PORTABLE SOUND PRODUCING DEVICE WITH BATTERY BACKUP

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Abstract

The present invention relates to a portable sound producing device with battery backup for producing an audio signals and charging external electrical appliances. The device comprising: a battery installed in the device that provides power supply in the form of electrical signal, an amplifier connected to the battery for increasing strength of the generated electrical signals, a speaker connected to the amplifier that receives the electrical signals from the amplifier and converts the same into audio waves, a bluetooth module installed in the device for wirelessly connecting multiple electronic units simultaneously, an inbuilt battery charging module attached to the battery for provisioning the device with longer battery backup, a voltage regulator connected to the battery that controls the voltage according to a certain limit; and a control unit installed in the device that receives signals from the electronic units that controls the functioning of the device.

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Keywords:bluetooth module, electronic units, battery, speaker, amplifier.

1. Introduction

Sound producing devices also termed as speakers devices that incorporate transducers for converting the electrical signals into sound waves or acoustic waves. These devices can be used in indoor as well as outdoor applications, the intensity of sound varies as per the type of application. Most of the people use these devices in indoor applications as it produces more sound output as compared to outdoor applications. The quality of sound also depends upon the type of material by which an enclosure is fabricated. A basic sound producing device requires external power supply, for the operation of the device. When the external power supply is not available then the person cannot enjoy high sound music. As these devices require continuous power supply for the operation and are bulky in weight which make them unable to carry from one place to another. In order to overcome aforementioned limitation there is need to develop a portable sound producing device that provides a long battery backup for producing high sound music and is flimsy

weight which make it easy to carry from one place to another.

2. Experiment

The present invention relates to a portable sound producing device with battery backup, for generating audio signals and also charging or powering any electronic equipment by harnessing the electric power from the inbuilt battery[1]. The outer covering of the device is made up of shock proof plastic body with metallic design. The battery is installed in the device that supplies the power in the form of electrical signals for the operation of the device[2]. The battery consists of at least three cell that produces 11.7 volt of output voltage, wherein the battery is used for charging or powering the external electronic equipment's and also provide power for the operation of the device. Due to which the device does not require the external power supply for the generation of the audio signals[3]. The battery is preferably a lippo battery. The amplifier is connected to the battery that increases the strength of the electrical signals generated by the battery. It eliminates unwanted disturbances from the signals obtained by the speaker in order to enhance the quality of output signals[4]. The speaker is connected to the amplifier that receives the enhanced electrical signals generates from the amplifier and converts the signals into audio waves that can be heard by the person[5]. The bluetooth module is installed in the device that transfers the generated audio signals between the device and the external electronic equipment. It is helpful in exchanging data, such as song, and any other audio document between the same[6]. The inbuilt battery charging module is attached to the battery that charges the battery during discharging condition for longer battery backup. It is further connected to an input terminal that supplies an input voltage to the charging module so as to charge the same. The voltage regulator is attached to the battery that manages the amount of the voltage supplied to the device. It generates a fixed output power that remains constant with any changes in an input voltage or load conditions. The control unit is installed in the device that receives signals from the electronic equipment's for controlling the functioning of the device[7]. The USB (Universal serial bus) module is attached to the battery for charging or powering the electronic equipment's in a closed mode. This module is used to connect the device to the external equipment's in order to charge the battery of the same. As the device produces an input voltage of about 11.7 volt that can easily charge the mobile phones more than five times. The electronic equipment is selected from a group consisting of telephones, cell phones, laptops, television, desktop computers, printers, paper, paper shredders, digital cameras, camcorders, video game, consoles, electronic musical instruments, karaoke machines, digital cameras, and video players.Multiple switches are installed in the device that controls the flow of electricity in the device[8]. These switches work in two different modes, an open mode and a close mode. In the open mode the charge produced by the

battery is transferred to the circuit for producing the audio signals. In the closed mode the charge remain stored in the same. The light emitting diode strip is attached to the battery that reflects two different color light in order to show the charging/discharging of the battery. When the inbuilt battery is less charged, then the light emitting diode reflects a red color, so as to give an indication to the person regarding the charging of the battery. On other hand when the light emitting diode reflects a green color, it gives an indication regarding full charging of the battery. The two jacks are connected to the amplifier that ejects out the generated audio signals. The control unit installed in the device that exchanges the generated audio signals between the device and the external equipment's.

3. Result and conclusion

The device is fabricated to generate the high sound audio signals and also powering or charging the external electronic equipment's during the discharging conditions. It is easy to carry, as the device has flimsy weight that makes it easy to take from one place to another and enjoy the music in parties or functions, and also works in cost-effective manner. It does not require external power supply for generating the audio signals.

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