pico® Technology

PicoScope® 4000 Series

HIGH-PRECISION USB OSCILLOSCOPES

For detailed waveforms and accurate measurements

32 MS buffer
12 bit resolution
80 MS/s sampling
20 MHz bandwidth
2 or 4 channels
2 channel IEPE model
USB powered

32 MS BUFFER
12 BITS
IEPE

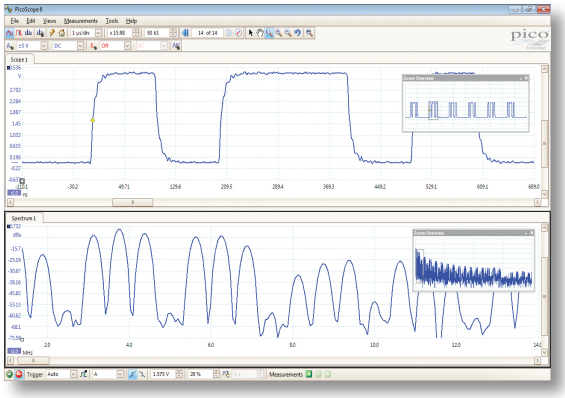
5 YEAR WARRANTY

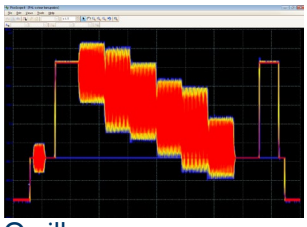
Supplied with SDK including example programs
Software compatible with Windows XP, Vista, 7 and 8
Free technical support

www.picotech.com

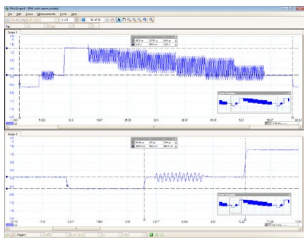
PicoScope features at a glance

- 20 MHz oscilloscope and FFT spectrum analyzer
- 26 automatic measurements
- Mask limit testing with alarms
- Serial bus decoding
- Per-channel low-pass filtering
- Software resolution enhancement to 16 bits
- Math channels with basic and advanced functions
- Reference waveforms
- Waveform buffer with up to 10,000 segments and overview window
- Digital color and analog intensity persistence display modes
- XY mode

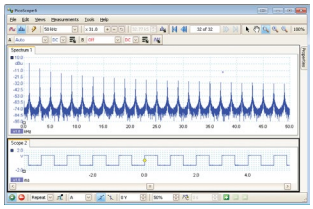




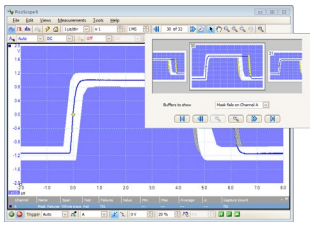
Oscilloscope



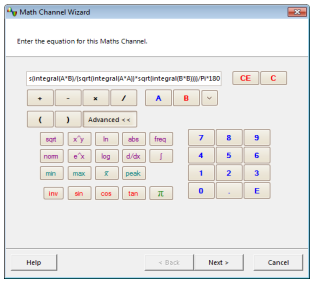
Quick and powerful zoom



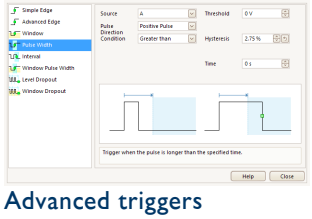
Spectrum analyzer



Mask limit testing



Math channels



Advanced triggers

All-in-one instruments

The PicoScope 4000 Series PC Oscilloscopes are extremely versatile, with an oscilloscope and spectrum analyzer included in every model.

PicoScope 4224 IEPE

The 2-channel IEPE version is compatible with industry-standard IEPE (integrated electronics piezoelectric) accelerometers and microphones, making it suitable for a variety of measurement applications including noise and vibration analysis.

Convenience and speed

The PicoScope 4000 Series scopes obtain their power from the USB 2.0 interface, so there's no need for an external power supply. The USB port also delivers high-speed data to your PC to give you a responsive, high-resolution display. A maximum sampling rate of 80 MS/s is combined with a high resolution of 12 bits, giving you 16 times better vertical resolution than most standard scopes.

Deep memory

The 32 M sample buffer is 'always on'. There is never a compromise between buffer size and waveform update rate, because the PicoScope 4000 Series always maximises both at the same time. Now you can capture every waveform with full detail without having to think about it.

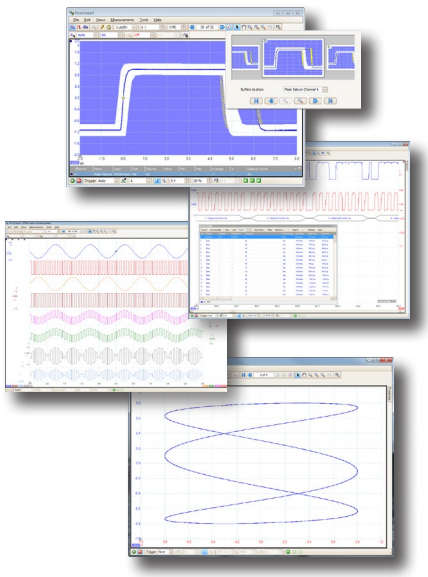
Advanced software

The scopes are bundled with the latest version of PicoScope for Windows. PicoScope is easy to use and can export data in a variety of graphical, text and binary formats. Also included are Windows drivers and example programs.

Mask limit testing

PicoScope allows you to draw a mask around any signal with user-defined tolerances. This has been designed specifically for production and debugging environments, enabling you to compare signals. Simply capture a known good signal, draw a mask around it, and then attach the system under test. PicoScope will capture any intermittent glitches and can show a failure count and other statistics in the Measurements window.

The numerical and graphical mask editors can be used separately or in combination, allowing you to enter accurate mask specifications, modify existing masks, and import and export masks as files.



Math channels

With PicoScope you can perform a variety of mathematical calculations on your input signals and reference waveforms.

Use the built-in list for simple functions such as addition and inversion, or open the equation editor and create complex functions involving trigonometry, exponentials, logarithms, statistics, integrals and derivatives.

Advanced triggers

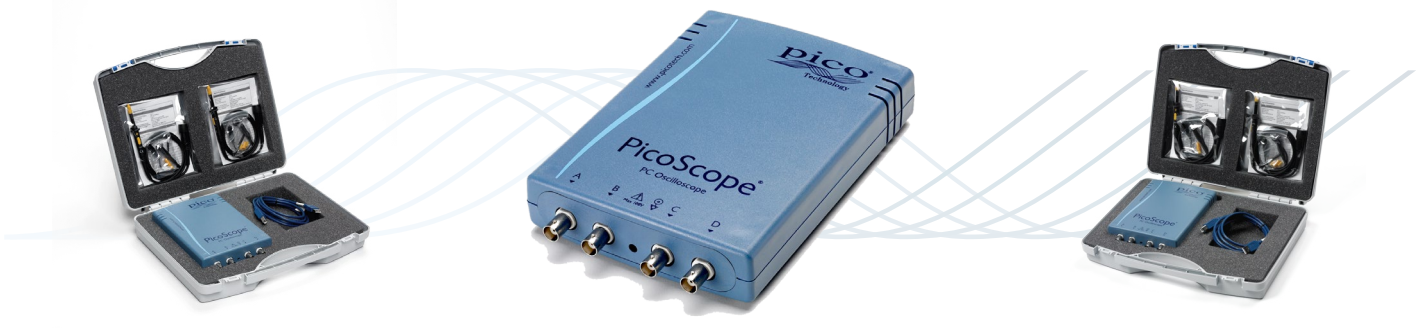
As well as the standard range of triggers found on most oscilloscopes, the PicoScope 4000 Series offers one of the best selections of advanced triggers available. These include pulse width, windowed and dropout triggers to help you find and capture your signal quickly.

MODEL SELECTOR

MODEL	BANDWIDTH	CHANNELS	SAMPLING	BUFFER MEMORY	EXT TRIG	AWG
PicoScope 4424	20 MHz	4	80 MS/s	32 MS	No	No
PicoScope 4224	20 MHz	2	80 MS/s	32 MS	No	No
PicoScope 4224 IEPE	20 MHz	2	80 MS/s	32 MS	No	No

SPECIFICATIONS

MODEL	PicoScope 4424	PicoScope 4224	PicoScope 4224 IEPE	
			Passive Probe Mode	IEPE Interface Mode
INPUTS				
Number of channels	4 BNC inputs	2 BNC inputs	2 BNC inputs	
Analog bandwidth	DC to 20 MHz		DC to 20 MHz	1.6 Hz to 20 MHz
	(10 MHz on ±50 mV range)			
Rise time (10% to 90%, calculated)	17.5 ns (35 ns on ±50 mV range)			
Voltage ranges	±50 mV to ±100 V in 11 ranges		±50 mV to ±20 V in 9 ranges	
Sensitivity	10 mV/div to 20 V/div		10 mV/div to 4 V/div	
Graphing frequency measurement	20 Hz, 200 Hz, 2 kHz, and 20 kHz ranges			
Vertical resolution	12 bits (up to 16 bits with resolution enhancement)			
Input coupling	AC or DC, software-controlled			
Input impedance	1 MΩ || 22 pF		1 MΩ || 22 pF	1 MΩ || 1 nF
Overvoltage protection	±200 V		±100 V	
SAMPLING				
Timebases	100 ns/div to 5000 s/div			
Maximum sampling rate (real time)	1/2 channels: 80 MS/s*	80 MS/s	80 MS/s	
	3/4 channels: 20 MS/s			
	*To achieve the stated sampling rate with two channels, choose one channel from A or B and one from C or D.			
Buffer size	32 MS shared between active channels			
TRIGGERING				
Sources	Any input channel			
Modes	None, single, repeat, auto, rapid			
Trigger types	Rising edge, falling edge, edge with hysteresis, pulse width, runt pulse, dropout, windowed			
PERFORMANCE				
Timebase accuracy	50 ppm			
DC accuracy	1% of full scale			
Trigger resolution	1 LSB			
Trigger re-arm time	2.5 µs (fastest timebase)			
ENVIRONMENT				
Temperature range	Operating: 0 °C to 45 °C For stated accuracy: 20 °C to 30 °C Storage: –20 °C to 60 °C			
Humidity range	Operating: 5% to 80% RH, non-condensing Storage: 5% to 95% RH, non-condensing			
PC connection	USB 2.0. Compatible with USB 1.1 and USB 3.0.			
PC operating system	Windows XP (SP3), Windows Vista, Windows 7 and Windows 8 (not Windows RT). 32-bit and 64-bit versions.			
Power supply	Powered by USB port			
Dimensions	200 mm x 140 mm x 38 mm including connectors			
Weight	< 500 g			
Compliance	EU EMC and LVD Standards RoHS and WEEE, FCC Rules Part 15 Class A			



PicoScope 4000 Series

What do I get?

The PicoScope 4000 Series oscilloscope kits contain the following items. The scopes are also available without accessories.

- PicoScope 4000 Series PC oscilloscope
- Passive x1/x10 60 MHz probes (2 with PicoScope 4224, 4 with PicoScope 4424)
- USB 2.0 cable
- PicoScope software CD
- Quick start guide
- Tough, padded carrying case

If your next application requires a different scope, consider one from the range of PicoScopes below.

PicoScope 2000 Series	PicoScope 3000 Series	PicoScope 5000 Series	PicoScope 6000 Series	PicoScope 9000 Series
Ultra-compact and handheld	General -purpose 2 and 4 channel	Flexible resolution 8 to 16 bits	High performance Up to 1 GHz	20 GHz sampling with TDR/TDT

Ordering information

ORDER CODE	PART DESCRIPTION	GBP	USD*	EUR*
PP493	PicoScope 4424 oscilloscope	799	1319	967
PP479	PicoScope 4424 oscilloscope kit	825	1362	999
PP492	PicoScope 4224 oscilloscope	499	824	604
PP478	PicoScope 4224 oscilloscope kit	519	857	628
PP695	PicoScope 4224 IEPE oscilloscope	599	989	725

*Prices are correct at the time of publication. Please contact Pico Technology for the latest prices before ordering.

UK headquarters:
Pico Technology
James House
Colmworth Business Park
St. Neots
Cambridgeshire
PE19 8YP
United Kingdom
☎ **+44 (0) 1480 396 395**
🖷 **+44 (0) 1480 396 296**
✉ **sales@picotech.com**

USA headquarters:
Pico Technology
320 N Glenwood Blvd
Tyler
Texas 75702
United States
☎ **+1 800 591 2796**
🖷 **+1 620 272 0981**
✉ **sales@picotech.com**

www.picotech.com