Micsig

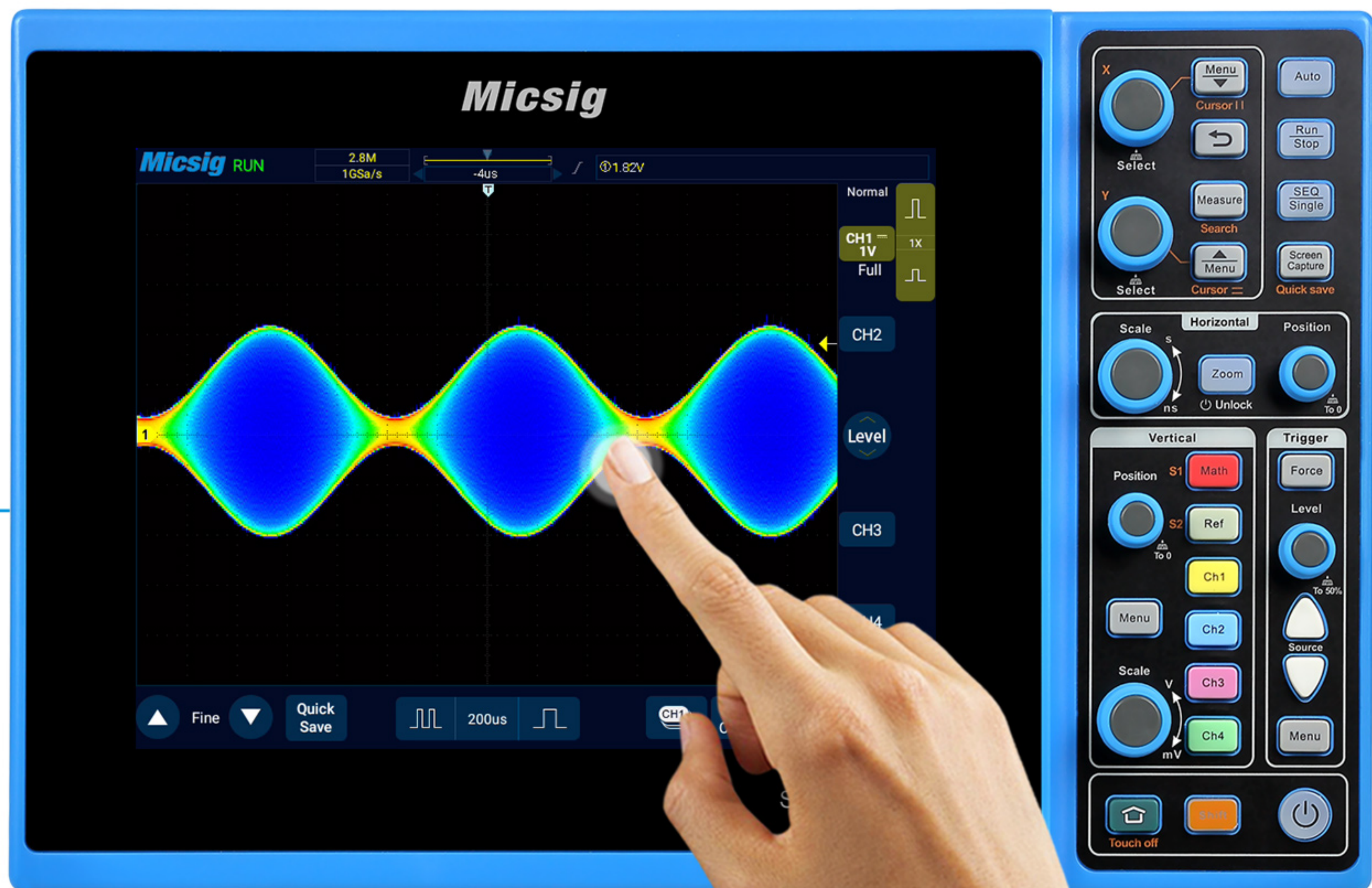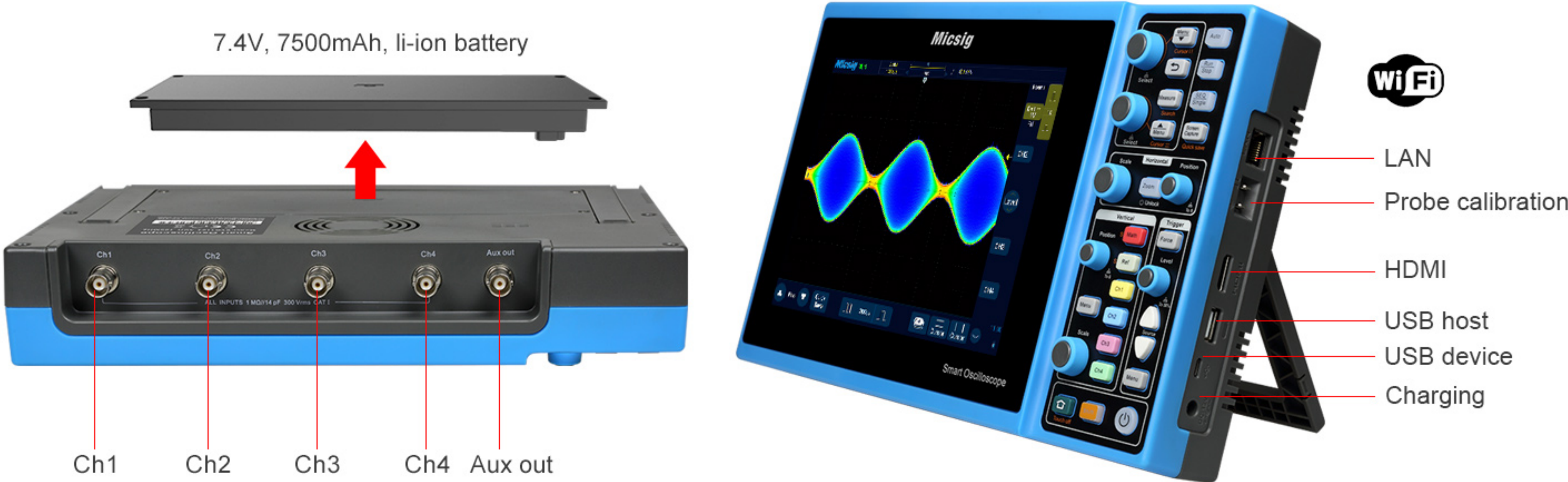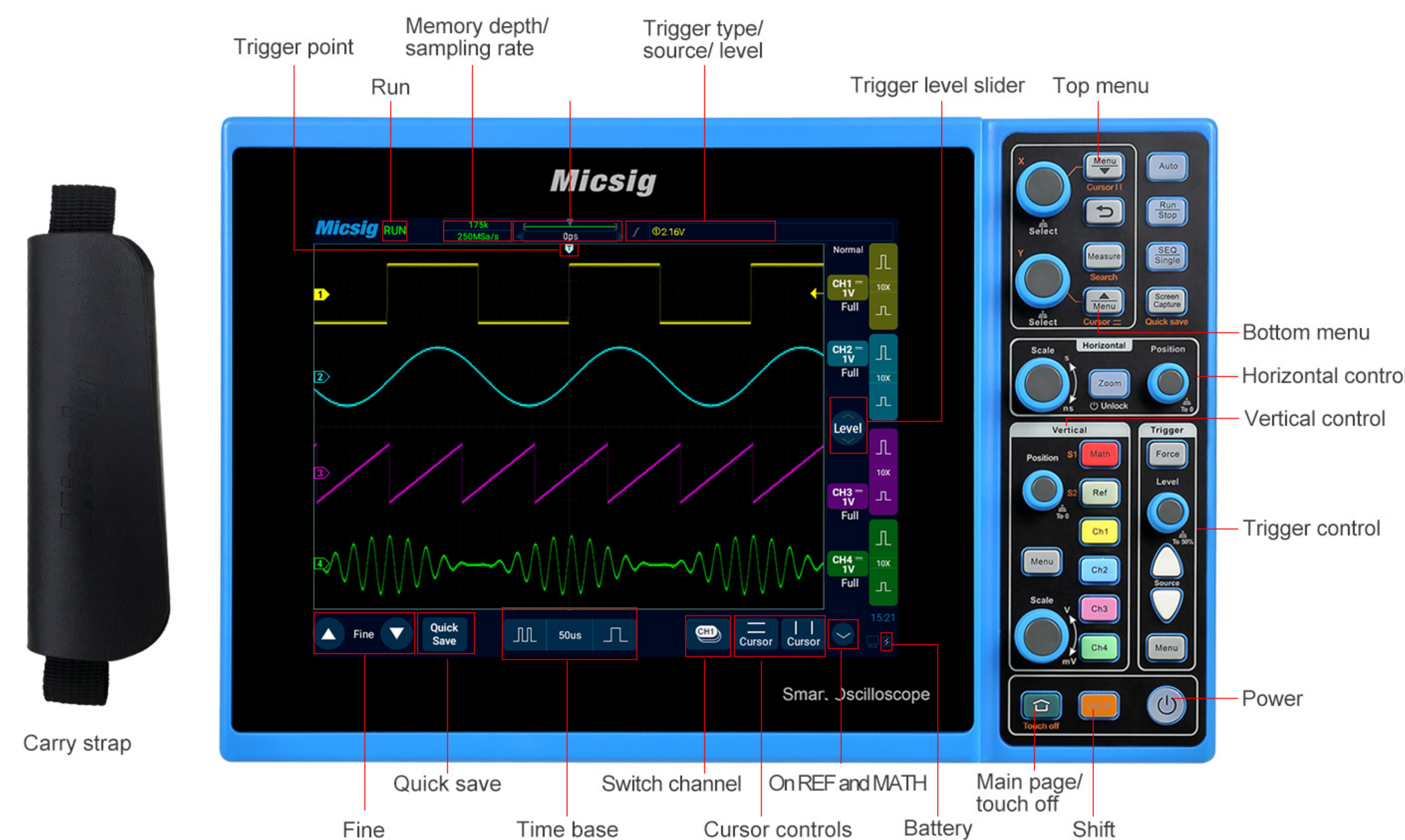# Smart Oscilloscope
STO1000E series

- **Bandwidth up to 150MHz, 1 GSa/s Sample Rate**
- **Up to 70Mpts Sample Memory Depth, 2/4 Channel Selectable**
- **Maximum capture rate up to 80,000 Waveforms per Second**
- **8 inches Full Capacitive Touch Display, integrated button&knob+full touch operation together**
- **256-level Intensity Grading and Color Temperature Display**
- **Built-in 8GB Flash Memory and support Video Recording**
- **Unique File Management System for Easy Waveform Data Storage and Transfer**
- **Support Wi-Fi data real time transmission and HDMI Port for External Display**
- **Remote Control using via PC software and iOS or Android APP in smart phone**

Innovation, makes test simpler.

Micsig STO1000E Series Smart Oscilloscope offers a modern user experience by combining a full touch capacitive display with traditional buttons and knobs.

Deep Sample Memory (Up to 70Mpts) and 130,000 Waveforms per second capture rate help you diagnose problems more easily. STO1000E Series offers advanced features with entry level pricing.

Trigger point
Memory depth/ sampling rate
Trigger type/ source/ level
Trigger level slider
Top menu
Run

Bottom menu
Horizontal control
Vertical control
Trigger control
Power

Carry strap

Quick save
Fine
Switch channel
Time base
Cursor controls
On REF and MATH
Battery
Main page/ touch off
Shift

7.4V, 7500mAh, li-ion battery

Ch1
Ch2
Ch3
Ch4
Aux out

WiFi

LAN
Probe calibration
HDMI
USB host
USB device
Charging

Dimension: 280*180*50mm
Weight: 4CH Oscilloscope 1425g   Battery 320g

Specification

| Model	STO1102E	STO1104E	STO1152E
Bandwidth	100MHz	100MHz	150MHz
Input channel	2	4	2
Sample rate	1G Sa/S	1G Sa/S	1G Sa/S
Memory depth	70Mpts	70Mpts	70Mpts
Max capture rate	130,000 wfm/s	130,000 wfm/s	130,000 wfm/s
Bandwidth limitation	20MHz,high pass, low pass		
Interface	Wi-Fi,LAN,HDMI,USB Host,USB Device,DCPower,Trigger out		
Screen	8 inches TFT LCD, 800*600 pixels display resolution,14*10 grids		
Battery(Standard)	Built-in lithium battery, working time is up to 5 hours continuously		

Features and benefits
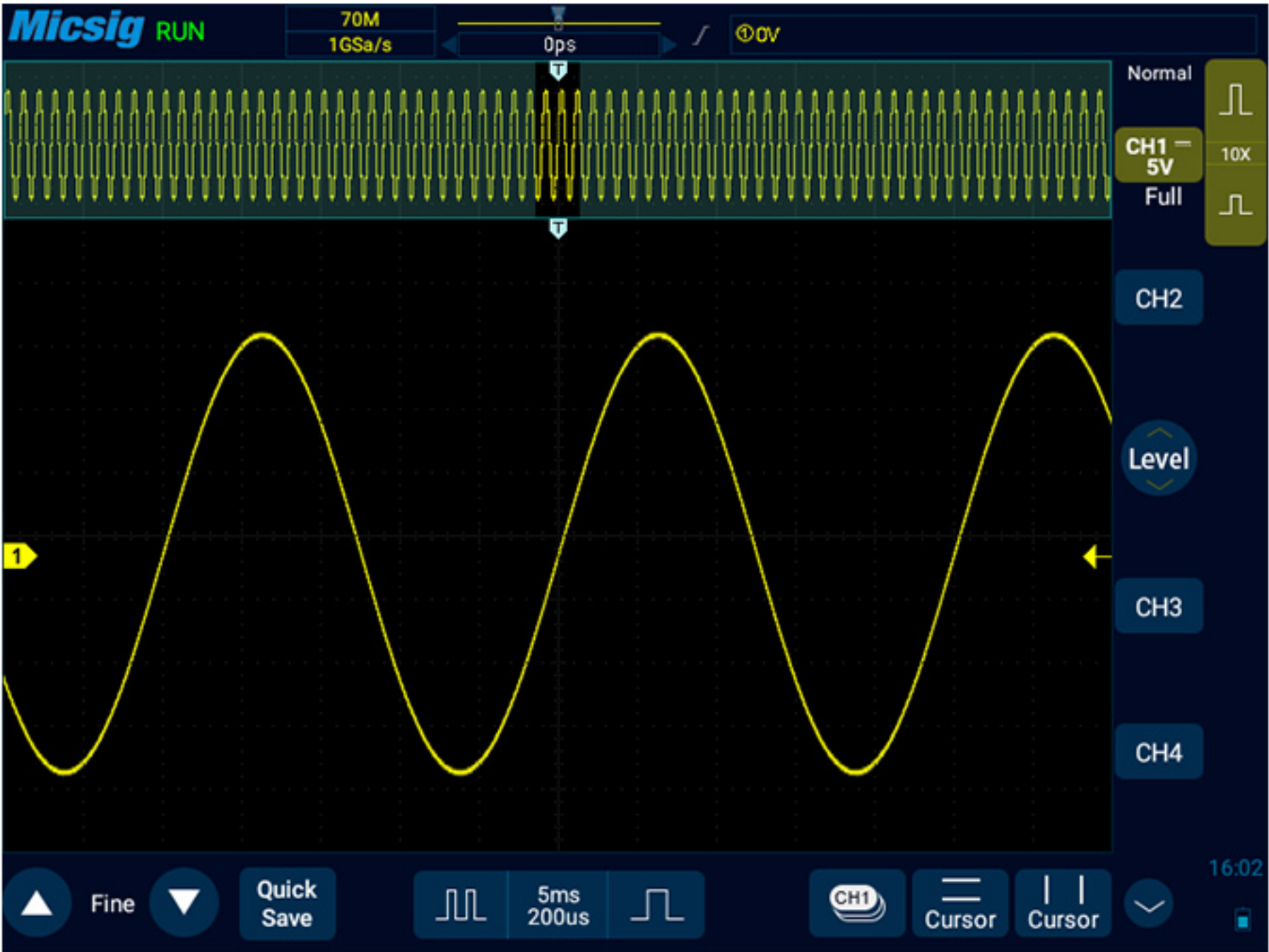
Up to 70Mpts memory depth ,Zoom into a selected part of the captured waveforms to get more details.

Maximum 130,000wfm/s capture rate.By increasing the waveform capture rate, you see a more complete picture of what is going on with the signal.


31 automatic measurements. Various automatic measurements can meet different measurement demand. It can be display all in one page.
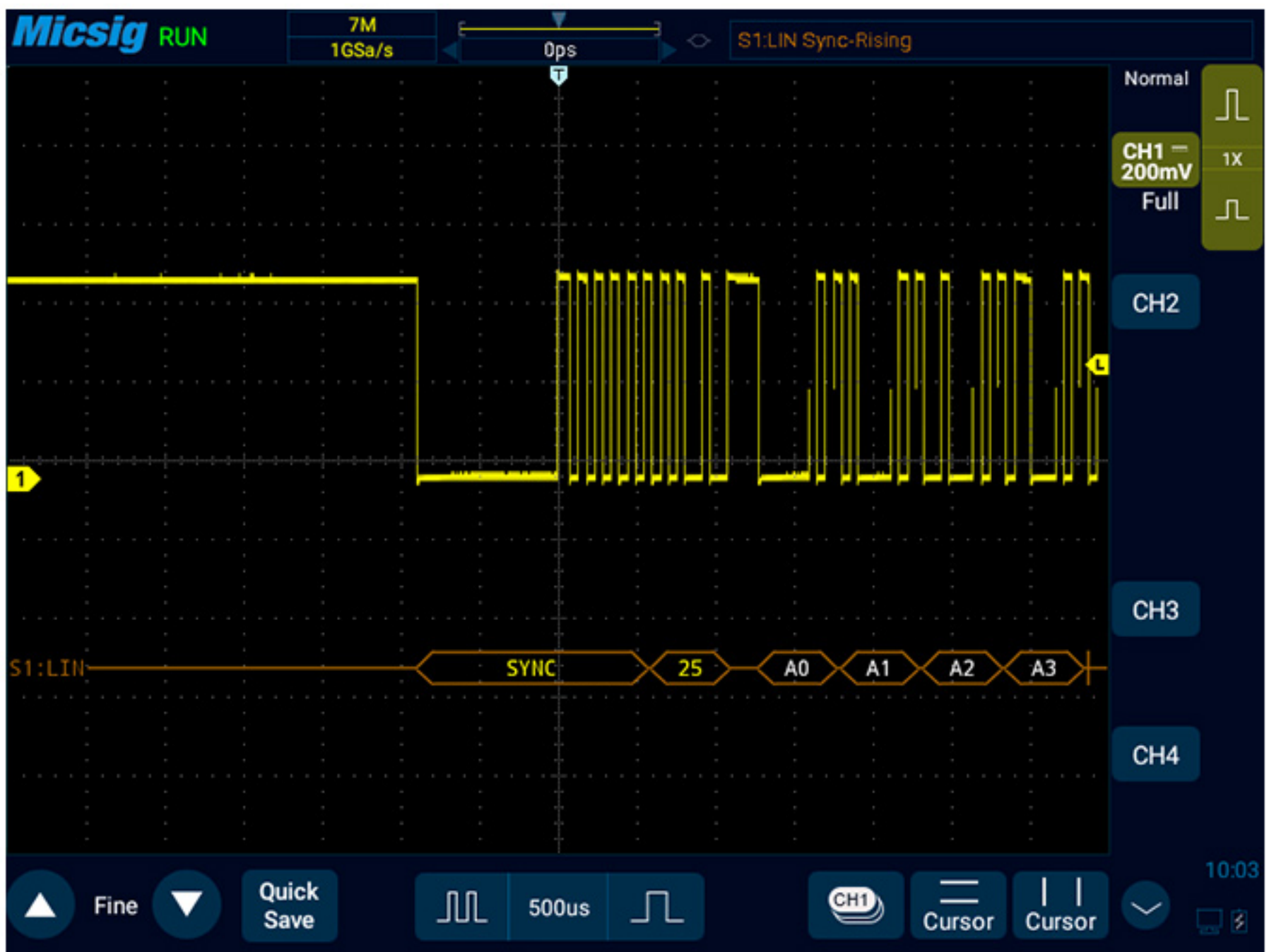

Support serial triggering and decode (I2C, SPI, RS232/UART,CAN, LIN) and Aerospace and defence (MIL-STD 1553, ARINC 429). Two formats to display decoding, text and graphic.

Support Edge, Pulse width, Short pulse (Under-throw), Logic, Video, Overtime, N_Edge, Slope and other triggers. Simple and intuitive settings, swift trigger source switching mode, make the difficult part of oscilloscope application extremely easy.
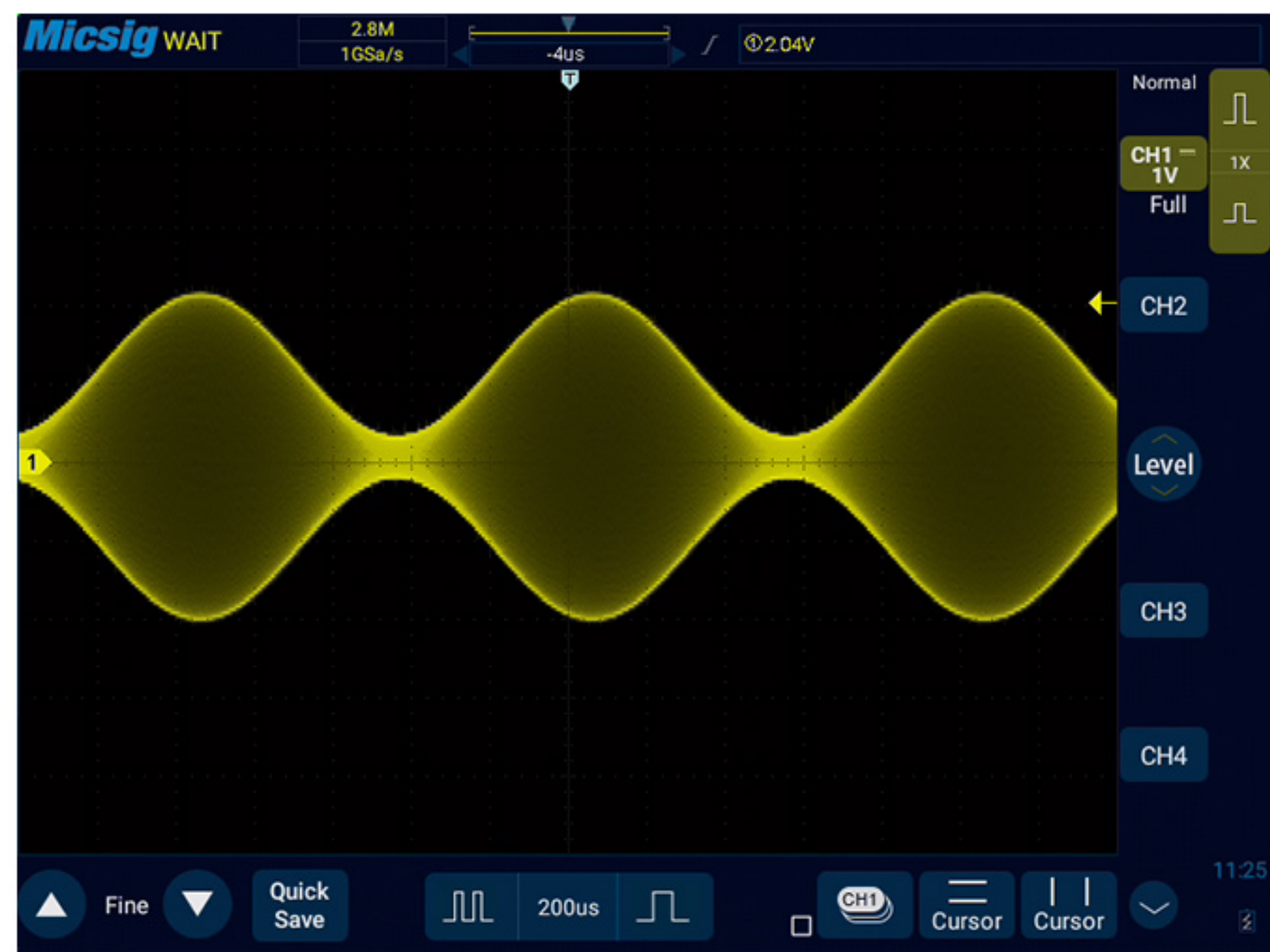
Adopts digital fluorescent display, STO1000E make sure to identify signals by the brightness of the waveform: the brighter indicates a higher probability, and the darker means lower probability of the waveform.
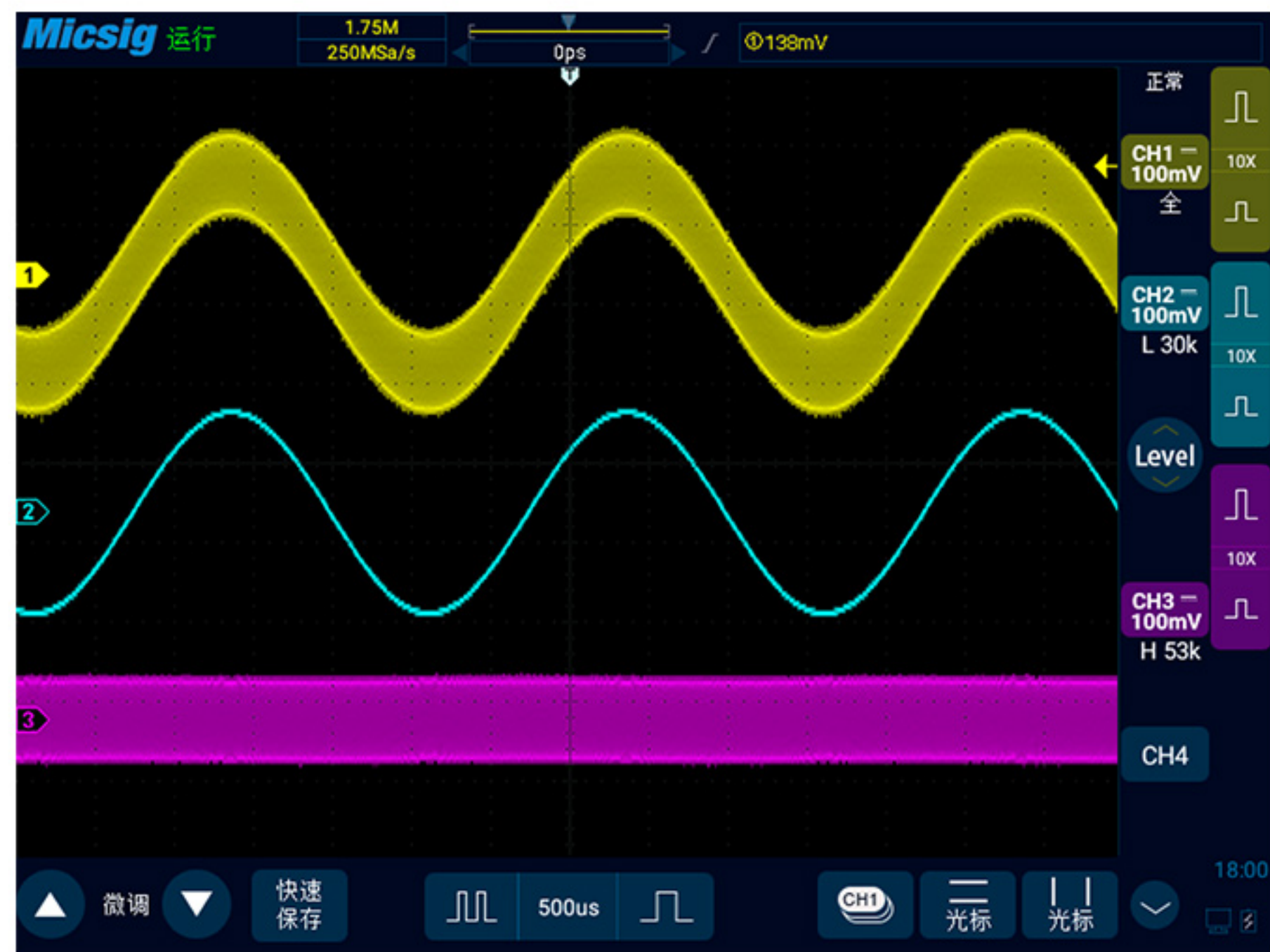
Most engineers focus on the details of a certain frequency band of a signal. Filtering out insignificant frequency to eliminate interference, realizes a better judgement of the signal
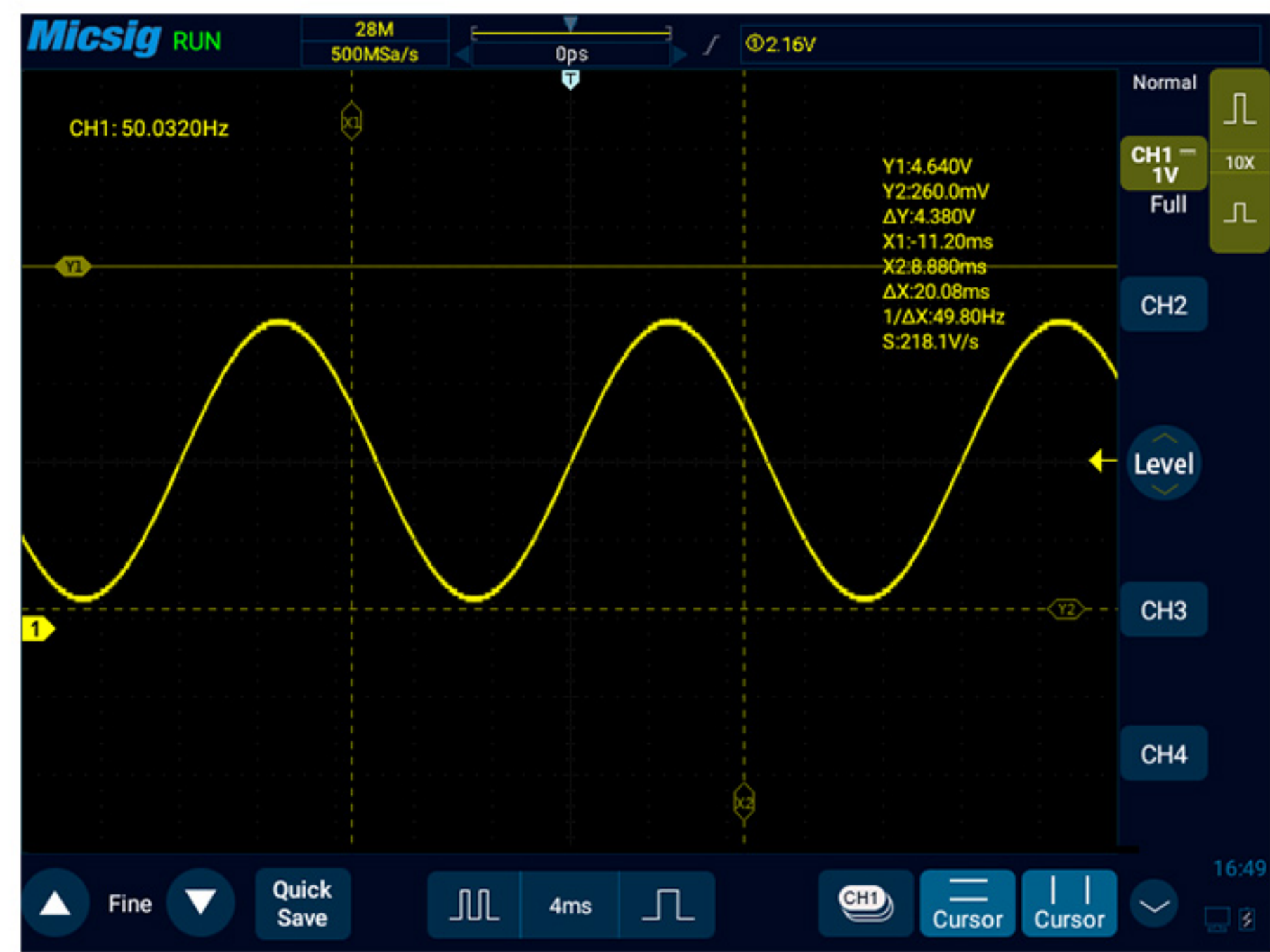
One soft touch to initiate horizontal and vertical cursors, each cursor can be moved independently. Simple two-point touch to track down the cursors, efficiency increased by 80%! No more traditional "anti-human" cursor operations!

STO1000E supports automatic measurements. The scope can adjust the amplitude and horizontal time base in real time, ensures the waveform is always displayed with a suitable size on the screen, more convenient and accurate, avoids complicated manual adjustments.

STO1000E supports adding time stamp and inverse color to screenshots, waveform are more concise and prominent, easy to record, meet the demands of our users to collect and organize.

Built in 8G storage and unique file management system. Support video record, quick save, screen shot, one button fast operation

Unique oscilloscope mobile APP and PC software via Wi-Fi, USB, Wi-Fi LAN and LAN connection. Support transfer data from scope to PC via Wi-Fi and USB. Support Micro HDMI to connect scope and display directly.

Specifications

All specifications apply to all models unless noted otherwise.

| Horizontal system	
Time base range	2ns/div to 1ks/div
Time base delay range	-14 divisions to 14ks
Clock skew	≤±2ppm/Year
Time based accuracy	±20ppm
Vertical system	
Bandwidth limitation	20MHz high pass, low pass
Input coupling	DC, AC, GND
Input impedances	1MΩ±1%||14.5pF±3pF
Vertical resolution	8bits
DC gain accuracy	< ±2% (1MΩ)
Vertical scale	1mV/div to 10V/div (1MΩ)
Channel to channel	≥40dB (100:1)
Offset range	±6div
Maximum input voltage	CAT I 300V (1MΩ)
Trigger system	
Trigger mode	Normal, Auto, Single
Trigger coupling	DC, AC, HF reject(>50KHz), LF reject(<50KHz), noise reject
Hold off range	200ns to 10s
Trigger type	
Edge	Positive, negative, or either slope on any channel input. Coupling includes DC, AC, HF reject, LF reject, and noise reject.
Pulse Width	Trigger on width of positive or negative pulses that are >, <, =, ≠, or inside/outside a specified period of time (8ns~10s).
Logic	Trigger when any logical pattern of channels goes false or stays true for specified period of time (8ns~10s). Any input can be used as a clock to look for the pattern on a clock edge. Pattern (AND, OR, NAND, NOR) specified for all input channels defined as High, Low, or None.
Video trigger	Trigger on all lines or individual lines, odd/ even or all fields on 625/PAL、 SECAM、 525/NTSC、 720P、 1080I、 1080P video signals.
Time out	Trigger on an event which remains high, low, oreither, for a specified time period.
Slope	Positive slope (Great than, lower than, within specific interval) Negative slope (Great than, lower than, within specific interval)
Runt	Trigger on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again. Event can be time- or logic qualified.
N Edge	Edge type: Rising, falling, idle time: 8ns to 10s, number of edges 1 to 65535.
UART	Trigger on UART(RS232/RS422/RS485) signals on Start Bit, Stop Bit, Data, [0:Data], [1:Data], [x:Data], and Parity Error.
LIN	Trigger on LIN signals on Sync-Rising, Frame ID, and ID+Data.
SPI	Trigger on SPI signals on CS, Data, and X:Data.
CAN	Trigger on CAN signals on F.Start, Remote ID, Data ID, R/D ID, ID+Data, Wrong F., All Error, ACK Error, and Over Load.
I2C	Trigger on I2C signals on Start, Stop, LostACK, Restart, NoACKInAdr, Frame1, Frame2, RomData, and 10 WriteFrame.
1553B	Trigger on 1553B signals on C/S Sync, Data Sync, C/S Word, RT Addr, M-Code Err, Data Word, Parity Err, and All Err.
ARINC 429	Trigger on ARINC 429 signals on WordBegin, WordEnd, Label, SDI, Data, SSM, Label+SDI, Label+ Data, Label+ SSM, Word Err, Gap Err, Parity Err, All Err, All 0, and All 1.

Sampling system	
Sampling mode	Real time sample rate
Peak sampling	
Sample rate 1G Sa/s	All the sampling glitches in scanning rate are narrow to single channel 1 ns, dual channel 2 ns .four channel 4ns
Max duration in the max sampling rate	
Sample rate 1G Sa/s	28/14ms
Sample rate 500MSa/s	56/28ms
Sample rate 250MSa/s	56/28ms
Average	Average of sampling for N times N is chosen from 2, 4, 8, 16, 32, 64, 128, 256
Envelope	Envelope of sampling for N times N is chosen from 2, 4, 8, 16, 32, 64, 128, 256, ∞
Waveform measurement	
Cursor	Horizontal Cursor, Vertical Cursor, Cross Cursor
Auto measurements	31, of which up to ten can be displayed on-screen at any one time. Measurements include: Period, Frequency, Rise Time, Fall Time, Delay, Positive duty Cycle, Negative Duty Cycle, Positive Pulse Width, Negative Pulse Width, Burst Width, Positive Overshoot, Negative Overshoot, Phase, Peak to Peak, Amplitude, High, Low, Max, Min, Mean, Cycle Mean, RMS, Cycle RMS.
Waveform math	
Dual Waveform FFT	Add, subtract, multiply, and divide waveforms
FFT	Spectral magnitude. Set FFT Vertical Scale to Linear RMS or dBV RMS, and FFT Window to Rectangular, Hamming, Hanning, or Blackman-Harris.
Display system	
Display type	8″ TFT LCD Multi point capacitive screen
Display resolution	800*600
Max touch point on touch screen	5 points
Operation way	Full touch,Mouse
Afterglow time	None, Auto, 100ms to 10s, ∞
Time Base format	YT, XY, Roll, Zoom
Expansion bench mark	Center, Trigger Position
Waveform display	Brightness is adjustable, point ,Line
Grid	14*10 div, Brightness of the grid is adjustable
Grey level	256 level
Language	English,Simplified Chinese. For more languages please contact Micsig
Color temperature display	Support
Storage	
Storage media	Native, U Disk
Built-in memory	8G
Storage format	Csv,wav,bin
Waveform quantity	Unlimited
Waveform storage name	Support
Display the reference waveform quantity	4 piece
Screenshot	Support
User name setting	Support
Flash format	Comply with industry standards
Power source	
Power source voltage	100 to 240V AC, 50/60Hz
Power consumption	< 60W
Fuse	12V DC, 5A
Battery(Optional)	7.4V 7500mAh, rechargeable lithium battery

Interface	
USB Host	Connect USB mass storage device (R/W)
USB Device	Connect to PC for remote access
DC interface	For charging
Probe calibration Port	1KHz, 2Vpp
LAN	Included
HDMI	Included
Wi-Fi	Included

Environment		
Temperature		
	Operating	0℃ to 45℃
	Non-operating	-40℃ to 60℃
Humidity		
	Operating	5% to 85%, 25℃
	Non-operating	5% to 90%, 25℃
Altitude		
	Operating	< 3000m
	Non-operating	< 12000m

Physical characteristics		
Dimensions		
	Length	280mm
	Width	180mm
	height	50mm
Weight		
	Net	2CH Bare	1340g
		4CH Bare	1425g
	Shipping	2CH Bare	2745g
		4CH Bare	2930g
	Battery	320g

Ordering Information		
	Description	Order Number
Model	STO1102E (100 MHz, 2 CH)	STO1102E
	STO1104E (100 MHz, 4 CH)	STO1104E
	STO1152E(150 MHz, 2 CH)	STO1152E
Standard Accessories	Smart tablet oscilloscope	See model
	Power cord	MS-Cable
	Power adapter	MS-PA-1205
	Probes(quantity depends on the oscilloscope channel)	MS-PR-P130A
	BNC cap	MS-Cap
	Battery	MS-BA
Hardware Optional Accessories	Carry strap	MS-Belt
	Screen Protector Film	MS-Mask
	Oscilloscope Handbag	MS-Handbag
Software Optional Accessories	Serial bus decode:1553B, 429	MS-decode
Warranty	Repair Service 3 Years (including warranty). Probes and accessories are not covered by the oscilloscope warranty and service offerings. Refer to the datasheet of each probe and accessory model for its unique warranty and calibration terms.	

Micsig products catalogue index

Tablet Oscilloscope
TO1000 series
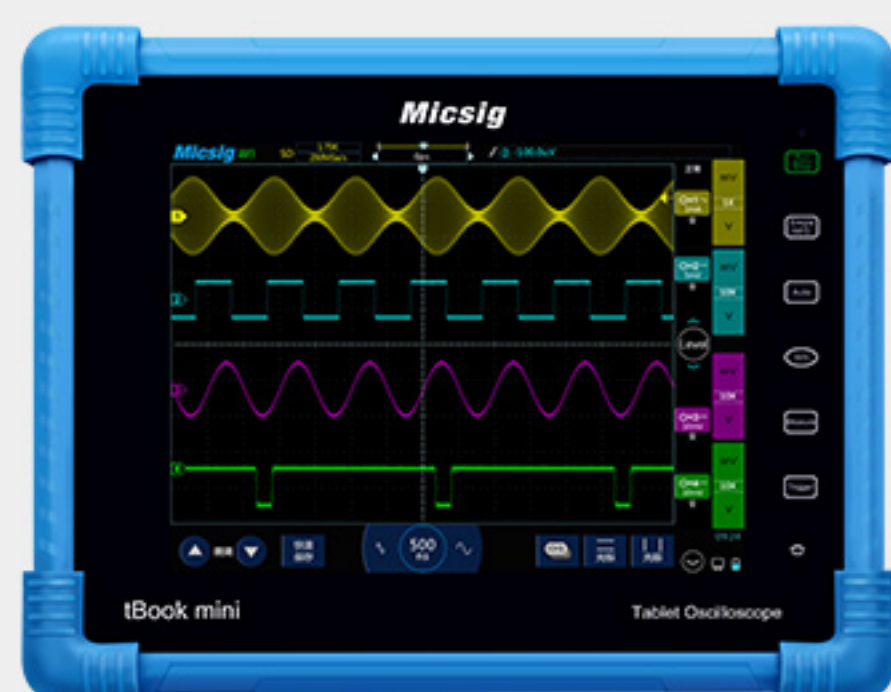
70/100/150MHz, 2/4CH

Handheld Oscilloscope
MS200/MS300/MS500 series

70/100/150/200MHz, 2CH

Automotive Tablet Oscilloscope
ATO1000 Series

100MHz, 2/4CH

High Voltage Differential Probes
DPseries

100MHz, 1300V

AC/DC Current Probes
CP2100 series

2.5MHz,100A

AC Current Probe
ACP1000

10Hz-100kHz, 0.1A-1000A

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