Roland™

Fantom Xa

Workshop

Importing and Using Loops

About the Fantom-Xa Workshop Series

Roland's Fantom-Xa workstation keyboard provides lots of creative power at an affordable price. It shares many of the features of its more expensive siblings—the Fantom X6, X7, and X8—including killer sounds, 128-note polyphony, a full-featured 16-track sequencer, sampling capabilities, and so much more.

The Fantom-Xa Workshop Series booklets discuss some of the things you can do with your Fantom-Xa. Each booklet focuses on one topic, and is intended as a companion to your *Fantom-Xa Owner's Manual*.

About This Booklet

While the Fantom-Xa's built-in sampler allows you to make your own samples, it also lets you to import .WAV- and AIFF-format sampled beat loops—we'll just call them "loops" for short.

Once you've got a loop inside the Fantom-Xa, you can use it as the basis for a new song, or time-stretch it to fit the tempo of an idea you already have. You can change a loop's tempo on-the-fly, or alter it permanently.

This booklet explains how to import and use a loop, and how to take advantage of the Fantom-Xa's time-stretching power.

Understanding the Symbols in This Booklet

Throughout this booklet, you'll come across information that deserves special attention—that's the reason it's labeled with one of the following symbols.

A note is something that adds information about the topic at hand.

A tip offers suggestions for using the feature being discussed.

A definition is provided for an important term that's just been introduced.

Warnings contain important information that can help you avoid possible damage to your equipment, your data, or yourself.

Expanding Sample Memory

If you plan to take advantage of the Fantom-Xa's sampling or sample-playback capabilities, we recommend you expand its onboard sample RAM.

What Is Sample RAM?

Whether you capture, load, or import a sample, it's held in an area within the Fantom-Xa called "sample RAM." This is an area of fast, fluid, temporary memory derived from SDRAM chips, the same kind found in many computers. It's called "sample RAM" because it's where you work with your samples.
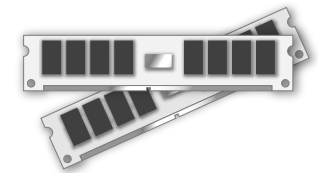
The Fantom-Xa sample RAM is 4 MB (MegaBytes) in size as shipped from the factory, enough to get you started with sampling.

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In case you're curious, "RAM" stands for "Random Access Memory," and "SDRAM" stands for "Synchronous Dynamic Random Access Memory."

The Fantom-Xa performs CD-quality sampling—using a 44.1 kHz sample rate and a 16-bit word length. To give you an idea of how quickly sample RAM gets used up, this means that:

- *a 30-second-long mono sample*—uses up 2.5 MB of your sample RAM.
- *a 15-second stereo sample*—uses 2.5 MB of sample RAM.

The Fantom-Xa's Skip Back Sampling also uses sample RAM, so a limited amount of sample RAM also limits the size of Skip Back samples.

If your Fantom-Xa is set to load its demo preset samples at startup, you'll actually be starting out with just 2 MB of sample RAM in an unexpanded Fantom-Xa. You can turn off the automatic loading of the preset samples as described in the *Fantom-Xa Owner's Manual*.

Therefore, install as much memory as you can afford if you intend to get into sampling. You can expand the Fantom-Xa sample RAM up to a spacious 512 MB as described on Page 216 in the *Fantom-Xa Owner's Manual*.

How Does Stuff Get Into Sample RAM?

Whenever you can hear a sample, it's in sample RAM. It gets put there when:

- *you import a new sample*—from your personal computer. We'll discuss how to do this later.
- *you capture a new sample*—by sampling.
- *you load a sample for playing and editing*—stored in user or card memory.
- *the Fantom-Xa loads it*—automatically at startup. The Fantom-Xa can automatically load both demo preset and user samples when you first turn it on.

A Nice Place to Visit, But...

Sample RAM is temporary memory, which means that it's cleared when you turn off the Fantom-Xa. It's therefore critically important that you remember to save anything you import or sample to permanent user or card memory before you turn off the Fantom-Xa. If you don't, your work will be lost.

If you load an already-saved sample and edit it, make sure to save the new version to user or card memory before powering off, since the edited version exists only in sample RAM until you save it.

Importable Loops

If you'll be importing samples that originally came from audio CDs, you'll have no problem—audio CDs use the same type of audio files the Fantom-Xa uses. If you get your loops from friends or the Internet, you can import sample loops that are:

- *.WAV or AIFF-format audio files*
- *sampled at 44.1 kHz*—the sampling rate of audio CDs.
- *16-bit files*—the bit depth of audio CDs.

Your Fantom-Xa must also have sufficient user or card memory and sample RAM to hold any sample you want to import.

An Assumption...

In this booklet, we're assuming that any loop you want to import has first been trimmed so that it starts precisely at its first beat, and ends precisely at the end of its last beat.

The most common loop lengths are one measure, two measures, or four measures.

While this booklet discusses the use of trimmed loops, you can also trim loops on the Fantom-Xa itself—see the *Owner's Manual* for more details.

Importing a Loop

Here's how to import and set up a loop for use in the Fantom-Xa. We recommend you read—and perform—the following steps in the order in which they're presented.

Bringing a Sample Loop Into the Fantom-Xa

The simplest way to import a loop into the Fantom-Xa is by connecting the Fantom-Xa to your computer via USB.

If your Fantom-Xa has a memory card and your computer has a card reader, you have an additional option. You can insert your Fantom-Xa-formatted card into the reader and move any loop you wish to import into the card's AUDIO_IMPORT folder. To learn about using memory cards, see the *Fantom-Xa Owner's Manual*.

Connecting and Activating USB Communication

This procedure is possible only with USB-supporting computers using the following operating systems: Windows XP/2000/Me or higher, Mac OS 9.04 or higher, or Mac OS X.
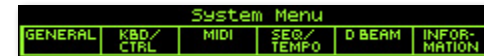
When USB communication is turned on, do not unplug the USB cable connecting the Fantom-Xa and the computer.

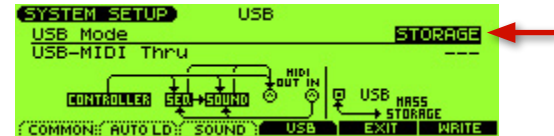Before connecting the Fantom-Xa to your computer via USB and activating communication:

1. On the Fantom-Xa, press LAYER/SPLIT, MENU, and then select System if it isn't already selected.

2. Press ENTER—the System Menu window appears.

3. Press F1 (GENERAL).
4. Press F4 (USB)—by default, the Fantom-Xa's USB connection is set to STORAGE, as the red arrow shows here.

The Fantom-Xa's USB connection can also be used for sending and receiving MIDI data.

5. If USB Mode is set to STORAGE, skip to Step 7. If USB Mode is set to MIDI, turn the VALUE dial counterclockwise until a warning message appears, and then press F6 (OK) to proceed.
6. Press F6 (WRITE) to store the new setting.
7. Turn off the Fantom-Xa and start up your computer.
8. Using a USB A/B-type cable, connect the A-type USB plug to a USB jack on your computer, and the other end to the B-type USB jack on the rear panel of the Fantom-Xa.
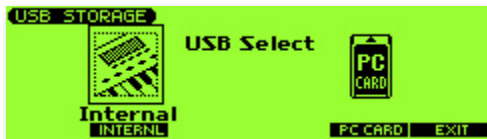
USB A plug   USB B plug

Plug this end into the computer.   Plug this end into the Fantom-Xa.
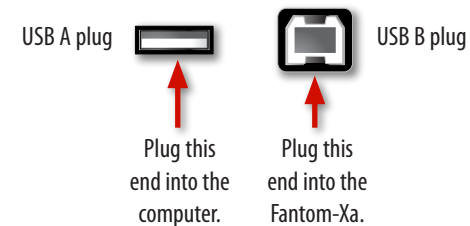
9. Turn on the Fantom-Xa.

Copying the Loop to User or Card Memory

1. On the Fantom-Xa, press LAYER/SPLIT, and then MENU.
2. Turn VALUE to select USB Storage.

3. Press ENTER—the USB Select screen appears.

4. On this screen, you allow your computer access to the Fantom-Xa's user memory or card memory. To choose:
   • *user memory*—press F2 (INTERNL).
   • *card memory*—press F5 (PC CARD).

> The Fantom-Xa can import loops from either memory area, so choose whichever one you want to use.

The Fantom-Xa displays "Connected" once communication is established. The Fantom-Xa's user or card memory appears on the computer in a new window or on the desktop as a removable storage device. User memory appears as "FANX USER." Card memory appears as "FANX CARD."

5. Open FANX USER or FANX CARD on your computer.
6. Double-click the TMP folder, and then the AUDIO_IMPORT folder.

7. Drag each loop you want to import into the AUDIO_ IMPORT folder. Your computer will copy the file into the Fantom-Xa's user or card memory.

> You must have enough free memory space in user or card memory to hold any loop you want to copy. The Fantom-Xa's user memory area is 16 MB in size when it's empty; the free space on a card depends on the card's size.

8. When you're done, eject the Fantom-Xa's memory area from your computer as you would any removable device.

Ending USB Communication and Disconnecting

1. Once you've ejected the Fantom-Xa's memory area from your computer as described above, press EXIT on the Fantom-Xa to leave the USB Select screen.
2. Power off the Fantom-Xa, and disconnect its USB cable.

Converting a Loop Into a Fantom-Xa Sample

1. After powering up the Fantom-Xa, press SAMPLE EDIT↔ LIST once or twice until the SAMPLE LIST screen appears.

2. Press MENU to display the Sample List Utilities menu.

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3. Highlight "Import Audio" in the menu, and then press ENTER to display the IMPORT AUDIO screen.

> If your computer runs Mac OS X, you may see extra files whose names start with a period. These files are used by Mac OS X and aren't meant for loading into the Fantom-Xa—don't worry about them.

4. Press F1 (USER) or F2 (CARD) to select the area of memory into which you copied your loop on your computer.

5. Press ▾ or ▴ to highlight the loop. (In the screenshot above, our loop is the audio file named "Skip Groove.")

6. Press F6 (IMPORT). When the Fantom-Xa asks if you're sure you want to proceed, press F6 (EXEC).

   The Fantom-Xa imports the audio file and temporarily sets aside the next empty:

   • *user memory location*—if you copied the loop into user memory on your computer.

   • *card memory location*—if you copied the loop into card memory on your computer.

"N" signifies that a sample has not yet been stored in user or card memory.

7. Audition the imported loop by pressing F6 (PREVIEW).

Preparing an Imported Loop

With beat loops, it's a good idea to let the Fantom-Xa know the loop's tempo, expressed as BPM (for "Beats Per Minute"). This is especially important if you'll be taking advantage of the Fantom-Xa's tempo-changing tools.

1. Press SAMPLE EDIT↔LIST to display the SAMPLE EDIT screen.

> The four REALTIME CONTROL knobs are assigned to four of the SAMPLE EDIT screen parameters, circled in red above. Turn the right-most REALTIME CONTROL knob to zoom out far enough to see your entire loop if you like.

2. Press ▾ repeatedly until the Tempo parameter is highlighted.

3. If you know your loop's tempo, turn the VALUE dial to set the Tempo parameter accordingly.

> If you don't know your loop's tempo, see "The Tempo Calculator" on Page 7.

4. Press ▾ twice to select the Time Stretch parameter. This parameter chooses the algorithm the Fantom-Xa uses when it manipulates a sample's tempo on-the-fly with Tempo Sync, described on Page 7. Select a Time Stretch value for your loop—lower values are best for drum and percussion loops, while higher values are best for loops that contain pitched instruments.
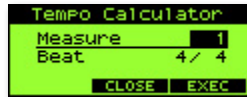
The Tempo Calculator

When you highlight the Tempo parameter (in Step 2 on the previous page), "CALC" appears above F1.

If you don't know your loop's tempo, the Fantom-Xa can figure it out for you.

1. Press F1 (CALC) to display the Tempo Calculator window.

2. Set Measure to the number of bars in your loop, and then set Beat to the loop's time signature.

3. Press F3 (EXEC)—the Fantom-Xa calculates the loop's tempo based on its length, and enters the result as the value for the Tempo parameter.

Manipulating a Loop's Tempo

Now that the Fantom-Xa knows your loop's original tempo, it can stretch or shrink the loop's tempo to suit your needs, in either of two ways:

- *Tempo Sync*—automatically changes the loop's tempo to match any sequence or rhythm with which you use it. Tempo Sync's extremely easy use: You simply turn it on when you assign the loop to a pad or the keyboard, and the Fantom-Xa does the rest. We'll explain how to do this in the steps starting on Page 8.

- *Time Stretch*—permanently changes a loop's tempo to a new setting, as described in the following section, "Time-Stretching a Loop."

Time-Stretching a Loop

When your loop's tempo needs to be changed, and you want to permanently lock in this new tempo, use the Fantom-Xa's Time Stretch sample-modification tool.

You can get to the sample-modification tools from the SAMPLE EDIT screen. If you've been following along, that's where you are now. Otherwise, to get to the SAMPLE EDIT screen, press SAMPLE EDIT↔LIST once or twice to display the sample list, select the desired loop sample, and then press SAMPLE EDIT↔LIST again to display the SAMPLE EDIT screen.

1. On the SAMPLE EDIT screen, press F3 (MODIFY)—the Sample Modify Menu appears.

2. Press F3 (TIME STRETCH) to display the TIME STRETCH screen.
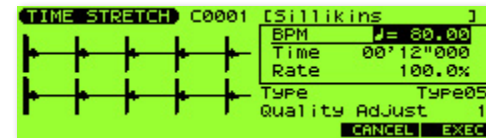
3. Choose the amount of time-stretching using any one of the following three parameters, each of which measures tempo in its own way:

- *BPM*—Dial in the desired beats-per-minute value for the sample.

- *Time*—Dial in the desired duration for the sample.

- *Rate*—Dial in the desired amount of change by percentage. (100% equals no change.)

When you set any one of these parameters, the others are automatically updated to reflect your new setting.

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4. Set Type to choose the desired time-stretching method, from Type01-Type10. The best setting depends on the loop. Just as on the SAMPLE EDIT screen, lower values are best for drum and percussion loops, while higher values are best for loops that contain pitched instruments.

5. Quality Adjust sets the accuracy of the time-stretching process in terms of audio fidelity. Try the default setting, or experiment with different values if you like.

6. When you've set all of the parameters, press F6 (EXEC).

7. When the Fantom-Xa asks you if you're sure you want to proceed, press F6 (EXEC).

💡 You can try out different Time Stretch Type and Quality Adjust values, pressing UNDO and then F6 (EXEC) to start over after each listening test.

Saving Your Loop

The user or card location set aside for your loop gives it a temporary address that allows a rhythm set—or patch—to find and play it. Your imported loop exists so far only in temporary sample RAM, so you need to save it to a permanent user or card memory location before powering off.

1. Press WRITE•SAVE/LOAD to display the WRITE MENU screen.

2. Press F3 (SAMPLE)—the SAMPLE NAME screen appears. The loop's original name is already spelled out for you, so press F6 (WRITE) to move onto the SAMPLE WRITE screen.

💡 You can re-name the sample if you like. See Page 28 in the *Fantom-Xa Owner's Manual* to learn about using the Fantom-Xa naming tools.

3. The loop's pre-assigned memory location is already selected, so unless you have some reason to change it, press F6 (WRITE).

📌 To select a new memory location, press F1 (USER) or F2 (CARD) as desired, turn VALUE to select the desired location, and then press F6 (WRITE).

4. When the Fantom-Xa asks if you're sure, press F6 (EXEC) to finish saving your imported loop as a Fantom-Xa sample.

Assigning the Loop to a Pad

Though your loop is now imported, you have to assign it to a pad or the keyboard to use it in a song. The pads work especially well for triggering loops.

📌 Technically, when you assign a loop to a pad, you're adding it to the currently selected rhythm set. When you send it to the keyboard, the Fantom-Xa creates a new patch that plays the loop.

1. Press F4 (ASSIGN).
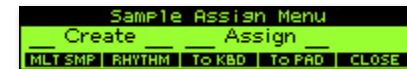
2. Press F5 (To Pad)—the ASSIGN TO PAD screen appears.

3. Press the pad to which you'd like to assign the loop—the pad you strike turns dark onscreen.

4. If you'd like the loop to use Tempo Sync, press F1 (SYNC) to checkmark its box. (Remember, we told you Tempo Sync was simple to use!)

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5. Press F6 (EXEC)—when the Fantom-Xa asks if you're sure you want to proceed, press F6 (EXEC) again.

Playing a Loop from Its Pad

To play a loop from its pad, select the rhythm set to which the loop is assigned. Next, make sure the ARP/RHY RHYTHM button is turned off, and press TRIGGER so it's lit. Pads 1-9 light to show that they're set to play notes.
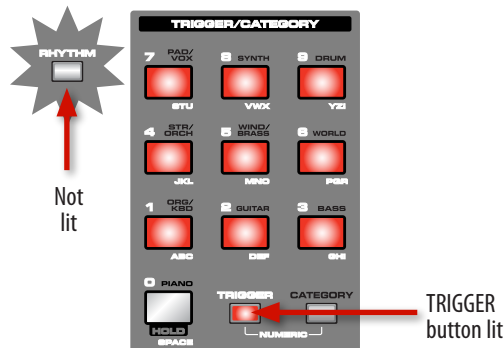
Strike and hold down the desired pad to play its loop.

Step-Recording a Loop

The most accurate way to record a loop into a sequence is by using "step recording," in which the sequencer is stopped and you enter the notes you want at the desired locations.

When you're step-recording a loop, each time you strike the loop's pad, the sequencer records the pad's note and moves forward by a specified length of time, called a "step." At that point you can strike the loop's pad again and again until the loop plays everywhere you want it.
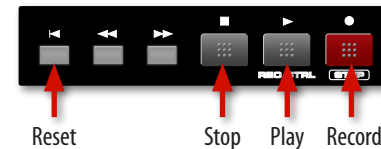
You'll use the SEQUENCER buttons to start and end step recording, and to play back your work.

1. Press the Record button twice to display the Step Rec Standby screen.

2. Set Rec Track to Track 10.

📌 Since it's common to use a loop as the basis for a song, we're using Track 10—it's typically the rhythm track. You can use any track you like.

3. If this is the first thing you'll be recording on the selected track, you can leave Rec Mode set to MIX. If you want your loop to replace already-recorded data on the track, set Rec Mode to REPLACE.

💡 As you're getting comfortable with step recording, it's a good idea to set Rec Mode to REPLACE so that if you need several attempts to get the loop recorded properly, each new attempt will replace the one before it.

4. Set Start Point to the location in the song at which you want the loop to start playing. If you're using the loop as the basis for your song, leave it set to 0001-01-000, the top of the song.

📌 Here, we'll record the loop throughout the whole song. You can, however, use the loop only in selected song sections if you like. To do this, step-record each section separately, setting Start Point each time to the beginning of the section in which you want the loop to play.

5. Press F6 (NOTE) to begin step recording—the STEP REC screen appears with the Note Type parameter highlighted.

Current location

Note Type   Gate Time   Input Velo
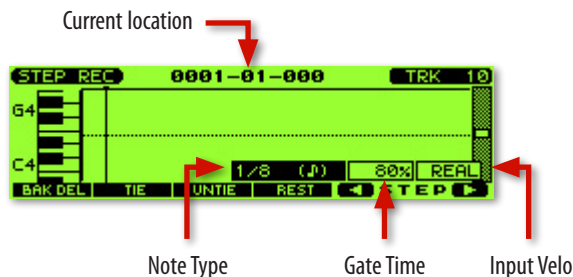
6. Set Note Type to the length of your loop as follows.

If your loop length is:	Set Note Type to:
one measure	1/1　(o)
two measures	2/1　(ⵀ)
four measures	2/1　(ⵀ)

8. Set Gate Time to 100 so the loop plays for the full length of the Note Type.

9. Set Input Velo (for "Input Velocity") to 127 so that each time the loop plays, it plays at the same volume: loud.

10. If your loop is:
   • *one or two measures long*—strike the loop's pad once. Its note appears onscreen and the sequence moves ahead by the Note Type length.
   • *four measures long*—strike the loop's pad once and then press F2 (TIE) to double the Note Type's length to four bars.

11. Repeat Step 10 over and over until your loop plays wherever you want it. The top line of the STEP REC screen shows you where you are in the song.

12. When you're done, press the Stop button, and then the Reset button. Press Play to hear what you've recorded.

💡 If you're not satisfied with your recording, press UNDO and then F6 (EXEC) to undo your work, or simply do it again, making sure that Rec Mode in the Step Rec Standby window is set to REPLACE.

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The End

We hope you've enjoyed this little Fantom-Xa looping seminar. Keep an eye out for other Fantom-Xa Workshop booklets, all available for downloading at *www.RolandUS.com*.

For the latest Fantom-Xa updates and support tools, visit the Roland U.S. Web site at www.RolandUS.com. If you need personal assistance, call our amazing Product Support team at 323-890-3745.

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