

LaserCon "Merlin-Dx"

EPROM Update Instructions

Design and Control Firmware Version 1.x - by [Shaun D. Wood](#)

The Merlin board is a multi-game replacement ROM board for Cinematronics' Dragon's Lair or Space Ace arcade machines (1983-'84 versions only). It provides multiple versions of Dragon's Lair, Space Ace, and (optionally) Dragon's Lair 2 to be played in your one game cabinet. This "Dx" version is specially programmed to control [The Dexter laserdisc-replacement player](#), which is a solid-state video player. You must have a Dexter to use Merlin-Dx. If your arcade machine is using a laserdisc and laserdisc player, then you will need a different version of Merlin. Please email me for more information.

Installed ROM sets:

- Dragon's Lair – F2 (original factory game)
- Dragon's Lair Enhancement 2.1
- Dragon's Lair - Prototype game
- Space Ace – A3 (original factory game)
- Space Ace Enhancement 1.0

Optional ROM set:

- Dragon's Lair II Enhancement - Time Warp

Parts List: Merlin EPROM, Dip-Switch sheets and these instructions.

Before you begin your Dexter installation, please watch Dexter's "How To" videos at this site...

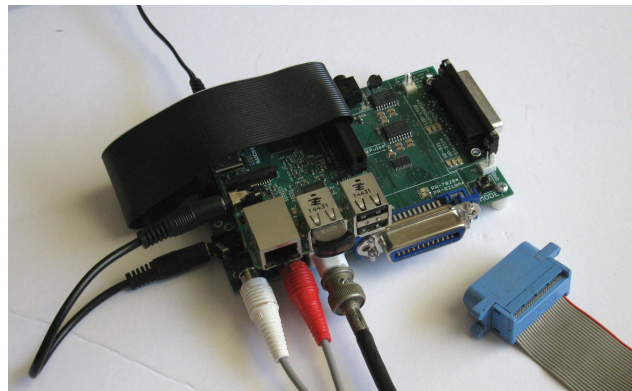
<https://www.daphne-emu.com:9443/phpBB3/viewtopic.php?f=28&t=3031>

Part 1: Install and Configure your Dexter:

1. Mount Dexter inside your cabinet.

Only attach the power, audio and video cables at this time.

Do not attach the ribbon cable.



Download and un-zip the "Dexter Manager" software to your PC.
<http://www.laserdisc-replacement.com/download/DexterManagerBase.zip>

Open the folder " DexterManagerBase"
Double click and run the file "DexterManager.exe"
Click "Update all" to update the manager software to it's latest version. If you don't see an "Update all" button, then you are up to date.

When finished updating, the software will restart. If Windows Firewall asks permission to access the internet, click "Allow Access".

Exit/Close Dexter Manager.

2. Download and un-zip the "Merlin Menu disc" to your PC.
<http://www.wood1st.com/LaserCon/Dx/merlin-disc-v1.zip>

Remove the USB drive from your Dexter
and plug it into your PC.
Copy the file "merlin-v1.ldimg"
to the folder "disc" on the USB drive.

3. Re-Start Dexter Manager (DexterManager.exe) with the USB drive still in the computer. You should now see all of discs you purchased with your Dexter, along with "Merlin Menu" listed in the main window of the Dexter manager software. You should also see a button in the upper right corner.
Click "Update all" to update the Dexter firmware on your USB drive.
Bullet the Merlin menu and then click "Save Changes" and exit Dexter Manager.

Down near the clock on your Windows PC, find and click the "Safely Remove Hardware and Eject Media" icon.

4. Remove the USB drive from your PC and place it back in Dexter.

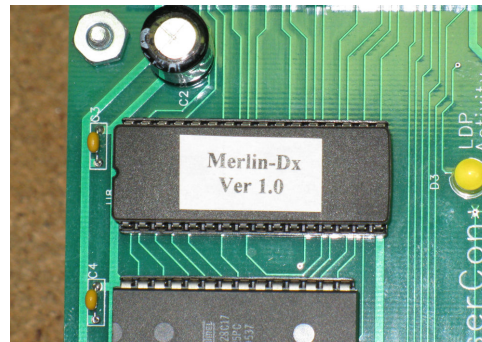
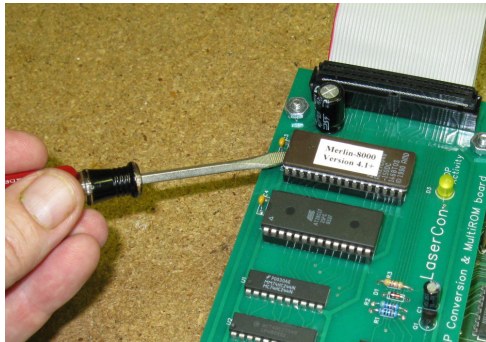
With the game control ribbon cable disconnected, power up your machine.
Dexter will begin the process of updating it's firmware and image files. This process will take approximately 20 minutes. Do not power down until all screen activity has stopped, and the screen has remained black for over a minute.

Power off the machine once the updating has finished.

(If you are unfamiliar with un-zipping and moving files within Windows, please email me for assistance.)

Part 2: Install the Merlin EPROM and Configure your game board:

1. Remove the main board from the game cabinet. Use a small screwdriver to remove the old EPROM from your Merlin board. Carefully install the new Merlin-Dx EPROM: Take notice that the "end notch" of the chip must face the top edge of the board. Do not force it. Make certain that all legs are resting in the socket before pressing down. *Do not re-install the board yet.*



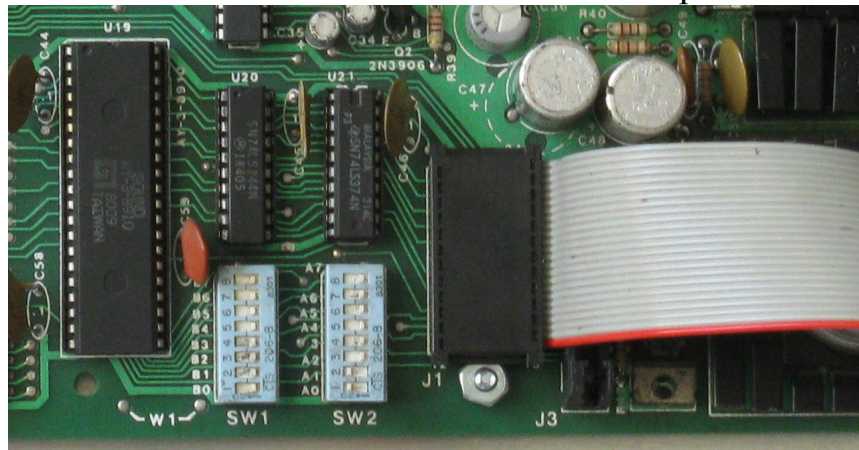
2. Use the included "switch settings" sheets to set your board's dip-switches. **The original switch settings from the manuals are no longer valid when using the Merlin board.** Keep the new dip-switch charts within the machine.

***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.

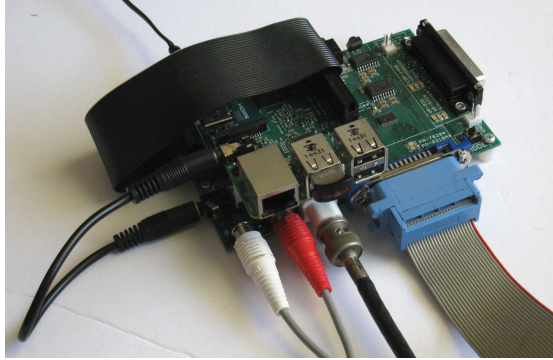
3. Install the player control ribbon cable. Dexter uses the 24 pin ribbon cable that came with the game from the factory. Email me if you need this cable.

Please take notice of the orientation in the photo.



Re-install the main board back into the cabinet.

4. Connect the player control ribbon cable to Dexter.



Operation:

Upon power up, you will hear a beep, and Merlin will begin a quick diagnostics. Your main board type / player-mode will be momentarily displayed in Player one's score area... '1' for LD-V1000 mode, '7' for PR-7820 mode.

If any Dexter/Merlin communication problems are found, an error code will be displayed, otherwise the default game will scroll through the Player two score area. A second beep will be heard, and the results of the board's clock test will be displayed. Finally, the third "chime" will be heard, and the game will begin.

You may change the game 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, and the game selection menu will come on. Move the joystick to select the desired game. Press Sword/Fire to start the game.

Error Codes:

E1 - Command/Ready remains HIGH

E2 - status stays LOW

E3 - status stays LOW after a HIGH

E1-E3: Check ribbon cable for proper connection (part 2, steps 3-4)

E4 - LD I/O error (U20, U21)

E4: Main control board is defective

E5 - Dexter version error

E5: Use Dexter Manager to update firmware (part 1, steps 3-4)

E6 - No Merlin menu disc

E6: Download and install Merlin menu disc (part 1, steps 2-4)

E7 - No game discs loaded in Dexter

E8 - No usable game discs loaded in Dexter

Contact <http://laserdisc-replacement.com/> to obtain DL and SA laserdisc images.

If you have any problems, questions, or comments, contact me at shaun@wood1st.com