MP3 player from SD card with Audio amplifier of 5Watts and 1% THD

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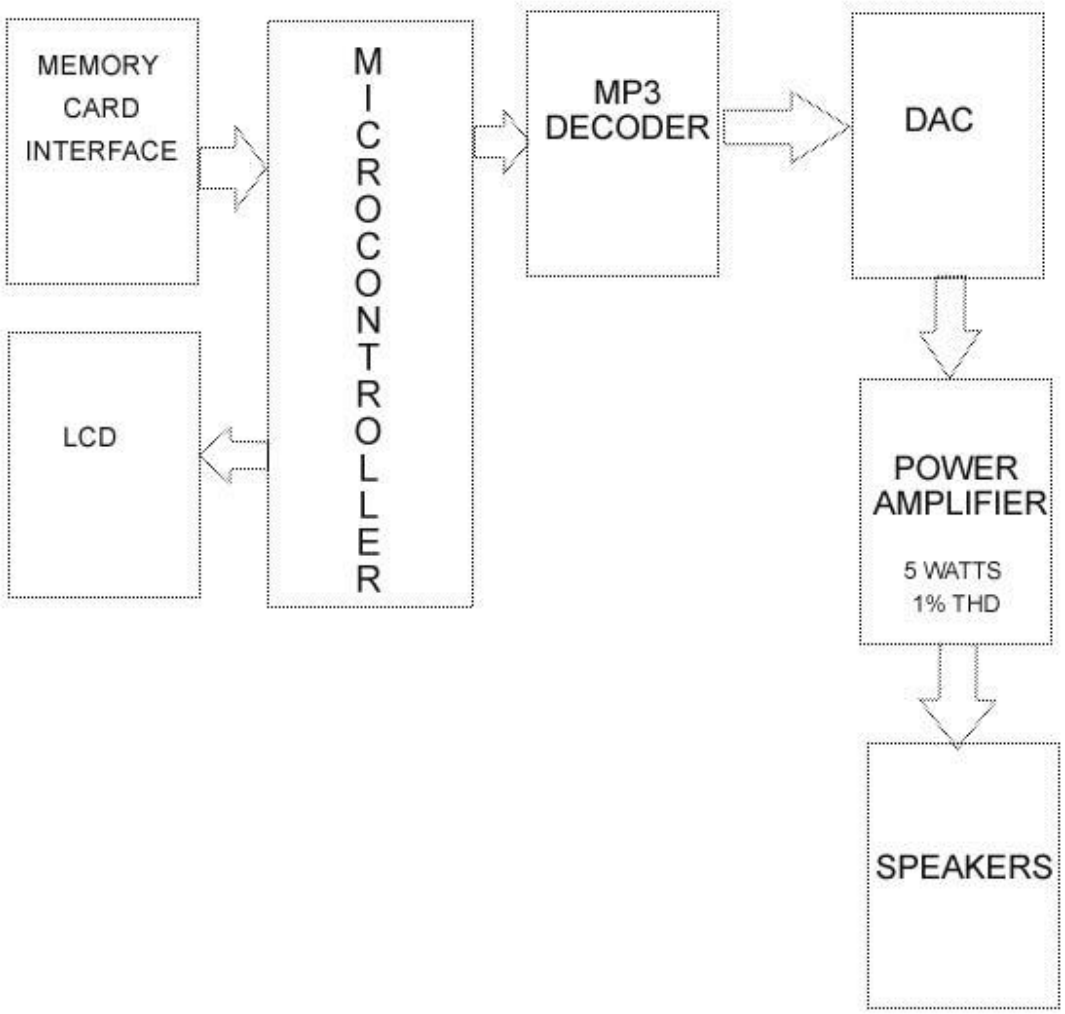

Introduction:

Our project basically consists of reading MP3 files from a SD card and playing it with a self made Power Amplifier/Speaker. Our Power Amplifier has specifications of 5W power output and 1% THD. You can see song's playing status on LCD. A brief description of each block in the flow chart is given below.

Memory Card Interface:

We will be using standard memory card, file stored on it will be read by Microcontroller

LCD:

This is used to of song display status of playing song. Currently name of song, if it is playing or paused and no of seconds played.

Microcontroller:

Reading from memory card and displaying on LCD also output pm3 file data to MP3 decoder IC after processing will be done by this. It's some pin's will be connected to pushbuttons which will be used to control playing of File (play, pause, if needed some extra).

RAM:

It will store data read from SD card and then stream for here to MP3 decoder.

MP3 Decoder:

This IC converts the MP3 codec's into digital bits signal. Its output will be then fed to DAC

DAC (Digital to Analog Convertor)

This will convert the digital signal into the analog signal which will then be used to vibrate the diphram of speakers and hence generate sound. As this signal is very low it will sent to speaker after Power amplifying it.

Power Amplifier:

The output of DAC is very weak and susceptible to noise distortion so the power amplifier is provided to increase the power output of output signal and provide a very clear signals to speaker.

Speakers

The output of power amplifier will be connected to the speakers which will eventually produce the sound according to the input signal.

Components:

1. Microntroller (Atmel Mega32)
2. MP3 decoder (STA013)
3. DAC (CS4334)
4. LCD display (JHD162A)
5. SD card adapter
6. RAM (HY6116ALP)
7. Some Pushbuttons(3-4)
8. 2 Bredboards