BK PRECISION
ELECTRONIC TEST INSTRUMENTS

Model 2121

30 MHz Analog Oscilloscope With Frequency Counter

Data Sheet

- **Dual or single trace operation**
  5 mV/div sensitivity
- **AUTO/NORM triggered sweep operation with AC,**

  TVH, TVV and line coupling
- **Calibrated 23 step time base with x 10 magnifier**
- **Compact low-profile design**
- **Built-in 50 MHz frequency counter**

Specifications

model 2121

VERTICAL AMPLIFIERS (Ch 1 and CH 2)

Sensitivity	5 mV/div to 5 V/div, 1 mV/div to 1 V/div at X5
Attenuator	10 steps in 1-2-5 sequence. Vernier control provides full adjustment between steps.
Accuracy	±3%, ±5% at X5
Input Resistance	1 MΩ ±2%
Input Capacitance	25 pF ±10pF
Frequency Response	5 mV to 5 V/div: DC to 30 MHz (-3dB). X5: DC to 10 MHz (-3dB)
Rise Time	12 ns (Overshoot ≤5%)
Operating Modes	CH 1: CH 1, single trace
CH 2	CH 2, single trace
ALT	dual trace, alternating
CHOP	dual trace, chopped
ADD	agebraic sum of CH 1 + CH 2
Polarity Reversal	CH 2 only
Maximum Input Voltage	400 V (DC + AC peak)

SWEEP SYSTEM

Sweep Speed	0.1 μs/div to 2s/div in 1-2-5 sequence, 23 steps Vernier control provides fully adjustable sweep time between steps.
Accuracy	±3%
Sweep Magnification	10x

TRIGGERING

Triggering Modes	AUTO (free run) or NORM, TV-V, TV-H		
Trigger Source	CH 1, CH 2, ALT, EXT, LINE		
Maximum External Trigger Voltage	300 V (DC + AC peak)		
Trigger Coupling	AC 30 Hz to 30 MHz		
TV H	Used for triggering from horizontal sync pulses		
TV V	Used for triggering from vertical sync pulses		
TRIGGER SENSITIVITY			
Coupling	Bandwidth	Int	Ext
Auto	100 Hz-30 MHz	1.5 div	100 mV
Norm	DC to 30 MHz	1.5 div	100 mV
TV V	20 Hz-1 kHz .5 div	100 mV	
TV H	1 kHz-100 kHz	.5 div	100 mV

HORIZONTAL AMPLIFIER (Input through channel 2 input)

X-Y Mode	Switch selectable using X-Y switch. CH 1: X axis
CH 2	Y axis
Sensitivity	Same as vertical channel 1
Input Impedance	Same as vertical channel 1
Frequency Response	DC to 1 MHz typical (-3 dB)
X-Y Phase Difference	Approximately 3° at 50 kHz
Maximum Input Voltage	Same as vertical channel 1

Frequency Counter

Display Resolution	Auto select from 0.001Hz to 1KHz depending on the frequency		
Max. Counter Range	0.1Hz to 50MHz		
Max. External Voltage	300V dc + ac peak		
Accuracy	+0.01% + 1 digit or 1/99999 +1 digit		
Time Base	18,432MHz + 10ppm (23°C±5°C)		
Sensitivity	Note:		
	1- The Counter must be set at "DC COUPLING" operation then the input signal is less than 10HZ.		
	2- The counter is operated by the "Trigger Source" CH1, CH2, or EXT.		
	Mode	Range	Sensitivity
	INT	2Hz~40MHz	≥ 1Div
	INT	1Hz~45MHz	≥ 2Div
	INT	0.2Hz~50MHz	≥ 3Div
	EXT	10Hz~50MHz	≥ 200mVrms
	EXT	1Hz~50MHz	≥ 400mVrms

CRT

Type	Rectangular with internal graticule
Display Area	8 x 10 div (1 div = 1 cm)
Accelerating Voltage	2 kV
Phosphor	P31
Trace Rotation	Electrical, front panel adjustable

Other Specifications

Calibrating Voltage	1 kHz (±10%) Positive Square Wave, 2 V p-p (±3%)
ENVIRONMENT	
Within Specified Accuracy	50° to 95°F (10° to 35°C), ≤ 85% RH
Full Operation	32° to 104°F (0° to 40°C), ≤ 85% RH
Storage	-4° to 158°F (-20° to +70°C)
Power Requirements	100/120/220/240 VAC ±10%, 50/60 Hz, approximately 40 W.
Dimensions (WxHxD)	7 x 14.5 x 17.25" (180 x 370 x 440 mm)
Weight	Approximately 17.2 lbs (7.8 kg)

Accessories

Two Year Warranty

SUPPLIED: Instruction Manual, Two PR-33A x1/x10 Probes or equivalent, AC Power Cord, Spare Fuse

OPTIONAL: PR-32A Demodulator Probe, PR-37A x1/x10/REF. Probe, PR-100A x100 Probe, PR-55 High Voltage x1000 Probe, LC-210A Carrying Case