

Video Tunes



Owners Manual

FUTUREVISION

Congratulations on your purchase of VideoTunes,
FutureVision's music software for the ADAM
Computer.

Young or old, musician or novice, you will find
VideoTunes easy to use. We have provided
complete instructions for you as well as a few
musical selections to help you get started.

Experiment with VideoTunes. You will find your
new software to be versatile. If you're just
learning music, VideoTunes can help you read music
and apply your music theory. But most of all,
enjoy VideoTunes. It was created for you.

We always welcome your comments. Please
write to us at the following address:

FutureVision Inc.
P.O. Box 34
North Billerica, MA 01862

TABLE OF CONTENTS

	Page
1. Getting Started	
Running VideoTunes	1-1
Playing pre-recorded songs	1-1
2. Preparing to Create a Song	
Titling Your Song	2-1
Setting the Musical Key	2-1
Setting the Tempo	2-2
Adding Comments to the Song	2-2
3. Editing the Music	
Joystick Note	3-1
Piano Note	3-1
Your Position in the Song	3-1
Joystick Movement and the Musical Key	3-2
Moving by Semitones	3-2
Inserting Notes	3-2
Inserting Rests	3-3
Deleting a Single Note or Rest	3-3
Deleting All the Notes	3-3
Playing the Song	3-3
Changing the Joystick Note Duration	3-4
Inserting One Note with a Different Note Duration	3-4
Scrolling Your Position in the Song	3-5
Inserting/Deleting Space on the Screen	3-6
4. Loading and Storing a Song	
Storing a Song	4-1
Loading a Song	4-1
Deleting a Song File	4-2
Changing the Load/Store Device	4-2

TABLE OF CONTENTS

	Page
5. Miscellaneous Commands	
Shifting all Notes by One Octave	5-1
Free Note Space Remaining	5-1
Playing More Than One Note at a Time	5-2
Changing How Far the Red Note Moves to the Right After Inserting a Note	5-2
6. General Discussion of Music	
Notes	6-1
Pitch	6-1
Duration	6-2
Rests	6-2
Musical Scales and Keys	6-3
Tempo	6-3
7. Differences between VideoTunes and Printed Music	
No Bar Lines	7-1
No Tied Notes	7-1
Accidentals	7-2
No Double Sharps/Flats	7-2
No Triplets	7-3
A. Appendix	
Joystick Controller Diagram	A-1
Keyboard Commands Table	A-2

GETTING STARTED

Running VideoTunes

VideoTunes is easy to start and run. Simply put your VideoTunes tape or disk into drive number 1 and press the computer reset button on your Adam. (The same way you would load a super game tape, SmartBasic, or SmartFiler (trademarks of Coleco Industries)).

When VideoTunes is finished loading, an introductory screen will briefly appear. Following the introductory screen, the VideoTunes music screen will be displayed. VideoTunes is ready for you to enter musical notes. In the middle of the screen, you'll see the treble and bass clef staves for your musical score. On the bottom of the screen are four octaves of piano keys. On the very top of the screen, from left to right, you'll see the current title of your song (you can change this to any name you want from 2 to 11 characters long), the speed you want the music to play (in quarter notes per minute), the musical key of your song (it starts in the key of C), and the x position on the screen of the red eighth note.

Playing Pre-recorded Songs

To play one of the songs provided with your VideoTunes program, press the "get" key on the keyboard, use the arrow keys to select any of the songs, and press the "get" key again. The song will be loaded into memory. Press the "P" key on the keyboard to play the song. Pressing "P" again will replay the song. When you're done, please press the "clear" key on the keyboard followed by the "Y" letter key.

PREPARING TO CREATE A SONG

Titling Your Song

When VideoTunes begins, the title of the song (at the top of the screen) is "MY SONG". To change the title, press the keyboard key "T", type in a new title, and press the return key. It's that simple. Song titles should be more than one character long.

Setting the Musical Key

As mentioned before, when VideoTunes first starts, your song is in the key of C. If you look near the upper right hand corner of the screen, you will see the letter "C". This is where VideoTunes shows you what major key your song is currently in. To change the key you press the letter "K" on the keyboard. Try it now.

At the bottom of the screen you will see a display of all the possible major keys. Use your joystick to select a new key. The new key will light up in color. When you change to a new key, notice that the sharps and flats on the left of the staves will change to the proper sharps and flats for the new major key. Also notice that the key indicator in the upper right of the display will also change. To exit key selection mode and make the new key permanent, press any keypad button or any keyboard key other than the arrow keys.

You should decide upon a musical key before you start entering notes into the song. But if you don't, VideoTunes will automatically convert the song that you've entered so that it will sound

exactly the same as it did before you changed the key. The notes in the song are not transposed to the new key.

Setting the Tempo

The tempo or speed that the notes in your song will play is indicated by the note symbol and number that is to the left of the key indicator at the top of the screen. The note symbol and number signify the number of quarter notes to be played per minute. VideoTunes starts with a value of 120 quarter notes per minute. Increasing this value speeds up the song, decreasing it slows it down. The actual speed is not exact but is fairly close. To change the tempo or speed of the song, press the keyboard key "Q" and enter the new value.

Adding Comments to the Song

You can add up to four lines of comments to any song. Each comment line can be up to 30 characters long. Each time a song is loaded from tape or disk, any song comments will be displayed. An example of a two line song comment:
"TWO PART INVENTION #8"
"BY J. S. BACH"

Later, when you load your song from tape or disk, the song comments will be displayed for you.

To change the comments of a song, press the letter "C" on the keyboard. The current comment lines will be displayed at the bottom of the screen. Use the arrow keys to move to different letters in the comments. You can insert space by

pressing the "shift/insert" or "control/N" keys. You can delete the previous character by pressing the backspace key and you can delete the current character by pressing the "delete" or "control/O" keys. Pressing the "clear" key will erase all the comments lines. Pressing "return" will move your position to the next line. Pressing "return" on the last line will exit the command.

EDITING THE MUSIC

Joystick Note

The red eighth note you see on the screen is called the joystick note. Try moving the joystick and you'll see that it will move around on the screen under your control. If you hold the joystick in one direction, the note will keep moving in that direction. It will move faster and faster the longer it is held in one direction.

You can also move the joystick note on the screen by pressing the arrow keys on the keyboard.

Piano Note

As you move the joystick note up and down through the scale on the musical staves, notice that there is another red note on the piano keys at the bottom of the screen. It will move from piano key to piano key matching the note on the musical staves.

Your Position in the Song

Look at the upper right hand corner of the screen. The number in the corner is your horizontal position in the song. This is a handy indicator to where you are in the music. The further along the song you are, the larger the number. The closer you are to the beginning of the song, the lower the number. Try moving the joystick and watch the value change.

Joystick Movement and the Musical Key

When VideoTunes first starts, you will be in the key of C major. When you move the joystick up or down through the scale, VideoTunes will automatically move your red note to the next note on the current major scale. In the key of C, all the major scale notes are on the white piano keys. Try moving the joystick through the scale and you'll see that the piano note always lands on the white piano keys (key of C only).

Moving by Semitones (Halfsteps)

If you want to move up or down through the scale by a semitone, push the "1" and "4" keypad buttons. "1" moves up a semitone (making sharps) and the "4" moves down (making flats). Try this out and you'll see that the red piano note will move up and down the scale landing on both the white and black piano keys. To do this on the keyboard, you press the "home" key simultaneously with either the up arrow or down arrow keys. Be sure to press the home key at the same time as the arrow key.

Inserting Notes

To insert a note, simply move the red joystick note to the place on the musical staff where you want the note to be and press and release the right or left fire button on the hand controller. A note will be placed on the screen. The joystick note will automatically move over to the right two spaces to give you room to add the next note. On the keyboard, the cursor arrow keys position the red note on the

screen and the "insert" key inserts a note on the screen.

Inserting Rests

Keypad button "9" or Smartkey IV will change the joystick note from a note to a rest (of the same length or duration). Pressing the key again will change it back again. Rests are added in the same way as notes.

Deleting a Single Note or Rest

To delete a note on the screen, move the joystick note directly on top of the note you want to delete and press keypad button 2. The note will be deleted. The "delete" key on the keyboard will do the same thing.

Deleting All the Notes

Now, let's delete your song so we can start fresh. Press the "clear" function key on the keyboard. Answer "Y". This will clear all the notes in the song from the screen.

Playing the Song

Try adding a few notes on the screen right now. When you're done, press the "*" button on the keypad or the letter "P" on the keyboard. Your entire song will play for you right before your eyes. Notice that the notes that are currently playing light up in red on the screen. The current notes that are playing are also displayed on the piano keys.

To play only the portion of the song you can see on the screen and not the entire song, press the "0" button on the keypad or Smartkey I on the keyboard.

Pressing keypad button "#" or Smartkey II on the keyboard will play only the notes in one vertical column on the screen. Pressing the letter "J" on the keyboard tests the sound of the joystick note without adding any notes to the music.

To abort a song that is already playing, press "control/C" (hold down the control key and press "C").

Changing the Duration of the Joystick Note

Now let's try adding notes other than eighth notes. Press the "3" button on the keypad. The red joystick note will change to a dotted eighth note (a three-sixteenth note). Press it again. It will now change to a quarter note. And so on. The "6" keypad button, does the same thing but makes the note duration shorter instead of longer. The shortest note you can play with VideoTunes is a thirty-second note and the longest is a dotted whole note. Smartkey VI and Smartkey V do the same functions from the keyboard.

Try making a little tune with different length notes. Play it, then clear the notes from the screen.

Inserting One Note with a Different Note Duration

If you use the joystick to insert your song, there is a convenient way to insert one note with

a different note duration. Press the keypad fire button to insert a note in the normal way, but don't release the button yet. While holding in the fire button, move the joystick and the duration of the joystick note will change. Moving the joystick North or East will increase the note duration. Moving the joystick West or South will decrease it. When you've selected the note duration you want, release the fire button. The note will be inserted with the note length you specified. However, notice that the different note length was temporary and only for that inserted note. This feature is very useful if most of the notes you're inserting are of one length (ex: eighth notes) but every once in a while you have to insert a note of a different length (ex: a quarter note).

Scrolling your Position in the Song

If you are editing a very long song, there is a command to help you get quickly from one place in the song to another. Press keypad button "5" to enter "scroll" mode. Once you press the button, every time you move the joystick to the right or left, the display will shift by a page to the right or left. Notice that the position indicator in the upper right corner changes as you move.

You can also move directly to the beginning or ending of the song. To do this, you press the fire buttons while in "scroll" mode. Pressing the right hand fire button will position you at the end of the song and pressing the left fire button will position you at the beginning. Once there you can still move a page at a time by

using the joystick. Pressing any keypad button exits "scroll" mode.

On the keyboard, pressing the "home" key simultaneously with the right or left arrow keys will move you right or left one page at a time. This does not enter you into "scroll" mode. Each time you press those keys simultaneously, you move on the screen by one page and that's all. To move to the beginning or ending of the song using the keyboard, press control/"left arrow" or control/"right arrow". Holding down the control key while pressing the left cursor arrow key will position you at the beginning of the song. Holding down the control key while pressing the right cursor arrow key will position you at the end of the song.

Inserting and Deleting Space on the Screen

Now let's say that you've used VideoTunes to create a whole song. You play the song and you discover that you forgot some notes right in the middle of the song! There's no room for the missing notes. What do you do? Well VideoTunes has two commands to help with that type of problem - "insert more space" and "delete space". To insert more space press the keyboard keys shift/"insert" (hold down the shift key and press "insert"). Similarly, you press shift/"delete" to delete unwanted space on the screen. Shift/"insert" and shift/"delete" are very similar in function to the keys control/N and control/O in Adam Basic.

LOAD AND STORE COMMANDS

Storing a Song

So you've written your first composition and you want to save it on tape? Step one: Put a spare data pack into the tape drive. Step two: Use the "T" command to give the song the title you want. and Step three: Hold down the shift key while pressing the function key "store/get". VideoTunes will store your song on tape.

Note: Please do not store songs on your VideoTunes tape or disk. We recommend using another tape or disk for your own songs.

Loading a Song

To load a song from tape, it's just as simple. Step one: Put your data pack with the song you want into the tape drive. Step two: Press the "clear" key to clear (erase) all notes from the screen. (Be sure to first save what's there if you want to save it.) Step three: Press the keyboard function key "store/get". VideoTunes will display all the song files on your tape. Use the joystick or the arrow keys on the keyboard to select the song you want. and Step four: Press the "get" key again. VideoTunes will load your song from tape and display the notes on the screen.

Note: Pressing the "store/get" function key does a "get". Pressing the key while holding down the shift key does a "store".

Deleting a Song File

If you want to delete a song file from tape or disk, press the "get" key and select the file you wish to delete. But instead of pressing the "get" key again to load the song, press the "delete" key. VideoTunes will ask you for confirmation that you really want to delete the file. Answer Y or N for Yes or No. This is so you won't accidentally delete a song if you pressed the "delete" key by mistake.

Changing the Load/Store Device

VideoTunes will automatically load and store songs to and from the same device that the VideoTunes program is on. If VideoTunes was loaded from tape, the load and store commands will load and store on tape. If VideoTunes was loaded from disk, the load and store commands will load and store on disk.

To change the default device, press the keyboard key "D" and follow the directions. For example, you may have loaded VideoTunes from tape but want to store your song on disk.

MISC COMMANDS

Shifting all the notes by one octave

Take a look at the C note on the far left of the piano keys at the bottom of the screen. Now move slowly to the right to find the first A note. Normally, the sound chip in the Adam cannot play tones below that A note. If the C note in the middle of the screen is middle C, then the sound chip just can't handle tones below that A note you were just looking at. To overcome this problem, VideoTunes automatically, by default, shifts all the notes in your song up one octave allowing you to use those low notes in your song. Otherwise, you could not play any songs that had notes that low in the musical staves. Musically your song will still be correct, it will just play one octave higher.

If you wish, you can shift your music back down one octave by pressing the "O" key on the keyboard. Pressing it again will shift the music back up one octave. If you shift the music down an octave just be forewarned not to insert notes below that low A note or they won't play (until you shift the music back up by an octave with the "O" command).

Free Note Space Remaining

Pressing the keyboard key "F" will display how much free space you have left for more notes. In other words, it tells you how many more notes you can add before you run out of space.

Playing More Than One Note at a Time.

VideoTunes can play up to three notes at the same time. This is the maximum number of notes that the sound circuitry in the Adam can handle and is not a limitation of VideoTunes.

Changing How Far the Red Note Moves to the Right After Inserting a Note

Sometimes, you may not want the red joystick note to move two spaces to the right after inserting a note. This is particularly true when you want to add three notes in the same vertical column. To change the number of spaces it should move to the right, press the letter "M" on the keyboard. VideoTunes will ask you to enter the number of spaces you want the red note to move when a note is inserted on the screen. The value can be anywhere from 0 to 9. If you enter a value of zero, the red note will not move at all after a note is inserted in to the music. A value of zero is useful when you're adding more than one note in a vertical column.

GENERAL DISCUSSION OF MUSIC

This section provides a basic introduction to some of the fundamental concepts of music. This will begin with a discussion of what a note is, how notes are combined to form a song, and finish in the next chapter with a discussion of how VideoTunes is different in some respects from normal printed music.

Notes

A note is a single unit of musical sound. It has two main characteristics: frequency or pitch, and length or duration (in time).

Pitch

Musical notes are sounds which have a periodic or repeating pattern. The pitch or frequency of a note is a measure (usually in cycles per second) of just how often the pattern repeats. For example, the note A above middle C represents a frequency of 440 cycles per second. (This is an international standard). The other notes (pitches) on the musical staff are mathematically related to A-440.

A note which has a frequency twice or half that of another note is said to be an octave higher or lower than that note. Such a combination of two notes is very pleasing to the ear. In western music (as opposed to Indian and Oriental, for example), the octave is broken up into 12 equally spaced intervals called semitones. Each note is one semitone higher than the previous note, the note frequency is 2 raised to the 1/12th power times the frequency of the previous note. This

factor (approx. 1.0595) arises from the fact that 12 semitones fill an octave interval. This represents a doubling in frequency: 2 to the 1/12th raised to the 12th power equals 2.

Duration

Each note also has a duration, or the length of time that it is heard. Notes within a song usually have durations that are related by powers of two. A whole note is so named because it fills a whole measure (or bar) of music, and a half note is exactly half as long. There are also quarter, eighth, sixteenth, and thirty-second notes, which have a corresponding relationship to a whole note.

There are also "dotted" notes, which are written with a small dot to the right of the note. The dot has the effect of adding half again as much time to the length of a note. For example, a dotted eighth note has the same duration as three sixteenth notes played in succession. The combination of a dotted eighth note and a sixteenth note fills the same amount of time as a quarter note; this combination is quite common.

Rests

Rests are used in printed music to indicate that no notes are to be played for a time. That is to say, there is to be a pause or silence. Rests have duration, but no pitch. The duration of a rest is the same length of the pause; as in notes it is indicated by the shape of the symbol. There are whole rests down to thirty-second rests, and there are dotted versions of these as well.

Rests are used in VideoTunes for another reason as well. Suppose that there were two notes in a song. The second note is supposed to start before the end of the first. A rest of the appropriate duration is used to indicate the difference in the starting times of the two notes. The rest must be vertically aligned with the first note, and the second note must be positioned to the right of the first note.

Musical Scales and Keys

The major scale is the one most often used in western music. There are twelve different major scales, one for each note of the chromatic scale (the chromatic scale consists of all twelve notes in sequence). Each major scale is named for the note on which it begins. For example, the C major scale begins on C, progresses through D, E, F, G, A, B, and finally to C one octave up.

You will note, however, that VideoTunes, in its key menu has 15 different keys. This reflects the fact that three of the keys have two different names. Some composers use one version, while others use the other. Specifically, the key of D-flat (5 flats) is the same as the key of C-sharp (7 sharps), G-flat (6 flats) is the same as F-sharp (6 sharps), and C-flat (7 flats) is the same as B (5 sharps).

Tempo

The tempo of a song is described in two ways: either there is an Italian word like "allegro", "largo" or "vivace", or there is a note symbol followed by a "=" and a number. This number

describes how many notes (of that duration) should be played in one minute. For example, a march is usually played at 120 quarter notes per minute. A minuet might be played at a rate of 80 dotted half notes per minute.

VideoTunes always describes a tempo in terms of quarter notes per minute. This means that if a song tempo is given in some other length note, you will have to convert. For example, the aforementioned minuet would be played at $80 * 3$, or 240 quarter notes per minute, since there are 3 quarter notes in a dotted half note.

Here are some numerical equivalents for tempi which are given as words. Use these as guidelines -- pick a tempo that sounds right to you.

Largo	42-66
Adagio	50-76
Andante	56-88
Lento	52-108
Moderato	66-126
Allegro	84-144
Allegretto	90-150
Presto	100-152
Vivace	80-160

DIFFERENCES BETWEEN VIDEOTUNES AND PRINTED MUSIC

There are some significant differences in the way VideoTunes represents music, as opposed to the way it appears on the printed page. These differences are discussed in the next few paragraphs.

No Bar Lines

Most printed music is divided into bars, or measures, in which each measure represents some fixed amount of time. For example, in 4/4 time, each measure contains the equivalent of four quarter notes. In 6/8 time, each measure contains the equivalent of six eighth notes, and so on. VideoTunes does not make any distinction between different meters, since all timing is derived directly from the notes themselves. Therefore no bar lines appear on the screen.

This has two significant implications if you are transcribing printed music into VideoTunes. The first involves tied notes, and the second involves accidentals.

No Tied Notes

Very often in printed music, it is desired to play a note continuously from one measure into the next. This is indicated by placing a printed note in each measure and connecting them with a curved line called a "tie-line." This means that the second note is merely a continuation of the first, with no audible beginning of its own. Since VideoTunes does not support tie lines, you must pick a note which has a length equal to the total length of the two notes combined. If this

is not possible, you can try combinations of two or more notes to get the desired duration, but you will hear the start of each note. Sometimes this can be hidden by making the continuation notes start at the same time as some other note.

Accidentals

Accidentals are notes which have sharp, flat or natural signs in front (to the left) of them. These indicate that the note is not on the major scale in which the piece is written. In printed music, all notes which follow the first accidental on the same line or space in the same measure have the same accidental applied to them. This effect ends at the bar line that ends the measure. Since there are no bar lines in VideoTunes, all accidentals apply only to the note to which they are attached. Any other implied accidentals in the measure will have to be explicitly entered.

No Double Sharps/Flats

Sometimes it happens that the composer wishes to make a note sharp which is already sharp because of the key signature. In printed music, the double sharp symbol is used (it looks like the letter "x"). VideoTunes does not support the use of the double sharp, or its counterpart, the double flat. This does not mean that the music will not be played correctly. It merely means that the note will be displayed on the screen in a different way. As long as you use the correct key to enter accidental sharps and flats, each note will be played correctly.

No Triplets

Occasionally, a composer wishes to have three notes played in the same time as some other note. This is called a "triplet." The most common form is three eighth notes, which are to be played in the same time as a quarter note.

Normally, three eighth notes would play for $1/8 + 1/8 + 1/8 = 3/8$, and a quarter note would play for $1/4$. In a triplet, the three eighth notes would, in sum, play for the same length of time as the quarter note. In other words, each eighth note in the triplet would play for one third of a quarter note, or $1/12$ of a whole note.

VideoTunes does not support the triplet or other unusual note timings. This means that some compromise will have to be made when these are encountered in music that is being transcribed. If a piece contains mostly triplets, then it is a simple matter to replace all non-triplet notes with their dotted counterparts, that is, use a dotted quarter note in place of a quarter note, a dotted half note in place of a half note, and so on. This method has the advantage of keeping all of the relative note lengths correct. If, on the other hand this approach would be too cumbersome, then an alternative to the triplet must be used. For example, one normal eighth note and two sixteenth notes (in any combination) could be used in place of an eighth-note triplet.

APPENDIX A

Joystick Controller Diagram

! INSERT !		! INSERT !
! and !		! and !
! CHANGE !		! CHANGE !
! DURATION !		! DURATION !

! UP !	! DELETE !	! INCREASE !
! SEMITONE !	! NOTE !	! DURATION !
! !	! !	! !

! DOWN !	! SCROLL !	! DECREASE !
! SEMITONE !	! MODE !	! DURATION !
! !	! !	! !

! PLAY !		! NOTE !
! JOYSTICK !		! TO REST & !
! NOTE !		! VICE VERSA !

! PLAY !	! PLAY !	! PLAY !
! ENTIRE !	! ONLY THE !	! ONLY THE !
! SONG !	! SCREEN !	! COLUMN !
! !	! !	! !

KEYBOARD COMMANDS

"CLEAR"	ERASE ALL NOTES
"INSERT"	INSERT A NOTE
"DELETE"	DELETE A NOTE
SHIFT/"INSERT"	INSERT SPACE
SHIFT/"DELETE"	DELETE SPACE
UP ARROW	MOVE JOYSTICK NOTE UP
DOWN ARROW	MOVE JOYSTICK NOTE DOWN
RIGHT ARROW	MOVE JOYSTICK NOTE RIGHT
LEFT ARROW	MOVE JOYSTICK NOTE LEFT
"HOME"/UP ARROW	MOVE JOYSTICK NOTE UP SEMITONE
"HOME"/DOWN ARROW	MOVE JOYSTICK NOTE DOWN SEMITONE
CONTROL/RIGHT ARROW	SCROLL TO THE LAST NOTE IN THE SONG
CONTROL/LEFT ARROW	SCROLL TO THE FIRST NOTE IN THE SONG
SMARTKEY I	PLAY ONLY THE NOTES ON THE SCREEN
SMARTKEY II	PLAY ONLY THE NOTES IN THIS VERTICAL COLUMN
SMARTKEY IV	CHANGE RED NOTE TO A REST OR A REST TO A NOTE
SMARTKEY V	SHORTEN THE RED NOTE
SMARTKEY VI	LENGTHEN THE RED NOTE

KEYBOARD COMMANDS

"GET-STORE"	LOAD A SONG FROM THE CURRENT DEVICE
SHIFT/"GET-STORE"	STORE A SONG ONTO THE CURRENT DEVICE
"P"	PLAY THE ENTIRE SONG
"T"	CHANGE TITLE OF SONG
"Q"	CHANGE TEMPO (QUARTER NOTES/MINUTE)
"O"	SHIFT MUSIC ONE OCTAVE (UP OR DOWN)
"D"	CHANGE DEFAULT STORAGE DEVICE
"F"	DISPLAY FREE SPACE
"K"	CHANGE THE MUSICAL KEY
"C"	ADD SONG COMMENTS (FULL TITLE, AUTHOR, ETC.)
"M"	CHANGE THE AMOUNT TO MOVE AFTER INSERTING A NOTE
"J"	PLAY THE JOYSTICK/PIANO NOTE AS A TEST