GSM CONTROLLED PRE-PAID ENERGY METER

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ABSTRACT:

The point of the task is to diminish the line at the power charging counters and to confine the use of power naturally, if the bill is not paid. The undertaking likewise goes for proposing a framework that will diminish the loss of force and continues because of force robberies and other unlawful exercises. The work framework receives an absolutely new idea of "Prepaid Electricity". The GSM innovation is utilized so that the client would get messages about the usage of force and on the off chance that it achieves the base sum, it would naturally caution the client to revive. This innovation holds useful for all power deliverance organizations, private groups, IT parks and self-containing lodging ventures. The usage of this venture will help in better vitality administration, conservation of vitality furthermore in getting rid of the superfluous bothers over wrong charging. The robotized charging framework will remain track of the ongoing utilization and will leave slight degree for deviation on utilization and billing.

KEYWORDS:

Energy meter, GSM technology, Micro controller ATMEL 89S52.

INTRODUCTION:

The task points in manipulative a framework which makes electric bill installment less demanding furthermore controlling of computerized meter for power office turns out to be all the more effectively utilizing GSM innovation. The GSM modem gives the correspondence component between the purchaser and the vitality meter by method for short message administration messages.

GSM based prepaid power is an elite and most recent idea which spares part of time and control for power division. shopper can energize the card at whatever point the force is required. Power division powers send uniquely decoded SMS message to the Modem associated with the vitality meter.

On the off chance that the adequate sum is revived, then the creator can send the message through GSM with novel distinguishing proof number. So the force is conveyed to client. Contingent on the client use of influence, cash will be diminished depending up on the force utilization. Furthermore, a LCD is put to show the present readings.

Microcontroller is interfaced with GSM modem. "Prepaid vitality meter" is a current time computerization framework where we can spare the force. Here the gadgets to be controlled are interfaced with a GSM modem unit, which is fit for getting directions as Short message benefit and performs the important undertakings. A committed GSM modem with SIM card is required for every vitality meter. The bill sum is additionally shown on the LCD screen. The powers can switch OFF the ability to client on the off chance that he doesn't pay the bill,

through basic SMS.

An EEPROM is given on the board to store the upgraded revive units and vitality meter heartbeat check. At each moment the tally esteem and units qualities are put away in EEPROM so that the information won't be lost even in force disappointment cases. At the point when the energized units get to be zero on force utilization, the framework shutdown every one of the heaps associated with it. What's more, the heap will be separated from the supply with the assistance of hand-off. Again client needs to energize

II. PROBLEM FORMULATION

1.Errors are unavoidable at each phase of charging, some are human mistakes while noticing down the meter readings, blunders while handling the paid bills and the due bills.[1]

2. human blunders in taking meter readings

III. BLOCK DIAGRAM AND EXPLANATION

Pre-paid Energy meter using GSM
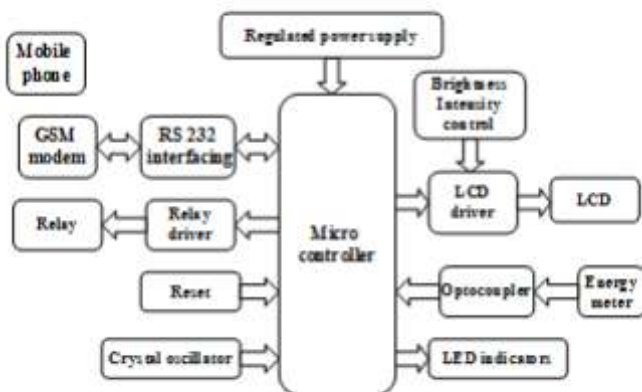
Microcontroller

The AT89S52 is an elite CMOS 8-bit microcontroller, low-power, with 8K bytes of EPROM. These are components of AT89S52 microcontroller: 256 bytes of RAM, 8K bytes of Flash,32 information/yield pines, three 16-bit clock/counters, Watchdog clock, two information pointers, six hinder of two level structural engineering, serial port, oscillator . the AT 89C52 is intense MC which gives an adaptable and cheap result to numerous implanted

framework applications.

Vitality meter:

An electric meter or vitality meter is a gadget that measures the measure of electrical vitality devoured by a living arrangement, business, or an electrically-controlled gadget.

Electric meters are normally aligned in charging units, the most well-known one being the kilowatt hour. Occasional readings of electric meters set up charging cycles and vitality utilized amid a cycle.

In settings when vitality funds amid specific periods are coveted, meters might gauge request, the greatest utilization of force in some interim. In a few territories, the electric rates are higher amid specific times of day, to support lessening being used. Likewise, in a few territories meters have transfers to kill unnecessary gear

Optocoupler:

An optocoupler-detached power supply is regularly the most secure and most handy approach to go with regards to execution and insurance. The utilization of an optocoupler likewise acts to kick things off circles, and this usefulness is profitable in killing regular mode commotion, particularly for frameworks working at the higher working voltages. At the point when diverse force supplies in a framework are entwined, ground circle streams have a tendency to be instigated because of slight contrasts in ground potential

Transfer:

A transfer is an electrically worked switch. Numerous transfers utilize an electromagnet to work an exchanging instrument, yet other working standards are additionally utilized. Transfers discover applications where it is important to control a circuit by a low-power signal, or where a few circuits must be controlled by one sign.

GSM (Global System for Mobile)-

GSM is an extra gathering cell regular progressed to give supposition offices and records exchange by arithmetical articulation.
GSM Specifications-1RF Spectrum
GSM 900
Versatile to BTS (uplink): 890-915 MHZ
BTS to Mobile (downlink):935-960 MHZ
Data transmission : 2* 25 MHZ

LCD (Liquid Crystal Display) –

LCD which is ordinarily known as Liquid Crystal Display &Alphanumeric Presentation it implies that it can indicate Letters, Amounts and also diverse codes therefore LCD is a client generous Show system which can be utilized for demonstrating numerous correspondences distinctive seven segment show which can demonstrate just amounts and a portion of the letters

RS232 CABLE:

To permit similarity among information correspondence hardware, an interfacing standard called RS232 is utilized. Subsequent to the standard was set much sooner than the approach of the TTL rationale family, its data and yield voltage levels are not TTL perfect.

Consequently, to interface any RS232 to a microcontroller framework, voltage converters, for example, MAX232 are utilized to change over the TTL rationale levels to the RS232 voltage levels and the other way around.

Gem Circuit

This gem circuit gives the required clock heartbeats to the microcontroller to give it the feeling of the reference time

Reset Circuit

This circuit gives the microcontroller the beginning heartbeat required to begin the operation from the begin. Unless this heartbeat is given, the microcontroller doesn't begin working

Driven Indicators
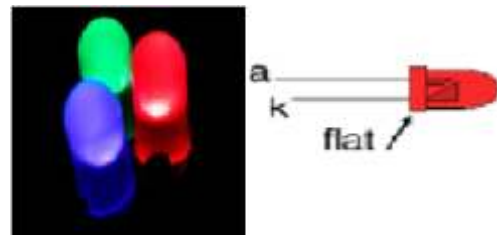
Driven Indicators gives visual sign of framework status. In this venture we a making utilization of LED markers to check the strength of the Microcontroller.

It likewise used to demonstrates the nonstop correspondence between the microcontroller and GSM Modem.

It likewise demonstrates the status of Relay.

Control supply

The A.C. 230 info is given to rectifier circuit and Output get from the rectifier is a throbbing D.C voltage. The yield from the rectifier is given to a channel circuit to channel A.C segments present consistent later than correction. Presently, this voltage nourished to voltage controller to immaculate consistent D.C voltage get.

II. SOFTWARE DESCRIPTION

This venture is executed utilizing taking after software's:

1. Express PCB – for outlining circuit
2. PIC C compiler - for assemblage part
3. Proteus 7 (Embedded C) – for reproduction part.

III. ADVANTAGES:

1. Energy protection can be observed on LCD show.
2. The framework alarms through SMS
3. Efficient and ease plan.
4. Low force utilization.
5. Fast and precise result.

IV. RESULT

V. CONCLUSION:

Incorporating elements of all the equipment segments utilized have been created as a part of it. Vicinity of each module has been contemplated out and set deliberately, in this way adding to the best working of the unit. Furthermore, utilizing very propelled IC's with the assistance of developing innovation, the task has been effectively actualized. Along these lines the undertaking has been effectively composed and tried.

VI. REFERENCES

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