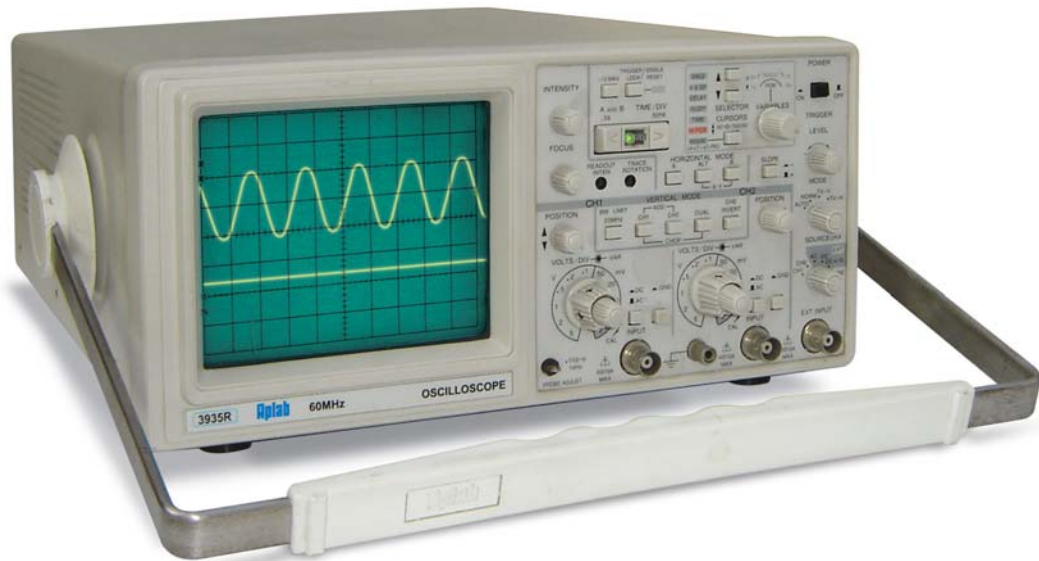


## 60MHz, 2 Channel, 4 Trace CRT Readout Oscilloscope



### Features

- ★ Small Size, Light Weight, Low Power Consumption
- ★ Easy Operation, Quality, Reliability & Stability
- ★ 2mV/div Sensitivity
- ★ Dual Time Base
- ★ 0.5s/div to 50ns/div Main Time Base with 22 Calibrated Steps
- ★ 50ms/div to 50ns/div, Delayed Time Base with 19 Calibrated Steps
- ★ x10 MAG
- ★ Single Sweep
- ★ Auto Ranging Facility - Automatically Optimizes the Sweep Time
- ★ Trigger Lock Facility
- ★ Signal Delay Line
- ★ 17KV PDA
- ★ 150 mm, 8 x 10 cm Rectangular CRT
- ★ A and B Time Bases in ALT Mode
- ★ Variable Hold-off
- ★ Z-axis Input
- ★ EXT X Operation
- ★ CRT Cursor Readout for Amplitude & Frequency Measurement
- ★ Digital Frequency measurement upto 60MHz
- ★ Bandwidth Limiter

### Specifications

#### VERTICAL DEFLECTION

**Deflection Coefficient (CH1 & CH2)** : 2mV/div to 5V/div in 11 calibrated steps in 1, 2, 5 sequence. Uncalibrated variable control between the steps upto atleast 12.5V/div.

**Accuracy** : ±5%.

**Bandwidth** : DC-60MHz (-3dB), dc coupled 10Hz-60MHz (-3dB), ac coupled DC-20MHz (-3dB) (dc coupled) on 2mV range. 10Hz-20MHz (-3dB) (ac coupled) on 2mV range.

**Rise Time** : 6ns or less, 17.5ns or less on 2mV.

**Polarity Reversal** : CH2 invert.  
**Input Impedance** : 1M ohms // 25pF ±10%.  
**Maximum Input Voltage** : 400V (DC + AC peak) ≤1KHz.

**Vertical Modes** : CH1, CH2, CH1 & CH2 in dual mode (ALT/CHOP), CH2 INVT, CH1 & CH2 Algebraic ADD & SUBTRACT.

**Bandwidth Limiter** : Frequency response can be limited to approx. 20MHz by bandwidth limiter switch.

#### TIME BASE

**Operating Modes** : A, A&B ALT, B, EXT X.

**Sweep Mode** : Auto, Normal, Single sweep & Auto range sweep.

**A Time Base** : 50ns/div to 0.5s/div (5ns/div to 50ms/div at x10 MAG) 22 steps in 1-2-5 sequence, variable vernier control (range 1:2.5). (UNCAL - CRT Read out indicator) provides fully adjustable sweep time between steps.

**Accuracy** :  $\pm 5\%$ .

**Hold-off Time** : Variable hold-off.

**B Time Base** : (Continuous triggered delay) 50ns/div to 50ms/div (5ns/div to 5ms/div at x10 MAG) 19 steps in 1-2-5 sequence.

**Accuracy** :  $\pm 5\%$ .

**Delay Jitter** : 1 : 10,000.

**Sweep Magnification** :  $\times 10 \pm 10\%$ .

**Trigger System** : Source 1. INT : CH1 or CH2  
2. EXT : AC, DC, DC $\div 10$ , LINE  
Slope : + or -  
Mode : AUTO, NORM, TV-V, TV-H, Trigger Lock.

**External Trigger**

**Input Impedance** : 1M ohms  $\pm 5\%$  // 30pF  $\pm 5\text{pF}$ .

**Max. Voltage** : 400V (DC + AC peak).

**Trigger Sensitivity**

Internal : NORM:DC-20MHz - 1div  
20MHz-60MHz - 1.5div  
AUTO :30Hz-100Hz - 1.5div  
100Hz-20MHz - 1.0div  
20MHz-60MHz - 1.5div  
TV :1.5 div

External : DC - 20MHz : 50mV PTP  
20MHz - 60MHz : 150mV PTP  
TV : 150mV PTP.

#### HORIZONTAL DEFLECTION

**Sensitivity** : 0.1V/div, 1.0V/div ( $\div 10$ ).

**Bandwidth** : DC - 2MHz (-3dB).

**Phase Shift** :  $< 3^\circ$  (DC - 50KHz).

#### Digital Measurement System

Frequency Measure : 20Hz - 60MHz  
Range

#### Frequency Measure Accuracy

Freq. Range	Display Mode	Resolution	Accuracy
20Hz $\leq$ f<100Hz	99.9Hz	0.1Hz	$\pm 1$ digit
100Hz $\leq$ f<1KHz	999.0Hz	1Hz max.	
1KHz $\leq$ f<10KHz	9.990KHz	0.02KHz Max.	
10KHz $\leq$ f<100KHz	99.99KHz	0.02KHz max.	
100KHz $\leq$ f<1MHz	999.9KHz	f<972KHz 0.2KHz f $\geq$ 972KHz 2.6KHz	
1MHz $\leq$ f<10MHz	9.999MHz	0.003MHz max.	
10MHz $\leq$ f<100MHz	99.99MHz	0.03MHz	

#### Cursor Readout

$\Delta V$  4 digit display Two horizontal cursor lines ( $\Delta V$ )  
effective range :  $\pm 3$  div  
 $\Delta T$  4 digit display  
1 /  $\Delta T$  4 digit display Two vertical cursor lines ( $\Delta T$ , 1/ $\Delta T$ )  
effective range :  $\pm 4$  div.

**CRT Type** : 150 mm rectangular with internal graticule.

**Display Area** : 8 x 10 div (1 div = 1 cm).

**Accelerating Voltage**: 17KV.

**Phosphor** : P31.

**Trace Rotation** : Front panel adjustable.

#### MISCELLANEOUS

**Z-Axis** (Intensity Modulation) : TTL level or 5V +ve going signal decreases trace intensity.  
Freq. Range : DC - 5MHz.

**Input Resistance** : 20K ohms  $\pm 10\%$ .

**Max. Input** : 30V (DC + AC peak)  $\leq 1\text{KHz}$ .

**CAL OUT** : 0.5V p-p  $\pm 1\%$ , square wave  
1KHz  $\pm 10\%$ .

**TRIG SIG OUT** : Output outlet for triggering source or signals selected by X switch.

#### GENERAL INFORMATION

**Power Requirement** : 100V - 250V, 48Hz - 440Hz,  $\pm 5\%$  40VA.

**Dimensions** : 280 (W) x 130 (H) x 370 (D) mm (approx.).

**Weight** : 6 Kgs. (approx.).

**Standard Accessories** : Instruction Manual - 1 No.  
High Impedance x1/x10 Switchable Probe - 2 Nos.  
Mains Cord - 1 No.

WE PURSUE A POLICY OF CONTINUOUS DEVELOPMENT AND PRODUCT IMPROVEMENT. THUS THE SPECIFICATIONS IN THIS DOCUMENT AND THE LOCATION OF CONTROLS ON THE FRONT PANEL MAY BE CHANGED WITHOUT NOTICE.

## Aplab Test & Measurement Instruments

### APLAB LIMITED

APLAB HOUSE, A-5, WAGLE ESTATE, THANE 400 604. INDIA. TEL : 25821861 FAX : 91-022-2582 3137  
EMAIL : tmsales@aplab.com WEBSITE : www.aplab.com

- BANGALORE Tel. : 080-23576001 to 07 Fax : 23576008 E-mail : aplabblr@aplab.com
- CHENNAI Tel. : 044-26680472, 26680477 Fax : 26680473 Email : aplabchn@aplab.com
- KOLKATA Tel. : 033-22455435, 22848834 Fax : 22454294 Email : aplabcal@aplab.com
- MUMBAI Tel. : 022-29201787, 29204642, 29203468 Fax : 29209066 Email : aplabwr@aplab.com
- NEW DELHI Tel. : 011-23515183/86, 23627467 Fax : 23634709 Email : aplabnd@aplab.com
- SECUNDERABAD Tel. : 040-27811012, 27843351, 27720339 Fax : 27897788 Email : aplabsec@aplab.com