



**DVD-V7200**  
**Industrial DVD Player**

**DOWN LOAD / UP LOAD MANUAL**

Dec. 30, 1998

Pioneer Electronic Corporation  
Pioneer New Media Technologies, Inc.

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## FCC INFORMATION

The equipment described in this manual has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against radio and television reception interference in a residential installation. There is no guarantee that interference will not occur in a particular installation.

To determine if your player is causing interference, turn the device off. If the interference stops, it was most likely caused by the player. To eliminate the interference, you may try one or more of the following corrective measures:

- verify the cables and connectors between components are shielded.
- increase separation between the player and components.
- connect the changer into an outlet or circuit different from that which the components are connected.
- consult dealer or experienced radio/television technician for help.

The Federal Communications Commission offers a handbook that may help you with eliminating interference. The handbook is titled *Interference Handbook* (stock number 004-000-00493-1) and may be ordered from the U.S. Government Printing Office, Washington, D.C. 20402.

**Warning:** Any changes or modifications to this product that are not authorized by Pioneer could void the FCC Certification and negate the user's authority to operate the equipment.

## DOC CLASS B COMPLIANCE

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

## SAFETY CAUTION

Care should always be taken when working with electronic devices. To protect you and your DVD-V7200 player from damage or harm, it is important that you first read and then carefully follow the instructions in this documentation. Take particular care to heed all warnings and cautions marked on the unit and outlined in this document and the accompanying *DVD-V7200 Industrial Player Operating Instructions*. **IGNORING ANY OR ALL INSTRUCTIONS AND WARNINGS MAY CAUSE INJURY TO THE PERSON(S) OPERATING THE EQUIPMENT, DAMAGE TO THE PRODUCT OR BOTH.**



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## 1. INTRODUCTION

This document defines the RS-232C download and upload process for the Pioneer DVD-V7200 Industrial DVD Player.

The DVD-V7200 is capable of playing DVD, CD and VCD discs. The device has three control methods: front panel, remote control or computer interface through the RS-232C serial port.

This manual addresses the various commands and precautions required when using the player with a computer. Please refer to the *DVD-V7200 Operating Instructions* included in this bundle for details on operating the unit via the front panel and/or remote control.

Chapter 2 describes the Interface Connector Specifications and the Computer Control features of the DVD-V7200.

Chapter 3 discusses the Serial Control and Internal Operation via computer.

Chapter 4 explains the Player Command Structure in detail.

Chapter 5 reviews DVD Barcode commands in detail.

**NOTE:** In this manual, a DVD disc containing a modified program from a current educational Laser Disc (LD) is handled as a Laser BarCode (LB) compatible DVD disc. The disc has two formats: CAV and CLV.

Please be careful the following. The commands in this manual, it is not the same as LD players one. Both are exactly like but a little different in the detailed using.

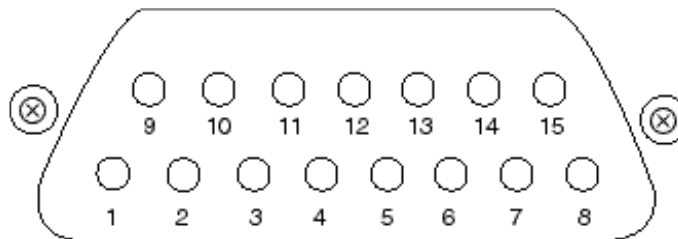
**CAUTION:** The material in this manual is subject to change without notice.

## 2. INTERFACE

### 2.1 Interface Connector

A computer may be connected to the DVD-V7200 through either the RS-232 serial port or the parallel port by using a 15-pin D-Sub connector (e.g., a JAE DALC-J15SAF connector with suitable plug such as the JAE DA-15PF-N).

The pins are identified below:



### 2.2 Serial Interface Pin Specification

| Pin No. | Terminal | Input/Output<br>t | Function                  |
|---------|----------|-------------------|---------------------------|
| 1       | GND      | --                | ground                    |
| 2       | TxD      | Output            | send data                 |
| 3       | RxD      | Input             | receive data              |
| 4       | DTR      | Output            | enable data receiving     |
| 5       | POWER    | Output            | external power control    |
| 6       | SW1      | Input             |                           |
| 7       | SW2      | Input             |                           |
| 8       | SW3      | Input             |                           |
| 9       | SW4      | Input             |                           |
| 10      | SW5      | Input             |                           |
| 11      | SW6      | Input             |                           |
| 12      | SW7      | Input             |                           |
| 13      | SW8      | Input             |                           |
| 14      | DLTST    | INPUT             | used only service support |
| 15      | V +8V    | OUTPUT            | used only service support |

### 2.3 Computer Control Functions

#### 2.3.1 Serial Control (see Chapters 3, 4, 5 and 6)

The player and computer are based upon the RS-232C protocol and are connected through the TxD, RxD, DTR and GND terminals.



**2.3.2 External Switch Control (see Chapter 9)**

Control the player with the External Option Switches (SW#).

Please make sure the Key Lock condition. If the player is in the Key Lock mode, the player ignores the control. (Please refer to the Key Lock command description.)

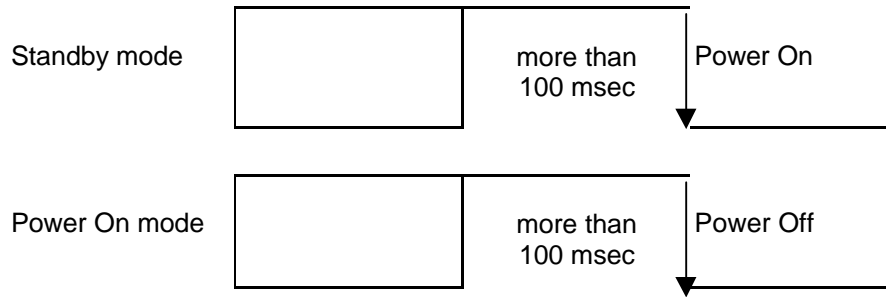
**2.3.3 External Power Control**

Control the player's power with the Power pin within the Interface Connector.

If the player detects a high signal throughput (100m/sec or more) during the Standby mode, the player powers on. If the player detects the same signal during the Power On mode, the player powers off and switches to the Standby mode.

The specifications for the Power pin are as follows:

|                       |                     |
|-----------------------|---------------------|
| Maximum Input Voltage | Less Than $\mp$ 12V |
| High Level Signal     | More Than 4.5V      |
| Low Level Signal      | Less Than 0.5V      |



Please verify that the Key Lock condition is deactivated. If the player is in the Key Lock mode, the player ignores the control. (Please refer to the Key Lock command description.)

### 3. SERIAL CONTROL

#### 3.1 Serial Interface Specifications

##### 3.1.1 Signal Interface

The signal interface is an RS-232C connection

##### 3.1.2 Data Type

Data Length: 8 bit

Stop Bit: 1 bit

Parity bit: No Parity

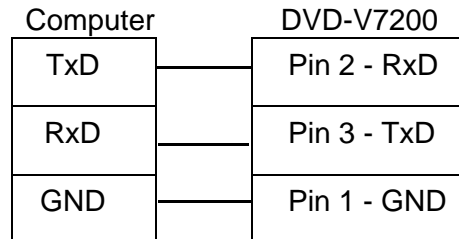
##### 3.1.3 Data Transfer Speed (Baud rate)

The data transfer speed can be set to either 4800 or 9600 baud on the Industrial player menu screen and/or with the Advanced Feature Menu Set command. (Please refer to the DVD-V7200 Operating Instructions and/or the Advanced Feature Menu Set command description.)

NOTE: The factory default is 4800 baud. The player memorizes the transfer speed each time the player is powered down. The player retains the setting after the power cycle reaches completion.

#### 3.2 Communication with a Computer

The DVD-V7200 communicates to the computer through the player's RS-232C port using pins 2 and 3 for communication and Pin 1 for grounding. Control or "handshaking" lines other than the TxD and RxD connections are not required. Please refer to the diagram below for clarification.



In some computer, the CTS port should be set to HIGH during the communication. It is best to connect the computer's CTS connector to the player's DTR connector. During normal operation, the DTR in the player is set to HIGH thus the unit is able to receive a command at any time.

### 3.3 Command and Status

The computer transmits a command to the DVD-V7200 and the player responds with the message, 'execution complete'.

Example

|                            |   |                      |
|----------------------------|---|----------------------|
| <u>COMPUTER</u>            |   | <u>DVD-V7200</u>     |
| (1) "Search to Frame 1000" | ⇒ | (2) Search Execution |
|                            | ⇐ | (3) Complete         |
| (4) "Play to Frame 2000"   | ⇒ | (5) Play Execution   |
|                            | ⇐ | (6) Complete         |

NOTE: The length of a command string is limited to 32 characters. Please refer to the COMMAND STRUCTURE segment for additional information.

When using a computer to control the DVD-V7200 player, follow the command protocols listed below:

- ASCII character codes are used for the actual commands and status response
- Command mnemonic is expressed as two (2) ASCII characters
- Uppercase letters are recommended; however, usually there are no distinctions between the use of uppercase or lowercase letters
- Some commands require an argument, (e.g. chapter number or speed)
- Use a command as the terminator of the argument

The player executes a command as soon as the carriage return <CR> is received. The <CR> acts as the command line terminator.

Example

```
CH<CR>      : Set chapter for address mode
10SE<CR>    : Search to chapter 10
```

The player has a command buffer, which stores a command string of up to 32 characters in length.

**Example**

```
10SE 20PL<CR> : Search to chapter 10 then play to 20
```

The command string enters into the buffer with the left character and continues sequentially from left to right. When the <CR> is entered, the commands are executed sequentially beginning with the first command in the buffer. In the example above, the first command is 10SE.

NOTE: The player ignores codes in the command string such as <SPACE> or <LF> (line feed) which do not affect the player's operation.

NOTE: Some commands, sent after a specialty command which includes an AUTOSTOP setting, (PL, MF, MR, etc.), cause the player to execute the new command before the AUTOSTOP is enacted (see Chapter 5, Command Descriptions).

When all the commands in a string have finished executing, the player transmits or *returns* the "complete" message.

The player returns an R after a command has been executed. This response is called the Automatic Status. The Automatic Status signals the computer program to send the next command. If this function is not used, the command processing time must be taken into consideration before the next command is sent.

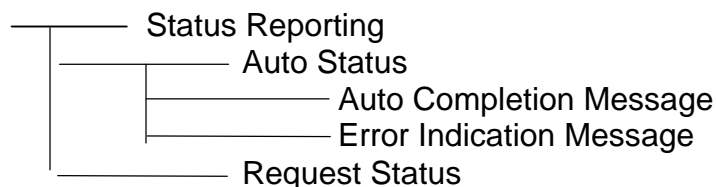
If an error occurs, the player returns an error message such as E04. The message indicates an error has occurred as well as the type of error. Error messages are in the form of EXX where XX represents a 2-digit error code.

In some cases, an incorrect command sends the player to search within a non-recorded area and the player returns an error message. Use the Request Status function to determine the unit's current status (actual player hardware failures are rare).

Apply one of the following methods to reset the player after an error has occurred:

- Use ?P to determine the Active mode of the player
- Use ?X, ?W, ?M, ?H, ?H to determine the player information, model name, clock time, player region code, the setting of Industrial Player Menu, etc.
- Use ?F, ?T, ?C, or ?R to determine the current frame, time, chapter, title/track number, respectively.
- Use ?V, ?D, ?K, ?G, ?Y, or ?Q to determine the disc information, disc type, total frame number, TOC information, etc.

The status functions are summarized below:



### 3.4 Error Messages

If an error occurs during a command execution, the player returns an error code. The table below lists each code with a description of the error:

| Code | Message                   | Description  |
|------|---------------------------|--|
| E00  | Communication error       | <i>Communication Line Error due to framing error or buffer overflow</i>  |
| E04  | Feature not available     | <i>Non-Usable Function has been tried – either the command mnemonic is wrong or the command can not be used in this mode</i>   |
| E06  | Missing argument          | <i>Correct parameter is not specified</i>  |
| E11  | Disc does not exist       | <i>There is no disc in the tray</i>  |
| E12  | Search error              | <i>Search address can not be found</i><br><br><i>Read error of Text File; (When the command (UU) is executed)</i>  |
| E15  | Picture stop              | <i>Playback has been stopped by a picture stop code while in the Auto Play mode</i>  |
| E16  | Interrupt by other device | <i>The command(s) sent via the serial line were not executed before commands were sent from the front panel buttons and/or remote control unit</i><br><br><i>Forced end of the data transfer while Text File sends to PC (When the command (UU) is executed)</i> |
| E99  | Panic                     | <i>Unrecoverable Error occurred – possible that a disc cannot be loaded and/or playing can not continue</i>  |

### 3.5 Initial Setting

The following table provides the default internal register and switch settings. Take care to set each to the required parameters when creating an application program.

| Register/Switch | Setting at Power ON   |
|-----------------|---|
| Key Lock        | 2 : If set at 2 at power OFF<br>0 : All other cases                       |
| Video Switch    | 1 : ON  |
| Audio Switch    | 7 : Audio +1  |
| Display Switch  | 0 : OFF   |
| Address mode    | 1 : Time  |
| Speed Parameter | 30 : ½ Speed  |
| CCR             | 3 : Mode 3  |
| Register A      | 3 : Title/Chapter and Frame Display (DVD)<br>Track/Time Display (CD, VCD) |
| Register B      | 0 : Normal Squelch  |
| Register D      | 0 : CR  |

#### 4. COMMAND STRUCTURE

The DVD-V7200 supports the commands listed below.

| COMMAND                        |           | SUPPORTING FORMATS |              |    |     |
|--------------------------------|-----------|--------------------|--------------|----|-----|
| Name                           | Mnemonic  | DVD                | LB comp. DVD | CD | VCD |
| Open                           | OP        | X                  | X            | X  | X   |
| Close                          | CO        | X                  | X            | X  | X   |
| Reject                         | RJ        | X                  | X            | X  | X   |
| Start                          | SA        | X                  | X            | X  | X   |
| Play                           | (adrs) PL | X                  | X            | X  | X   |
| Pause                          | PA        | X                  | X            | X  | X   |
| Still                          | ST        | X                  | X            |    | X   |
| Step Forward                   | SF        | X                  | X            |    | X   |
| Step Reverse                   | SR        | X                  | X            |    |     |
| Scan Forward                   | NF        | X                  | X            | X  | X   |
| Scan Reverse                   | NR        | X                  | X            | X  | X   |
| Scan Stop                      | NS        | X                  | X            | X  | X   |
| Multi-Speed Forward            | (adrs) MF | X                  | X            |    | X   |
| Multi-Speed Reverse            | (adrs) MR | X                  | X            |    |     |
| Speed                          | arg SP    | X                  | X            |    | X   |
| Search                         | adrs SE   | X                  | X            | X  | X   |
| Search & Play                  | adrs SL   | X                  | X            | X  | X   |
| Stop Marker                    | adrs SM   | X                  | X            | X  | X   |
| Lead Out Symbol                | LO        | X                  | X            | X  | X   |
| Clear                          | CL        | X                  | X            | X  | X   |
| Frame                          | FR        | X                  | X            |    |     |
| Block Number                   | BK        |                    |              | X  | X   |
| Time                           | TM        | X                  | X            | X  | X   |
| Chapter                        | CH        | X                  | X            |    |     |
| Title                          | TI        | X                  | X            |    |     |
| Index                          | IX        |                    |              | X  | X   |
| Track                          | TR        |                    |              | X  | X   |
| Select Subtitle                | arg SU    | X                  | X            |    |     |
| Select Audio                   | arg AU    | X                  | X            |    |     |
| Select Aspect                  | arg AP    | X                  | X            |    |     |
| Select Angle                   | arg AG    | X                  | X            |    |     |
| Select Parental-Level          | arg PT    | X                  | X            |    |     |
| Audio Control                  | arg AD    | X                  | X            | X  | X   |
| Video Control                  | arg VD    | X                  | X            | X  | X   |
| Display Control                | arg DS    | X                  | X            | X  | X   |
| Keylock                        | arg KL    | X                  | X            | X  | X   |
| Stack Group Set                | arg GP    | X                  | X            |    |     |
| Barcode / Command Stack Play   | arg BS    | X                  | X            |    |     |
| Video Blackboard Display       | arg VS    | X                  | X            |    |     |
| Video Blackboard Clear         | arg CB    | X                  | X            |    |     |
| Blackboard / Stack Data Upload | BU        | X                  | X            | X  | X   |

|                                  |    |   |   |   |   |
|----------------------------------|----|---|---|---|---|
| Blackboard / Stack Data Download | BD | X | X | X | X |
| Weekly Timer Data Upload         | WU | X | X | X | X |
| Weekly Timer Data Download       | WD | X | X | X | X |
| Text File Data Upload            | UU | X | X |   |   |

| COMMAND                       |          | SUPPORTING FORMATS |              |    |     |
|-------------------------------|----------|--------------------|--------------|----|-----|
| Name                          | Mnemonic | DVD                | LB comp. DVD | CD | VCD |
| Current Address Request       | ?A       | X                  | X            | X  | X   |
| Title/Track Number Request    | ?R       | X                  | X            | X  | X   |
| Chapter Number Request        | ?C       | X                  | X            |    |     |
| Time Code Request             | ?T       | X                  | X            | X  | X   |
| Index Number Request          | ?I       |                    |              | X  | X   |
| Frame Number Request          | ?F       | X                  | X            |    |     |
| Block Number Request          | ?B       |                    |              | X  | X   |
| Total Frame Request           | ?Y       | X                  | X            |    |     |
| TOC Information Request       | ?Q       |                    |              | X  | X   |
| Disc Region Code Request      | ?G       | X                  | X            |    |     |
| DVD Disc Status Request       | ?V       | X                  | X            |    |     |
| LD Disc Status Request        | ?D       |                    | X            |    |     |
| CD Disc Status Request        | ?K       |                    |              | X  | X   |
| Register A Set (Display)      | arg RA   | X                  | X            | X  | X   |
| Register B Set (Squelch)      | arg RB   | X                  | X            | X  | X   |
| Register D Set (TxD Term)     | arg RD   | X                  | X            | X  | X   |
| Print Character               | arg PR   | X                  | X            | X  | X   |
| Clear Screen                  | CS       | X                  | X            | X  | X   |
| Real Time Clock Set           | WW       | X                  | X            | X  | X   |
| Advanced Feature Menu Set     | arg MS   | X                  | X            | X  | X   |
| Communication Control Set     | arg CM   | X                  | X            | X  | X   |
| Player Active Mode Request    | ?P       | X                  | X            | X  | X   |
| Player Model Name Request     | ?X       | X                  | X            | X  | X   |
| Real Time Clock Request       | ?W       | X                  | X            | X  | X   |
| Advanced Feature Menu Request | ?S       | X                  | X            | X  | X   |
| Player Region Code Request    | ?H       | X                  | X            | X  | X   |
| CCR Mode Request              | ?M       | X                  | X            | X  | X   |
| Input Number Request          | ?N       | X                  | X            | X  | X   |
| Error Code Request            | ?E       | X                  | X            | X  | X   |
| Input Unit Request            | #I       | X                  | X            | X  | X   |
| Input Barcode Data Request    | #B       | X                  | X            | X  | X   |
| Register A Request            | \$A      | X                  | X            | X  | X   |
| Register B Request            | \$B      | X                  | X            | X  | X   |
| Register D Request            | \$D      | X                  | X            | X  | X   |

NOTE: Any command prefaced with an \* is supported by a firmware upgrade.

NOTE: A command with an argument or an address parameter is prefaced by the letters arg (argument) or ards (address). If the arg or ards is in parentheses ( ), the parameter is optional.

#### 4.1 Blackboard / Stack Data Upload

Function: Reads the Blackboard, Barcode or Stack data in the player

Format: BU

Explanation: The player sends data to the computer after the command is uploaded (while the player is in the Park mode)

Flow of the communication:

(N=8420)

| Computer | DVD-V7200              |
|----------|------------------------|
|          | ---BU<CR>--->          |
|          | <---R<CR>----          |
|          | <--1st byte data--     |
|          | <--2nd byte data--     |
|          | ~                      |
|          | <--(N-1)th byte data-- |
|          | <--Nth byte data<CR>-- |
|          | <---R<CR>----          |

Format of the data:

| BP          | Contents  | Numbers of bytes |
|-------------|---|------------------|
| 0 - 1       | (1) Total number of the transfer data<br>(fixed number = 20e4H) | 2 bytes          |
| 2 - 3       | (2) The version of this data format<br>(fixed value)            | 2 bytes          |
| 4 - 5       | (3) Barcode #1 Search Pointer                                   | 2 bytes          |
| 6 - 7       | Barcode #2 Search Pointer                                       | 2 bytes          |
| ~           | ~   | ~                |
| 600 - 601   | Barcode #299 Search Pointer                                     | 2 bytes          |
| 602 - 603   | Barcode #300 Search Pointer                                     | 2 bytes          |
| 604 - 605   | (4) Number of Next Barcode Data                                 | 2 bytes          |
| 606 - 607   | (5) Number of Next Barcode Group                                | 2 bytes          |
| 608 - 609   | (6) Blackboard #1 Search Pointer                                | 2 bytes          |
| 610 - 611   | Blackboard #2 Search Pointer                                    | 2 bytes          |
| ~           | ~   | ~                |
| 1204 - 1205 | Blackboard #299 Search Pointer                                  | 2 bytes          |



|                |                                     |            |
|----------------|-------------------------------------|------------|
| 1206 -<br>1207 | Blackboard #300 Search Pointer      | 2 bytes    |
| 1208 -<br>1209 | (7) Number of Next Blackboard Data  | 2 bytes    |
| 1210 -<br>1211 | (8) Number of Next Blackboard Group | 2 bytes    |
| 1212 -<br>1213 | (9) Number of Next Blackboard Unit  | 2 bytes    |
| 1214 -<br>1215 | (10) Next Data Address              | 2 bytes    |
| 1216 -<br>8415 | (11) Barcode & Blackboard Data      | 7200 bytes |
| 8416 -<br>8419 | (12) Checksum                       | 4 bytes    |

(1) Fixed data:

Indicates the total data bytes of this transfer with HEX characters  
 20e4H = 8420

(2) Fixed data:

Indicates the version of the data format. It is (0000H) now. When it is revised, it will change. Do not change the digits manually.

(3) Indicates the head address of the #Nth Barcode / Command Stack data. The head address is relative address. Base address is (BP = 1216). (BP = 1216) is the head byte of Barcode & Blackboard Data in this data format.

(N = 1 ~ 300)

If the data of #Nths is not available, it shows (ffffH).

(4) Indicates the numbers of the registered Barcode / Command Stacks

Available numbers range from 0 to 299 and shows as HEX digits

(5) Indicates the group number of the next Barcode / Command Stack

Available numbers range from 0 to 299 and shows as HEX digits

(6) Indicates the head address of the #Nth Blackboard data. The head address is a relative address. Base address is (BP = 1216) and the head byte of Barcode & Blackboard Data is in the data format (BP = 1216).

(N = 1 ~ 300)

If the data of #Nths is not available, it shows (ffffH).

(7) Indicates the numbers of the registered Picture / Text

Available numbers range from 0 to 299 and shows as HEX digits

(8) Indicates the group number of the next Picture / Text

Available numbers range from 0 to 299 and shows as HEX digits

(9) Indicates the number of the next Picture / Text

Available numbers range from 0 to 299 and shows as HEX digits

- (10) Indicates the head address of the next Barcode / Command Stack data or Picture / Text data. The head address is a relative address. The Base address is (BP = 1216) with (BP = 1216) as the head byte format for the Barcode & Blackboard Data.
- (11) It is the body of the data
- (12) It is the checksum of the data. It indicates the result of adding up from BP 0 to BP 8415. It shows with HEX characters (double word).

Format of Barcode / Command Stack data in the data:

The length of Barcode / Command Stack data is 16 bytes. This is a fixed length. Each byte is made up of aH (Upper nibble) and one digit of the Barcode Command (Lower nibble). The Barcode Command length is available up to 16 - digits. If the command length is less than 16 - digits, it fills with (00H).

Example:

Segment Play Command: Title 02, from Frame 3600 to Frame 4800  
 > 4020036000048007

| BP                    | Data | Explanations |
|-----------------------|------|--------------|
| 1216 + BARCODE_SRP #n | a4H  |              |
| + 1                   | a0H  |              |
| + 2                   | a2H  |              |
| + 3                   | a0H  |              |
| + 4                   | a0H  |              |
| + 5                   | a3H  |              |
| + 6                   | a6H  |              |
| + 7                   | a0H  |              |
| + 8                   | a0H  |              |
| + 9                   | a0H  |              |
| + 10                  | a0H  |              |
| + 11                  | a4H  |              |
| + 12                  | a8H  |              |
| + 13                  | a0H  |              |
| + 14                  | a0H  |              |
| + 15                  | a7H  |              |

\*BARCODE\_SRP #n: Barcode #n Search Pointer

Outline of Barcode Command: Barcode Commands have the following formats.

DVD 4-digit command (Set the player, the video and the audio control)

DVD 6-digit command (Set the attribute control)

DVD 10-digit command (Chapter Search Command)

DVD 12-digit command (Chapter Segment Play Command)

DVD 14-digit command (Frame Search Command)

DVD 16-digit command (Segment Play Command)

LB compatible 4-digit command (Set the player, the video and the audio control)

LB compatible 6 digits command (Chapter Search Command)

LB compatible 8 digits command (Chapter Segment Play Command)

LB compatible 10 digits command (Frame Search and Time Search Command)

LB compatible 14 digits command (Frame segment Play and Time Segment Play)

LB compatible 16 digits command (Special Effect Frame Segment Play)

NOTE: Follows two command functions in Barcode / Command Stack are not regulated in Barcode Format. So those are regulated as follows.

1) The mark of the end of group : The first byte is (ffH), the others are (00H).

2) REPEAT : (49a3H)

\*Refer the details to the Barcode Format.

Format of Blackboard ; Picture data in the data :

The length of Blackboard ; Picture data is 24 bytes. This is a fixed length.

Example: Displays the picture compulsively

Title 02, from Frame 3600 to Frame 4800. And GROUP 01, UNIT 03, Rectangle: the coordinates are (24, 36), (260, 200). Inside of the rectangle fills with blue

| BP                       | Data | Explanations                               |
|--------------------------|------|--|
| 1216 + BARCODE_SRP<br>#n | 46H  | Means "F", indicates the ID of Picture     |
| + 1                      | 04H  | (1) Display mode; This is a Forced display |
| + 2                      | 02H  | The starting Title number                  |

|      |     |  |
|------|-----|--|
| + 3  | 00H | The starting Address number (MSB)      |
| + 4  | 00H | The starting Address number            |
| + 5  | 0eH | The starting Address number            |
| + 6  | 10H | The starting Address number (LSB)      |
| + 7  | 02H | The ending Title number                |
| + 8  | 00H | The ending Address number (MSB)        |
| + 9  | 00H | The ending Address number              |
| + 10 | 12H | The ending Address number              |
| + 11 | c0H | The ending Address number (LSB)        |
| + 12 | 00H | The number of Group                    |
| + 13 | 01H | The number of Group                    |
| + 14 | 00H | The number of Unit                     |
| + 15 | 03H | The number of Unit                     |
| + 16 | 71H | (2) The kind of Picture, color         |
| + 17 | 00H | The width of line                      |
| + 18 | 00H | The starting point of Picture, X (MSB) |
| + 19 | 18H | The starting point of Picture, X (LSB) |
| + 20 | 01H | The ending point of Picture, X (MSB)   |
| + 21 | 04H | The ending point of Picture, X (LSB)   |
| + 22 | 24H | The ending point of Picture, Y         |
| + 23 | c8H | The ending point of Picture, Y         |

\*BARCODE\_SRP #n: Barcode #n Search Pointer

(1) Display mode:

- 00H: The player does not respond
- 01H: Pauses at the starting Address
- 02H: Displays "\*" while the player is in registered Address
- 03H: Pauses and displays "\*" while the player is in registered Address
- 04H: Forced displays of the picture
- 05H: Pauses and forced displays the picture
- 0dH: Pauses at the address just before registered Address

(2) The kind of Picture, color :

bit7, 6, 5 The kind of Picture

- 0: There is no Picture
- 1: Text
- 2: Line
- 3: Rectangle
- 4: Ellipse

- 5: Circle
- bit4, 3, 2 The tone of the color
  - 0: White
  - 1: Black
  - 2: Gray
  - 3: Red
  - 4: Blue
  - 5: Green
  - 6: Yellow
  - 7: Orange
- bit1, 0 Paint mode
  - 0: Only frame
  - 1: The frame is filled with color
  - 2: The frame border is filled with color

Format of Blackboard; Text in the data:

The length of the Blackboard display; Text data length may fluctuate between 22 bytes to 341 bytes

Example: Displays the text compulsively

Title 02, from Frame 3600 to Frame 4800 and GROUP 01, UNIT 03, Text in 3rd line

| BP                    | Data | Explanations                             |
|-----------------------|------|--|
| 1216 + BARCODE_SRP #n | 54H  | Represents "T", indicates the Picture ID |
| + 1                   | 04H  | (1) Display mode with a Forced display   |
| + 2                   | 02H  | Starting Title number                    |
| + 3                   | 00H  | Starting Address number (MSB)            |
| + 4                   | 00H  | Starting Address number                  |
| + 5                   | 0eH  | Starting Address number                  |
| + 6                   | 10H  | Starting Address number (LSB)            |
| + 7                   | 02H  | Ending Title number                      |
| + 8                   | 00H  | Ending Address number (MSB)              |
| + 9                   | 00H  | Ending Address number                    |
| + 10                  | 12H  | Ending Address number                    |
| + 11                  | c0H  | Ending Address number (LSB)              |
| + 12                  | 00H  | Number of the Group                      |
| + 13                  | 01H  | Number of the Group                      |

|         |     |                              |
|---------|-----|------------------------------|
| + 14    | 00H | Number of the Unit           |
| + 15    | 03H | Number of the Unit           |
| + 16    | 00H | Starting point of Text (MSB) |
| + 17    | 40H | Starting point of Text (LSB) |
| + 18    | 00H | Ending point of Text (MSB)   |
| + 19    | 44H | Ending point of Text (LSB)   |
| + 20    | 42H | Text data                    |
| ~       | ~   | ~                            |
| + m - 1 | 6bH | Text data                    |
| + m     | ffH | 0xff                         |

\*BARCODE\_SRP #n: Barcode #n Search Pointer

\* 20 < m < 341

Text data may include the blank characters. If your text has spaces, the player memorizes whole texts with spaces from the 1st character to the last character.

(1) Display mode:

- 00H: Player does not respond
- 01H: Pauses at the starting Address
- 02H: Displays "\*" while the player is in a registered Address
- 03H: Pauses and displays "\*" while the player is in a registered Address
- 04H: Forced displays the picture
- 05H: Pauses and force-displays the picture
- 0dH: Pauses at the address just before registered Address

Execution:

| Command String | Status Return                       | DVD-V7200  |
|----------------|-------------------------------------|--|
| BU<CR>         |                                     | Park mode  |
|                | R<CR><br>20e40010....02<br>6743<CR> | Receives the command and starts the transfer of the data, up to 8420 bytes then ends with <CR> |
|                | R<CR>                               |  |

## 4.2 Blackboard / Stack Data Download

- Function : Sends the data to the player: Blackboard data, Barcode data, Stack data
- Format : BD

Explanation : The player, in Park mode, receives the data from the computer after the command is sent

Refer to the descriptions of Blackboard / Stack Data Upload

The Communication flows as follows:

Flow of the communication:

(N=8420)

| Computer | DVD-V7200              |
|----------|------------------------|
|          | ---BU<CR>--->          |
|          | <---R<CR>-----         |
|          | --1st byte data-->     |
|          | --2nd byte data-->     |
|          | ~                      |
|          | --(N-1)th byte data--> |
|          | --Nth byte data<CR>--> |
|          | <---R<CR>-----         |

Execution:

| Command String             | Status Return | DVD-V7200  |
|----------------------------|---------------|--|
| BD<CR>                     |               | Park mode  |
|                            | R<CR>         | Receives the command and starts the receiving data, 8420 bytes. It ends with <CR>. |
| 20e40010....0267<br>43<CR> |               |  |
|                            | R<CR>         |  |

### 4.3 Weekly Timer Data Upload

### 4.4 Weekly Timer Data Download

### 4.5 Text File Data Upload

# **VD-V7200**

## **Industrial DVD Player RS-232 Command Protocol**

Pioneer Electronic Corporation

4-1, Meguro 1-chome  
Meguro-ku, Tokyo 153  
JAPAN

<http://www.pioneer.co.jp>

Pioneer New Media Technologies, Inc.

2265 East 220<sup>th</sup> Street  
Long Beach, California 90810  
United States of America  
(310) 952-2111

<http://www.pioneerusa.com>