Aplab

3.4GHz UNIVERSAL COUNTER 1120 / 1120X

APLAB 3.4GHz Universal Counter Model 1120 / 1120X, is a sleek & portable instrument, offering a high performance at a low cost. It has been designed, to provide multiplicity of functions in communication establishments & laboratories. The instrument covers a wide range of LF, RF, VHF & UHF frequencies. The 3.4 GHz band is very much suitable for Microwave range. The instrument can measure frequency, period & period average, Time interval & Time interval average, and frequency ratio.

Description

The instrument front panel layout & colour bands provide easy understanding of the controls.

The frequency mode has two inputs Band I & Band II. Input Band I, has a selectable LO-PASS FILTER to eliminate HF noise in LF signals. Frequency is displayed directly in Hz, KHz & MHz.

Period & Time Interval can be measured directly in the 1 Avg. position or averaged over upto 10^7 cycles. Period & Time interval measurements are displayed in sec, ms, μs & ns. Frequency ratio A ÷ B enables the user to get a direct reading with a different references & may also be used to measure scaling ratios of programmable dividers. The TOTALIZE is a unit counter used for totalizing input pulses. No external triggering of input signal is required.

The eight gate times are selected by the RANGE switch. The HOLD switch pressed once, 'holds' the present reading until hold is de-selected (HOLD switch pressed again).

Reset when pressed, clears the display to all zeros and initiates a new measurement cycle.

Int 10MHz osc out is available at rear panel also we can feed more stable external oscillator, if one is available.

Features

- Low Cost & Portable
- Frequency Range of 10Hz to 3.4GHz (typically 1Hz to 3.4GHz)
- High Stability Oven Controlled Crystal Oscillator Time base (For 1120X only)
- External Oscillator Input Facility
- LO-PASS Filter for Noisy Low Frequency Signals

Technical Specifications

Frequency Range	:	10Hz - 3.4GHz (2 ranges) (Typically 1Hz - 3.4GHz).
Gate Times	:	Selectable from 0.01sec - 10sec.
Measurement Accuracy	:	± (1 count ± TB acc.).

Time Base Internal (For 1120X)

Time Base Freq.	:	10MHz oven controlled.
Stability Over Temp. Range (0 to 50°C)	:	$<\pm 1 \times 10^{-7}$.
Short term stability	:	$< 5 \times 10^{-8}$ / s.
Long term stability	:	$< 5 \times 10^{-7}$ / day.
Warm-up Time	:	15 minutes.
Internal Out	:	3V p-p.

Time Base Internal (For 1120)

Time Base Freq.	:	10MHz.
Ageing Rate	:	±5PPM / year.
Stability	:	±1PPM.
Temp. Stability	:	±5PPM from 0 to 50°C.
Internal Out	:	5V p-p.

Frequency (BAND I)

Range	:	10Hz - 120MHz.
Input Impedance	:	1M ohm // 25pF.
Sensitivity (rms sinewave)	:	50mV rms (sinewave) typically 30mV.
Maximum I/P Voltage	:	250V DC or 200V rms at 400Hz falling to 10V (without damage) rms at 1MHz.
Connector	:	BNC(F).

Frequency (Band II)

Range	:	100MHz - 3.4GHz.
Input Impedance	:	50 ohms.
Sensitivity	:	50mV rms.
Maximum I/P Voltage	:	50V DC or 5V rms. +13dBm max. rms over full range. Overload protection by pin diode.
Connector	:	N-female.

Hi-Sens Input

Range	:	50KHz to 100MHz.
Input Impedance	:	1M ohm shunted by 15pf.
Sensitivity	:	5mV rms.
Maximum Input	:	200V rms AC / ±250V DC.
Connector	:	BNC(F).

Period (Band I)

Range	:	10Hz - 10MHz.
Accuracy	:	±1 count ± time base accuracy ± trigger error.

Multiple Period Average Mode

Range	:	10Hz to 10MHz.
Accuracy	:	± 1 count ± timebase accuracy ± trigger error/N. N = no. of periods averaged.
Periods Averaged	:	10 to 10^7 in decade steps.

Time Interval (Band I)

Range	:	1µs - 10^8s.
Measurement Type	:	Averaged.
Start-Stop Inputs	:	Through two mini banana sockets on front panel.

Totalize

(Input A) Range	:	10Hz - 10MHz.
Resolution	:	1 count.
Reset	:	Manual (reset switch).

Frequency Ratio Mode

Display	:	F1/F2.
F1 Range	:	Same as input A.
F2 Range	:	Same as frequency std external.
Accuracy	:	±1 count ± trigger error of signal B.

External Standard Frequency Input

Frequency Range	:	100KHz - 10MHz.
Sensitivity	:	0.5 - 10V rms for sinewaves 1V to 10V peak to peak for pulse input.

General

Display	:	8 Digit 7 seg. LED.
Unit Annunciators	:	Overflow, gate, ext std, 26 LEDs to indicate instrument status.
Keyboard	:	6 Keys.
Power		
Mains	:	230V ±10%, 47-53Hz. Optional 115V AC ±10%, 57-63Hz.
Battery	:	External 12V DC.
Environmental	:	0-50°C 10% - 90% RH (non-condensing).
Dimensions	:	265 (W) x 85 (H) x 315 (D) mm (approx.).
Weight	:	4 Kg. approx.

Standard Accessories

Instruction Manual	-	1 No.
BNC(M) to BNC(M) Cable	-	1 No.
N(M) to BNC(M) Connector	-	1 No.
Mini Banana to Mini Alligator Clip	-	1 No.
Battery Jack Cable	-	1 No.
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 : tmisales@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