

## Product Datasheet - Technical Specifications



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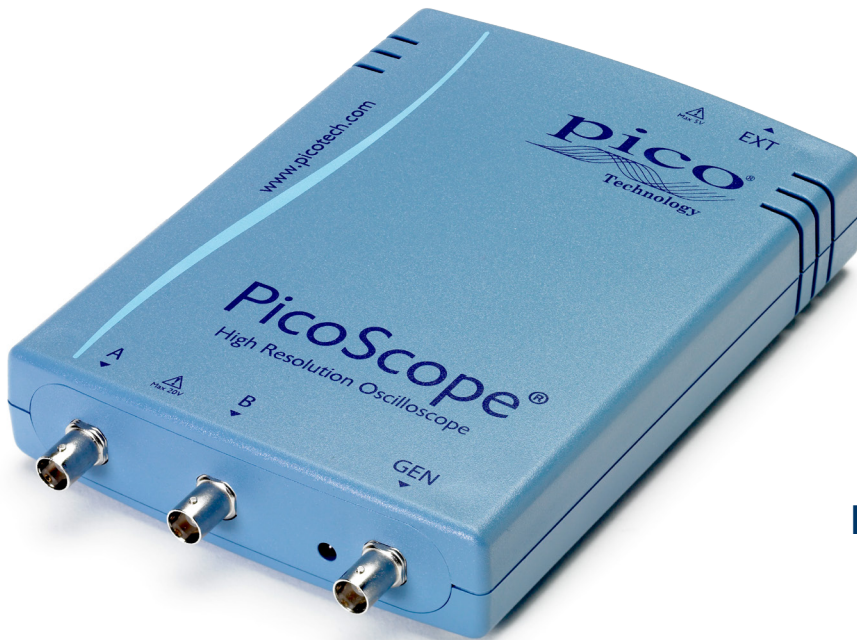
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# PicoScope<sup>®</sup> 4262

HIGH-RESOLUTION USB OSCILLOSCOPE

A digital oscilloscope for the analog world



Low noise  
Two channels  
16 MS buffer  
16-bit resolution  
10 MS/s sampling  
5 MHz bandwidth  
Advanced digital triggers  
Low-distortion signal generator  
Arbitrary waveform generator  
USB powered



# 16 bit



Supplied with an SDK including example programs • Free Technical Support  
• Software compatible with Windows 7, Windows 8 and Windows 10

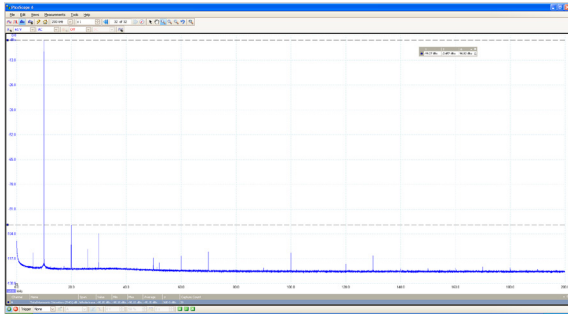
...from a name you can trust

PicoScope 4262 Oscilloscope

# Introduction to the PicoScope 4262

## Low distortion, low noise

The PicoScope 4262 from Pico Technology is a 2-channel, 16-bit high-resolution oscilloscope with a built-in low-distortion signal generator. With its 5 MHz bandwidth, it can easily analyze audio, ultrasonic and vibration signals, characterize noise in switched mode power supplies, measure distortion, and perform a wide range of precision measurement tasks.



## Full-featured oscilloscope

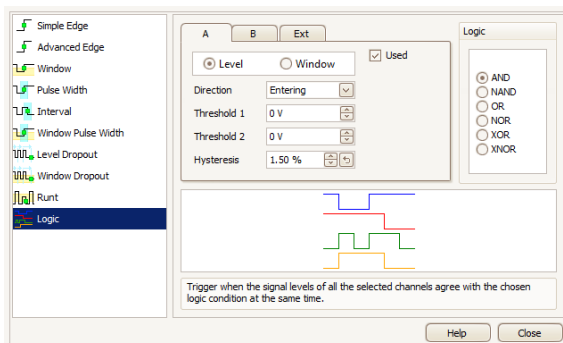
The PicoScope 4262 is a full-featured oscilloscope, with a function generator and arbitrary waveform generator that includes a sweep function to enable frequency response analysis. It also offers mask limit testing, math and reference channels, advanced digital triggering, serial decoding, automatic measurements and color persistence display.

## Designed for the analog world

When used in spectrum analyzer mode, the scope provides a menu of eleven automatic frequency-domain measurements such as IMD, THD, SFDR and SNR. Its performance is so good that it rivals many dedicated audio analyzers and dynamic signal analyzers costing several times the price.

Most digital oscilloscopes have been designed for viewing fast digital signals. The trend has been to use new technology solely to increase sampling rate and bandwidth. With the PicoScope 4262 we have focused on what's important for measuring analogue signals: increasing the resolution, improving dynamic range, and reducing noise and distortion.

## Advanced triggers



As well as the standard range of triggers found on all oscilloscopes, the PicoScope 4262 offers a comprehensive set of advanced digital triggers including pulse width, windowed and dropout triggers to help you capture the data you need.

## Digital triggering

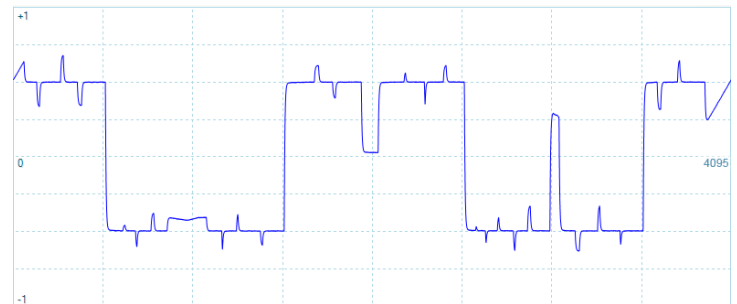
Digital triggering reduces trigger errors and allows our oscilloscopes to trigger on the smallest signals, even at the full bandwidth. Trigger levels and hysteresis can be set with great precision and resolution.

Digital triggering also reduces re-arm delay and this combined with the segmented memory allows the triggering and capture of events that happen in rapid sequence. At the fastest timebase you can use rapid triggering to capture a new waveform every microsecond. The mask limit testing function can then scan through these waveforms to highlight any failed waveforms for viewing in the waveform buffer.

## Arbitrary waveform and function generator

The unit has a built-in signal generator (sine, square, triangle, DC level). As well as basic controls to set level, offset and frequency, more advanced controls allow you to sweep over a range of frequencies. Combined with the spectrum peak hold option, this makes a powerful tool for testing amplifier and filter responses.

Also included is a fully programmable arbitrary waveform generator with a 4 k-sample buffer.



## High-end features as standard

To protect your investment, both the API and the firmware inside the unit can be updated. We have a long history of providing new features for free via software downloads. Other companies make vague promises about future enhancements but we deliver on our promises year after year. Users of our products reward us by becoming lifelong customers, frequently recommending us to their colleagues.

## High signal integrity

Most oscilloscopes are built down to a price; ours are built up to a specification.

Careful front-end design and shielding reduces noise, crosstalk and harmonic distortion. Years of oscilloscope experience enable us to achieve improved pulse response and bandwidth flatness.

We are proud of the dynamic performance of our products and publish these specifications in detail. The result is simple: when you probe a circuit with a PicoScope, you can trust in the data you capture.

# PicoScope 4262 Specifications

<b>VERTICAL</b>	
Number of channels	2
Input connectors	BNC
Bandwidth (-3 dB)	5 MHz (4 MHz on $\pm 20$ mV range, 3 MHz on $\pm 10$ mV range)
Bandwidth limiter	200 kHz, switchable
Rise time (calculated)	70 ns (88 ns on $\pm 20$ mV range, 117 ns on $\pm 10$ mV range)
Resolution	16 bits (20 bits in enhanced resolution mode)
Input impedance	1 M $\Omega$ $\pm 2\%$    15 pF $\pm 2$ pF
Input coupling	AC/DC
Input sensitivity	2 mV/div to 4 V/div (10 vertical divisions)
Input ranges	$\pm 10$ mV, $\pm 20$ mV, $\pm 50$ mV, $\pm 100$ mV, $\pm 200$ mV, $\pm 500$ mV, $\pm 1$ V, $\pm 2$ V, $\pm 5$ V, $\pm 10$ V, $\pm 20$ V
DC accuracy (% of full scale)	$\pm 0.25\%$ ( $\pm 0.5\%$ on $\pm 50$ mV range, $\pm 1\%$ on $\pm 20$ mV range, $\pm 2\%$ on $\pm 10$ mV range)
Overvoltage protection	$\pm 50$ V (DC + AC Peak)
<b>HORIZONTAL</b>	
Maximum sampling rate (real-time)	10 MS/s (1 or 2 channels in use)
Maximum sampling rate (USB streaming)	10 MS/s using PicoScope 6 software. 10 MS/s (1 channel in use), 6.7 MS/s (2 channels in use) using supplied SDK.
Buffer memory	16 MS
Waveform buffer (no. of segments)	10 000 (with supplied software), 32 768 (in SDK)
Timebase ranges	1 ns/div to 5000 s/div
Timebase accuracy	$\pm 50$ ppm
Sample jitter	< 10 ps RMS
ADC sampling	Simultaneous sampling on all enabled channels
<b>DYNAMIC PERFORMANCE (typical)</b>	
Crosstalk	> 50 000:1
Total harmonic distortion	-95 dB typical at 10 kHz, -1 dBfs input
SFDR	96 dB typical at 10 kHz, -1 dBfs input
Pulse response	< 1% overshoot all ranges
Bandwidth flatness	+0.25 dB to -3 dB, DC to full bandwidth
Noise	8.5 $\mu$ V RMS (on most sensitive range)
<b>TRIGGERS (CHANNELS A &amp; B)</b>	
Trigger modes	None, auto, repeat, single, rapid (segmented memory)
Basic trigger types	Rising, falling
Advanced digital trigger types	Edge, window, pulse width, window pulse width, dropout, window dropout, interval, runt pulse, logic
Trigger sensitivity (Ch A, Ch B)	Digital triggering provides 1 LSB accuracy up to full bandwidth of scope
Max. pre-trigger capture	Up to 100% of capture size
Max. post-trigger delay	Up to 4 billion samples
Trigger re-arm time	< 10 $\mu$ s on fastest timebase
<b>EXT TRIGGER</b>	
Trigger types	Edge, pulse width, dropout, interval, logic, delayed
Input characteristics	Rear panel BNC, 1 M $\Omega$ $\pm 2\%$    15 pF $\pm 2$ pF
Threshold range	$\pm 5$ V and $\pm 500$ mV, DC coupled
Sensitivity	25 mV p-p at 1 MHz, typical
DC accuracy	$\pm 1\%$
Bandwidth	5 MHz
Overvoltage protection	$\pm 50$ V
<b>SPECTRUM ANALYZER</b>	
Frequency range	DC to 5 MHz
Windowing functions	Rectangular, Gaussian, triangular, Blackman, Blackman-Harris, Hamming, Hann, flat-top
Display modes	Magnitude, peak hold, average
Number of FFT points	128 to 1 million
<b>MATH CHANNELS</b>	
Functions	$-x$ , $x+y$ , $x-y$ , $x*y$ , $x/y$ , $\sqrt{x}$ , $x^y$ , $\exp(x)$ , $\ln(x)$ , $\log(x)$ , $\text{abs}(x)$ , $\text{norm}(x)$ , $\text{sign}(x)$ , $\sin(x)$ , $\cos(x)$ , $\tan(x)$ , $\arcsin(x)$ , $\arccos(x)$ , $\arctan(x)$ , $\sinh(x)$ , $\cosh(x)$ , $\tanh(x)$
Operands	Input channels A and B, time, reference waveforms, pi

## Specifications Continued...

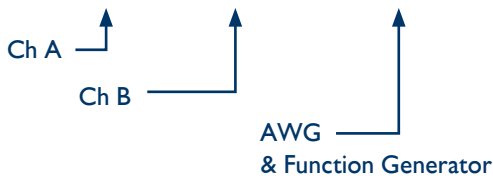
<b>SERIAL DECODING</b>	
Protocols	I <sup>2</sup> C, CAN Bus, SPI, RS232/UART, I <sup>2</sup> S, LIN
<b>MASK LIMIT TESTING</b>	
Statistics	Pass/fail, failure count, total count
<b>DISPLAY MODES</b>	
Interpolation	Linear or sin (x)/x
Persistence modes	Digital color, analog intensity, custom, fast
<b>SIGNAL GENERATOR</b>	
Standard output signals	Sine, square, triangle, DC voltage, ramp, sinc, Gaussian, half-sine, white noise, PRBS
Bandwidth	20 kHz
Output frequency accuracy	±50 ppm
Output frequency resolution	< 0.01 Hz
Output voltage range	±1 V (into high impedance load)
Offset voltage adjustment	100 µV steps (within overall ±1 V range)
DC accuracy	±0.5% of full scale
Amplitude flatness	< 0.1 dB to 20 kHz, typical
SFDR	102 dB typical @ 10 kHz, -1 dBfs input
Connector type	Front panel BNC
Output characteristics	600 Ω
Overvoltage protection	±10 V
Sweep modes	Up, down, dual with selectable frequency and sweep time
<b>AWG</b>	
Update rate	192 kS/s
Buffer size	4096 samples
Resolution	16 bits
Bandwidth	20 kHz
Rise time (10% to 90%)	11 µs, typical
<b>AUTOMATIC MEASUREMENTS</b>	
Scope mode	AC RMS, true RMS, frequency, cycle time, duty cycle, DC average, falling rate, rising rate, low pulse width, high pulse width, fall time, rise time, minimum, maximum, peak to peak
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, standard deviation
<b>GENERAL</b>	
PC connectivity	USB 2.0 (USB 1.1 compatible)
Power requirements	Powered from USB port
Dimensions	210 x 135 x 40 mm (including connectors)
Weight	< 0.5 kg
Temperature range	Operating: 0 °C to 45 °C (20 °C to 30 °C for stated accuracy). Storage: -20 °C to +60 °C.
Humidity range	Operating: 5% to 80% RH, non-condensing. Storage: 5% to 95% RH, non-condensing.
Safety approvals	Designed to EN 61010-1:2010
Compliance	RoHS and WEEE compliant. CE: Tested to EN61326-1:2006. FCC: Tested to part 15 subpart B.
Software included	PicoScope 6, SDK and example programs
PicoScope software PC requirements	Microsoft Windows 7, Windows 8 or Windows 10, 32-bit or 64-bit
Languages	Chinese (simplified & traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish, Turkish



### Have you seen our PicoScope 4000 Series data sheet?

It shows the full range of features available with the PicoScope software, which turns your PicoScope 4262 into a powerful oscilloscope and spectrum analyzer. All of these capabilities are included in the price of your oscilloscope.

# PicoScope 4262 Connections



The front panel of the PicoScope 4262 has two BNC input channels and a BNC output for the function generator and AWG.



The rear panel of the PicoScope 4262 has two connections: a USB port for connection to the PC, and a BNC for an external trigger to be connected.

Your PP799 PicoScope 4262 product pack contains the following items:

- 2 x MI007 probes
- PicoScope 4262
- USB cable
- Quick Start Guide
- Software and Reference CD



## Ordering information

ORDER CODE	PART DESCRIPTION
PP799	PicoScope 4262 16-bit oscilloscope with 2 probes