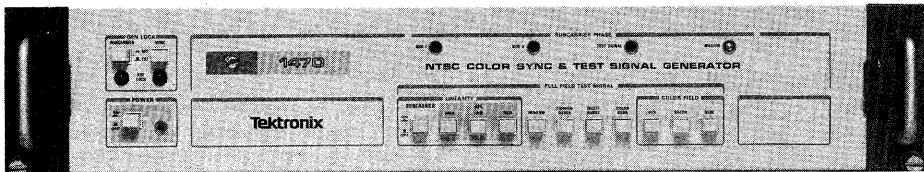
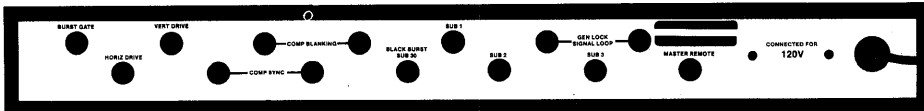




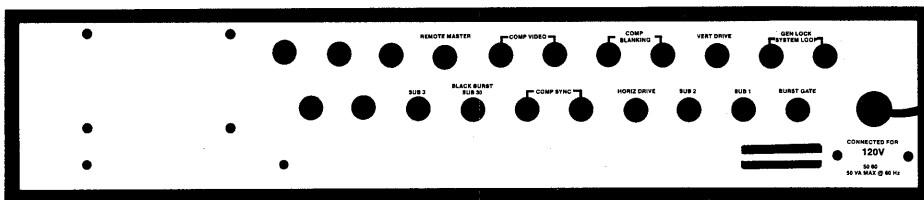
1474 NTSC Color Sync Generator



1470 NTSC Color Sync and Test Signal Generator



1474 Rear Panel



1470 Rear Panel

## 1470/1474

Full Color Sync Generator with Gen-Lock

Locks to Most Helical Scan VTRs

Simple to Operate

Compact and Economical

Full Selection of Sync and Timing Signals

Simplified Timing Via Multiple Subcarrier Phasing Controls

The 1470 Sync and Test Signal Generator is a compact, full color, gen-lock sync generator providing a full selection of high quality test signals.

The 1474 is identical in performance to the 1470 with the exception of test signals which, in the interest of economy, are not included. Both products have color gen-lock compatible with composite video from all normal sources including most helical scan video tape recorders.

The 1470 and 1474 can operate as master-sync generators or as units fully or partially timed from external sources. Color gen-lock capable of locking to most helical scan VTRs is a standard feature.

Front-panel pushbutton selection of external synchronization is provided. In external mode, the 1470 and 1474 automatically lock on composite video (1 V), composite sync (-4 V), or reference subcarrier (2 V). Two front-panel lights show subcarrier and/or sync external lock. Lights out indicate a switch to internal standard.

### 1470 Test Signal Functions

To simplify your test signal selection and speed testing operations, the 1470 has push button selection of test signals. All test signal push buttons, except the color field selectors, are self-cancelling. Each test signal provides aberration-free transitions and accurate flat levels.

#### Color Bars

The 1470 provides full-field color bars signals useful for color monitor adjustments, VTR tape lead in, and system checks.

#### Color Fields

Red, green, and blue color-field signals are provided for checking purity on color monitors/receivers that do not have individual gun on/off controls. These signals may also be used to provide a color background source. The red, green, and blue selectors may be used simultaneously to provide yellow, cyan, magenta, and white full field signals.

#### Linearity (Staircase)

Staircase signal with selection of high, medium, or low APL. Staircase subcarrier may be switched on or off from the front panel.

#### Test Signals

Test Signals available include: Window, Convergence Multiburst.

Window signals are suitable for measuring both line time and field time distortion. Convergence test signals are used to check color monitor convergence and linearity, and camera scanning linearity. Multiburst signals are used to check system frequency response.

Both the 1470 and 1474 are configured for rackmounting and are shipped ready to install in a 19 in rack.

The GV3257A Changeover Unit is compatible with the 1470 and 1474.

## CHARACTERISTICS

### SYNC GENERATORS OUTPUTS (1470/1474)

**Horizontal Blanking** — Leading Edge: 2.2  $\mu$ s to 0.6  $\mu$ s before the leading edge of sync. Trailing Edge: 9.1  $\mu$ s to 10.7  $\mu$ s after the leading edge of sync.

**Horizontal Drive** — Leading Edge: 2.2  $\mu$ s to 0.6  $\mu$ s before the leading edge of sync.

**Vertical Blanking** — 20 or 21 lines.

**Subcarrier Phase Controls** — Composite Test Signals: Subcarrier 1 and 2. Blackburst: Independent adjustment range of  $\approx 120^\circ$ , and jumpers allow a full  $360^\circ$  shift in  $90^\circ$  steps. Gen-Lock Master: Independent  $360^\circ$  front panel adjustment and  $100^\circ$  remote control, via a rear-panel BNC connector.

### GEN-LOCK

**Composite Sync** — Output level into 75  $\Omega$ : 4 V  $\pm 0.5$  V. Rise-time and Falltime: 140 ns nominal.

**Composite Blanking** — Output level into 75  $\Omega$ : 4 V  $\pm 0.5$  V. Field Blanking Rise-time and Falltime: 140 ns nominal.

**Vertical Drive** — Output level into 75  $\Omega$ : 4 V  $\pm 0.5$  V. Rise-time and Falltime: 140 ns nominal. Duration: 9 lines.

**Horizontal Drive** — Output level into 75  $\Omega$ : 4 V  $\pm 0.5$  V. Rise-time and Falltime: 140 ns nominal. Duration: 6.35  $\mu$ s.

**Burst Gate** — Output level into 75  $\Omega$ : 4 V  $\pm 0.5$  V. Delay from line sync: 5.1  $\mu$ s  $\pm 0.1$   $\mu$ s. Rise-time and Falltime: 140 ns nominal. Duration: 2.5  $\mu$ s  $\pm 100$  ns.

**Subcarrier** — Output level into 75  $\Omega$ : 2 V. Frequency: 3.579545 MHz  $\pm 10$  Hz.

**Black Burst** — Sync amplitude into 75  $\Omega$ : 40 IRE. Burst Amplitude: 40 IRE (286 mV peak-to-peak). Burst Frequency: 3.579545 MHz  $\pm 10$  Hz.

**Gen-Lock Signal Loop Input** — Composite Video Input Range: 0.5 V to 1 V when loop-through connectors are externally terminated into 75  $\Omega$ . Comp sync 1 to 4 V, ref subcarrier 1.5 to 2 V p-p.

### TEST SIGNAL OUTPUTS (1470)

**Test Signal Generator Outputs Composite Video** — Return Loss:  $\geq 30$  dB to 5 MHz. Output Level into 75  $\Omega$ : 1 V. Sync: 40 IRE,  $\pm 1$  IRE (286 mV nominal amplitude). Peak Video Level:  $\pm 100$  IRE,  $\pm 2$  IRE (714 mV nominal amplitude). Blanking dc Level: 0 V,  $\pm 50$  mV.

**NTSC Color Bars** — Full Field: 75% amplitude, 100 IRE white reference, 7.5% setup. Luminance Signal Accuracy: Within 2%. Chrominance Signal Absolute Amplitudes: Within 3% (all subcarrier frequency components).

**Window Amplitude** — 100 IRE,  $\pm 2$  IRE. Duration: 25.8  $\mu$ s,  $\pm 3\%$ . Starts at line 66 in each field and ends at 218 in each field. Rise-time: 150 ns nominal.

**Crosshatch Pattern or Dots** — Setup: 7.5 IRE  $\pm 1$  IRE. Peak Level: 77 IRE  $\pm 2$  IRE. Rise-time and Falltime: 150 ns nominal.

**Multiburst** — White Reference Amplitude: 100 IRE  $\pm 2\%$  IRE. Multiburst Amplitude: 50 IRE  $\pm 2\%$  IRE. Average Level: 55 IRE  $\pm 1$  IRE. Multiburst Frequencies: 0.5 MHz, 1.5 MHz, 2.0 MHz, 3.0 MHz, 3.58 MHz, 4.2 MHz.

**Staircase Luminance Component** — Five Step Amplitude (each step): 20 IRE  $\pm 1$  IRE (143 mV). Staircase Amplitude: 100 IRE  $\pm 2$  IRE (714 mV). Aberrations: Within 2% of step amplitude. Step Rise-time: 150 ns nominal.

**Staircase Subcarrier Chrominance Component** — Amplitude: 40 IRE  $\pm 1$  IRE (286 mV p-p). Phase:  $180^\circ$ . Differential Phase:  $\leq 0.3^\circ$ . Differential Gain:  $\leq 0.5\%$ . Subcarrier Envelope Rise-time: 400 ns nominal.

### OTHER CHARACTERISTICS

**1470 Power Requirements** — 115 V or 240 V line voltage, high-low ranges. Selection switches for line voltages and ranges are accessible internally. Factory set to 120 V. 120 V Range — High, 108 V to 132 V; Low, 95 V to 110 V. 240 V Range — High, 216 V to 250 V; Low, 198 V to 242 V. Line Frequency: 50 to 60 Hz. Power maximum: 50 W. 1474 Power Requirements — 115 V: 90 to 130 V. 240 V: 198 V to 250 V. Power: Maximum 40 W.

### PHYSICAL CHARACTERISTICS

Dimensions	1470		1474	
	mm	in	mm	in
Width	483	19.0	483	19.0
Height	89	3.5	44	1.7
Depth	483	19.0	483	19.0
Weights	kg	lb	kg	lb
Net	4.9	10.8	4.2	9.2
Shipping	7.8	17.2	8.1	17.9

### ORDERING INFORMATION

**1470 Color Sync and Test Signal Generator (Rackmount)** ..... **\$3,760**

Option 01 — Sync Generator Without Gen-Lock ..... **-\$245**

**1474 Color Sync Generator (Rackmount)** ..... **\$1,965**

Option 01 — Sync Generator Without Gen-Lock ..... **-\$245**

**GV3257A Automatic Change Over Unit** **\$1,600**