



# POWER WARMTH MONITORING STRUCTURE (VTMS) FOR A BTS ROOM

Mr. Manish Sharma

College of Engineering, Pune

## ABSTRACT

*Though Cellular communication is obtaining a lot of and a lot of standard in our country gift days, however its network improvement is hampered by the crysis of electricity. The recent call of gift Government is that they'll not give any electricity from the grid to any new BTS rooms of any Celluler operator firms like Grammen Phone, Robi, Airtel etc. These firms got to develop their own power stations either by exploitation generators or by developing star plants. currently a days most of the BTS rooms, that the cellular operators square measure putting in with a generator and forty eight V battery backup. therefore for the synchronisation of the operation of PDB, Generator and battery, they need a tool known as Voltage Temperature observation System or VTMS. it's a Microcontroller based mostly dominant unit that controlls the operation of generator and battery once PDB in not out there within the BTS space.*

## 1. INTRODUCTION

Within the history of Asian country, power crisis has reached to the worst-ever level, particularly throughout the recent summer days, once country's average temperature is thirty one to thirty five degree Celsius [1]. Asian country has been facing electricity shortage for several years. The distribution system in Asian country is facing tremendous pressure from industrial and residential users to keep up an everyday provide [2]. In previous couple of years this drawback wasn't serious however within the year of 2010-11 the matter has exceeded the common people's patient. Power outage/failure may be a common development now-a-days and folks face severe electrical load shedding, voltage fluctuation throughout the day and this drawback is a lot of severe within the rural areas, though solely half-hour of the full population enjoys the electricity facilities [3]. one among the main steps that our Government has taken to resolve this electricity drawback is that they'll not give any power from the grid to any new BTS and for brand spanking new BTS, operators should got to develop their own grid by exploitation generators or renewable energy [4], i.e. solar power [5].

Early detection of heating and correct handling of such state of affairs during a BTS space is admittedly essential [7] to avoid deterioration and faulty elements. to resolve the ability drawback, now-a-days most of the BTS rooms square measure put in with a diesel generator [8] and forty eight V battery backup. so that they alternate the supply like they use generator six|for six} hours and battery for next 6 hours to fullfil their power requirements with the assistance of a dominant device known as VTMS. And temperature is additionally maintained AN exceedingly|in a very} bound level by chase the temperature with VTMS that provides AN alarm for an heating surroundings of BTS. therefore Voltage and Temperature observation System (VTMS) may be a micro-processor based mostly digital programmable device, designed with integrated systems [9] [10]. it's wont to management the entire power distribution surroundings by observation forty eight V battery voltage level and temperature of a BTS space, synchronizing and maintaining the provision among PDB, Generator and forty eight V battery provide and additionally by generating some vital alarm as per needed.

## 2. PROJECTED SYSTEM

The system contains a temperature device, a multi flip five metric weight unit ohm electrical device to regulate the battery voltage level and a few relays to come up with completely different alarms and additionally to sense the mains fail and low fuel condition. the entire system is controlled by a PIC microcontroller 16F877A. It senses whether or not the PDB is on the market or not if not then takes completely different selections, synchronize the operation of generator and battery and provides some alarms as per logic provided.





### 3.1.4 show section

For show section a 4x20 line alphanumeric display (Liquid Crystal Display) is employed. alphanumeric display is currently a awfully common alternative for graphical and alphameric displays. usually alphanumeric display may be a high distinction management module with a 4-bit or 8-bit knowledge bus and inbuilt temperature management module [24] [25].

### 3.1.5 device section

LM35DZ is employed here as a temperature device to live the area temperature. it's a linear device or it provides linear knowledge. The LM35 series square measure exactness integrated-circuit temperature sensors, whose output voltage is linearly proportional to the Anders Celsius (Centigrade) temperature [26] [27] [28]. The calculation of temperature from the device is shown in equation one.

## 4. RESULT

The result shows the entire controller in fig 8(a). this is often the entire product and it's additionally tested within the real time surroundings. Fig 8(b) shows the ports to attach the wires returning from alarm box and additionally from generator. This figure shows the multiturn of battery voltage observation section is unbroken in such the simplest way that battery voltage is tag for showing within the alphanumeric display. This figure additionally shows the temperature device position. In fig 8(c) the alphanumeric display output is shown and in fig 8(d) the indicator semiconductor diode and their names square measure shown.

## 5. CONCLUSION

The explanation and also the actual motivation toward this work is to make a high quality product that provides a full support to manage the operation of the generator and produce synchronization between the battery and generator in step with the PDB provide in BTS space. For the protection of the instrumentation of BTS space it's additionally necessary to manage the temperature that is monitored by exploitation VTMS. therefore it's an entire package for a BTS space to not solely maintain the correct grid for BTS however additionally monitor the temperature for the protection of subtle equipments of BTS space. The producing price of VTMS is calculable to be twenty nine USD that is admittedly price effective.

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