMETER [◀◀] [▶▶] to let "AUX Out =" appear in the display.
3. Determine what is to be output from the AUX jacks by rotating the TIME/VALUE dial.

AUX Out (In the example, AUX)



AUX Out

This selects what sounds are heard through the AUX jacks.

- AUX:** The sounds assigned to the AUX bus.
FX1: The sounds assigned to the (FX1) EFFECT bus.
FX2: The sounds assigned to the (FX2) EFFECT bus.

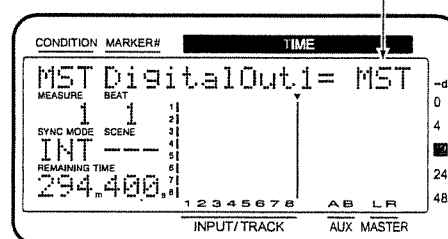
4. Press PARAMETER [▶▶].
5. "AUX Level=" appears in the display. Use the TIME/VALUE dial to adjust the volume of the sound that is output from the AUX jacks. This value is linked with AUX SEND knob on the top panel.
6. Press PARAMETER [▶▶].
7. "AUX Bal=" appears in the display. Use the TIME/VALUE dial to adjust the left/right balance of the sound that is output from the AUX jacks.

8. Press [PLAY (DISPLAY)].
Return to Play condition.

DIGITAL OUT Connectors

1. Hold down [SHIFT] and press [EDIT (FADER)].
2. Press PARAMETER [◀◀] [▶▶] to let "DigitalOut1=" appear in the display.
3. Determine what is to be output from the DIGITAL OUT1 connectors by rotating the TIME/VALUE dial.

Digital Out 1 (In the example, MST)



DOUT1 (DIGITAL OUT1)

This selects what sounds are heard through the DIGITAL OUT1 (coaxial) connector.

MST: Same sound as is heard from the MASTER jacks (MIX bus).

AUX: The sounds assigned to the AUX bus.

FX1: The sounds assigned to the (FX1) EFFECT bus.

FX2: The sounds assigned to the (FX2) EFFECT bus.

1-2: The sounds assigned to the Tracks 1-2.

3-4: The sounds assigned to the Tracks 3-4.

5-6: The sounds assigned to the Tracks 5-6.

7-8: The sounds assigned to the Tracks 7-8.

4. Press [PLAY (DISPLAY)].
Return to Play condition.

* The DIGITAL OUT2 (optical) connector is set in the same way. In this case, make the display read "DigitalOut2" in step 2.

DIRECT OUT

The sounds from each of the Tracks 1–4 or Tracks 5–8 are output from separate analog jacks.

1. Hold down [SHIFT] and press [EDIT (FADER)].
2. Press PARAMETER [◀◀] [▶▶] to let "DIR OUT=" appears in the display.
3. Determine what is to be output from the DIRECT OUT by rotating the TIME/VALUE dial.

DIR OUT (Direct Out)

The metronome sound is not output.

Off: The DIRECT OUT is not use.

- 1–4:** The sounds from Tracks 1–4 are output from the following jacks. In this case, the settings for the MASTER and AUX jacks are not in effect. The sounds from Tracks 1 and 2 are output from the PHONES jack. Additionally, the sounds output from the DIGITAL OUT connectors are specified in the Master Block (p. 159).

Track 1: MASTER jack (L)

Track 2: MASTER jack (R)

Track 3: AUX A jack (L)

Track 4: AUX A jack (R)

- 5–8:** The sounds from Tracks 5–8 are output from the following jacks. In this case, the settings for the MASTER and AUX jacks are not in effect. The sounds from Tracks 5 and 6 are output from the PHONES jack. Additionally, the sounds output from the DIGITAL OUT connectors are specified in the Master Block (p. 159).

Track 5: MASTER jack (L)

Track 6: MASTER jack (R)

Track 7: AUX A jack (L)

Track 8: AUX A jack (R)

4. Press [PLAY (DISPLAY)].
Return to Play condition.

Confirming That a Drive is Not Damaged (Drive Check)

You can check the drive you are using to make sure it can be read correctly. This is referred to as **Drive Check**.

This provides a way to determine whether a failure during Song Copy (p. 102) or DAT Backup (p. 129) is due to a problem in the song itself that was saved on disk, whether the problem is with the connections, or if there is a problem of some other kind.

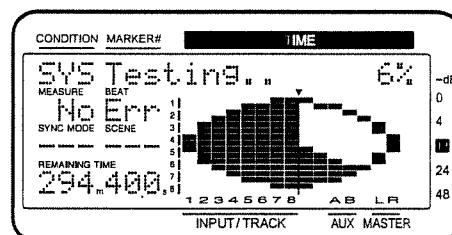
If data cannot be read correctly, the display will indicate the song in which the error occurred.

1. Press [SYSTEM] several times until "SYS Drive Check?" appears in the display.
2. Press [YES].
3. Select the drive that you wish to check. Rotate the TIME/VALUE dial.

CheckDrive (Check drive)

Select the disk drive that you wish to check.

4. When you have selected the drive you wish to check, press [YES].
5. A confirmation message ask you that you want to proceed with the Drive Check appears in the display. Press [YES].
6. "STORE Current?" appears in the display. If you wish to save the current song, press [YES]; if not, then press [NO]. **If you have selected a demo song, then press [NO].**
7. Drive Check is the executed. Progress of the operation is shown in the display. Do not turn off the power until the operation is completed.

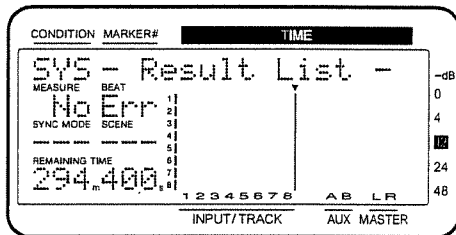


To Cancel the Drive Check

You can use the following procedure to cancel the Drive Check.

1. Press [CANCEL (NO)].
"Cancel?" appears in the display.
2. Press [YES].
Drive Check is canceled.

8. When Drive Check is completed, the display screen appears as shown below.



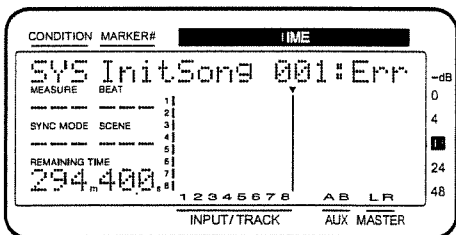
If the display indicates "No Err"

- 9-1. The entire disk could be read correctly. Press [YES].
Return to Play condition.

If the display indicates "___ Err"

The underlines portion will display the number of times that a read error occurred. Rotate the TIME/VALUE dial to check the list.

The display will indicate "Err" for locations where an error was found. Locations for which "OK" was displayed have no problems.



ResultList (Drive check results)

System: Location where basic data used by the VS-880EX for recording and playback is stored

SongList: Location where the saved songs are managed

InitSong001: Each song (in actual use, the song name is displayed)

InitSong002:

InitSong 200:

ClusterInfo. (Cluster information)

Total: Number of clusters on the entire disk

Defect: Number of clusters tagged as unusable memory

Used: Number of clusters currently being used

Free: Number of clusters currently not being used

X-LinkErr: Number of cross-linked clusters

LooseArea: Number of clusters whose links are lost

IllegalDIR: Number of directories with incorrect content

ReadError: Number of read errors detected by this operation

Clusters

These are the smallest unit of memory that the VS-880EX uses to manage data on a disk drive. The smallest physical units on a disk drive are called either **sectors** or **blocks**, and depending on the device, the size that is handled can be selected. For example, the VS-880EX is designed to use disks with 512 bytes/sector. When the VS-880EX manages song data, it handles 64 sectors as a single unit (cluster). This means that 512 (bytes) x 64 (sectors) = 32768 bytes (32 kilobytes) is one cluster.

Cross Link

This is an error in which a cluster is detected as being included in two or more songs. In such a case, a completely different song may be heard in the middle of a song. Such an error condition is referred to as a **cross link**.

Loose Areas

An error in which clusters not included in any song are detected as containing valid data. In this case, the VS-880EX will not store data in those clusters. A situation which causes this error to occur is called a **loose area**.

Directories

The VS-880EX stores data such as audio data or parameter values on disk in units called files. In order to manage large numbers of files, the VS-880EX keeps lists of file names and the locations on disk in which the data of these files is stored. These lists are called **directories**.

The "IllegalDIR" message will appear when this list is incorrect. For example, this message will appear if the data of a certain file is supposed to be recorded in an area of the disk which does not actually exist, or if the list itself becomes permanently unreadable.

If a disk error is found, it is possible to erase only the data that was lost as a result of the error (Recover). I.e., the disk can be restored to a correct operating condition while keeping as much possible of the non-error data.

** This procedure does not correct the disk error. All error locations will be erased. This means that depending on the location in which the error occurred, a take that was recorded may no longer be playable, auto mix data may be lost, or even the entire song itself may be erased. If the error has occurred in the system or song list, the probability of this danger is especially high.*

9-2. Press [ENTER (YES)].

"RecoverDriveTry?" appears in the display.

9-3. The message "You'll Lose Data" will appear in the display. Press [YES].

The Recover operation is executed. If you want to cancel the operation, press [CANCEL (NO)].

9-4. When the recovery is finished, the results are shown on the display screen. Songs that have been partially altered are indicated by "Adj"; deleted songs are indicated by "Del." Songs that have not been changed are not indicated. Please check the display.

RecoverResult (Recovery result)

InitSong001:

InitSong003: Modified songs (in actual operation, the song name)

:

InitSong200:

ClusterInfo. (Cluster information)

Total: Number of clusters on the entire disk

Defect: Number of clusters marked as unusable memory

Used: Number of clusters currently being used

Free: Number of clusters currently unused

9-5. Press [YES].

Return to Play condition.

Chapter 13 Making Global Settings and Checking Conditions

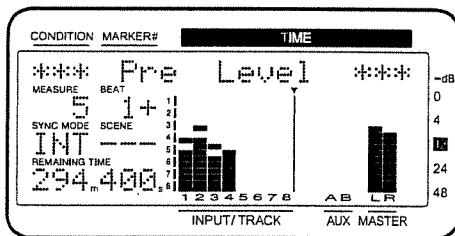
This section describes the settings that affect the overall functioning of the VS-880EX.

Switching the Display Content

In Play condition, you can hold down [SHIFT] and press [DISPLAY (PLAY)] to switch the contents of the bar display. In Edit condition, the contents of the display will change depending on the selected parameter or operation.

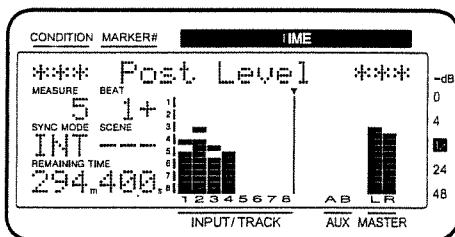
Pre Level

The volume of each channel before passing through the channel faders will be displayed. The AUX and MASTER fields indicate the respective volume levels of the signal after passing through the AUX knob and the master fader.



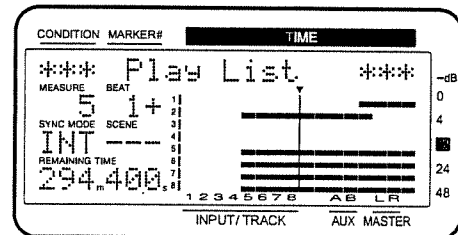
Post Level

The volume of each channel after passing through the channel faders will be displayed. The AUX and MASTER fields indicate the respective volume levels of the signal after passing through the AUX knob and the master fader.



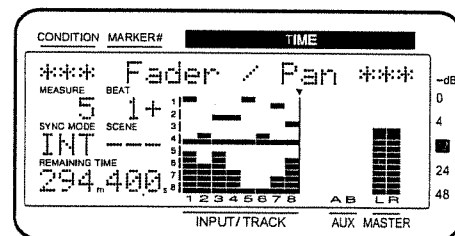
Play List

The way in which sound is recorded in the various tracks before and after the current time will be displayed.



Feder/Pan

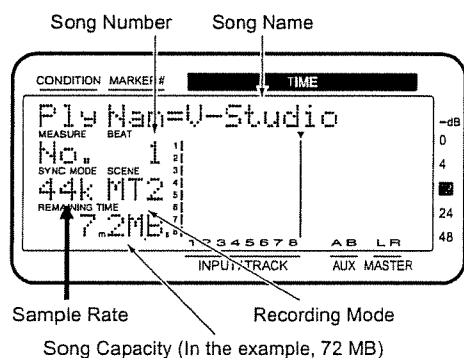
The settings of the master fader and the PAN knob and fader of each channel will be displayed. If the displayed location of the PAN knobs or faders is different than the actual location (as when the mixer mode has been switched), the current location of the PAN knob or fader will blink.



Checking the Size of a Recorded Performance

You can see the Song Name, Song Number, Sample Rate, Recording Mode, and the actual used capacity of the current song by the following operation.

1. Stop the song playback. When the song is performed, press [STOP].
2. Press [PLAY (DISPLAY)].
Return to Play condition.
3. Hold down [SHIFT] and press [SONG].
The display will indicate Song Information briefly.



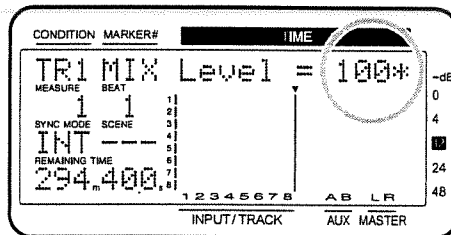
* The actual used capacity of the song is displayed as 1 MB = 1,000,000 bytes. The displayed value is the approximate standard value.

System Settings for Each Song

These are overall settings that can be saved in any song. These settings are lost if the power is turned off without the song being saved, or if the System settings are reset to their original conditions.

Having the Volume Change as Soon as the Faders are Moved

When you press [FADER (EDIT)] to switch between input and track channels or to recall Scenes, there will be times when fader positions may not correspond to their actual volume settings. In such instances, the position of each fader is represented by a black dot, and the actual level that is set is represented by a white circle. Use the following procedure when you wish to have the volume change as soon as the faders are moved.



1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS FaderMatch" appears in the display.
4. Rotate the TIME/VALUE dial.

Fader Match

Here, the fader is selected to control the sound if there is a discrepancy between the current fader and the actual volume level.

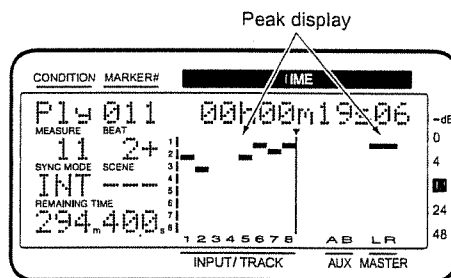
Jump: The actual value will change at the instant that the fader is moved.

Null: No change is made unless the fader or pan knob is moved to its current actual value.

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Holding Level Meter Peaks

You can hold the display of maximum values (peaks) while the level meter appears in the graphic display.



1. Press [SYSTEM] several times until "SYS PeakHoldSw=" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS System PRM ?" appears in the display.
4. Rotate the TIME/VALUE dial.

PeakHoldSw (Peak Hold Switch)

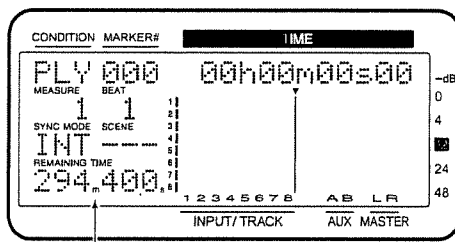
With this set to "On," the level meter in the graphic display holds the display of peak levels.

5. Press [PLAY (DISPLAY)].

Return to Play condition. Now, the peak display is reset (cleared) each time [PLAY (DISPLAY)] is pressed.

Checking the Remaining Disk Space

The amount of free disk space available for recording the current song is displayed as "REMAINING TIME" field in the display. You can select the type of display for this.



Remaining amount (in the example, 294 minutes 40 seconds)

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS RemainDsp=" appears in the display.
4. Rotate the TIME/VALUE dial.

RemainDsp (Remaining Display)

This selects how the remaining disk space is shown.

- Time:** This indicates the time (minutes/seconds) left for recording.
- CapaMB:** This shows the actual memory (in megabytes).
- Capa %:** This indicates the remaining space as a percentage of the total disk space.
- Event:** This shows the number of events used in the recording.

5. Press [PLAY (DISPLAY)].

Return to Play condition.

When Using the Foot Switch

With an optional foot switch (such as the Roland DP-2 or BOSS FU-5U) connected to the FOOT SWITCH jack, you can choose how the foot switch functions.

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Foot Sw=" appears in the display.
4. Rotate the TIME/VALUE dial.

Foot Sw (Foot Switch)

This sets the foot switch function.

Play/Stop: Pressing the switch alternately starts and stops playback of the song.

Record: Works the same as the [REC] button. Use this to switch between recording and playback during manual Punch-In Recording.

TapMarker: Works the same as the [TAP] button. Mark points are set when the pedal is pressed.

Next: Works the same as the [NEXT] button. Each time the pedal is pressed recalls the next marker.

Previous: Works the same as the [PREVIOUS] button. Each time the pedal is pressed recalls the previous marker.

GPI: This controls start and stopping of playback of the song according to the GPI trigger signal received from the FOOT SWITCH jack.

? GPI (Appendices p. 123)

5. Press [PLAY (DISPLAY)].

Return to Play condition.

Overall Settings for the VS-880EX

These are setting related to the overall operation of the VS-880EX.

Holding the function of [SHIFT] (Shift Lock)

You can temporarily hold functions by pressing [SHIFT]. Operations such as switching V-tracks or saving songs can be performed with one hand.

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Shift Lock=" appears in the display.
4. Rotate the TIME/VALUE dial.

Shift Lock (Shift Lock Switch)

Setting to "On" temporarily holds the [SHIFT] button function.

5. Press [PLAY (DISPLAY)].
Return to Play condition.
6. Afterwards, the [SHIFT] button indicator light goes on and off each time the button is pressed. [SHIFT] is in effect when the indicator is lit. The hold is lifted the next time another button is pressed or if the TIME/VALUE dial is rotated.

Example Procedure for Switching the Solo Function ON

1. Press [SHIFT] and immediately release the button.
The SHIFT indicator lights. The display will briefly indicate "Shift Lock." The display in the "CONDITION" field will alternate between the name of the current condition and "sft," also indicating that the Shift Lock function is on.
2. Press [SOLO (EZ ROUTING)].
The display will briefly indicate "SOLO Mode ON," indicating that the Solo function is on. The SHIFT indicator goes off.

When Holding Down the [SHIFT] Button

If [SHIFT] is held down during the operation, the Shift Lock function will be ignored. For example, if you hold down the [SHIFT] and press [AUTOMIX (VARI PITCH)], Shift Lock will not be turned on when you take your finger off [SHIFT]. The function of [SHIFT] itself remains in effect, so the the Vari-Pitch function is on at this time. Additionally, rotating the TIME/VALUE dial while holding down the [SHIFT] button increases or decreases the value of some parameter setting by a factor of ten (or 1/10).

Displaying Measures and Beats

If both the metronome is being used and MIDI clock messages are being transmitted, the measure and beat of the song can be displayed in the graphic display. When you are running in synchronization with an external device or recording a song along with a previously-created tempo map, this allows you to operate the VS-880EX just as though you were operating a MIDI sequencer. Set the metronome to sound as described in "Sounding the Metronome" (p. 154).

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MeasureDsp=" appears in the display.
4. Rotate the TIME/VALUE dial.

MeasureDsp

Use this to select whether or not the measure and beat appear in the graphic display.

Always: The measure and beat are constantly displayed.

Auto: The measure and beat are not displayed when the metronome is not in use.

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Adjusting the Button Sensitivity

On the VS-880EX, function of STATUS button differs by it is hit and released quickly or it is held for longer seconds. You can specify the length of this time that the STATUS button must be held down in order to change it's function.

Function When Pressed: Changes the track status.

Function When Held Down: Confirms the channel assigned to the track.

1. Press [SYSTEM] several times until "SYSTEM PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SwitchTime=" appears in the display.
4. Rotate the TIME/VALUE dial.

SwitchTime (Switching Time)

This designates the time the buttons must be held down (0.3–2.0 seconds) in order to change functions.

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Changing the VS-880EX's SCSI ID Number

When connecting SCSI devices with the VS-880EX, the SCSI ID number of each device must be set so that none of the devices have the same ID number. The VS-880EX's SCSI ID number is set to "7" at the factory. When connecting the VS-880EX to other SCSI devices (for example, Zip drives or CD-R drives), be sure to set the SCSI ID number for these other devices to a number other than "7."

If no other SCSI ID number is vacant, it is also possible to change the SCSI ID number of the VS-880EX.

1. Press [SYSTEM] several times until "SYS DISK PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS DSK:SCSI Self=" appears in the display.
4. Rotate the TIME/VALUE dial.

SCSI Self (SCSI Self ID Number)

This sets the VS-880EX's own SCSI ID number (0–7).

5. Hold down [SHIFT] and press [STORE (ZERO)].
"STORE OK?" appears in the display.
6. Press [YES].
The song is saved.

7. Press [PLAY (DISPLAY)].

Return to Play condition. The new SCSI ID number becomes effective from the next time when the VS-880EX is turned on.

When There Is No Hard Disk Installed

Even when there is no hard disk installed in the VS-880EX, it still can be used with only a Zip drive connected to the SCSI connector. In such instances, it takes approximately 30 seconds after the power is turned on of the VS-880EX to check its internal hard disk connection status. To avoid this wait, you can preset the VS-880EX not to attempt to use the internal hard disk.

1. Press [SYSTEM] several times until "SYS DISK PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS DSK:IDE Drv=" appears in the display.
4. Rotate the TIME/VALUE dial.

IDE Drv (IDE Drive)

When not using the internal hard disk, set this to "Off." Normally, this is set to "On."

5. Hold down [SHIFT] and press [STORE (ZERO)].
"STORE OK?" appears in the display.
6. Press [YES].
The song is saved.
7. Press [PLAY (DISPLAY)].
Return to Play condition. The changed setting becomes effective from the next time when the VS-880EX is turned on.

Changing at the Level at Which the Peak Indicator Lights

You can designate the level at which the peak indicator lights for sounds input via the INPUT jacks (1–6).

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "Peak Level=" appears in the display.
4. Rotate the TIME/VALUE dial.

Peak Level

This sets the volume level at which the peak indicator lights.

CLIP: The indicator lights when the sound distorts.

-3dB: The indicator lights 3 dB before the sound distorts.

-6dB: The indicator lights 6 dB before the sound distorts.

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Overall Settings for Playback and Recording

These are settings related to the overall workings of the Play and Record functions.

Constantly Monitoring the Input Source

On channels for which Track Status is set to REC, playing back the song in record ready mode (REC indicator blinking) will allow you to monitor the performance that is recorded in the track, and during recording (REC indicator lit) you will be able to monitor the input source. At this time, pressing [STATUS] will let you switch between monitoring the track and monitoring the input source.

It is also possible to make settings so that the input source is always monitored.

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Record Mon=" appears in the display.
4. Rotate the TIME/VALUE dial.

Record Mon (Record Monitor)

This switches between track and source monitoring.

AUTO: This switches monitoring between track and source.

SOURCE: This sets the VS-880EX to monitor the source at all times.

	While stopped	During playback	During recording
AUTO	SOURCE	TRACK/SOURCE	SOURCE
SOURCE	SOURCE	SOURCE	SOURCE

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Stopping Automatically

You can cause song playback to stop automatically at a marker.

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Marker Stop=" appears in the display.

4. Rotate the TIME/VALUE dial.

Marker Stop

When this is set to "On," playback of the song stops automatically when a designated marker is reached.

5. Press [PLAY (DISPLAY)].
Return to Play condition.
6. Press [PLAY] to begin playback of the song.
When the song reaches the location containing the marker, playback then stops.

If Noise Between Segments is Obtrusive

In the seams or breaks that occur when recording is begun or ended or when a phrase is copied, obtrusive noise may occur. The VS-880EX fades-in and fades-out these breaks so that this noise will not be heard. If objectionable noise occurs, you can adjust the length of the fade-in and fade-out.

** It is not possible to set the fade-in/fade-out time to 0. Thus in some cases, such as if you copy a sustained sound such as strings and use it elsewhere, the break may be even more noticeable than if there had been no fade.*

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Fade Length=" appears in the display.
4. Rotate the TIME/VALUE dial.

Fade Length

This sets the length (2, 10, 20, 30, 40, or 50 ms) of the fade-in or fade-out.

5. Press [PLAY (DISPLAY)].
Return to Play condition.

Resetting Mixer and System Settings to Their Original State

After repeatedly making new settings to the input mixer, track mixer, and Master Block, as well as after changing the content of settings in System condition, you can restore the initial parameters existing when you started to create a song.

** Even if you restore the settings to their initial state, the song, scene, tempo map and sync track data will not be lost. Furthermore, the IDE drive (p. 167), SCSI self ID (p. 167), Scene Mode (p. 74), Shift Lock (p. 166), and Numerics Type (p. 153) settings will not return to their default state.*

1. Press [SYSTEM] several times until "SYS System PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS Init Mix/SysPRM ?" appears in the display.
4. Press [YES].

A message will ask you to confirm that you really want to restore the mixer to the initial settings.

5. Press [YES]. To cancel the operation press [NO].
When the mixer settings return to the initial state, you will be in Play condition.

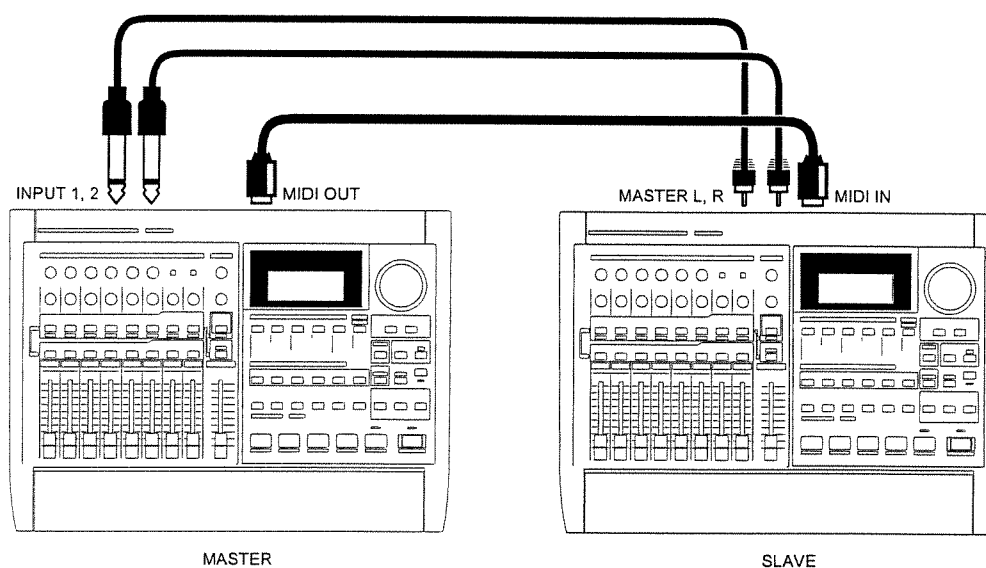
Chapter 14 Takein Advantages of the VS-880EX (idea and examples)

Along with the functions or external devices explained in earlier chapters, this chapter explains some actual ways and gives some tips in which the VS-880EX can be used effectively. First press [PLAY (DISPLAY)], and begin each operation from Play condition.

Synchronizing the Operations of Two VS-880EX Units

The VS-880EX is compatible with MMC. Here, we explain how the operation of two VS-880EX units can be synchronized. One VS-880EX acts as the MMC/MTC master, and the other acts as the MMC/MTC slave. Make connections as described below.

? MMC (Appendices p. 124)



* In this example, you can use the master's Stereo In function for the mix balance between the master and slave VS-880EXs (p. 152). First adjust the individual track balances on both machines. Of course, you can also send the output of the master and slave VS-880EXs to a separate mixer. However, the master and slave units cannot be connected using digital connections.

Settings for the Master VS-880EX

1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
"SYS MID:DeviceID=" appears in the display.
3. Rotate the TIME/VALUE dial.

DeviceID

This sets the Device ID number (1–32) that is used when exchanging exclusive messages (mixer parameters) with an external MIDI device. Exclusive messages can be transmitted and received between devices which have the same Device ID number setting. Here, set this to "17."

Chapter 14 Takein Advantages of the VS-880EX (idea and examples)

4. Press **PARAMETER** [▶▶].
"SYS MID:MIDIThr=" appears in the display.

5. Rotate the **TIME/VALUE** dial.

MIDIThr (MIDI Thru Switch)

This switches the function of the MIDI OUT/THRU connector. For now, set this to "Out."

Out: The connector transmits MIDI message such as metronome Note messages or MTC from the VS-880EX.

Thru: MIDI messages received at the MIDI IN connector are retransmitted from the connector without any changes.

6. Press **PARAMETER** [▶▶] several times until "SYS MID:SysEx.Tx=" appears in the display.

7. Rotate the **TIME/VALUE** dial.

SysEx.Tx. (System Exclusive Transmit Switch)

Exclusive messages are transmitted when this is set to "On." At this time, set this to "On."

8. Press **PARAMETER** [▶▶].
"SYS MID:MMC=" appears in the display.

9. Rotate the **TIME/VALUE** dial.

MMC (MMC Mode)

This setting determines how the VS-880EX implements MMC. Set this to "MASTER."

Off: MMC is neither transmitted nor received.

MASTER: MMC is transmitted. The VS-880EX functions as the master device for external MIDI equipment.

SLAVE: MMC is received. The VS-880EX functions as a slave device for external MIDI equipment.

10. Press **PARAMETER** [▶▶] several times until "SYS MID:CtrType=" appears in the display.

11. Rotate the **TIME/VALUE** dial.

CtrType (Mixer Control Type)

This selects the type of MIDI messages that will be used when transmitting mixer settings to an external MIDI device, or when MIDI messages from an external MIDI device are used to control the mixer. At this time, set this to "Off."

Off: MIDI messages related to mixer operation are not transmitted or received.

C.C.: The mixer is controlled using Control Change messages.

Excl: The mixer is controlled using Exclusive messages.

** When "C.C." or "Excl" is selected, making mixer adjustments on the master VS-880EX makes the same adjustments to the slave VS-880EX mixer. For more detailed information about Exclusive messages, please refer to "MIDI Implementation" (Appendices p. 74).*

12. Press **[SYSTEM]** several times until "SYS Sync/Tempo ?" appears in the display.

13. Press **[YES]**.
"SYS Syn:Source=" appears in the display.

14. Make sure that the Sync Source is set to "INT."

Sync Source

This determines how the VS-880EX is synchronized with other devices. Here, set this to "INT."

INT: The VS-880EX runs according to its own internal clock. Select this setting when you are not synchronizing with other devices or when you want external MIDI devices to be controlled by synchronization signals from the VS-880EX.

EXT: The VS-880EX is controlled with synchronization signals (MTC) from the connected external MIDI device. In this case, the VS-880EX does not operate unless it is receiving MTC signals. Select this setting when you want to use the MTC from an external MIDI device to control the VS-880EX.

15. Press **PARAMETER** [▶▶].
"SYS Syn:Gen.=" appears in the display.

16. Rotate the **TIME/VALUE** dial.

Gen. (Generator)

This selects the type of synchronization signal transmitted from the MIDI OUT connector. For now, set this to "MTC."

Off: Synchronization signals are not transmitted.

MTC: MIDI Time Code is transmitted.

MIDIClk: MIDI Clock according to the Tempo Map is transmitted.

SyncTr: MIDI Clock data recorded on the sync track is transmitted.

17. Press **PARAMETER** [▶▶] several times until "SYS Syn:MTC Type=" appears in the display.

18. Rotate the **TIME/VALUE** dial.

MTC Type (MTC Type)

This selects the type of MTC (30, 29N, 29D, 25, or 24). Set this to conform to the type of MTC on the slave VS-880EX. Here, select "30."

19. Press **[PLAY (DISPLAY)]**.
Return to Play condition.

Settings for the Slave VS-880EX

1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
"SYS MID:DeviceID=" appears in the display.
3. Rotate the TIME/VALUE dial.

DeviceID

This sets the Device ID number (1–32) that is used when exchanging exclusive messages (mixer parameters) with an external MIDI device. Exclusive messages can be transmitted and received between devices which have the same Device ID number setting. Here, set this to "17."

4. Press PARAMETER [▶▶] several times until "SYS MID:SysEx.Rx.=" appears in the display.
5. Rotate the TIME/VALUE dial.

SysEx.Rx. (System Exclusive Receive Switch)

Exclusive messages are received when this is set to "On." At this time, set this to "On." The Exclusive messages can be received when the VS-880EX is in Play condition.

6. Press PARAMETER [▶▶].
"SYS MID:MMC=" appears in the display.
7. Rotate the TIME/VALUE dial.

MMC (MMC Mode)

This setting determines how the VS-880EX implements MMC. Set this to "SLAVE."

Off: MMC is neither transmitted nor received.

MASTER: MMC is transmitted. The VS-880EX functions as the master device for external MIDI equipment.

SLAVE: MMC is received. The VS-880EX functions as a slave device for external MIDI equipment.

8. Press PARAMETER [▶▶] several times until "SYS MID:CtrType=" appears in the display.
9. Rotate the TIME/VALUE dial.

CtrType (Mixer Control Type)

This selects the type of MIDI messages that will be used when transmitting mixer settings to an external MIDI device, or when MIDI messages from an external MIDI device are used to control the mixer. At this time, set this to "Off."

Off: MIDI messages related to mixer operation are not transmitted or received.

C.C.: The mixer is controlled using Control Change messages.

Excl: The mixer is controlled using Exclusive messages.

** When "C.C." or "Excl" is selected, making mixer adjustments on the master VS-880EX makes the same adjustments to the slave VS-880EX mixer. For more detailed information about Exclusive messages, please refer to "MIDI Implementation" (Appendices p. 74).*

10. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.
11. Press [YES].
12. Press PARAMETER [▶▶] several times until "SYS Syn:ErrLevel=" appears in the display.
13. Rotate the TIME/VALUE dial.

ErrLevel (Error Level)

This sets the interval (0–10) for checking MTC receiving status when synchronize VS-880EX with MTC from an external MIDI device. If the MTC is not being sent continuously, the VS-880EX checks the MTC and if there is an error, cancels synchronization. By setting a longer interval under such circumstances, synchronization can continue, even if there is a certain degree of error. Normally, set this to "5."

14. Press PARAMETER [▶▶].
"SYS Syn:MTC Type=" appears in the display.

15. Rotate the TIME/VALUE dial.

MTC Type (MTC Type)

This selects the type of MTC (30, 29N, 29D, 25, or 24). Set this to conform to the type of MTC on the slave VS-880EX. Here, select "30."

16. Press [PLAY (DISPLAY)].
Return to Play condition.

17. Hold down [SHIFT] and press [SYSTEM].
The "SYNC MODE" field of the display will show "EXT," indicating that the unit is waiting to receive MTC.

In this condition, the slave VS-880EX is operated synchrony when the master VS-880EX is operated.

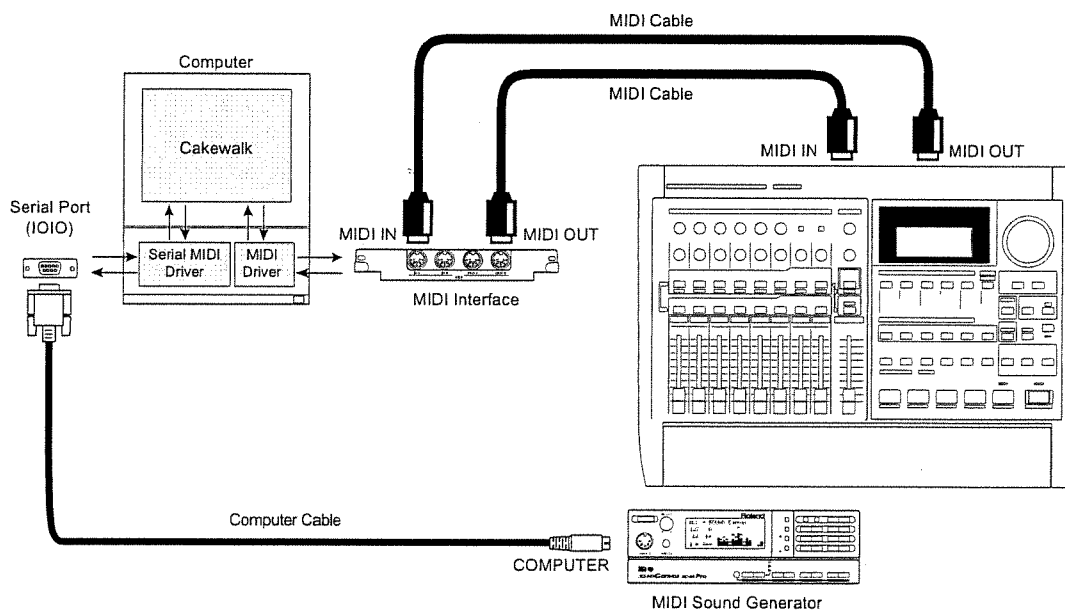
Synchronizing with Cakewalk Pro Audio (MMC)

The VS-880EX supports MMC. This means that when two VS-880EX units are synchronized or when a VS-880EX is used in conjunction with an MMC-supporting MIDI sequencer etc., operations such as song playback, stop and fast-forward can be performed by operating only the master device.

? MMC (Appendices p. 124)

** Some MIDI devices are not compatible with the MMC used by the VS-880EX. If you are using such a device, the VS-880EX cannot be operated in the manner described in this Owner's Manual. For more detailed information about MMC functions for the VS-880EX, please refer to "MIDI Implementation" (Appendices p. 74).*

Here, we will see an example of synchronizing the VS-880EX with the Cakewalk Pro Audio software application. Cakewalk Pro Audio is a computer-based sequencer program compatible with MMC and MTC (for Windows 95). Make the connections as shown below, referring to the Cakewalk owner's manual as you go along.



In this example, Cakewalk is the master device when MMC is used, and the VS-880EX is the master device when using MTC. Cakewalk can be used to control such operations of the VS-880EX as playback, stopping, switching track status, and more.

** Use a MIDI interface when connecting the VS-880EX to a computer. You can also use a MIDI interface in connecting a computer to a sound generator.*

Settings for the VS-880EX

1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MID:MIDIThr=" appears in the display.
4. Rotate the TIME/VALUE dial.

MIDIThr (MIDI Thru Switch)

This switches the function of the MIDI OUT/THRU connector. For now, set this to "Out."

Out: The connector transmits MIDI message such as metronome Note messages or MTC from the VS-880EX.

Thru: MIDI messages received at the MIDI IN connector are retransmitted from the connector without any changes.

5. Press PARAMETER [▶▶] several times until "SYS MID:SysEx.Rx.=" appears in the display.
6. Rotate the TIME/VALUE dial.

SysEx.Rx. (System Exclusive Receive Switch)

Exclusive messages are received when this is set to "On." At this time, set this to "On." The Exclusive messages can be received when the VS-880EX is in Play condition.

7. Press PARAMETER [▶▶].
"SYS MID:MMC=" appears in the display.
8. Rotate the TIME/VALUE dial.

MMC (MMC Mode)

This setting determines how the VS-880EX implements MMC. Set this to "SLAVE."

Off: MMC is neither transmitted nor received.

MASTER: MMC is transmitted. The VS-880EX functions as the master device for external MIDI equipment.

SLAVE: MMC is received. The VS-880EX functions as a slave device for external MIDI equipment.

9. Press PARAMETER [▶▶] several times until "SYS MID:CtrlType=" appears in the display.
10. Rotate the TIME/VALUE dial.

CtrlType (Mixer Control Type)

This selects the type of MIDI messages that will be used when transmitting mixer settings to an external MIDI device, or when MIDI messages from an external MIDI device are used to control the mixer. At this time, set this to "C.C.."

Off: MIDI messages related to mixer operation are not transmitted or received.

C.C.: The mixer is controlled using Control Change messages.

Excl: The mixer is controlled using Exclusive messages.

11. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.

12. Press [YES].
"SYS Syn:Source=" appears in the display.

13. Make sure that the Sync Source is set to "INT."

Sync Source

This determines how the VS-880EX is synchronized with other devices. Here, set this to "INT."

INT: The VS-880EX runs according to its own internal clock. Select this setting when you are not synchronizing with other devices or when you want external MIDI devices to be controlled by synchronization signals from the VS-880EX.

EXT: The VS-880EX is controlled with synchronization signals (MTC) from the connected external MIDI device. In this case, the VS-880EX does not operate unless it is receiving MTC signals. Select this setting when you want to use the MTC from an external MIDI device to control the VS-880EX.

14. Press PARAMETER [▶▶].
"SYS Syn:Gen.=" appears in the display.

15. Rotate the TIME/VALUE dial.

Gen. (Generator)

This selects the type of synchronization signal transmitted from the MIDI OUT connector. For now, set this to "MTC."

Off: Synchronization signals are not transmitted.

MTC: MIDI Time Code is transmitted.

MIDIClk: MIDI Clock according to the Tempo Map is transmitted.

SyncTr: MIDI Clock data recorded on the sync track is transmitted.

Chapter 14 Takein Advantages of the VS-880EX (idea and examples)

16. Press PARAMETER [▶▶] several times until "SYS Syn:MTC Type=" appears in the display.

17. Rotate the TIME/VALUE dial.

MTC Type (MTC Type)

This selects the type of MTC (30, 29N, 29D, 25, or 24). Set this to conform to the type of MTC on the slave VS-880EX. Here, select "30."

18. Press [PLAY (DISPLAY)].

Return to Play condition.

Settings for Cakewalk Pro Audio

Make the settings for Cakewalk Pro Audio as described below. For more detailed information about Cakewalk, please refer to the Cakewalk owner's manual.

Setting | Clock:

MTC (receives MTC)

Setting | MIDI Out:

Check "Transmit MMC" (sends MMC)

Setting | Time Format:

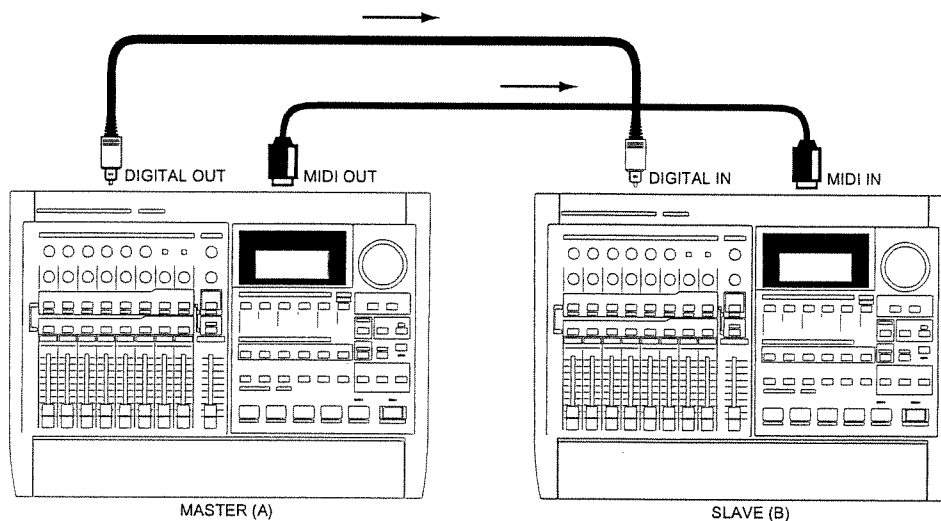
MTC from the VS-880EX (here, set "30")

* "30 Frame Drop" in Cakewalk corresponds to "29D" on the VS-880EX.

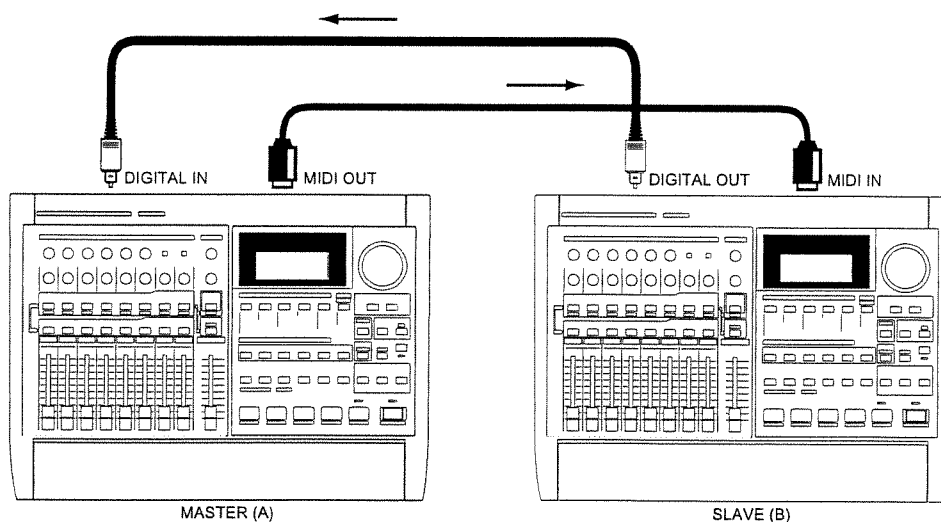
Under this condition, when playback is begun with Cakewalk, MMC is transmitted to the VS-880EX, and upon receiving the MMC, the VS-880EX also begins playback. During playback, MTC is sent from the VS-880EX to Cakewalk, thus synchronizing operations.

Digital Connections Cannot Be Used

When Sync Source is set to "EXT," the VS-880EX operates according to the Clock signal (MTC) transmitted by the connected MIDI device. At such times, if you also set the master Clock to "DIGIN1" or "DIGIN2," the VS-880EX then also attempts to operate according to the Clock (digital signal) from the external digital device. This means the internal clock becomes mismatched. Thus, in the present example, the slave VS-880EX (B) cannot record the digital signals transmitted by the master VS-880EX (A).



When the master Clock is set to "DIGIN1" or "DIGIN2," the VS-880EX operates according to the Clock (digital signal) transmitted by the connected MIDI device. You can thus make MTC the master Clock. However, in this case, the slave VS-880EX (B) attempts to operate according to the MTC transmitted by the master VS-880EX (A), while the master VS-880EX (A) attempts to operate according to the digital signals transmitted by the slave VS-880EX (B). In such instances, since this ends up in there being no reference clock, the VS-880EX cannot operate correctly.



Making Digital Connections with Cakewalk

When you have a sound card (such as Audiomedia III or CardD) that features digital input and output connectors installed in your computer, you can connect Cakewalk and your VS-880EX digitally. This is convenient when, for example, you want to record the audio tracks from the VS-880EX to Cakewalk via a digital connection, edit the material in Cakewalk, and then send it back via the digital connection to the VS-880EX for mixdown. Be sure to read the owner's manuals for Cakewalk as well as the sound card you are using.

About Sound Cards

Even when using the digital connections as described in the example, noise originating inside the computer in the vicinity of the sound card may be introduced into the sound. The level of noise will vary according to the computer's exterior panels, interior boards, the condition of the cable connections, etc. In general, high-performance sound cards that tend to resist this kind of noise better.

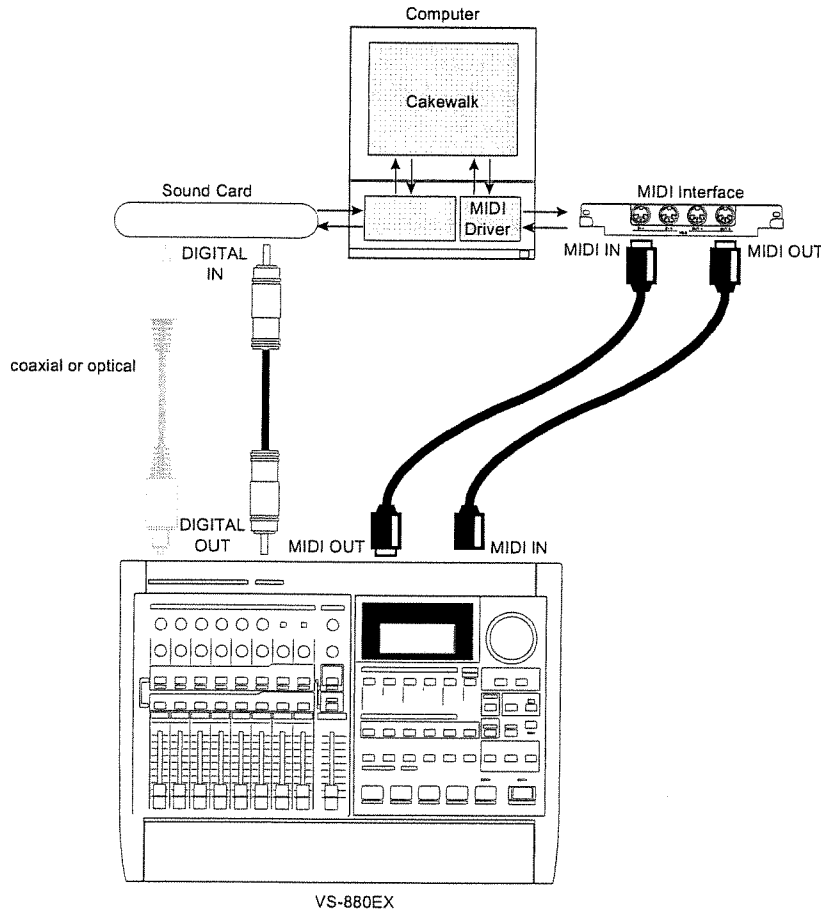
With sound cards that feature both analog and digital input and output, it may be necessary to set the card to use the digital input and output. After carefully reading the owner's manual for your sound card, make the necessary settings to enable the sound card to use the digital input and output connectors.

About the Recording Mode

Even when using the digital connections as described in the example, since audio tracks are recorded from the VS-880EX to Cakewalk, edited, and then sent back to the VS-880EX, this can be likened to repeated track bouncing. Thus, we recommend that you to use a recording mode featuring higher quality sound, such as "MAS" or "MT1."

Recording to Cakewalk

1. Make the connections as shown below.



2. Follow the procedure as described in "Settings for the VS-880EX" (p. 195) and "Settings for Cakewalk Pro Audio" (p. 196), set up the system so that the VS-880EX and Cakewalk are synchronized.
3. Make the settings to Cakewalk as shown below. For more detailed information, please refer to your Cakewalk owner's manual.

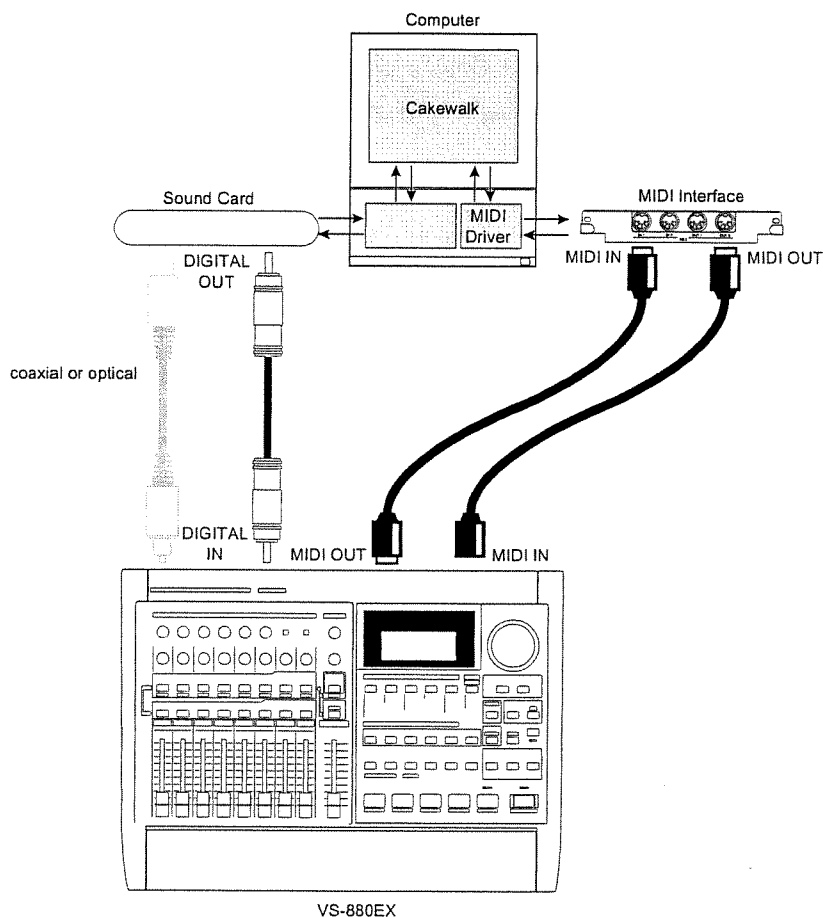
Settings | Audio Options... | Advanced | SMPTE/MTC Sync: "High-Quality"

** If your computer does not feature adequate performance, even with the above settings, you may not be able to get stable digital audio output, meaning the sound will suffer when digital connections are used. Additionally, Cakewalk Pro Audio 5.0 and Cakewalk Professional 5.0 do not feature the above-mentioned settings. We recommend upgrading to Version 6.0.*

In the present status/condition, when record is begun with Cakewalk, MMC is transmitted to the VS-880EX, and upon receiving the MMC, the VS-880EX also begins playback. During playback, MTC is sent from the VS-880EX to Cakewalk, thus synchronizing operations.

Recording to the VS-880EX

1. Make the connections as shown below.



2. Follow the procedure as described in "Settings for the VS-880EX" (p. 195) and "Settings for Cakewalk Pro Audio" (p. 196), set up the system so that the VS-880EX and Cakewalk are synchronized.
3. Make the settings to Cakewalk as shown below. For more detailed information, please refer to your Cakewalk owner's manual.

Settings | Audio Options... | Advanced | SMPTE/MTC Sync: "High-Quality"

* If your computer does not feature adequate performance, even with the above settings, you may not be able to get stable digital audio output, meaning the sound will suffer when digital connections are used. Additionally, Cakewalk Pro Audio 5.0 and Cakewalk Professional 5.0 do not feature the above-mentioned settings. We recommend upgrading to Version 6.0.

4. Press [SYSTEM] several times until "SYS System PRM?" appears in the display.
5. Press [YES].
6. Press PARAMETER [▶▶] several times until "SYS MasterClk=" appears in the display.
7. Rotate the TIME/VALUE dial.

Master Clock

This is used to select the reference clock for the VS-880EX operations. Here, set this to "DIGIN1" or "DIGIN2."

DIGIN1: Based on the digital signal received at the DIGITAL IN connector (coaxial).

INT: Based on the VS-880EX's internal clock.

DIGIN2: Based on the digital signal received at the DIGITAL IN connector (optical).

8. Press [PLAY (DISPLAY)].

Return to Play condition.

9. Make the settings for the VS-880EX by following the procedure as described in "Recording Digital Signals" (p. 55).

Under this condition, when playback is begun with Cakewalk, MMC is transmitted to the VS-880EX, and upon receiving the MMC, the VS-880EX also begins record. During playback, MTC is sent from the VS-880EX to Cakewalk, thus synchronizing operations.

Using an External MIDI Device to Adjust the Mixer (Compu Mix)

The VS-880EX can send and receive the mixer settings and movements as MIDI messages. You can use an external MIDI controller to control the VS-880EX's faders, and by using a MIDI sequencer to record mixer settings and movements during playback as MIDI song data, the mixer can be controlled automatically by the MIDI sequencer when the song is played back later. This is referred to as **Compu Mix**. Compu Mix uses Control Change messages and Exclusive messages.

This roughly describes how things proceed when performing operations using Control Change messages. For more detailed information, please read the appropriate pages.

When Using Exclusive Messages

When working in Compu Mix, you should use normal Control Change messages. However, if the use of Control Change messages would affect other MIDI devices in your setup, you may use System Exclusive message instead.

For more detailed information about Control Change messages and Exclusive messages, please refer to "MIDI Implementation" (Appendices p. 74).

Chapter 14 Takein Advantages of the VS-880EX (idea and examples)

The Correspondence Between MIDI Channels and Controller Numbers

MIDI channels correspond to the mixer channels as shown below. For channel pairs linked with the Stereo Link function, Control Change messages can be exchanged using the odd-numbered channel's MIDI channel. Control Change messages transmitted via the even-numbered channel's MIDI channel are ignored.

MIDI Channel	Input Mixer	Track Mixer	Effect Return Mixer	Master Block
1	1	1	-	-
2	2	2	-	-
3	3	3	-	-
4	4	4	-	-
5	5	5	-	-
6	6	6	-	-
7	7 (DIGITAL L)	7	-	-
8	8 (DIGITAL R)	8	-	-
11	-	-	ST IN	-
12	-	-	FX1	-
13	-	-	FX2	-
16	-	-	-	MST

Controller numbers correspond to the track mixer parameters as follows.

Controller Number	Mixer Parameter
3	TRACK STATUS
7	MIX Send Level
10	MIX Send Pan
12	EQ L Freq.
13	EQ L Gain
14	EQ M Freq.
15	EQ M Gain
16	EQ M Q
17	EQ H Freq.
18	EQ H Gain
19	FX1 SND Level
20	FX1 SND Pan/Bal
21	FX2 SND Level
22	FX2 SND Pan/Bal
23	AUX Send Level
24	AUX Send Pan/Bal
29	MIX Offset Level
30	MIX Offset Bal

Controller numbers correspond to the input mixer parameters as follows.

Controller Number	Mixer Parameter
8	MIX Send Level
70	MIX Send Pan/Bal
71	EQ L Freq.
72	EQ L Gain
73	EQ M Freq.
74	EQ M Gain
75	EQ M Q
76	EQ H Freq.
77	EQ H Gain
78	FX1 SND Level
79	FX1 SND Pan/Bal
80	FX2 SND Level
81	FX2 SND Pan/Bal
82	AUX Send Level
83	AUX Send Pan/Bal
88	MIX Offset Level
89	MIX Offset Bal

Controller numbers correspond to the effect return mixer parameters as follows.

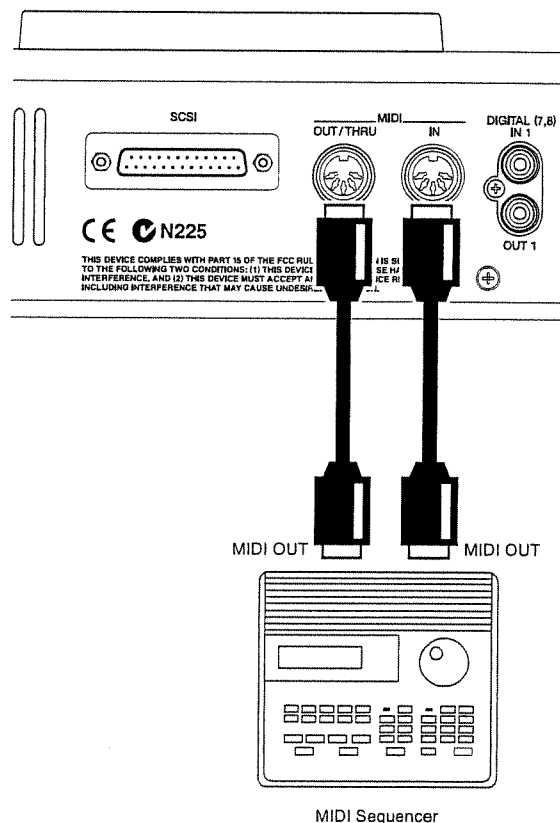
Controller Number	Mixer Parameter
68	MIX Send Level
70	MIX Send Balance

Controller numbers correspond to the Master section parameters as follows.

Controller Number	Mixer Parameter
68	Master Level
70	Master Balance
78	FX1 SND Level
79	FX1 SND Balance
80	FX2 SND Level
81	FX2 SND Balance
82	AUX Level
83	AUX Balance

Preparations for Compu Mix

1. Make the connections as shown below.



2. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
3. Press [YES].
4. Press PARAMETER [▶▶] several times until "SYS MID:MIDIThr=" appears in the display.
5. Rotate the TIME/VALUE dial.

MIDIThr (MIDI Thru Switch)

This switches the function of the MIDI OUT/THRU connector. For now, set this to "Out."

Out: The connector transmits MIDI message such as metronome Note messages or MTC from the VS-880EX.

Thru: MIDI messages received at the MIDI IN connector are retransmitted from the connector without any changes.

6. Press PARAMETER [▶▶] several times until "SYS MID:CtrlLocal=" appears in the display.
7. Rotate the TIME/VALUE dial.

CtrlLocal (Control Local Switch)

When this is set to "Off," actual volume levels remain unchanged even when the faders on the top panel are moved (fader movements have no effect). Normally, this is set to "On." At this time, set the Control Local switch to "On."

8. Press PARAMETER [▶▶].
"SYS MID:CtrlType=" appears in the display.

9. Rotate the TIME/VALUE dial.

CtrlType (Mixer Control Type)

This selects the type of MIDI messages that will be used when transmitting mixer settings to an external MIDI device, or when MIDI messages from an external MIDI device are used to control the mixer. At this time, set this to "C.C.."

Off: MIDI messages related to mixer operation are not transmitted or received.

C.C.: The mixer is controlled using Control Change messages.

Excl: The mixer is controlled using Exclusive messages.

10. Follow the procedure as described in "Synchronizing with MIDI Sequencers" (p. 116), make the necessary settings in both the VS-880EX and the MIDI sequencer to synchronize the two machines. In addition, make sure to set the MIDI sequencer so that MIDI messages received at the MIDI In connector are not output from the MIDI OUT connector.

Chapter 14 Takein Advantages of the VS-880EX (idea and examples)

Recording with Compu Mix

1. Prepare the VS-880EX's mixer settings (faders, pan, etc.) and ready for playback the song.
2. Put the MIDI sequencer in Record mode, and begin playback with the VS-880EX.
3. When playback begins, immediately hold down [SHIFT] and press [SCENE].

The mixer's initial condition is transmitted from the MIDI OUT connector.

4. As you listen to the song, make adjustments to the faders and other controls as needed.
5. When playback of the song is finished, stop the MIDI sequencer and the VS-880EX.

This completes the recording with Compu Mix. Save the MIDI song data to a floppy disk or other storage media. When you go back to the beginning of the MIDI song data and the VS-880EX song, and then begin playback on the VS-880EX, the mixer is controlled according to the Compu Mix while the song is played back.

To Have the Fader Movements Ignored

When playing back songs using Compu Mix, may be you want the actual volume levels to remain unchanged even when the faders on the top panel are moved. In such instances, use the following procedure.

1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
3. Press [PARAMETER [▶▶]] several times until "MID:CtrlLocal=" appears in the display.
4. Rotate the TIME/VALUE dial.

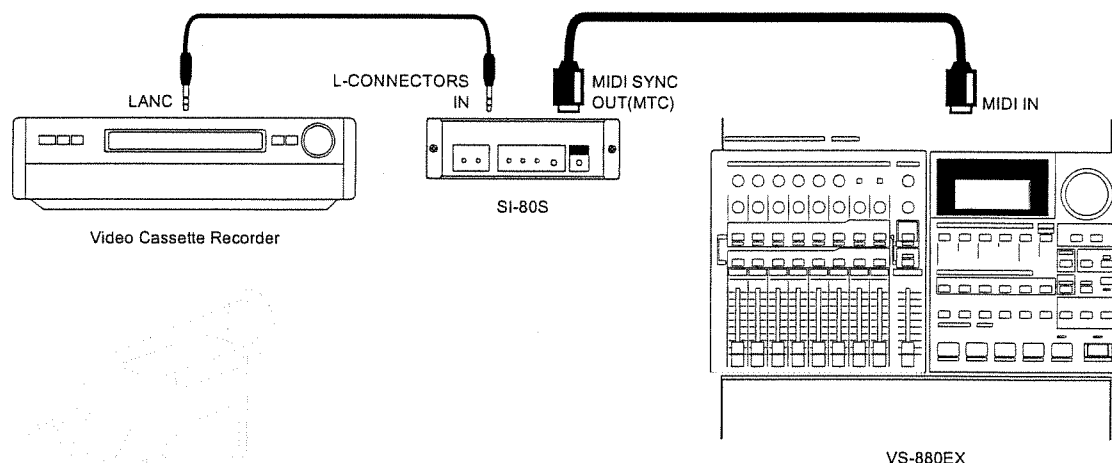
CtrlLocal (Control Local Switch)

When this is set to "Off," actual volume levels remain unchanged even when the faders on the top panel are moved (fader movements have no effect). Normally, this is set to "On." At this time, set the Control Local switch to "Off."

4. Press [PLAY (DISPLAY)].
Return to Play condition.

Synchronizing with Video Equipment

When used in combination with the Roland SI-80S, you can control playback and stop functions on the VS-880EX with video equipment featuring a consumer video interface that conforms to (RCTL) time code. Make the connections as shown below, and refer to the SI-80S owner's manual and the owner's manual for your video device.



1. Press [SYSTEM] several times until "SYS MIDI PRM ?" appears in the display.
2. Press [YES].
3. Press PARAMETER [▶▶] several times until "SYS MID:SysEx.Rx.=" appears in the display.
4. Rotate the TIME/VALUE dial.

SysEx.Rx. (System Exclusive Receive Switch)

Exclusive messages are received when this is set to "On." At this time, set this to "On." The Exclusive messages can be received when the VS-880EX is in Play condition.

5. Press PARAMETER [▶▶].
"SYS MID:MMC=" appears in the display.
6. Rotate the TIME/VALUE dial.

MMC (MMC Mode)

This setting determines how the VS-880EX implements MMC. Set this to "SLAVE."

Off: MMC is neither transmitted nor received.

MASTER: MMC is transmitted. The VS-880EX functions as the master device for external MIDI equipment.

SLAVE: MMC is received. The VS-880EX functions as a slave device for external MIDI equipment.

7. Press [SYSTEM] several times until "SYS Sync/Tempo ?" appears in the display.

Chapter 14 Takein Advantages of the VS-880EX (idea and examples)

8. Press [YES].
9. Press PARAMETER [▶▶] several times until "SYS Syn:ErrLevel=" appears in the display.
10. Rotate the TIME/VALUE dial.

ErrLevel (Error Level)

This sets the interval (0-10) for checking MTC receiving status when synchronize VS-880EX with MTC from an external MIDI device. If the MTC is not being sent continuously, the VS-880EX checks the MTC and if there is an error, cancels synchronization. By setting a longer interval under such circumstances, synchronization can continue, even if there is a certain degree of error. Normally, set this to "5."

11. Press PARAMETER [▶▶].
"SYS Syn:MTC Type=" appears in the display.

12. Rotate the TIME/VALUE dial.

MTC Type (MTC Type)

This selects the type of MTC (30, 29N, 29D, 25, or 24). Set this to conform to the type of MTC on the slave VS-880EX. Here, select "30."

13. Press [PLAY (DISPLAY)].
Return to Play condition.

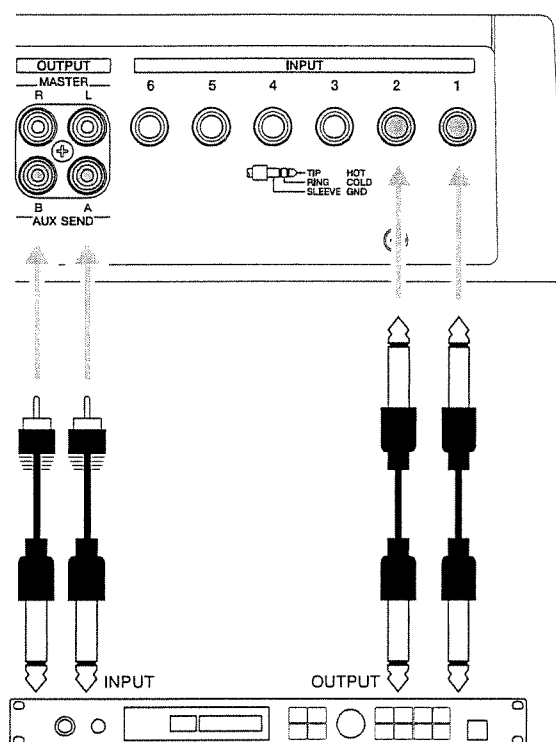
14. Hold down [SHIFT] and press [SYSTEM].
The "SYNC MODE" field of the display will show "EXT," indicating that the unit will operate in synchronization to MTC received from the SI-80S.

In this condition, operations performed on the video equipment are performed in synchrony on the VS-880EX.

Using External Effects Devices

When using external effects devices, the AUX SEND jacks (A, B) function as effects send jacks. Here we see how effects can be added to a performance recorded in stereo on Track 1. This is handy when, for example, you want to add reverb using an external effects device. Use the INPUT 1 and 2 jacks as the effect return jacks.

1. Connect your effects device as shown below.



2. Press [FADER (EDIT)] several times to let the FADER indicator lights green.
3. Press [CH EDIT (SELECT)] on Channel 1.
4. Press PARAMETER [◀◀1] [▶▶] to let "MIX Sw=" appears in the display.
5. Rotate the TIME/VALUE dial.

MIX Sw (Mix Switch)

This sets how the signal is sent to the MIX bus. Here, select "Off."

- Off:** The signal is not sent to the MIX bus.
On: The signal is sent to the MIX bus.

Chapter 14 Takein Advantages of the VS-880EX (idea and examples)

6. Hold down [SHIFT] and press the channel 6 [AUX Send (CH EDIT)].
"AUX Sw=" appears in the display.

7. Rotate the TIME/VALUE dial.

AUX Sw (AUX Switch)

This sets how the signal is sent to the AUX bus. Here, select "Off."

Off: The signal is not sent.

PreFade: The signal before passing through the channel fader is sent.

PstFade: The signal after passing through the channel fader is sent.

8. Press PARAMETER [▶▶].
"AUX Level=" appears in the display.

9. Rotate the TIME/VALUE dial.

AUX Level (AUX Level)

This adjusts the level (0–127) of the signal sent to the AUX bus. Set the initial value to "100."

10. Press PARAMETER [▶▶].
"AUX Pan" appears in the display.

11. Rotate the TIME/VALUE dial.

AUX Pan

This adjusts the stereo placement of the signal (L63–0–R63) sent to the AUX bus. Set the initial value to "0."

12. Hold down [SHIFT] and press [EDIT (FADER)] several times until "AUX Level=" appears in the display.

13. Rotate the TIME/VALUE dial.

MST AUX Level (Master AUX Level)

Adjust the volume (0–127) of the sound that is output from the AUX SEND jacks. This is linked with the AUX SEND knob on the top panel.

14. Press PARAMETER [▶▶].
"MST AUX Bal=" appears in the display.

15. Rotate the TIME/VALUE dial.

MST AUX Bal (Master AUX Balance)

Adjust the left/right balance (L63–0–R63) of the sound that is output from the AUX SEND jacks. Set the initial value to "0."

16. Press [FADER (EDIT)] several times to let the FADER indicator lights red.

17. Press [CH EDIT (SELECT)] on Channel 6.

18. Press PARAMETER [▶▶] several times until "RTN StereoIn=" appears in the display.

19. Rotate the TIME/VALUE dial.

RTN StereoIn (Master Stereo In)

Here, select "Input 56."

Off: Stereo In is not used.

Input 12: Selects INPUT jacks 1/2 for use with Stereo In.

Input 34: Selects INPUT jacks 3/4 for use with Stereo In.

Input 56: Selects INPUT jacks 5/6 for use with Stereo In.

Digital: Selects the DIGITAL IN connector (coaxial or optical) for use with Stereo In.

20. Press PARAMETER [▶▶].
"MST StIn Level=" appears in the display.

21. Rotate the TIME/VALUE dial.

RTN StIn Level (Master Stereo In Level)

This adjusts the volume level (0–127) for Stereo In. Set the initial value to "100."

22. Press PARAMETER [▶▶].
"RTN StIn Bal=" appears in the display.

23. Rotate the TIME/VALUE dial.

RTN StIn Bal (Master Stereo In Balance)

This adjusts the balance (L63–0–R63) for Stereo In. Set the initial value to "0."

24. With this, you are now ready to add the external effect. Press [PLAY (DISPLAY)].

Return to Play condition.

25. While playing back the song, adjust the sound of the effect.

The volume level of Stereo In can be adjusted directly with the channel fader 6 when the effect return mixer is in effect (when the FADER indicator is lit red).

Index

Index (words)

(A)

Automix 142

(C)

CD player.....55, 110
 CD player function.....110
 CD-R backup.....113
 CD-R disc.....107
 CD-R recover.....115
 Channel.....22
 Channel fader.....15, 28
 Channel Link.....43, 149
 Coaxial 19, 55, 128
 Compu-mix 180
 Control change message.....127
 Current drive.....21
 Current song 22

(D)

DAT 63, 128
 DAT backup 129
 DAT name 133
 DAT recover.....131
 DAT verify.....134
 DCC 128
 Destructive edit.....88
 Digital disk recorder 28
 Digital in connector 19, 55
 Digital out connector 159
 Direct out.....160
 Disk drive 21, 100
 Drive check.....160
 Drive initialize.....100
 Drive select 104
 Drop frame 117

(E)

EZ routing.....74
 Effect.....31, 66
 Effect bus 25, 68
 Equalizer 57
 Error level 118, 172
 Event.....23
 Exclusive message.....171
 External effects processor.....185

(F)

Fader match.....144, 164
 Finalize.....112
 Foot switch 44, 165
 Frame.....117

(G)

GPI.....45, 165
 Gradation.....144

(H)

Headphones 20, 132

(I)

IDE 13
 Initialize (Mixer/System) 169
 Input channel 42
 Insert.....52, 66

(L)

Locator 36, 37
 Locator bank.....37
 Loop recording 47

(M)

MD 63, 128
 MIDI 116
 MIDI clock 119
 MMC 170
 MIDI time code (MTC) 116
 Marker.....36, 38
 Mask fader.....145
 Master tape.....63
 Metronome 154
 Mix bus.....25
 Mix down.....63
 Mute 148

(N)

Non-destructive edit 88
 Non-drop frame.....117
 Numeric keys 153

(O)

Optical.....19, 55, 128
 Over dubbing.....49

(P)

Partition 21
 Patch 70
 Peaking type (Equalizer) 58
 Playlist.....163
 Post level.....163
 Pre level.....163
 Preview 140
 Program change message.....127
 Punch in.....44
 Punch out.....44

Index

(R)

Random access	28
Realtime	144
Recording bus	25
Recording mode	40

(S)

S/P DIF	19, 55
SCMS	6
SCSI	99
SMPTE time code	36
Sample rate	40, 108
Scene	73, 127
Scrub	141
Send/Return	31, 68
Sequential access	28
Shelving type (Equalizer)	58
Shutdown	33
Slave	118, 172
Snapshot	143
Solo function	148
Song	22
Song copy (Archives extract)	106, 136
Song copy (Archives store)	105
Song copy (Playable)	103
Song erase	157
Song export	138
Song import	137
Song name	157
Song new	40
Song optimize	156
Song protect	64
Source	22
Status	35, 126
Step edit	74
Stereo in	152
Sub frame	36
Surface scan	101
Sync source	174, 176
Sync track	119, 154

(T)

TOC	112
Tap marker function	36, 38
Template	74
Tempo map	121, 154
Track	22
Track bouncing	60, 108
Track copy	89
Track cut	94
Track erase	95
Track exchange	92
Track insert	93

Track move	91
Track number	111
Track time compression/expansion	96

(U)

Undo	146
User routing	87

(V)

V-track	30, 49
Vari pitch	152

(Z)

Zero return	17
Zip disk	99
Zip drive	99

MEMO...

Information

When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country as shown below.

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Chaudron - BP79 97491
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(PTY) Ltd.
11 Melle Street (Cnr Melle and
Juta Street)
Braamfontein 2001
Republic of SOUTH AFRICA
TEL: (011) 403 4105

Paul Bothner (PTY) Ltd.
17 Werdmuller Centre Claremont
7700
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P.O. Box 23032
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SOUTH AFRICA, 7735
TEL: (021) 64 4030

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Instruments Co., Ltd.
6 Huangmuchiang Chao Yang
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TEL: (010) 6774 7491

HONG KONG

Tom Lee Music Co., Ltd.
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22-32 Pun Shan Street, Tsuen
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HONG KONG
TEL: 2415 0911

INDIA

Rivera Digitec (India) Pvt. Ltd.
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Flats, Compound
off. Dr. Edwin Moses Road,
Mumbai 400011, INDIA
TEL: (022) 498 3079

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Kompleks Perkantoran
Duta Merlin Blok E No.6-7
Jl. Gajah Mada No.3-5,
Jakarta 10130,
INDONESIA
TEL: (021) 6335416

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Cosmos Corporation
Service Station
261 2nd Floor Nak-Won Arcade
Jong-Ro ku, Seoul, KOREA
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339 Gil J. Puyat Avenue
Makati, Metro Manila 1200,
PHILIPPINES
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Swee Lee Company
150 Sims Drive,
SINGAPORE 387381
TEL: 748-1669

CRISTOFORI MUSIC PTE LTD

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Bangkok 10100, THAILAND
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Saigon Music
138 Tran Quang Khai St.,
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38 Campbell Avenue
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AUSTRALIA
TEL: (02) 9982 8266

NEW ZEALAND

Roland Corporation (NZ) Ltd.
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Instrumentos Musicales S.A.
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Office Number 206A
Buenos Aires
ARGENTINA, CP1005
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R. Coronel Octaviano da Silveira
203 05522-010
Sao Paulo BRAZIL
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OMNI MUSIC
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Juan Pablo 2 No. 4010
San Salvador, EL SALVADOR
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Av. Toluca No. 323 Col. Olivar de
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Musicaland Digital C.A.
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Centro Parque de Cristal, Nivel
C2 Local 20 Caracas
VENEZUELA
TEL: (02) 285 9218

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DK-1023 Copenhagen K.
DENMARK
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Roland France SA
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Parc de l'Esplanade F 77 462 St.
Thibault Lagny Cedex FRANCE
TEL: 01 600 73 500

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Filial Finland
Lautasaarentie 54 B
Fin-00201 Helsinki, FINLAND
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Roland Elektronische
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Handelsgesellschaft mbH.
Oststrasse 96, 22844 Norderstedt,
GERMANY
TEL: (040) 52 60080

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20, Alexandras St. & Bou Boulouinis
54 St. 106 82 Athens, GREECE
TEL: (01) 8227 775

HUNGARY

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Warehouse Area 'DEPO' P.F.83
H-2046 Torokbalint, HUNGARY
TEL: (23) 511011

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Roland Ireland
Audio House, Belmont Court,
Donnybrook, Dublin 4,
Republic of IRELAND
TEL: (01) 2603501

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Roland Italy S. p. A.
Viale delle Industrie, 8
20020 Arese Milano, ITALY
TEL: (02) 937-78300

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Roland Scandinavia Avd.
Kontor Norge
Lilleakerveien 2 Postboks 95
Lilleaker N-0216 Oslo
NORWAY
TEL: 273 0074

POLAND

P. P. H. Brzostowicz
UL. Gibraltarska 4.
PL-03664 Warszawa POLAND
TEL: (022) 679 44 19

PORTUGAL

Tecnologias Musica e Audio,
Roland Portugal, S.A.
RUA SANTA CATARINA
131 - 4000 Porto-PORTUGAL
TEL: (02) 208 44 56

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FBS LINES
Plata Libertatii 1.
RO-4200 Cheorgheni
TEL: (066) 164-609

RUSSIA

Siarni Music Company
Sadovaya-Triumfainaja st., 16
103006 Moscow, RUSSIA
TEL: 095 209 2193

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Roland Electronics
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SPAIN
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Roland Scandinavia A/S
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Danvik Center 28, 2 tr.
S-131 30 Nacka SWEDEN
TEL: (08) 702 0020

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Gerberstrasse 5, CH-4410 Liestal,
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TEL: (061) 921 1615

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Mira Str. 19/108
P.O. Box 180
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Enterprise Park SWANSEA
SA7 9FJ,
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TEL: (01792) 700139

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825 Amman 11118 JORDAN
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KUWAIT
TEL: 5719499

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Chahine Building, Achrafieh
Beirut, LEBANON
TEL: (01) 335799

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OHI Electronics & Trading
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Sultanate of OMAN
TEL: 959085

QATAR

Badie Studio & Stores
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DOHA QATAR
TEL: 423554

SAUDI ARABIA

aDawlah Universal
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P.O. Box 2154 ALKHOBAR 31952,
SAUDI ARABIA
TEL: (03) 898 2081

SYRIA

Technical Light & Sound
Center
Khaled Ibn Al Walid St.
P.O. Box 13520
Damascus - SYRIA
TEL: (011) 2235 384

TURKEY

Barkat Muzik aletleri ithalat
ve ihracat limited ireketi
Siraselvler Cad. Guney Isani No.
86/6 Taksim, Istanbul TURKEY
TEL: (0212) 2499324

U.A.E.

Zak Electronics & Musical
Instruments Co.
Zabeel Road, Al Sherooq Bldg.,
No. 14, Grand Floor DUBAI
U.A.E.
P.O. Box 8050 DUBAI, U.A.E.
TEL: (04) 360715

NORTH AMERICA

CANADA

Roland Canada Music Ltd.
(Head Office)
5480 Parkwood Way Richmond
B. C., V6V 2M4 CANADA
TEL: (0604) 270 6626

Roland Canada Music Ltd.
(Toronto Office)
Unit 2, 109 Woodbine Downs
Blvd, Etobicoke, ON
M9W 6Y1 CANADA
TEL: (0416) 213 9707

U. S. A.

Roland Corporation U.S.
7200 Dominion Circle
Los Angeles, CA. 90040-3696,
U. S. A.
TEL: (0323) 685 5141

As of February 17, 1999



For EU Countries

This product complies with the requirements of European Directives EMC 89/336/EEC and LVD 73/23/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

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? SCMS (Appendices p. 124)

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