



A PicoScope (sometimes known as a labscope) turns your laptop or desktop PC into a powerful diagnostic tool. Think of it as the X-ray machine of diagnostics, letting you see the changing signals inside wires. You can purchase a PicoScope on its own, but most people purchase one of our award-winning Automotive Diagnostics Kits. These money-saving kits contain everything you need – just add a PC.

PicoScope 4225 and 4425 Series Specifications

This table lists the specifications that are most important to the average customer using the PicoScope for automotive diagnostics. If you have a more specific use for the product (or are just curious), detailed specifications are below this table.

Model	Key specifications at a glance	
	PicoScope 4225	PicoScope 4425
Channels	2	4
Bandwidth	20 MHz	
Resolution	12 bits (16 bits enhanced)	
Sampling rate	400 MS/s	
Buffer memory	250 M samples	
Input ranges (full scale)	±50 mV to ±200 V in 12 ranges	
Software supplied	PicoScope [®] , PicoDiagnostics [®]	
Language support	Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish, Turkish	
PC and power requirements	Desktop or laptop running Windows 7, 8 or 10 (recommended) Powered from PC USB port (USB 3.0 / 3.1 recommended; USB 2.0 compatible).	

Detailed specifications

Some of our customers use our automotive oscilloscopes for vehicle design and development and other non-diagnostic purposes. For these customers we have provided detailed technical specifications.

Oscilloscope specifications (vertical)

Oscilloscope specifications (vertical)

Model	PicoScope 4225	PicoScope 4425
Bandwidth	20 MHz (10 MHz on ± 50 mV range)	
Channels	2	4
Vertical resolution	12 bits	
Enhanced vertical resolution	16 bits	
DC accuracy	$\pm 1\%$ of full scale	
Sensitivity	10 mV/div to 40 V/div	
Input ranges (full scale)	± 50 mV to ± 200 V in 12 ranges	
Input characteristics	1 M Ω in parallel with 24 pF	
Input type	Floating, BNC connector	
Input common mode	30 V	
Input coupling	Software selectable AC/DC	
Overvoltage protection	± 250 V (DC + AC peak) on single input	

Oscilloscope specifications (horizontal)

Maximum sampling rate	
1 channel in use	400 MS/s
2 channels in use	200 MS/s
3 or 4 channels in use	100 MS/s
Maximum sampling rate (USB streaming)	20 MS/s (USB 3.0) 10 MS/s (USB 2.0)
Buffer memory	250 M samples
Waveform buffer	Up to 10,000 waveforms
Timebase ranges	100 ns/div to 5000 s/div

Dynamic performance (typical)

Crosstalk	4000:1, DC to 20 MHz
Harmonic distortion	< -60 dB
SFDR	> 60 dB
Noise	220 μ V RMS on 50 mV range
Bandwidth flatness	DC to full bandwidth (+0.25 dB, -3 dB)
ADC ENOB	10.8 bits

Triggers

Source	Any input channel
Basic triggers	Auto, repeat, single, none
Advanced triggers	Rising edge, falling edge, edge with hysteresis, pulse width, runt pulse, dropout, windowed
Maximum pre-trigger delay	Up to 100% of capture length
Maximum post-trigger delay	Up to 4 billion samples

Spectrum analyzer

Frequency range	DC to 20 MHz
Display modes	Magnitude, average, peak hold
Windowing functions	Rectangular, Gaussian, triangular, Blackman, Blackman-Harris, Hamming, Hann, flat-top

Spectrum analyzer

Number of FFT points Selectable from 128 up to 1 million in powers of 2

Scale / units X axis : linear or log 10
Y axis : logarithmic (dBV, dBu, dBm, arbitrary) or linear (volts)

Math channels

General functions $-x$, $x+y$, $x-y$, $x*y$, x/y , x^y , sqrt, exp, ln, log, abs, norm, sign, sin, cos, tan, arcsin, arccos, arctan, sinh, cosh, tanh, derivative, integral, delay

Filter functions Low pass, high pass, band stop, band pass

Graphing functions Frequency, duty cycle

Multi-waveform functions Min, max, average, peak

Operands Input channel, reference waveforms, time, constants, pi

Automatic measurements

Scope mode AC RMS, true RMS, cycle time, DC average, duty cycle, falling rate, fall time, frequency, high pulse width, low pulse width, maximum, minimum, peak to peak, rise time, rising rate.

Spectrum mode Frequency at peak, amplitude at peak, average amplitude at peak, total power, THD %, THD dB, THD+N, SFDR, SINAD, SNR, IMD

Statistics Minimum, maximum, average and standard deviation

Serial decoding

Protocols CAN, LIN, I²C, UART/RS-232, SPI, I²S, FlexRay

Inputs All input channels with any mixture of protocols

Mask limit testing

Mask generation Auto generate from captured waveform, manual drawing, manual coordinate entry

Actions Highlight on screen, select in buffer overview, activate alarm

Statistics Pass/fail, failure count, total count

Alarms

Initiating events Capture, buffer full, mask fail

Alarm actions Beep, play sound, stop/restart capture, run executable, save current buffer/all buffers, trigger signal generator

Data export

Output file formats BMP, CSV, GIF, JPG, MATLAB 4, PDF, PNG, PicoScope data, PicoScope settings, TXT

Output functions Copy to clipboard, print

Environmental

Operating environment

Temperature range 0 °C to 40 °C (15 °C to 30 °C for quoted accuracy)

Humidity 5% to 80% RH, non-condensing

Storage environment

Temperature range -20 to +60°C

Humidity 5% to 95% RH, non-condensing

Physical dimensions

Physical dimensions

Dimensions 190 x 160 x 40 mm (approx 7.5 x 6.3 x 1.6 in)

Weight < 900 g (approx 2 lb)

Software

Software included PicoScope 6 oscilloscope software with waveform database and guided tests.

Software included PicoDiagnostics software

Languages Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean*, Norwegian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish, Turkish

For Korean software, please contact our Korean distributor [VNP InterBiz](#)

General

Additional hardware (supplied) USB cable, user manuals, software CD-ROM

PC requirements Desktop or laptop running Windows 7, 8 or 10 recommended ([read more](#))

PC connectivity Powered from PC USB port (USB 3.0 / 3.1 recommended, USB 2.0 compatible).

Power requirements Powered from USB ports

Safety approvals LVD compliant

EMC approvals Tested to meet EN61326-1:2006 and FCC Part 15 Subpart B

Environmental approvals RoHS and WEEE compliant

Total satisfaction guarantee In the event that this product does not fully meet your requirements you can return it for an exchange or refund. To claim, the product must be returned in good condition within 14 days.

Warranty 2 years