

A Review on Proposed Module of LED Display (Globe) With GPS System

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Abstract: In this paper different types of Light Emitting Diode(LED) Display globe overview is present. The enhance LED plugs and existing required Hardware related information is present. Global Position System(GPS) based LED Globe is a display module to playing the messages and the location. This paper is proposed to an idea of developing a single globe where the location continuously running. It has dual system in terms of changing the power supply having Alternative current which having ability to work in any condition and a solar system. This paper is overview of the literature and it does not contain implementation result.

Keywords: Dual power supply, LED (Globe) display, Global Positioning System(GPS), Solar system.

I. Introduction

A Display it is a best way of providing information. It can be seen anywhere as a display module. But now a day technology is adventuring day by day with electronic display devices like Cardboard, Globes and different types of display modules. The Display devices mostly are usable for advertisements and promotions. It has the ability to display the important information in the form of short messages. The LED display can be used for indoor and outdoor which makes it fit for any business and any events. It is also effective way to communicate with peoples and conveying the information. The LED is solid state light source with its attractive properties for display application. It chosen as the main component of display module because the LED is the most energy efficient. The intention of this paper is to incorporate a motion detector which acts as a switch in the display board.

II. Literature Review

Traffic light is used in the mid of 1990s were the LED is developed. before it the traffic lights were design by using the halogen light bulbs. The LED light bulbs use the array of LED elements that are arranged in various manner or patterns, when it viewed from a particular distance it appears as a light source.

A wireless system is used to display various messages by using a cardboard as display boards which need not to be programmed. The aim of paper was to develop a mobile sign board by using user can change the scrolling messages. The cardboard like CCTV and programmable sign board was generally hardware device are hard to enlarge. This limitation can be overcome by using the wireless interface like GSM. Currently the scrolling LED is attracting to community, the system uses the Bluetooth technology to communicate from any Mobile phone to LED display board. [6]

Message display system using LED is become an appreciable system becoming a power saving concept for advertising. The less power consumption of the system and the more Life span of the system increasing the use of this LED display in further future. This system can display 8 alphanumeric characters in one time by using the matrix display using less connection needed. Multiplexing and Matrix addressing method is applied to control the system and to turning on and off to the system.

An advance reduce instruction set computer machines and field programmable gate array is also used to control the LED display system. According to the structure of the LED like Red, Blue, Green (RGB) three colors and also this system support to the alphabet, characters and images to display in full screen and also in limited display according to the requirement. This can be display the static or dynamic information.

III. Problem Identification

Based on the previous papers reviews, we recover some improvement in the further system it induced us to design a new enhanced Module. The previous model was simply a cardboard where it was not that much attractive. The common drawback we found is that the system is used only one power supply that is AC power supply if the battery level goes down or if battery get dead then the system will stop working immediately, other one drawback we identify that is the module was aware about to the area location when the module get started at the any location there should have maintain the area location also it will help the user to identify the exact Geographical Location. The module can able to control the system or to power on and off of the system by using

GSM and laptop only there was no use of manual switching was used in any of the previous system, if in any case the module get breakdown then the system will not able to get switched off. This is clearly mention that the existing invention or past invention are not well planned nor specifically designed.

IV. The Proposed System

The proposed work of this system is to get the attractive display of the system that the LED cardboard was replaced by the Globe. Another one that the system will able to work on AC power supply as well as it will able to work by using the Solar power system.

On the daily basis we can use the solar panels to store the solar energy in the form of power into the power bank to further uses. However, the climate changes or weather get changed and we feel about to lack of solar energy then the system will able to function to use the AC power supply. This enhanced LED display system will be design by using the motion detector. The function of the motion detector is it act as a switch it will automatically turn on and off the system when the system is not needed to use. This will reduce the unnecessary power consumption by switching off the system and the system will be off until it gets on manually.

The another unique feature of the proposed system is the GPS system.

By using the GPS trackers, the user can identify the actual geographical location. A GPS tracking unit is a navigation device normally carried out with the moving module or person that uses the GPS, it uses the navigation satellite system Network that uses the microwave signals to give the information, it sends radio signals that receive by the GPS receiver. There are 27 satellite is used by the GPS system in which 24 are in working and extra are 3 GPS tracking unit can be operating from anywhere on the globe using satellite technology such as Global star and Iridium which does not require a cellular connection. All of the above proposed feature certainly uphold far sighted vision which is why the new design is said to be enhanced from the current module.

A. Light Emitting Diode(LED)

A Light Emitting Diode is a semiconductor light source that emits light when current flows through it, Electrons in the semiconductor recombine with electron holes by releasing energy in the form of photons. [2]. The color of light is determined by the energy required for electrons to cross the band gap of the semiconductor. [3] White light is obtained by using multiple semiconductors or a layer of light-emitting phosphor on the semiconductor device. Unlike a laser, the color of light emitting from LED is neither coherent nor monochromatic, but the spectrum is narrow with respect to human vision, and functionally monochromatic.

B. Dual Power Supply(AC Power/Solar System)

A Power Supply is nothing but to provide Electronic power to an Electronic load, its primary function is to convert electrical current from a source to correct voltage, current and frequency to power the load.

- **AC Power supply**

An AC power supply typically takes the voltage from main supply and uses a transformer to step up or step down the voltage to the desired voltage having some filtering as well. In some cases, the source voltage is same as the output voltage. A circuit is designed with a voltage multiplier topology to direct step up AC power. [4]

- **Solar Power Supply**

Solar Power is the conversion of energy from sunlight into electricity either directly or indirectly. Directly by using photovoltaics(PV) and indirectly by using Concentrated solar power or a combination Concentrated Solar Power System use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. As the cost of solar electricity has fallen, the number of grid-connected solar PV systems has grown into the millions and utility-scale Solar Power Station with hundreds of megawatts are being built.

C. Global Positioning System(GPS)

A Global Positioning System(GPS) originally Navstar GPS, is a satellite based radio navigation system owned by the United States Government and operated by United State Air Force.[5] The GPS user does not require to transmit any data and it operate independently of any internet reception through the enhance technologies.

Each GPS satellite continuously transmits a radio signal containing the current time and data about its position, having the constant speed of radio waves. When the satellite system transmits the signal and the receiver receives it is proportional to the distance from the satellite to the receiver.

We show the block diagram of the proposed LED display(Globe).

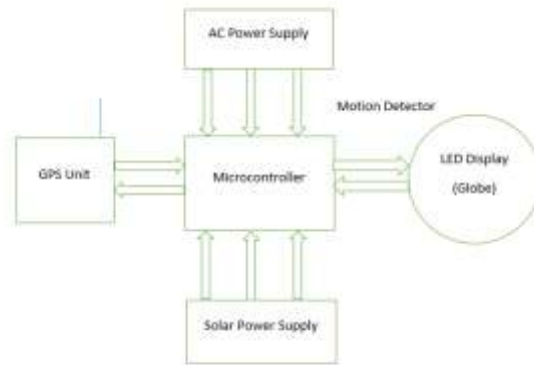


Fig. Block Diagram of LED Display(Globe)

Advantage

The more attractive message will more people get influenced by it. The purpose of this module is to make the advertisement area more attractive and also by Dual power supply to reduce the use of electrical energy.

V. Application

A. Education

If this module is used in education field it will provide a best way to interact with knowledge that we provide to students.

B. Advertisement purpose

This module is the best way to advertisement, as it is attractive display. The continues globe will be display a particular image or text.

C. Animation

The persistence of vision is the basic principle of animation; this technic is usable for cartoon animation.

VI. Conclusion

This paper introduces the drawback found in the existing work. As result in a new concept enhanced LED Globe display,as well as this paper introduce the dual power supply and inbuilt motion detector in the field of communication.such this dual power supply and location tracking was not have been introduce in one single device,this paper make the new change in exist technology by combining the two separate technologies together or under one roof. This new enhanced LED display will make our communication more efficient, more attractive and faster. Basically this model may be able to work under any circumstances with greater efficiency,as it uses AC power supply as well as solar power supply to control the system.

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