Scientech

DesignLab®

An Indispensable and Unique Solution for you

Compact | Convenient | Powerful | Affordable

Scientech DesignLab is a powerful Solution for Circuit Designers. It includes essential instruments, utilities and interactive event manager for design and testing. It is a portable and easy to carry solution at an affordable price.

Features

- **Portable**
- **A powerful Virtual bench with real time instruments ready to go in one touch**
- **Flexi intelligent touch screen**
- **Analog Signal Acquisition**
- **Digital Signal Acquisition**
- **Analog plus Digital Signal Acquisition**
- **Analog Waveforms**
- **Digital Pattern Waveforms**
- **Programmable Clock**
- **Programmable DC Power Supply**
- **Interactive virtual graphical user interface**
- **Connectivity : USB 2.0**
- **Multi utility board**
- **Virtual Analog & Digital component libraries for real world hardware interface**
- **Event scheduler for design & testing of circuits**
- **Compatible with Matlab**

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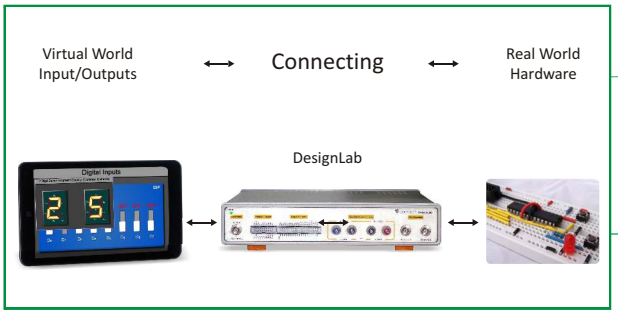
DesignLab®

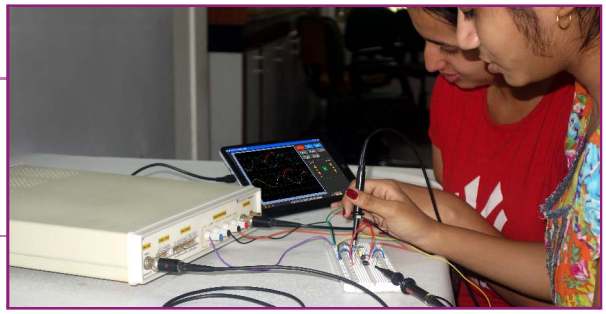
Benefits

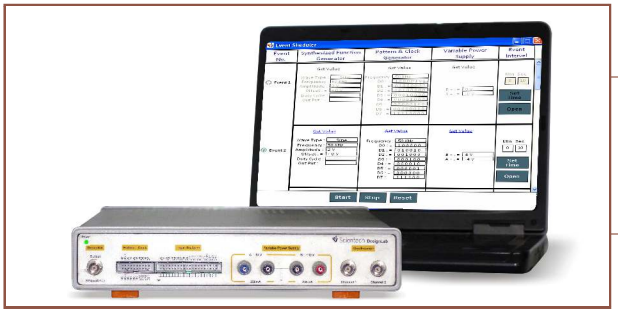
Real time instruments ready to go in one touch



Virtual Analog - Digital Component & Circuit Libraries for real world hardware interface to reduce development time & cost

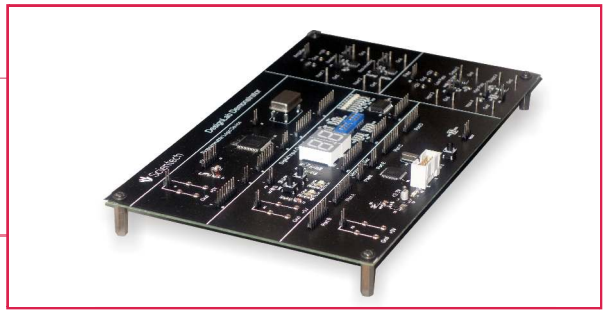
Incorporate in Laboratory -
Accelerate project development to benefit students





Automate your Testing Time using Event Scheduler

Multi utility board to explore DesignLab



Incorporate real world practical study in the classroom & laboratory

Technical Specifications

Analog Waveform Generator

No. of Channels	: 1
Frequency Range	: 1 mHz to 5MHz (Sine), 1mHz to 3MHz (others)
Waveforms	: Sine, Square, Triangle, Ramp and Pulse.
Sampling Rate	: 100MSPS
Waveform Length	: 4K points
Square Wave Rise / Fall Time	: < 20ns (10% to 90%)
Triangular Wave Linearity	: Better than 1%
Pulse - Duty Cycle	: 5% to 95%
Square and Pulse-Overshoot	: < 5%
Amplitude Range	: 10mV to 20Vpp (OC)
Amplitude Accuracy	: ±2% (Sine output)
Amplitude Flatness	: < 5MHz 0.1dB (±1%)
Maximum Output	: 20Vpp Voltage (O.C.)
Maximum Output	: 10Vpp Voltage (50Ω)
DC Offset (O.C.)	: ± (20V-amplitude)/2

Digital Signal Acquisition

No. of Channels	: 16 (D0 to D15)
Maximum Sampling Rate	: 100MSPS
Memory	: 2K per channel
Input Voltage Tolerance	: 7V (max.)

Digital Pattern Waveform

No. of Channels	: 8
Maximum Sampling Rate	: 100MSPS
Pattern Length	: 8-bit
Frequency Range	: 1Hz to 2MHz

Analog Signal Acquisition

No. of Channels	: 2 Analog (CH1 & CH2)
Real-time Sampling Rate	: 100MSPS per channel
ADC Resolution	: 8-bit per channel
Memory	: 2K
Bandwidth	: 10MHz
Input Impedance	: 1MΩ II 30pF approximately
Input Coupling	: DC, AC and Ground
Timebase Range	: 200ms to 1mS
Vertical range	: 10mV/div to 20V/div
Triggering Source	: CH1, CH2
Measurements	: Voltage & Frequency
Storage / Save Option	: BMP, JPEG, JPG, PNG, GIF format

Analog plus Digital Signal Acquisition

No. of Channels	: 1 Analog + 8 Digital
Real-time Sampling Rate	: 100MSPS per channel
ADC Resolution	: 8-bit per channel
Memory	: 2K
Bandwidth	: 10MHz
Input Impedance	: 1MΩ II 30pF approximately
Input Coupling	: DC, AC and Ground
Vertical range	: 10mV/div to 20V/div
Triggering Source	: CH1
Measurements	: Voltage & Frequency
Input voltage tolerance 0 (Digital)	: 7V (maximum)
Storage / Save Option	: BMP, JPEG, JPG, PNG, GIF format

Programmable Clock

No. of Channel	: 1
Frequency Range	: 1Hz to 2MHz

Programmable DC Power Supply

No. of Channels	: 2
Output Voltage	: ±12V
Max. Output Current	: 250 mA (with load)

Utility Board (optional)

Micro Controller

Family	: AVR ATMEGA 8515
Device Density	: 8 Bit AVR Microcontroller, 8K Bytes flash
Programming Methods	: USB Programmer

CPLD

Xilinx family	: CPLD, XC95108TQ100
Device density	: 2400 gates, 108 macro cells
Configuration method	: USB JTAG interface (boundary scan)

Digital Section

Seven Segment	: 2 nos
LED	: 8 nos
DIP Switch	: 8 nos

Analog Section

Low pass filter	: Cut off frequency 50KHz
High pass filter	: Pass band frequency 100KHz
Inverting Amplifier	: Maximum frequency 100KHz
Non Inverting Amplifier	: Maximum frequency 100KHz

Interactive DesignLab Software

Interactive Real Time Multi-Instruments Graphical User Interface

- Analog Waveform Generator
- Analog Signal Acquisition
- Digital Signal Acquisition
- Analog and Digital Signal Acquisition
- Digital Pattern Waveform
- Programmable Clock
- Programmable DC Power Supply

Real Time Virtual Library

- **Digital Inputs**
  - DIP Switch
- **Digital Output Library**
  - LED
  - Seven Segment
  - BCD to Seven Segment Display
  - Multiplexed Seven Segment
  - Relay Circuit
  - DC Motor Control Circuit
  - Stepper Motor Control Circuit
  - Logic Gates
  - Adder
  - Subtractor
  - Multiplexer
  - Demultiplexer
  - Decoder
- **Analog Output Library**
  - Op amp as Inverting Amplifier
  - Op amp as Non Inverting Amplifier

Event Scheduler

- Total number of events possible : 10 fixed.
- Event Scheduler is mapped with all input instruments.
- For every event, user can program and set all the three instruments.
- Maximum time allowed for an event is 1 hour.
- Minimum time allowed for an event is 10 sec.
- User can save event settings for future use.

Real-Time Matlab and Labview compatibility

- Yes

Software Requirements

- Supporting OS : Windows XP, Vista, Windows 7 and Windows 8 with 32-bit and 64-bit.
- Memory : RAM 1GB (minimum)
- Hard Disc Space : Free Space atleast 1GB
- Communication Port : USB 2.0

List of Accessories

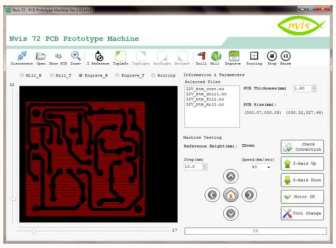
- Mains cord : 1 no
- BNC to BNC : 2 nos
- USB host to device cable : 1 no
- Patch cords (2mm) : 3 nos
- Tina pro software (free version) : 1 no
- DesignLab Software CD : 1 no

Optional

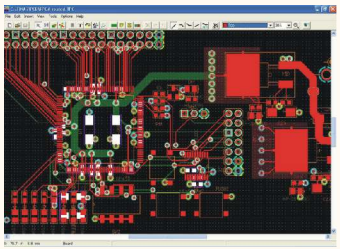
Nvis 72

PCB Prototype Machine and Tina Designsuit

Nvis 72 Interfacing Software



Tina PCB design & Software



Features

- Versatile PCB prototyping
- Auto depth adjustment
- Position Selection Facility
- Light for work area
- Micro drilling & milling
- Pause/Resume Option
- Process Logging
- Design two layer PCB
- Emergency Stop and Play
- PC based Software with interactive GUI
- PCB Viewer
- Software support both TINA and Eagle files.
- Rugged and fully protected
- Simple and easy to operate
- Step by Step execution
- Chemical free Operation
- USB Interface
- Energy efficient

Subject to Change

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