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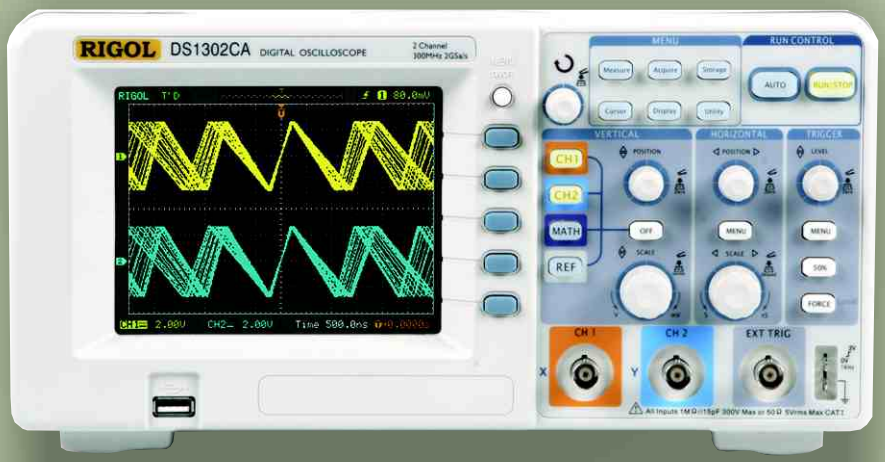
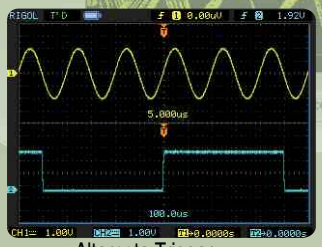
Digital Oscilloscopes

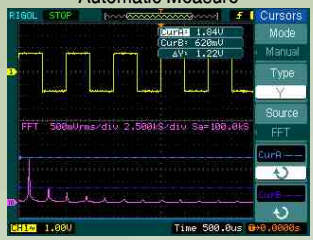


DS1062CA : 60 MHz
DS1102CA : 100 MHz
DS1202CA : 200 MHz
DS1302CA : 300 MHz

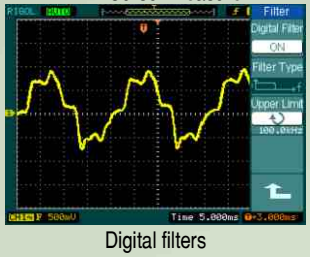


Alternate Trigger

Automatic Measure



FFT Cursor Measure



Digital filters

- Sampling Rate , Real Time : 2GSa/s
- Equivalent Sampling up to 50 GSa/s
- Dual Analog Channel 60 MHz, 100 MHz, 200 MHz & 300 MHz
- Maximum Bandwidth : 300 MHz
- The waveform capture rate is upto 2000 wfms/s
- Unique Waveform Record & Replay
- 10 waveform and 10 setup storage
- Enable to measure 20 types of wave parameters
- 64 k color TFT LCD
- Built-in FFT
- Abundant trigger types : Edge, Pulse Width, Slope, Video, Alternate triggers
- Unique adjustable trigger sensitivity
- Automatic measurements and Manual cursor measurements
- Exclusive digital filters to capture noisy signals
- Standard USB device, USB Host & LAN interface
- Support USB flash memory for mass storage
- Standard software included

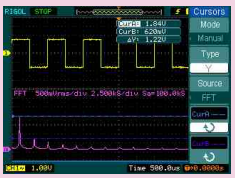
Automatically Measure 20 Wave Parameters

Automatic measure

DS1000CA series oscilloscope provide 20 types of wave parameters for automatically measuring which contains 10 Voltage & 10 Time parameters.

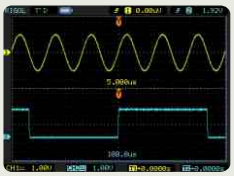
In cursor mode, users can easily measure by moving cursor. Besides, 3 types of cursor measurement are Optional : Manual, Track & Auto

Cursor Measure



FFT cursor measure

Multiple Trigger



Alternate trigger

DS1000CA series digital oscillscopes contain abundant triggers : Edge, Pulse Width, Slope, Video, Alternate triggers. Especially the alternative trigger is the repearence in digital oscilloscope from analog oscilloscope which can use different timebase to observe signal simultaneously.

Unique function of adjustable trigger sensitivity is good for filtering possible noise from signal in order to avoid false triggers.

High-Speed Refresh Rate

The waveforms capture rate of DS1000CA series digital oscilloscope is upto 2000 wfms/s. The high-speed refresh rate makes the instrument easier to capture the precise transient signal precisely, specially used for capturing dynamic complex signals and abnormal waveforms.

High-Speed Refresh Rate

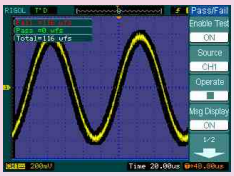
Waveform Recording

In Virtue of waveforms recording function from DS1000CA 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 and measure wave; Perform local or remote operation; Save waves as ".Bmp" format; Save files as ".txt" or ".xls" format; Print Waveforms.

Digital Filters

Digital Filters

DS1000CA series digital oscilloscope provide 4 kinds of practical digital filters : LPF, HPF, BPF & BRF, which can achieve very good filtering effect by setting up the range of filter bandwidth.

Technical Specifications

Specifications	DS1062CA	DS1102CA	DS1202CA	DS1302CA
Bandwidth	60 MHz	100 MHz	200 MHz	300 MHz
Bandwidth Limit	Limit 20 MHz			
Memory Depth	10 k points (Single channel) , 5 k points (Dual channel)			
Sample Modes	Real-Time Sample, Equivalent Sample, Average, Roll			
Real Time Sample Rate	2 GSa/s for single channel, 1 GSa/s for each channel			
Equivalent Sample Rate	10 Ga/s	25 Ga/s		50 GSa/s
Number of Channels	Dual channels + External Trigger			
Vertical Resolution	8 bits			
Vertical Sensitivity	1 mV/div to 10 V/div			
DC Gain Accuracy	1 mV/div : ±8%, 2 mV/div to 5 mV/div : ± 4% , 10 mV/div to 10 V/div : ± 3%			
Overshoot	<20 %			
Offset Range	± 40 V (500 mV/div ~ 10 V/div), ± 800 mV(1 mV/div ~ 200 mV/div)			
Lower Freq. Response	≤ 5 Hz (at input BNC)			
Rise Time at BNC	5.8 ns	3.5 ns	1.7 ns	1.2 ns
Dynamic Range	±5 div			
DC Measurement Accuracy Average Acquisition Mode	When vertical displacement is zero, and N≥16 : ±(DC Gain Accuracy x reading + 0.1 div+1mV) When vertical displacement is not at zero & N≥16 : +[DC Gain Accuracy x(reading + vertical Position)+(1% of vertical position) + 0.2 div] Add 1 mV for setting from 1 mV/div to 200 mV/div Add 50 mV for setting >200 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 : ±(DC Gain Accuracy x reading + 0.05 div)			
Input Impedance	1MΩ || 15 pF		1 MΩ II 15 pF, 50 Ω	
Probe Attenuation Factor	1X, 5X, 10X, 50X, 100X, 500X, 1000X			
Input Coupling	DC, AC , GND			
Max Input Voltage	300 V (DC+AC Peak, 1MΩ input impedance, 10 X)		300 V (DC+AC Peak, 1MΩ input impedance, 10 X) 5 V (DC + AC Peak, 50 Ω input impedance, BNC)	
Time Delay between Channel	500 ps			
Waveform Interpolation	Sinx/x			
Record Length	10 k samples for single channel, 5 k samples for dual channel			
Time Base	5 ns to 50 s/div in 1-2-5 seq.	2 ns to 50 s/div in 1-2-5 seq.		1 ns to 50 s/div in 1-2-5 seq.
Delay Time Accuracy	±50 ppm			
Delta Time Measurement	Single-Shot : ±(1 sample interval + 50 ppm x reading + 0.6 ns)			
Accuracy (Full Bandwidth)	>16 averages : ±(1 sample interval + 50 ppm x reading + 0.4 ns)			
Trigger Modes	Edge, Video, Pulse-width, AC-Line			
Trigger Sources	CH 1 , CH 2 , EXT, EXT/5, Slope, Alternative			
Trigger Sensitivity	0.1 div ~ 1.0 div (adjustable)			
Trigger Level Range	Internal : +6 V div from centre of screen; Ext : ±1 V ; Ext/5 : ±3V			
Trigger Level Accuracy	Internal : +(0.3 div x V/div)(±4 div from centre of screen); Ext : ±(6% of setting + 40 mV); Ext : ±(6% of setting + 200 mV)			
Trigger Offset	Normal Mode : Pre trigger(262144/sample Rate), Delayed Trigger : 1 s, Slow Scan Mode : Pre-trigger 6 div, delayed trigger 6 div			
Trigger Hold Off	100 ns - 1.5 s			
HF Reject	120 kHz ± 20%			
LF Reject	8 kHz ± 20%			

Technical Specifications

Specifications	DS1062CA	DS1102CA	DS1202CA	DS1302CA
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 , Pulse width : 20ns ~10s			
Roll Range	500 ms/div to 50 s/div			
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 , Auto and 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)			
X-Y Mode	X : Channel 1 , Y : Channel 2			
X-Y Bandwidth	60 MHz	100 MHz	200 MHz	300 MHz
Phase Difference	± 3°			
I/O	USB host , USB device, RS232 and P/F Out (Isolated)			
Display	5.7 inch TFT(64 k, Color LCD) , 320 x 234 pixels			
Display Resolution	320 horz. X RGB X 234 vertical pixels			
Display Contrast	150:1			
Probe Compensation Output	Output Voltage : 3 Vp-p into > 1 MΩ load, Frequency : 1 kHz			
Power	100V - 240 V , AC : 45 Hz to 440 Hz , 50VA , CAT II			
Power Consumption	Less than 50 VA			
Fuse	2 A, T rating, 250 V			
Operating Conditions	10° C to 40°C, RH 90%			
Dimension & Weight	W : 303 , D : 133 , H : 154 mm, 2.4 kgs			
Standard Accessories	Mains chord , User Manual , Probe(x1-x10) : 2 nos., Software CD			

(subject to change)

DS1000CA DSOs Ver 1.0

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