2. The LB2 Standard Command Set

The LB2 Standard Command Set is listed below. Notice that the list is divided into "Original Commands" and "Extended Commands". LB2 includes all of the "original" LaserBarcode standard commands and adds 15 "extended" commands: 12 new independent commands, one additional search command and two new segment play commands.

LaserBarcode 2 Standard Command Set

LB2 Independent Commands

Original LB Independent Commands

- Analog Audio Stereo
- Analog Audio Ch1/Left
- Analog Audio Ch2/Right
- Audio Off
- Audio - No Change
- Video On
- Video Off
- Video - No Change
- Play
- Pause
- Step Forward (CAV)
- Step Reverse (CAV)
- Debug On
- Debug Off

Extended Independent Commands

- Start
- Digital Audio Stereo
- Digital Audio Ch1/Left
- Digital Audio Ch 2/Right
- Slow Forward 1 (CAV)
- Slow Forward 2 (CAV)
- Slow Forward 3 (CAV)
- Slow Forward 4 (CAV)
- Slow Reverse 1 (CAV)
- Slow Reverse 2 (CAV)
- Slow Reverse 3 (CAV)
- Slow Reverse 4 (CAV))

LB2 Search Commands

Original Search Commands

- Frame Search (CAV)*
- Chapter Search*

Extended Search Commands

- Time Search (CLV)

LB2 Segment Play Commands

Original Segment Play Commands

- Frame Segment (CAV)*
- Chapter Segment*

Extended Segment Play Commands

- Time Segment (CLV)
- Special Effects Segment (CAV)

Each LaserBarcode 2 command is shown in the charts below with a sample barcode and a description of how the player responds when the code is scanned and transmitted to the player. LaserBarcode 2 Sample Barcodes include: Original Independent Commands; Extended Independent Commands; Original and Extended Search Commands; Original and Extended Segment Play Commands. **NOTE:** LB2 "extended" commands can be identified by a subscript 2 next to the barcode. (See examples on page 4.) Remember, extended LB2 commands are supported only by LB2 compatible players, as indicated on page 1 of this bulletin. (See player compatibility chart, **Figure 3**, on page 10.)

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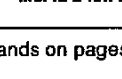
* Under LB2, these commands have been expanded to include control of digital audio playback.

LaserBarcode 2 Sample Barcodes

Original LaserBarcode Independent Commands

Command	Description
Play	Plays the videodisc inserted in drawer.
Audio Off	Sets Audio OFF.
Analog Audio 1/Left	Sets the audio control attribute to "analog channel 1," plays back analog left channel only.
Analog Audio 2/Right	Sets the audio control attribute to "analog channel 2," plays back analog right channel only.
Analog Audio Stereo	Sets the audio control attribute to "analog stereo," plays back left and right analog audio channels simultaneously.
Video Off	Sets Video OFF.
Video On	Sets Video ON.
Pause	Pauses playback, displays a squelch screen.
Step Forward (CAV Only)**	Steps forward one frame at a time.
Step Reverse (CAV Only)**	Steps reverse one frame at a time.
Reject/Spin Down	Spins down and parks disc, displays a squelch screen.
Marker Clear	Clears, and plays through stop marker. *
Debug On	Instructs player to maintain various player settings so barcodes can be tested. *
Debug Off	Turns debug feature OFF.

* See text description of Original LaserBarcode commands on pages 6 and 7.
** Step Forward and Step Reverse barcodes can also be used with CLV discs played on the LD-V8000.

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LaserBarcode 2 Sample Barcodes (cont.)

Extended Independent Commands

Command	Barcode	Description
Start		Instructs the player to spin up the disc from a park position and pause at frame 1 (CAV discs) or at time number 0:00:00 (CLV discs) with video squelched.*
Digital Audio Stereo		Sets the audio control attribute to "digital stereo," plays back left and right digital audio channels simultaneously.
Digital Audio Ch 1/L		Sets the audio control attribute to "digital channel 1," plays back digital left channel only.
Digital Audio Ch 2/R		Sets the audio control attribute to "digital channel 2," plays back digital right channel only.
Slow Forward 1 (CAV)**		*Slow Forward 1* - Instructs the player to play forward at 1/4 the normal speed.
Slow Forward 2 (CAV)		*Slow Forward 2* - Instructs the player to play forward at 1/8 the normal speed.
Slow Forward 3 (CAV)		*Slow Forward 3* - Instructs the player to play forward, displaying 1 frame / second.
Slow Forward 4 (CAV)		*Slow Forward 4* - Instructs the player to play forward direction, 1 frame / 3 seconds.
Slow Reverse 1 (CAV)		*Slow Reverse 1* - Instructs the player to play in reverse at 1/4 the normal speed.
Slow Reverse 2 (CAV)		*Slow Reverse 2* - Instructs the player to play in reverse at 1/8 the normal speed.
Slow Reverse 3 (CAV)		*Slow Reverse 3* - Instructs the player to play in a reverse direction, 1 frame / second.
Slow Reverse 4 (CAV)		*Slow Reverse 4* - Instructs the player to play in reverse, 1 frame / 3 seconds.

* See text description of Extended LaserBarcode commands on pages 7 and 8.

** NOTE: The Slow Forward and Slow Reverse commands function with CAV discs only. The Slow Forward and Slow Reverse playback speeds described in this Application Note relate to the playback speed of Pioneer players only. These Slow Forward and Slow Reverse barcode commands may execute differently on other manufacturer's players. The LB2 format allows the following range of speeds for these commands:

- Slow Forward or Reverse 1 = 1/4 to 1/3 speed;
- Slow Forward or Reverse 2 = 1/12 to 1/8 normal speed;
- Slow Forward or Reverse 3 = 1 frame per second;
- Slow Forward or Reverse 4 = 1 frame every 2 or 3 seconds.

LaserBarcode 2 Sample Barcodes (cont.)

Original LaserBarcode Search Commands

Frame Search (CAV only)

Search to Frame 1000

Chapter Search (CAV & CLV)

Search to Chapter 2

Extended Search Command

Time Search (CLV)

2

Search to Time number 0:34:56

Original LaserBarcode Segment Play Commands

Frame Segment Play (CAV only)
In this example, Analog Audio Stereo is ON.

Play from Frame 1000 to Frame 1200

Chapter Segment Play (CAV & CLV)
In this example, Analog Audio Stereo is ON.

Play from Chapter 2 to Chapter 5

Extended Segment Play Commands

Time Segment Play(CLV)
In this example, Audio is OFF

2

Search to Time number 0:23:45, play to 0:34:56

Special Effects Segment (CAV)
Frame segment play at
Speed 1, 2, 3, or 4 —
in forward or reverse.

2

Play from Frame 4000 to 5000, at Speed 2

The LB2 sample barcodes were created using Pioneer's
Bar'n'Coder 3.0 software for the Macintosh.