



The electronic device we chose to take apart is a Philips DVD player. When we were thinking about possible options, this stood out because of the combination of mechanical, optical, and electronic parts needed for it to function. The orange-yellow board in the top right of the picture is the part that is used for providing energy to the whole DVD player. Firstly, the part that is plugged into a wire in the top right is responsible for taking in the current from the plug into the DVD player. Secondly, the board transforms AC current, the type of current that is normally found in homes, to DC current, the power that operates the DVD player. An AC wave constantly reverses the current; first, the current goes in one direction, and then half a wavelength later, the current goes in the opposite direction. The converter converts the AC waves to DC waves by reversing the reversed currents, so that it would flow in a straight line, like DC currents. Finally, the big yellow part in the middle of that orange board is the transformer, and it steps the voltage down to make sure that the DVD player is not receiving too much input voltage. Looking at the optical side of this electronic is the lens assembly. The lens assembly is used to read information from the CD, convert it from digital to analog, and send it to the Table of Contents. The lens assembly starts this process by focusing a laser beam on the CD, which reflects off the disc's mirrored surface and goes into a photodiode array sensor. The photodiode array sensor then reads the changes in the laser beam and converts them into binary data. After being processed, this data is converted using a digital to analog converter and is sent to the Table of Contents. Finally, the main circuit board has a chip in the center made by the company MediaTek. According to MediaTek, it prioritizes video quality while remaining cost effective. It is common among DVD players at similar price range and is capable of processing video at 1080p HD. Furthermore, it also controls the motors responsible for rotating the DVD and ejecting it as well as regulating and amplifying the audio. Overall, we learned that even basic electronics have many complex pieces involved in making them work.

