



- VARIABLE PERSISTENCE STORAGE
- DC-to-100 MHz BANDWIDTH
- EXTREMELY BURN RESISTANT CRT
- 5¼-INCH RACKMOUNT

The TEKTRONIX 7613 Storage Oscilloscope offers Variable Persistence operation with a stored writing speed of 5 div/μs or conventional (nonstorage) operation. Stored traces can be viewed up to 60 minutes on a display area of 8 x 10 div (0.9 cm/div). The 7613 CRT is extremely burn resistant and doesn't require any special operating precautions.

**Note**—All 7000-Series plug-ins with lighted push buttons do not light in the vertical or horizontal compartments.

### VERTICAL SYSTEM

**Channels**—Two left-hand plug-in compartments; compatible with all 7000-Series plug-ins. Bandwidth determined by mainframe and plug-in unit, see Storage FAMILY Vertical System Specification Chart.

**Modes of Operation**—LEFT, ALT, ADD, CHOP, RIGHT.

**Chopped Mode**—Repetition rate is approximately 1 MHz.

**Delay Line**—Permits viewing leading edge of displayed waveform.

### HORIZONTAL SYSTEM

**Channels**—One right-hand plug-in compartment; compatible with all 7000-Series plug-ins.

**Fastest Calibrated Sweep Rate**—5 ns/div.

**X-Y Mode**—The phase shift between vertical and horizontal channels is 2° from DC to 35 kHz. Bandwidth is DC to at least 2 MHz.

### CRT AND DISPLAY FEATURES

**Variable Persistence Storage CRT**—Internal 8 x 10 div (0.9 cm/div) graticule with variable illumination.

**Option 1, Without CRT Readout**—Deletes CRT READOUT.

**Option 6, Special Internal Graticule (Spectrum Analyzer)**—Internal 8 x 10 div (0.9 cm/div) with variable illumination including LIN, LOG and FREQUENCY markings.

**Accelerating Potential**—8.5 kV.

**Phosphor**—P31.

**Non-Store Mode**—For displaying waveforms in the conventional (non-storage) mode.

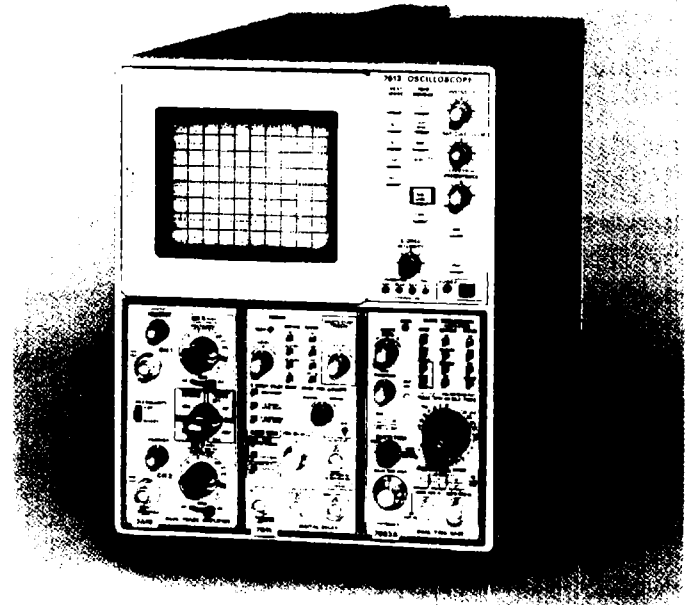
**Store Mode**—For displaying waveforms utilizing the variable persistence storage feature.

**Maximum Stored Writing Speed**—Greater than 5 div/μs.

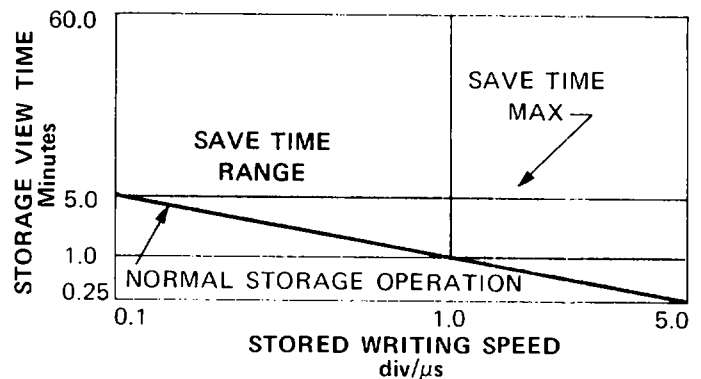
**Storage View Time**—(See chart) may be increased by selecting SAVE and adjusting for reduced viewing brightness with SAVE TIME control.

**Erase Time**—0.5 s or less.

**Persistence**—Continuously variable, persistence may be turned off when not needed to provide high contrast stored displays without the characteristic fading of variable persistence.



**Save**—Prevents erasing and storing additional displays, also extends viewing time of stored displays.



**External Z-Axis Input**—2 V P-P for full intensity range from DC to 2 MHz, intensity range diminishes to 20% of full range at 10 MHz. A positive signal blanks the trace. Maximum input voltage is 10 V (DC ± Peak AC) and P-P AC.

**Auto-Focus**—Reduces the need for additional manual focusing with changes in intensity after focus control has been initially set.

**Beam Finder**—Limits display within Graticule area.

### OUTPUTS/INPUTS

**↑ Sawtooth**—Sawtooth starts 1 V or less from ground (into 1 MΩ). Output voltage is 50 mV/div (±15%) into 50 Ω, 1 V/div (±10%) into 1 MΩ. Output R is 950 Ω within 2%.

**↑ Gate**—Positive pulse of the same duration and coincident with sweep. Output voltage is 0.5 V (±10%) into 50 Ω, 10 V (±10%) in 1 MΩ. Risettime is 20 ns or less into 50 Ω, output R is 950 Ω within 2%. Source is selectable from Main, Delay or Auxiliary Gate.

# 7000-SERIES STORAGE FAMILY

## 7613



**Sig Out**—Selected by TRIGGER SOURCE switch. Output voltage is 25 mV/div (+10%) into 50  $\Omega$ , 0.5 V/div ( $\pm 10\%$ ) into 1 M $\Omega$ . The bandwidth depends upon vertical plug-in, see Storage Family Vertical System Specifications Chart. Output R is 950  $\Omega$  within 2%.

**External Single Sweep Reset**—Ground closure, rear panel BNC provides input to reset sweep.

**Remote Erase**—Ground closure, rear panel BNC provides input to erase stored trace.

**Option 7, Without Signals Outputs/Inputs**—Deletes previously described OUTPUTS/INPUTS.

### CAMERA POWER OUTPUT

Three-prong connector to the left of the CRT provides power, ground, and remote single-sweep reset access for the C-50-Series Cameras.

### CALIBRATOR

**Voltage Output**—Rectangular waveshape, positive-going from ground. (DC voltage available when selected by internal jumper.) Ranges are 40 mV, 0.4 V, 4 V into 1 M $\Omega$ ; 20 mV, 0.2 V, 0.4 V into 50  $\Omega$ . Amplitude accuracy is within 1% ( $+15^\circ\text{C}$  to  $-35^\circ\text{C}$ ); within 2% ( $0^\circ\text{C}$  to  $-50^\circ\text{C}$ ). Repetition rate is approx 1 kHz.

**Current Output**—40 mA DC or 40 mA rectangular waveshape with optional current-loop accessory (012-0259-00) connected between 4 V and GND pin jacks.

### POWER REQUIREMENTS

**Line Voltage Ranges**—100, 110, 120, 200, 220 and 240 V AC  $\pm 10\%$ ; internally selectable with quick-change jumpers.

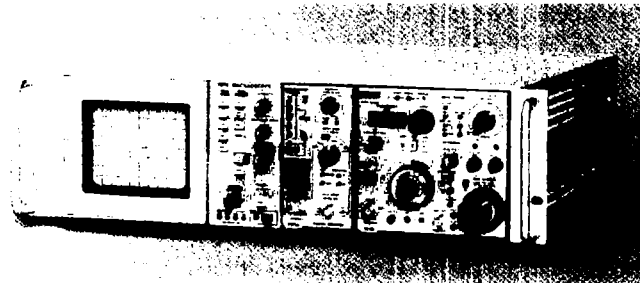
**Line Frequency**—50 Hz to 60 Hz.

**Option 5, Line Frequency Change (50 - 400 Hz)**—Converts the 7613 and R7613 to 50 - 400 Hz operation.

**Max Power Consumption**—180 Watts, 2.0 Amps at 115 V line, 60 Hz. Cooling is provided by a fan for both models.

### DIMENSIONS AND WEIGHTS

Please refer to the 7623 dimensions and weights chart.



The R7613 requires only 5 1/4 inches of rack height in a standard 19-inch rack. It is fan-cooled and comes complete with slide-out chassis tracks.

**Included Accessories**—(For 7613 and R7613) 20-inch cable (two-pin-to-BNC) (175-1178-00); CRT filter (Gray 378-0625-02). The R7613 includes rackmounting hardware.

### ORDERING INFORMATION

(Plug-ins not included)

7613 STORAGE OSCILLOSCOPE .....	\$2500
R7613 STORAGE OSCILLOSCOPE .....	\$2600

#### 7613 OPTIONS

Option 1 W/O CRT READOUT .....	Sub \$400
Option 3 EMI MODIFICATION .....	Add \$75
Option 5 LINE FREQ CHANGE (50 - 400 Hz) .....	Add \$100
Option 6 SPECIAL INT GRATICULE (Spectrum Analyzer) .....	No Charge
Option 7 W/O SIG OUT/IN .....	Sub \$50

#### R7613 OPTIONS

Option 1 W/O CRT READOUT .....	Sub \$400
Option 3 EMI MODIFICATION .....	Add \$50
Option 5 LINE FREQ CHANGE (50 - 400 Hz) .....	Add \$100
Option 6 SPECIAL INT GRATICULE (Spectrum Analyzer) .....	No Charge
Option 7 W/O SIG OUT/IN .....	Sub \$50

#### 7613 CONVERSION KITS

040-0656-00 CRT READOUT .....	\$400
040-0663-00 EMI MODIFICATION .....	\$75
040-0629-00 SIG OUT/IN .....	\$50

#### R7613 CONVERSION KITS

040-0676-00 CRT READOUT .....	\$400
040-0678-00 EMI MODIFICATION .....	\$75
040-0633-00 SIG OUT/IN .....	\$50