WIDEBAND PORTABLE DUAL-CHANNEL OSCILLOSCOPE
MODEL 1066A

- DC to 15MHz Bandwidth
- 5mV/cm Dual Trace
- Comprehensive Trigger facilities, including TV Sync
- Built-in Signal Delay
- Bright Line Auto Free-run
- Wide Time-Base Ranges

- Truly Portable — Small, Light, Rugged, Designed for Dependable Operation in Adverse Environments
- Easy to Use — Greatly Simplified Panel Layout
- Maximum Convenience — Extremely Stable Trigger & Amplifier Circuits, Wide Range of Sensitivities; Fast Warmup, Low Drift
- Lowest Cost in This Class of Instruments

APPLICATIONS:
- Field Service of Computer peripherals and information display terminals
- Communications Maintenance — Modems, Multichannel Telemetry
- Television Checks and Field Maintenance of Servo equipment

BALLANTINE LABORATORIES, INC.
FOUR DECADES OF INNOVATION IN ELECTRONIC INSTRUMENTATION
The Model 1066A dual-channel portable CRO has all the features normally found only in instruments costing twice as much. This solid-state professional oscilloscope incorporates a 4kV CRT supply for bright display on even the fastest sweeps — to 50 nanoseconds/cm, for precise fast-rise pulse work.

Other characteristics include: dual trace, and X-Y display modes; built-in signal delay; DC to 15MHz bandwidth and ±3% accuracy; 5mV/cm sensitivity; amplifiers may be cascaded for 1mV/cm max. sensitivity (5Hz-5MHz); wide time-base ranges with 10X magnifier and vernier from 50ns/cm to 25 seconds full-scale; internal calibrator; comprehensive trigger controls, including TV Sync., will trigger positively on as little as 3mm peak-to-peak.

The Model 1066A may be ordered with a full range of accessories, including probes, viewing hoods, and compatible CRO cameras. Its compact design (only 7" x 11½" x 17"), its light weight (only 20 lbs.), and its high-strength construction recommend it for every field and bench application compatible with its high sensitivity and bandwidth.

**SPECIFICATIONS**

**CATHODE RAY TUBE**

5-inch rectangular CRT. Illuminated graticule with 6 x 10 cm display area. 4kV accelerating potential. P31 phosphor standard, P7 optional. Removable bezel permits attachment of oscilloscope cameras and viewing hoods as well as interchange of graticules.

**VERTICAL DEFLECTION**

Dual Channels (identical): Y1 and Y2.
Bandwidth (at 3dB down): DC to 15MHz; 5Hz to 5MHz in cascaded mode. 25Hz to 5MHz with AC coupling (less than 0.2Hz with attenuator probe).
Rise Time: 24nsec; 70nsec in cascade.
Deflection Factor: 5mV/cm to 20V/cm in 12 calibrated steps. 1:2:5 sequence. Extended to 1mV/cm in cascaded mode, and to <500V/cm with 2:5:1 vernier range. Accuracy: within 3% (within 6% in cascade).
DC Drift: 

- Short term: (Constant ambient temperature and line voltage) 1 mm or less in any minute within first hour after 30 minute warmup.
- Long term: (Constant ambient temperature in range of 20°C to 30°C and constant line voltage) 2 mm or less during first hour after 30 minute warmup.

**Display Modes:**

- Single Trace: Y1 or Y2.
- Cascaded: Y2 and Y1.
- Dual Trace: Chopped mode, selected automatically on 1msec/cm to 1sec/cm time base ranges; 250kHz rate; Alternate mode from 0.5msec/cm to 0.5usec/cm.
- 2-axis blanking provided.
- X-Y: via Y1 and Y2 identical channels.
- External X: against Y1 or Y2, Y1 and Y2 dual trace, or cascaded Y2 and Y1.

**HORIZONTAL DEFLECTION**

Time Base: 0.5μsec/cm to 1sec/cm in 20 calibrated steps, 1:2:5 sequence. Accuracy, within 3% over center 8cm of CRT scale. 2:5:1 vernier extends range to 2.5sec/cm and 25 sec. full scale.

**X10 Magnifier:** Extends range to 50msec/cm. Accuracy, within 3% over center 8cm of CRT scale. Permits full screen view of display of any 1cm segment of normal time base. Expands normal time base around center (+1.5cm) scale.

**EXTERNAL X Input:** variable in 2 steps, 80mV/cm to 0.8V/cm (with X10 magnifier). Input RC, 100kΩ ±10% <38pF. DC to 2MHz.

**XY Operating Mode:** via Y1 and Y2 channels. Deflection factor, 5mV/cm to 20V/cm, extended to 50V/cm with vernier. Accuracy, within 3%. Bandwidth (3dB down): DC to 1MHz (2Hz-1MHz, AC coupled). Phase shift <1°, DC-50kHz, <3°, DC-50kHz (5mV/cm deflection factor).

**TRIGGER**

Modes: Normal, free run, automatic (40Hz to 2MHz, useful to 20Mhz). Bright baseline reference trace with no input (or <40Hz).

- Coupling: AC, AC fast (low frequency reject), TV (optimizes frame-rate triggering of sweep).

**Sources:** Internal Y1 (t) and Y2 (t). External t, Line t.
Pulse Triggering

External Trigger Input RC: 100kΩ ±10%/±1pf.

(Pulse Response)

Y Sensitivity: 2V/cm. X speed: 50ns/cm.
50Ω termination at scope.
Input pulse: Tp = 5ns, Tr = 5ns.
Internally triggered, AUTO mode.
Lower waveform: 1.0MHz sine wave.

(Pulse Triggering)

(triggering negligible slewing of trigger point with amplitude)

Internal trigger, AC Fast mode.
Manual Trigger Level — optimized for each amplitude.
50Ω termination at scope.
Input Pulse: Width = 150ns, Rep Rate = 5kHz.
Tm = 5ns, Tr = 5ns.
Amplitude range: 10 to 100mV
X speed: 50ns/cm.

Horizontal Linearity

X speed: 5μsec.
Upper waveform: square wave from CAI 1V jack on panel.
Lower waveform: 5mV and 50μs signals from time mark generator.
(Note excellent full screen linearity.)
ACCESSORIES

Oscilloscope Camera Model 7000A. For all standard oscilloscopes with 6 x 10cm screens. (Other sizes optional.) Controls reduced to minimum. Pre-focused; lens aperture preset. Polaroid Land Type 20C "Coaterless" ASA3000 film provides prints in 30 seconds, requires no coating for permanence. Lowest cost for any quick-process CRO camera.

Hooded viewing port provides convenient view of CRT and graticule before exposure. High-quality Dallmeyer f4.5, 2.4-inch lens. Object image ratio 1:0.65 (nominal). Three shutter speeds: 1/25 sec (fixed), time, and bulb. Adapters available for a large range of oscilloscopes — or the Model 7000A may simply be held to the CRO during exposure. Price: $165.

Probe Kit, X10 Attenuation
10600A, 4 feet, $30.00
10601A, 6 feet, $32.00

Viewing Hood, 10701A, $10.00

Protective Cover, 10725A, $35.00

Rack Mounting Kit, 800-03, $60.00

Feedthru Termination, 502, BNC, L630A, $12.50

Electronic Signal Recorder, 7050A, $985.00

The construction of the Model 1066A conforms to the highest standards of industrial instrumentation; accessibility and ease of maintenance are remarkable for this class of instruments.