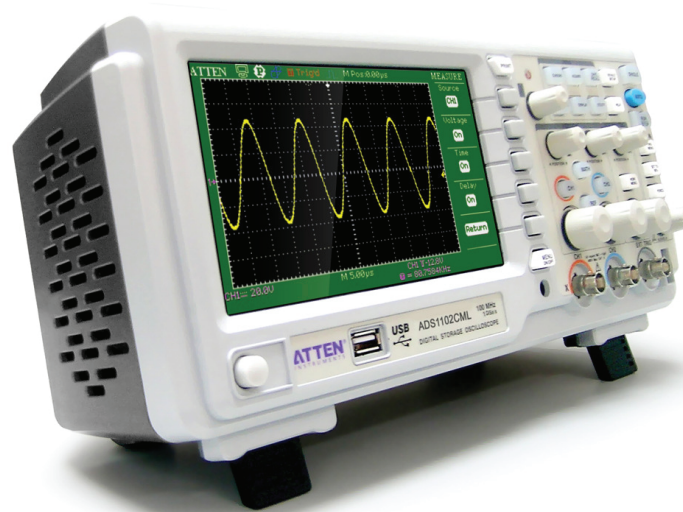


ADS1000CAL Series

DIGITAL STORAGE OSCILLOSCOPE

60MHz, 100MHz



FEATURES

- 1GSa/s Sampling Rate
- 2 Channels
- 7" Widescreen LCD Color Display
- USB Host/Device: Support USB Printer and USB Flash Drive
- PictBridge Function
- Easyscope Software
- 12 Languages

APPLICATIONS

- Industrial Power Design, Troubleshooting, Installation, and Maintenance.
- Electronics Design, Troubleshooting, Installation, and Maintenance
- Circuit Design & Debug
- Educational Lab & Training Institutions
- Repair & Service
- Production Test & Quality Inspection

CHARACTERISTICS

- The highest Single real-time sampling rate can up to 1GSa/s; Equivalent sampling rate is up to 50GSa/s.
Memory Depth: 4Kpts
- Max recording length: 6Mpts
- The longest single recording time: 33.3h
- Trigger types: Edge, Pulse Width, Video, Slope, Alternative
- Unique Digital Filter function and Waveform recorder function
- Support Pass/Fail function.
- Thirty two parameters Auto measure function.
- Save/recall types: Setups, Waveforms, CSV file, Picture.
- Support Multilingual On-line help system
- Waveform Intensity and Grid Brightness can be adjusted.
- User Interface in 12 Language
- Standard Configuration Port:
USB Host: Support USB flash driver save/recall function and update firmware;
USB Device: Support PictBridge compatible printer and support PC remote control; RS232, Pass/ Fail output

- ADS1062 CAL
60MHz, 1GSa/s, 2 Channel
- ADS1102 CAL
100MHz, 1GSa/s, 2 Channel

MODEL INDEX	ADS1102CAL	ADS1062CAL
Bandwidth	100MHz	60MHz
Sampling Rate	1GSa/s	
Equivalent Sampling Rate	50GSa/s	
Memory Depth	Single Channel: 4Kpts; Double Channels:2Kpts	
Rise Time	<3.5ns	<5.8ns
Input Impedance	1M 17pF	
Sec/div Range	2.5ns/div-50s/div	5ns/div-50s/div
	Scan: 100ms-50s/div	
Display	7" LCD Color (480*234)	

FEATURES

Abundant Trigger Function

ADS1000 series products have rich trigger modes: Edge, Pulse, Video, Slope and Alternative mode, which satisfy with users more extensive needs. Alternative trigger mode is usually used to observing two non-correlated signals at the same time and users can select different trigger mode for two channels, which is a kind reproduction that analog oscilloscope function in the digital oscilloscope.

FFT Waveform Split Display Function

FFT waveform and its Channel waveform can display on split screen at the same time. In split display mode, the screen is divided into two parts and each part is divided eight divides in vertical direction. That is similar to under the entire screen pattern simultaneously to observe two waveforms. This way will make users observe waveforms to be clearer and convenient.

Pop-up Menu Display Mode

The menu may hide as necessary make waveforms display on 18 divides full screen. Comparing with other same level digital oscilloscopes, this kind of pattern is more flexible, the user operation is more convenient and users can observe waveforms clearly.

Display

ADS1000 series products use the 7" Wide Screen Color TFT LCD. The screen display parameter value and the waveform are clearer, stably and nature; That is also more advantageous to alleviate tiredness of users using the instrument extended periods at a time.

Digital Filter Function

ADS1000 series provide a digital filter function, and users can use it setting upper limit and lower limit of frequency to reduce signal noise and filter error signal. So they can observe their interested signals distinctly, which will advance users' work efficiency consumedly.

Waveform Recorder Function

Using this function, Users can continue record data of their need signals as the form of frame. Waveform recorder can record input waveform from CH1 and CH2, with maximum record length of 1500 frames. This record behavior can also be activated by the pass/fail test output, which makes this function especially useful to capture abnormal signals in long term without keeping an eye watching it.

Pass/Fail Function

Users may use the Pass/Fail function which the ADS1000 series provides to carry on the product test. Through a series of setups, the oscilloscope can output the test result automatically which enhanced the product production efficiency greatly.

Auto Measure Function

ADS1000 series can auto measure thirty two parameters, which is most in the same level digital oscilloscopes. Auto measure function can eliminate user error consumedly, and users will measure parameters what they need faster and more accurately using it. ADS1000 series also have all measurement function that displays all the waveform parameters on the screen according to measure kinds, and users can ready measure parameters value expediently making ADS1000 series the most perfect measure tools.

Multi-country Language User Interface Display function

ADS1000 series product has 12 languages user interface display function: Simplified Chinese, Traditional Chinese, English, Arabic, French, German, Russian, Spanish, Portuguese, Japanese and Korean, which has further developed the ADS1000 series product for the international market

Powerful EasyScope3.0 Software

EasyScope3.0 software is the powerful system software suitable for ADS1000 series products. This software can be compatible RS-232 and USB Device to realize communication between the computer and the oscilloscope, then realizes long-distance control. Simultaneously this software can automatic real-time refresh waveform data, provide waveforms measure data sampling data, screen images read storage and printing functions. In addition EasyScope3.0 also has setups upload and download function. Most quickly basing on millisecond level interactive between PC and ADS1000 series make users to be easier to analyze, research waveforms and data.

Cursor Survey Function

ADS1000 series cursor survey function has three kinds of modes: Auto manual mode, Track mode, Auto mode. The user may according to own need to choose the survey pattern nimbly, thus with ease read measure results from the top right of the screen or experience completely automatic intelligent design pattern.

Input		
Input Coupling	AC, DC, GND	
Input Impedance	DC: 1M Ω +/-2% 17pF +/-3pF AC: 1.2M Ω +/-2% 17pF +/-3pF, <=100mV/div 1.0M Ω +/-2% 17pF +/-3pF, >100mV/div	
Maximum Input Voltage	\pm 400V PK-PK CATI	
Ch to Ch Isolation (Both channels in same V/div setting)	> 100: 1 at 50MHz (ADS1102CAL), > 100: 1 at 30MHz (ADS1062CAL)	
Probe attenuator	1X, 10X	
Probe attenuator	1X, 10X, 100X, 1000X	
Horizontal System		
Real Time Sampling Rate	Single Channel 1GSa/s; Double Channels 500MSa/s (ADS1000CAL Series)	
Equivalent Sampling Rate	50GSa/s	
Measure Display Modes	MAIN, WINDOW, WINDOW ZOOM, Scan, X-Y	
Timebase Accuracy	\pm 100ppm measured over 10ms interval	
Time Window	18 Divisions	
Horizontal Scan Range	ADS1102CAL	ADS1062CAL
	2.5ns/div -50s/div	5 ns/div -50s/div
	Scan: 100ms/div -50s/div (1-2.5-5 sequence)	
Vertical System		
Vertical Sensitivity	2mV-10V/div at input BNC (1-2-5 order)	
Channel voltage offset range	2mV-200mV: \pm 1.6V 206mV-10V: \pm 40V in Fixed Gain Ranges & Variable Gain Ranges	
Vertical Resolution	8 bit	
Channels	2	
Analog Bandwidth (at input BNC)	ADS1102CAL 100MHz	ADS1062CAL 60MHz
BW Flatness	DC-10% of rated BW: \pm 1DB 10%-50% of rated BW: \pm 2DB 50%-100% of rated BW: \pm 3DB	
Lower frequency limit (AC -3dB)	\leq 10Hz (at input BNC)	
Noise: Pk-Pk for 3K record	\leq 0.6Div for average of 10Pk-Pk readings in fixed gain settings. \leq 0.7 Div for average of 10 Pk-Pk readings, Variable gain settings	
SFDR including harmonics	\geq 40dB	
DC Gain Accuracy	< \pm 3.0%: 5mV/div to 5V/div in Fixed Gain Ranges < \pm 4.0%: typical for 2mV/div and Variable Gain Ranges	
DC Measurement Accuracy: All Gain settings 100mV/div	\pm [3%X (reading + offset) +1% of offset +0.2div+ 2mV] +0.2div+2mV]	
DC Measurement Accuracy: All Gain settings >100mV/div	\pm [3%X (reading + offset) +1% of offset +0.2div +100mV]	
Rise time, Typical (using 500ps pulse)	ADS1102CAL <3.5ns	ADS1062CAL <5.8ns
Math operation	+, -, *, FFT	
FFT	Window mode: Hanning, Hamming, Blackman, Rectangular Sampling points: 1024	
Bandwidth limiter	20MHz \pm 40% Typical (Note: BW limited below 20MHZ \pm 40% when using probe X1; 25MHz BW don't have this function)	

Trigger System				
Trigger Types	Edge, Pulse Width, Video, Slope, Alternative			
Trigger Modes	Auto, Normal, Single			
Trigger Sources	Ch1-2, EXT, EXT/5, AC Line			
Trigger Coupling	AC, DC, LF rej, HF rej			
Trigger Level Range	CH1, CH2: ± 6 divisions from center of screen EXT: $\pm 1.2V$ EXT/5: $\pm 6V$			
Trigger Level Accuracy (typical) applicable for the signal of rising and falling time 20ns	Internal: $\pm(0.2 \text{ div} \times V/\text{div})$ (within ± 4 divisions from center of screen) EXT: $\pm(6\% \text{ of setting} + 40 \text{ mV})$ EXT/5: $\pm(6\% \text{ of setting} + 200 \text{ mV})$			
Edge Trigger	Edge type: Rising, Falling, Rising and Falling			
Pulse Width Trigger	Trigger Modes: (>, <,<=) Positive Pulse Width, (>,<,<=) Negative Pulse Width, Pulse Width Range: 20ns-10s			
Video Trigger	Support signal Formats: PAL/SECAM, NTSC Trigger condition: odd field, even field, all lines, line Num			
Slope Trigger	(>,<,<=) Positive slope, (>,<,<=) Negative Slope Time: 20ns-10s			
Alternative Trigger	CH1 trigger type: Edge, Pulse, Video, Slope CH2 trigger type: Edge, Pulse, Video, Slope			
Control Panel Function				
Auto Set	Auto adjusting the vertical, horizontal system and Trigger Position			
Save/Recall	Support 2 Group referenced Waveforms, 20 Group setups, 20 Group captured Waveforms internal Storage/Recall function and USB flash driver storage function.			
Hard Ware Frequency Counter				
Reading resolution	6 Bytes			
Accuracy	$\pm 0.01\%$			
R ange	DC Couple, 10Hz to MAX Bandwidth			
Signal Types	Satisfying all Trigger signal (Except Pulse width trigger and Video Trigger)			
Acquisition System				
Sample Types	Real time, Equivalent time			
Memory Depth	ADS1000CAL Series: Single Channel Kpts,			
	ADS1000CALSeries			
	Channel Mode	Sampling Rate	Short memory	Long Memory
	Single Channel	1Gsa/s	4kpts	No Support
Sample Mode	Sample, Peak Measure, Average			
Averages	4,16,32,64,128,256			
Measure System				
Auto Measure	Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Rise time, Fall time, Freq, Period, +Wid, -Wid, +Dut, -Dut, Bwid, Phase, FRR, FRF, FFR, FFF,LRR,LRF, LFR, LFF			
Cursor Measure	Manual mode, Track mode and Auto mode			

GENERAL SPECIFICATIONS

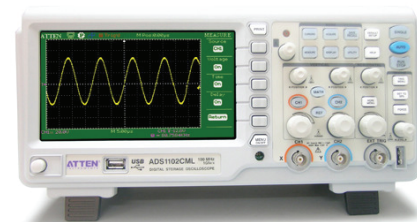
Display	
Display Mode	Colour TFT 7in diagonal Liquid Crystal Display
Resolution	480 horizontal by 234 vertical pixels
Display Colour	64K color
Display Contrast (Typical state)	150:1
Backlight Intensity (Typical state)	300nit
Wave display range	8 x 18 div
Wave Display Mode	Point, Vector
Point, Vector	Off, 1 sec, 2 sec, 5 sec, Infinite
Menu Display	2 sec, 5 sec, 10 sec, 20 sec, Infinite
Skin	Succinct
Screen saver	1 min, 2min, 5min, 10min, 15min, 30min, 1hour, 2hour, 5hour, off
Waveform Interpolation	Sin(x)/x, Linear
Color model	Normal , Invert
Language	English, French, German, Russian, Spanish, Simplified Chinese, Traditional Chinese, Portuguese, Japanese, Korean, Italian, Arabic
Interface	USB Host, USB Device, RS232, Pass/Fail output

Environments	
Temperature	Operating: 10°C to + 40°C Not operating: -20°C to +60°C
Humidity	Operating: 85%RH, 40°C, 24 hours Not operating: 85%RH, 65°C, 24 hours
Height	Operating: 3000m Not operating: 15,266m

Power Supply	
Input Voltage	100-240 VAC , CAT II, Auto selection
Frequency Scope	45Hz to 440Hz
Power	50VA Max

Mechanical			
Dimension	Length	Width	Height
	399mm	110.5mm	148.5mm
Weight	2.4 kg		

We pursue a policy of continuous development and product improvement. Thus the specifications and picture in this Spec sheet and control location on the front Panel may be changed.



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ADS1000CAL Series Spec Sheet (File Version _v1.8)

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INSTRUMENTS

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