

# RIGOL

## DS1000 Series Digital Oscilloscopes



DS1000 Series  
Digital Oscilloscopes

# DS1000 SERIES DIGITAL OSCILLOSCOPES



**Application**

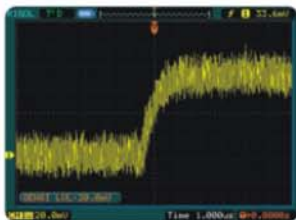
- Electronics lines debug
- Signal logic relationship verification
- Mixed signal circuit test
- Circuit function test
- Education and technical training

Product Dimensions: Width×Height×Depth=303mm×154mm×133mm

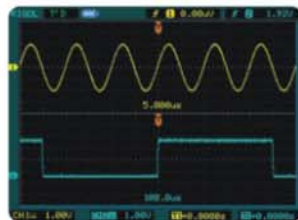
1. A true Mixed Signal Oscilloscope with 16 channels Logic Analyzer
2. Ultra compact design, small dimensions, to save your desktop space
3. 1M points of memory depth
4. 5.7" 64K TFT color LCD, bright and vivid waveform display
5. Versatile trigger modes: Edge, Video, Pulse Width, Slope, Alternative, Pattern and Duration
6. 400 MSA/s maximum real-time sample rate and 25 GSa/s maximum equivalent sample rate
7. Built-in USB Host to supports USB disk, USB printer and direct system upgrade

Model	DS1102C	DS1062C	DS1042C	DS1022C	DS1102CD	DS1062CD	DS1042CD	DS1022CD
Bandwidth	100 MHz	60 MHz	40 MHz	25 MHz	100 MHz	60 MHz	40 MHz	25 MHz
Configuration	Null				Logic Analyzer			

## Versatile Trigger Modes



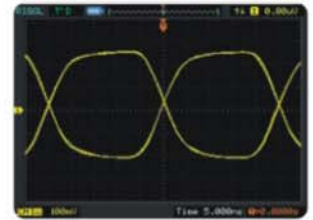
**Adjustable Trigger Sensitivity**  
Effectively filter noise from trigger signal and avoid false trigger



**Alternative Trigger**  
Dual time-base display which was ever used in analog oscilloscope



**Slope Trigger**  
Trigger by signal rise time or fall time



**Rise Edge and Fall Edge Trigger**  
Mainly used to observe eye-diagram, only in advanced oscilloscopes

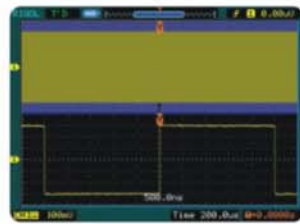


1. Standard interface: USB Device, RS-232
2. Standard configuration: Pass/Fail test

## Human - oriented Design



**Waveform Intensity**  
Adjustable waveform intensity, more effective waveform display



**Ultrazoom**  
Survey macroscopically, observe microscopically



**File System**  
Easy-to-use, support USB disk and local files storage



**Built-in Help System**  
Press current key for 3 seconds to enter help system

## Logic Analyzer Module



Logic Analyzer Module

It becomes a true Mixed Signal Oscilloscope (MSO) with 16 channels Logic Analyzer (LA). LA is divided into two groups: D7-D0, D15-D8. Each works separately.



**Pattern Trigger**  
Trigger condition is the combination of level and edge



**Duration Trigger**  
Combination of Pattern Trigger and Pulse Width Trigger

## Advanced Features

- A true Mixed Signal Oscilloscope with 16 channels Logic Analyzer (for some models)
- Ultra compact design, small dimensions, to save your desktop space
- 5.7" 64K TFT color LCD, bright and vivid waveform display
- Memory depth: 1M points (Single Channel), 512K points (Dual Channels), 512K points (Logic Analyzer)
- Versatile trigger modes: Edge, Video, Pulse Width, Slope, Alternative, Pattern and Duration
- Adjustable trigger sensitivity: Effectively filter noise from trigger signal and avoid false trigger
- 400 MSa/s maximum real-time sample rate and 25 GSa/s maximum equivalent sample rate
- 20 automatic measurements
- Cursor measurements: Manual, Track and Auto Measure modes
- 10 waveforms, 10 setups, BMP and CSV storage
- Math functions: Add, Subtract, Multiply, FFT
- Automatic self calibration
- Special digital filters and waveform recorder
- Built-in hardware frequency counter
- Dual channels plus external trigger. Bandwidth including 100 MHz, 60 MHz, 40 MHz, 25 MHz
- Standard interface: USB Device, RS-232; USB Host to support USB disk and USB printer
- Standard configuration: Pass/Fail test
- Multi-language user interface, built-in help system

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## Performance Characteristics

Model	DS1102C	DS1062C	DS1042C	DS1022C
Bandwidth	100 MHz	60 MHz	40 MHz	25 MHz
Memory Depth	1M points (Single Channel), 512K points (Dual Channels)			
Channels	Dual Channels + External Trigger			
Real-time Sample Rate	400 MSa/s			
Equivalent Sample Rate	25 GSa/s			
Rise Time	3.5 ns	5.8 ns	8.7 ns	14 ns
Time Base Range	5 ns/div to 50 s/div		10 ns/div to 50 s/div	20 ns/div to 50 s/div
X-Y Operation	Bandwidth	100 MHz	60 MHz	40 MHz
	Phase Difference	± 3°		
Trigger Modes	Edge, Video, Pulse Width, Slope, Alternative			
Trigger Sources	CH1, CH2, Ext, Ext/5, AC Line			
Model	DS1102CD	DS1062CD	DS1042CD	DS1022CD
Bandwidth	100 MHz	60 MHz	40 MHz	25 MHz
Memory Depth	1M points (Single Channel), 512K points (Dual Channels), 512K points (Logic Analyzer)			
Channels	Dual Channels + External Trigger + Logic Analyzer			
Real-time Sample Rate	400 MSa/s, 200 MSa/s (Logic Analyzer)			
Equivalent Sample Rate	25 GSa/s			
Rise Time	3.5 ns	5.8 ns	8.7 ns	14 ns
Time Base Range	5 ns/div to 50 s/div		10 ns/div to 50 s/div	20 ns/div to 50 s/div
Voltage Level Standards (Logic Analyzer)	TTL = 1.4 V, CMOS = 2.5 V, ECL = - 1.3 V, USER = - 8.0 V to + 8.0 V			
X-Y Operation	Bandwidth	100 MHz	60 MHz	40 MHz
	Phase Difference	± 3°		
Trigger Modes	Edge, Video, Pulse Width, Slope, Alternative, Pattern and Duration			
Trigger Sources	CH1, CH2, Ext, Ext/5, AC Line, D0 to D15			

Common Parameters		Common Parameters	
Input Impedance	1 MΩ    15 pF	Cursor Measurements	Manual, Track and Auto Measure mode
Vertical Sensitivity	2 mV/div to 5 V/div	Math	Add, Subtract, Multiply, FFT
Vertical Resolution	8 bits	Storage	Internal: 10 Waveforms and Setups
Input Coupling	DC, AC, Ground		USB: BMP, CSV, Waveforms and Setups
Maximum Input Voltage	400 V (DC + AC peak)	I/O	USB Device, USB Host, RS-232,
Scroll Range	500 ms/div to 50 s/div		P/F Out (Isolated)
Automatic	Vpp, Vamp, Vmax, Vmin, Vtop, Vbase, Vavg,	Display	TFT (64K, Color LCD), 320 x 234
Measurements	Vrms, Preshoot, Overshoot, Frequency, Period,	Power	Worldwide Use, 100 - 240 V / 50 VA Max
	Rise Time, Fall time, Positive Width, Negative	Weight	2.3 kg
	Width, Positive Duty Cycle, Negative Duty Cycle,		
	Delay 1→2 f, Delay 1→2 ↓		

## Standard Accessories



Power Cord



Probe × 2



User Manual



Logic Analyzer Module



Logic Analyzer Clips



Data Connection Cable

DS1000CD Series Only

## Optional Accessories



Ultrascope  
Software CD-ROM



RS-232 Cable



Instrument Bag

RIGOL TECHNOLOGIES, INC.

Address: 156# Cai He Village, Sha He Town, Chang Ping District, Beijing, China

Post Code: 102206

Tel: (8610) 8070 6688

Fax: (8610) 8072 0067

Http: //www.rigol.com

In order to get latest technical materials, please contact with RIGOL's local distributors in time.