



Samsung QLED TV Smart Remote Teardown

Samsung QLED TV Smart Remote with Voice Command Control

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INTRODUCTION

A look inside the Samsung QLED TV Smart Remote

TOOLS:

- [Spudger \(1\)](#)
- [iFixit Opening Tools \(1\)](#)

Step 1 — Samsung QLED TV Smart Remote Teardown



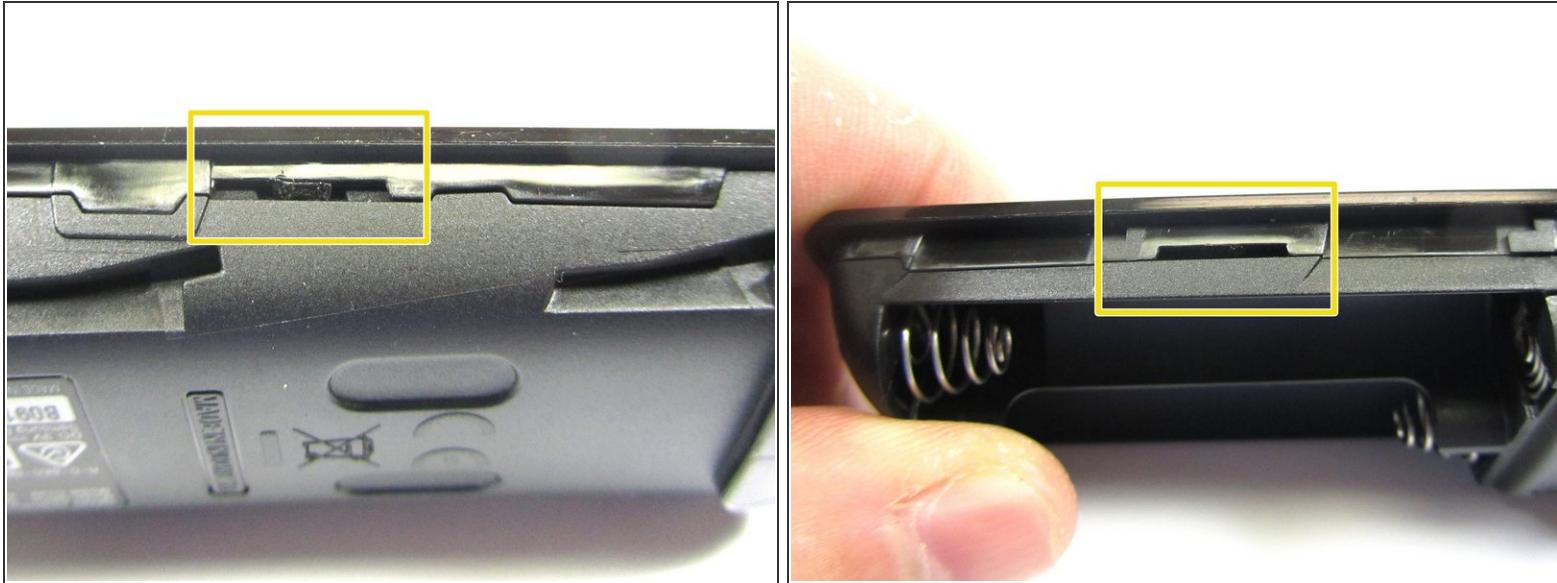
- Samsung QLED TV Smart Remote with Voice Command via Samsung's Bixby, and WiFi Direct

Step 2



- To open the Samsung Smart TV Remote, flip the remote over and slide the back cover down in the direction on the indicators.
- Sliding the backside on the remove toward the indicators will expose a small gap on the front side of the remote.
- The exposed gap allows for easy gripping of the back cover, so that the back cover can be removed.
- Removing the back cover exposes the battery compartment, and pairing instructions for the remote.

Step 3



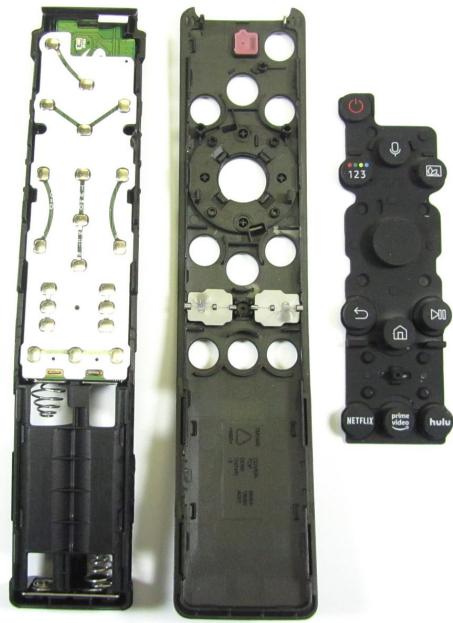
- The rest of the remote is held together with plastic clips.
- On the right side of the remote, when the remote is facing up, there are two large chip opening areas. These large clip opening areas are only located on the right side of the remote.

Step 4



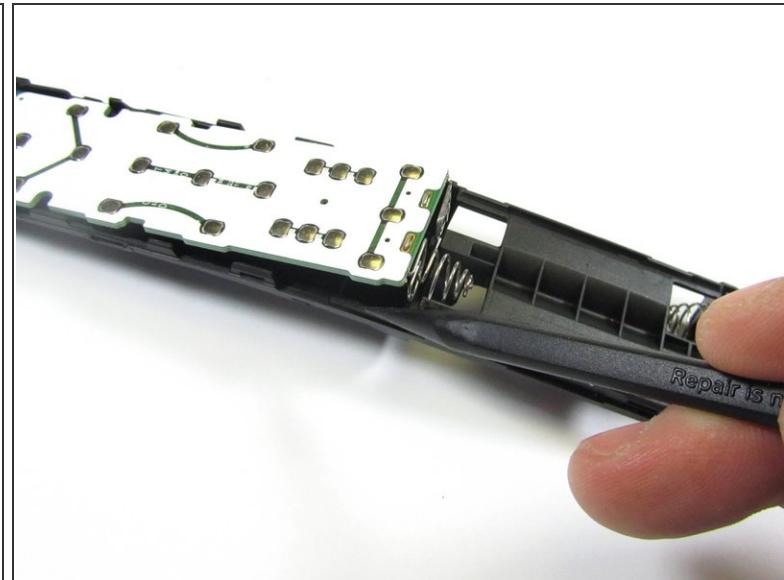
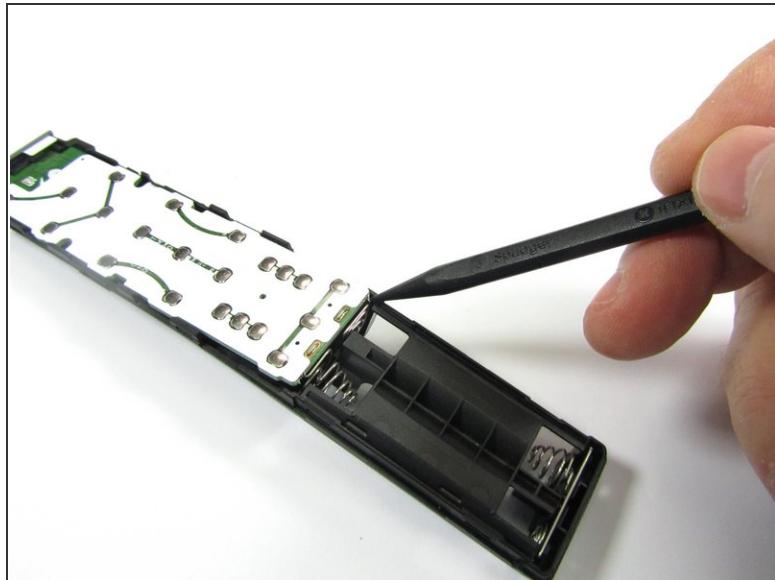
- To open the remote enclosure, a Plastic Opening Tool can be used to start the separation of the enclosure seam via the large clip opening areas. Then a Spudger Tool can be used to pry open the enclosure.
- Once the enclosure starts to open, gentle move along the outside of the remote enclosure seam with the Spudger Tool to release the remaining enclosure clips.

Step 5



- Once the enclosure has been opened, the top part of the enclosure, and rubber membrane keypad can be reviewed.
- The remote keypad area on the back of the PCB is made out of dome tactile buttons.

Step 6



- To remove the PCB from the enclosure, use the Spudger Tool to gently pry up on both sides of the bottom part of the PCB near the battery compartment area. This will release the PCB from the PCB enclosure.

Step 7



- A close inspection of the tactile button side of the PCB revealed two small holes. These small holes turned out to be port openings for dual MEMS Microphones found in the remote.
- Also, found during the close inspection of tactile button side of the PCB was that the two horizontal buttons on the front face of the remote are also able to contact tactile buttons above and below the tactile button they rest on, which means that the user can push down, push up, or pull down when using those buttons.
- A LED was also located near one of the Microphone port holes.

Step 8



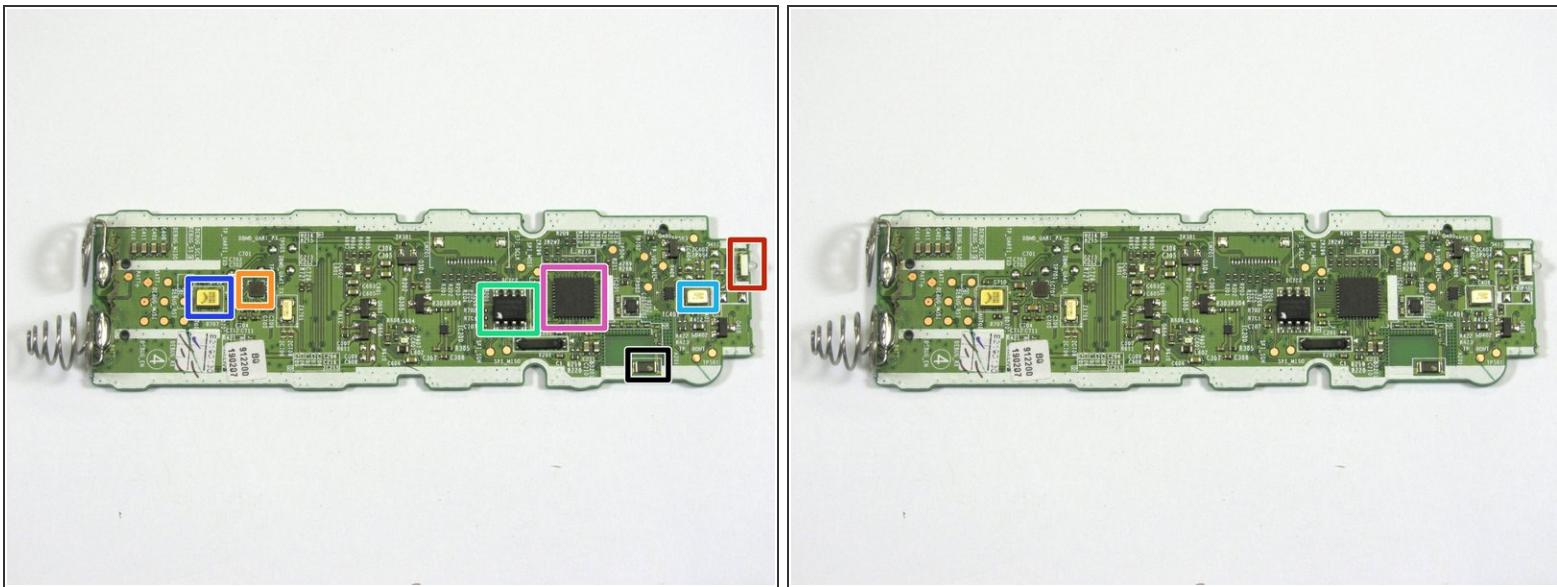
- Location of MEMS Microphone on the topside of the remote enclosure.
- The Bottom MEMS Microphone is located under the two horizontal buttons of the remote.

Step 9



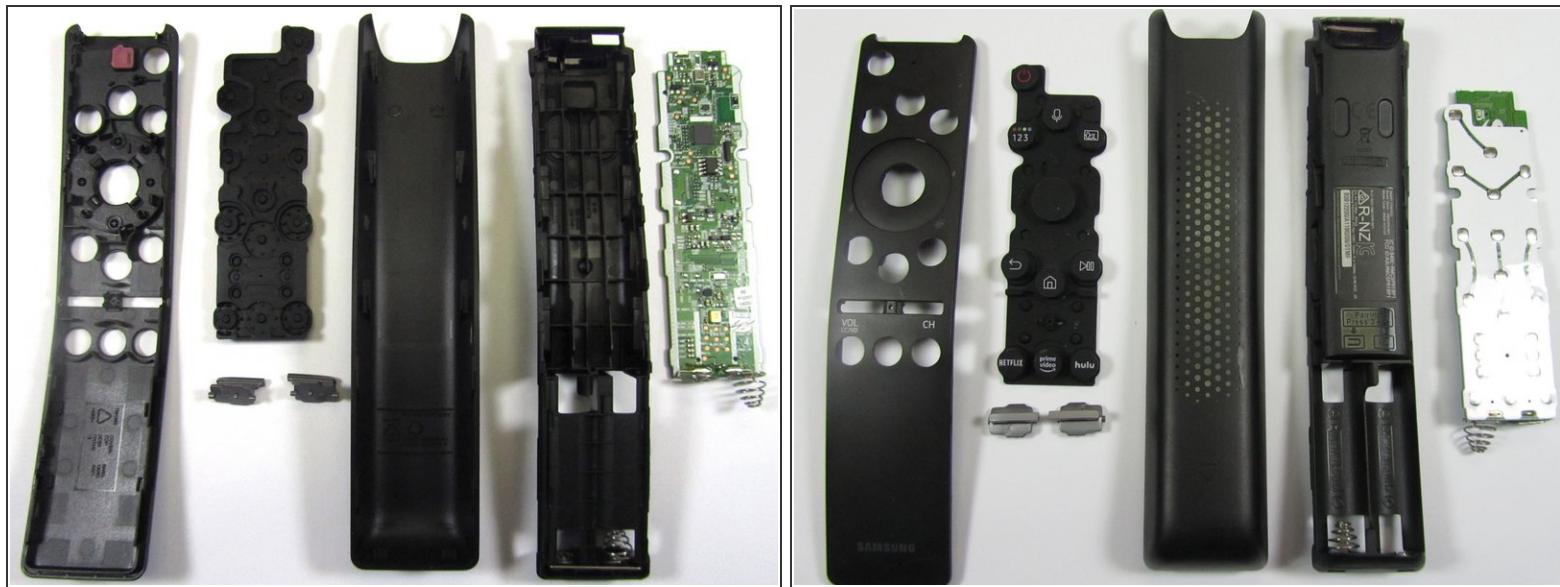
- There are acoustic gaskets in contact with each MEMS microphone when the enclosure is assembled.
- The top part of the remote enclosure has the acoustic gasket for the top microphone.
- The rubber membrane keypad of the remote is used as a acoustic gasket for the bottom microphone.

Step 10



- Turning our attention to the backside of the PCB, we can review the components that give the remote its functionality. There are a number of discrete parts, transistors, and power supply ICs. Plus the components that were cross referenced listed below. Some parts could not be cross referenced. Leave comment if you know a part.
 - [Vesper VM1010 Wake-On-Sound MEMS Microphone](#)
 - [DSP Group D851A](#)
 - [Winbond W25Q40BWSNIG 4M Bit SPI FLASH](#)
 - [Universal Electronics Voice Controlled Remote Controller with WiFi Direct UE878NMEG](#)
 - WiFi Chip Antenna
 - [Knowles SiSonic™ Microphone](#)
 - Infrared LED

Step 11



- Teardown Exploded Views of the Frontside and Backside of Samsung QLED TV Remote