

# A Report on General Purpose Development

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**ABSTRACT:** *This paper shows the creation and design of a control panel with various peripherals application package. Application set. It is a compact device for which you can use Input power, display and handling. An overall solution the controller board is simply a controller board that enables its use, which ultimately points to, in different applications out to its other applications compatibility. Used true sensor the temperature remain and then the quantity is measured this is a real time control device measured and presented. This control board is designed to allow a communications between the microcontroller and devices. It is an electronic platform via serial communication Easy-to-use hardware, applications and software. Carried out by following a series of instruction. The micro-controller programmed.*

**KEY WORDS:** *Controller Board, Microcontroller, Analog Sensing, Communication, Display, Sensor.*

## INTRODUCTION

Conventional built-in design environments comparative boards of microcontrollers, FPGA or DSP are complex and demands substantial learning time. Scientific studies in digital and other fields analog application management has been substantially affected heights to ensure substantial difficulty for initial research practical as well as theoretical. The Checker comes with all the peripheral drivers' available Long-term device and hardware assurance Consistency. The availability of strong drivers the hardware platforms considered release the users from Low-level programming burden. Simultaneously, high programming approach promotes software reuse and allows laboratory skills to be steadily used via time, grow. Finally, if both are fully incorporated, a well-designed real time setup (RT) driven simulations can be done with the application [1]. This will allow the developer to proceed with the implementation of the controller. This paper elaborates the proposed block diagram, section III includes the survey, comparison, selection of the components, section IV consists the designing blocks for each peripheral and respective schematic, section V consists of generation of gerber files for layouting, section VI includes Hardware Implementation and section VII determines the software implementation, testing and development details. As a result, the development of non-trivial applications, for demonstration as well as for scientific research purposes requires considerable efforts and relatively long times.

All that, often, discourages students and prevents them from engaging the challenge altogether. The interest on digital computation platforms for the development of controllers and real-time simulation systems has increased significantly in recent years [2]. This is also due to the needs, posed by smart grid applications, for the simulation of complex power system. This section aims to discuss in greater depth the various Hardware features of the controller. Each component is described in terms of its function and capabilities.

## HARDWARE TOOLSET

### *PIC Controller:*

DsPIC3EP system control the controller, I2C bus slave configured. The PIC is programmed announced with microchip MPLAB programmer incorporated technology, Maximize requests including Flexibility and reliability as well as the varying costs outside bits. The features include an alarm clock, Flexible settings, code protection, JTAG code protection Programming of border scans, including serial in circuit Programming (ICSP) and resetting brown-out (BOR). Everyone Restored input function is simultaneously mapped and the same pin. And to the same [3]. If any function needs to be executed the allowed pin can be reworked. The systems therefore used contribute to industrial use. Centered on the IC ADE7754 real-time value. Some people Prefect mechanism instructions helps preserve output and the execution provides

predictable. Most directions efficient execution rate in a single cycle with except for guidance. The pin is based on HIV and VIN acts as the source or sink in relation to the pin of controller-Of controller.

#### *Voltage Sense Input:*

The connections to the Voltage Input can be related directly Sources of line voltage. The line voltages are attenuated made before it is using a simple network resistor divider ADE7754 submitted the network of mitigation Network corner frequency has voltage channels. Matches those of the filters required for RC (anti-aliasing) inputs from the existing channel this is important because they are important don't balance big mistakes at lower power factors [4]. The attenuation network can be changed the user can easily accomplish any feedback level of signal. The resistance value with 1K value however the phase response of voltage should not be changed channels do not conform to existing channels. The maximum signal level endurable at VAP, VBP and VCP is 0.5 V peak for the ADE7754. ADE7754 analog inputs that can withstand  $\pm 6V$  without damage, but the signal range should not exceed  $\pm 0.5 V$  with respect to AGND. VN, analog input is connected to AGND via the anti-alias filter.

#### *Voltage Sensing:*

The figure above indicates that the voltage of the step is sensed 230V AC entry. The disparity must be obtained the output voltage. The gap is approximately 0.5 V. For this reason, a 1M resistor is needed. There are the following: With regard to the neutral, voltages are.

$$V_R = 230 V$$

$$V_Y = 230 V$$

$$V_B = 230 V$$

Here placing a single can cause a problem to entire circuitry in case of high voltage input, palcing multiple resistors in series can help in such situation. SMD resistors 1206 are used with value of 333K each. Using voltage divider formula.

$$VAP = [R2 / (R1+R2)] \times VIN \dots (1)$$

$$VAP = [1K / (1K+(333K \times 3))] \times 230 VAP = 0.23V \quad VAP= 200-300mV$$

#### *Current Sensing:*

The current transformers are used for stepping down the current. TALEMA Group's AC1005 is used for the purpose. The CT is best suited for sensing overload protection, ground fault detection, metering and analog to digital circuitries. It has 5A nominal primary current and the maximum of 60 Amp is specified. The CT has nominal turn's ratio of 1000:1. The terminating resistor and the one turn primary are not altered [5].

## **DEVELOPMENT OF BOARD**

There have been many paper in the field of general purpose controller board among all those papers a paper titled "A Review Paper on DEVELOPMENT OF GENERAL PURPOSE CONTROLLER BOARD" by Ms. Aditi Girish Vaidya, Mr. Lakshman Korra this paper shows the creation and design of a control panel with various peripherals application package [1]. Application set. It is a compact device for which you can use input power, display and handling. An overall solution the controller board is simply a controller board that enables its use, which ultimately points to, in different applications out to its other applications compatibility [6]. Used true sensor the temperature remain and then the quantity is measured this is a real time control device measured and presented. This control board is designed to allow a communications between the microcontroller and devices. It is an electronic platform via serial communication Easy-to-use hardware, applications and software. Carried out by following a series of instruction. The micro-controller programmed.

## CONCLUSION

The product of the new revolutionary ideas and many functions and many. A variety of potential parameters edited makes an optimized adaptation to the various devices. This module is user-friendly and menu-based action on plain text guided screens. Your House Features allow an intuitive operating mode.

## REFERENCES

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