Sony Blu- Ray Player Electronics Challenge

Team Name: LMJ **Team Number:** 2952 B **Organization:** NanoBeasts

Identify the electronic device you selected and why?

I, (Emiliano Lopez) of LMJ chose the SONY - Blu Ray Player for this electronics challenge because it allows me and my brother to watch any type of video, movie, that I or my family want to watch, especially during this time of the pandemic. We can also watch CDs that have photos contained within them that are unique vs. watching them on our phones. We are mostly indoors and cannot have family gatherings. We usually find Blu-ray movies at Walmart. Below are some pictures of the Blu - ray player:

Below are a few photos of me taking apart the Sony blu - ray player. I really enjoyed this project very much as I began to get more familiar with components, chipsets, resistors, capacitors, and their function within the blu-ray player.

SONY BLU RAY PLAYER - COMPONENT *Front Overview Photo of Blu-ray player*

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FRONT BUTTON DISPLAY PANEL

On/Off button - Turns unit on and off
Stop Button - Stops Playing of Disc
Play Button - Plays Disc
Eject Button - Ejects/Removes Disc

REAR PANEL

LAN Connector - Allows you to connect via LAN device
HDMI Connector - Allows you to connect via HDMI cable
Coaxial Connector - Allows you to connect via Coaxial connection

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Summary of the chips and components you found inside, were any components TI?

(Component) - BD Loader
(Component) - PCB Mainboard
(Component) - PCB Electronic Power board with capacitors and resistors

(Chip) - Toshiba RAM chip (memory)
(Chip) - Samsung DRAM chip (memory)
(Chip) Front control board with USB connector
(Chip) - Sony CXD90018R-DA circuit processor chip

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None of the chips or components were made by Texas Instruments.

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Research findings of what components do and the role they play?

BD Loader - loader to where load blu-ray or any type of media.

PCB Mainboard - printed circuit board used to mechanically support electronic components using conductive pathways, tracks, or signal traces etched from copper sheets.

PCB Powerboard - is an electronic circuit component used to power up a blu-ray player

Sony CXD90018R-DA chip - integrated circuit processor board that controls data flow between processor, memory, and peripherals.

What lessons did you learn from this experiment?

What I learned from this electronics challenge is how a blu - ray player can read different types of CD formats, where it be DVD, Blu - Ray, or just a simple CD with photos stored within it. Although blu - ray players are not used as much as in year's past, due to Netflix, Hulu, etc, it is very impressive to see how multiple formats can be read by a single reader using optical technology. I learned that different types of resistors/capacitors are needed to power up a Blu-ray player with an electronic board, which also works together with the front control board to tell it to eject, stop or play the media desired.

I, Emiliano Lopez of LMJ would like to acknowledge NanoBeasts, my teammates Max & Leo, our parents, the REC Foundation, Sony Inc, and the judges for giving me and my teammates an opportunity to compete and complete this Electronics challenge.