

## Google Home Voice Controller



Google Home Voice Controller is a smart IoT device which allows the user to enjoy features like media, alarms, lights, thermostats, control the volume and much more functions just by their voice.

**Cost:** US \$ 130

### **Top Features:**

- Google home allows a user to listen to media.
- Let's the user to control TV and speakers.
- It is capable of managing timers and alarms.
- It can remotely handle the volume and home lights as well.
- It helps the user to plan their day and get things done automatically.

### **A Look Inside the Google Home**

The Google Home contains a number of parts found in many other smart home devices, such as an array of light-emitting diodes (LEDs) that function as part of the listening recognition and music playing events. But there is also a microcontroller (Atmel's 32-bit ARM Cortex-M0+), two LED driver chips and, maybe most interesting, only two microelectromechanical systems (MEMS) microphones (InvenSense INMP621).

**Inside the Google Home is a host of components and semiconductors used to connect to other devices and power the microphone and speaker. Source:**

**Google** There are also a host of other microprocessors, wireless system-on-chips (SoCs), 256 MB NAND flash memory, and 512MB DDR3 SDRAM memory for storing information and enabling commands as well as other components to enable sound and connectivity with other devices. There are also high excursion speakers in order for Google to play music and give responses.

## **When Voice Is Not Enough**

Google Home uses a trackpad for touch to control volume and music, and to enable listening of the device. For those of us that hate hearing our own voice, the Google Home, much like the Amazon Echo, does not just lend itself to being commanded via voice but also has a built-in, touch-sensitive panel. This is located on top of the device near the recognition LED lights, where you can control the volume, play and pause music, or enable listening mode.

The touch function is generated by the ProxSense trackpad from Azoteq that uses capacitive sensing to allow your fingers to control the Google Home. Capacitance sensing allows for human interface devices to be controlled through touch to replace mechanical buttons. Capacitive sensing touchscreens are commonly used in other popular devices, such as smartphones, tablets, audio players and laptop computers. There is no touchscreen in the Google Home but, instead, a trackpad that senses finger movement.

## **Connecting the Devices**

Beyond hearing what's coming out of the Google Home, many consumers want it to do more than just find information on the internet or play music. They want it to be able to control temperatures in a room, turn on a security system, close the blinds, turn on the lights or manage daily tasks.

In order to do this, the Google Home uses Marvell's Avastar 802.11ac mobile multiple input, multiple output (MIMO) system-on-chip (SoC) radio chip that allows for both near-field communication (NFC), Bluetooth and Wi-Fi. The MIMO chip features an always-on capability, so consumers can always be connected to their devices whether they want to do high definition video streaming or control devices inside the home.