Introduction:

The Voice Controlled Robotic Arm (VCRA) is, as the name suggests, a robotic arm that picks up a block from one place and drops it at another, using voice commands. The robotic arm is connected to a PC using a USB. On the PC, using the Linux command line the Robotic Arm is controlled. Using the Speech Recognition technology, the voice commands are converted to text based commands that can be used in controlling the motors of the Robotic Arm for movement. The Voice Controlled Robotic Arm is a project that uses the OWI-535 Robotic Arm Edge as shown in the figure.

Speech Recognition:

The speech commands are recognized using a PC. A Linux based PC that has the Speech SDKs, would be needed to recognize the speech accepted by the PC’s microphone. A code would be developed that accepts the following basic speech commands:

Claw Open. Claw Close.
Claw Up. Claw Down.
Shoulder Up. Shoulder Down.
Light On. Light Off.

Each command will redirect the code to a specific function. The code uses the pre-defined libraries of the SDK. Since speech recognition was not being able to be performed accurately, this project has been done in different versions, one of which uses the Google Voice APIs as well.