**TOOLS Measuring BEHROOZ**

# Digital Storage Oscilloscope

## TSO1000 Series
### PORTABLE DIGITAL STORAGE OSCILLOSCOPE

## Introduction

TSO1000 series digital storage oscilloscope combine mature and steady hardware configuration, high-powered digital signal processing technology and functionality concepts with a mainstream display interface and the operation panel. TSO1000 series, with its intuitive logical and convenient user interface and most compatible price, are available with powerful functions and excellent performances.



## Features

✓ 25MHz/40MHz/60MHz/100MHz/150MHz/200MHz bandwidth

✓ Sampling rate up to 1Gsa/s & 500Msa/s, memory depth up to 2Mpts

✓ Advanced triggering: edge, pulse, video, slope, alternative

✓ 32 parameters auto measuring

✓ Save/Recall available with setups, waveforms, CSV file, pictures

✓ Auto setup, Run/Stop control, Menu ON/OFF button

✓ Unique digital filter and waveform recording function

✓ Multi-lingual user interface with 12 languages and context sensitive help

✓ 4 math functions plus FFT

✓ Large internal waveform and setup storage

✓ Front panel print button for easy saving or printing screen shots

✓ Screen-saver function (1 min. to 5 hours)

✓ USB host, USB device, RS-232, PASS/FAIL output interfaces

✓ USB host interface for USB flash driver and firmware upgrade.

✓ USB device interface for PC remote control and PictBridge printing

## Applications

✓ Industrial power design, troubleshooting, installation, maintenance

✓ Electronics design, troubleshooting, installation, maintenance

✓ Circuit design & debugging

✓ Education and training

✓ Repair & service

✓ Production test & quality inspection

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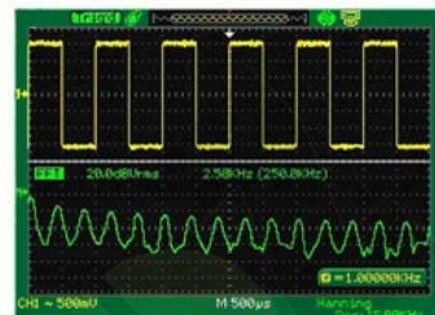
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## Special features



### Auto measurements
With 32 standard automatic measurements. Each parameter can be selected independently and displayed simultaneously.
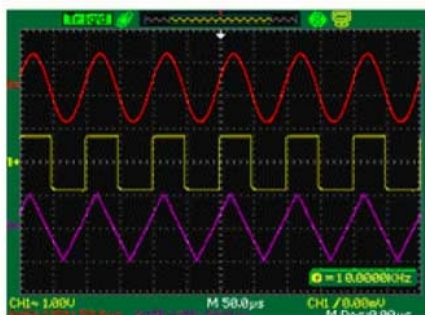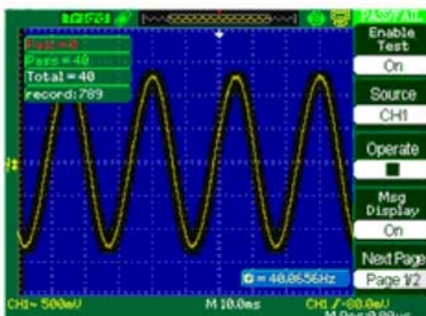


### Reference waveform
Saves two sets of reference waveform and displays them simultaneously to make comparison.
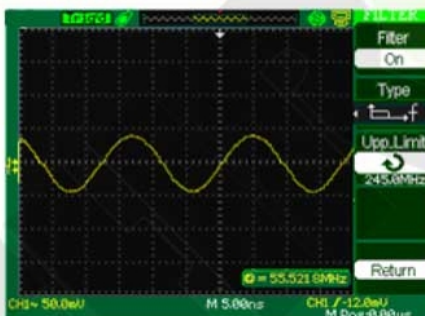


### FFT split display
Analyzes signal in frequency area, channel waveform and FFT displays simultaneously in one screen, giving direct waveform observation.



### Pass/Fail Test
The built-in Pass/Fail testing provides quick problem identifying in production testing, possesses output OFF function, and improves testing efficiency.
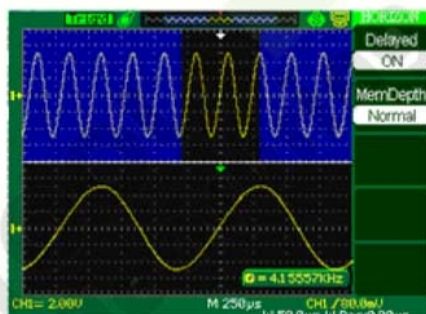


### Digital filter ON/OFF
Digital filtering is available on each channel and can be turned on or off. The Low-Pass, High-Pass, Band-Pass and Band-Stop filters allow you to isolate only the frequencies you want to see.
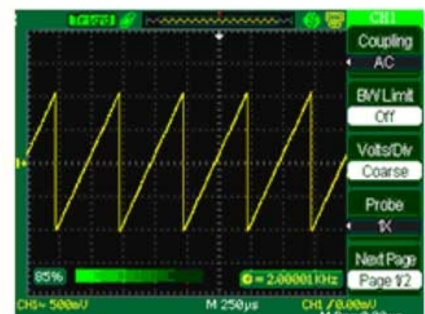


### Independent channel control
Simple operation for independent channel control; backlit button design, clear and easy for measuring.



### Delay scanning
Applies dual time base EasyZoom technology, giving perfect display for partial and complete waveforms.



### Adjustable waveform intensity
Waveform intensity can be adjusted to give easy view of waveforms.
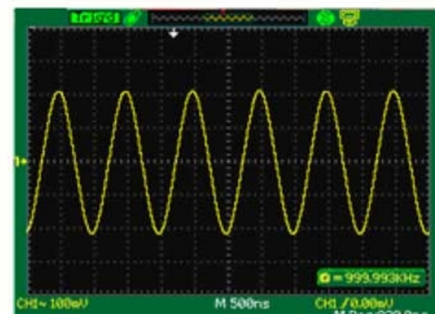


### Pop-up menu
With pop-up menu, the menu can be hidden at any time to make full-screen display, making more convenient waveform observation.

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## Specifications

| MODEL | TSO 1022 | TSO 1042 | TSO 1062 | TSO 1102 | TSO 1152 | TSO 1202 |
|---|---|---|---|---|---|---|
| Bandwidth | 25MHz | 40MHz | 60MHz | 100MHz | 150MHz | 200MHz |
| Channels | 2 channels + 1 external triggering channel | | | | | |
| Real time sampling rate | | | | | | |
| Single channel | 500Msa/s | 500Msa/s | 1Gsa/s | 1Gsa/s | 1Gsa/s | 1Gsa/s |
| Dual channel | 250Msa/s | 250Msa/s | 500Msa/s | 500Msa/s | 500Msa/s | 500Msa/s |
| Equivalent sampling rate | 10Gsa/s | 25Gsa/s | 50Gsa/s | 50Gsa/s | 50Gsa/s | 50Gsa/s |
| Memory depth | 4K/CH | 32K/CH | 2Mpts | 2Mpts | 2Mpts | 5K/CH |
| Rise time | <14ns | <8.8ns | <5.8ns | <3.5ns | <2.3ns | <1.7ns |
| Input impedance | 1MΩ‖17pF | | | | | |
| Time base | 25ns/DIV ~50s/DIV | 10ns/DIV ~50s/DIV | 5ns/DIV ~50s/DIV | 2.5ns/DIV ~50s/DIV | 2.5ns/DIV ~50s/DIV | 2.5ns/DIV ~50s/DIV |
| | Roll: 100ms~50s/DIV | | | | | |
| Vertical sensitivity | 2mV~10V/DIV (1-2-5 sequence) | | | | | |
| Vertical resolution | 8 bit | | | | | |
| Trigger source | CH1, CH2, EXT, EXT/5, AC line | | | | | |
| Trigger mode | Edge, Pulse, Video, Slope, Alternative | | | | | |
| Math operation | +, -, *, FFT (window mode: Hanning, Hamming, Blackman, Rectangula Sampling point: 1024) | | | | | |
| Digital filter | High-pass, low-pass, band-pass, band-stop | | | | | |
| Max. input voltage | 400V (DC+AC peak), CAT I | | | | | |
| Auto set | Auto adjusting the vertical, horizontal system and trigger position | | | | | |
| Auto measuring | Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Rise time, Fall time, Freq, Period, +Wid, -Wid, +Dut, -Dut, Bwid, Phase, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF | | | | | |
| Internal memory | Support 2 sets reference waveforms, 20 sets setups, 20 sets captured waveforms storage/recall function | | | | | |
| External memory | Support bitmap save, CSV save, waveform save, setting save USB flash driver storage | | | | | |
| Point, vector | OFF, 1 sec., 2 sec., 5 sec., Infinite | | | | | |
| Language | English, French, German, Russian, Spanish, Portuguese, Japanese, Korean, Italian, Arabic, Simplified Chinese, Traditional Chinese | | | | | |
| Interface | USB Host, USB Device, RS-232, Pass/Fail output | | | | | |
| Display | 5.7 inches TFT LCD, resolution: 480×234 | | | | | |
| Safety | EMC: EN61326; LVD: EN61010-1 | | | | | |
| Power source | AC100-240V, 47-440Hz, 50VA Max. | | | | | |
| Dimension | 305×133×154mm | | | | | |
| Weight | 2.3kg | | | | | |

Specifications are subject to change without prior notice.

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