PicoScope®

AN INTRODUCTION TO PC OSCILLOSCOPES

pico® Technology

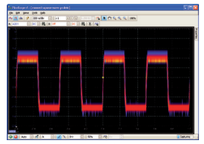
SAMPLING RATE

PC oscilloscopes work by "sampling" the input signal - that is, measuring its value at regular intervals and storing those values in its memory.

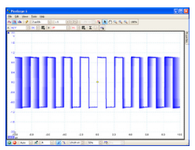
Any changes in the signal between one sample and the next are lost. So, to avoid losing important details, the sampling rate must be fast enough for the type of signal being measured.

PicoScope devices are available with a wide range of sampling rates from 20 million to 5 billion samples per second (20MS/s to 5GS/s).

PERSISTENCE MODE



Digital color mode is useful for estimating noise and jitter, and for spotting glitches.



Analog Intensity mode shows the high-frequency content of a signal at slow timebases.

RECORD LENGTH

PC oscilloscopes usually store more data on each waveform than they can display on the screen. You can zoom in to see the extra data.

Older scopes tend to slow down when capturing large records, but the latest PicoScope models have high-performance "always-on" memory that operates at full speed regardless of record length.

This frees you from having to worry about the memory settings and lets you capture high-resolution data every time.

PICOSCOPE IS THE PC OSCILLOSCOPE SOFTWARE FROM PICO TECHNOLOGY.

PERSISTENCE BUTTON
Switches to digital color or analog intensity mode. Both modes are fully configurable.

SPECTRUM BUTTON
Switches to spectrum analysis mode.

AUTO SETUP BUTTON
Click this first to find your signal, then adjust using the other controls.

TIMEBASE CONTROLS
Set the time interval across the screen, zoom factor, and record length

TRIGGER MARKER
Shows the channel, signal level and time of the trigger event. Drag to adjust.

BUFFER CONTROLS
PicoScope stores the most recent waveforms in a buffer. Use these controls to scan backwards and forwards through the buffer.

ZOOM BUTTONS
Click to pan and zoom around the entire view. (To zoom a single channel, use the scaling buttons)

UPDATES TO **PICOSCOPE** CAN BE DOWNLOADED FREE OF CHARGE FROM **WWW.PICOTECH.COM**.

SCOPE BUTTON
Click to return to the normal oscilloscope display mode.

CHANNEL CONTROLS
In "Auto" mode PicoScope adjusts the input range to fit the signal. You can override this to set your own range for each channel. "DC" preserves the DC component of the signal, while the "AC" filters anything below about 1 hertz.

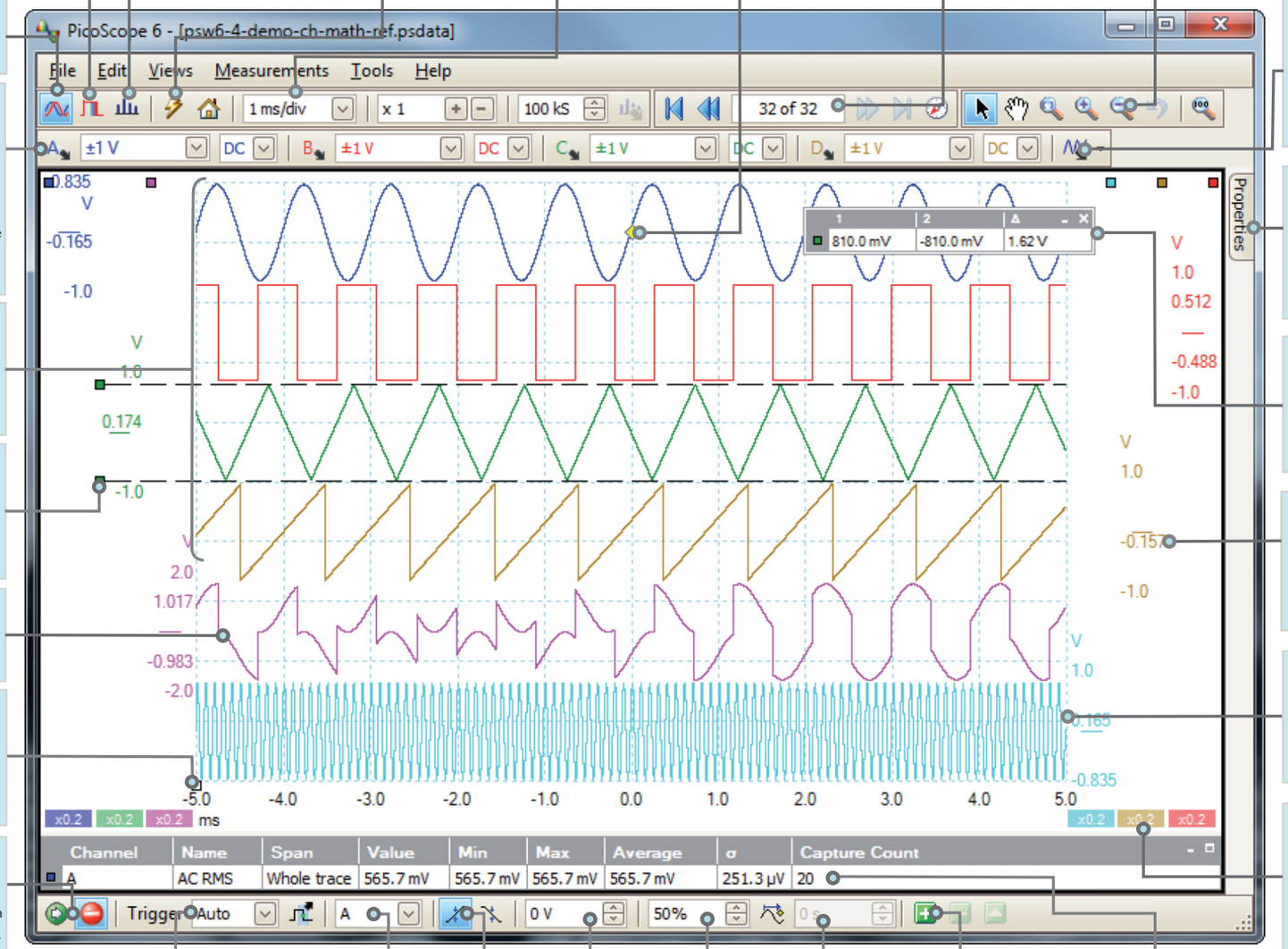
CHANNELS A TO D
These are linked to the channel controls above. Each channel corresponds to one of the BNC connectors on the PicoScope.

CHANNELS RULER
Drag a colored handle from the top of the window to the level you want to measure. The ruler legend shows the measurement.

MATH CHANNEL
This channel is the sum of channels A and B.

TIME RULER
Drag a white ruler handle from left to right to mark a point on the axis. The ruler legend shows the time at each ruler and the time difference between two rulers.

STOP/START CONTROL
Click to start displaying waveforms. Click again to stop. The space bar on the keyboard has the same function.



SIGNAL GENERATOR BUTTON
For oscilloscopes with a built-in signal generator, this button lets you set up the output signal.

PROPERTIES TAB
Click to reveal the Properties sheet, which contains detailed information about the oscilloscope settings.

RULER LEGEND
Shows measurements of all rulers on screen. Also shows difference between two rulers.

CHANNEL AXIS
There is a color-coded axis for each channel. Drag it up or down to position the channel.

REFERENCE CHANNEL
This channel shows a waveform that was saved in a previous session.

SCALE AND OFFSET BUTTONS
There is a color-coded button for each channel. Click it to reveal the scale and offset controls.

PICOSCOPE SOFTWARE IS SUPPLIED WITH EVERY PICO TECHNOLOGY REAL-TIME OSCILLOSCOPE.

TRIGGER MODE
AUTO displays a stable waveform when possible.
NONE always displays regardless of the waveform.
SINGLE displays a single waveform then stops.
REPEAT displays only stable waveforms.
RAPID captures a sequence of waveforms.

TRIGGER SOURCE
Choose which channel to trigger on.

EDGE SELECT
Trigger on rising or falling edges.

THRESHOLD
Set the voltage at which the trigger operates, or drag the trigger marker.

PRETRIGGER
How much of the waveform is captured before the trigger event.

TRIGGER DELAY
How long to wait after the trigger event before capturing the waveform.

MEASUREMENT BUTTONS
Click to add an automatic measurement to the measurements table, or to delete or edit one.

MEASUREMENTS TABLE
Lists all your dynamically updated automatic measurements with statistics. Click the Add Measurements button to add more. Choose from dozens of measurement types.

PICOSCOPE RUNS ON MICROSOFT WINDOWS XP (32-BIT), VISTA AND WINDOWS 7 (32-BIT AND 64-BIT).

THE PICOSCOPE RANGE

PICOSCOPE 2104 & 2105
Handheld

PICOSCOPE 2203/2204/2205
Ultra-Compact

PICOSCOPE 3204/3205/3206
General Purpose

PICOSCOPE 4224/4424
High Precision

PICOSCOPE 4226/4227
Speed and Precision

PICOSCOPE 5203/5204
High Bandwidth

PICOSCOPE 6402/6403
Deep Memory

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