Aplab
GLOBAL

70MHz to 200MHz 2 Channel Digital Storage Oscilloscopes
1GSa/s Real Sample Time

● D37200A ● D37100A ● D37070A

Features

- 200 / 100 / 70MHz Bandwidths
- 1GSa/s Real Time Sample Rate
- Trigger Mode : Edge, Pulse Width, Video, Slop, Overtime, Alternative Trigger etc.
- Provides Software for PC Real-time Analysis
- Five Math Functions, +, -, *, /, and FFT functions
- 32 Automatic Measurements and Track Measurement via Cursor Automatically
- Large (7") Color Display, WVGA (800 x 480)
- Support U Disk and Local Files Storage
- Pass / Fail Function Enables to Output Testing Results

Applications

- Design and Debug
- Education and Training
- Manufacturing Test and Quality Control
- Service and Repair
- Electronic Circuit Designing and Testing

Technical Specification

ACQUISITION	
Sample Rate	Real-Time Sample: 1GS/s; Equivalent Sample: 25GS/s.
Acquisition Modes	
Normal	Normal data only.
Peak Detect	High-frequency and randon glith capture.
Average	Wavefom Average, selectable 4, 8, 16, 32, 64, 128.
Inputs	
Input Coupling	AC, DC, GND
Input Impendance	1MΩ ±2%, 20pF ±3pF.
Probe Attenuation	1X, 10X.
Supported Probe Attenuation Factor	1X, 10X, 100X, 1000X.
Max. Input Voltage	CAT I and CAT II : 300V RMS (10X); Installation Category III : 150V RMS (1X); Installation Category II : derate at 20dB/decade above 100kHz to 13V peak AC at 3MHz and above. For non-sinusoidal waveforms, peak value must be less than 450V. Excursion above 300V should be of less than 100ms duration. RMS signal level including all DC components removed through AC coupling must be limited to 300V. If these values are exceeded, damage to the oscilloscope may occur.
HORIZONTAL	
Waveform Interpolation	(sin x) / x.
Record Length	24K.
SEC/DIV Range	2ns/div to 40s/div, in a 2, 4, 8 sequence, D37200A. 4ns/div to 40s/div, in a 2, 4, 8 sequence, D37100A / D37070A
Sample Rate and Delay Time Accuracy	±50ppm (at over any =1ms time interval).
Position Range	D37200A : 2ns/div to 10ns/div; (-4div x s/div) to 20ms; D37100A / D37070A : 20ns/div to 80us/div; (-8div x s/div) to 40ms; 200µs/div to 40s/div; (-8div x s/div) to 400s;
Delta Time Measurement Accuracy (Full Bandwidth)	Single-shot, Normal mode : ± (1 sample interval +100ppm x reading + 0.6ns); >16 averages : ± (1 sample interval + 100ppm x reading + 0.4ns); Sample Interval = s/div ÷ 200.
VERTICAL	
Vertical Resolution	8-bit resolution, all channel sampled simultaneously.
Volts/Div Range	2mV/div ~ 5V/div.
Position Range	2mV/div to 200mV/div; ±2V; 200mV/div to 5V/div; ±50V.
Bandwidth	D37200A: 200MHz; D37100A: 100MHz; D37070A: 70MHz;
Rise Time at BNC (Typical)	D37200A: 1.8ns; D37100A: 3.5ns; D37070A: 5ns
Analog Bandwidth in Normal and Average Modes at BNC or with probe, DC Coupled	2mV/div to 20mV/div, ±400mV; 50mV/div to 200mV/div, ±2V; 500mV/div to 2V/div, ±40V; 5V/div, ±50V.
Math	+, -, *, ÷, FFT.
FFT	Windows : Hanning, Flatop, Rectangular, Bartlett, Blackman; 1024 sample point.
Bandwidth Limit	20MHz.
Low Frequency Response (-3dB)	≤10Hz at BNC.
DC Gain Accuracy	±3% for Normal or Average acquisition mode, 5V/div to 10mV/div; ±4% for Normal or Average acquisition mode, 5mV/div to 2mV/div.
DC Measurement Accuracy, Average Acquisition Mode	When vertical displacement is zero, and N ≥16 : ±(3% x reading + 0.1 div + 1mV) only. 10mV/div or greater is selected; When vertical displacement is not zero, and N ≥ 16 : ± [3% x (reading + vertical position) + 1% of vertical position + 0.2div]; Add 2mV for settings from 2mV/div to 200mV/div; add 50mV for settings from 200mV/div to 5V/div.
Volts Measurement Repeatability, Average Acquisition Mode	Delta volts between any two averages of >=16 waveforms acquired under same setup and ambient conditions.
TRIGGER	
Trigger Types	Edge, Video, Pulse, Slope, Over time, Alternative
Trigger Source	CH1, CH2, EXT, EXT/5, AC Line
Trigger Modes	Auto, Normal
Coupling Type	DC, AC, Noise Reject, HF Reject, LF Reject

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Trigger Sensitivity (Edge Trigger Type)	**DC (CH1, CH2) :** 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 above 80kHz. **LF Reject :** Same as the DC-coupled limits for frequencies above 150KHz; Attenuates signals below 150KHz.
Trigger Level Range	CH1/CH2 : ±8 divisions from center of screen; EXT : ±1.2V; EXT/5 : ±6V.
Trigger Level Accuracy (typical) Accuracy is for signals having rise and fall times >=20ns	CH1/CH2 : 0.2 div x volts/div within ±4 divisions from center of screen; EXT : ±(6% of setting + 40mV); EXT/5 : ±(6% of setting + 200mV).
Set Level to 50% (typical)	Operates with input signals ≥50Hz.
Trigger Holdoff range	100ns - 10s.
Video Trigger	
Video Trigger Type	CH1, CH2 : Peak-to-peak amplitude of 2 divisions; EXT : 400mV; EXT/5 : 2V.
Holdoff Range	100ns ~ 10s.
Pulse Width Trigger	
Pulse Width Trigger Mode	Trigger when (<, >, =, or =); Positive pulse or Negative pulse.
Pulse Width Trigger Point	**Equal :** The oscilloscope triggers when the trailing edge of the pulse crosses the trigger level. **Not Equal :** If the pulse is narrower than the specified width, the trigger point is the trailing edge. Otherwise, the oscilloscope triggers when a pulse continues longer than the time specified as the Pulse Width. **Less than :** The trigger point is the trailing edge. **Greater than** (also called overtime trigger) **:** The oscilloscope triggers when a pulse continues longer than the time specified as the Pulse Width.
Pulse Width Range	20ns ~ 10s.
Overtime Trigger	
Over Time Mode	Rising edge or Falling edge.
Time Range	20ns ~ 10s.
Slope Trigger	
Slope Trigger Mode	Trigger when (<, >, =, or =); Positive slope or Negative slope.
Slope Trigger Point	**Equal :** The oscilloscope triggers when the waveform slope is equal to the set slope. **Not Equal :** The oscilloscope triggers when the waveform slope is not equal to the set slope. **Less than :** The oscilloscope triggers when the waveform slope is less than the set slope. **Greater than :** The oscilloscope triggers when the waveform slope is greater than the set slope.
Time Range	20ns ~ 10s.
Alternative Trigger	
Trigger on CH1	Internal Trigger : Edge, Pulse Width, Video, Slope.
Trigger on CH2	Internal Trigger : Edge, Pulse Width, Video, Slope.
Trigger Frequency Counter	
Readout Resolution	6 digits.
Accuracy (Typical)	±30ppm (including all frequency reference errors and ±1 count errors).
Frequency Range	AC coupled, from 4Hz minimum to rated bandwidth.
Signal Source	Pulse Width or Edge Trigger modes: all available trigger sources. The Frequency Counter measures trigger source at all times, including when the oscilloscope acquisition pauses due to changes in the run status, or acquisition of a single shot event has completed. Pulse Width Trigger mode : The oscilloscope counts pulses of significant magnitude inside the 1s measurement window that qualify as triggerable events, such as narrow pulses in a PWM pulse train if set to < mode and the width is set to a relatively small time. Edge Trigger Mode : The oscilloscope counts all edges of sufficient magnitude and correct polarity. Video Trigger Mode : The Frequency Counter does not work.
MEASUREMENT	
Cursor Measurement	**Manual :** Voltage difference between cursors : ΔV; Time difference between cursors : ΔT; Reciprocal of ΔT in Hertz ($1/\Delta T$); **Tracing :** The voltage and time at a waveform point.
Auto Measuerment	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, RPREShoot, BWIDTH, FRF, FFR, LRR, LRF, LFR, LFF

| DISPLAY	
Display Type	7" 64K color TFT (diagonal liquid crystal).
Display Resolution	800 horizontal by 480 vertical pixels.
Display Contrast	Adjustable (16 gears) with the progress bar.
PROBE COMPENSATOR OUTPUT	
Output Voltage (Typical)	About 5Vpp into ≥ 1MΩ load.
Frequency (Typical)	1KHz.
POWER SUPPLY	
Supply Voltage	100 - 120V AC RMS (±10%), 45Hz to 440Hz, CAT II. 120 - 240V AC RMS (±10%), 45Hz to 66Hz, CAT II.
Power Consumption	<30W.
Fuse	2A, T rating, 250V.
Dimension (mm)	313 (L) x 108 (W) x 142 (H).
Net Weight	2.08 Kg.
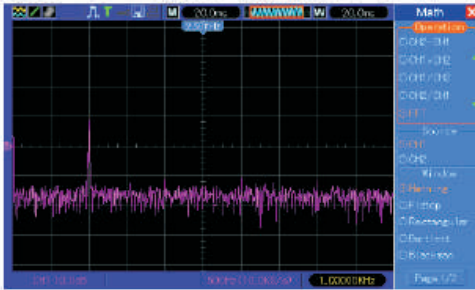
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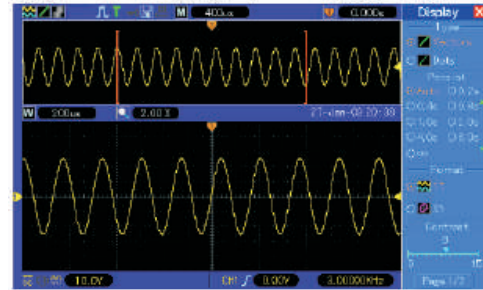
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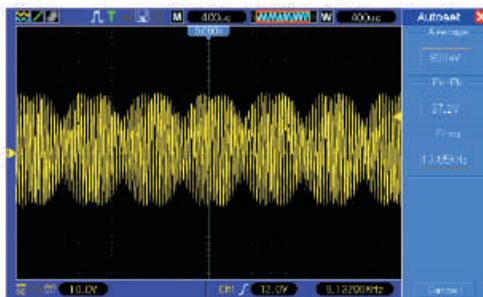
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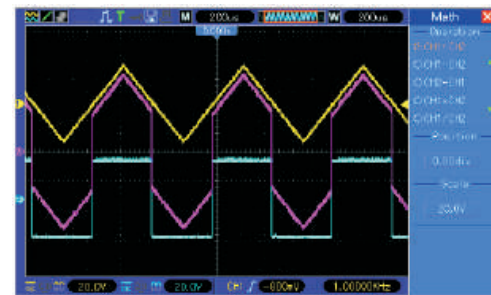
Math: CH1+CH2

Designed to Make Your Work Easy

The DSO Series oscilloscopes are designed with the ease of use and familiar operation you have come to expect from Aplab.

Performance You Need at a Price You Can Afford

The D37000A Series Digital Storage Oscilloscope provides you with affordable performance in a compact design. Packed with standard features-including USB connectivity, 32 automated measurements, limit testing, data loading, and context-sensitive make the instruments help you get more done in less time. Digital Precision for Accurate Measurements With up to 200MHz bandwidth and 1GS/s maximum sample rate, no other digital storage oscilloscope offers as much bandwidth and sample rate for the price. Aplab provides realtime sampling with a minimum of 10X oversampling on all channels, all the time to accurately capture your signals.

Easy PC Connectivity

Easily capture, save, and analyze measurements results by connecting to your PC with the rear-panel USB device port. Simply pull screen images and waveform data into the stand-alone desktop application.

Aplab **Test & Measurement Instruments Division**

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