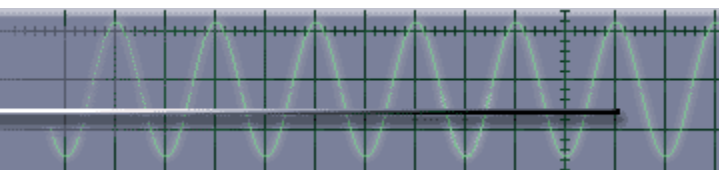




Link Instruments

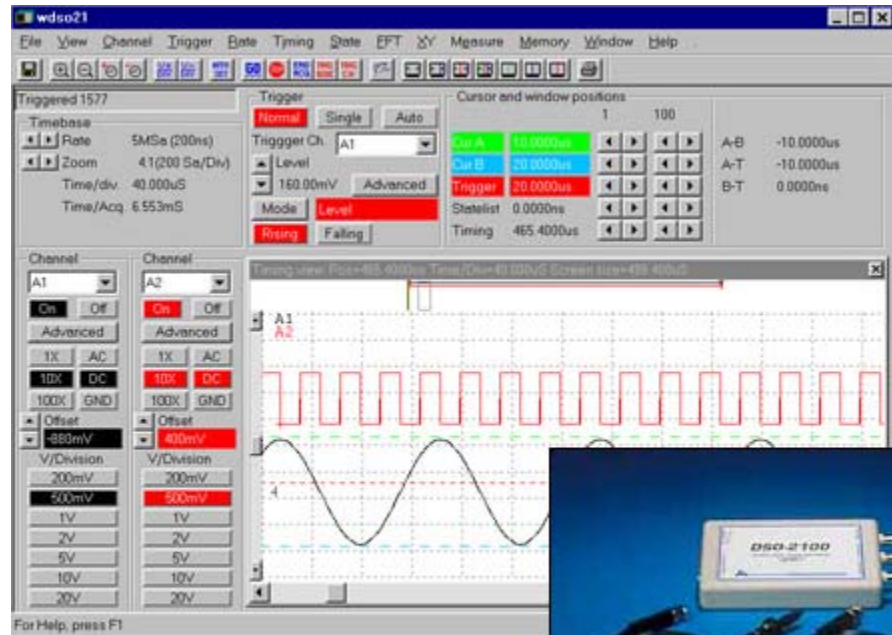


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DSO-2102M & DSO-2102S

QUICK LINKS

- [Features](#)
- [Specifications](#)
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PRICE

DSO-2102M

[\\$725 \(USB\)](#)

[\\$650](#)

DSO-2102S

[\\$600 \(USB\)](#)

[\\$525](#)

The DSO-2102 PC-based oscilloscopes connect to your desktop or laptop via the parallel or USB port. Both channels can operate at up to 100 million Sa/s with a 32K sample buffer. The 2102M version includes a spectrum analyzer (FFT), advanced triggering, Pass/Fail testing and many measurements.

The PC-based instruments are controlled with easy to use Windows software. This allows for more organized data display (with color coded data and increased screen size), intuitive user interface, and data management (file saving, loading, sharing and exporting to other software and reports). Our scopes connect to your PC's parallel port or USB port and take advantage of your large color screen, disk drives and printers. They are compact and don't have screens, drives, knobs or buttons - saving you money and space.

Features

- [100MSa/s \(100 million samples per second\) Sampling Rates](#)
- [Flexible Interface Options](#)
USB or Parallel Port
- [32K Memory Depth](#)
- [Advanced Triggering](#)
DSO-2102M only
- [Autosetup Of Capture & Channel Parameters](#)
- [50 MHz Spectrum Analyzer/FFT](#)
DSO-2102M only
- [XY Plot](#)
- [Customized Displays](#)
- [Fast, Accurate Measurements](#)
With pass/fail on DSO-2102M
- [Easy Installation](#)
- [Simple Operation](#)
- [Automatic Data Storage](#)
With data save/load & data export capabilities
- [Battery Power Option](#)
- [FrontPanel™ Oscilloscope software supports Windows](#)
- [Print Support](#)
Output to printer
- [Software Libraries \(optional\)](#)
DLL and LabView

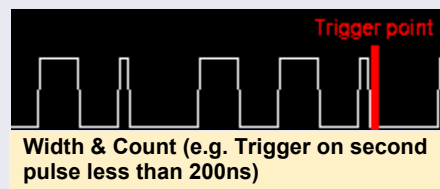
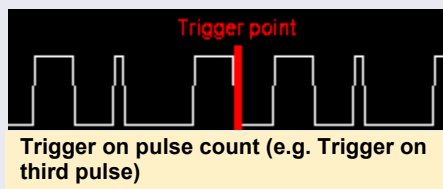
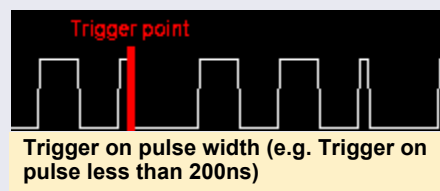
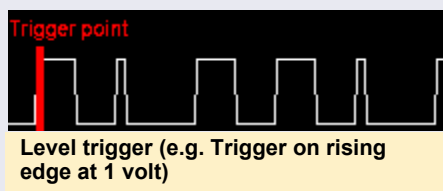
100MSa/s (100 Million Samples Per Second) Sampling Rates

- Captures single-shot data at 100MSa/s (every 10ns) on two channels simultaneously
- Software selectable sample rates as low as 1Ksa/s
- Full 32K per channel data buffers are available at all sampling rates

Advanced Triggering

Triggering options include:

- Level trigger with rising or falling slope
- TV Horizontal
- TV Vertical
- Pulse count (DSO-2102M only). Trigger on the Nth pulse
- Pulse width (DSO-2102M only). Trigger on a pulse of a certain width
- Pulse width + count (DSO-2102M only). Trigger on the Nth pulse of a certain width

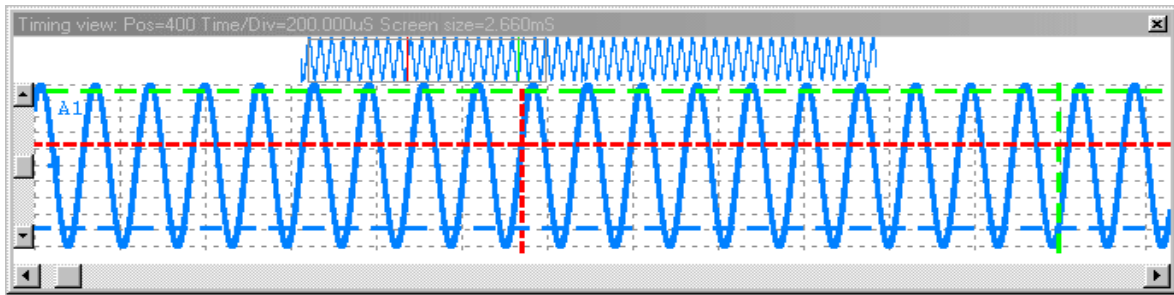


The oscilloscope has fully adjustable pre/post trigger position. This lets you define how much data is collected before the trigger event and how much is collected after.

Deep Acquisition Memory

The large 32K memory buffer enables capturing of details without sacrificing overall recording length. Longer

data buffers allow you to capture for more time at faster sample rates.



"zoom-and-scroll" simplifies trouble shooting and analysis. The display shows the entire recorded waveform(s). In addition, the user can zoom (up to 50X) on signal details and scroll through long data records to identify and characterize problems. The locked all-channel zoom keeps all the analog waveforms synchronized.

The deep memory allows analysis of jitter from the beginning of the record to the end. By zooming/scrolling and then measuring with cursors, pulse widths and channel-to-channel timing can be compared at different sections of data streams. This feature allows identification of time varying problems such as "power-on" sequences and clock jitter.

Flexible Interface Options (USB or Parallel Port)

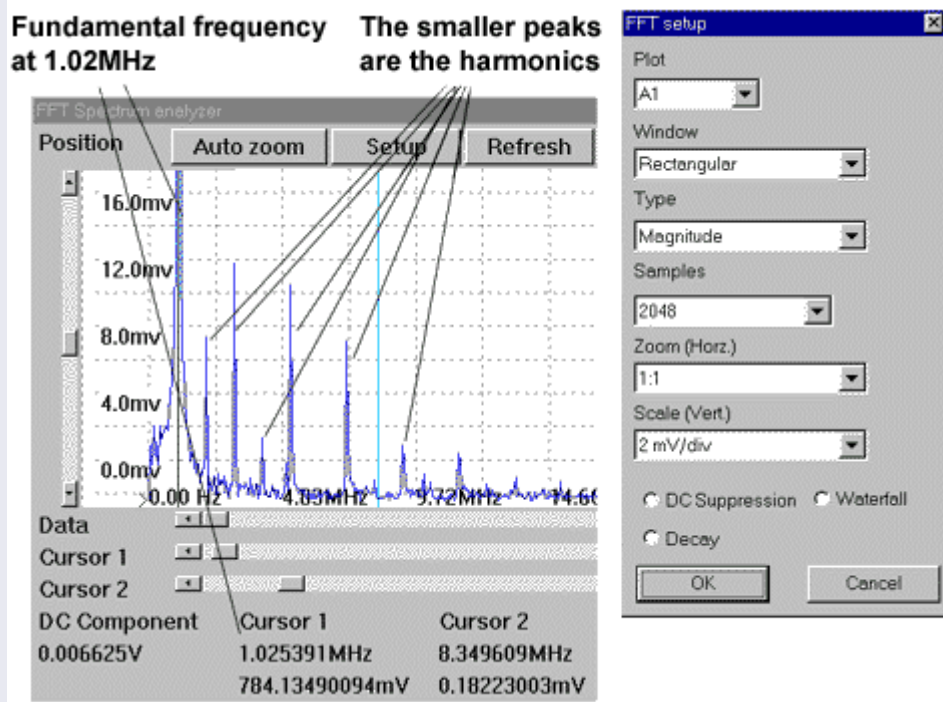
- Choose USB version for fastest transfer speeds. The USB oscilloscope still has the parallel port connector so that it can connect using either the USB or parallel port. Compatible with Win 98, Win ME, Win XP, and Win 2K.
- Choose the parallel port oscilloscope if you don't have a USB port or your operating system does not support USB (Win 95 and Win NT). Compatible with Win 95, Win 98, Win ME, Win NT, Win XP, and Win 2K.

Auto-Setup

The DSO-2102 even has autoseup. With one mouse click the software will analyze incoming data and setup the oscilloscope using advanced data analysis routines. You can then fine tune any or all oscilloscope parameters to your liking.

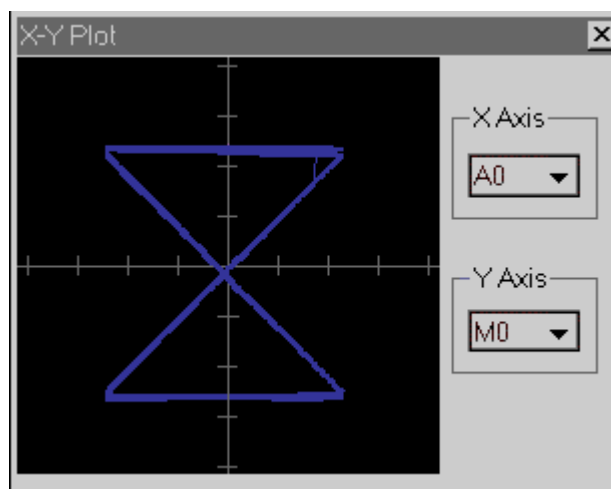
50 MHz Spectrum Analyzer/FFT (DSO-2102M only)

- The DSO-2102M also delivers high accuracy spectrum analysis. A binary FFT algorithm is used to break the input signal into its frequency components
- Unlike swept spectrum analyzers which require a stable repetitive signal, the DSO-2102M can also analyze a single shot event
- You can control and view both the FFT (frequency-domain) and oscilloscope (time-domain) display windows simultaneously



- Spectrum analyzer frequency range, FFT algorithm, spectral resolution and vertical/horizontal size can be set via the software. This flexibility helps to optimize the spectrum analyzer for a particular application. The frequency range extends from DC to 50MHz
- FFT screen has its own set of cursors for magnitude and frequency readouts
- FFT data can be saved to disk and exported to other programs such as Excel, Mathcad, etc...
- Screen shots can be pasted into your documents

X-Y Plot



An X-Y Plot allows you to graph one channel vs. another.

Customizable Color Display

You can display any combination of Digital Oscilloscope and Spectrum Analyzer traces simultaneously.

Color can be a real time saver. Each display element can be a unique color. This includes each of the Data channels, Memories, Waveform functions, Horizontal cursors, Vertical cursors, Trigger position, Text, Background, Grid and more. We even color code the cursor measurements to the appropriate channel color.

Stand-alone oscilloscope display screens represent a compromise at best. Few people would choose a 7" or 9" monitor as the screen for their PC. So why use a small monitor for an oscilloscope? Link PC-based instruments let you choose the display monitor size and type for viewing your data. Plus, you can utilize powerful PC-industry display peripherals such as projectors, remote monitors, and heads-up displays. Many people are now using dual monitor PC's - our software will work there also - Imagine having a 30" wide trace window.

You can take electronic snapshots of the screen and put them into your documents as well as print data to your standard windows printer.

Fast, Accurate Measurements

Measurements [screen]			
Test	Source	Value	Pass/Fail
1 Frequency	(CH A)	102.56410KHz	Fail
2 Peak to peak	(CH A)	488.00mV	Pass
3 Cycles	(CH A)	4	Fail
4 Duty cycle rising	(CH B)	25.00%	Fail
5 Falltime (10% .. 90%)	(CH B)	38.000US	Fail
6 Period	(CH A)	9.000US	Fail
7 Pulse width [neg]	(CH A)	7.000US	Pass
8 Standard Deviation	(CH A)	66.63mV	Fail
9			
10			

- Powerful cursors display voltage and time information
- Advanced waveform measurements are included with the FrontPanel™ software (the DSO-2102M has 45 whereas the DSO-2102S has 5)
- The DSO-2102M can even do PASS/FAIL testing based on the results of those measurements. Data can be logged to disk automatically on PASS or FAIL

Waveform Measurements (DSO-2102M)

- area
- cursor A (time)
- cursor A (voltage)
- cursor B (time)
- cursor B (voltage)
- trigger cursor
- cursor A - B (time)
- cursor A - B (voltage)
- cursor A - trigger (time)
- cursor B - trigger (time)
- cycles
- cycles (user defined)
- delay
- delay (user defined)
- delta delay
- delta delay (user defined)
- dutycycle (rising)
- dutycycle (falling)
- dutycycle (rising, user defined)
- dutycycle (falling, user defined)
- fall time (10..90)
- fall time (20..80)
- fall time (user defined)
- fall time (A level to B level)
- frequency
- maximum
- mean/median
- minimum
- peak to peak
- period
- pulse width (positive)
- pulse width (negative)
- pulse width (positive, user defined)
- pulse width (negative, user defined)
- rise time (10..90)
- rise time (20..80)
- rise time (user defined)
- rise time (A level to B level)
- rms voltage
- rms voltage (AC)

Easy Installation

The PC-based DSO-2102 oscilloscope connects to the USB or parallel port of your computer. To install the oscilloscope all you need to do is plug it into your PC, plug in the power supply and run the install

software.

The DSO is about the size of a video tape (7" x 3.75" x 1.2"). If you need portability what could be easier than connecting the DSO to your laptop?

Simple Operation

- Installation is a snap
- Make measurements in your first half hour
- Simple controls make operation intuitive
- All functions from one simple software "panel"
- Perform sophisticated operations that you couldn't even dream of doing with a knob based DSO
- Save default setups to disk for easy recall at a future date. You don't need to keep a notepad with settings scribbled in it. Just save them to the file name of your choice
- Data and settings are easily saved to disk - no extra software to buy - no communications upgrades
- Screen shots can be pasted into documents and annotated in your favorite image editing software

Automatic Data Storage

Superior to most stand-alone instruments, the DSO-2102 allows you to store an unlimited number of waveforms, timing patterns, and spectra to disk. Later, recall the data to the screen for visual inspection and comparison to "live" data, process the stored waveforms through the DSO-2102M spectrum analyzer and waveform analysis functions, or use your own software to analyze archived waveforms.

To save time, you can set the DSO-2102M to automatically datalog your waveforms to your PC after each trigger. The data logger can also store only waveforms meeting specific parameter criteria, such as rise times between 20 and 30ns and pulse widths greater than 100ms, etc.... Data can be stored in our format or in industry standard format for exporting to other software.

FrontPanel™ Oscilloscope software supports Windows

OS's supported:	USB	Parallel Port
Windows XP/2K	✓	✓
Windows NT		✓
Windows 98/98SE/ME	✓	✓
Windows 95		✓

The DSO-2102 has software for Win XP, Win 2K, Win NT, Win 95, and Win 98. The oscilloscopes are PC-based and we regularly upgrade the software with more features and support for new operating systems. [Software updates](#) are free and available on the website.

Print Support

Statelist and Timing waveforms can be printed on any Windows compatible printer.

Probe Types

The DSO-2102 comes with 2 probes (1x/10x switchable). You can connect any standard Oscilloscope probe to the BNC connectors.

We also sell to the following types of probes:
1x/10x (2 meter cable)

100x

[Differential probes](#)**The speed of your PC does not significantly affect the performance of our instruments**

Although we rely on the PC to display the data and for the user interface. We don't rely on it for our high speed data acquisition. If your PC is fast enough and has enough memory to run windows well it will run our products well also.

The DSO-2102 has high speed samplers and data buffers. It can acquire data at up to 100MSa/s and stores the data in it's own 32K/channel buffers. When these buffers are full the data is transferred to the PC.

The DSO-2102 will run just as well on a 80386 as on newest Pentium 4 or Athlon. The DSO connects via the parallel port but this is just used as a method of transferring the already captured data from the DSO to the PC - we don't rely on it transfer 'live' data. The only improvement you will see with a faster computer is in screen update speed and in post-acquisition calculation intensive features such as FFT's, and even then the differences are slight.

Software Libraries (optional)

The DSO-2102 comes with FrontPanel™ for Win XP, Win 2K, Win NT, Win ME, Win 98, and Win 95. But if you want to write your own software to drive the unit, our optional [DLL or LabView drivers](#) are available for purchase.

- DLL Library
 - DSO-21-DLL-95 - Win 95, Win 98, Win ME (Parallel port version only)
 - DSO-21-DLL-2K - Win 2K, Win XP (USB version only)
- LavView VI Library
 - DSO-21-DLL-95 - Win 95, Win 98, Win ME (Parallel port version only)
 - DSO-21-DLL-2K - Win 2K, Win XP (USB version only)

Specifications

	DSO-2102M & DSO-2102S
Input	
Max Sample Rate	100MSa/s on each channel
Channels	2 + External trigger
Max Input Voltage (at BNC connector)	± 50V DC continuous ± 150V DC transient (DC + AC <10KHz) <i>max input voltage at probe tip depends on probe type (1x, 10x, 100x, etc.)</i>
External Trigger	TTL level (1.4V trigger) Max voltage: 5V
Bandwidth	60MHz
Vertical Resolution	8 bits/channel
Gain Range (per division) <i>full scale = 10 divisions</i>	20mV to 2V/div @ x1 200mV to 20V/div @ x10 2V to 200V/div @ x100
Range	10 divisions

Offset Range	± 5 divisions	
Coupling	AC, DC, and Ground	
Offset Resolution	0.04 division increments	
Impedance	1MΩ // 15pF	
DC Accuracy	± 2%	
A/D	Dual 8 bit	
Probes	1x/10x switchable with standard BNC connector. Two probes are included. 100x probes are available as an option (see below)	
Timebase		
Rate	100MHz ... 1KHz 10ns/sample to 10s/sample	
Accuracy	+/- 0.01%	
Resolution	10ns	
Channel Skew	< 1ns	
Memory		
Buffer Size	32KB/channel	
Calibration		
Oscilloscope	Self calibrating	
Probe	Calibration signal provided	
	DSO-2102M	DSO-2102S
Trigger		
Type	Rising Edge (Adjustable level), Falling Edge (Adjustable level), TV-H, TV-V, Pulse Width, Pulse Count, Pulse Width & Pulse Count	Rising Edge (Adjustable level), Falling Edge (Adjustable level), TV-H, TV-V
External Trigger In/Out	Software selectable	Software selectable
Trigger On Rising Edge	Yes	Yes
Trigger On Falling Edge	Yes	Yes
Trigger On Pulse Count	Yes	No
Trigger On Pulse Width	Yes	No
Trigger On Pulse Width & Count	Yes	No
TV Horizontal Trigger	Yes	Yes
TV Vertical Trigger	Yes	Yes
Trigger Out	Yes	Yes

Mode	Auto, Normal, and Single	Auto, Normal, and Single
Autosetup	Yes	Yes
Slope	Rising or Falling	Rising or Falling
Level	Adjustable	Adjustable
Range	10 divisions	10 divisions
Resolution	0.04 division increments	0.04 division increments
Software Parallel/USB		
Windows 95/98/ME	Yes	Yes
Windows NT/2K/XP	Yes	Yes
FFT	Yes	n/a
XY Plot	Yes	Yes
Math	Yes	Yes
Advanced Math	Yes	n/a
Pass/Fail Testing	Yes	n/a
Data Logging (based on pass/fail test)	Yes	n/a
Data Logging (on every capture)	Yes	n/a
Physical		
Included	DSO, probes, communications cable, power supply (USA), and software <i>(optional international power supply is also available)</i>	DSO, probes, communications cable, power supply (USA), and software <i>(optional international power supply is also available)</i>
Interface	Parallel Port or USB	Parallel Port or USB
Probes	Two 1 meter probes are included. They are switchable between 1x and 10x	Two 1 meter probes are included. They are switchable between 1x and 10x
BNC Connectors	2 input and 1 for trigger in/out plus calibration	2 input and 1 for trigger in/out plus calibration
Power Requirement	1A@7.5V	1A@7.5V
Dimensions	7" x 3.75" x 1"	7" x 3.75" x 1"

Pricing

DIGITAL STORAGE OSCILLOSCOPES

	DSO-2102M	DSO-2102S
DSO Kit: Oscilloscope, 2 1x/10x probes, parallel cable, US power supply, software	\$725 - DSO-2102M (USB) \$650 - DSO-2102M Non U.S. add \$80 to either version for universal power supply (90-240V 50-60Hz)	\$600 - DSO-2102S (USB) \$525 - DSO-2102S Non U.S. add \$80 to either version for universal power supply (90-240V 50-60Hz)

Pricing

OPTIONAL ACCESSORIES

Description	Price	Part Number
Universal Power Supply	\$80	DSO-21-UNIV-PWR
DLL Library	\$300	DSO-21-DLL-95, Win95/98/ME (Parallel port only)
	\$300	DSO-21-DLL-2K, WinXP/2000 (USB port only)
USB Adapter	\$100	DSO-21USB1 (<i>\$25 off when purchased along with a DSO Kit</i>)
10x/100x Differential Probe	\$395	DSO-probe-dif-kit (<i>includes probe, power supply, assorted clips, carrying case</i>)
100x Probes (100MHz, 2 meters)	\$72	DSO-probe-x100
1x/10x Probes (100MHz, 2 meters)	\$60	DSO-probe-2M
1x/10x Probes (60MHz, 1 meter)	\$40	DSO-P60
Battery Pack	n/a	