MSO1000 Series Mixed Signal Oscilloscope

Datasheet

Saluki Technology Inc.

The document applies to the Mixed Signal Oscilloscopes of the following models:

Modle	Channel	Memory Depth	Bandwidth	Sampling Rate
MSO1062	2CH + L16	1M	60MHz	1GSa/S
MSO1102	2CH + L16	1M	100MHz	1GSa/S
MSO1202	2CH + L16	1M	200MHz	1GSa/S

Standard Accessories of MSO1000 Mixed Signal Oscilloscope

Item	Name	Qty
1	Main Machine	1 Set
2	Power Cord	1 pcs
3	Oscilloscope Probe Kit	2 pcs
4	CD or U disk	1 pcs
5	USB cable	1 pcs

Preface

Thanks for choosing MSO1000 Mixed Signal Oscilloscope produced by Saluki Technology Inc.

Document No.

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Version

Rev01 2017.04 Saluki Technology

Document Authorization

The information contained in this document is subject to change without notice. The power to interpret the contents of and terms used in this document rests with Saluki.

Product Quality Assurance

The warranty period of the product is 36 months from the date of delivery.

Product Quality Certificate

The product meets the indicator requirements of the document at the time of delivery. Calibration and measurement are completed by the measuring organization with qualifications specified by the state, and relevant data are provided for reference.

Quality/Environment Management

Research, development, manufacturing and testing of the product comply with the requirements of the quality and environmental management system.

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Content

1 Overview

MSO1000 series mixed signal oscilloscope benefits following key features:

Key feature

- 2CH oscilloscope
- 200MHz/100MHz/60MHz bandwidth available
- 1GSa/s sample rate
- 1M memory depth
- 16CH logic analyzer, sample rate 500MSa/s
- More than 30 kinds automotive measurement, FFT included
- Trigger functions: video, edge, pulse width, slope, overtime, alter.
- 7" high bright color display, 800*480 resolution.
- Compact design, low weight, portable

Definitions

Instrument specifications listed in this datasheet applies to all different configurations MSO1000 series oscilloscope unless model numbers are clearly noted.

Specification (Spec.)

Specifications describe the performance of parameters within the warranty of the instrument. Product specifications applies under the following conditions:

- Environmental temperature of 25℃ (± 5℃) with less than 1℃ deviation from the calibration temperature
- Specifications include measurement uncertainties

Data in this document are Spec. unless otherwise noted.

Typical (typ.)

Typical data is not guaranteed by instrument warranty. It describes additional product performance information that 80 percent of the units' exhibit. Typical data only valid at 25℃. Typical performance does not include measurement uncertainty.

Nominal(nom.)

Nominal values indicate expected performance, or describe product performance that is useful in the application of the product, but are not covered by the product warranty.

2 Specifications

2.1 Horizontal

Model No.	MSO1202	MSO1102	MSO1062
Bandwidth	200MHz	100MHz	60MHz
Sampling Rate Range	1GSa/s	1GSa/s	1GSa/s
Memory Depth	1M	1M	1M
SEC/DIV Range	8ns/div - 40s/div		
Sampling Rate and Delay Time Accuracy	±50ppm in any ≥1ms time intervals		
Delta Time Measurement Accuracy (Full Bandwidth)	Single, "Sampling" mode, ± (sampling interval + 100ppm x readout +0.6ns)		
	Average factor≥16, ± (sampling interval + 100ppm x readout +0.4ns)		
	Sampling Interval = SEC/DIV ÷ 200		

2.2 Vertical

Model No.	MSO1202	MSO1102	MSO1062
A/D converter	8-bit resolution, each channel sampled simultaneously		
VOLTS/DIV range	2mv/div - 10V/div at input BNC		
Position Range	±400mv (2mv/div - 20mV/div)		
	±2V (50mV/div - 200mV/div)		
	±40V (500mV/div - 2V/div)		
	±50V (5V/div)		
Optional Analog Bandwidth Limit (Typ.)	20MHz		
Low Frequency Response (-3dB)	≤10Hz at output BNC		
Rise Time	1.8ns	3.5ns	5.8ns
Vertical Gain Accuracy	±3% for sample or average acquisition mode, 5V/div to 10mv/div		
	±4% for sample or average acquisition mode, 5mV/div to 2mv/div		

2.3 Tigger

Model No.	MSO1202	MSO1102	MSO1062
Trigger Type	Video, Edge, Pulse Width, Slope, Overtime, Alternate Trigger		
Trigger Sensitivity (Edge Trigger Type)	DC(Internal): 1div from DC to 10MHz, 1.5div from 10MHz to 100MHz, 2div from 100MHz to 200MHz		
	DC(EXT): 200mv from DC to 100MHz, 350mv from 100MHz to 200MHz		
	DC(EXT/5): 1V from DC to 100MHz, 1.75V from 100MHz to 200MHz		
	AC: Attenuates signals below 10Hz		
	HF Reject: Attenuates signals when above 80kHz		
	LF Reject: The same as DC coupling limit when frequency above 150kHz, Attenuates signals when below 150kHz.		
Trigger Level Range	CH1, CH2: ±8 div from center of screen		
	EXT: ±1.2V		
	EXT/5: ±6V		
Typical Accuracy for Signals (Rise and fall time ⩾20ns)	CH1, CH2, : ±(0.2div x V/div) (within ±4 divisions from center of screen)		
	EXT: ± (6% of setting +40mv)		
	EXT: ± (6% of setting +20mv)		
Holdoff Range	100ns - 10s		
Set Trigger Level to 50%	For the input signals ≥ 50Hz (Typ.)		

2.4 Acquisition

Normal, Peak Detect	Upon single acquisition on all channels simultaneously
Average	After N acquisitions on all channels simultaneously, N can be set to 4, 8, 16, 32, 64, 128

2.5 Input

Input Coupling	DC, AC or GND
Input Impedance, DC coupled	1MΩ ± 2% for 20pF±3pF
Probe Attenuation (Standard pack)	1x, 10x
Supported Probe Attenuation Factor	1x, 10x, 100x, 1000x
Max. Input Voltage	CAT I and CAT II: Installation type: 300VRMS (10X); CAT III: 150VRMS(1x)

2.6 Measurement

Cursors	Manual: The difference between voltage cursors ΔV; The difference between time cursors ΔT； Reciprocal of Δt in Hertz (1/Δt)
	Tracing: The voltage and time at a waveform point
Automatic Measurement	Frequency, Period, Mean, Pk-Pk, Cycli RMS, Minimum, Maximum, Rise time, Fall time, +Pulse width, -Pulse width, Delay 1-2 Rise, Delay 1-2 Fall, +Duty, -Duty, Vbase, Vtop, Vmid, Vamp, Overshoot, Preshoot, Preiod Mean, Preiod RMS, FOVShoot, PREShoot, BWIDTH, FRF, FFR, LRR, LRF, LFR, LFF
Waveform Signal Process	+, - , x, ÷ , FFT, Invert

2.7 General

Display	7" 64k color LCD, 800*480 PIXELS, Adjustable (16 gears) with the progress bar
Voltage	100-120VACRMS (±10%) , 45Hz to 440Hz, CAT II
	120-240VACRMS (±10%) , 45Hz to 66Hz, CAT II
Power	<30W
Fuse	2A, T rating, 250V
Size	313mm(L) x 108mm(W) x 142mm(H)
Weight	2.08KG (Without Packing)

2.8 Logic Analyzer Specification

Sampled Channels	16 (divided into 2 groups)
Max. Input Impedance	200K (C=10p)
Input Voltage Range	-60V ~ 60V
Logic Threshold Range	-8V ~ 8V
Max. Sample Rate	500MHz
Compatible Input	TTL, CMOS, ECL
Sample Depth	512K Sample
Measurement	Period and frequency

3 Compliant

3.1 CE

Complies with the requirements of the EMC directive 2014/08/EC.

Test Standards:

- EN 61326-1:2006
- EN 61000-3-2:2006 + A1:2009 + A2:2009
- EN 61000-3-3:2008

3.2 RoHS

Complies with the requirements of the RoHS directive 2011/65/EU.

Test Standards:

- EN 50581:2012

3.3 ISO

- Manufacturing

This instrument is manufactured in an ISO-9001 registered facility

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