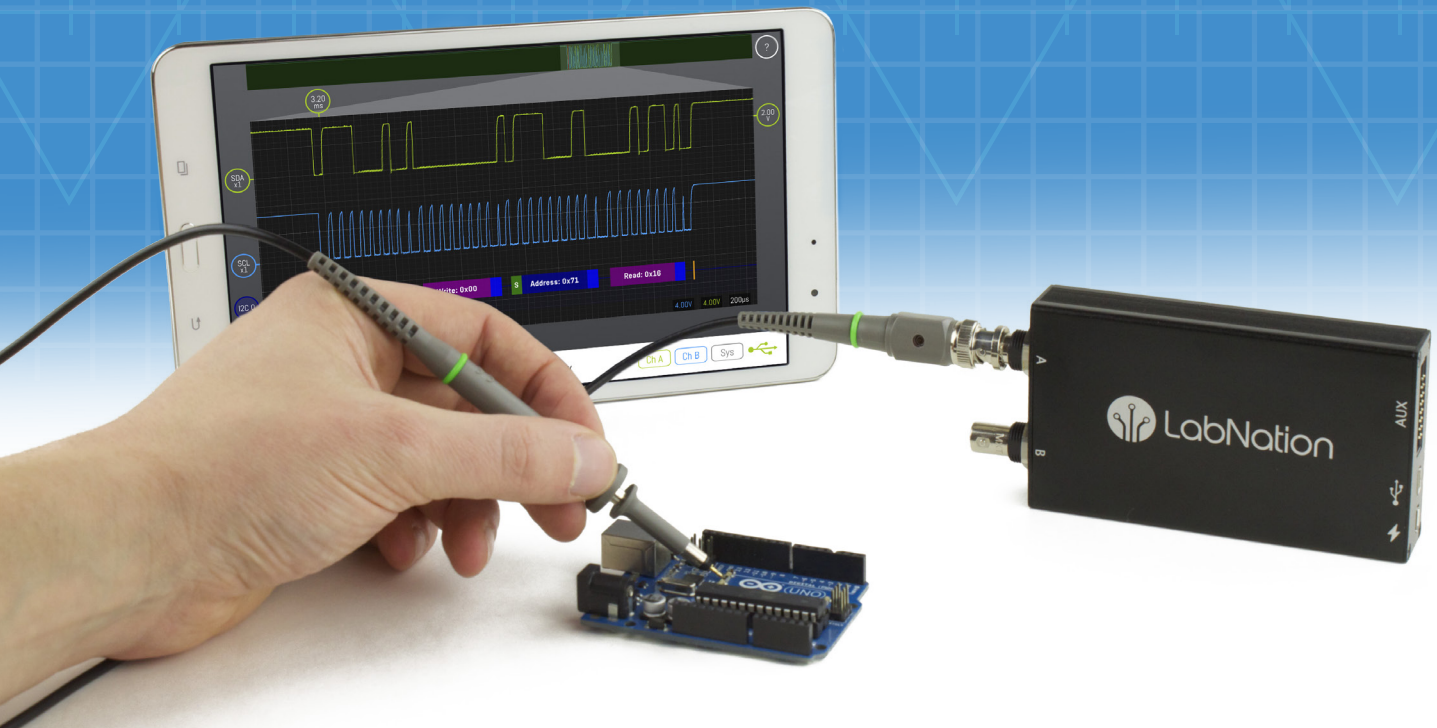




LabNation



SmartScope

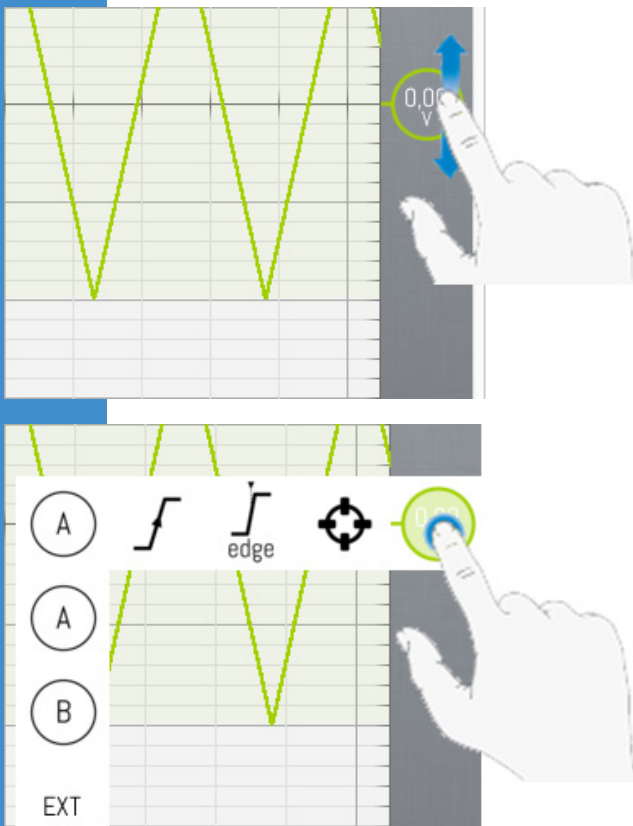


Interface for the 21st century

The software for the SmartScope was built from the ground up with a clear goal in mind:

To create a clean, attractive and intuitive GUI which gives the maximum of screen real estate to the waveforms.

Making optimal use of touch, mouse and keyboard, the software driving the SmartScope is a fresh approach to oscilloscope interfaces. No need to manipulate knobs or buttons, **simply interact directly with the elements you see on the screen!**



Scope wherever you go!

Measuring only 110mm x 64mm x 25mm, the SmartScope is small enough to carry with you everywhere you go. Thanks to its **single-cable USB connectivity**, simply hook it up to your phone/tablet/laptop wherever you are! With its maximum power consumption of **only 700mW**, it probably sets a world record of lowest consuming scope with these specs.

Compatible with Android, Windows, Linux and OSX devices through USB. Connects over the network as well, including to iOS devices.

A reliable scope in a small box

No compromises were made by shrinking down an oscilloscope into a small box. The SmartScope can be used for any job on the road, and for 90% of typical day-to-day engineering tasks.

Analog input stage

With an analog bandwidth of 30MHz, and each channel having its own 100MS/s digitizer, the SmartScope can easily be used to visualize digital waves up to 10MHz, making it an ideal device to fit on any engineers desk.

Equipped with a standard BNC connector, AC/DC coupling and an active divide/multiply stage, each analog channel of the SmartScope has everything you require.

Triggering

An oscilloscope is only as good as the robustness of its triggering. And that's what the architecture of the SmartScope has been built around. You can trigger anywhere freely, and the SmartScope will display the **waveform rock-solid on the screen**. By implementing **sub-nanosecond sinc-triggering**, the SmartScope has no problem keeping high-frequent signals steady on the screen.

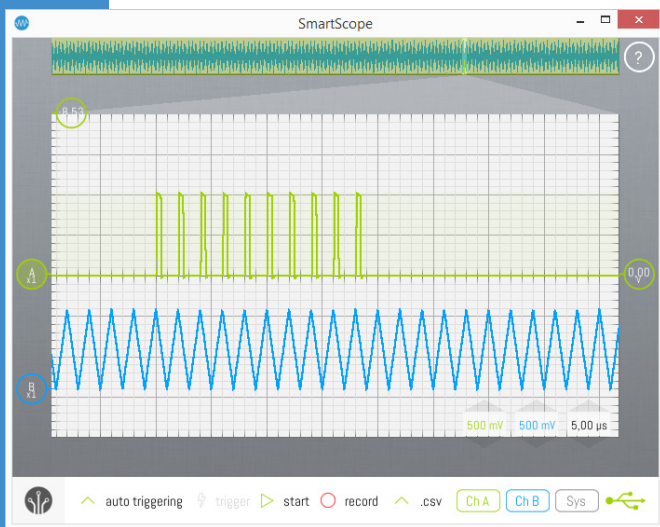
Metal box for shielding

The SmartScope comes in a sturdy metal enclosure, which is required to shield it from external signals.

8MS On-board RAM

Unique in its price range, the SmartScope comes with 4MS on-board memory for each of its analog and digital channels. After capturing a sequence, this allows you to **zoom in up to 10.000x on your waveform**. A smart implementation allows you to acquire at high update rates AND still have access to every sample of your stopped acquisition!

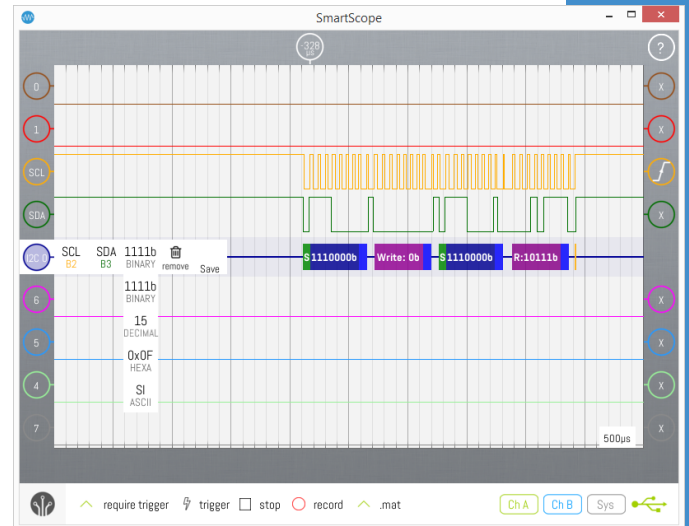
An innovative way to visualize the currently shown section of the RAM makes it a breeze to pinch, scroll or navigate through the RAM..



Logic Analyzer

On the rear port of the SmartScope you'll find 8 digital inputs, allowing you to **capture 8 waveforms at 100MS/s each**. Digital voltages from 1.8V to 5.0V are supported.

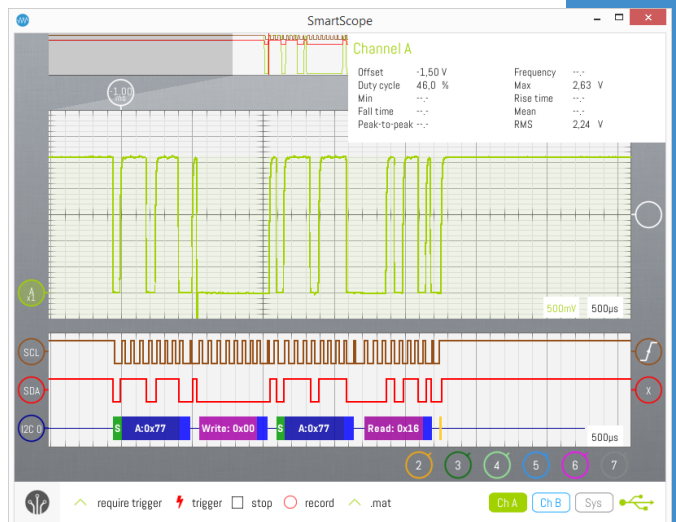
Decoders



Digital communication captured on the analog and/or digital inputs can be decoded into hex, decimal, binary or ASCII values. The free software comes with **built-in I2C, SPI, UART, RS232, I2S decoders**, and thank to its open-source nature they can be extended at will!

Mixed mode

If your digital signals don't look as expected, switch to Mixed mode and you can visualize an analog channel simultaneously with your digital channels!



Analog & Digital generators

The SmartScope comes with 4 digital outputs (3V/5V selectable) and 1 Arbitrary Waveform Generator (range between 0V and 3.3V), each generating samples at up to 100MS/s. Use the built-in signals from the menu, or upload your own .csv files.

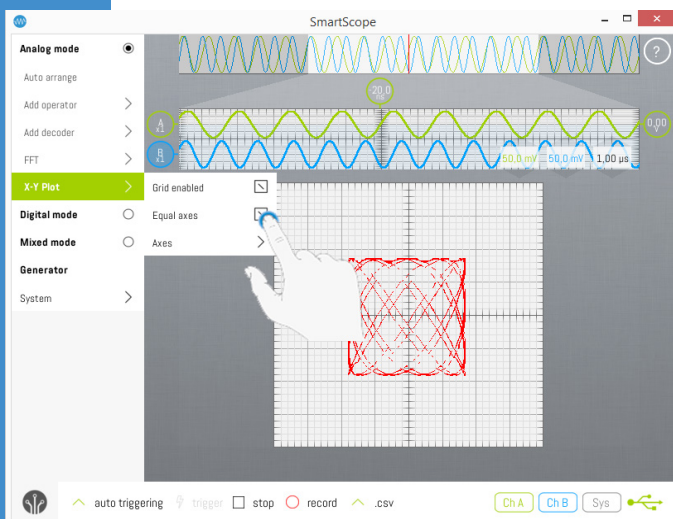
Spectrum analyzer

The SmartScope comes with a real-time spectrum analyzer, where can also pan/zoom the frequency axis.



XY Mode

The free software comes with an XY mode, which allows you to plot both signals versus each other, while simultaneously showing them in the time domain.



Data logging

Store one or all acquisitions to file, either in CSV format (Excel) or .mat format (matlab).

For longer measurements, you can choose to store only 1 acquisition every x seconds, or even to store bursts of y acquisitions every x seconds.

Math channels

You can add as many Math channel as you want, and choose between any operator. Stack multiple Math channels to create any arbitrary function.

Provisions for high-frequency signals

You will not miss a glitch, because the SmartScope **implements Peak Detection**, ensuring short spikes will still be highlighted even when you're using long timebases.

Additionally, the SmartScope features sinc-triggering and **up to 4GS/s equivalent time sampling for periodic signals**.

What's included in the box

Each SmartScope comes ready to go with a full set of accessories: **2 analog probes, 8 digital dupont wires + digital probes and USB cable**.



www.lab-nation.com
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Oscilloscope specifications

Bandwidth	30 MHz -3dB point
Sample rate	2 × 100 MS/s
Channels	2
Max pre-trigger position	Free
Max post-trigger position	Up to 4MS
Max full voltage scale	5V/div ±35V input range (10x more for probe in x10)
Min full voltage scale	20mV/div
Analog input range	-35V, +35V (10x more for probe in x10)
Max input peak-to-peak	40V (10x more for probe in x10)
Signal coupling	AC / DC
Precision	8 bit
Input impedance	1 MOhm // 10 pF
Waverforms	200 waveforms/s
Data delay to host	< 10ms
Sample depth	Up to 4 million samples per channel
External trigger	Yes

Logic Analyzer specifications

Input channels	8
Input impedance	100kOhm // 2pF to GND
Sample rate	100 MS/s
Logic level	1,8 V to 5,0 V
Diode protection	Bidirectional
Input data buffer	4 million samples
Waveforms	200 waveforms/s
Data delay to host	< 10ms
Protocol decoders	I2C, SPI, UART, I2S integrated User extensible

Analog Wave Generator specifications

Output channels	1
Data rate	Up to 50 MS/s
Output level	0 - 3,3 V Opamp driven
Output buffer	Up to 2048 samples
Max slew rate	30ns/V
Step	13 mV

Digital Wave Generator specifications

Channels	4
Data rate	Up to 100 MS/s
Output level	3,3 V or 5 V selectable
Output buffer	Up to 2048 samples
Diode protected	Up and down



Physical specifications

