

PenScope

USB Pen-Type Digital Oscilloscope



Oscilloscope, Data Logger, Spectrum Analyzer, Voltage and Frequency Meter

FEATURES

- ***Input voltage range: $\pm 20\text{mV}$ - $\pm 25\text{V}$***
- ***High voltage protection***
- ***Adjustable trigger level***
- ***128KB data buffer***
- ***AC and DC input coupling***
- ***100MHz sampling rate and 20MHz analog bandwidth***
- ***FFT - Fast Fourier Transform***
- ***Pen-type housing***
- ***Small size - 150x25mm***
- ***No external power supply needed***
- ***Easy to use software***

DESCRIPTION

PenScope is high performance data acquisition system. It connects to the USB cable and does not require an external power supply.

PenScope enables you to use this tool in any design, service or automotive measuring tasks. Easy to use software turns your PC into a digital oscilloscope and spectrum analyzer.

PenScope measures frequency (time period), voltage (RMS, average, peak to peak) and cursor position. It analyzes signal FFT, zooms selected area and prints or saves measured signals for later reference or examination.

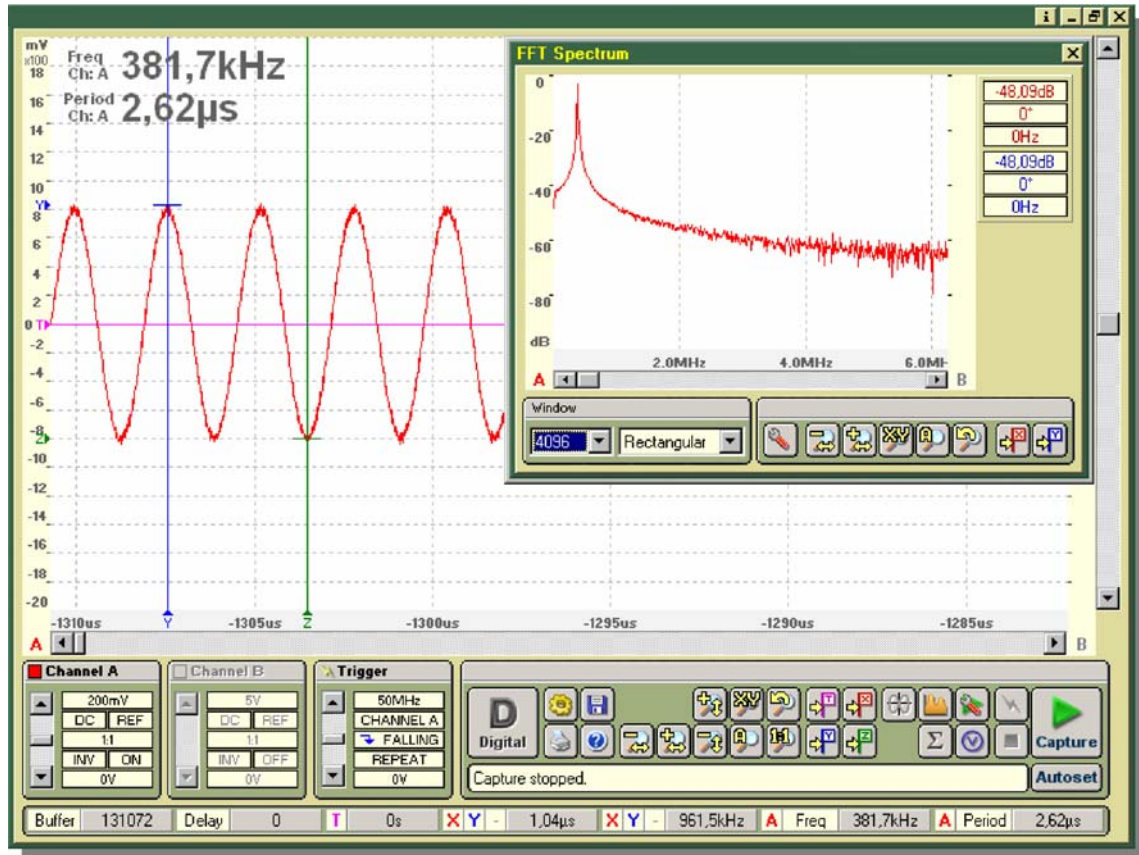
Supplied with a powerful software that converts your computer in an ***Oscilloscope, Data Logger, Spectrum Analyzer, Voltage and Frequency Meter.***

SPECIFICATIONS

Sampling Rate	100MHz
Analog Bandwidth	20MHz
Resolution	8 bits
Buffer	128KB
Vmax	25V
Input Type	AC or DC
Overload	100V
Impedance	1M, 15pF
Triggers	threshold, edge, external and pre/post
Size	25mm x 150mm

SOFTWARE

The software consists of two parts: analog - oscilloscope and digital - logical analyzer. The large Analog and Digital buttons realize the possibility of switching between both parts of the software.



Analog Window

The common way to examine electrical signals is time domain analysis, using an oscilloscope. The time domain is used to determine amplitude, time and phase information, which is necessary to describe an electrical system. The Analog window represents a signal registered in the time. It permits also simple analysis of a signal like the spectral analysis, the measurement of the time or frequencies, the measurement of the voltage.

It consists of the following elements:

- The central area, initially empty, is used to display views of the data, which are read from the hardware.
- Channel configuration of analog inputs
- Trigger field - allows to set trigger options
- Scope area - allows to execute the most commonly used functions

- Information bar (at the bottom of the main window)

Analog Window - Display Area

This area displays captured data in graphical form. Data may be scrolled and zoomed by clicking on one of zoom icons. Time differences or frequency can be measured using four cursors.

1. Threshold level.
2. T cursor (Trigger). The cursor consists of two lines: vertical and horizontal. The vertical line of T cursor shows the point in which the signal state corresponds to the trigger conditions settings. The position of vertical line (of T cursor) is determined by the pre-/post trigger buffer size setting in Analog/Digital Setup Window. The line divides time domain in two parts: post trigger – „positive time” and pre trigger – „negative time”.
3. Time ruler. The zero value of time (0s) is always in position of T cursor.
4. Cursors.
5. Indicator of zero value (0V).
6. Signal display area.
7. Amplitude ruler with the indicators of cursors and indicator of zero value (0V).
8. Horizontal scroll bar – allows moving registered signal towards time ruler.
9. Vertical scroll bar – allows moving the signal area vertically. After clicking the right button of the mouse the vertical scroll bar sets in zero position.

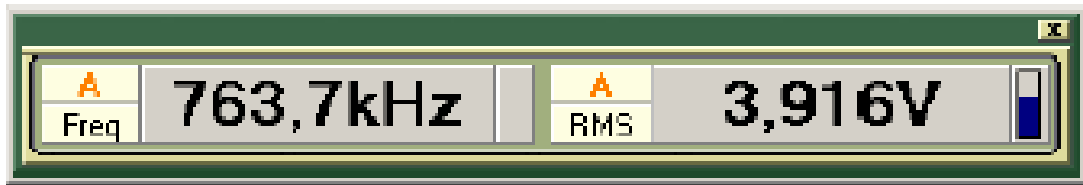
Digital Window

Digital Window displays logical state of a signal in time domain. It permits to do simple analysis of signals like measurement of time or frequency. It consists of the following elements:

- Trigger field - allows to change trigger parameters,
- Logic field - used to execute the most commonly used functions,
- The central area (the Desktop) - is initially empty and is used to display views of the data which are read from the hardware,
- Information bar (at the bottom of the main window).

Frequency and Voltage Measurements

Useful function of the software is universal Meter in the form of the small window displaying present values measured in the digital form.

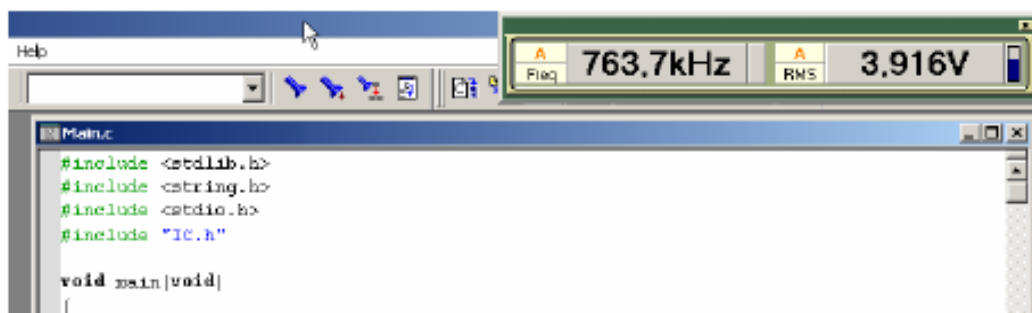


This tool, run by pressing button, can display current value of voltage: mean (AVG), RMS, Peak-Peak, and frequency or time period.

Type of the displayed value, and the number of the channel, it is possible to change by clicking on area of the type or the flag of the channel.

Selected area of the value it is possible to "freeze" through clicking on them.

This value, drawn with blue color, is not being refreshed then.



The window of the Meter possesses this feature that windows of other applications are not covering it.

This operation provides a possibility of tracing the code of the application and watching the consequence of execution of this code in the inspected device, e.g. change of the voltage or the frequency.

Spectral Analysis (FFT)

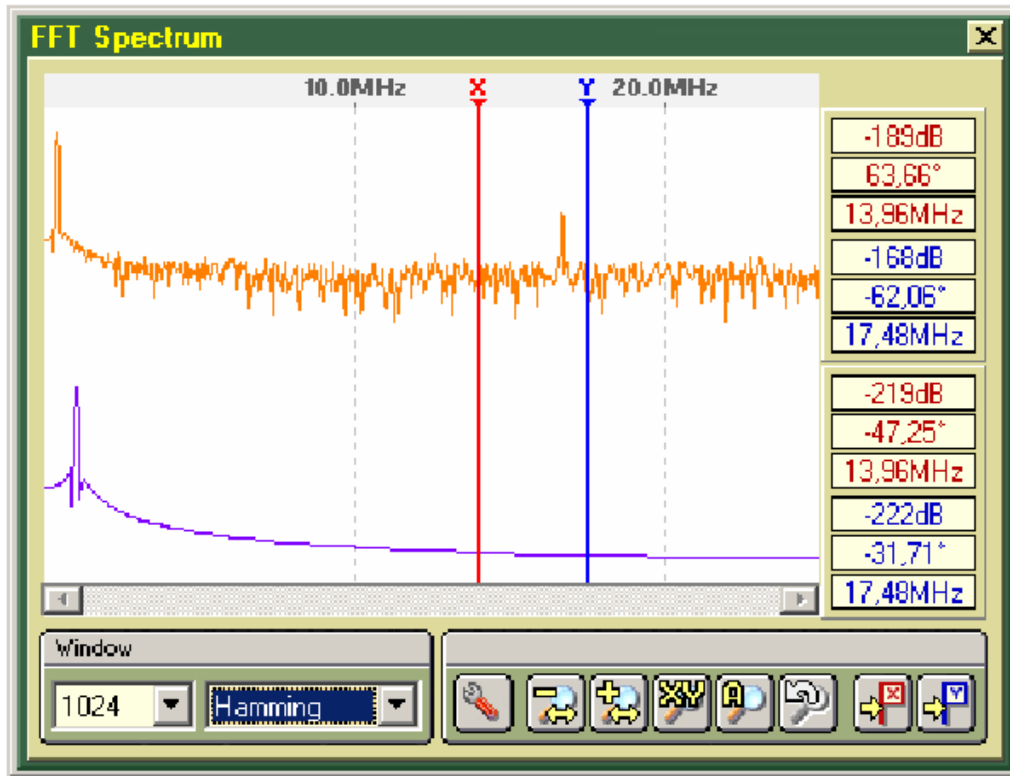
The software offers the possibility to display the spectral analysis of the registered signal.

The click of button opens the additional window containing the chart of the spectrum.

The analysis of execution is easier thanks to cursors showing the frequency in the place of their setting as well as the value of the amplitude and phase.

Also magnifying of the fragment of the spectrum, the change of the type and the size of FFT window are possible.

The window is offering also the possibility of change the method of displaying the vertical axis of the graph (linear or logarithmic).



PenScope - ORDERING INFORMATION

<i>Item</i>	<i>Description</i>
PenScope	USB Pen-Type Digital Oscilloscope

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