

# PBS-TRI

## Playback Sampler/Flash ROM Option

### User's Guide



# KORG

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# 1. Introduction

Thank you for purchasing the **PBS-TRI Playback Sampler/Flash ROM option**. In order to enjoy long and trouble-free use of this product, please read this manual carefully to learn how to use the **PBS-TRI** correctly.

## *Expanded multisamples and drum samples*

When the **PBS-TRI** is installed, the multisample and drum sample memory is expanded, allowing PCM data to be loaded from floppy disk and used as multisamples or drum samples.

This allows the **TRINITY series** to utilize the **PCM data** of **KORG format files**, **AKAI S1000 format files**, and **AIFF files**.

The following limits apply to the number of PCM data items that can be loaded.

Multisamples	maximum 100
Drum samples	maximum 200
Samples	maximum 500

The **number of samples** is the sum of the samples used in the multisamples plus the number of drum samples.

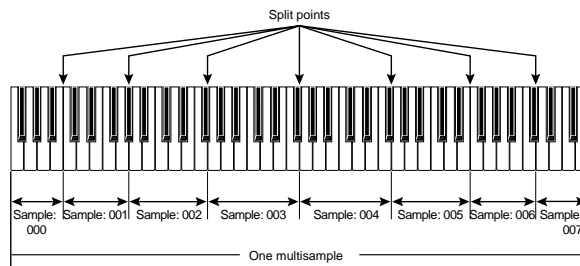
For example if you have loaded two multisamples each consisting of 8 samples, and ten drum samples, the remaining number that can be loaded will be 98 multisamples (= 100-2), 190 drum samples (= 200-10), and 474 samples (= 500-8×2-10).

The capacity of the PCM memory is **approximately 8 Mbytes** (8,323,040 bytes). It is not possible to load samples which are larger than 2 Mbytes. Also, individual samples which exceed the capacity of a floppy disk (approximately 1.4 Mbytes for a 2HD disk) can be saved only to a hard disk when the SCSI option or the HRD option has been added.

### What is a sample?

Each multisample consists of PCM data (waveforms) for two or more pitch ranges. Each of these units of PCM data is referred to as a sample. Samples are numbered from the bottom end of the keyboard as Sample:000, Sample:001, Sample:002, etc.

For example, a multisample with seven split points would contain 8 samples.



## ***Expanded numbers of programs, combinations, and drum kits***

The **PBS-TRI** doubles the number of programs, combinations, and drum kits. (The number of songs will not change.)

### **Programs (PCM)**

Banks C and D are added to banks A and B, for a total of 512 programs.

### **Programs (Solo)**

For a **TRINITY series** instrument in which the Solo synthesizer is installed, bank S programs are doubled to 128 programs.

### **Combinations**

Banks C and D are added to banks A and B, for a total of 512 combinations.

### **Drum Kits**

The number of drum kits is doubled to 24.

## ***New functions***

Installing the **PBS-TRI** will add the following functions.

### **Disk mode**

- Tab page 1 (Load) allows you to load KORG format KMP, KSF, and KSC files, AKAI S1000 format files, and AIFF files as multisamples or drum samples.
- The “Save Multi/DrumSample” item added to the page menu commands of tab page 2 (Save) allows you to save multisamples and drum samples to floppy disk.
- In the “Save All” and “Save Combi/Prog” items of tab page 2, you can save the combination or program of the specified bank to floppy disk.

### **Global mode**

- In P5 (Drum Kit), you can convert a drum kit to a multisample.
- In P6 (Multi/Drum Sample), the remaining free area of the PCM data memory is displayed.
- The page menu commands of P6 allow you to write or delete edited multisamples or drum samples.

### **Sequencer mode**

- Due to the expansion in the number of program banks, the bank displayed in the dialog box that appears when you execute the P5 page menu command “Event Edit” will correspond to the actual bank as follows.

<b>Displayed</b>	
Bank: A	Bank A
Bank: B	Bank B
Bank: 2	Bank C
Bank: 3	Bank D
Bank: 4	Bank S

## 2. Operation

The following functions have been added to handle the additional PCM data functionality.

### Loading KORG format files

There are three types of Korg format PCM data: KSC files, KMP files, and KSF files. These files are contained in the separately sold TFD-Series TRINITY PCM/Performance Data Library.

#### KMP files



Files which have a filename extension of KMP (KORG Multisample Parameter)

These contain parameters that make up a single multisample. These parameters also include the names of the KSF files used by that multisample. When a KMP file is loaded, the necessary KSF files will also be loaded at the same time.

#### KSF files



These are files with a filename extension of KSF (KORG Sample File), and contain parameters and waveform data for one sample.

KSF files can be used as a drum sample or as a single sample used by a multisample.

When a KSF file is loaded individually, it will be treated as a drum sample.

#### KSC files



These are files with a filename extension of KSC (KORG SCRIPT), and contain filenames of the above-mentioned KMP and KSF files.

These are used to load two or more multisamples or drum samples as a group.

### Loading as a multisample

- 1 Insert a floppy disk containing a KMP file into the disk drive.
- 2 Access the Disk mode tab page 1 (Load).
- 3 Select the desired KMP file.




- 4 Execute the Load Selected page menu command.

The selected KMP file will be loaded as a multisample.


The data will be loaded as an addition to the multisamples which currently exist in memory, and therefore cannot be used as a drum sample.

If the KSF files used by the KMP file do not exist in or below the current directory, a dialog box will appear for you to specify the directory. Use the procedure of "If the file for loading is not found" (⇨page 8 of this manual) to load the required KSF file(s).

-  Since PCM memory overflow checking is performed when loading each of the KSF files, it is possible that an overflow may occur during loading.

## Loading as a drum sample

- 1 Insert a floppy disk containing a KSF file into the disk drive.
- 2 Access the Disk mode tab page 1 (Load).

- 3 Select the desired KSF file. 


- 4 Execute the Load Selected page menu command.

The selected KSF file will be loaded as a drum sample. The data will be loaded as an addition to the drum samples which currently exist in memory.

If you wish to use the loaded data as a multisample, use the procedure of “Using a drum kit as a multisample” (⇨page 10 of this manual).

## Simultaneously loading a set of multisamples and drum samples


- 1 Insert a floppy disk containing a KSC file into the disk drive.
- 2 Access the Disk mode tab page 1 (Load).

- 3 Select the desired KSC file. 

- 4 Execute the Load Selected page menu command.

The KMP/KSF files listed in the selected KSC file will be loaded respectively as multisamples or drum samples. The data will be loaded as an addition to the multisamples and drum samples which currently exist in memory.

If the KSF files used by the KMP files do not exist in or below the current directory, a dialog box will appear for you to specify the directory. Use the procedure of “If the file for loading is not found” (⇨page 8 of this manual) to load the required KSF file(s).

-  Since PCM memory overflow checking is performed when loading each of the KSF files, it is possible that an overflow may occur during loading.


## Loading AKAI S1000 format files

When the **PBS-TRI** is installed, you can load AKAI S1000 format Sample files and Program files.



If the sample data which is loaded contains loop points, setting Offset Start on the **TRINITY series** will make the sound begin from the loop point. If there are no loop points, Offset Start cannot be set.

### Loading a Sample file

- 1 Insert a floppy disk containing a Sample file into the disk drive.
- 2 Access the Disk mode tab page 1 (Load).
- 3 Select the desired Sample file. 

- 4 Execute the Load Selected page menu command.

The selected Sample file will be loaded as a drum sample. The data will be loaded as an addition to the drum samples which currently exist in memory. If you wish to use the loaded data as a multisample, use the procedure of "Using a drum kit as a multisample" (⇨page 9 of this manual).




Since PCM memory overflow checking is performed when loading each of the Sample files, it is possible that an overflow may occur during loading.

#### About Sample files

Parameter	AKAI S1000 format	TRINITY series format after loading
Loop points	8 can be set	Of the 8, the first HOLD loop will be used. If there is no HOLD loop, the longest loop will be used.
Loop length	Settable with resolution of less than 1 sample	Resolution of less than 1 sample is ignored

### Loading a Program file

- 1 Insert a floppy disk containing a Program file into the disk drive.
- 2 Access the Disk mode tab page 1 (Load).
- 3 Select the desired Program file. 

- 4 Execute the Load Selected page menu command.

The selected Program file will be loaded as a multisample. The data will be loaded as an addition to the multisamples which currently exist in memory, and cannot be used as a drum sample.

If the Sample files used by the Program file do not exist in or below the current directory, a dialog box will appear for you to specify the directory. Use the procedure of "If the file for loading is not found" (⇨page 8 of this manual) to load the required Sample file(s).

When loaded data is saved to disk, Program files will be saved as KMP files and

Sample files will be saved as KSF files.

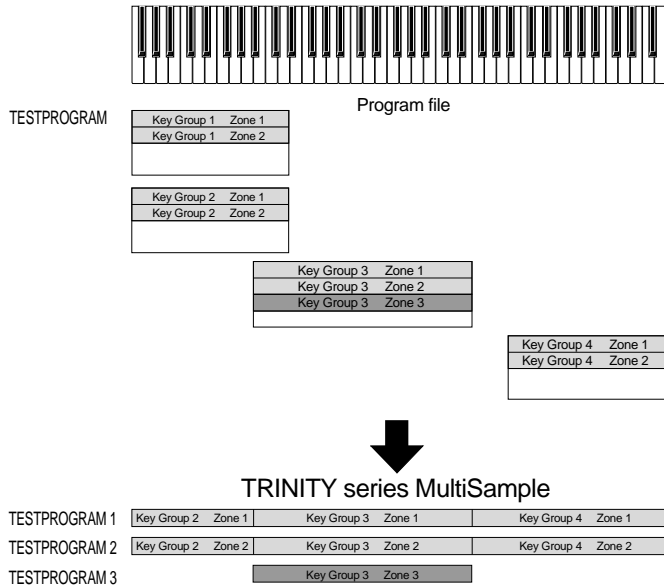
**About Program files**

From these files, the **TRINITY series** will read only the key map related parameters.

The **AKAI** format uses the concept of “key map,” and allows up to four samples to be assigned to a key zone, enabling velocity switching or cross-fading between these four samples.

In contrast, the **TRINITY series** pairs each key zone with one sample, so up to four Trinity multisamples must be used to re-create Akai key maps that have more than one sample per zone. Key zones are not cross-faded.

Example: The **AKAI** format program file “**TESTPROGRAM**” consists of four key groups, and each key group consists of up to three velocity zones. Key groups 1 and 2 form a layer which has the same Low Range. When this data is loaded into the Trinity, it will be converted into a set of three multisamples (one for each velocity zone), and a 1, 2 or 3 will be added to the end of each multisample name. At this time, the Top Key will be determined by the Bottom Key of the sample assigned at its right, and if the Bottom Keys match (key groups 1 and 2 in the diagram), the higher key group number will be used.





The Pitch parameters of the program file will all be converted to **TRACK** when the data is loaded into the **TRINITY**.




## Loading AIFF files

When the **PBS-TRI** is installed, you can load AIFF files (a format used by personal computers, etc. to store audio data).

 AIFF files with a filename extension other than **.AIF** will not be recognized as AIFF files. In this case, use the tab page 3 (Utility) page menu command “Rename” to change the last four characters of the filename extension to **.AIF**.

 If the sample data which is loaded contains loop points, setting Offset Start on the **TRINITY series** will make the sound begin from the loop point. If there are no loop points, Offset Start cannot be set.

 If data with a sample size of 8 bits or less is loaded, the Trinity will convert this into 16 bit data, meaning that memory amounting to twice the file size will be consumed. Also, be aware that since this conversion increases the data size, it may no longer be possible to save that data to floppy disk.

1 Insert the floppy disk (DOS format) containing the AIFF file into the disk drive.

2 Access the Disk mode tab page 1 (Load).

3 Select the desired AIFF file. 

4 Execute the Load Selected page menu command.

The selected AIFF file will be loaded as a drum file.

The data will be added to the drum samples which already exist in memory.

When the loaded data is saved to disk, it will be saved as a KSF file.

If you wish to use the loaded data as a multisample, use the procedure of “Using a drum kit as a multisample” (⇨page 9 of this manual).

### Compatible chunks

When data is loaded by the **TRINITY series**, the following chunks are referenced: Common chunk, Sound Data chunk, Marker chunk, and Instrument chunk. Other chunks are ignored.

Limitations on the parameters within each chunk are described below.

#### Common chunk

Only a channel number of 1 is supported (monophonic sound).

Sample sizes of 1–16 bits are supported. If this is 8 bits or less, the data will be loaded as 16 bit data with lower 8 bits as all 0.

#### Sound Data chunk

Offset and block size are ignored. (Block-Aligning Sound Data is not supported.)

#### Marker chunk

Up to 8 markers are supported. The ninth and subsequent markers are ignored.

#### Instrument chunk

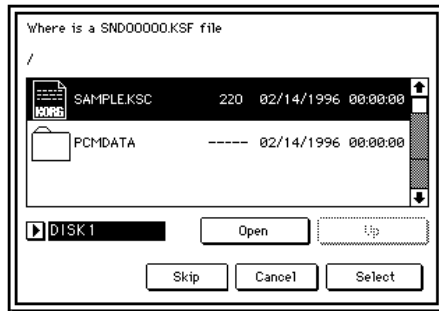
A loop play mode of ForwardBackwardLooping will be handled as ForwardLooping.

baseNote, detune, lowNote, highNote, lowVelocity, highVelocity, gain, and releaseLoop are ignored.

## If the file for loading is not found

When loading PCM data, the following dialog box will appear if the necessary files are not found in or below the current directory. This will appear if the necessary KMP files are not found when loading a KSC file.

Likewise, this will appear when loading a KMP file if the necessary KSF files are not found, and when loading a Program file in the S1000 format if the Sample files are not found.



- 1 Changing disks as necessary, move to the directory that contains the file requested by "Where is."
- 2 Press the Select button to begin loading. If you press the Cancel button loading will be halted. If you press the Skip button, the specified file will be skipped and the next file will be loaded.  
Except for special cases such as when the disk containing the necessary file is damaged or cannot be found, you should press the Select button to continue loading.

## Using a drum kit as a multisample

This can be done using the “Convert to MultiSample” command which has been added to the Global mode P5 (Drumkit) page menu.

Convert To MultiSample

- 1 Select a drum kit in the Global mode P5 (Drumkit) item DrumKit.
- 2 Press the page menu command Convert to MultiSample.

The dialog box at right will appear.

- 3 Use the radio buttons to select either “Use High DrumSample” or “Use Low DrumSample” for the drum kit that will be converted to a Multi-Sample.



With High DrumSample, all the High drum samples will be selected (those which sound for velocities above the Bottom Vel setting).

With Low DrumSample, all the Low drum samples will be selected (those which sound for velocities less than the Bottom Vel setting).

- 4 Press the OK button.

The selected drum sample will be usable as a multisample.

It will be added to the multisamples which are already in memory.

Of the drum kit parameters, Decay, Bottom Vel, Ex, Bypass Filter, Pan, Send 1, Send 2, and Insert FX will be ignored.

If the Start Offset check box cannot be set for even one drum sample in the drum kit to be converted, neither will it be possible to set the Start Offset for the multisample that is created by this conversion.



If you wish to use a KSF file, Sample file, or AIFF file that was loaded as a drum sample as a multisample, perform the conversion after creating a drum kit.




The tuning of the drum samples will be converted into the Original Key and Tune of the samples in the multisample. Since the original key after conversion is limited to the range of C-1 to G9, conversion may not take place correctly for some drum sample settings.

If the converted data is saved to disk, it will be saved as a KMP file.

## Editing multisamples and drum samples

These samples can be edited using the “P6 Multi/Drum Sample” command which has been added to Global mode.

This tab page displays the number of multisamples, drum samples, and samples that can be added, and the free memory for each bank of PCM data.

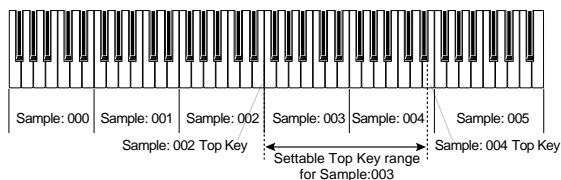
 The memory for PCM data is divided into four banks, and it is not possible for one sample to straddle two banks.



- a **Free Number** indicates the number of multisamples, drum samples, and samples that can be added.
  - **MultiSample:** the number of multisamples that can be added (maximum 100)
  - **DrumSample:** the number of drum samples that can be added (maximum 200)
  - **Sample:** the number of samples that can be added (maximum 500)
  - **Sample in MS:** the number of samples that can be added to those used in multisamples (maximum 500)
- b Select the multisample or drum sample to be edited. You can edit the name of the selected multisample or drum sample.
- c This will be displayed when a multisample is selected. Select the sample within the multisample that you wish to edit.
- d This shows the parameters of the sample selected in 'c'. The possible range of settings is as follows.

Tune	-99...+99
Level	-99...+99
Top Key	C-1...G9
Original Key	C-1...G9

**Top Key** is the highest note of the keyboard area to which that sound is assigned. The settable range is from the Top Key of the sample to left to the Top Key of the sample to right. The following figure shows the settable range for the Top Key of Sample:003.

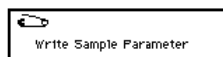


**Original Key** is the note which will sound the sample at its original pitch (as it was recorded).

- ▲ If the keyboard location is more than 2 octaves higher than the Original Key, the pitch may stop changing. This is affected not only by the note played on the keyboard, but also means that the pitch may stop changing when the ribbon controller or joystick is used to raise the pitch.

## Writing an edited multisample or drum sample

Use the “Write Sample Parameter” page menu command that has been added to Global mode P6.



- ▲ Settings that are edited in the “Multi/DrumSample” P6 will be lost when the power is turned off. If you wish to keep these settings, use the “Write Sample Parameter” to store them into internal memory. When new PCM data is loaded from disk, or when “2-6 Convert to Multi-Sample” is performed, the data will automatically be written into internal memory.

## Deleting multisamples and drum samples that you wrote

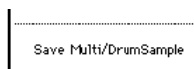
Use the “Delete All Multi/Drum Sample” page menu command that has been added to Global mode P6.

When you execute Delete All Multi/DrumSample, all multisamples and drum samples that you wrote will be deleted.

- ▲ All PCM data that was added will be deleted.

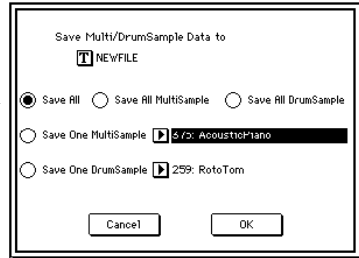
## Saving multisample or drum sample data to floppy disk

Use the “Save Multi/DrumSample” page menu command that has been added to Disk mode tab page 2 (Save).



- 1 Insert a floppy disk which will contain the saved data into the disk drive.
- 2 Press the Save Multi/DrumSample page menu command.

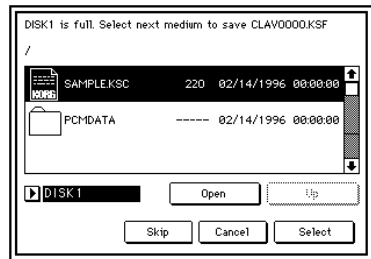
The dialog box at right will appear. There are five ways to save data to a floppy disk, as follows. (Data is saved in KORG format for all five methods.)



### Save All

If you select this and press the OK button, all multisamples/drum samples will be saved as KMP and KSF files, and at the same time a KSC file containing these will also be created and saved.

The filename that you specified using the text edit button will be used as the filename of the KSC file. **If the data does not fit on one floppy disk**, the dialog box at right will appear. Remove the floppy disk from the disk drive, insert another floppy disk, and press the Select button.



### Save All MultiSample

All multisamples will be saved as KMP and KSF files, and at the same time a KSC file containing these will also be created and saved.

The filename that you specified using the text edit button will be used as the filename of the KSC file.

### Save All DrumSample

All drum samples will be saved as KSF files, and at the same time a KSC file containing these will also be created and saved.

The filename that you specified using the text edit button will be used as the filename of the KSC file.

### Save One MultiSample

The selected multisample will be saved as a KMP file and its associated KSF files.

The filename that you specified using the text edit button will be used as the filename of the KMP file.

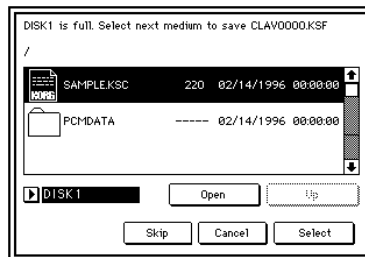
### Save One DrumSample

The selected drum sample will be saved as a KSF file.

The filename that you specified using the text edit button will be used as the filename of the KSF file.

**If the file size is larger than the free capacity of the disk when saving PCM data, the dialog box at right will appear.**

- 1 Insert a different floppy disk into the disk drive.
- 2 Move to the directory in which the data will be saved.
- 3 Press the Select button.



Saving will begin. If at this time you press the Cancel button, saving will be halted.

If you press the Skip button, the displayed file will be skipped, and the next file will be saved.

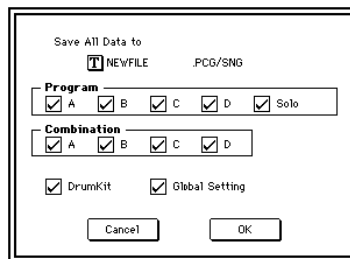
Except for special cases such as when the disk is damaged or cannot be found, you should press the Select button to continue saving.

## *Saving programs and combinations to floppy disk by bank*

The page menu commands “Save All” and “Save Combi/Prog” of Disk mode tab page 2 (Save) let you save to floppy disk by bank.

Select “Save All” and the dialog box at right will appear.

Only the data types whose check boxes are checked will be saved. In the case of a **TRINITY series** instrument without a Solo synthesizer option, the Solo check box cannot be selected.



## 3. Error messages

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### Format not supported

- Meaning:** You attempted to load a file of a format not supported by the **TRINITY series**, such as a stereo AIFF file.
- Action:** If possible, use your personal computer to convert the data into a format supported by the **TRINITY series**, and load it once again.

### Memory overflow

- Meaning:** The data you attempted to load would exceed the free capacity of waveform memory.
- Action:** Execute Delete All Multi/DrumSample, and reload in a way that the waveform data memory can accommodate.

### Number overflow

- Meaning:** Loading was attempted that would exceed the remaining number of multisamples, drum samples, or samples that can be loaded.
- Action:** Execute Delete All Multi/DrumSample, and reload in a way that the remaining number is not exceeded.

### Number overflow

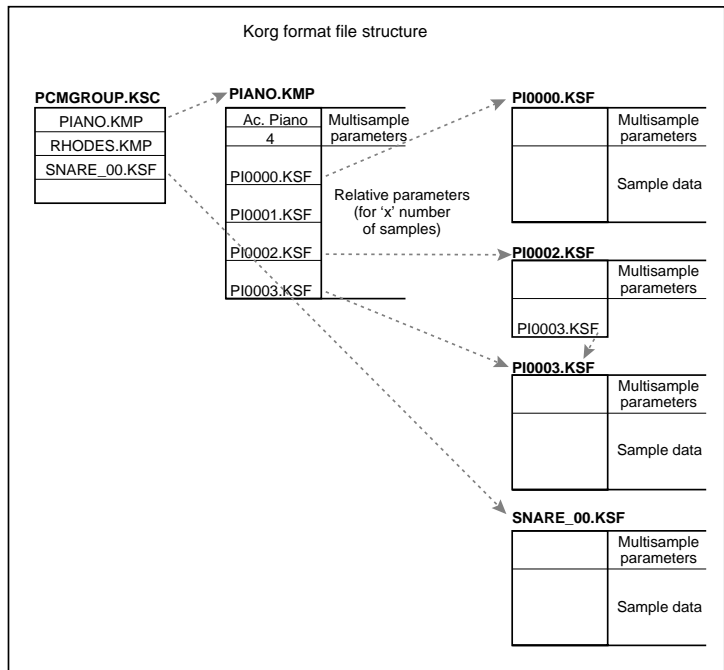
- Meaning:** In the dialog box that appears when Save All or Save Combi/Prog is selected, the OK button was pressed without checking any check boxes.



## 4. Technical information (About KORG format files)

### KORG format file structure

There are three types of files: KMP files for multisamples, KSF files for samples, and KSC files which handle the first two as a collection. Similar to the IFF format, KMP/KSF files consist of chunks. The fourth character of the chunk ID is the chunk format ID, and if adding chunks to expand the specification is not sufficient, this format ID will change.



Unless stated otherwise, all data is MSByte first.

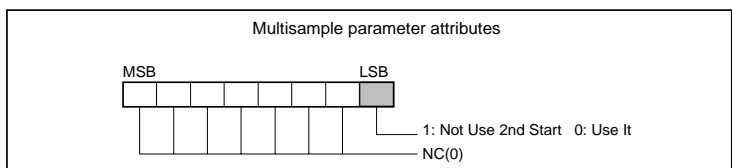
### KMP (KORG Multisample Parameter) files

This consists of one multisample parameter chunk, and relative parameter chunks.

- **Multisample parameter chunk**

Chunk ID ('MSP1')	[4 bytes]
Chunk size (fixed at 18)	[4 bytes]
Multisample name	[16 bytes]
Number of samples in the multisample	[1 byte]
Attributes	[1 byte]

- **Attributes**



• **Relative parameter chunk**

Chunk ID ('RLP1')	[4 bytes]
Chunk size (18 × number of samples in the multisample)	[4 bytes]
Original key	[1 byte]
MSB 1: Non Transpose 0: Transpose	
bits 6–0 original key	
Top key (0–127)	[1 byte]
Tune (–99...+99 cents)	[1 byte]
Level (–99...+99 cents)	[1 byte]
Pan (0–127 currently unused)	[1 byte]
Filter cutoff (–50...0 currently unused)	[1 byte]
KSF filename (including period and extension)	[12 bytes] × number of samples in the multisample

If the KSF filename is "SKIPPEDSAMPL", it will be treated as a sample skipped during loading.  
 If the KSF filename is "INTERNALnnnn", internal samples will be used.

**KSF (KORG Sample File) files**

There are two types of these files. One type consists of a sample parameter chunk and a sample data chunk. The other type consists of a sample parameter chunk and a sample file name chunk. The latter uses the sample data of the specified KSF file (sharing sample data).

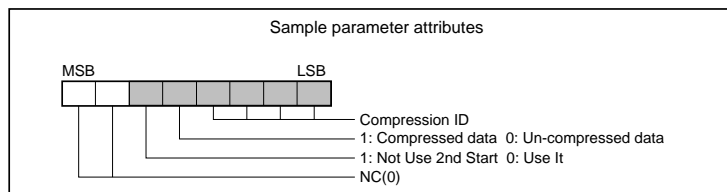
• **Sample parameter chunk**

Chunk ID ('SMP1')	[4 bytes]
Sample size (32)	[4 bytes]
Sample name (for drums)	[16 bytes]
Default bank (0–3)	[1 bytes]
Start address	[3 bytes]
2nd start address	[4 bytes]
Loop start address	[4 bytes]
Loop end address	[4 bytes]

• **Sample data chunk**

Chunk ID ('SMD1')	[4 bytes]
Chunk size (12 + number of sample databytes)	[4 bytes]
Sampling frequency	[4 bytes]
The sampling frequencies supported by the <b>TRINITY series</b> are 48000/47619/44100/32000/31250/24000/23810/22254/22050/15625/11127/11025 (Hz).	
Attributes	[1 byte]
Loop tune (–99...+99 cents)	[1 byte]
Number of channels (1)	[1 byte]
Sample size (8/16)	[1 byte]
Number of samples	[4 bytes]
Sample data	variable length

• **Attributes**



• **Sample filename chunk**

Chunk ID ('SMF1')	[4 bytes]
Chunk size (12)	[4 bytes]
KSF filename	[12 bytes]

If the KSF filename is "SKIPPEDSAMPL", it will be treated as a sample skipped during loading.  
 If the KSF filename is "INTERNALnnnn", internal samples will be used.

## KSC (KORG Script) files

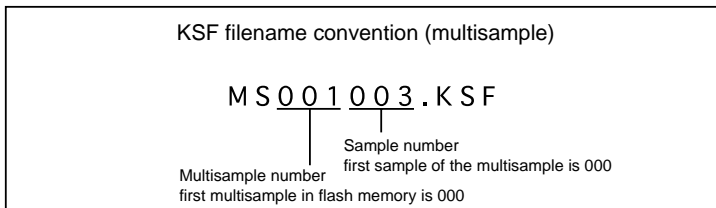
These files are text files which contain a list of filenames for KMP/KSF files which are to be handled together.

Lines beginning with # are ignored as comment lines.

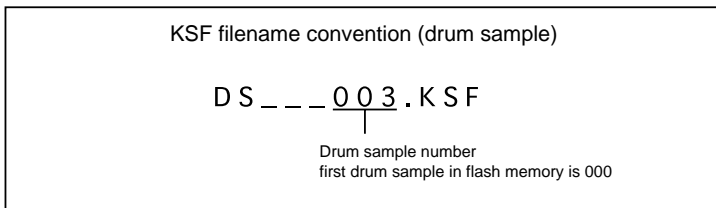
The first line of the file must begin with "#KORG Script Version 1.0" and subsequent lines (except for comment lines) consist only of filename. Only files with an extension of KMP/KSF are processed.

## Filename conventions

When data is saved using Save All Sample, Save All MultiSample or Save One MultiSample, the individual KSF files are automatically given filenames according to the following convention.



Likewise, when data is saved using Save All Sample or Save All DrumSample, the individual KSF files are automatically given filenames according to the following convention.



KMP filename for Save All Sample or Save All MultiSample

