



Hardware Description:

Speaker: 5 watt, 4 ohm analog speaker

Amplifier: 2.5W Class D Audio Amp

Voice Processing and Playback Module: EasyVR version 3 is used for voice recognition and message playback.

Internet of Things (IoT) Module: NodeMCU which is an esp8266 based development board is being used as the core unit for processing and communication.

Motor: a 3.3 volt tiny dc motor is being used in order to make the parrot vibrate in the child's hands.

Sensors: three custom made proximity sensors have been built. Each of them use two transistors with an aluminum piece.

Battery: A 3000 mAh 5v power bank is being used

Connection Details:

1. ESP Module:

One pin of the vibration motor is connected directly to digital pin 5 (**D5**) and the other pin of the motor is connected to the ground rail.

Each proximity sensor is connected to one of the digital pins.

- Head Sensor: **D2**
- Tummy Sensor: **D6**

- Back Sensor: **D1**

Rx and **Tx** Pins of the EasyVR Module are connected to **Tx** and **Rx** Pins of the ESP Module respectively.

gnd and **vin** pins of the ESP Module are connected to ground and VCC rails respectively.

2. EasyVR:

gnd and **5v** pins of the ESP Module are connected to ground and VCC rails respectively.

Rx and **Tx** Pins of the EasyVR Module are connected to **Tx** and **Rx** Pins of the ESP Module respectively.

Analog speaker outputs of EasyVR (2 pins) are connected to the inputs on the amplifier module and the amplified output is connected to the speaker.

Analog microphone inputs of EasyVR (2 pins) are directly connected to the analog microphone.

