

## 2.2 Loading and Executing Level II Programs

The LD-V8000's microprocessor, in addition to directly controlling the videodisc player's operations, provides the user with seven pages and one extra register (7156 bytes) of RAM. This memory space is available for the storage of user-designed Level II program instructions, associated data, and variables. Level II program instructions stored in RAM are executed by an interpreter program that is resident in the player's EPROMs.

### 2.2.1 Loading Level II Program Code into RAM

Programming code may be entered directly into the player's memory to allow execution of stand alone programs that do not require a Level II disc. More commonly, however, interactive Level II programs are generated on a computer, downloaded to the player for testing, and then sent to videodisc manufacturing to be encoded onto a videodisc. Then, the **On-Screen Function Switch Settings** of the LD-V8000 can be set to automatically load a Level II program from a videodisc into the player's memory. The program read from disc is executed to control the player.

Thus, Level II programs are loaded into RAM from three different sources:

- **Automatically from Disc**, by reading programs encoded on Audio Channel 2 of a Level II videodisc (Program Dumps).
- **Manually with the RCU**, entering program argument, command, and data codes individually, using the RU-V6000T remote control unit.
- **Via the RS-232C port from an External Computer**, downloading each page of codes in just a few seconds.

To prepare the LD-V8000 to automatically load a Level II program from a Level II videodisc, make sure that the player's **Level II Auto Start** parameter is set to **Load From Disc**, as described below:

- Power-On the player while simultaneously pressing the player's DISPLAY button. This allows customization of any of the player's **On-Screen Function Switch** settings.

- Press the SCAN FORWARD button four times to select Page 4 of the **On-Screen Function Switch Setting** menus.
- Press the STEP FORWARD button to select **Level II Auto Start**.
- Press the STEP REVERSE button to choose the option, **Load from Disc**.
- Press the DISPLAY button to store the chosen options.

For more about the available options, see the **LD-V8000 Level I & III User's Manual/Programmer's Reference Guide: On-Screen Function Switches** and **On-Screen Status Displays in Manual Mode, Audio Status Display**.

Then, make sure that Audio Channel 2 is ON as the disc spins up. In general it is not necessary for Audio 2 to be ON for the player to read dumps, but Audio 2 OFF during spinup tells the player to skip its initial dump load detection sequence.

For more information about loading Level II programming codes to the player's RAM using the RCU, see **Section 3.1**. For information about sending Level II code to the player's RAM from a computer via the RS-232C port, see **Section 3.2**.

### 2.2.2 Executing Level II Program Code from RAM

Level II programs loaded from videodisc automatically begin execution when they are loaded. However, one may wish to automatically execute a program that is already in the player's memory independent of the type of disc or the original source of the program. In this case, set **Level II Auto Start**, as described above, but choose the **Back-Up Memory** option. This will cause the player to automatically begin execution of the code stored in memory, as soon as any videodisc is spun up. **CAUTION:** When running programs automatically with the **Back-Up Memory** setting, make sure that the program code begins at program address 0.

The Level II program remains in the player's RAM indefinitely, until it is overwritten. The LD-V8000 contains a lithium battery so that a Level II program can be held in memory up to 5 years, even when the player is not plugged in.

To begin execution of a program manually, press the RUN button on the RCU. To use an external computer to command execution to begin, send a "RUN" (\*R) command.

### 2.2.3 Stopping Level II Program Execution

To stop execution of a Level II program, press the CLEAR/HALT button on the remote control unit, or send a "HALT" command (\*H) from an external computer. When the program is "halted", the player changes from *Automatic Mode* to *Manual Mode*.

**NOTE:** If the HALT is sent during the execution of an AUTO STOP command, the player will continue execution of the AUTO STOP even though it is in *Manual Mode*.