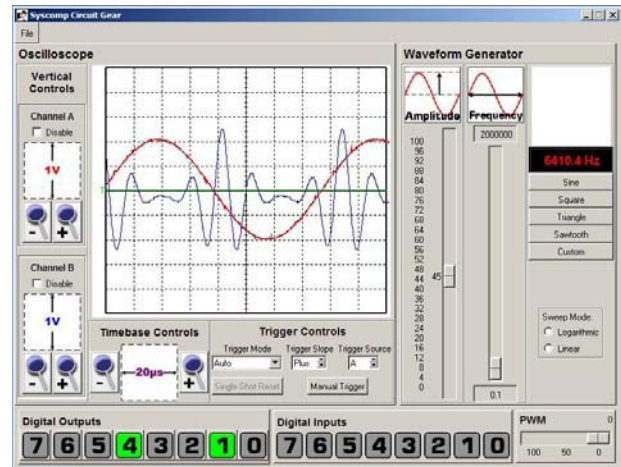


Syscomp CircuitGear

An oscilloscope, waveform generator and digital I/O port integrated into one small, low-cost unit.

- 20MS/Sec dual channel scope
- 2 Mhz arbitrary waveform generator
- Eight channel digital I/O
- USB powered, no AC adaptor
- Open software: Windows, Linux, Mac
- National Instruments Drivers
- Small, Low Cost



Graphical User Interface

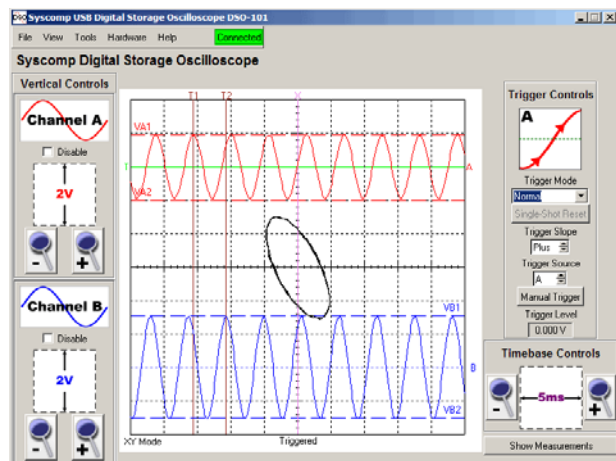
Specifications

Oscilloscope

Max Sampling Rate	20MS/sec
Bandwidth	2MHz
Input Voltage Span	+/-0.25Vp-p to +/-25Vp-p
Input Ranges	7 ranges in 1:2:5 sequence
Vertical Calibration	Yes, software
Input A/D	10 bits
Input Impedance	1Mohm 20pF
	Accepts x10 probe
Timebase Span	50ns/division to 100ms/division.
Timebase Ranges	21 steps in 1:2:5 sequence
Trigger	Normal, Auto, Single shot
Trigger polarity	+/-
Trigger level	On-screen horizontal cursor
Pre-Post trig display	On-screen vertical cursor
Readouts	Amplitude and Timebase Cursors
Sample Memory	1K points/channel
Display refresh rate	> 2 updates/second
Interface	USB 1.0 or 2.0
Additional Displays	X-Y plot Spectrum Analysis Histogram Waveform Math



Hardware



X-Y (Lissajous) Plot



Waveform Generator

Frequency Range 0.1Hz to 2MHz
Frequency Resolution 0.1Hz
Output Amplitude +/-3V
Amplitude Control Hardware
Vertical Resolution 8 bits at all amplitude settings
Output Impedance 150 ohms
Waveforms Sine, Square, Triangle, Ramp
Pulse waveform Variable duty cycle at constant frequency
Arbitrary Waveform 8 bit resolution vertical, 256 time points

Bode Plotter

The Bode Plotter is VNA (Vector Network Analyser) software that operates the CircuitGear hardware over the frequency range 0.1Hz to 2MHz to measure amplitude and phase in circuit theory and filter design exercises.

Digital I/O

Output 8 bits, 5 volt, HCMOS
Input 8 bits, 3 or 5 volt, HCMOS
Other Pulse Width Modulated Output
Interrupt Input

Software

The oscilloscope, generator and digital I/O are operated from a software GUI (graphical user interface) included with the hardware. The software is open-source and source code is included. The software is multi-platform - it runs under the Windows, Linux, Unix and Macintosh operating systems.

Wavemaker, open-source multiplatform software, is used to construct an arbitrary waveform.

National Instruments Labview drivers are available for CircuitGear. These drivers are free open-source and operate under NI Labview on Windows, Linux and Unix platforms.

Documentation

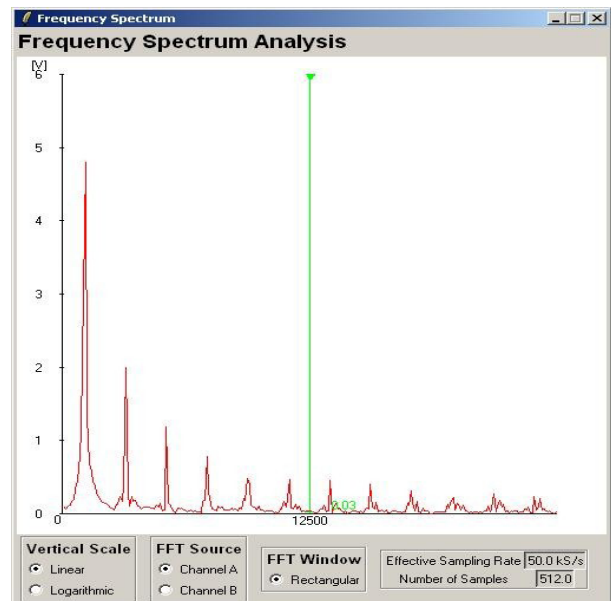
A comprehensive manual on disk includes the API (Applications Program Interface) information for those who wish to develop their own interface software. The hardware can be controlled by any software that can communicate with a serial port, such as Matlab or Visual Basic.

Teaching Materials

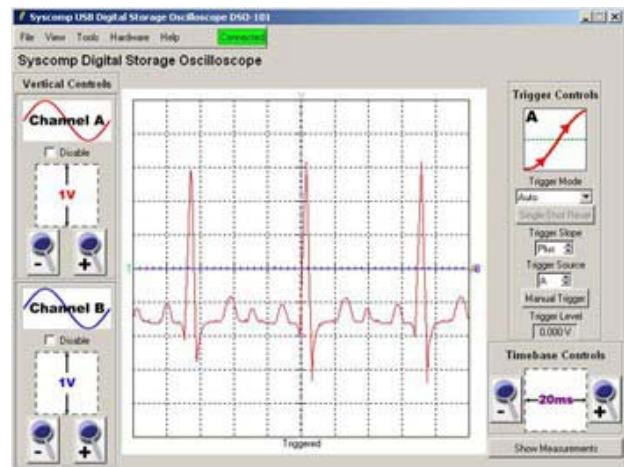
Custom teaching materials are available from Syscomp for project-based learning and lab exercises in electronics. Contact us for details.

Host Requirements

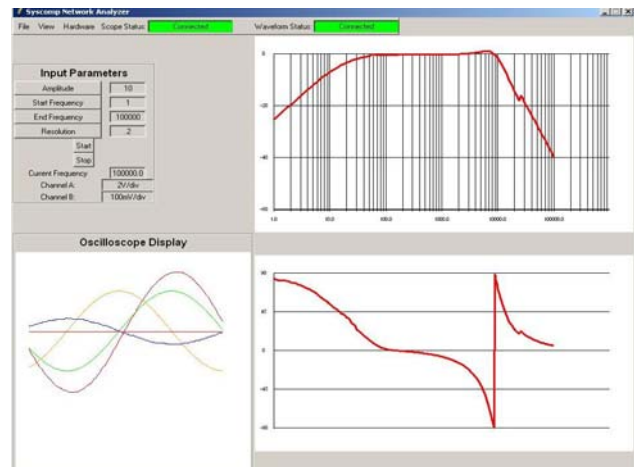
Pentium 233 MHz, 250MB RAM, 20MB hard drive space. Minimum 1024x768 display resolution, 16 bit colour depth. One USB port (USB 2.0 preferred but not required). Windows 2000, XP, Vista, Linux with 2.4 kernel or later, Mac OS X 10.4



Spectrum Analysis (FFT)



Arbitrary Waveform (ECG)



Bode Plot, Vector Network Analysis

Contact

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