



# An innovative approach based on VLSI to bring yoga under electro automation

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## ABSTRACT

*This Project Belongs to a very important domain and having wide spread applications across the Globe. The level of stress and tension is increasing day by day, particularly in the Metropolis and people are running after solutions in a different way. The quantum of Traditional Yoga studios are being opened up at a fantastic scale in most of the cities in Europe, Asia and America.*

*It is a subject to note the level of practising accuracy blended with quick recovery portfolio is very much needed. In order to manage this challenging problem- Teacher free fully automated Yoga Platform with extraordinary electronic set up would be a novel idea and I have just selected this as my Project to serve people all over the world and also to open up new vistas of further research on it. This project to be based on totally Advanced VLSI Technology with customised software.*

**Keywords:** Electro automation, Metropolis, Traditional Yoga.

## 1. INTRODUCTION

The system will be centre around a specially made Yoga Platform and various mechatronics devices to be planted over this work station. It would be a five step system where in against of specified postures, the control systems to be attenuated. The term Electro Yoga is implied, because of application of various level of frequency, the whole project will turn providing positive result for the purpose of bringing down the stress level not only ,but along with will keep fit the person in every way through cumulation of energy.

There will be a PIC ( Peripheral Interface Controller) supported or Microcontroller supported governance paradox by which programmed command with specific duty cycle to be produced and accordingly to interfaced with the driving section for the purpose of actuating Robotic and electro tools to run.

Special linearly regulated Power supply with exact rating will take care of Power management section of my project concerned.

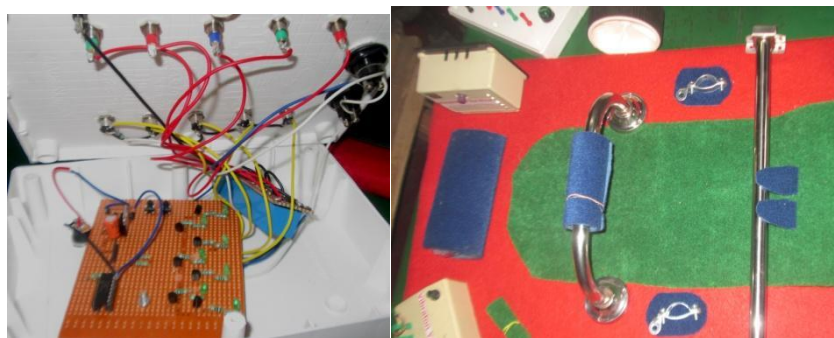


Fig:1 Electro Yoga Platform

## 2. CIRCUIT COMPONENTS

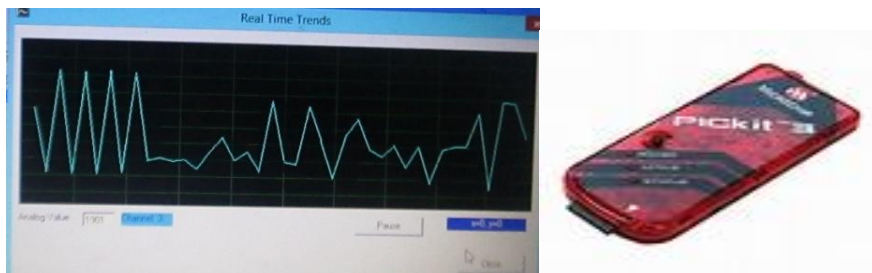
HARDWARE COMPONENTS	SOFTWARE COMPONENTS
Electric Motors	MPLAB Compiler
Crystal	Proteus Software
Reset	Embedded C Language
PIC Microcontroller	
Resistors	
Capacitors	

## 3. WORKING METHODOLOGY

In fact the project is based on right now a pic controller, but as an option it can run with any ATMEL advanced processor. To develop a VLSI platform for control application, a set of essential functional blocks should be there, like, clk. Inputting either from external reference or from the chip by setting program within, a resonator block specially made of 11-579 MHZ Piezoelectric crystal supported, a pull down block, buffing array, status indicator, cll( current limiting limiters),EM drive block, linear regulator etc.

Further to run in sequence with time from central command, polarity reversal circuitry with dc brush lees motors along with robotic arms to be necessarily planted.

The outputting trend is viewed for the initial status as under.



The main objective of this project is the development of a device prototype capable of performing electrotherapy treatments at low and medium frequency as referred above. In order to do so, the following characteristics must be taken into account:

- The programmable signal generator must be able of producing signals with frequencies up to 10 kHz.
- Due to practical issues, the system supply voltage cannot exceed 12 V, while the output signal may contain peaks that reach 100 V;
- The setup must have appropriate safeguards to avoid patient injuries;
- The user interface must be friendly, in order to be used by technical personal without expertise in electronics and computing;
- The setup must be flexible enough to allow for the introduction of new types of treatments without hardware upgrades;
- The setup must perform self-diagnosis tests and report any type of anomaly;
- The setup must be able to work 24 h a day, 7 days a week.

The general system architecture proposed in this article is a master-slave structure since there are two control units: the high-level one (master) and a low-level one (slave).

The high-level control unit, central processing unit (CPU) or simply the master is responsible for supporting the user interface, exchanging and processing the necessary information between the user and the low-level control unit. The low-level control unit or slave is responsible for converting digital data, sent by the high-level control unit, to analog signals, which are directly applied to the patient. Its main component is a microcontroller. The low-level control unit, once programmed with a treatment data, can operate alone. Nevertheless, it may be useful to maintain the high-level control unit connected for debugging, treatment monitoring and error or malfunction detection.

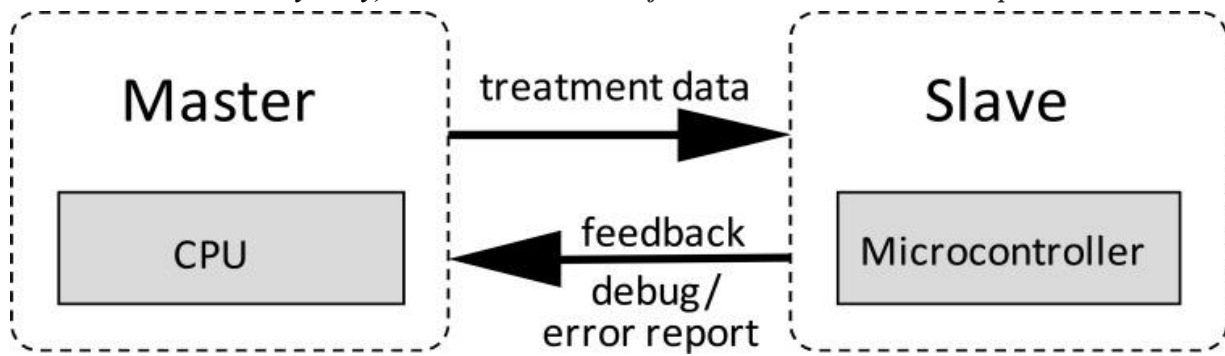


Fig. (2) shows the system architecture. The CPU operates as master and the microcontroller operates as a slave. The microcontroller functionalities are programmed by the CPU and then, the microcontroller can run alone

#### 4. HEX CODE AND SOFTWARE

The Real time software is given below:-

```
:03000300020145B2
:03000B0002018966
:0300130002016780
:1000300075A887D288D28A758911758CEC758A78F3
:10004000D28CC2907520001201AC7D1A752100750A
:10005000220075230075240010001412011560F8A9
:100060001200E97440120222745212023380E985B0
:10007000213085223185233285243312020EE52476
:10008000C4540F12013A120233E524540F12013AFC
:10009000120233E523C4540F12013A120233E5234E
:1000A000540F12013A120233E522C4540F12013ADE
:1000B000120233E522540F12013A120233E521C431
:1000C000540F12013A120233E521540F12013A1271
:1000D00002331200FB600F7526C8752703D290D239
:1000E000042004FDC29002004A7880E530F608E55D
:1000F00031F608E532F608E533F6227880E6B530C9
:100100001208E6B5310D08E6B5320808E6B5330346
:10011000740122E42220032020A004740180132013
:10012000A1047402800C20A2047403800520A3089B
:100130007404752532D20322E422C3940A400324B6
:100140004122243A22C0E09201D3E52133F521E592
:100150002233F522E52333F523E52433F524DD02AC
:10016000D200D0E0A20132C0E09202C3E52133F513
:1001700021E52233F522E52333F523E52433F52465
:10018000DD02D200D0E0A20232C28DC28C758CECAE
:10019000758A78D28C300305D52502C20330040B52
:1001A000D526087526C8D52702C204327E107F00E6
:1001B000DFFEDEFAC2A5C2A6C2A77E287F00DFFE50
:1001C000DEFA758038D2A7C2A77E107F00DFFEDE80
:1001D000FA75800CD2A7C2A77F40DFFE758002D2DD
:1001E000A7C2A77E087F00DFFEDEFAD758001D2A7D6
:1001F000C2A77E087F00DFFEDEFAD2A522C2A5C21A
:10020000A6F580D2A7C2A7D2A57F64DFFE22C2A531
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:10022000A522C2A54480F580D2A7C2A77F40DFFE9
:10023000D2A522F580D2A7C2A77F40DFFE7580FF3E
:10024000C2A5D2A6D2A77F40DFFE580C2A7547F19
:10025000B4140474408005B454107400C2A64480E1
:0F026000F580D2A7C2A77F40DFFE2A5C2A6229B
:00000001FF
```

Top win 853 or debugger PIC kit3 both I have tested and used in my project for the purpose of loading my programme.

## **5. CONCLUSION**

I have so far just presented a brief summary in the form of a paper for my innovative project concerned and further write up I am in the way to develop. It is my strong belief that my work will be surrounded all over the world from need point of view. It can be upgraded to a great extent with more advanced electronics and software.

## **6. REFERENCES**

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## **BIOGRAPHY**



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Received the B.Tech. Degrees in Electronics & Communication from BACET, Jamshedpur in 2013. I am currently pursuing the M. tech degree in VLSI and Microelectronics from Bankura, Unnayani Institute of Engineering, West Bengal- 722146.

My current research interests is how some advancement can be done in my existing project “Electro Yoga”.

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