PREMON: A TALKATIVE ROBOT

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Abstract – *In this paper, we present a robot that communicates with humans so effectively that it looks like two humans are talking to each other. With the advancement in robotics, communication becomes an integral part in the development of the robots. This paper mainly focuses on the response given by the robot when the human is asking something. The robot will fetch the information from its database and reply to the questions and if the answer is not known then it will fetch the information from the internet and then reply. To give commands to the robot we are using AMR, which helps in converting the human's voice to the text that is saved in the robot's database and then answer accordingly. We here demonstrate all this using AIML and arduino uno.*

***Key Words*: Robotics, Communication, AMR, AIML, Arduino uno**

1. INTRODUCTION

Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing. In this paper we are controlling our robot through the voice commands using your Android phone. Have you ever encountered Android's speech recognition? Yes android has one and you can use it to control your Arduino, via Bluetooth. The App works by pressing the mic button, then the it will wait for you to say a command. The app will then display the word's that you've stated and will send data strings for the Arduino to process. JY-MCU (DX Bluetooth Module) is still installed on our robot, what I have right now is the bare HC-05 module.

2. VOICE RECORDING USING APR-9600

This circuit provides high quality recording & play back for 40 to 60 seconds message. The device supports both random & sequential access of multiple messages. This device stores &reproduces voice signals in their natural forms. Eliminating the distortion that is often introduced by encoding & compression. It is ideal for portable voice recorders. Toys & many other consumer & industrial applications. A PLUS integrated achieves these high levels of storage capability by using its proprietary analog/multilevel storage technology implemented in an advanced Flash non-volatile memory process, where each memory cell can store 256 voltage levels. This technology enables the APR9600 device to reproduce voice signals in their natural form. It eliminates the need for encoding and compression, which often introduce distortion.
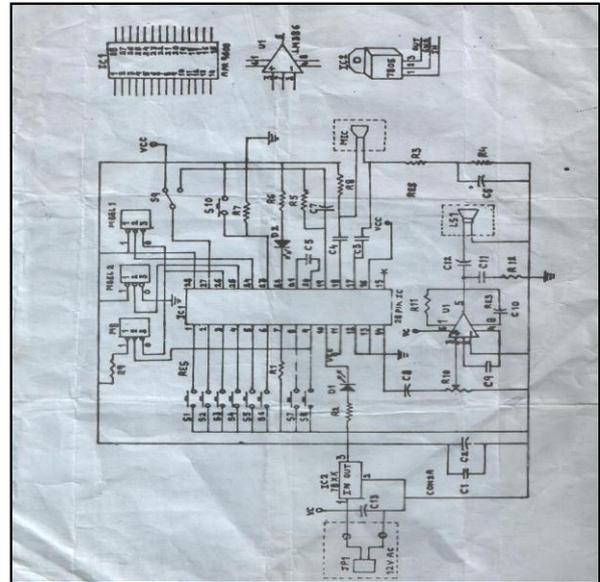

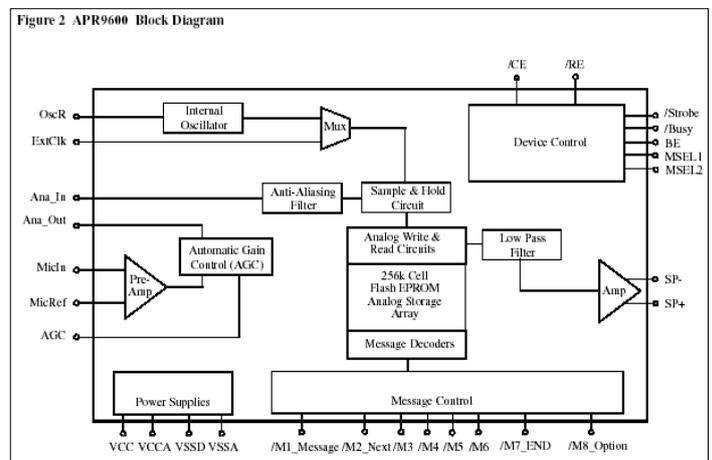**Fig-1:** Circuit Diagram of APR-9600

Fig-2: Block Diagram of APR-9600

2.1 FEATURES

• Single-chip, high-quality voice recording & playback solution- No external ICs required, Minimum external components.

• Non-volatile Flash memory technology- No battery backup required.

• User-Selectable messaging options - Random access of multiple fixed-duration messages, Sequential access of multiple variable-duration messages.

• User-friendly, easy-to-use operation - Programming & development systems not required, Level-activated recording & edge-activated play back switches.

• Low power consumption - Operating current: 25 mA typical, Standby current: 1 u A typical, Automatic power-down.
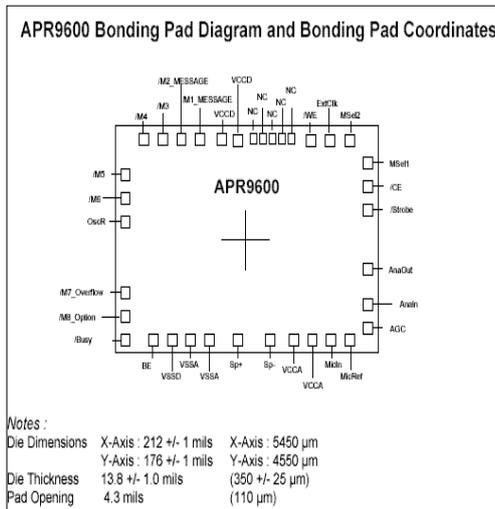
• Chip Enable pin for simple message expansion

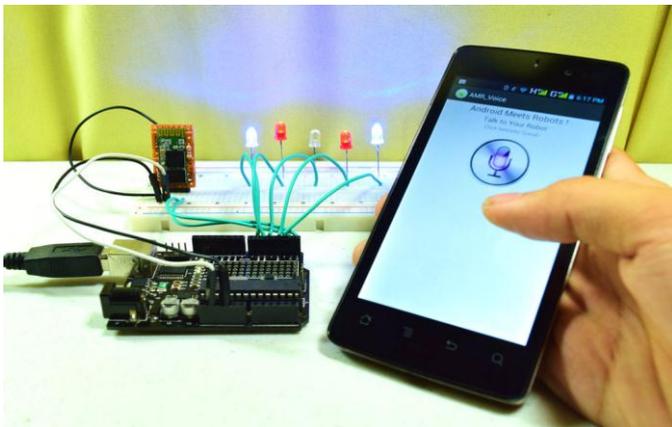**Fig-3:** APR-9600 Bonding Pad Diagram

3. AUDIO AMPLIFIER

Fig-4: Circuit Diagram of Amplifier

4. ARDUINO MEETS ROBOT (AMR)

The app work by recognizing your voice command, it will then display the words that you've spoken then sending data/ strings to the arduino via bluetooth. What's a string? A string is like a word, you can make conditional statements out of it. The "voice" is your string, "==" is your condition (means equal to), "*computer on" is your command and the code inside the curly-braces "{ }" are the codes to be executed once your string matches the command condition.

What's the format of the string? How does it know when the next command kicks in? How does it differentiate a set of words from a new command? The app sends strings in this format *command#, the asterisk (*) indicates the start of a new command and the hash-tag (#) indicates the end of a command. I was able to remove the hash-tag (#) after each word in the conditional statement was not able to remove the asterisk (*). You'll need to start your command condition with an asterisk otherwise the sketch will not work.
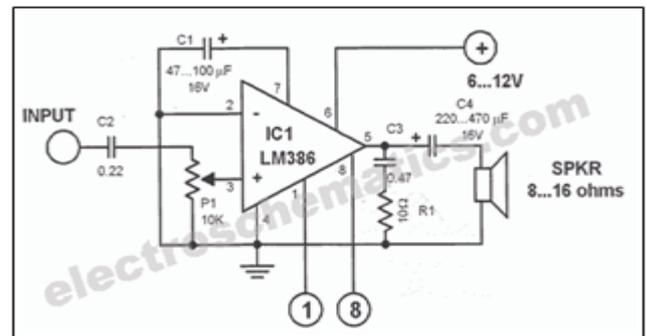

Fig-5: Connected AMR

5. CONCLUSIONS AND FUTURE WORK

In this paper we have demonstrated how the communication is taking place between a man and a machine that is made by a man. The robot can understand our voice, talk back to us as a friend, understand various voice commands and move backward and forward.

The future of the project is that the robot should speak aloud the things that is shown to it and after some efforts adding the emotions to the robot will be the major focus of the project.

So the future lies in the concept that whether we can add emotions to the robot or not. Can PREMON track our emotions and understand us. Can it emotionally connect to us?

6. ACKNOWLEDGMENT

7. REFERENCES

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