PC based Digital Sound Level Analyzer

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Abstract- Sound energy meters measures sound pressure level & are used in noise pollution studies.Most of the sound level meters are hand held,battery powered devices & are often limited in functionality beacause of poor processing power limited storage & poor display. A Pc based sound level meter will not only overcome these limitation but more advanced functionalities can be implemented in it. Ac signal from microphone is converted into DC.It will make use of MAX187,Max 232 & LM 358 ICs as main component for converting sound into digital signal.The working of this meter will confirm the noise levels as per environments. It is easy to use & has small package size. This circuit is ideal for the circuits where power consumption & space are crucial.This project also is able to detect ,analyze & matches the frequency of a particular human being as per our requirements. This project is basically design for classroom application

Index Terms— LM 358, MAX 187,MAX 232,Sound energy meter.

I. INTRODUCTION

Sound level analyzer measures sound pressure level & used in noise pollution. A basic sound level meter shows the sound pressure levels with different frequency weighting that are used for noise assessment. The current international standard for sound level meter mandates to the inclusion of an frequency weighting filter and also describe other frequency weighting of 'c' & 'z'(0). In almost all countries the use of a frequency weighting Is mandated for protection of workers against noise induced deafness. The standard sound level meter is more correctly called an 'exponenetially averaging sound level meter'as the ac signal from microphone converted into dc using electronic component.

II. OBJECTIVE OF THE PROJECT

The project is basically concerned with analyzing/controlling classroom noise remotely. This is basically helps college authorities to maintain discipline in class rooms. This project includes fine assignments to the class if noise exceeds certain threshold limit.

III. SCOPE OF THE PROJECT

Area,where noise levels are to be maintained this project can be prove effective.

IV. LITERATURE SERVEY

A) Existing System:

Most of the sound level meters are hand held ,battery powerd devices & often limited in functionality because of poor processing power ,limited storage & poor display.
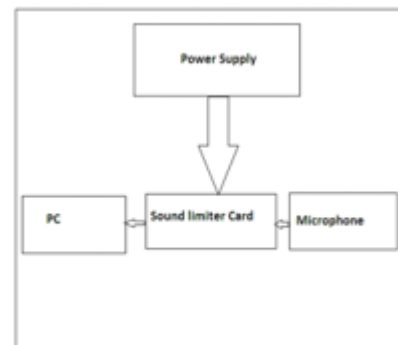
IV. MAJOR STEPS

Figure.1)Block diagram of PC based Sound Analyzer

Figure shows block diagram for the PC based digital sound analyzer.It shows the working flow of project
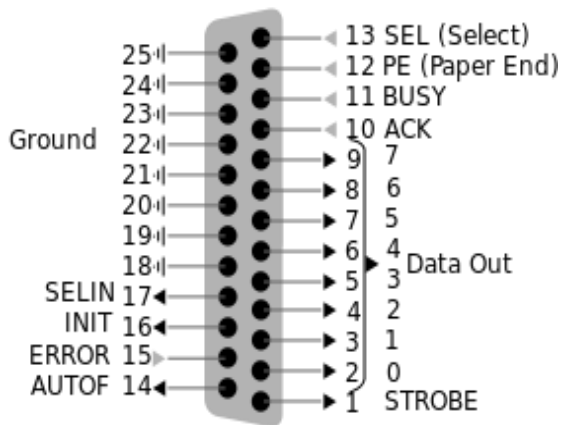
1).It consist of a microphone as input device Which captures environmental noise.This input is given to sound limiter card .We are giving 5 volt regulated power supply.

2)Sound limiter card contains analog to digital converter(ADC0804)whose output is given to software application via LPT port.The input given to the application is analyzed by our software for checking its limit.

3)If it exceeds the threshold value an entry is made into a data base table. As well as an alaraming message is given to the class.

VI. SYSTEM ARCHITECTURE

A) LPT PORT

It is a simple & inexpensive tool for building computer controlled devices & projects. The primary use of parallel port is to connect printers to computer & is specifically disgned for this purpose.

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The lines in DB25 connector are divided into 3 groups.
1)Data lines.
2)Control lines
3)Status lines

B) ADC 0804

ADC0804 is a very commonly used 8 bit analog to digital converter.It is a single channel IC,it can take only 1 analog signal as input. The digital outputs vary from 0 to maximum of 255.

VII. CONCLUSION

The development of the project has given me an excellent opportunity & experience to know how real life project works in its working environment & that there is always some differences in studying software engineering theoretically & while setting applied practically. Keeping all this in mind I conclude that system being desired will be robust efficient in all repect & having a strong security featues.The system therefor can be easily customized as per the changing user requirement of a later time without much effort,thus achiving all the objectives off the proposed system successfully.

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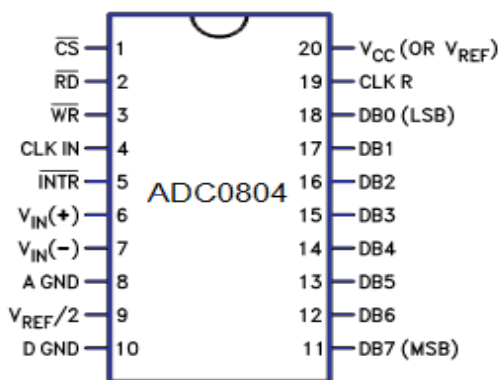**Prof. D.G. Wadnere,** B.E Computer Engineering, Sandip polytechnic, Sandip foundation , Nashik, India.

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