# Operating Guide for the Technovision LD48

LD48EXT program chip Version 1.2

## General Information

The LD48 with the LD48EXT program chip is capable of providing up to 48 grounds to DC lamps when controlled through RS232 commands. The first 24 lamp outputs are located on BANK #1 of the LD48 and the second 24 are located on BANK #2.

When the LD48 powers up, it has to check to see if the ID SETTER is attached (pulling the appropriate pins low on port B to set the ID number of the board). If the LD48 powers up and sees no ID SETTER attached, it does not change the current LD48 id number.

**Setting the ID of the LD48 (default is 1 for a new board).**

To set the ID of the board, you must power up the LD48 with the appropriate bits pulled to ground on the Parallel port of the LD48.

| Pin# | Description (ID value) |
|---|---|
| 10 | 1 |
| 22 | 2 |
| 9 | 4 |
| 21 | 8 |
| 8 | 16 |
| 20 | 32 |
| 7 | 64 |
| 19 | 128 |
| 1 and 13 | GROUND |

**Example:**
To set the board ID to 25 you will jumper pins 8, 21 and 10 to GROUND (value 16 + 8 + 1).

## RS232 Commands (9600 baud, 8 bits, no parity and 1 stop bit)

**DB9 male connector on LD48 (this is not a standard RS232 port – do not attach any other pins):**

| Pin# | Description |
|---|---|
| 2 | RS232 command input |
| 5 | Data Ground |

**Protocol:**

There are two formats for the RS232 commands being sent to the LD48 with the LD48EXT firmware – individual lamp control and full card setting. There should be at least 20ms between each set of commands.

**Individual lamp control (2 byte command):**

Byte 1 = card id (01H..FEH)
Byte 2 = lamp and the action (bits 0..5 = LAMP# and bit 6 = lamp condition (1=LAMP ON or 0 = LAMP OFF).

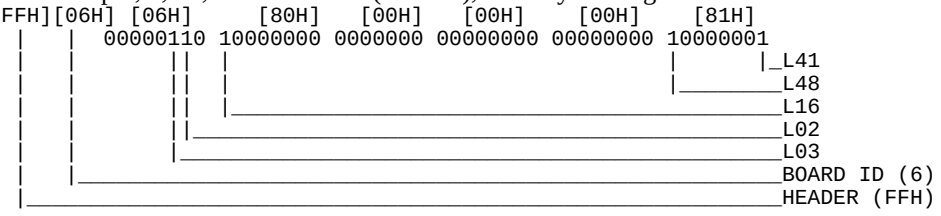
**Full Board Control (8 byte command):**

Byte 1 = FFH
Byte 2 = board id (01H..FFH). An id of FFH represents ALL boards
Bytes 3 to 8 = lamp setting (each bit = lamp output)

**Example:**

[FFH][FFH][6 bytes] will set all boards to the bits represented by the 6 bytes.
[FFH][01H][6 bytes] will set board 1 to the bits represented by the 6 bytes.

To set lamp 2, 3, 16, 41 and 48 ON (board 6), the 8 byte string sent would be:



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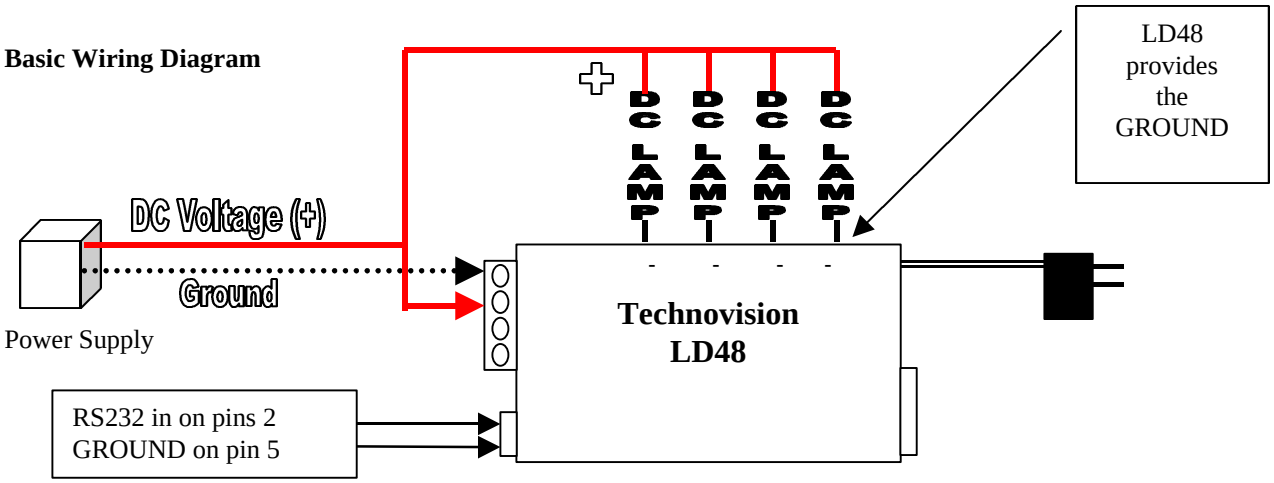
**Basic Wiring Diagram**




Note 1.

**The LD48 board is rated at .5 (½) amps per output to a maximum voltage of 48 volts (DC). VOLTAGE + has to be connected to the controller to provide clamping diode protection and NOT to provide power for the lamps.**

## Wiring Instructions when providing grounds to DC lamps

**If 24 or less lamps using the same power supply (not supplied) are being used:**

Attach VOLTAGE + from the power supply to the + side of all DC lamps and the terminal labeled B1V+ on the 4 position terminal connector. Attach the GROUND from the DC power supply to the terminal labeled GND. Attach the ground from each lamp to the matching terminal number on the LD48 board (BANK #1).

**If more than 24 lamps using the same power supply are being used:**

Attach VOLTAGE + from the power supply to all lamps and the terminal labeled B1V+ and B2V+. Attach the GROUND to an input terminal labeled GND. Attach the ground from each lamp to the matching terminal number of BANK #1 and BANK #2 on the LD48 board.

**If lamps using two different power supplies are being used:**

Attach VOLTAGE + from the first power supply to all lamps using that voltage and to the terminal labeled B1V+. Attach VOLTAGE + from the second power supply to all lamps using this voltage and the terminal labeled B2V+. Attach the GROUNDs from both power supplies to the input terminal labeled GND. Attach the ground from each lamp to the matching terminal number on the board. Terminals on BANK #1 will provide the grounds to lamps connected to B1V+ and terminals on BANK # 2 will provide the grounds to lamps connected to B2V+.

## LD48 Mechanical Specifications

- When used as a lamp driver the outputs are rated at 48 volts (DC) MAX @ ½ AMP.
- Board can facilitate the switching of two separate DC voltage levels (24 outputs/voltage).
- Clamping Diode Protection.
- Terminal contacts provided for all wires.

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