

## MTO-100 Tablet Digital Oscilloscope



### Overview:

MTO-100 is a full featured handheld digital oscilloscope that provides all required measurements in one small device.

Compared with traditional oscilloscopes, Marmonix MTO-100 will bring you a new experience and it will make your tests and measurements simpler and more accurate.

The particularly large TFT full touch display is very easy to read and using an intelligent system for displaying or masking information, the largest possible area is always dedicated to display signals. Signals, FFT display and other functions can be shown simultaneously.

MTO-100 is widely used in various fields of industry, communications, semiconductor technology, aerospace sites, instrumentation, R&D sections, education, electronic laboratories, etc.

### Features:

- Up to 28Mpts memory depth
- Up to 80Kwfm/s waveform capture rate
- Gradient waveform display with 256 intensity levels
- Low noise floor (less than 1mV)
- Various measurement types
- Supporting 7 kinds of trigger functions
- Quick screenshots by swiping down four fingers
- 8 Gb internal storage, expandable via USB, allows unlimited number of waveforms to be saved
- Easy access to zoom by swiping down with three fingers
- Math & reference channel setup
- On screen soft keyboard
- Quick Channel setup
- Easy positioning of vertical and horizontal positions
- 7,500mAh rechargeable Li-ion battery, conveniently detachable, can continue working up to 5 hours
- Various I/O ports: LAN, Wi-Fi, USB2.0, USB device, HDMI, Trigger out



Parameter	Value
Channels	2 , 4 (selectable)
Bandwidth	100MHz
Rise-time	3.5ns
Real time sampling rate	1G Sample/s (1 CH), 500M Sample/s (2 CH), 250M Sample/s (4 CH)
Peak mode	1ns(1 CH), 2ns(2 CH), 4ns(4 CH)
Standard memory depth	28Mpts (1 CH), 14Mpts (2 CH), 7Mpts (4 CH)
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 5V/div ( 1MΩ )
Channel to channel	≥40dB ( 100:1 )
Offset range	±6div
Maximum input voltage	CAT I 300V ( 1MΩ )
Horizontal system	
Time base range	2ns/div ~ 1ks/div
Time base delay range	-14 divisions to 14ks
Time base accuracy	±20ppm
Sampling system	
Sampling mode	Real time sample rate
Peak sampling	All the sampling glitches in scanning rate are narrow to single channel
Sample rate 1G Sa/s	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, ∞
Display system	
Display type	8 inches TFT LED Multi point touchable capacitive screen
Display resolution	800*600
Max touch points	5 points
Operation way	Full touch
Afterglow time	Auto, 10ms 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, adjustable brightness
Grey level	256 level
Time	YES

Trigger system	
Trigger mode	Normal, Auto, and 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 Don't Care
Video trigger	Trigger on all lines or individual lines, odd/ even or all fields on PAL/625SECAM,NTSC/525,720P,1080I,1080P video signals
Time out Slope	Trigger on an event which remains high, low, or either, for a specified time period. Selectable from 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
Nth edge	Edge type: Risingm Falling, Idle time: 16ns to 4s, Number of edges 1 to 65535
Waveform measurement	
Cursor	Horizontal Cursor, Vertical Cursor, Cross Cursor
Auto measurements	23, of which up to five can be displayed on-screen at any 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	Add, subtract, multiply, and divide waveforms Spectral magnitude. Set FFT Vertical Scale to
Dual Waveform FFT	Linear RMS or dBV RMS, and FFT Window to Rectangular, Hamming, Hanning, or Blackman-Harris
Power supply	
Voltage	100 to 240V AC, 50/60Hz, (Fuse: 12V DC, 5A )
Built-in Battery (optional)	7.4V, 8000mAh (Up to 5 hours continuous operation)

Storage	
Storage media	Local, U Disk
Built-in storage	8G
Storage format	csv , wav, bin
Waveform storage number	Unlimited
Waveform storage name	Support
Display the reference waveform quantity	4 piece
Screenshot	Support
User setting number storage	Unlimited
User name setting	Support, soft keyboard input
User name setting	Support, soft keyboard input
Flash format	Comply with industry standards

Interface	
USB2.0 interface	Supports USB mass storage devices, can read and write
Micro USB2.0 interface	1, supports read and write
DC interface	1, for charging
Probe calibration port	1KHz, 2Vpp
LAN	Support
Micro HDMI	Optional
Wi-Fi	Optional

Environment	
Temperature	0°C to 45°C (operating), -40°C to 60°C (storage)
Humidity	5% to 85% (operating) At 25°C 5% to 90% (storage) At 25°C
Altitude	<3000m(operating),<12000 (storage)

Physical characteristics	
Dimensions	210mm*250mm * 55mm
Net weight	1040g (2 CH) 1125g (4 CH)
Battery weight	263g

**Standard accessories**  
Tablet oscilloscope, Power plug, Power adapter, Probes (depending on oscilloscope order, 2pcs for 2 channel, 4 pcs for 4 channel 10X, Input capacitance: 1X: 85pF-120p, 10X, 16pF-20pF, Input Voltage: 1X: <300V DC +Peak AC, 10X: <600V DC +Peak AC)

Optional accessories	
Battery	7.4V /8000mAh, Li-ion, recharging
Screen protector	Plastic, screen size
Carry strap	Leather carry strap
Handbag	Black nylon

