Roland

MIDI CUEING BOX

SBX-1000

Ⅲ Glossary

■GPI Command

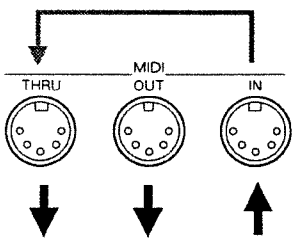
This is a trigger pulse signal which controls such operations as "off," "play" and "stop" of certain types of professional equipment.
There are different types of GPI commands, such as open collector (corrector), relay and TTL. The SBX-1000 employs an open corrector type GPI command.

■MIDI MIDI

This is the abbreviation for "Musical Instrument Digital Interface," a worldwide standard for the exchange of musical performance data and other data among various electronic instruments. MIDI conveys musical performance "actions", such as the playing of keys and the pressing of pedals, as MIDI data.
Musical performance data can be transmitted and received among instruments of different manufacturers as long as they are compatible with the MIDI standard.
The data which is sent and received according to the MIDI standard is called MIDI data.

■MIDI Terminals

MIDI data is sent and received over the following three kinds of terminals. MIDI cables are connected to these terminals depending on the application.



MIDI IN: For receiving data from other MIDI instruments.
MIDI OUT: For sending internal data.
MIDI THRU: For retransmitting the data received by the MIDI IN terminal.

The SBX-1000 has no separate MIDI THRU terminal; instead, there is a "Soft THRU" function which uses the MIDI OUT terminal for retransmitting the data received via MIDI IN.

■MIDI Channel MIDI

Different information can be sent to several MIDI instruments over a single MIDI cable. This is possible through the use of MIDI channels.
MIDI uses sixteen channels, numbered 1 to 16, and MIDI data is sent to the connected device whose receiving channel matches the transmit channel of the transmitting device.
It is necessary to match the channel of the sound source instrument with the channel of the event when registering an event in the cue sheet.

■MIDI Sync Data (MIDI Sync)

This data allows MIDI sequencers and rhythm machines to be played in perfect synchronization. Nearly all MIDI sequencers and rhythm machines are capable of receiving and transmitting this data.

● MIDI Song Select Data (F3H) MIDI
This data is used to select song numbers. It is sent before the song is started.

● MIDI Song Position Pointer Data (F2H) MIDI
This data is used to set the location from which the song is started. The location is indicated in units of 16th notes (or 6 clocks). The data is sent before the song is started.

● MIDI Start Data (FAH) MIDI
This message sets the condition in which playback is started from the beginning of the song. (Actual playback starts with the timing clock data.)

● MIDI Continue Start Data (FBH) MIDI
This message sets the condition in which playback is started from the current location of the song. (Actual playback starts with the timing clock data.)

● MIDI Timing Clock Data (F8H) MIDI
This data is sent every 1/24 of a quarter note and controls the playback tempo.

● MIDI Stop Data (FCH) MIDI
This data stops playback.

◇ Cue Sheet Operation
When the cue sheet is played, the above messages are sent to the selected MIDI output at the corresponding SeqStart and SeqStop events. (☞ P.30 "Manual I")

◇ Tempo Controller Operation

When the tempo controller is played, the above data are sent to the selected output according to the settings. (☞ P.30, "Manual I")

◇ Sequencer Operation

When playback of the sequencer is executed from the sequencer itself, the above data is sent. When sequencer playback is controlled by the cue sheet or the tempo controller, this data is not sent.

■ MIDI Update

MIDI Update is a function used when playing back data from the middle of a sequence; it changes all relevant MIDI settings of the connected sound sources to match the position from which playback is started.

◇ Cue Sheet Section

When playback is started, the SBX-1000 searches backwards for all events (with the exception of note on, exclusive and GPI) from the point of playback to the zero SMPTE position. If events are found, it transmits the data of the last event that precedes the point of playback.

◇ Sequencer Section

When only the sequencer section is played back, the MIDI Update function can be set manually, for transmitting all data (except note events) from the beginning of the song until the current position. From the sequencer screen, press [PLAY] while holding down [SHIFT], wait until the "MIDI Update" message in the display disappears, then start playback.

■ ORG TEMPO

(☞ "Original Tempo Control")

■ SMPTE Time Code

SMPTE time code is a standard developed by SMPTE (the Society of Motion Picture and Television Engineers), and is commonly used for creating address points in video tape for editing purposes.

The time code is expressed by a time indication: hours, minutes, seconds and frames. Each address point is assigned to a single frame of the image.

There are four types of time code (☞ "Time Code Rates"), depending on the different standards of TV signals.

■ SMPTE Time Code Generator

The section that generates SMPTE time code is called the time code generator.

When the SMPTE sync mode is set to "INT," the time code generator generates SMPTE time code and plays the cue sheet. It also simultaneously transmits the time code signals from the TIMECODE OUT terminal.

Since the time code generator is built into the SBX-1000, time code can be recorded on a tape that contains no recorded time code.

■ SMPTE Time Code Reader

The section that reads external SMPTE time code is called the time code reader.

When the SMPTE sync mode is set to "EXT," the time code reader reads the time code received from the TIMECODE IN terminal and plays the cue sheet and tempo controllor. It also retransmits the time code received from TIMECODE IN through the TIMECODE OUT terminal.

■ SMPTE Sync Mode

This control allows selection between operation of the SBX-1000 by its internal time code generator or external control by external SMPTE signals.

When this is set to "INT," the SBX-1000 is controlled by the time code from the internal SMPTE time code generator. The time code is also transmitted through the SMPTE TIMECODE OUT terminal.

When this is set to "EXT," the SBX-1000 is controlled by the time code received from the SMPTE TIMECODE IN terminal. The signals received at the SMPTE TIMECODE IN terminal are also retransmitted directly through the SMPTE TIMECODE OUT terminal.

◇ How to access this function on the SBX-1000:

Press [TIME CODE INT/EXT] from either the 【Cue Sheet Play】 screen or the 【Tempo Play】 screen.

■ Active Sensing Data(Active Sensing) MIDI

These MIDI messages are used to determine whether or not the MIDI cable has been disconnected or damaged. Once a MIDI instrument first receives this data, it expects to

receive additional messages at regular intervals. If active sensing data is not detected at these intervals, the instrument assumes that the cable has been damaged or disconnected. Depending on the type of instrument, this automatically executes certain functions, such as the turning off of all notes, to prevent "stuck notes" from occurring.

◇ SBX-1000 Transmission of Active Sensing Data

This data is transmitted from the MIDI OUT ports at regular intervals when the Active Sense parameter is set to ON in "1. MIDI" of [SETUP].

◇ SBX-1000 Reception of Active Sensing Data

When the SBX-1000 initially receives this data over the MIDI IN terminal but fails to receive it after a specific interval, an "Active Sens Error" message is displayed, and certain safety functions are executed. These include the transmission of note off messages to the cue sheet during recording or when Soft THRU is set.

■ Aftertouch Data MIDI

Many electronic keyboards allow you to apply vibrato, or change the volume of the sound, by pressing down more firmly on a key after playing it. With most of these keyboards, "aftertouch" can be transmitted as continuous data.

There are two kinds of aftertouch data. One is called channel aftertouch, and controls all of the sounds of a single MIDI channel; the another is called polyphonic aftertouch, and it allows independent control over individual notes.

◇ Recording on the SBX-1000

Both channel aftertouch and polyphonic aftertouch can be recorded in the cue sheet and sequencer. [Chan.Aft(CAft)] and [Poly.Aft(PAft)] are displayed in the screen.

■ Event CUE SEQ

Each bit of data recorded in the cue sheet is called an "event." One line in the【Cue Sheet Play】screen represents one event.

In the【Sheet Edit】and【Event Entry】screens, an event which is entered and being edited is displayed over two lines.

The following events can be registered in the cue sheet:

Note On (note on)	MIDI
Poly.Aft (polyphonic aftertouch)	MIDI
Cont.Chg (control change)	MIDI
Prog.Chg (program change)	MIDI
Chan.Aft (channel aftertouch)	MIDI
Pit Bend (pitch bend)	MIDI
Tune (tune request)	MID
SeqStart (sequencer start)	MIDI
Seq Stop (sequencer stop)	MIDI
Exclusiv (exclusive)	MIDI
GPI (GPI trigger)	
[ ] (marking event)	

Each bit of sequence data recorded in the sequencer is also referred to as an "event." One line in the【Microscope】screen represents one event.

The following events can be registered in tracks and patterns:

◇ Events of Standard-type Tracks or Patterns

Note (note on)	MIDI
PAf (polyphonic aftertouch)	MIDI
C.Chg (control change)	MIDI
P.Chg (program change)	MIDI
CAf (channel aftertouch)	MIDI
Bend (pitch bend)	MIDI
EX (exclusive)	MIDI
TU (tune request)	MIDI

◇ Pattern-type Track Events

PTRN (pattern call)

◇ Tempo Track Events

Tempo (tempo change)

■ Event List CUE

Cue sheets can be created more efficiently by registering often-used events in the event list in the cue sheet. The desired events can be loaded from files, since event lists can be saved to disk as independent files.

■ Exclusive Data MIDI

Exclusive data consists of messages that are unique to a specific model of MIDI device. Data such as the manufacturer identification (ID) code, which identifies the instrument maker (Roland's ID is 41), and identification of different kinds of instruments are included in the exclusive data. Exclusive data that follows reception of a different ID

number is ignored.

Synthesizers and effects devices commonly have various settings for sound and effect programs that can be changed instantly during performance. These programs can be played back if the changes are recorded in sequencers or similar devices. The actual parameters and settings of the sound and effect programs differ among individual devices and are usually transmitted as exclusive data.

For equipment which has a bulk dump function (in which all the settings of the synthesizer or effects device are transmitted together) the data is also transmitted as exclusive data. If such data is recorded in the sequencer, the settings can be played back by playing the sequencer and executing a bulk load (loading data) in the synthesizer, even though the settings of the synthesizer or effecs device have been changed.

◇ Recording with the SBX-1000

Exclusive data can be loaded in both the cue sheet and sequencer. They can also generate exclusive data. An "Exclusiv(Excl)(EX)" message is displayed in the screen.

■ Audio Trigger SEQ TEMPO

Audio signals can be input to the SBX-1000 to trigger cue sheet events. (☞ P.37, "Manual I") They also can be used for entering tempo data in real time.(☞ P.63, "Manual I")

The input level of the audio signals is adjusted by rotating the AUDIO IN LEVEL dial on the upper right side of the panel.

Use sounds that have a quick attack, such as a snare drum, in order to provide the best trigger signal.

■ Original Tempo Control TEMPO

This function allows you to limit control over a connected sequencer or rhythm machine to start/stop functions only, and maintain the original playback tempo of the device. In this function, song start data is transmitted but MIDI timing clock data is not.

This method (in which playback at the original tempo is started with the reception of song start/stop data) is effective only for the internal sequencer, or for external sequencers and rhythm machines which have a remote mode and are set up properly for this operation .

With this function, synchronization from the middle of the song is not possible.

There are two ways of using original tempo control. One is to execute the function with the tempo controller (☞ P.76, "Manual I"), and another is to register a sequencer start event in the cue sheet and have it start automatically (☞ P.77, "Manual I").

■ Cursor

This is the portion of the screen which is highlighted (shown in reverse display). Values can be entered and changed by using the value dial and numeric keys. Use the arrow keys [↑], [↓], [←] and [→] to move the cursor.

■ Key On Recording SEQ

This is one of the methods of recording with the sequencer. The recording starts at the moment that the MIDI keyboard starts play back. Previously existing data is erased during the recording process. (☞ P.22, "Manual II for the sequence")

■ Default Display Screen

The 【Cue Sheet Play】 screen (in which cue sheets are played) is the default display of the SBX-1000 and appears initially whenever the unit is turned on. You can return to this display from any other by pressing [EXIT] repeatedly until the display screen appears.

The default display of the sequencer section is the 【Sequencer】 screen which appears when the [SEQ] button is pressed.

■ Cue Sheet CUE

The cue sheet is where events (MIDI data and GPI commands) are stored, in order, according to SMPTE time code positions.

■ Gate Time SEQ

Gate time represents the duration of a note event recorded in the sequencer; from when the note is pressed to when it is released. This value is expressed in clocks. The gate time of a note can be edited after it has been recorded.

■ Quantize SEQ

This function corrects the timing irregularities that often occur when recording in real time. This creates a recording that is metrically accurate (according to 8th note or 16th

note resolutions, for example), but alters the unique rhythmic feel of the original performance. Therefore, quantization should be used only when it is musically appropriate.

You can either quantize the incoming data as you record or quantize the data as an editing operation after the recording is made. (☞ P.42, "Manual II for the sequencer") Quantization can be applied not only to key-on timing, but also to key-off and gate time as well.

◇ Quantize Key-Off

This corrects the timing of note off messages (the gate time will also change). By quantizing the timing of note off messages, you can emphasize the beats in a measure (☞ P.84, "Manual II for the sequencer").

◇ Quantize Gate Time

This corrects the gate time (the note off location will change). For example, if you quantize gate times to 8th note resolution, note lengths will be adjusted to eighth notes, quarter notes, half notes and whole notes (☞ P.84, "Manual II for the sequencer").

■ Clock SEQ

A clock is unit of time equal to 1/96th of a quarter note, and is the smallest unit used by the SBX-1000. For example, an 8th note is equal to 48 clocks and a 16th note is equal to 24 clocks.

■ Control Change Data MIDI

This is a type of MIDI message that contains data for various types of performance expression. The frequently used control numbers are shown in the chart below.

Control Number	Name	Function
0	Bank select	For switching among banks for program change for GS sound source
1	Modulation depth	For applying modulation by moving the lever or wheel
7	Volume	For changing the volume
10	Pan	For changing the pan position
11	Expression	Changes as expression pedal is moved
64	Hold 1	Changes as hold pedal is pressed down
91	Effect 1 depth	Reverb depth for GS sound source
93	Effect 3 depth	Chorus depth for GS sound source

◇ Recording from the SBX-1000

Events can be recorded in both the cue sheet and sequencer. The message "Cont.Chg(C.Chg)" is displayed on the screen. The value for Input On is 127 and Off is 0, when controlling On/Off operation.

■ Sequencer

A sequencer is a device for automatic recording and playback of musical performances. In modern electronic music applications, MIDI data is normally used as signals for controlling the performance of connected musical instruments.

Unlike a tape recorder, which records the actual sound of an instrument, a sequencer digitally records performance data such as "which key was pressed, how strongly, and held for how long." Music production with a sequencer allows you to hear the results as you proceed, unlike when using pencil and paper to compose. It also allows you to modify the pitch, rhythm, and song structure in complex ways, so as to create music that might be difficult or impossible to realize using a tape recorder.

■ Disk With System

This type of disk can be used for starting or "booting up" the SBX-1000 since it contains the system program of the SBX-1000.

To make this kind of disk, format it using the "Disk Format with System" operation in the DISK – Utility section. If you want to load the system program to a disk that does not contain the system program, but you wish to save the data that already exists on the disk, save the system program by using the "Save System" operation in the DISK – Utility section.

Make sure that the disk has enough available memory space to store the system program.

■ Disk Without System

This type of disk does not contain the system program of the SBX-1000. The SBX-1000 cannot be started with this disk, but the capacity for data storage is greater.

To make this kind of disk, format it by using the "Disk Format" operation in the DISK—Utility section.

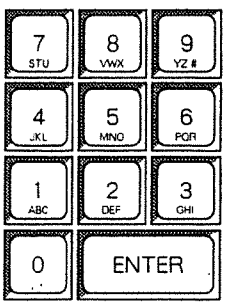
■ System Exclusive Data MIDI

(☞ "Exclusive Data".)

■ Numric Keypad

The cursor position can be changed by using the numeric keys.

Numeric keypad



When entering values using the numeric keypad, press [ENTER] to actually enter the number. For example, in order to input "46," you have to press [4], [6] and [ENTER].

Press [0] while holding down [SHIFT] to enter a minus sign (−) for negative values. The letters which are printed on the numeric keys can also be entered. Pressing a key repeatedly will cycle through the characters printed on that key. Capital letters are displayed by pressing the keys while holding down the [SHIFT] key.

■ Standard MIDI File SEQ

Most MIDI sequencers on the market today use their own song file format which cannot be read by other sequencers. This makes data transfer between different sequencers impossible. To solve this problem, the industry has agreed upon a Standard MIDI File format which allows sequencers of different manufacturers to share data. Many, if not all sequencers made today (including the SBX-1000) are able to read and write song data in this format.(☞ P.54, "Manual II for the sequencer")

■ Standard MIDI File Format SEQ

There are two types of standard MIDI files that the SBX-1000 sequencer is compatible with: Format 0 and Format 1. Format 0 has only one track, and the performance data of multiple MIDI channels is stored together in a single track. Format 1 allows for an unlimited number of tracks, and data from multiple MIDI channels can be contained in each track. There are some sequencer software products on the market that are capable of reading and writing only one of these two formats.

■ Standard-type Tracks SEQ

This type of sequencer track allows you to record musical data directly. If you use real-time step recording to record data into an empty track, it will automatically become a Standard-type track.

It is possible to create Patterns in a Standard-type track, but it is not possible to use Pattern Call events to call these Patterns.

■ Step Time SEQ

When step recording tracks and patterns, the step time is the length of time that elapses before the next note event is to occur. This value is expressed in clocks.

■ Step Input

This is a recording method which allows you to enter data events one by one. Events in the cue sheet, tempo data of the tempo program, tracks of the sequencer and events of patterns can all be entered in step time.

- ☞ P.34, "Manual I " for information about step input for the cue sheet.
- ☞ P.62, "Manual I " for information about step input for the tempo program.
- ☞ P.23, "Manual II (Sequencer)" for information about step input for Standard-type tracks.
- ☞ P.27, "Manual II (Sequencer)" for information about step input for patterns.
- ☞ P.35, "Manual II (Sequencer)" for information about step input for the tempo track.

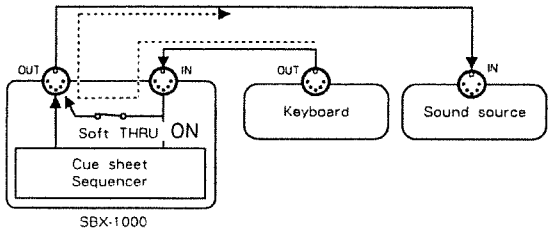
■ Save

The Save operation allows you to store cue sheets, event lists, tempo programs, song data and SETUP data from internal memory to an SBX-1000-formatted disk.

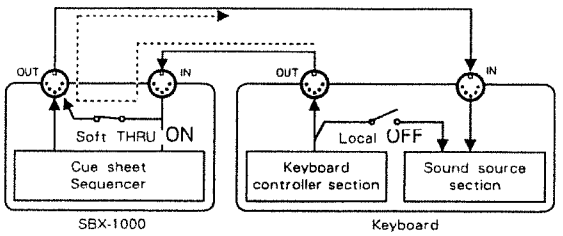
■ Soft THRU MIDI

This switch determines whether or not the data received at the the MIDI IN terminal is re-transmitted through the MIDI OUT terminal.

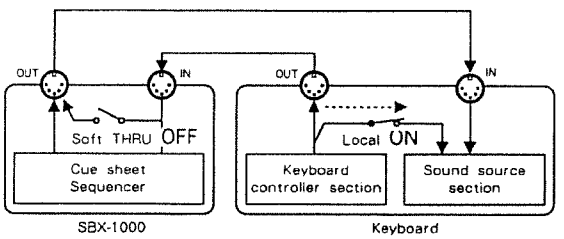
■ When using a separate keyboard and sound source :



■ When using the sound source of the connected keyboard :



OR



When the keyboard and sound source used are separate, the Soft THRU function must be set to ON in order to allow the MIDI keyboard to simultaneously enter events and play the sound source.

In order to have the keyboard itself sound, either set the Soft THRU to OFF or set the Soft THRU to ON and the keyboard to local OFF.

◇Soft THRU On/Off on the SBX-1000

Press [SETUP] and select "1. MIDI," then set each port to Soft THRU from the Soft THRU parameter.

■ Song SEQ

A song consists of sequence data stored in the built-in sequencer section of the SBX-1000. The sequence data of a song is comprised of events in individual tracks and patterns, and includes other parameters stored with the song.

A song must be loaded into the sequencer section if it is to be played by the cue sheet or tempo controllor. (☞ P.14, "Manual II (Sequencer)" for details on loading songs)

■ Time Code

(☞ "SMPTE Time Code")

■ Time Code Reader/Generator

(☞ "SMPTE Time Code Reader/Generator")

■ Time Code Rates CUE

There are four different SMPTE time codes corresponding to the different standards of TV signals.

◇30 Non-drop

This is an NTSC time code signal system used in North America and Japan. One second consists of 30 frames, and one frame consists of 80-bit digital signals. Since the NTSC system actually has 29.97 frames/second, a deficit with actual or absolute time (clock) results. However, the frames of the time code are not dropped since the continuity of the time code takes precedence over the deficit with absolute time.

This is called non-drop frame (NDF).

◇30 Drop

This is the same NTSC signal system as 30 non-drop; however, the time deficit can be compensated for by dropping or skipping a frame of the time code at regular intervals. This system is called drop frame (DF).

◇25

This is the system which is used in Europe. One second consists of 25 frames.

◇24

This is the system for film. One second consists of 24 frames.

◇Setting from the SBX-1000

When the SMPTE sync mode is set to EXT, it is not neccessary to match the time code of the master tape with the frame mode. The SBX-1000 automatically determines the time code type that is received from the SMPTE TIMECODE IN terminal and sets operation accordingly.

When the SMPTE sync mode is set to "INT" (internal), the time code type can be selected.

Press [SMPTE], and select the type in the "Frame Mode" field.

■Time Sign TEMPO

This indicates the time signature of a measure when executing manual tempo control with the tempo controller or when making tempo programs. A value of "4/4" indicates a time signature of 4/4 and "3/4" indicates a time signature of 3/4.

■Check Sum

Roland's exclusive messages contain check sum data immediately before the End Of Exclusive messsage (F7). The last 7 bits of the sum of the address, size and check sum become zero. The SBX-1000 automatically calculates the check sum.

☞ P.36, "Manual I" for information on exclusive events in the cue sheet.

☞ P.72, "Manual II (Sequencer)" for information on exclusive events in the sequencer.

■Channel Aftertouch Data MIDI

(☞ "Aftertouch")

■Tune Request Data MIDI

This message is used to automatically tune the overall pitch of an analog-type sound source (synthesizer). Whether this message is actually recognized by the device and, if recognized, what frequency the device is tuned to, depends on the specifications of the device itself.

■Disk Format

Before a newly purchased disk (or a disk that has been used by another device)can be used in the SBX-1000, it must be formatted as an SBX-1000 disk.

If you wish, you can save the System program when formatting a disk, to create a System disk. It is also possible to format a disk without the system program, for the sole purpose of storing data.

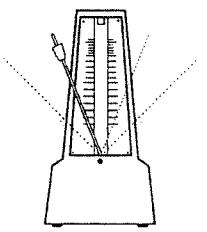
When the format operation is executed, all existing data on the disk will be erased. It is not possible to recover the original data from a formatted disk.

■Duration CUE

Duration is the length of time that elapses (in a note event that is registered in the cue sheet) from the pressing of the key until the key is released. It is expressed in standard timecode from (hours, minutes, seconds and frames). The value can be edited after recording.

■Tempo

Tempo is expressed as the number of quarter notes played in one minute.



Tempo = 60
(60 quarter notes in one minute)

■Tempo Controller

The SBX-1000 can control the tempo of a connected sequencer or rhythm machine by transmitting MIDI sync data (specifically, MIDI timing clock messages) from the MIDI OUT terminal. In combination with the SMPTE time code functions of the SBX-1000, this makes it possible to synchronize SMPTE devices with MIDI devices, allowing you, for example, to synchronize video tape decks and multitrack tape recorders with MIDI sequencers. The tempo controller is used to control these operations.

There are three methods of control: manual, original and program.

■Tempo Change Event SEQ

The tempo of the song is determined by the standard tempo; however, in order to change the tempo in the middle of a song, you can enter a tempo change event in the tempo track. The tempo change evented is enter as a numeric value, but the ratio of the standard tempo is stored internally. In this way, the overall tempo becomes faster or slower by changing the standard tempo.

Tempo change events are entered via step input. (☞ P.35, "Manual II for the sequencer") Tempo change events cannot be entered in real time.

■ Tempo Program TEMPO

This is a program for controlling the tempo of a connected sequencer or rhythm machine, and it is created with the tempo controller of the SBX-1000.
This method allows you to enter a large amount of tempo data and use the editing functions to change it. Programmed tempo control can be made to start automatically if the sequencer start event has been registered in the cue sheet.
The same tempo program cannot be used twice in a single cue sheet. Also, it is not possible to use different tempo programs at the same time. In this case, the tempo program which has most been registered recently has priority.

■ Track SEQ

The sequencer section contains sixteen tracks which can be used simultaneously. The type of each track is selectable: Standard-type or Pattern-type. A tempo track is also provided for controlling tempo changes.

■ Track Type SEQ

Sequencer tracks 1—16 can be used either as Standard-type, in which the performance data is recorded directly, or Pattern-type, in which created patterns are called up in the specified order by Pattern Call events recorded in the track.
Unrecorded tracks can be set to Standard or Pattern-type from the【Realtime REC】screen.
If you create a Pattern in the track, the track will automatically become a Pattern-type track. Pattern-type tracks can be converted into the Standard-type by using the "Pattern Conversion" function. (☞ P.46, "Manual II for the sequencer")

■ Note On Data MIDI

This data is transmitted when a key is pressed on a MIDI keyboard. The data includes messages indicating which key is pressed (note number) and how strongly the key is struck (note on velocity).

■ Note Off Data MIDI

This data is transmitted when a key on a MIDI keyboard is released. The data includes messages indicating which key is pressed (note number) and how quickly the key is released (note off velocity).

A velocity value of zero in the note on message is interpreted by some devices as "note off."

■ Note Event CUE SEQ

This event consists of a note on message and the time that elapses until a note off message is received.
The time from note on to note off is called "duration" in the cue sheet, and it is expressed as a time code value. The same information is called "gate time" in the sequencer and it is expressed in clocks (1 quarter note = 96 clocks).

■ Pattern SEQ

The sequencer section of the SBX-1000 lets you create songs in sections of several measures, save them as Patterns, and "paste" them into the track. In this way, you can speed up the process of song creation and also save memory.
Patterns are a specified number of measures in length, and can be called from a Pattern-type track by a Pattern Call event.
Patterns can also be created in Standard-type tracks, but cannot be called by Pattern Call events in these tracks.

■ Pattern Call Event SEQ

A Pattern Call event in a track calls and plays back a specified pattern. Pattern Call events can only be entered into Pattern-type tracks, and they can only be used to call Patterns available for the selected track. In order to call the Pattern made in another track, copy the pattern by using the "CopyP → P" function. (☞ P.106, "Manual II for the sequencer")

■ Pattern-type Tracks SEQ

These tracks allow you to use Pattern Call events to call and play back Patterns that were previously created in that track.
It is not possible to record standard musical data in a Pattern- type track.
If you create a Pattern in an empty track, the track type will automatically be set to Pattern. If a track already contains musical data, you will have to erase all the data before that track can become a Pattern-type track. (It is not possible to mix musical data and Pattern Call events in the same track.)
The Pattern Conversion operation can be used to convert a Pattern-type track into a Standard-type track.

■ Punch IN/OUT SEQ CUE

This method of recording allows you to playback the previously recorded data and re-record only a specified section. Changing from playback to the record mode is known as "punching in," and changing from record to the playback mode is know as "punching out."

In order to use the Punch IN/OUT function, press [REC] while recording a track in real time, either on the cue sheet or the sequencer.

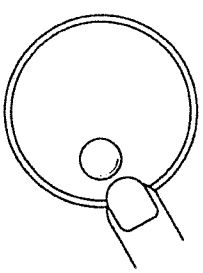
With the sequencer, you can also specify punch-in and punch-out points for performing automatic punch in/out recording.

- ☞ P.36, "Manual I" for information on exclusive events in the cue sheet.
- ☞ P.39, "Manual I" for information about tap input for the cue sheet.
- ☞ P.41,"Manual I" for information about MIDI keyboard input for the cue sheet.
- ☞ P.32, "Manual I" for information about real-time input of Standard-type tracks.

■ Value Dial

This is used to change the cursor position.

Value dial



Rotating the Value dial displays the available values one after the other. When entering characters, rotating the Value dial displays the available letters one after the other.

The sensitivity of the Value dial can be adjusted from the "3.Dial Sensitivity" parameter in [SETUP].

■ Beat SEQ TEMPO

This indicates the position in the measure, expressed as a beat number (first, second, third, etc.) of the measure. For example, the third beat in the second measure of a song is referred to as "measure 2, beat 3."

The word "beat" also indicates the time signature of the song. A display of "4/4" indicates that each measure is four quarter notes in length, and a display of 6/8 indicates that each measure is six eighth notes in length.

It is not possible to change the time signature of a measure which has already been recorded in the sequencer section.

■ Standard Tempo SEQ

This is the song tempo determined by the sequencer. It is set from the "Tempo" parameter, which is displayed at the bottom left of the [Sequencer] screen.

In order to change the tempo in the middle of a song, enter a tempo change event in the tempo track. The tempo change event is entered as a numeric tempo value, but it is stored as a ratio of the standard tempo. This allows you to maintain the relative tempo changes in the middle of a song even when you change the Standard tempo.

■ Pitch Bend Data MIDI

This type of MIDI data is used to control continuous pitch changes. For MIDI keyboards which are equipped with bender levers or bender wheels, moving these controllers transmits the bender data. The pitch bend range, over the extreme positions of the bender, is determined by the receiving device.

◇ Recording on the SBX-1000

This data can be recorded to either the cue sheet or the sequencer. "Pit Bend (Bend)" is displayed on the screen.

■ Function Keys

The functions or operations that these keys control changes depending on the screen that is selected. The functions are indicated at the bottom of the display. Holding the [SHIFT] key down allows you to access the alternate functions of the function keys.

■ Format

☞ "Disk Format"

■ Frame mode CUE

(☞ "Time Code Rates")

■Program Change Messages MIDI

These MIDI messages are used to select sound programs by specifying a program number of 1—128.

◇Recording on the SBX-1000

This data can be recorded to either the cue sheet or the sequencer. "Prog.Chg(P.Chg)" is displayed on the screen.

■Programmed Tempo Control TEMPO

The tempo controller of the SBX-1000 is used to create tempo programs, and this tempo data is used to control the tempo of the connected sequencer or rhythm machine. (☞ P.61, "Manual I")

Program tempo control can be started automatically if the sequencer start event is registered in the cue sheet.

■Paste Buffer

Note: Data which is cut or copied by pressing [CUT] or [COPY] is temporarily stored in the paste buffer. The data in the paste buffer is retained until the same data is cut or copied again, or until the power is turned off. Press the [PASTE] key to paste (insert) the data.

■Velocity MIDI

The force (or, more accurately, the speed) with which you play a key is called the "velocity." Velocity data is part of the note message which is transmitted when a note is played.

■Polyphonic Aftertouch MIDI

(☞ "Aftertouch Data")

■Microscope SEQ

The Microscope screen allows you to view individual events of tracks and Patterns of the sequencer. Each line of the Microscope screen displays one event.

■Manual Tempo Control TEMPO

This function sets the standard tempo of the tempo controller, which controls the tempo of the sequencer or rhythm machine.

This is effective when playing the song at the same tempo from the beginning to the end. It is also possible to change the tempo in real time by using the value dial or the numeric keypad. (☞ P.59, "Manual I")

Manual control is possible only with the tempo controller and is impossible to control from the cue sheet.

■Measure SEQ TEMPO

This indicates the measure or measure number.

■Metronome

The metronome sounds when playing the tempo with the tempo controller or during recording. You can adjust the volume of the metronome by rotating the METRONOME LEVEL dial on the upper right side of the panel. Set the volume level to 0 to turn the metronome sound off.

The metronome can also be triggered by the sequencer. Specify when you want to hear the metronome from the "Metronome" parameter displayed at the bottom left corner of the【Sequencer】screen.

■Real Time Input

With this method, both the data and the timing at which it is entered is recorded. Tap input, audio trigger input and performance data from a connected MIDI keyboard can all be recorded in real time.

Events of the cue sheet, tempo data of the tempo program, and the events of tracks and Patterns of the sequencer can be entered in real time.

- ☞ P.37, "Manual I" for information about tap and audio trigger input for the cue sheet.
- ☞ P.40, "Manual I" for information about MIDI keyboard input for the cue sheet.
- ☞ P.63, "Manual I" for information about tap and audio trigger input for the tempo program.
- ☞ P.21, "Manual II (Sequencer)" for information about real time input for Standard-type tracks.
- ☞ P.26, "Manual II" for information about real time entry of Patterns.

■Rehearsal Mark SEQ

Rehearsal Marks allow you to divide a song into sections such as intro, first chorus, interlude, etc., and assign a name of up to 4 characters to each.

Rehearsal Marks can be conveniently used for selecting the starting position of playback and specifying a section of the song for editing. (☞ P.47, "Manual II for the sequencer")

■Loop Recording SEQ

This function allows you to specify a section of a song that will play repeatedly. Each time this looped section plays back, new data can be recorded on top of the existing data. This is especially convenient when creating a rhythm phrase.
Different percussion sound, can be added (one at a time) as the looped section plays over and over.

■Local On/Off MIDI

This switch allows you to turn keyboard control over its internal sound source on and off.

■Locator

The keys [ZERO], [END] and 1 through 6 are Locators.
The numbered keys 1 to 6 can be used to specify a point, and the point can them be immediately reached by pressing the appropriate key.
This function can be used to specify and locate time code points on the cue sheet, measure/beat points in manual/programmed tempo control of the tempo controller, and measure/beat/clock points in the sequencer.

- ☞ P.25, "Manual I" for information about locating time code points in the cue sheet.
- ☞ P.60, "Manual I" for information about measure/beat points in manual tempo control.
- ☞ P.67, "Manual I" for information about locating measure/beat points in programmed tempo control.
- ☞ P.119 "Manual II (Sequencer)" for information about locating measure/beat/clock points in the sequencer.

■Load

Load is the operation which allows you to transfer the data from disk to internal memory.

Roland

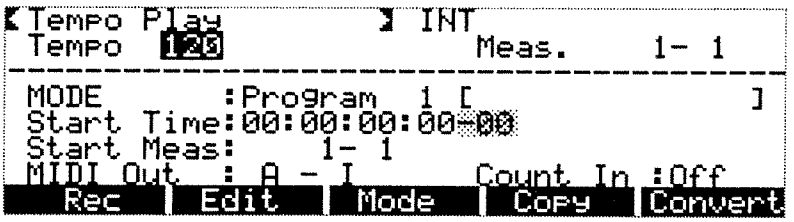
MIDI CUEING BOX

SBX-1000

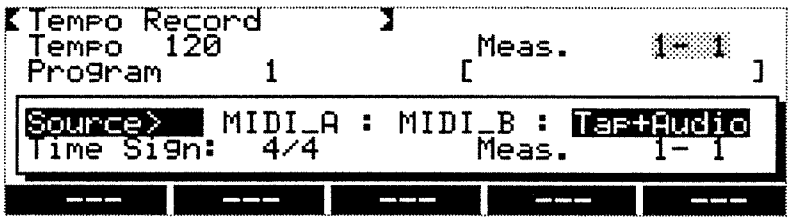
Ver.1.2

Features Added with Ver. 1.2 for the SBX-1000

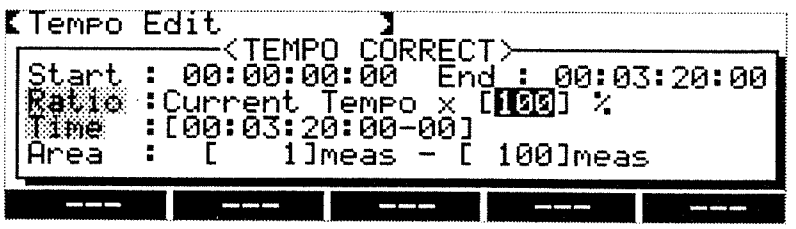
1.The minimum unit that the Tempo Controller section is capable of working with is now 1/80th of a frame, rather than the former 1/4th frame. (1/80th of a frame is referenced as one bit.)
* The minimum unit that the Cue Sheet section is capable of handling is 1/4th of a frame.



2.When recording tempo while synchronized with the timecode of an external device, the unit now is capable of displaying the equivalent measures and beats for the timecode, if tempo data is available.



3.Formerly, Ratio was given priority when specifying Ratio and Time. Now, the value of the counterpart is automatically altered whenever an alteration is made in either Ratio or Time. For example (when at a tempo of 120), if you set the Ratio to 120%, the Time automatically becomes 02:46:20-00. Conversely, if the Time were put at 02:20:00-00, the Ratio would become 142%.
** When Area is altered, the Ratio reverts to 100%. Time indicates the time for the specified Area. Any changes you wish to make in Ratio and Time should be made after the Area has been specified.



SBX-1000

III Glossary

Roland Corporation

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