

Panasonic LX-97 DVD Player

Team 7700P

Rolling Hill Estates, California

-Sarah Arata

-Matthew Rosenbaum

-Sean Pelecarini

-Felix Pope

-Abby Chiang

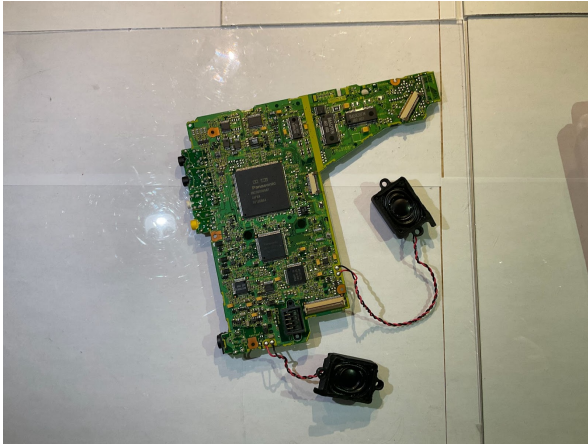
-Natalie Longfellow

-Ryan Baccura

We are Team 7700P, from Rolling Robots in Rolling Hills Estates and we present to you our Reverse Engineering Online Challenge Submission, a DVD player. A DVD player was chosen because of its unique niche in the world of technology. For example, it's outdated enough to be easily accessible, but still advanced enough to be a worthwhile exercise. Additionally, DVD players haven't been used commonly for a while so it serves as a good opportunity for us to gain insight about how an unfamiliar machine works. Our DVD player, a Panasonic LX-97, has taught us a lot about the inner workings of one of the machines that had a large impact on the normal lives and routines of a standard citizen. By reverse engineering the DVD player, we observed that each unique component has its own special functions that all work together to give the machine life. From this, we learned that working together is a vital part of what makes a team: teamwork, functionality, positivity, and much more.

In the process of disassembling the DVD player, we followed strict guidelines regarding safety around sharp edges and other hazards. First among these guidelines was to always attempt non-destructive disassembly in order to minimize damage and unintentionally hazardous surfaces. As for the actual disassembly process, we started by removing all external screws and safely storing them. Afterwards, the plastic plating was removed and we started working on the circuitry's gentle deconstruction. Eventually, we extracted the internally-mounted screws and detached the circuits and video screen. It was here that destructive force was first used against a plastic hinge that couldn't be removed normally. Finally, with the whole machine disassembled, the plastic plates and joints were put back together again to create an empty shell for display purposes.

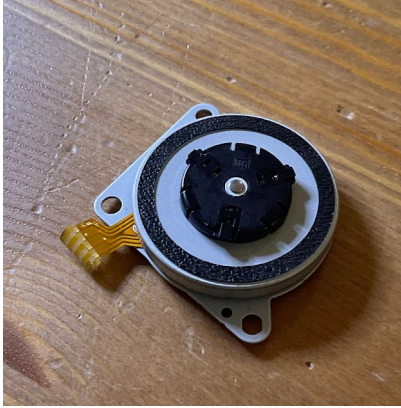
Components:



The DVD player's speakers, CPU, and other assorted chips that are likely used to control the laser reader, its movement system, the screen, and the audio.



The laser reader and its movement system. The laser reader uses its laser to scan the bumps on the DVD and translate it into a movie. It moves via two threaded poles that can spin and move the laser along the radius of a DVD.



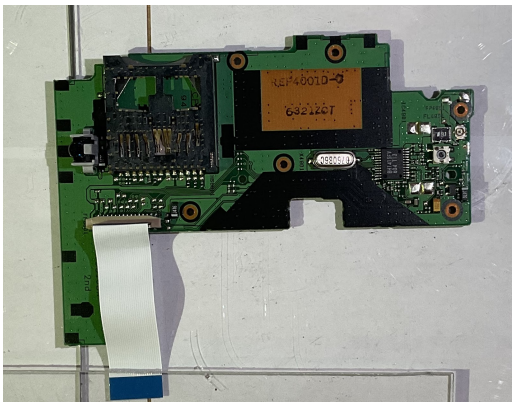
The motor used to turn the DVD in its slot so it can be read by the laser reader shown above this motor.



The display screen that serves to show the movie that has been embedded on a DVD. The screen has a small circuit underneath it that can be used to decode the messages from the main circuit and control the screen.



The plastic plating that covers the entire DVD player. This plating both provides a structure for the electronics to be built upon and then, upon their construction, protects the electronics from a great many outside forces.



The circuit used to decode the laser's readings into something that can be read and translated into a movie by the rest of the chips.



All components