STEM Electronics Summary

G-Shock, a watch brand owned by Casio that calls itself “The Unbreakable Watch”. Why does it call itself that? To answer that, that is why we did this STEM challenge. In this challenge, we are dismantling a Baby G-Shock 2017 Model watch to figure out the components that cause it to stay unbreakable and to work.

We found many pieces inside the watch. Those pieces include four screws that we took out to go into the watch. Inside it, we found three layers of protective cases that are found at the beginning of the dismantling of the watch. There is one main metal one, a rubber one, and one made of plastic. After those three layers, we found a battery held together tightly by a thin metal piece. We then found the watches mother board! The mother board had tiny pieces that make the mother board work. After that, we found the LED light (which contains a plastic protective case to not scratch the light itself. Along that point, we found small springs and outside the watch, we found a rubber band that doesn’t make all the components slide around. We couldn’t stumble upon TI components in the dismantling.

Now that that is done, here are the purposes of these components and materials. The three layers found at the beginning of the dismantling are for the best protection for the watch. It mainly helps so that the screen can be stuck in there good. Next up, we found a battery. The battery is used for lighting up the LED screen and can change the settings and do other commands when buttons were pressed. Now, here is some information about the LED lights that are in the mother board. Inside the mother board, the LED light blinks for about a second. The light radiation because the LED waves keep bouncing until it runs out. This light then powers the LED screen and shows an image.

The mother board, a small chip that collects the watch battery’s energy. It starts by the energy converting through two metal poles that have both negative and positive charges that then connect to the mother board. The mother board has little metal bits that are exposed and kept inside the mother board that collects the electric radiation of the battery. The information is traveled along the little metal passages that then travel to the center. The mother board’s energy that it gets from the battery gets shot onto a little memory card which starts up the watch. The tiny screws? They are there used to keep the metal outer plate of the watch in-tact with the rest f the watch so that all the pieces don’t fall out.

Oh, the lessons we learned in this experiment. We all learned how many tiny components makes such a powerful watch work, but how is it indestructible? Well, that ones simple. There are two rubber spheres preventing the glass to be scratched. The glass is also thick and very strong. So next time you buy a watch, get the unbreaking one.