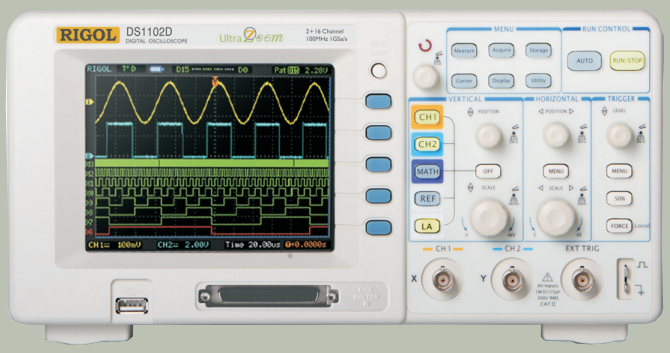
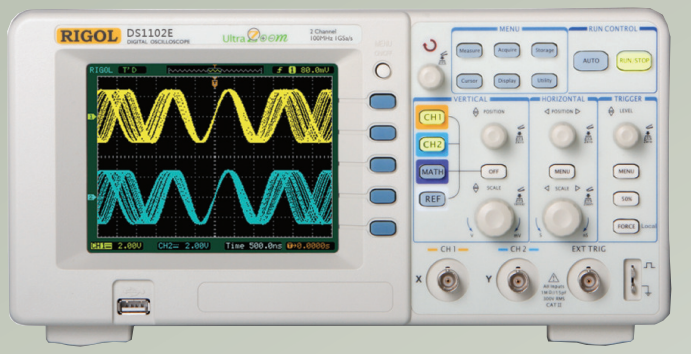
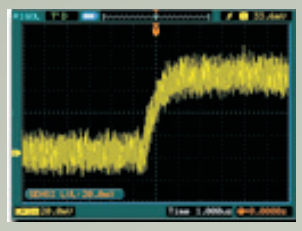
scientific®

Digital Oscilloscopes





DS1052D : 50 MHz
DS1102D : 100 MHz
DS1052E : 50 MHz
DS1102E : 100 MHz


Adjustable Trigger Sensitivity

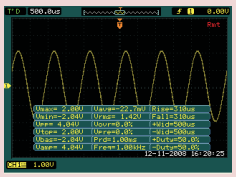

Rising & Falling Edge Trigger


Slope Trigger


Alternate Trigger

- Sampling Rate , Real Time : 1GSa/s
- Equivalent Sampling up to 10 GSa/s / 25 GSa/s
- Dual Analog Channel 50 MHz & 100 MHz
- Unique Waveform Record & Replay
- 16 channel logic analyzer in DS1000D Series
- Automatically measures 20 types of wave parameters
- 64 k color TFT LCD
- Built-in FFT
- Wide selection of trigger types : Edge, Pulse Width, Slope, Video, Alternate, Pattern & Duration
- Fine delayed scan function
- Unique adjustable trigger sensitivity
- Exclusive digital filters to capture noisy signals
- Standard USB device, USB Host, Rs232 interface
- Support USB flash memory for mass storage
- Powerful PC application software Ultra Scope
- Direct printing to PictBridge print standards

Automatically Measure 20 Wave Parameters

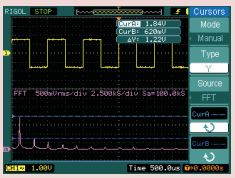


Automatic measure

DS1000E, DS1000D series oscilloscope provide 20 types of wave parameters for automatically measuring which contains 10 Voltage & 10 Time parameters.

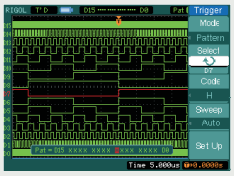
In cursor mode, users can easily measure by moving cursor. Besides, 3 types of cursor measurement are Optional : Manual, Track & Auto

Cursor Measure



FFT cursor measure

Multiple Trigger



Pattern trigger

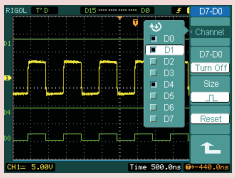
Both DS1000E and DS1000D series contain abundant triggers:

- Edge trigger, Pulse Width trigger, Video trigger, Slope trigger
- Alternate trigger, Pattern trigger (DS1000D), Duration trigger (DS1000D)

Especially the duration trigger is a new type from perfect combination of patten and pulse width trigger . Unique function of adjustable trigger sensitivity is good for filtering possible noise from signal in order to avoid false triggers.

16 Channels Logic Analyzer

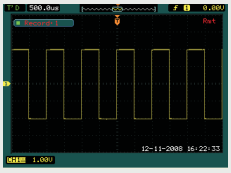
Being equipped with 16 channels logic analyzer, DS1000D series mixed signal oscilloscope achieve mixed signal measure co-ordinating with 2 analog channels.
Each channel can be turned on or off independently, or in group of 8(D7-D0 & D15-D8); also you can set waveform size and threshold types or change the display position on screen for digital channel.



Digital Channels Setup

Waveform Recording

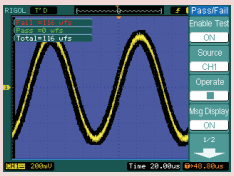
In Virtue of waveforms recording function from DS1000E & DS1000D series, not only the outputs from two channels could be recorded, but also the waves outputted by Pass/Fail test could be easily recorded. Totally, upto 1000 frames of waves are available to record. Besides, users can analyze waves according to recall or save transient waves so as to get more exact datum.



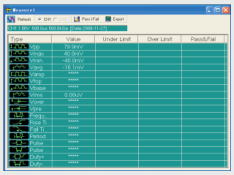
Waveform recording

Pass/Fail Testing

The Pass/Fail function monitors changes of signals by comparing whether the input signal is within the pe-defined mask. The testing results not only can be displayed on screen or output by isolated pass/fail port, but also can be alarmed according to relevant system sound settings.



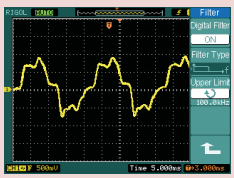
Pass/Fail testing



Measurement window

UltraScope Software

Powerful PC application software: UltraScope, which enables to: Capture & measure wave, Perform local or remote operation; Save waves as ".bmp" format; Save files as ".txt" or ".xls" format, Print Waveforms.



KeyLock Function

Key Lock

This function is idely used in most productions. All keys are locked except F1 to F5 and MENU ON/OFF in this mode.
To lock the keyboard, use menu; to unlock, correct code has to be input. Also, you can reset a new code if necessary.

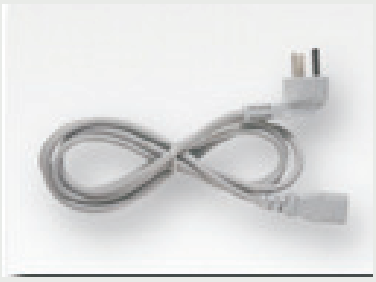
Technical Specifications

Specifications	DS1052D	DS1102D	DS1052E	DS1102E
Bandwidth	50 MHz	100 MHz	50 MHz	100 MHz
Memory Depth	16 k / 1 M points (Single channel) ; 8k / 512 k points (Dual channel)			
Sample Modes	Real-Time Sample & Equivalent Sample, Average, Roll			
Real Time Sample Rate	1 GSa/s			
Equivalent Sample Rate	10 GSa/s	25 GSa/s	10 GSa/s	25 GSa/s
Number of Channels	16 channel logic + Dual channels + External Trigger		Dual channels + External Trigger	
Vertical Resolution	8 bits			
Vertical Sensitivity	2 mV/div to 10 V/div			
DC Gain Accuracy	2 mV/div - 5 mV/div : $\pm$4%, 10 mV/div to 10 V/div : $\pm$ 3%			
Offset Range	$\pm$ 40 V (500 mV/div ~ 10 V/div), $\pm$ 2 V(2 mV/div ~ 100 mV/div)			
Lower Freq. Response	$\leq$ 5 Hz (at input BNC)			
Rise Time at BNC	<7.0 ns	<3.5 ns	<7.0 ns	<3.5 ns
DC Measurement Accuracy Average Acquisition Mode	When vertical displacement is zero, and N$\geq$16 : $\pm$(DC Gain Accuracy x reading + 0.1 div+1 mV) When vertical displacement is not at zero & N$\geq$16 : $\pm$[DC Gain Accuracy x(reading + vertical displacement)+(1% of Vertical displacement) + 0.2 div] Add 2 mV for setting from 2 mV/div to 245 mV/div Add 50 mV for setting > 250 mV/div to 10 V/div			
Delta Volts Measurement Accuracy (Average Acquisition Mode)	Under same setting & condition, the voltage difference (ΔV) between any two points in the waves coming from the Average, of more than 16 waves than 16 waves have been acquired : $\pm$(DC Gain Accuracy x reading + 0.05 div)			
Input Impedance	1 MΩ $\pm$ 2%, in parallel with 18 pF $\pm$ 3 pF			
Probe Attenuation Factor	1X, 5X, 10X, 50X, 100X, 500X, 1000X			
Input Coupling	DC, AC, GND			
Max Input Voltage	400 V (DC+AC Peak, 1MΩ input impedance) 40 V (DC + AC Peak)		400 V (DC+AC Peak, 1MΩ input impedance)	
Time Delay between Channel	500 ps			
Waveform Interpolation	sinx/x			
Time Base	5 ns to 50 s/div in 1-2-5 seq.	2 ns to 50 s/div in 1-2-5 seq.	5 ns to 50 s/div in 1-2-5 seq.	2 ns to 50 s/div in 1-2-5 seq.
Roll Range	500 ms/div to 50 s/div			
Delay Time Accuracy	$\pm$50 ppm (any interval $\geq$1 ms)			
Delta Time Measurement Accuracy (Full Bandwidth)	Single-Shot : $\pm$(1 sample interval + 50 ppm x reading + 0.6 ns) >16 averages : $\pm$(1 sample interval + 50 ppm x reading + 0.4 ns)			
Trigger Modes	Edge, Video, Pulse-width, AC-Line, Slope, Pattern, Duration		Edge, Video, Pulse-width, AC-Line, Slope	
Trigger Sources	CH 1, CH 2, EXT, Alternative			
Trigger Sensitivity	0.1 div – 1.0 div (adjustable)			
Trigger Level Range	Internal : $\pm$6 V div from centre of screen; Ext : $\pm$1.2 V			
Trigger Level Accuracy	Internal : $\pm$(0.3 div x V/div)($\pm$4 div from centre of screen), Ext : $\pm$(6% of setting + 200 mV)			
Trigger Offset	Normal Mode : Pre trigger(memory depth / 2 *sample Rate), Delayed Trigger : 1 s, Slow Scan Mode : Pre-trigger 6 div, delayed trigger 6 div			
Trigger Hold Off	500 ns - 1.5 s			
Edge Trigger	Edge trigger slope : Rising , Falling , Rising + Falling			
Pulse Width Trigger	Trigger condition (>, <, =) Positive Pulse, (>, <, =) negative pulse, Width Setting : 20n s – 10 s			
Video Trigger	Video Standard : NTSC, PAL, SECAM, Line Frequency : NTSC(1-525), PAL/SECAM(1 – 625)			
Alternate Trigger	Trigger on CH 1 & CH2 : Edge, Pulse Width, Video, Slope			
Slope Trigger	Trigger condition (>, <, =) Positive Pulse, (>, <, =) negative pulse, Time Setting : 20 ns –10 s			

Technical Specifications

Specifications	DS1052D	DS1102D	DS1052E	DS1102E
Logic Channel Sample Rate	200 MSa/s			
Pattern Trigger	Pattern type : D0 – D15 select H, L, X, ⨍, ⨍		–	
Duration Trigger	Pattern type : D0 – D15 select H, L, X, Qualifier : >, <, =, Time setting : 20 ns – 10 s		–	
Auto Measure	Vpp, Vamp, Vmax, Vmin, Vtop, Vbase, Vavg, Vrms, Overshoot, Preshoot, Freq, Period, Rise Time, Fall Time + Width, -Width, +Duty, -Duty, Delay 1 →2⨍ , Delay 1 →2⨍			
Cursor Measurements	Manual , Automatic & Track			
Math Functions	Add, Subtract, Multiply, FFT, Invert			
Storage	10 Setups and 10 Waveforms , USB : BMP, CSV, Waveforms and setups			
Average	selectable (2, 4, 8,16, 32, 64, 128 & 256)			
I/O	USB host, USB device, RS232 & P/F Out (Isolated)			
Display	5.7 inch TFT (64 k, Color LCD), 320 x 234 pixels			
Power	100V - 240 VACrms, 45 Hz to 440 Hz, 50 VA, CAT II			
Power Consumption	Less than 50 VA			
Operating Conditions	10° C to 40°C, RH 90%			
Dimension & Weight	W 30 D 133 H 154 mm, 2.3 kgs			
Standard Accessories	Mains chord , User Manual, Probe(1.5 m) : 2 nos., 1:1 & 10:1 Passive Probes, USB Cable, Data Cable, CD ROM, Positive Logic Probe, 20 Logic Testing Nips, 20 Logic Testing Cables		Mains chord, User Manual, Probe(1.5 m) : 2 nos., 1:1 & 10:1 Passive Probes, USB Cable, Data Cable, CD ROM	
Optional Accessories	BNC cable, USB to GPIB adapter, 50 Ω termination (Subject to change)			

www.scientificindia.com



Power Cord

RS232 Cable

CD-ROM

scientiFic®

Scientific Mes-technik Pvt. Ltd.

B-14, Pologround, Industrial Estate, Indore 452 015, India

0731-2422330 /31 /32 /33 0731-2422334, 2561641 info@scientificindia.com

File : DS1000D_E series Ver 1.1

Allahabad (0532) 2260833 allahabad@scientificindia.com
Bengaluru (080) 23437635, 23331478 bangalore@scientificindia.com
Chennai (044) 24424598, 42054180 chennai@scientificindia.com
Hyderabad (040) 27534995,27534996 hyderabad@scientificindia.com
Kolkata (033) 22282223-6 kolkata@scientificindia.com
Mumbai (022) 24333654, 24211171 mumbai@scientificindia.com
New Delhi (011) 65638100, 65638101 ndelhi@scientificindia.com
Pune (020) 26114688, 26132882 pune@scientificindia.com