

# **The LaserCon Merlin-1000 MultiROM Board**

## **Installation Instructions**

Design and Control Firmware Version 1.x - by Shaun D. Wood  
[shaun@wood1st.com](mailto:shaun@wood1st.com)

The Merlin-1000 MultiROM board is a direct replacement for the original ROM board found on any 1983 Cinematronics' main control board for Dragon's Lair or Space Ace, for use in the United States. By installing this board, you will be able to select any one of 4 different control romsets at boot up.

**Merlin-1000 works with the original factory laserdisc players:  
Pioneer PR-7820 and the Pioneer LD-V1000**

### **Installed Romsets are:**

Dragon's Lair –F2

Dragon's Lair Enhancement 2.1

Dragon's Lair Enhancement 2.1 – With prototype animation  
(Limited Edition disc required)

Space Ace –Version A3, and Space Ace Enhancement V1.0

\* “Dragon's Lair Enhancement” and “Space Ace Enhancement” are the intellectual property of "The Dragon's Lair Project" and are used with permission. You can find more information here: <http://www.dragons-lair-project.com/tech/enhancements/dle.asp>

Merlin will allow you to play either “Dragon's Lair” or “Space Ace” in the same game cabinet. Simply install a Dragon's Lair disc in your Space Ace machine, or install a Space Ace disc in your Dragon's Lair machine, and select an appropriate ROM set.

**Board installation** – Disconnect the 40-pin ribbon cable and remove the four nuts holding the original board in place. Reverse the process to install the new MultiROM board.

### **Set Dip-Switches:**

Please take the time to fill in the *Main Board Dipswitch Set-Up Chart* and find that one setting that works best for you. To make it easier, the switch locations have been rearranged to work better together between ROM sets. Therefore, you *must* use the included switch settings sheets. **The original settings charts from the manuals are no longer valid when using the MultiROM card.**

For a quick set-up, use these recommended settings.  
Audio always on, 1 coin, 5 lives, increasing difficulty...

Dragon's Lair Cabinet:	A0	A1	A2	A3	A4	A5	A6	A7	B0	B1	B2	B3	B4	B5	B6	B7
& LD-V1000 player:	0	0	1	1	0	0	1	1,	1	0	0	1	1	0	0	1
& PR-7820 player:	0	0	1	1	0	0	1	1,	1	0	0	1	1	0	1	1

Space Ace Cabinet:	A0	A1	A2	A3	A4	A5	A6	A7	B0	B1	B2	B3	B4	B5	B6	B7
& LD-V1000 player:	0	0	1	1	0	0	1	1,	1	0	0	1	1	1	0	1
& PR-7820 player:	0	0	1	1	0	0	1	1,	1	0	0	1	1	1	1	1

1 = ON, 0 = OFF

**\*Note:** The switch banks are printed with 1-8.

The circuit board is printed with 0-7.

**Ignore the incorrect #s printed on the switch banks**

### **Operation:**

At power-up, the default game version will be the one last played before shutdown. It will be displayed in player-2's score and optionally on-screen\*.

A ten second timer (displayed in the credits) will begin to tick down.

At this time, you may press "sword/fire" to begin the default game immediately, or wait for the ten seconds to elapse for the default game to start.

Moving the joystick up or down will change the default game setting. View the selection on player-2's score. After changing the game setting, you may press "sword/fire", or wait for the timer to elapse to start the game.

\*If your machine has a "LaserCon - Laserdisc Player Conversion Card" installed, you will view the selected ROM version on the video screen. (Note - the Merlin-1000 firmware and the LaserCon firmware must be compatible versions to use the on-screen feature. For Merlin-1000 V1.0, use LaserCon firmware 7.10M1. Contact me if you need a firmware update or have questions about this configuration.)

For a "Fixed" ROM set: With dipswitch B7-ON, select and *start* the desired game. Then power off the machine and set B7-OFF. The selected game version will always start at power-up.

### **Important Information about the Scoreboard Display**

The selected ROM set will be displayed in the Player Two score area.

DLE2.1 has been provided in two versions to eliminate the need to change a dipswitch: one version for normal play (without any prototype animation), and another with prototype animation when using the newer 2003 disc.

When selecting DLE2.1: a 'P' in the "lives" area indicates that the 'P'rototype version is selected and the extra scenes will be played.

\*Note- a prototype disc (2003) can be operated in either Standard or Prototype mode. Do not select "Prototype Animation" if you have a standard disc (1983) installed or you are using a PR-7820 player. No damage will be done, but the game will fail to start.

### **If you wonder why certain letters are displayed strangely...**

The display controller chips used on the Dragon's Lair or Space Ace scoreboard have limitations for what can be displayed. Each digit has 16 possible settings and nothing else is allowed. The 16 settings are the digits 0-9, a hyphen, a blank space (off), and the capital letters H, E, L, and P. (Why they chose the letters for "help", I don't know.)

In order to display a few extra characters, I did a few tricks...

A : alternately displaying 9 and P

B : 8

C : L and hyphen (I'm not happy with this one, but it's the best I could do)

D : 0

F : 7 and hyphen (appears backwards)

S : 5

If you have a "LaserCon LDP Converter" installed, then you can read the selected ROM version "on screen", and this is not a problem.

That's it. I hope you enjoy your new MultiROM board. If you have any questions, comments or suggestions, contact me at [shaun@wood1st.com](mailto:shaun@wood1st.com) or by posting a note on the message board at the Dragon's Lair Project website. <http://www.dragons-lair-project/>