

LaserCon

Laser Disc Player Conversion Card for Dragon's Lair, Space Ace & M.A.C.H.3

Version 2.1

Design and Firmware by Shaun D. Wood

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M.A.C.H.-3 Installation Instructions

LaserCon is an adaptor card for the replacement of the original laser disc player installed from the factory to a newer, more reliable player. It is to be installed in an arcade version of MACH-3 or the U.S. version of Dragon's Lair or Space Ace. These instructions apply only to MACH-3 installation.

Parts List

LaserCon board, Interface cable (MACH-3 version), 4 - 1" risers, 4 - Mounting Screws

Supported Replacement Player: Pioneer LD-V8000

The LD-V8000 is the only supported replacement player for use with M.A.C.H.3.

This is because of its ability to turn off the Drop Off Compensation and Sync signal during a search.

The MACH3 control board uses this loss of signal to determine that a search has occurred.

If you know of any other player with this ability, please contact me.

Installation Instructions

1. Set Dipswitches:

On LaserCon, set switch 1 2 3 4
 ON OFF ON OFF

LaserCon Dip-switch settings

| Program Space | Switch 1 | Switch 2 | Switch 3 | Switch 4 |
|--|----------|----------|----------|----------|
| Future Use | 0 | 0 | 0 | 0 |
| Future Use | 1 | 0 | 0 | 0 |
| Future Use | 0 | 1 | 0 | 0 |
| Future Use | 1 | 1 | 0 | 0 |
| Future Use | 0 | 0 | 1 | 0 |
| M.A.C.H. 3 PR-8210 mode | 1 | 0 | 1 | 0 |
| Dragon's Lair / Space Ace LD-V1000 mode | 0 | 1 | 1 | 1 |
| Dragon's Lair / Space Ace PR-7820 mode | 1 | 1 | 1 | 0 |

2. Configure your new player:

The player must be configured for proper serial communication as follows:

**Baud Rate: 4800, No Parity, 1 stop bit, Data Length: 8 bits,
TxD terminator: <CR>.**

Connect the player to a TV or monitor.

Press and hold the “DISPLAY” button while powering-on the player.

To make changes, press “STEP FORWARD” to highlight an item, then press “STEP REVERSE” to change the setting.

Press “SCAN FORWARD” to reach Page-3

Set “DOC CONTROL” to Off

Press “SCAN FORWARD” to reach Page-5 “RS-232 SWITCH P-5”

Set: Baud Rate: 4800, No Parity, 1 stop bit, Data Length: 8 bits

Press “SCAN FORWARD” to reach Page-6 “RS-232 SWITCH P-6”
Verify: TxD terminator: <CR>.

Install the LD-V8000 player into the game cabinet.

Attach the 15-pin connector of the interface cable to the back of the player.

Attach “Video Out” to J18 on the small filter board.

Attach “Audio Out (Left)” to J20 on the small filter board.

Attach “Audio Out (Right)” to J24 on the small filter board.

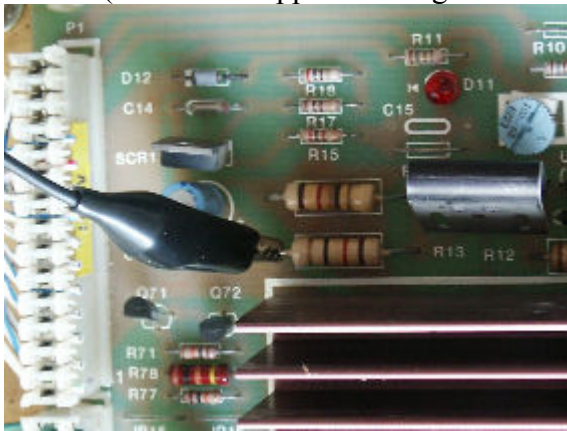
Plug AC power into the cabinet’s player outlet.

Make sure that the player’s power switch is pressed in (ON).

3. Install the LaserCon card:

- a. Find a clear area on the back panel, near the Power Supply board, to mount the LaserCon card.
- b. Mark the hole locations with a pencil and pre-drill 1/16" pilot holes.
- c. Mount the card to the backboard with 1" screws and 1/2" spacers.
- f. Attach the alligator lead wire to +5Volts.

You can attach to any point supplying +5V power that you like. My recommendation is to **attach to the leg of resistor R13 on the side closest to connector P1 of the power supply board.** (Ground is supplied through the interface cable.)



- g. Connect the Interface cable.

Attach the 9-pin connector of the interface cable to LaserCon's CN2. Attach the RCA connector to J22 on the small filter board.

NOTE:

This is a custom cable. The pin connections are as follows...

| LaserCon | 9-pin Female | Player | 15-pin Male |
|----------|--------------|--------|-------------|
| GND | Pin-1 ----- | Pin-11 | GND |
| TxD | Pin-2 ----- | Pin-10 | RxD |
| RxD | Pin-3 ----- | Pin-9 | TxD |

| | | Mach3 Filter board – RCA J22 |
|------------|----------------------------------|------------------------------|
| Control-In | Pin-6 ---- 470ohm resistor ----- | Coax Shield Conductor |
| | Pin-6 ----- | Coax Center Conductor |

Operation

Power on your machine.

The red LED should light, indicating that the board is properly powered.

The Green LEDs may be momentarily lit at power-up, but will immediately go dark.

After a one second delay, the “LDP” LED should light, indicating that LaserCon has established serial communication with the player.

After about five seconds, the “CPU” LED will rapidly blink, indicating that LaserCon is receiving the “PLAY” command from the main board. It will then go dark.

The Player should now begin to spin-up and play. The “LDP” LED will go dark, indicating that the player is busy.

Once the game is up and running...

The red “POWER” LED will remain lit,

The green “CPU” LED will remain dark except when receiving control commands (rapid blinking).

The green “LDP” LED will remain lit except when busy during searches.

Other Information

CN1 is not used for MACH3 operation.

If you wish to use your LaserCon card in a Dragon’s Lair or Space Ace machine, you will need to obtain the interface ribbon cable for connection to the main board. It is a 7” 24-pin ribbon cable with dip-plug connectors on each end. You can also contact me for the part.

Disclaimer

Use at you own risk. By accepting this product, you also accept all responsibility for the use of this product and release its manufacturer, Shaun D. Wood, from all possible responsibilities for damages, or difficulties, that the user has incurred due to use or misuse of this product.

And Finally...

LaserCon is an open source project. If you want to write code for other games or players and would like to have copies of the schematics and firmware files, contact me, or visit www.wood1st.com/lasercon. I only ask that you donate your work to be included in future releases of LaserCon.

If you need any help or have any questions, comments, or suggestions, please contact me at shaun@wood1st.com.