



LasrPlay Programming and Installation Manual



Multi-channel Synchronizers and Controllers for
Pioneer Video laserdisc players

Dave Jones Design



Dave Jones Design

87 Chestnut St., Owego, NY 13827 USA

phone: (607) 687-5740

fax: (607) 687-5898

e-mail: info@djdesign.com

web: www.djdesign.com

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INTRODUCTION

The LasrPlay is an intelligent, programmable controller made by Dave Jones Design for use with Pioneer brand industrial laserdisc players. It's function is to play a section of a Video laserdisc (or multiple laserdiscs) in a continuous loop. In systems with multiple channels of video, each channel can be programmed to start playing at the same time as the rest of the channels or be set to play in a loop by itself. This synchronization of multiple images is extremely accurate and can be used to make several channels of video look like parts of a single larger image.

This manual describes the process of programming a LasrPlay synchronizer. A programming cable and software disk were provided with your LasrPlay and are required for programming. Replacement cables and software can be purchased from Dave Jones Design if yours were lost or damaged. You can also download the software for free from the web, as well as download instructions for making the programming cable from cheap parts available at most Radio Shack or local electronics parts stores. The programming cable is a special cable for use specifically with the DVDplay and LasrPlay synchronizers and you can not buy a pre-made one at a computer store. That store might be able to build you one from the instructions on the web though. The software and cable instructions can be found at Dave Jones Design's web site at **www.djdesign.com** in the "support" section.

The LasrPlay must be programmed at least once before it is used. This can be done for you by us, or you can follow the instructions in this booklet to program it yourself. The software is currently only available for PC computers. There are programs to run under MS-DOS or Windows95/98. If you are using Windows3.x, follow the instructions for MS-DOS. You can either install the software on your hard drive or you may prefer to simply run it from the floppy disk.

INSTALLING THE SOFTWARE

In Windows95 or Windows98

You can either install the software directly onto your desktop, or do a full installation which creates an entry in your Start menu and installs an uninstaller to remove the software later.

Installing on the desktop

1. Insert the floppy disc containing the programming software into your floppy drive.
2. Double-click on **My Computer**
3. Double-click on **3-1/2 Floppy**
4. Double-click on the **LasrSync** folder.
5. Drag the icon for **LasrSync.exe** over to your desktop.

Full Installation

1. Insert the floppy disk containing the programming software into your floppy drive.
2. Shut down all open programs, and if you have a virus protection program, disable it.
3. Click on the taskbar's **Start** button, then click **Run**.
4. In the window that opens, click in the text box and type in **A:\Setup.exe** (or **B:\Setup.exe** if B: is your floppy)
5. Click **OK**
6. Follow the on-screen instructions that the installer gives you. It gives you several options, but most people should simply keep clicking the **Next** button until it is done.

For MS-DOS, PC-DOS, or Windows3.x

1. If you are running Windows3.x and you are simply installing the software now, you can run a DOS shell to do this. If you are planning on also using the software now then you must actually close Windows first, not run a DOS shell. To run a dos shell to install the software, double-click on the MS-DOS icon. To actually close Windows you must double-click in the box in the upper left corner of Program Manager. When it says that this will end your Windows

session, click YES or OK. You should now be at a DOS prompt (like **C:\WINDOWS>**).

2. Insert the floppy disk containing your LasrPlay programming software into your floppy drive.

3. If you only have one hard drive, your prompt should now start with **C:** If you have more than one hard drive, change to the hard drive you wish to install the software on by typing in **D:** (or any other drive letter you wish to install the software onto) and hitting the **Enter** key. Your prompt should now have changed to the appropriate drive letter.

4. Create a sub-directory to hold your software, type in **MD \LASRCUST** and hit the **Enter** key.

5. Type in **COPY A:\LASRCUST*.* \LASRCUST** and hit the **Enter** key (use **B:** if your floppy drive is **B:**). Your software is now installed.

PARAMETERS TO CHANGE

There are a number of parameters that can be programmed into a LasrPlay. Some of them are required for the LasrPlay to work, while others are options that are used for special purposes.

First Frame - The first frame number of the section of the LaserDisc that is to be played by the LasrPlay. This number should be in the range of 1 through 53999 (or the second to the last frame number on the disc). This number must be lower than the "Last Frame" number. This parameter must be set for the LasrPlay to work.

Last Frame - The last frame number of the section of the LaserDisc that is to be played by the LasrPlay. This number should be in the range of 2 through 54000 (or the last frame number on the disc). This number must be higher than the "First Frame" number. This parameter must also be set for the LasrPlay to work.

BAUD Rate - The BAUD rate is the speed of the serial port on the LaserDisc player that the LasrPlay uses to communicate with the player. This needs to be set both in the LasrPlay and in the

LaserDisc player. Both devices must be set to the same BAUD rate or nothing will work. The BAUD rate should be set to the fastest BAUD rate that the LaserDisc player has. This is 4800 BAUD for the Pioneer 2000 series players, and it is 9600 BAUD for the 4000 and 8000 series players. This does not affect the BAUD rate used by the LaserDisc player. That must be set manually on each player. The 2000 series players typically have a switch on the back of the player, while the 4000 and 8000 series have their BAUD rate set from menus (refer to your player's manual for instructions).

Synchronize - In order for two or more channels of the LasrPlay to synchronize with each other, this option must be enabled in each of those channels.

Init Strings - The four init strings hold all of the initialization commands for the LaserDisc player. These commands are sent from the LasrPlay to the LaserDisc player during start-up. These are pre-programmed with the most common initialization commands and for most people never have to be changed. There are a number of commands available here, and some Pioneer players have extra ones. The commands each consist of a number followed by letters. The various commands are strung together into strings of 3 or 4 commands. Be careful what you change these strings to because if you eliminate one of the default strings your player will revert back to it's own default settings, which may not be what you want.

The default init strings in a LasrPlay are:

init string 1 - 0KL0DS
init string 2 - 1RA16RC

The 2 init strings shown above contain 4 commands that set the LaserDisc player to enable the front panel (OKL), don't display frame or chapter numbers on top of the video (ODS and 1RA), and to have a black background during rewind (16RC).

Some of the more common options are:

OKL = player's front panel enabled
1KL = player's front panel disabled (locked out)
1RA = display frame numbers
2RA = display chapter numbers

0DS = don't display text (see RA) (overrides RA)
1DS = display text (see RA)
0RC = blue background when squelched
16RC = black background when squelched
3AD = force analog stereo
7AD = force digital stereo
xxxSP = playback speed in fields per second (where xxx is a number between 1 and 255) (some players will play at all of these speeds, while cheaper players only play at a few speeds)

Comment - This is an optional text string and can be anything you want. It is usually used to remind you of what this LasrPlay was programmed to do, such as the name of an installation or performance, or the channel number of a multi-channel display.

PROGRAMMING THE LASRPLAY

You only need to program the LasrPlay if it was not done for you when you ordered it or if you want to adjust some of the parameters.

The LasrPlay comes with programs for MS-DOS (or PC-DOS) and for Windows95/98. Most newer PC's are running Windows95 or 98 while most older PC's are running DOS or Windows 3. If your machine is using Windows 3 then you must exit Windows and use the DOS program. Do not "shell" to DOS from Windows as this will not let the software find your serial port. Be very careful in choosing the modes and other parameters that you program into the LasrPlay. If you use modes or parameters that don't match your laserdisc disc, that channel will fail to work.

Programming in Windows95/98

1. Connect the LasrPlay programming cable to a serial port on an IBM style PC computer. PC type computers have serial ports with either 9 pin connectors or 25 pin connectors. Most newer ones just have 9 pins. The LasrPlay programming cable has a 9 pin serial connector. If your computer is an old model with a 25 pin serial port, you will need to get a 25 pin to 9 pin serial adapter. They are available at most computer and electronic parts stores.

2. Turn on the computer and let Windows 95 or 98 boot.

3. Plug the power cord into the back of the LasrPlay, and plug it into the wall. If it is a rackmount version, turn on the power switch.

4. Connect the LasrPlay programming cable to the LasrPlay channel to be programmed (each channel must be programmed separately). For multi channel synchronizers you should just start with the first channel and repeat this process for all channels.

5. If you installed your software on your desktop, double-click it now. If you did a full installation, click the **Start** button, then **Programs, Dave Jones Design**, and select **LasrSync**. If you didn't install the software, put the disk in your floppy drive, double click on **My Computer**, then double-click on **3-1/2 Floppy**, then double click on the **LasrSync** folder, and finally double-click on the **LasrSync.exe** icon.

6. Once LasrSync opens, go to the **Synchronizer** menu and select **Find Synchronizer**.

7. If you know which serial port your LasrPlay is connected to, select it. If you don't know, then select **Auto Detect**.

8. Click on the **Find Now** button and hit the reset switch on the front of the LasrPlay. The software will test you serial ports and try to locate the synchronizer. If you get an error message, check the cable or try using the Auto Detect setting.

9. If it finds your synchronizer it will load the parameters that are currently programmed into it and it will display them in a window that will let you change them.

10. Read the section of this manual called Parameters To Change in order to understand the various parameters. Change them on this window to what you want.

11. Once you have set all of the parameters the way you want, hit the **Save To Synchronizer** button. Until you do this the parameters have only changed on the screen, not inside the synchronizer.

12. If you want to change more channels on the synchronizer, move the programming cable to the next channel, otherwise skip over the next step and go to step number 14.

13. Hit the reset switch on the front of the synchronizer and wait for the LED to change from red to orange. This takes about 7 seconds. Now click the **Load From Synchronizer** button on the screen and go back to step 10 in these instructions.

14. When you are done programming the synchronizer, simply disconnect the cable and click on the **Cancel** button on the screen. Then select **Exit** from the **File** menu to close the program.

Programming under DOS

1. Connect the LasrPlay programming cable to a serial port on an IBM style PC computer. If the computer only has one or two serial ports, it doesn't matter which port you use. If it has more than 2 then you must find out which ones are COM1 or COM2. PC type computers have serial ports with either 9 pin connectors or 25 pin connectors. The LasrPlay programming cable has a 9 pin serial connector. If your computer is an old model with a 25 pin serial port, you will need to get a 25 pin to 9 pin serial adapter. They are available at most computer and electronic parts stores.

2. Turn on the computer. The LASRCUST software is a DOS program, so if the computer comes up in Windows 3.x you need to close Windows (by double clicking on the box in the upper left corner of program manager and answering "yes" when it asks if you want to end Windows). You should not run a DOS shell under Windows, you should quit Windows. If the computer comes up in Windows 95 and you plan to use the DOS program, you need to restart in DOS only mode. Click on the **Start** button in the lower left corner of the task bar then select **Shut Down**, then **Restart the computer in MS-DOS mode**. Some customers have had problems programming on machines with specific Local Area Network cards. If you experience this, see the special note in the "Common Problems" section at the end of this manual.

3. If your LasrPlay is in a rackmount box, make sure that the power switch on the front is off. Plug the power cord into the back of the LasrPlay, and plug it into the wall.

4. Connect the LasrPlay programming cable to the LasrPlay channel to be programmed (each channel must be programmed

separately). For multi channel synchronizers you should just start with the first channel and repeat this process for all channels.

5. If you installed the software on your computer, change to the drive it is installed on by entering the drive letter followed by a colon and then hit **Enter**. If you didn't install the software on your computer, put the disk into the floppy and type in **A:** (or **B:** if that is your floppy) and hit enter.

6. Now change to the directory the software is in by typing **CD \LASRCUST** and hitting **Enter**.

7. If your LasrPlay is a rackmount version, push the power switch (it should light up). Smaller LasrPlays will already be on at this point.

8. Enter **LASRCUST** at the keyboard but *do not* hit the **Enter** key yet.

9. Hit the reset switch on the front of the LasrPlay. Wait for the lights on the front of the LasrPlay to change from red to orange (this takes about 7 seconds).

10. As soon as the lights change to orange, hit the **Enter** key on the keyboard. This runs the software. It will now try to find the correct serial port and the LasrPlay connected to it.

11. If everything has been done correctly, you should now see a list of the parameters programmed into the LasrPlay as well as the list of commands available to you. If instead, you see some error messages or were returned to the DOS prompt, check the cable connections and try again or see the Common Problems section at the end of this manual.

12. When you first start the program, the first parameter in the list will be highlighted. Use the up and down arrow keys on the keyboard to move the highlight from parameter to parameter until you get to the one you want to change. See the "Parameters To Change" section before this section in this manual.

13. When you have highlighted the parameter you wish to change, hit the "enter" key on the keyboard. For BAUD rate and Synchronize this will toggle between each of the choices. For the number or text

items this will then let you enter that parameter. For number and text items simply hit the "enter" key again when done to accept the new data.

14. Once you have set the parameters that you wish to change, you must hit the 'S' key on the keyboard to save the new parameters into the LasrPlay. Until you hit the 'S' key, the new parameters have not been sent to the LasrPlay.

15. If you are finished programming all of the channels that you plan to change you can skip steps 16 through 19. Disconnect the programming cable from the LasrPlay and then hit the "escape" or "ESC" key on the keyboard. If you can't find this key then hit the "X" key. You can now turn off the computer and disconnect the other end of the programming cable.

16. If you have more channels to program, you should now move the programming cable to a different channel on the LasrPlay.

17. Hit the reset switch on the front of the LasrPlay and wait for the lights to change from red to orange.

18. As soon as the lights change from red to orange, hit the "L" key on the keyboard and the program will read the current data from the new channel and display it on the screen. If there is a problem reading the new channel, you will see an error message. If this happens, try steps 17 and 18 again.

19. Repeat steps 12 through 18 for each channel on the LasrPlay that you want to program.

INSTALLING THE LASRPLAY

1. If this is the first time that you have used the LaserDisc players with the LasrPlay, you need to make sure that the players all have their BAUD rates set to their maximum rates (and must match the BAUD rate set during programming of the LasrPlay. This is 4800 BAUD for the Pioneer 2000 series and 9600 BAUD for the 4000 and 8000 series. Refer to your LaserDisc player manual for instructions on how to set this. In addition, if you are using a 4000 or 8000 series player, you should set the "Termination Character" to <CR>. The 8000 series also have a few other parameters to set. The serial port should be

set to 8 data bits, 1 stop bit, and no parity. The 8000's "Input Device" should be set to serial, and the "RS232 Function" should be set to controller.

2. Plug the power cord into the back of the LasrPlay, and plug it into the wall or the power strip used by the Pioneer LaserDisc player(s) that you are using. There are two typical ways of setting up the power. One is to plug all the LaserDisc players and the LasrPlay into one power strip, and turn the power strip on and off to turn the installation on and off. The other method is to plug them all into the wall and turn the LaserDisc players on and off individually. In this method you can leave the LasrPlay plugged in all the time (it uses ten times less power than a night light).

3. Connect the 15 pin cables from each channel of the LasrPlay to each of the LaserDisc players.

4. Connect all of the video and audio cables to the LaserDisc players.

5. If your LasrPlay has the optional sync reference out, connect it to the Comp. Sync input of the first laserdisc player. Now connect another cable from the sync loopthru output of that player to the sync input of the next player. Continue to chain all of the laserdisc players together this same way. Make sure that the termination switch on all of the players except the last one in the chain are set to HI-Z. The last one in the chain should be set to 75 ohms.

6. If your LasrPlay has the optional Network Connector, and you are connecting multiple LasrPlay and/or DVDplay synchronizers together to act as one large one, connect them together using standard audio RCA (a.k.a. "phono") cables. If you are connecting 2 units, simply run a single cable between the Network Connector on each unit. If you are connecting more than 2, you need to use RCA/Phono "Y" adapters to split the cables so they can loop through each Network Connector, connecting all of them together.

7. Turn on the power for the LasrPlay and all of the LaserDisc players.

8. That's all. About seven seconds after the LasrPlay has been turned on, it will take over control of the LaserDisc players and the

cycle will begin. If there are no discs in the LaserDisc players, the LasrPlay will open the drawers and wait for you to insert them. If you power up the LaserDiscs one at a time, or if you have to insert the discs into the players after powering up, you may have to hit the reset switch on the LasrPlay after the players have gotten up to speed. If you do this, there will be a 7 second pause and then the players will reset and a cycle will begin.

9. When you are done for the day, you can just turn off the power strip and everything will stop. This is not the way that Pioneer recommends to shut the system down, but we have many customers who use this method regularly and have never had a problem (one museum show ran this way for 12 hours a day for 13 months using 38 LaserDisc players with no problems). The LaserDisc players must not be moved or bumped when power is turned off this way. Pioneer recommends that you park the players before turning off the power. To do this, you must wait until the cycle is playing and the status lights on the LasrPlay are all green. At this point you can hit the stop buttons on all of the players. When the park lights on all players are lit up, you can turn off the power. If you need to remove the LaserDiscs from the players, you will need to unplug the LasrPlay or hold the reset switch down on the LasrPlay while you eject the LaserDiscs, otherwise the LasrPlay won't let you remove the discs.

EXTERNAL TRIGGERING

If you ordered your LasrPlay with the optional Network Connector, you can use it as an external trigger to start your synchronizer's playback loop. To do this you will need a special switch, or a control device that has a programmable set of contact closures.

The Network Connector is an RCA (a.k.a. Phono) connector. When it's center pin is connected to it's outer shell, the synchronizer will not start playing it's playback loop. Once the connection is opened, playback starts.

To do it with a switch, you need a pushbutton switch with "normally closed" contacts. This means that the switch's contacts are connected together until you push it. The more common type is the "normally open" type, so be sure that you get a "normmally closed"

type or a “Single pole double throw” switch that has both normally open and normally closed contacts.

Simply connect the “common” and “normally closed” contacts of the switch to the center and outside of an RCA plug, and plug it into the Network Connector. When you push the button, the contacts are opened and playback starts.

COMMON PROBLEMS

1. The most common problem users of the LasrPlay have is forgetting to set the BAUD rate on their LaserDisc players. You need to do this before using the system for the first time. The BAUD rate of the LaserDisc player should be set to the highest rate supported by that player (4800 for the 2000 series, and 9600 for the 4000 and 8000 series). The BAUD rate programmed into a given channel in the LasrPlay using the LasrCust program must match the BAUD rate set on the player connected to that channel. The various channels on a LasrPlay can be set to different BAUD rates, as long as each channel matches the player connected to it. In addition, if you are using a CLD-V8000 you must also select 8 data bits, 1 stop bit, and no parity. The CLD-V8000 also needs the parameters for "Input Device" set to "serial", and the "RS232 Function" set to "controller". Both the CLD-V4400 and the CLD-V8000 should have the "Termination Character" set to <CR>.

2. If you plan to not use all of the channels on your synchronizer, the unused channels must have the “Synchronize” parameter turned off. Otherwise they will prevent the rest of the channels from starting.

3. A common problem with programming the parameters is not resetting the LasrPlay after moving the programming cable from one channel to another. The software will work most of the time without hitting the reset button, but it is only 100% reliable if you hit the reset button and wait for the red lights to turn orange.

4. Another common problem with programming a multi-channel LasrPlay is forgetting to hit the "L" key to load or read the data from the LasrPlay before changing the parameters.

5. Also when programming the LasrPlay, don't forget to hit

the "S" key after changing parameters in order to save the new parameters. The parameters that you change are only updated in the LasrPlay when you hit the "S" key.

6. Some customers have reported problems programming the LasrPlays on Windows 95 computers connected to specific Local Area Networks. This hasn't happened often enough for us to determine if this is specific to certain LAN cards or LAN software. If you have this problem, try using a different, stand-alone computer. If you can, please let us know the hardware and software you use for the LAN so we can try and duplicate this problem to solve it.

7. We have included a special version of the software called LASRCUS2.EXE for those people that have problems caused by local area networks. This software is exactly the same as LASRCUST.EXE except that you can specify the COM: port when you run it. On the command line enter either:

LASRCUS2 1	(for COM1:)
-or-	
LASRCUS2 2	(for COM2:)