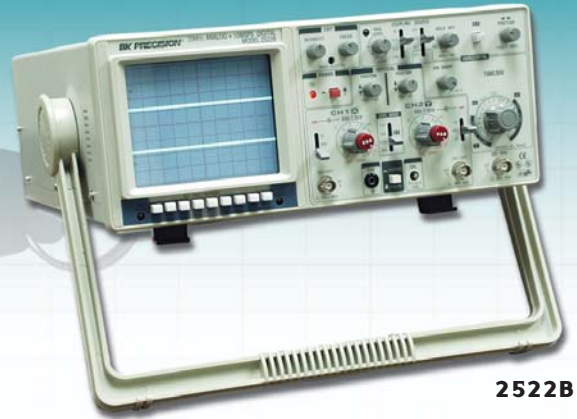


# 20 MHz Analog/Digital Storage Oscilloscope



**2522B**

- 20MHz analog bandwidth
- 10MS/s sampling rate each channel
- 2k memory per channel
- 1GHz equivalent time sampling (at 0.1  $\mu$ s/div)
- Pre-trigger capture

## Digital Mode Specifications

Storage Word Size	2048 x 8 bits/channel; (2 k/channel with direct sampling, 1 k/channel with equivalent time sampling).
Vertical Resolution	1 in 256, approximately 25 steps/div.
Horizontal Resolution	1 in 2048, approximately 200 samples/div.
Sampling Rate	10 M samples/sec to 4 samples/sec, reduced in proportion to time base. Direct sampling at time base settings of 20 $\mu$ s/div and slower, equivalent time sampling at time base settings of 10 $\mu$ s/div and faster.
Time Base Expander	For storage of slow time events, time base steps 10 ms/div and slower have selectable 1/1 or 1/100 rate. 1/100 rate expands time base from 1 sec/div to 50 sec/div in 1-2-5 sequence.
Equivalent time Sampling Bandwidth	20MHz for repetitive waveforms.
Dot Joining	Linear interpolation between samples.

### DIGITAL DISPLAY MODES

Roll	Stored data and display updated continually.
Refresh	Stored data and display updated by triggered sweep.
Hold	Freezes channel 1 and channel 2 data immediately.
Save CH 2	Freezes channel 2 data immediately.
Pretrigger Storage	Available in single shot mode, switchable to 0% or 50%.
LED Indicators	Trigger (green), Arm (red), Pen Down (red).

### PLOT OUTPUT

CH1 and CH 2 Outputs OUTPUT and CH 2 OUTPUT	Selected by PLOT switch on rear panel. Output via CH 1 jacks on rear panel. Amplitude 0.1 V/div (1 V maximum).
Output Sweep Rate	Output sweep rate is 1/10 of TIME/DIV setting (and 1/100 switch when applicable).
Pen Lift Output	Available at Pen Down jack on rear panel. TTL high, Pen Up. TTL low, Pen Down.

## Analog Mode Specifications

### VERTICAL AMPLIFIERS (CH 1 and CH 2)

Sensitivity	5 mV/div to 5 V/div in 1-2-5 sequence, 10 steps. Vernier control provides fully adjustable gain between steps. Pull x5 increases maximum sensitivity to 1 mV/div (at reduced bandwidth).
Accuracy	$\pm 3\%$ , $\pm 5\%$ at x5 MAG
Input Resistance	1M $\Omega$ $\pm 2\%$
Input Capacitance	25pF + 10pF
Frequency Response	5 mV to 5 V/div: DC to 20 MHz (-3 dB), x5:DC to 10MHz (-3dB)
Rise Time	Approximately 17.5 ns (overshoot $\leq 3\%$ )
Polarity Reversal	CH 2 only
Maximum Input Voltage	400 V (DC + AC peak)

### MAXIMUM UNDISTORTED AMPLITUDE

DC-to-20 MHz	4 divisions
DC-to-10 MHz	8 divisions

### OPERATING MODES

CH 1: CH 1, single trace	CH 2: CH 2, single trace
ALT	Dual trace, alternating
CHOP	Dual trace, chopped
ADD	Algebraic sum of CH 1 + CH 2

## model 2522B

### SWEEP SYSTEM

Sweep Speed	0.1 $\mu$ s/div to 2 s/div in 1-2-5 sequence, 23 steps. Vernier control provides fully adjustable sweep time between steps.
Accuracy: +3%	Sweep Magnification: 10X, +6%
Hold off	variable.

### TRIGGERING

Modes: AUTO (free run) or NORM. Source: CH1, CH2, ALT, EXT, LINE.	
Maximum External Trigger Voltage: 200V (DC + AC peak).	
Sensitivity	Internal - 0.5 division, External - 500 mV.

### TRIGGER COUPLING

AC	30 Hz to 30 MHz.
TV H/HF:	Used for triggering from horizontal sync pulses. Low frequencies are attenuated.
TV V DC/LF:	Used for triggering from vertical sync pulses. High frequencies are attenuated. Direct coupled.

### HORIZONTAL AMPLIFIER (Input thru CH 1 Input)

X-Y Mode	Switch selectable using X-Y switch
CH 1: X axis	CH 2: Y axis
Sensitivity	Same as vertical channel 1
Accuracy	Y-Axis: $\pm 3\%$ , X-Axis: $\pm 6\%$
Input Impedance	Same as vertical channel 1
Frequency Response	DC to 2 MHz typical (-3 dB) (to 6 divisions horizontal deflection)
X-Y Phase Difference	Approximately 3° at 50 kHz
Maximum Input Voltage	Same as vertical channel 1

## Other Specifications

### 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

### ENVIRONMENT

Within Specified Accuracy	50° to 95°F (10° to + 35°C), 85% maximum RH
Full Operation	32° to 104°F (0° to + 40°C), 85% maximum RH
Storage	-4° to 158°F (-20° to + 70°C)

### OTHER

CH 1 Output	(on rear panel)
Output Voltage	25mV/div (nominal into 50 $\Omega$ load)
Output Impedance	Approximately 50 $\Omega$
Frequency Response	20 Hz to 10MHz, -3 dB into 50 $\Omega$
Cal/Probe Compensation Voltage	0.5 Vp-p + 3% square wave, 1kHz nominal
Power Requirements	110 V/125/220/240 VAC, 50/60 Hz, approximately 60 W
Dimensions (HxWxD)	5.2 x 12.8 x 15.6" (132 x 324 x 397 mm)
Weight	Approx. 19 lb (8.6 kg.)

## Accessories

**Three 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