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SMART ECO-FRIENDLY BUS TO AVOID ACCIDENT AND POLLUTION

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ABSTRACT

Conformist vehicles offer superior energy proficiency while offering an enormous Potential for falling CO₂ emissions if the electricity is supplied from a renewable or nuclear source. However, they are presently neither range- nor cost-competitive compared to conventional vehicles, due to limited options for recharging, and expensive energy storage (batteries). This project aims at covering the contactless power transfer to the charging of moving electric vehicles. The success of this program may prove to be a very significant step forward towards the option of boundless range e- mobility by ranging the range of electric vehicles, this project will contribute to overcoming a critical limitation of existing electrical vehicles, by offering range at competitive costs.

Keywords- RFID, Microcontroller, GPS, CCTV.

1. INTRODUCTION

To overcome all the limitation in old buses, we develop a new concept such as "ELECTRIC BUS" i.e fuel less bus. Electric bus offer superior energy efficiency while offering an enormous Potential for reducing CO₂ emissions if the electricity is complete from a renewable or nuclear source. This project aims at spreading the alleging of moving electric bus & charging is allowed only when the valid bus. These buses are especially plan for BRT line. We also deliver position status for electric bus & develop reflex signalling system



Fig. 1: brt bus stop structure

2. LITERATURE SURVEY

Nowadays, travel time material becomes a key component of Advanced Traveler Information System (ATIS). The travel time of cars varies conditional on several outer constraints such as traffic, snow and accidents. In fact, buses are trapped in traffic and are thus laden by the passage of junctions. This makes the management of the bus schedule in the bus stations a difficult task. Most bus station follows fixed schedules, besides don't uses intelligent systems for vehicle following and control. Many controllers are deployed at the station to control the arrival and the exit of buses and prepare the trip sheets covering the schedules manually which is time consuming and inaccurate.



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Moreover, transport departments have no reflectivity over use of its fleet on real-time, which results in underutilization of resources. So, all these naturally results in avoidable stress, costly errors and sub cost optimumflesetuse and finally dissatisfaction and inconvenience to millions of commuters. The provision of timely and accurate transit travel time material is so important. New technology can help the administrator to monitor the buses traffic while increasing the satisfaction of transit users and reducing cost through efficient operations asset utilization. Well-known examples of ID technologies include Closed-Circuit Television (CCTV) and Global Positioning System (GPS).

3. BLOCK DIAGRAM

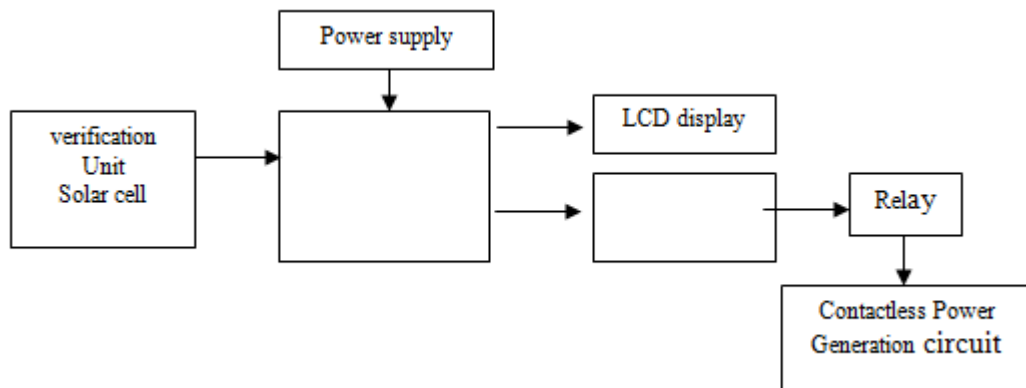


Fig.2: Bus Stop unit

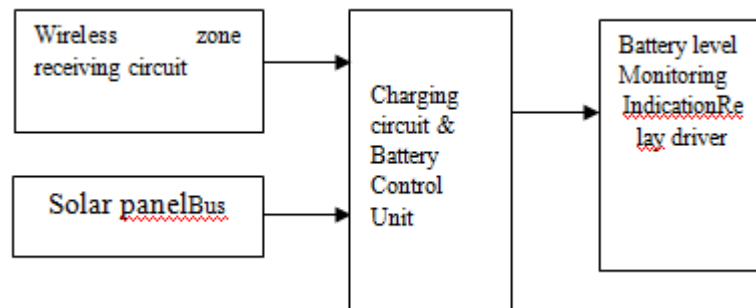


Fig.3:- Bus Unit

Component Explanation

Microcontroller

The signals from the RFID reader are given to the Microcontroller. Microcontroller processes all these signals and gives data to LCD display.

Rfid reader

There are two RFID reader used , first is used for the scanning of BRT BUS at bus stop no.1 and second reader for bus stop no.2.



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Rfid Tags

The BRT buses are labeled with the RFID tags. All the information related BRT bus are stored in cards.

Lcd Display

It is used for the displaying the information for the user.

Relay

It is used to drive AC/DC Load & also used for auto switching purpose.

Solar Cell

It is used to convert sun energy into electrical energy. Photovoltaic (PV) systems convert light energy directly into electricity. Normally known as “solar cells.” The meekest systems power the small calculators we use every day. More complex systems will provide a large slice of the electricity in the near future. PV represents one of the most promising means of maintaining our energy exhaustive usual of living while not paying to global warming and pollution.

Battery

A battery is a device that changes chemical energy directly to electrical energy. There are two types of batteries: primary batteries (disposable batteries), which are designed to be used once and discarded, and secondary batteries (rechargeable batteries), which are designed to be recharged and used several times.

4. HARDWARE IMPLEMENTATION

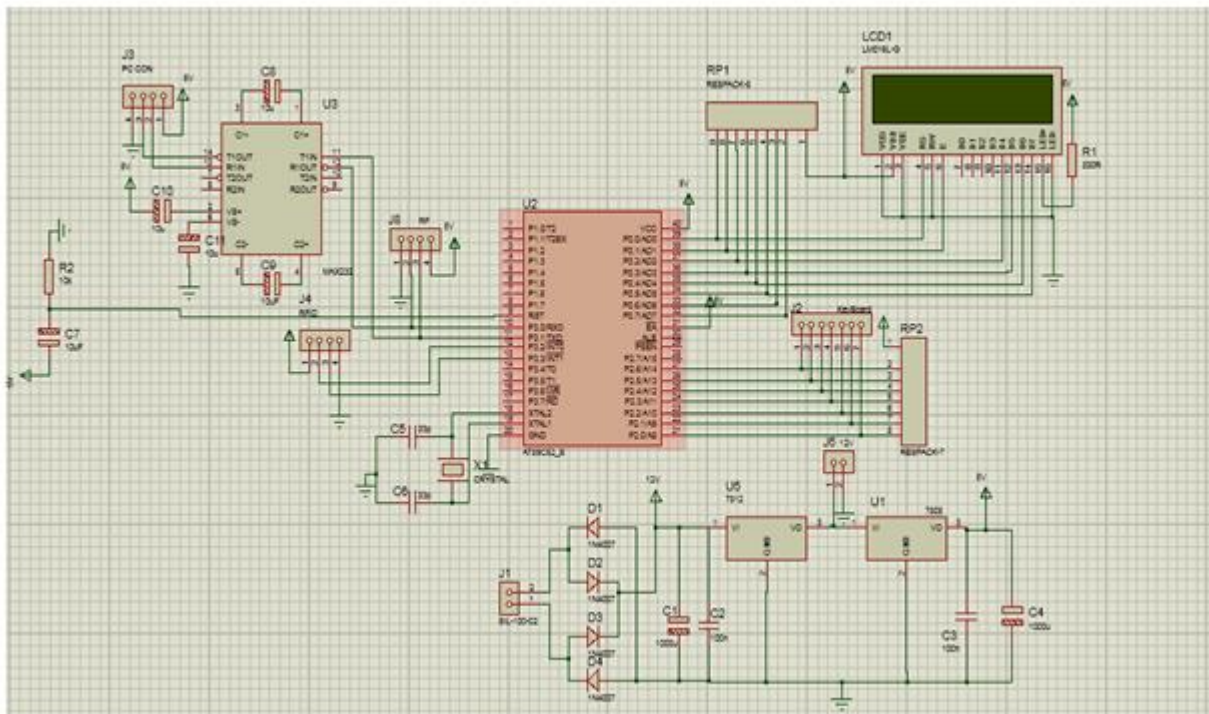


Fig. 4:- Circuit Layout For Both Unit



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Expected Result



Fig. 5:- Circuit Layout for Both Unit

The electronic buses are the very operative for latest environmental situations because by using this type of e-buses we can save fuel as well as people who seated in a bus can charge their mobile phones and electronic equipment as well.

In our project, we are basically directed on following application such as:

- Verification of bus.
- Wireless communication i.e. Bus monitoring status.
- Automatic battery charging.
- Status of battery charging.

5. ADVANTAGES

1. More suitable
2. No physical charging or recharging of batteries.
3. Eliminate unpleasant, unwieldy and costly power cords.
4. More reliable:
5. Never run out of battery power .
6. There is no need of having a line of sight.
7. More environment friendly
8. Reduce use of reusable batteries.
9. Use efficient electric grid power directly in its place of inefficient battery charging.

6. APPLICATIONS

This device can be used to give power to any appliances.

- Involuntary wireless charging of mobile electronics (phones, laptops, game controller) in home, car, Wi-Fi hotspots.
- Direct wireless powering of stationary devices (flat screen TV, Digital picture frame, home theater accessories, wireless loud speaker)
Direct powering to desktop PC peripherals wireless mouse, keyboard, printer, speaker, display.



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7. TRANSPORTATION

- Reflex wireless charging for future mixture and all electric traveller and profit-making vehicles, at home, in parking garages, at feet depots and at remote kiosks.
- Direct wireless power interconnection to replace costly vehicle wiring harnesses and error rings.

8. OTHER APPLICATION

- Direct wireless power interconnections and automatic wireless charging for implantable medical policies (ventricular assist plans, pacemaker, defibrillator)
- Automatic wireless charging and for tall tech military systems(battery powered mobile devices, translate, unmanned mobile robots and aircraft.)
- Direct wireless powering and automatic wireless charging of smart cards.

9. CONCLUSION

We are trying to develop wireless charging system which is having the RFID confirmation for the sad vehicle using inductive coupling principle. This will reduce the release of harmful gases such as CO₂ or SO₂ that are produced by the fuel vehicles.

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