The LaserCon Merlin-1000 MultiROM Board

Installation Instructions

Use with Firmware Version 4.x
by Shaun D. Wood - 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 and play any of 4 different control ROM sets.

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.

Merlin-1000 works with the original factory laserdisc players:
Pioneer PR-7820 and the Pioneer LD-V1000
And with popular player conversion boards:
LaserCon LDP Converter, Hi-Tech, Laser Ace and Dexter.

Included Romsets:
Dragon's Lair –F2,   Dragon's Lair Enhancement 2.1
Dragon's Lair Enhancement 2.1 – Prototype (Limited Edition disc required)
Space Ace –Version A3, Space Ace Enhancement V1.0
Optional Romset:
Dragon's Lair II Enhancement - Time Warp

Board installation – Remove the main board from the cabinet. 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. Do not re-install the board yet.

Set Dip-Switches: Use the included *Main Board Dipswitch Set-Up Chart.* **The original settings charts from the manuals are no longer valid when using the Merlin card.**

Note: The circuit board is printed with A0-A7 and B0-B7.
The switch banks are printed with 1-8. **Ignore the incorrect #s printed on the switch banks.** (Example: Switch A0 in these charts, is #1 of SW2)

Connect the laserdisc player ribbon cable, and then re-install the main board back into the game cabinet.

Operation:
If switch A7 is on:
At power-up, the default game version will be displayed in player-2's score area and optionally on-screen*.

*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. Contact me if you need a firmware update or have questions about this configuration.)

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 stop the timer and allow you to change the default game setting as well as change the laserdisc.
Press "sword/fire" to start the game.

If switch A7 is off:
The default game version will always auto-start at power-up.
(DL version F2 is default for shipping.)

Anytime the attract sequence is playing:
You may change the game version by holding LEFT + SWORD/FIRE for 4 seconds. This only works while the attract is playing, not during game play, nor during "deposit coins" type screens. The Game will stop, the ROM selection will be visible on Player 2's score and optionally on-screen, as described above. Move the joystick to select the desired game. Change the laserdisc if necessary. Press Sword/Fire to start the game.

Important Information about the Scoreboard Display
The selected ROM set will be displayed in the Player Two score area.

Dragon's Lair Enhancement V2.1 has been provided in two versions to eliminate the need to change a dipswitch. In the display, you will see... **"DLE"** for normal play, or **"DLE P"** for prototype animation when using the newer 2003 disc.
*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.

Why certain letters are displayed strangely on the Scoreboard…
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
D : 0
F : 7 and hyphen (appears backwards)
S : 5

If you are using a "LaserCon LDP Converter" to control a newer Pioneer player (LD-V8000/4000/2000), consider purchasing a Merlin-8000 upgrade kit: http://wood1st.com/LaserCon/Extras/index.htm
The Merlin-8000 provides extra features and will allow you to remove the conversion card for use in another game.

That's it. I hope you enjoy your new Merlin-1000 MultiROM board. If you have any questions, comments or suggestions, contact me at:
shaun@wood1st.com