Scientific Journal of Impact Factor (SJIF): 5.71

e-ISSN (O): 2348-4470
p-ISSN (P): 2348-6406

International Journal of Advance Engineering and Research Development

Volume 5, Issue 05, May -2018

E- UNIFORM

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Abstract — *Solar primarily based E-Uniform offers higher protection to the troopers who are operating in extreme climate. solarPanels are accustomed power up the inner circuitry of the E-uniform.A 12 V DC lead acid rechargeable battery is used for storing the energy. We ar using standard battery charging unit conjointly for giving provide to the circuitry. LPC2148 small controller is that the heart of the circuit because it controls all the functions. A voltage sampler is interfaced with the system exploitation ADC to urge the voltage generated from battery as a show on a 16X2 liquid crystal display.The project is operated in summer mode and winter mode. By choosing the mode of operation, we are in operation the H-Bridge IC specified it will drive body heater/cooler.The heater/cooler in turn will help us to provide chilling or warming effect inside the uniform which helps the soldier to bear to any kind of external environment. The GPS is interfaced with the microcontroller and GPS is also interfaced such that the tracking of the entire soldier is observed. This Uniform will make the soldier to work in any kind of environment.*

Keywords- *Arm 7,LCD,Peltier plate ,gps, Solar Panel, Battery.*

I. INTRODUCTION

Soldiers are the Army's most important resource. Soldiers play a vital role to protect one's country. The term soldiers include service men and women from the Army, Air Force, Navy and Marines. They will always be the one responsible for taking and holding the duty in extreme weather conditions throughout the year. While providing security to the nation, they may face troubles in extreme hot/cold weather conditions. Both very hot and cold temperatures could be dangerous to health. Troopers are the Army's most imperative asset. Officers assume an indispensable part to ensure one's nation. The term troopers incorporate administration men and ladies from the Army, Air Force, Navy and Marines. They will dependably be the one in charge of taking and holding the obligation in great climate conditions consistently. While giving security to the country, they might confront inconveniences in amazing hot/icy climate conditions. Both extremely icy and exceptionally hot temperatures could be hazardous to wellbeing. Extreme introduction to warmth is alluded to as warmth anxiety and over the top presentation to frosty is alluded to as icy anxiety. In an extremely hot environment, the most genuine concern is warmth stroke. At exceptionally icy temperatures, the most genuine concern is the danger of hypothermia or perilous overcooling of the body.

In this project we are going to design an E-Uniform which gives better protection to the soldiers who are working in extreme weather conditions.This project is gives two modes summer mode and winter mode .By selecting the mode of operation the relays drive body heater/cooler. The heater / cooler in turn will help us to provide chilling or warming effect inside the uniform which helps the soldier to bear to any kind of external environment and he can work efficiently without heat stress or cold stress.

II. LITERATURE SURVEY

1. **SOLAR BASED E – UNIFORM FOR SOLDIERS-USED FOR TEMPERATURE CONTROL AND TRACKING**

Author:- M.Sivalingamaiah, E.Satheesh kumar, M.Vijaya lakshmi

Solar based E-Uniform gives better protection to the soldiers who are working in extreme weather conditions. Solar Panels are used to power up the internal circuitry of the E-uniform. A 12 V DC lead acid rechargeable battery is used for storing the energy. We are using conventional battery charging unit also for giving supply to the circuitry.

2. **SOLAR BASED E-UNIFORM FOR SOLDIERS**

Author:- Asist.prof.Sridevi S.H.,Mr.Amit Dobade,Mr.Rohit Phulmali,Mr.Rahul Sinare

Solar based E-Uniform gives better protection to the soldiers who work in extreme weather conditions. Solar Panels are used to power up the internal circuitry of the Euniform.The energy is stored by using a 12V DC lead acid rechargeable battery. A conventional battery can also be used as charging unit. LPC2148 micro controller controls all the functions. A voltage sampler is interfaced with the system using ADC to get the voltage generated from battery as a display on a 16X2 LCD. In this paper we have designed an E-Uniform which gives better protection to the soldiers who work in extreme weather conditions. This Uniform will facilitate the soldier to work in any kind of environment.

III. System architecture

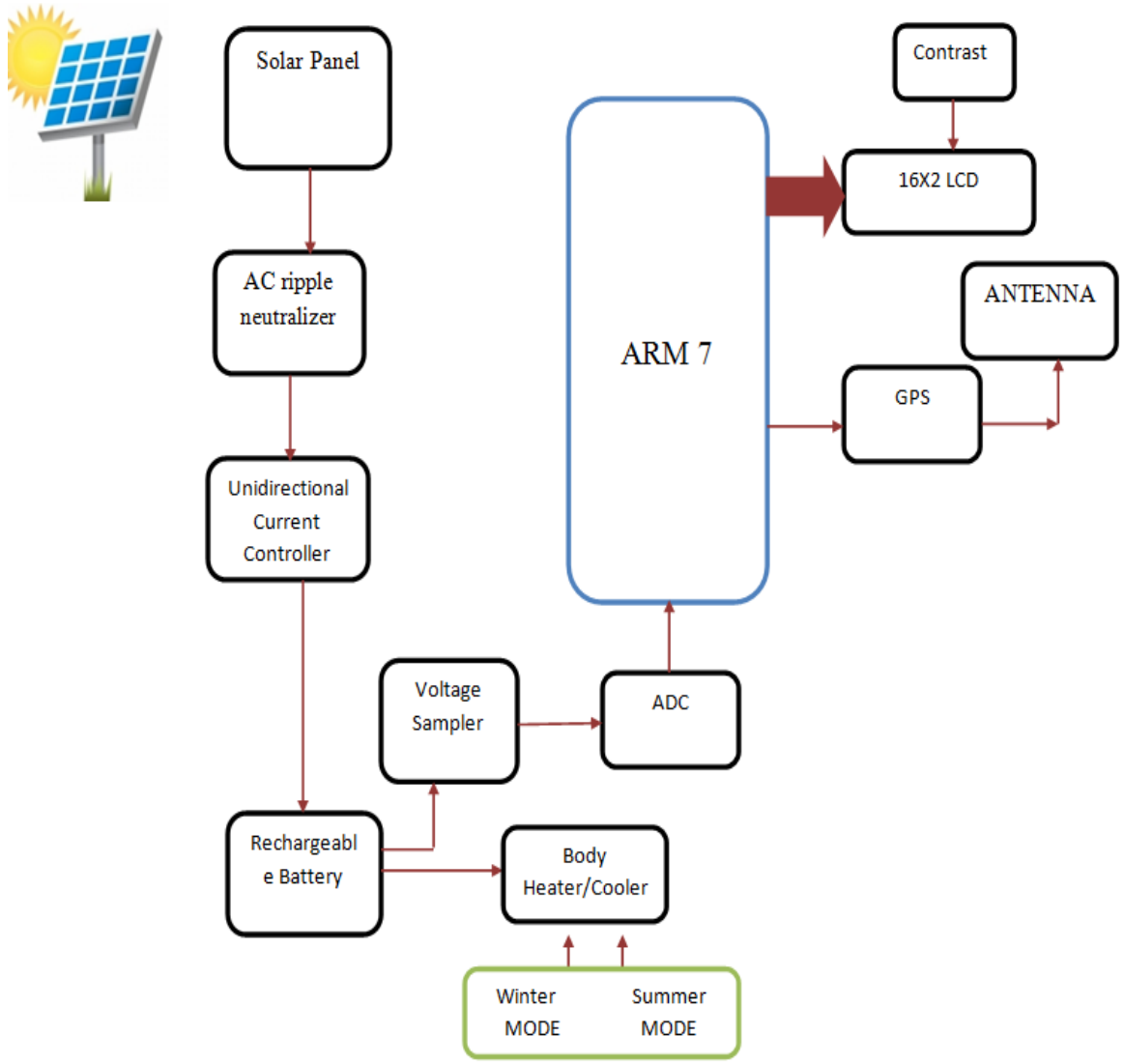
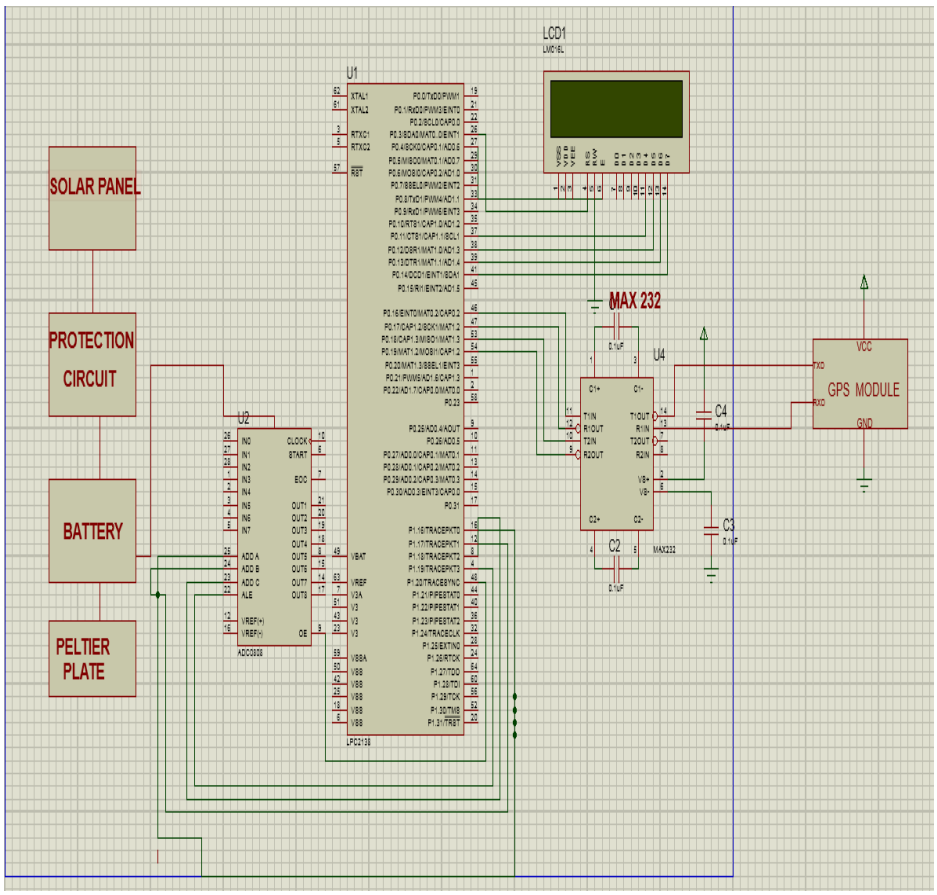


Figure: System Architecture

IV. Proposed System

- Solar panel used for power generations.
- And then generated power will be stored in battery
- They will always be the one responsible for taking and holding the duty in extreme weather conditions throughout the year.
- While providing security to the nation, they may face troubles in extreme hot/cold weather conditions. Both very hot and cold temperatures could be dangerous to health.
- In this project we are going to design an e-uniform which gives better protection to the soldiers who are working in extreme weather conditions.
- This paper is gives two modes summer mode and winter mode .by selecting the mode of operation the relays drive body heater/cooler.
- The heater / cooler in turn will help us to provide chilling or warming effect inside the uniform which helps the soldier to bear to any kind of external environment and he can work efficiently without heat stress or cold stress.
- Lcd display the battery voltage on lcd.
- Also by using GPS location will be trace.

V. Circuit Diagram



VI. PROBLEM STATEMENT

The man/military in ice land or in snow they works twenty four hours and seven days thus their temp. is below zero degree Centigrade. they need to survive their and additionally in desert their tem. Is above forty degree Centigrade, and their additionally we've got to maintain body temp. 27 degree Centigrade. thus we've got have to be compelled to prepare the heating and cooling jacket.
In this project we tend to ar attending to design AN E-Uniform which provides higher protection to the troopers WHO ar operating in extreme atmospheric condition.

VII. ADVANTAGES

- Protection from extremely low temperature such as 0/Minus Degree in hilly regions
- In deserts where temp is high uniform will maintains cool.
- No need to handle torch lights.
- Fit and forget system
- Reliable
- Compact size
- Affordable prize (Low cost)
- Low Maintenance

VIII. Goals and Objectives

- Design and develop the e-Uniform for extreme cool and hot using solar system.
- To develop a prototype model of the same which will show the working of e-uniform for extreme cool and hot using solar system set up with respect to the position.
- To propose a low cost e-uniform system using solar system.
- Fit and overlook framework
- Reliable

- Compact size
- Affordable prize (Low cost)
- Low Maintenance

VI. CONCLUSION

Soldiers are one of the important factors in a country. Because they are the forces who protect our country day and night living behind sleep and rest. Therefore it is our responsibility to protect them. Same is the significance of this project. So here design an E-Uniform which gives better protection to the soldiers who are working in extreme weather conditions. This project is operated in two modes summer mode and winter mode. If the weather condition is too hot then the cooling system will operated and if it is too cool then the heating system will operated. If this system may fail GPS will find out the position of soldiers. This project has a significant role in our day to day life .Also it can be used in various streams of industrial applications.

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