

Chapter 11 Editing Tips & Tools

I. About Editing Operations

On a tape recorder, in order to modify a performance, you would have to erase the performance which you recorded previously. Also, if you wanted to change the composition of a song, you must record it from the beginning, or use a razor blade and splicing tape to splice sections of the recording. In either case, with the tape itself subject to handling, the recording can never be restored back to its original condition. This type of editing is known as **destructive editing**.

With digital disk recorders, you can copy the original data before editing and back it up. Copying data has a negligible effect on the sound quality. It is easy to copy parts of the recording to different locations, or to erase specified portions of the track. Even if you make a mistake during Punch-In recording or track bouncing, you can restore the data back to its original condition. Editing which allows the original audio to be recovered is known as **non-destructive editing**.

Non-destructive Track and Phrase Editing are some of the most powerful tools available in the VS-1680. Since the VS-1680 also has 999 levels of UNDO, you can try editing your audio without risk.

II. Steps for Track Editing

There are two steps to editing on the VS-1680, first determining the edit points, and then simply going through the button presses. During the editing process, certain information is necessary to complete the edit. This necessary information can be summarized by a series of questions:

Do you want to do Track Editing?
What type of edit do you want to do?
Which Track or Tracks do you want to edit?
What is the start point for the edit?
What is the end point for the edit?
Are you really sure you want to edit?

For most edits, these questions can be answered by the following.

| Question | How to Respond |
|--|------------------------------------|
| Do you want to do Track Editing? | Hold [SHIFT] and press [F2(TRACK)] |
| What kind of edit do you want to do? | Press appropriate FUNCTION button |
| Which Track or Tracks do you want to edit? | Press STATUS button(s) |
| What is the start point of the editing location? | Press Locator 1 (for example) |
| What is the end point of the editing location? | Press Locator 2 (for example) |
| Are you really sure you want to edit? | Press [F4(Exec)] |

III. Step One: Finding Edit Points

The first step to editing audio on the VS-1680 is finding the edit points. The edit points indicate where on the track you want to **start** the edit, and where on the track you want to **end** the edit. There are many different ways to do this, and many different tools available to help you, including Preview and Scrub.

Here are some ways to set edit points. These will be explained in detail.

Press Locators while song is playing

Very fast, but not exact

Use [FF] and [REW] to locate to point you want to edit
Use PREVIEW TO and PREVIEW FROM
Use SCRUB

Slow, and not exact
Somewhat fast, and exact
Somewhat fast, and very exact

Typically, you will use a combination of the above methods to find edit points. As you're listening to your song, you may press a Locator on the fly near where the edit needs to occur. Then, you can press the Locator, then use Preview and Scrub to more accurately set the edit point.

A. Setting Edit Points Using Locators

One of the fastest ways to set edit points is to place locators "on the fly", that is, while your song is playing. Press LOCATOR 1 to indicate where you'd like to start an edit, and press LOCATOR 2 to mark the end of the edit.

B. Basic Editing Example: Track Erase

Below is a specific example of how to perform one of the most basic edits on the VS-1680, a Track Erase. In Track Erase, the area of audio between the Start and End points is replaced with silence. Use this to study the basic steps involved in Track Editing.

Before entering the Track Edit Mode:

1. Locate to the point in the song where you want to start erasing. Press Locator 1.
2. Locate to the point in the song where you want to end erasing. Press Locator 2.

Now try the edit:

1. Hold [SHIFT] and press [F2(TRACK)].
2. Press [F2(Erase)] for Track Erase. If you don't see "Erase" above [F2], press [PAGE] until "Erase" appears, and then press [F2(Erase)].
3. Press the Track 5 STATUS button to specify Track 5 to be erased. The STATUS button turns red, indicating it is the track to be edited. You can press more than just one STATUS button, if you wish to erase more than just one track. If you press a STATUS button, and then change your mind, press it again to change it back to green.
4. Press Locator 1. This moves the time line to the point where you want to begin erasing.
5. Hold [SHIFT] and press Locator 1. This enters the time value stored at Locator 1 as the "START" point for the edit.
6. Press Locator 2. This moves the time line to the point where you want to begin erasing.
7. Hold [SHIFT] and press Locator 2. This enters the time value stored at Locator 2 as the "END" point for the edit.
8. Press [F4(Exec)].

IV. Entering Time Values for an Edit

Once you've entered a track editing screen, how do you get the values you want for the START and END of the edit into the START and END boxes in the display? There are several different ways to do this. The examples below will explain how to get your value for the edit START into the START box in the display, and how to get your value for the edit END into the END box in the Track Erase screen. Practice each of these methods, then use the one you feel most comfortable with.

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A. Use TIME / VALUE dial

1. Hold [SHIFT] and press [F2(TRACK)].
2. Make sure "Track Edit Menu" appears in the display. If it does not, press [F1(Tr/Ph)] once.
3. Press [F2(Erase)] for Track Erase. If you don't see "Erase" above [F2], press [PAGE] so "Erase" appears, and then press [F2(Erase)].
4. Press [←], [→], [↑], and [↓] to move the cursor to the START area. Use the TIME / VALUE dial to change the value of hours, minutes, seconds, frames and sub frames. If your song was recorded using a Tempo Map, you can use the TIME / VALUE dial to choose Measures and Beats as well.
5. Press [→] to move the cursor to the END area. Use the TIME / VALUE dial to change the value of hours, minutes, seconds, frames and sub frames. Or use the TIME / VALUE dial to choose Measures and Beats.

B. Use [F2(Now)]

1. Before entering the Track Edit mode, place Locator 1 at the point you want to start the Track Erase.
2. Place Locator 2 at the point you want to end the Track Erase.
3. Hold [SHIFT] and press [F2(TRACK)].
4. Make sure "Track Edit Menu" appears in the display. If it does not, press [F1(Tr/Ph)] once.
5. Press [F2(Erase)] for Track Erase. If you don't see "Erase" above [F2], press [PAGE] until "Erase" appears, and then press [F2(Erase)].
6. Press [←], [→], [↑], and [↓] to move the cursor to the START area.
7. Press Locator 1. Then press [F2(Now)]. This captures the time value stored at Locator 1 and places it in the START box.
8. Press [→] to move the cursor to the END area.
9. Press Locator 2. Then press [F2(Now)]. This captures the time value stored at Locator 2 and places it in the END box.

This is a good method to use while you're just starting to learn editing.

C. Use the LOCATOR buttons

1. Place Locator 1 at the point you want to start the Track Erase.
2. Place Locator 2 at the point you want to end the Track Erase.
3. Hold [SHIFT] and press [F2(TRACK)].
4. Make sure "Track Edit Menu" appears in the display. If it does not, press [F1(Tr/Ph)] once.
5. Press [F2(Erase)] for Track Erase. If you don't see "Erase" above [F2], press [PAGE] until "Erase" appears, and then press [F2(Erase)].
6. Press Locator 1. Then hold [SHIFT] and press Locator 1. This places the time value stored at Locator 1 into the START area.
7. Press Locator 2. Then hold [SHIFT] and press Locator 2. This places the time value stored at Locator 2 into the END area.

Once you get accustomed to editing on the VS-1680, you might want to use this method, as it is very fast.

V. Precision Editing

In the above editing examples, we used locators to set edit points. This is a fast and easy way to edit dialog. For looping music beds and other music edits, you will need to find the edit point with much more precision. To achieve precise location of edit points, you will need to become familiar with the following tools: The PREVIEW section, SCRUB function, and the Waveform display.

A. Using PREVIEW

The preview function allows you to search for specific edit points on a track.

For locating precise points in a song, PREVIEW offers a way to hear a short portion of audio leading up to a point, or just after. Each of the four Preview buttons works differently.

1. Preview [TO], [THRU], and [FROM]

Preview provides a fast and convenient method to audition a short portion of a track. You can specify the length of the audition from 1 to 10 seconds. Press the appropriate Preview button [TO], [THRU], or [FROM] when the song is stopped.

[TO]: A preview of the song is played back one time for a duration as specified. If the Preview To value is set at 2 seconds, you will hear 2 seconds of the song leading up to the point of the current play position. You will hear 2 seconds of audio playing **up to** the current time line. Use [TO] when you are trying to determine the exact location of the **beginning** of a sound, for example the beginning of a snare hit, or the start of a vocal track.

[THRU]: A preview of the song is played back one time for a duration as specified. Based on the Preview Lengths for both the Preview To and Preview From, you will hear a portion of the song playing **through** the current position of the time line. Use [THRU] when you are trying to determine the transition between two tracks, you want to hear how one ends and the other begins.

[FROM]: A preview of the song is played back one time for a duration as specified. If the Preview From value is set at 2 seconds, all tracks will play for 2 seconds, beginning at the current play position. You will hear 2 seconds of audio playing **from** the current time line. Use [FROM] when you are trying to determine the exact location of the end of a sound, for example the ending of a bass guitar note.

2. Adjusting the Preview Length

1. To adjust the Preview To length, hold [SHIFT] and press [TO].
2. To adjust the Preview From length, hold [SHIFT] and press [TO].
3. The Preview Length is displayed. Use the TIME / VALUE dial to adjust the time. When you are first getting familiar with the Preview functions, you may want to try a longer Preview length, such as 3 seconds.
4. Press [TO] or [FROM] to check the actual playback time.

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5. After you have finished adjusting the Preview Length, press [PLAY(DISPLAY)] to return to the Playlist display.

B. Using SCRUB

Another part of the Preview section on the VS-1680 is the Scrub function. Scrub provides an exact method to find edit points. With analog tape recorders, edit points were determined by slowly rocking the tape back and forth across the playback head of the tape machine. The Scrub function on the VS-1680 emulates this process. During SCRUB, you use the TIME / VALUE dial to slowly rock a portion of your recording past the VS-1680's "playback head".

The following buttons are used during Scrub.

- ↩ [], [] Selects the track to be heard during Scrub.
[TO]: The track is played repeatedly **up to** the position of the time line.
[FROM]: The track is played repeatedly **from** the position of the time line

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1. Setting Scrub Length

Before you try using Scrub for the first time, you may want to adjust the Scrub Length, as this setting effects how Scrub sounds.

1. To adjust the Scrub length, hold [SHIFT] and press [SCRUB].
2. The Scrub length is displayed. Use the TIME / VALUE dial to adjust the time. When you are first getting familiar with the Scrub function, you may want to try a longer length, such as 70 or 80ms.

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Scrub Length

This sets a length (25ms to 100msec) of playback time when the SCRUB button is pressed.

3. After you have finished adjusting the Scrub Length, press [PLAY(DISPLAY)] to return to the Playlist display.

General Guidelines for Using Scrub

Before using SCRUB, you should do two things, set the TIME / VALUE Dial for Frame Increments and set the Scrub Direction using Preview To and Preview From.

1. Set the TIME / VALUE Dial for Frame Increments

Use [⇨] to set the TIME / VALUE dial. Press [⇨] to move the cursor to the last pair of numbers just after the small "f" in the time display. These are Sub Frames.

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There are 100 Sub Frames in each frame. With the cursor at this position, each click of the TIME / VALUE dial advances the play position by about 11 hundredths ($11/100^{\text{th}}$) of a frame. Hold [SHIFT] and slowly turn the TIME / VALUE dial. Now each click moves the edit line by exactly one hundredth of a frame. One hundredth ($1/100^{\text{th}}$) of a frame is equivalent to one three thousandths ($1/3,000^{\text{th}}$) of a second.

For scrubbing, start with the cursor under the Frame value. Then later, as you need a finer editing resolution, press [⇨] to move the cursor over to Sub Frames. As you try scrubbing, turn the TIME / VALUE slowly and smoothly for best results.

2. Setting Scrub Direction

When using the Scrub function in the VS-1680, it is possible to scrub both forward and backward. That is, you can turn the TIME / VALUE dial either clockwise or counter-clockwise to find an edit point. If you are trying to find the beginning of a note or a kick drum, you will most likely be turning the TIME / VALUE dial clockwise. If you are editing TIME / VALUE dialog, and need to find the end of a spoken word, for example the end of the following sentence "Get up and jump", you would likely locate just past the word "jump", and scrub backwards by turning the TIME / VALUE dial counter-clockwise until you begin to hear the "p" sound which indicates the end of "jump". With editing dialog, radio or TV spots, you may use the counter-clockwise method of scrubbing more frequently than for editing music tracks.

When ever you use Scrub, program the scrub direction for either clockwise scrubbing or counter-clockwise scrubbing.

Clockwise Scrubbing:

Press the PREVIEW TO once before pressing SCRUB

Counter-clockwise Scrubbing: Press the PREVIEW FROM once before pressing SCRUB

graphic p 152 right column middle: "Scrub length TO"

graphic p 152 right column top: "Scrub length FROM"

3. Summary on Using Scrub

Before using Scrub, just remember to do three things:

1. Press [⇌] so the cursor (underline) is positioned under either Frames or Sub Frames in the Time Display
2. Press [TO] once to calibrate the Scrub direction.
3. Use [↑] and [↓] to select the track which is heard during SCRUB.

C. Waveform Display

The pop-up waveform of audio in the VS-1680 is very useful for precision editing. The waveform shows audio amplitudes of the recorded track. You can use the function buttons to manipulate the resolution of this waveform for very precise location of edit points.

1. Press [PLAY(DISPLAY)] to view the Playlist Display.
2. Press [F5(WAVE)]. If "WAVE" does not appear above [F5], press [PAGE] until it appears, and then press [F5(WAVE)].

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3. Use [↑] and [↓] to select the track to view.
4. If after you press [F5(WAVE)], a flat line appears in the waveform window, try the following:
 - a. Make sure you have selected a track that has audio on it.
 - b. Press [F1(ZOOM+)] three times to increase the amplitude of the waveform.
 - c. Press [F3(← →)] four times to decrease the time zoom of the waveform.
5. When the waveform is displayed, the function buttons operate as follows:

[F1(ZOOM+)]: Increases the amplitude of the waveform display, in three steps. Makes the waveform taller in the display.

[F2(ZOOM-)]: Decreases the amplitude of the waveform display, in three steps. Makes the waveform shorter in the display.

[F3(← →)]: Decreases the time-zoom of the waveform display, in four stages. Zooms back on the time line.

[F4(←)]: Increases the time-zoom of the waveform display, in four stages. Zooms in on the time line.

[F5(WAVE)]: Removes the waveform display from the screen.
6. When you are done viewing the waveform for a track, press [F5(WAVE)] to turn the waveform display off.

VI. START, END, FROM and TO

Simple edits such as Track Erase and Track Cut only have two edit values, START and END. Edits such as Track Move and Track Copy have two additional values, FROM and TO. These are explained below:

START (Start point)

Specifies the starting time of the audio to be edited.

END (End Point)

Specifies the ending time of the audio to be edited.

FROM (From point)

Specifies the point within the section of audio to be edited which will be placed at the "To" point. In most cases, the FROM point will be the same as the START point.

TO (To point)

Specifies the destination for the section of audio to be edited, for a Move or Copy edit.

Using FROM Effectively

Typically when you perform a Track Move or Track Copy, the track is moved or copied using the START point as the Move or Copy reference point. However, if you want the audio **moved based on a point of sound within the section to be moved**, you'd determine this with the FROM point. For example, suppose you want to move a sound effect that consists of a time bomb ticking and then exploding, but you want the beginning of the explosion sound to land at a specific point on the time line. In this case, the START, END, FROM and TO values would be defined as follows:

START: The very beginning of the sound effect. The beginning of the ticking.

END: The very end of the entire sound effect. After the explosion has died down.

FROM: The point on the track where the actual explosion is first heard.

TO: The point on the time line where you want the explosion sound to be placed.

This type of edit is called a **back-time** edit. You don't have to figure out where the sound effect needs to begin playing in order to have the FROM and the TO points line up.

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VII. Track Editing and Phrase Editing

The VS-1680 offers two different methods for editing. These are called Track Editing and Phrase Editing. Every time you start and stop recording, the VS-1680 creates a block of audio in the display. These blocks are called **Phrases**. If you put a Track into record at the very beginning of a song, press [PLAY] and record all the way to the end, you will have one phrase. On the other hand, if you punch-in and punch out of record, you will end up with many different phrases, one for each punch in and punch out.

During Track Editing, the START and END points of the section of audio to be edited must be defined. In simple Track edits such as CUT and ERASE, you only need to specify the START and END points. All other editing functions except for CUT and ERASE have four parameters: START, END, FROM and TO. In Track Editing, you must define all four points. In Phrase Editing, the START and END points are already defined as the edges of the phrase, so you only need to specify the FROM and TO points.

When to Use Phrase Editing

Phrase Editing works best when you punched in and out frequently while recording. The START and END points of a section of audio are already defined by each punch in and out. The VS-1680 calculates the START and END point as defined by the beginning and end of the phrase. In many cases, Phrase Editing can be a time-saver. Also, the Phrase Editing menu contains editing tools such as Trim In, Trim Out, Split and Delete, which are not available in Track Editing. Also, Phrase Moves and Phrase Copies can be quantizing based on the Tempo Map of your song.

VIII. Important Notices Regarding Editing

The VS-1680 is not able to play individual pieces of audio which are 0.5 seconds or smaller. If you have phrase which is 5 seconds long, and you erase from the beginning up to 4.5

seconds, you will be left with a phrase 0.5 seconds long. Phrases 0.5 seconds or shorter will not be played. While editing, try to avoid leaving an isolated piece of audio which is shorter than 0.5 seconds. This applies for Track Erase, Track Cut, Track Insert and Track Move. For Track Copy, Track Move, and Track Expansion / Compression, you must choose a section of audio to be edited which is greater than 0.5 seconds.

Don't confuse this with editing resolution, or the ability to select minute edit points with extreme precision. It is possible with the VS-1680 to choose edit points in increments of 1/3000th of a second. It is also possible to erase or cut a portion of audio shorter than 0.5 seconds within a longer section.

IX. Seamless Looping using Track Copy

It is possible to isolate a portion of a rhythm track and use Track Copy to create a loop. Since the Track Copy function does not actually re-write audio to the hard drive, creating rhythm loops will not decrease available disk space.

Very carefully determine the START point. The START point for the loop should be on a downbeat, or on a beat of a measure which has a clear "edge", such as a snare hit or a solid kick drum beat. Then carefully determine the END point. The END point for the loop should also be on a downbeat, or on a beat of a measure which has a clear "edge", such as a snare hit or a solid kick drum beat. If the START point is on the 2nd beat of a measure, then the END point must also be on the 2nd beat of a measure, to assure a smooth sounding loop.

Make sure you have complete measures of music between the Start point and the End point. For looping, the START and FROM points must be the same, and the END and TO points must be the same.

The smoothness of the loop will depend on the accuracy with which you find the START and END points. If your music was recorded using a Tempo Map and Metronome, finding the START and END points may be as simple as using the TIME / VALUE dial to select the measure numbers you want. If the song was recorded without a click track or without using the metronome, you'll need to use SCRUB, PREVIEW TO, PREVIEW FROM and the Waveform display to find the edit points.

1. Determine the START and END points of the loop, using one of the previously discussed methods. Place LOCATOR 1 at the START point. Place LOCATOR 3 at the same position. This sets the START and FROM points at the same location. Place LOCATOR 2 at the END point. Place LOCATOR 4 at the same position. This sets the END and TO points at the same location.
2. Hold [SHIFT] and press [F2(TRACK)].
3. Make sure "Track Edit Menu" appears in the display. If it does not, press [F1(Tr/Ph)] once.
4. Press [F2(Copy)] for Track Copy. If you don't see "Copy" above [F2], press [PAGE] until "Copy" appears, and then press [F2(Copy)].
5. Press the Track SELECT button to specify the track to be copied. The SELECT button stops blinking, indicating it is the track to be copied.
6. Enter the START, END, FROM, and TO values:

Method #1: Using LOCATORS

- a. Press LOCATOR 1. Hold [SHIFT] and press LOCATOR 1.
- b. Press LOCATOR 2. Hold [SHIFT] and press LOCATOR 2.
- c. Press LOCATOR 3. Hold [SHIFT] and press LOCATOR 3.
- d. Press LOCATOR 4. Hold [SHIFT] and press LOCATOR 4.

↵

Method #2: Using [↵], [↶], [↷], and [↵] and [F2(Now)]

- a. Press LOCATOR 1. Use [↵], [↶], [↷], and [↵] to move the cursor to "START". Press [F2(Now)].
- b. Press LOCATOR 2. Use [↵] to move the cursor to "END ". Press [F2(Now)].
- c. Press LOCATOR 3. Use [↵] to move the cursor to "FROM ". Press [F2(Now)].
- d. Press LOCATOR 4. Use [↶] to move the cursor to "TO ". Press [F2(Now)].

Method #3: Using a Tempo Map

- a. Use [↵], [↶], [↷], and [↵] to move the cursor to the 3 digit Measure Number in "START ". Use the TIME / VALUE dial to select the measure number where you want the loop to start.
 - b. Use [↵] to move the cursor to the 3 digit Measure Number in "END ". Use the TIME / VALUE dial to select the measure number where you want the loop to end.
 - c. Use [↵] to move the cursor to the 3 digit Measure Number in "FROM ". Use the TIME / VALUE dial to select the same measure number you did for START.
 - d. Use [↶] to move the cursor to the Measure Number in "TO ". Use the TIME / VALUE dial to select the same measure number you did for "END".
7. Use [↵], [↶], [↷], and [↵] to move the cursor to "Copy Time ". Use the TIME / VALUE dial to select the number of loops you want.
 8. Use [↵] to move the cursor to "+Insert ". Use the TIME / VALUE dial to select "On".
 9. Press [F4(Exec)]. This executes the Track Copy.
 10. When Track Copy is completed correctly, "Complete" appears in the display.
 11. Press LOCATOR 1 to locate to the beginning of your Track Loop. Press [PLAY]. Listen to the loop. If it does not sound as you expected, use the Undo function. You may need to adjust the values of the START and END points. If you change the START or END points, make sure you also change the FROM and TO values accordingly. Then press [F4(Exec)] to try the loop again.
 12. When you are finished with Track Copy, press [PLAY(DISPLAY)] to return to the Playlist display.