

DVD-V7200 - Video Text Retrieval

Video Text Retrieval Format Specification - Version 1.0

1. Definition of the Video Text Retrieval Function
2. The Disc Specification of the Video Text Retrieval
3. The Format of a Text File
4. Player Specification (What the DVD-V7200 does)
5. Video Text Retrieval Limitations

1. Definition of the VideoText Retrieval Function

It is possible to author a DVD disc with navigation command buttons on the video. A navigation command such as "Search and Play this title, chapter, etc." is sent causing the DVD player to jump to a certain area of a DVD disc and play back that portion when the command button is selected. The Video Text Retrieval function allows a DVD player to jump to a text file area and display it or upload the text file data to an external PC. Only the combination of a DVD-V7200 and a Video Text Retrieval-*capable* disc can achieve this function.

2. The Disc Specification of the Video Text Retrieval

A Navigation Data Command button pointing to the location of the **Hyper Video** function needs to be recorded in the PCI (Presentation Control Information) area on a disc. However, data for Video Text Retrieval should be recorded on a different section of the disc.

Pioneer uses Text Data Manager (TXTDT_MG) in the VMGI (Video Manager Information) for the area where the Video Text Retrieval data is recorded. The language is English (TXTDT_LCD =en) and the character set is ISO646 (CGRS +01h).

2-1. How to identify a Video Text Retrieval-*capable* disc

It is necessary for the DVD-V7200 to recognize a Video Text Retrieval *capable* disc to record as a disc distinguishable from other DVD discs. Pioneer decided to use "other feature (60h)" of IT_TXT_IDCD and write "HYPER TEXT DISC" in the layer of the volume.

If the disc is ported over from a Laser Disc, it needs to have LD compatibility. Use two "other feature" options and write "LASER COMPATIBLE DISC<CAV>" and "HYPER TEXT DISC". The search pointer (IT_TXT_SRP) of the "LASER COMPATIBLE DISC<CAV>" should be written first (close to the beginning address of TXTDT LU) followed by IT_TXT_SRP of "HYPER TEXT DISC".

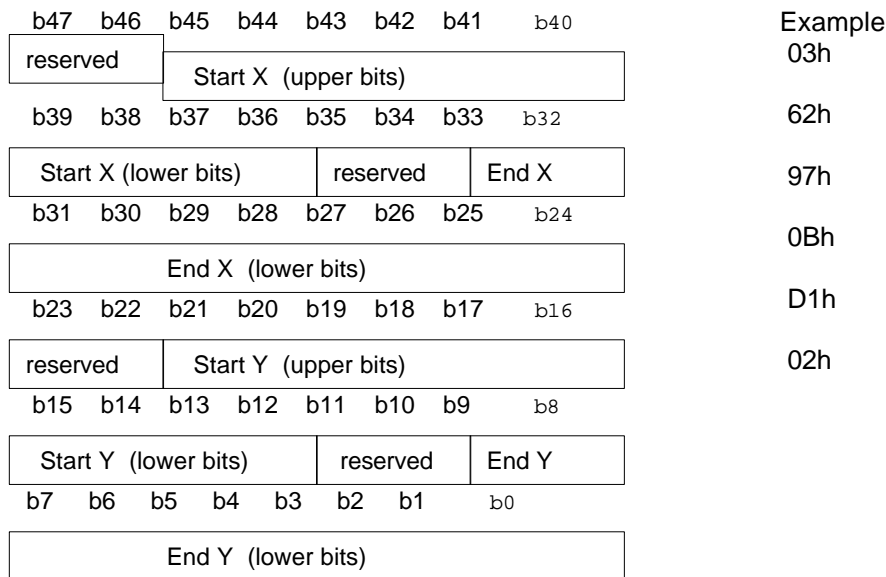
2-2. Location information format for command buttons and Text File names

Placing command buttons within the Hyper Video PCI area enables an author/publisher to set the flexible period during which a command button appears on the screen. As an alternative, Pioneer elected to use a combination of cells to set a command button that enables the VideoText Retrieval function. In other words, a group of cells need to be separated based upon the existence of VideoText Retrieval command buttons.

It is important to understand that VideoText Retrieval command buttons must be written in the Title Menu area rather than in the System Menu area.

The command button location information is recorded in Application IDCD “E0h” of the TEXT INFORMATION and the name of the Text File is recorded in Application ICDC “E1h” (DVD format standardizes E0h through Efh of Application IDCD as a “Vendor unique”). E0h and E1h must be paired and recorded in numeric order (E0h, E1h).

The format of a command button location information is similar to the “Button Information Table (BTNIT)” of the PCI (refer to chart below). The formula, (Start X, Start Y) – (End X, End Y), determines the shape of the command button. The command button location information needs to be recorded as text data consisting of 12 bytes of data such as “0362970BD102” given as an example listed below.



A Text File Name format must consist of the following three elements in the given order.

- “Main file name (max. 8 byte)
- period (1 byte)
- Extension (3 byte)”

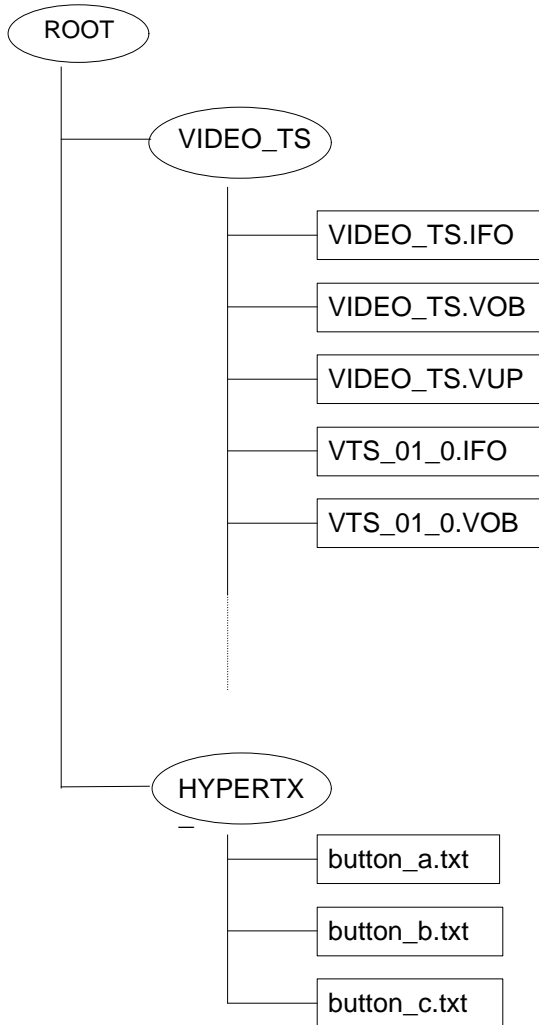
There are 80 Text File Name characters; from ! (21h) to ~ (7Eh) but excluding the specific 14 characters listed below.

” * + , . / : ; < = > ? \ |

The system is not case sensitive so either upper case or lower case characters are acceptable.

2-3 Directory for a Text File

It is necessary to set up a HYPertext directory directly below the ROOT. This newly created directory named HYPertext must be on the same layer as the VIDEO_TS. After making the HYPertext directory, add the Text Files to it.



3. Text File Format

There are several ways to display the Text File data on the screen after clicking on a command button.

- 1). Add the button information on the Still image where the command button is located
- 2). Add the button information on the squelched video with the squelch color as end-user selectable
- 3). Add the button information on the squelched video with the squelch color set to the author/publisher's default
- 4). Upload it to a PC

To add the button information to the disc, it is necessary to write a keyword at the beginning of each Text File. The DVD-V7200 will not display this keyword on the screen and will not upload it to a PC.

- 1). <MODE+IMPOSE0> is a keyword to write the Text File on the Still image at the command button location
- 2). <MODE=IMPOSE1> is a keyword to write the Text File on the squelched video *
* : The color of the squelched video is determined by the Menu setting
- 3). <MODE=IMPOSE#rgb> is a keyword to write the Text File on the author/publisher's default squelched video color **
** : The default color is determined by the combination of Red, Green and Blue with the combination limited to 4096 colors (16 x 16 x 16). A value ranging from 0 to 15 (16 levels) must be entered for each color. Actual values are 0(30h) through 9(39h) and A(41h) through F(46h). For example, <MODE=IMPOSE#000> represents black squelched color and <MODE=IMPOSE#FFF> represents white.
- 4). <MODE=SERIAL> is a keyword to upload the Text File to a PC
When a Text File is retrieved using an upload command button, the video Stills and actual Text File do not display on the screen.

It is possible to set different colors for each Command Button.

The DVD-V7200 displays up to 10 lines with each line consisting of up to 32 characters. The Specification for the player's character generator controls this feature. Plan the number of lines and the number of characters per line before creating a Text File to avoid errors (e.g. text recorded in the Text File without putting any "returns" or a line with more than 32 characters is truncated).

For Example:

Roland's VSC-55 Virtual Sound Canvas is an application that creates sounds using your computer's CPU for sound processing. Since it supports both the General MIDI system and the GS Format, it's simple to perform music data that carries the General MIDI or GS logo.

The player displays the message as shown below.

Roland's VSC-55 Virtual Sound Canvas is an application that creates sounds using your computer's CPU for sound processing. Since it supports both the General MIDI system and the GS Format, it's simple to perform music data that carries the General MIDI or GS logo.

Thus, when recording a Text File on a disc it is necessary to edit and add "returns" at the appropriate points.

Roland's VSC-55 Virtual Sound Canvas is an application that creates sounds using your computer's CPU for sound processing. Since it supports both the General MIDI system and the GS Format, it's simple to perform music data that carries the General MIDI or GS logo.

English characters are limited to 94 characters, that is SPACE (20h) through } (7Dh) and RETURN (CR+LF). This is the limitation of the player's character generator specification.

4. Player Specification (What the DVD-V7200 does)

4-1. When the disc is spinning

When the DVD-V7200 reads the VMGI it also reads TEXT INFORMATION thus detecting the existence of any command buttons. If any buttons exist, the player saves that information to the memory (RAM). The existence of Command Buttons is detected through APPLICATION_IDCD "E0h" and "E1h". Figure 1 indicates that Titles 1, 3 and 4 do not have any command buttons but that Title 2 has three command buttons (A, B and C).

4-2. When a disc is being Searched for a Title

When the DVD-V7200 executes a Title Search, it detects whether the particular title has any command buttons by referring the information which is saved in the RAM. If there are no command buttons in that particular title, the player executes a title search then plays back the Title. Titles with command buttons cause the player to save the button information to RAM. In Figure 1, the player reads the information on Title 2 and detects a command button in Cell 3. The location information and Text File Name are saved to the RAM.

4-3. When a disc is being played back

When the DVD-V7200 is playing cells with command buttons and detects the mouse click, the player compares the location to the button location information stored in the RAM. If the locations match, the player freezes the video (still) then goes to read the Text File which relates to the Command Button. The player also saves the number of the title and the cell being played back when the button was selected to return to that point after the command is completed. When the player reads the Text File, it displays Text by converting it through the character generator. When the "RETURN" icon is clicked, the play back returns to the previous cell and position or sequence on the disc.

4-4. How the Text is displayed

The DVD-V7200 displays the Text as well as the following three icons:

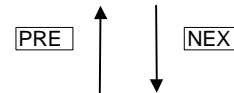
- PREV – return to the previous page
- RETURN – resume playback from the original location on the disc (prior to clicking the command button)
- NEXT – turn to the next page

Note: The PREV, RETURN and NEXT keys on the remote may also be used to for these functions.

< Roland Virtual Sound Canvas >
<< VSC-55 >>

Roland's VSC-55 Virtual Sound Canvas is an application that creates sounds using your computer's CPU for sound processing. Since it supports both the General MIDI system and the GS Format, it's simple

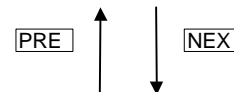
RET NEX



to perform music data that carries the General MIDI or GS logo.

[ROLAND LICENSE AGREEMENT]
This is a legal agreement between you (an individual or a corporation) and Roland Corporation (herein referred

PRE RET NEX



to as Roland.) Please read carefully the terms of this license agreement before installing the software. By installing the software , you indicate your acceptance of the terms outlined in this license agreement.

PRE RET

5. Limitations

- 1). Number of Command Buttons
 - Maximum 36 buttons per cell
 - Maximum 900 buttons per title
 - Maximum 1,800 buttons per disc
- 2). Difference between Hyper Video Buttons
 - No Highlight feature