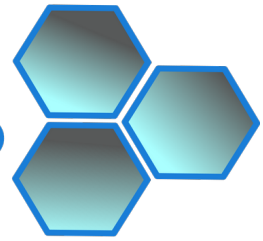


***Ability to do more***

# Terminus

UART based

Testbench generator



## ***Key Features, Functions and Introduction to Terminus 1.1A***

**Balanced Approach for Teaching Fundamental  
Theories & Circuits of Digital Electronics**

*Teach*

*Learn*

*Research*

*Innovate*

**With Terminus multipurpose  
Digital Tool Set**

### **Included Topics & Experiments**

- Combination Logic Circuits
- Synchronous Logic Circuits
- Dedicated Binary Hardware Counters
- Alphanumerical display
- Binary Adders
- Boolean Arithmetic
- Basic Digital Data Communication (TX & RX)
- Digital Error Detection and Error Correction
- Information isolation from Data Stream
- Asynchronous Data Storage
- Volatile Digital Memory
- Digital Buffer Memory
- Synchronous Logic Applications
- Digital I/O Circuits
- Synchronous & Asynchronous Digital Counters
- Application of Digital Counters
- Practical Coded Data communication
- Introduction to Servo Motor & PWM Signal

*And more ...*



**Product of  
Bangladesh**



**HOMEGROWN  
TECHNOLOGY**

Powered By:



**Arbiter  
Electrotech**

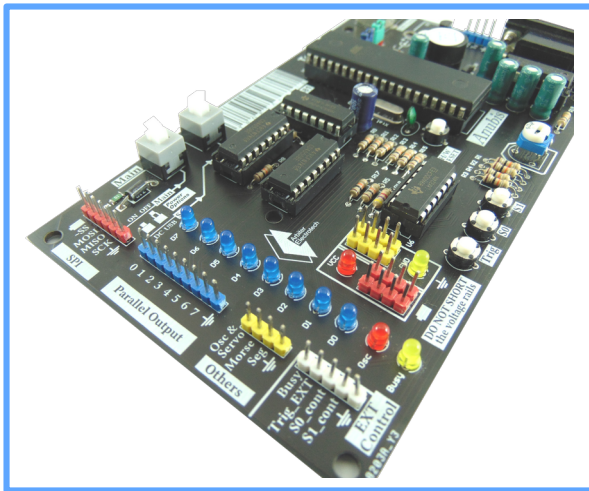
The technology for this product is proudly Researched & Developed in the  
"People's Republic Of Bangladesh"

**innovation . unlimited**

# Strong Foundation of Digital Electronics Without Dedicated Laboratory

**Ability to do more**

**Terminus**  
UART based  
Testbench generator



Applicable for

**EEE, ETE, CSE  
& others**

Small Form factor & inexpensive  
price tag enables hands-on  
teaching of Digital Electronics

- Tailor made for Academic, Commercial and Personal usage
- Compact & Portable Single Board Experiment Set for teaching fundamentals of digital electronics
- Concise Experiment Manual with 30+ experiments and other DIY projects for students
- No need for dedicated electronics lab space or any special lab equipment
- Enables teaching theory with practical circuits
- Prepare the students for advanced design software like Cadence and Linux like terminal based Operating Systems and software
- Introduces students to real life applications of digital electronics
- Introduction to industry standard professional SPICE simulator instead of hobby grade software
- Introduction to Power Electronics  
Upcoming add-on: PWM Motor Drive Module
- Upcoming Topic: Introduction to HDL & Verilog

**40+ Experiments & Projects**

Self sufficient Experiments and detailed "Experiment Manual" allows the students to conduct the experiment all by themselves

**12 different tools**

Terminus contains 12 different types of digital signal & data generator tools. These tools can also be used in other experiments

**Controlled and powered from a single PC**

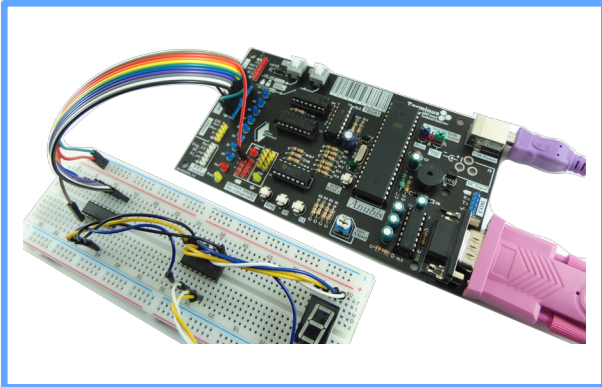
A single computer with USB Port is all that is required to conduct any and all of the experiments. Terminus turn your computer into a functional laboratory

**Self Contained Experiment Set**

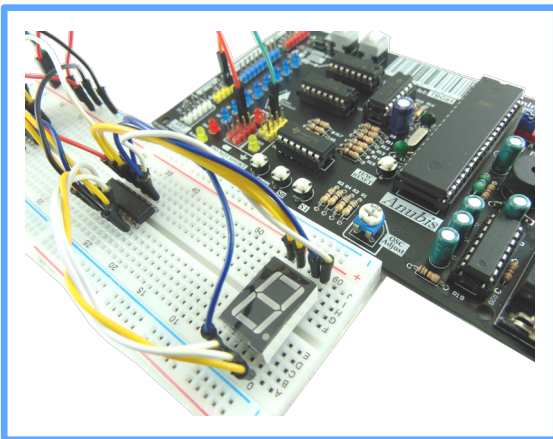
All required components, connecting wires and Experiment Manual are included included with each Experiment Set

# Make Engineering Interactive and Engaging Rather than Memorizing

## Introducing Terminus

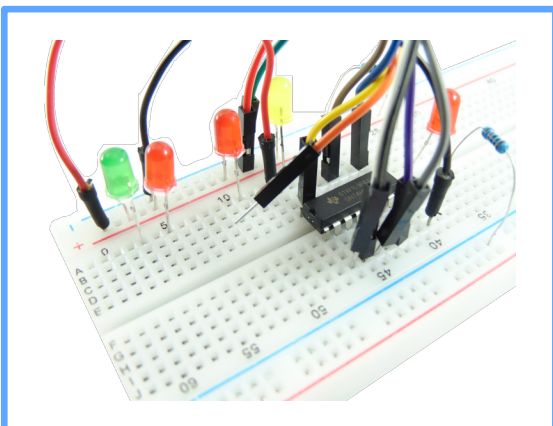


Terminus is a standalone digital equipment that can generate a large numbers of digital test signals for system design, research & development and educational purposes. All the signals and related parameters are user defined. The user can control and configure the Terminus and all the signal generators and the tools via a PC. A vast majority of these signals can only be generated with expensive equipment and are used in high end electronics laboratories. Expensive tools are not suited at the hands of entry level students. Terminus combines a large number of these tools in a single package with reduced capability than its expensive counterpart. As capability is reduced, university don't need to spend a large sum of money and worry about the students breaking the expensive equipment. This way, the students can get to know the basics of handling and operating expensive digital equipment before entering the industry. Terminus uses extremely easy command line interface to communicate between the device and the PC.



## DIY Teaching Method

The Terminus has an experiment set that includes all the semiconductor components, breadboard, connecting cables and an Experiment Guide. This setup allow the students to build the circuits and conduct the experiment by themselves. As the students assemble the circuits by themselves, soon they will learn what to do and what not to do. This way, when they succeed, they will get confidence and motivation to move forward and pursue the course for the sake of learning. Furthermore, students get to deal with the actual hardware rather than software simulator and therefore, can learn the difference between the real world situations and the ideal world of the simulators.

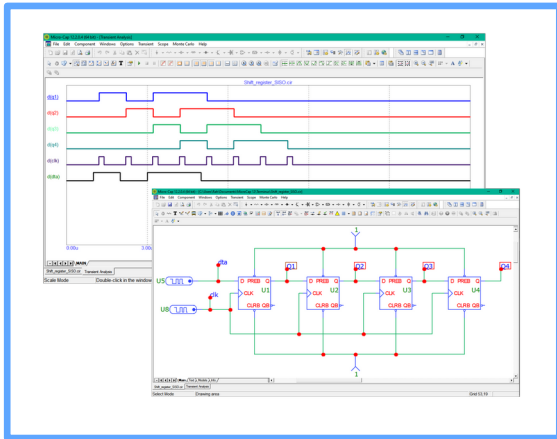


## Learn From The Mistakes

Students are bound to make mistakes when they conduct the experiments. Mistakes should not seen by as failure but as a learning experience. One of the best teacher is the mistakes that we make. Terminus has rugged build with several layers of protection for power rail short circuit, reverse power input, signal short circuit etc. Let the students make mistakes and let them take lessons from the mistakes without damaging the device or the computer.



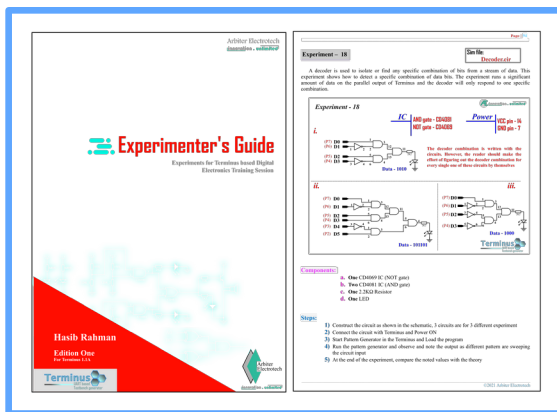
## Industry Standard Simulator



Terminus incorporates an industry standard professional circuit simulator software. This SPICE simulator has been around for 40+ years and is more practical and professional than any of the education grade circuits simulators that is used by most Bangladeshi universities. Best of all, the complete simulator is provided free of cost. Familiarize students with professional open source software rather than pirated education grade software.

**For the universities, The Simulator Program and Simulation files for all the experiments are distributed free of cost.**

## Experimenter's Guide



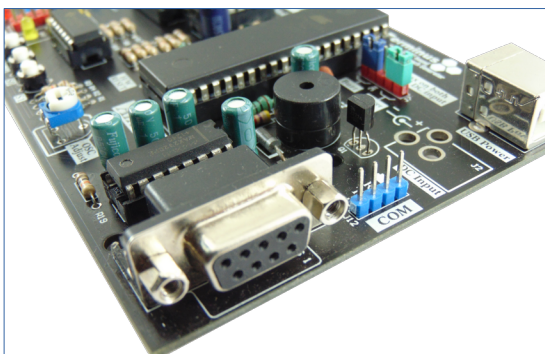
The Terminus experiment manual contains 30+ experiments and other DIY projects. The entire manual is written in easy to read english. A small introduction and the circuit schematic is provided before each experiment. Each experiment is divided into several steps for the students to follow. A list of all necessary components are provided for ease. After each experiment, a concise summary of the entire experiment is provided so that the students can match theory with the real circuit and practical result.

## No Vendor Lock-In

The Terminus is configured from a PC running a terminal emulator software. The Terminus has been tested with both TeraTerm and PuTTY. Both of these software are open source and is provided free of cost. The commands are conveyed using Arbiter Electrotech proprietary technology called "Arcon Interface". The "Arcon Interface" allows usage of very easy command line interface while maintaining a shallow learning curve.

## Included Tools

**12**  
different tools

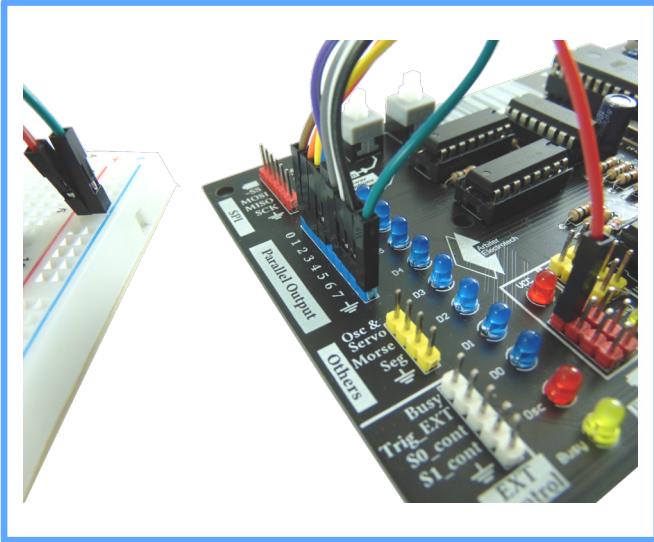


- Oscillator
- Pattern Generator
- Manual Byte Generator
- Random Byte Generator
- Finite Pulse Generator
- Morse Code Generator
- Frequency Sweep Generator
- Servo Motor Test Signal Generator
- Stepper Motor Test Signal Generator
- DC Motor Test Signal Generator
- SPI Test Signal Generator
- Seven Segment Display Test Generator

*More to be added in future*

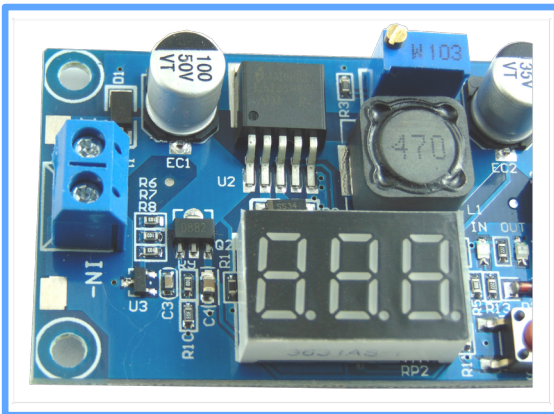


## Included Experiments and Topics



- Combination Logic Circuits
- Synchronous Logic Circuits
- Dedicated Binary Hardware Counters
- Alphanumerical display
- Binary Adders
- Boolean Arithmetic
- Basic Digital Data Communication (TX & RX)
- Digital Error Detection and Error Correction
- Specific Data Detection from Data Stream
- Asynchronous Data Storage
- Volatile Digital Memory
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- Synchronous Logic Applications
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- Synchronous & Asynchronous Digital Counters
- Application of Digital Counters
- Practical Coded Data communication
- Introduction to Servo Motor & PWM Signal

*And more ....*



## Upcoming Modules

The Terminus is a complete device, however, R&D is in progress to make it even better. As such, new add-on modules are being developed to aid the students in their learning endeavor. At present, Terminus requires no additional add-on, but in future, multiple add-on modules for Power Electronics, Embedded Systems and Physics will be available. A single Terminus device can be widely used across multiple different courses. The add-on modules will make Terminus the best value for money while being extremely convenient.

## Purchasing Options

The users of The Terminus have a lot of different options to choose from. Terminus is sold as kits, standalone package, complete experimentation set, training kit and more. Users can choose from the available options based on their requirements and budget.

**Don't pay extra, Pay only for what you need.**

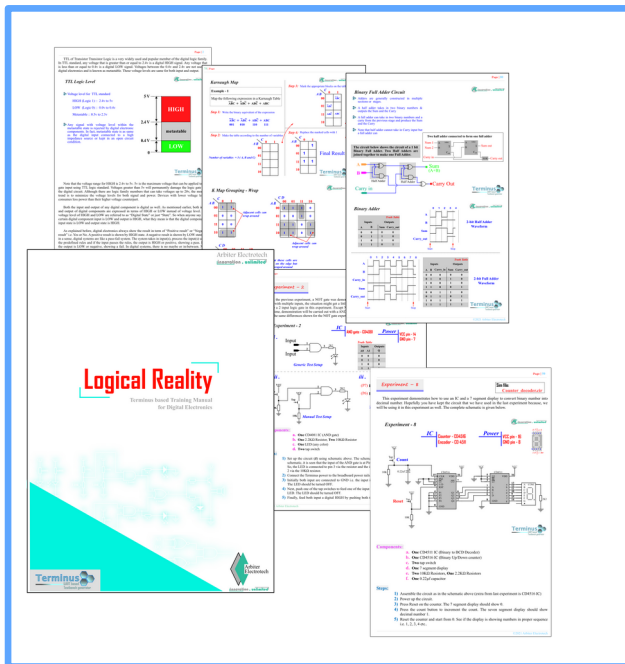


Ability to do more

**Terminus**  
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Testbench generator

# Balanced and effective teaching by combining theory & practice at the same time

## Subscription Based Services



The Terminus experiment manual contains all the experiments along with a brief overview of the topic and subject matter. However, no deep theoretical background is provided. The “*Logical Reality*” is a digital electronics book by Arbiter Electrotech that has been designed for Bangladeshi education system with self teaching attitude. This book offers not only the theoretical background and explanation but also a detailed overview of the related circuits and hardware. Fundamentals of circuits and relevant digital hardware are of paramount importance in advanced applications of digital electronics like embedded systems, electronics design engineering, mechatronics, robotics, VLSI engineering etc. *Logical Reality* discusses the theory with high emphasis on the circuits and real life semiconductor components. The *Logical Reality* is not meant to replace any text book at this time but is designed to be rather a very effective and cheap supplement. The *Logical Reality* can enable a student to learn digital electronic all by themselves. *Logical Reality* is a subscription based service, provided by Arbiter Electrotech. Details are provided on basis of request by the university/institute.

## “Logical Reality” List of Chapters

### Logical Reality

Terminus based training manual  
for Digital Electronics

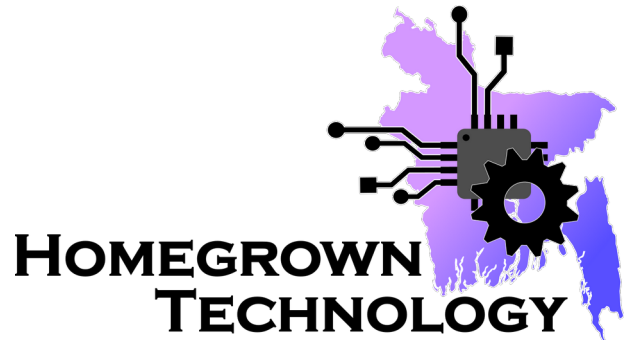
A supplementary  
literature for the  
classroom Text book

■ Chapter – 1	<i>Digital Electronics Fundamentals</i>
■ Chapter – 2	<i>Introduction To Simulators</i>
■ Chapter – 3	<i>Number System And Binary Counter</i>
■ Chapter – 4	<i>Logical Expressions and Arithmetic</i>
■ Chapter – 5	<i>Optimization of Digital Circuits</i>
■ Chapter – 6	<i>Ripple Carry Binary Adder</i>
■ Chapter – 7	<i>Application of Combination Logic</i>
■ Chapter – 8	<i>Intro to Synchronous Logic Element</i>
■ Chapter – 9	<i>Application Of Synchronous Logic</i>
■ Chapter – 10	<i>Practical Application Of Digital Electronics</i>
■ Chapter – 11	<i>DIY Projects</i>

## HomeGrown Technology

Arbiter Electrotech is dedicated to designing “Made In Bangladesh” technologies and generate the valuable technological “Know How” for more advanced future projects. All hardware systems, software, firmware, proprietary algorithm and proprietary communication protocols were designed and tested by Arbiter Electrotech in Dhaka, Bangladesh. Since early 2017, Arbiter Electrotech has been engaged in developing finished products that can be extremely effective in Bangladeshi society. All Arbiter Electrotech products are designed with Bangladeshi society’s financial status in mind along with easy to manufacture characteristics while holding the highest possible level of quality. Currently, Arbiter Electrotech have at least 13 original products for technological or science & technology related education. At least 9 products are designed for general purpose automation. Along with these products, Arbiter Electrotech has multiple original and proprietary algorithms and protocols for Digital data communication, Data Encryption and Decryption and Smart Automation. Every single product and the original related components were designed by Bangladeshi engineer on Bangladeshi soil.

**Support Arbiter Electrotech and support its stride toward a technologically self sufficient Bangladesh.**



## Contact Us

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