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DUAL TRACE

WIDE BAND

BANDPASS FILTERS

KEYED CLAMP

SYNC CHANNEL



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TEKTRONIX, INC.
POUGHKEEPSIE, N. Y.



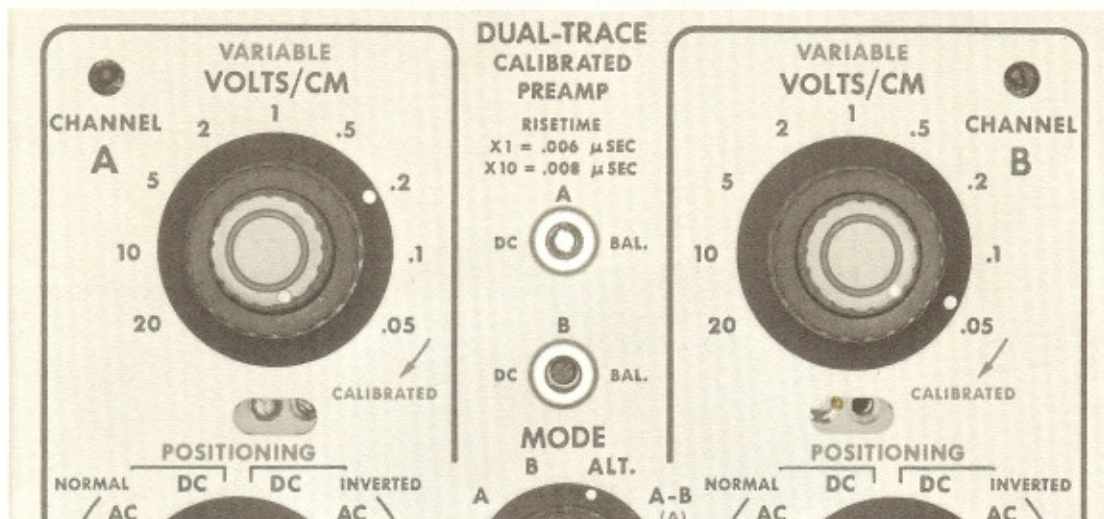
Type V
VIDEO
PLUG-IN UNIT

TYPE V VIDEO PLUG-IN

The Type V Video Plug-In Unit adapts Tektronix Type 530, 540, and 550-Series Oscilloscopes to meet the particular needs of the TV engineer.

Containing two input channels, plus a sync channel, the Type V permits quick and precise measurements of video signals.

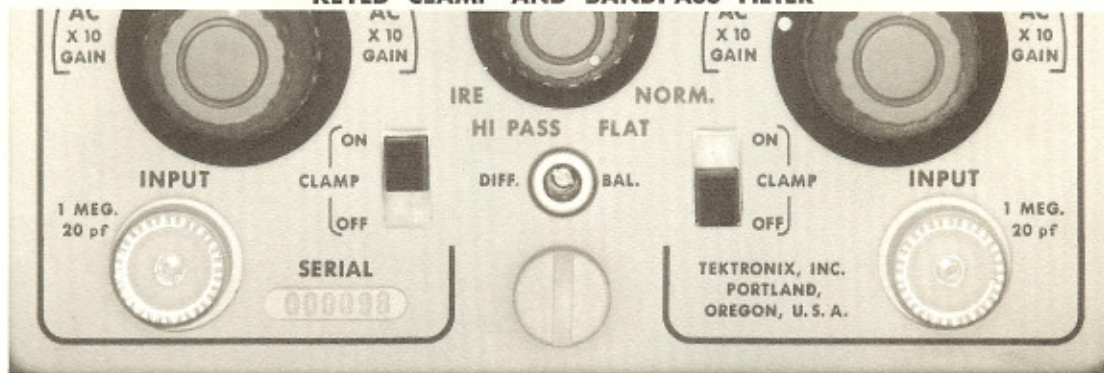
DUAL TRACE — WIDE BAND



Single channel presentation (A or B).
 Alternate trace (A and B).
 Differential (A minus B).
 6 nsec risetime (Type V Unit only) in AC or DC position.

8 nsec risetime (Type V Unit only) in AC X10 position.
 Sine wave frequency response flat within 1% to 10 mc.
 Input impedance of 1 megohm paralleled by 20 pf.

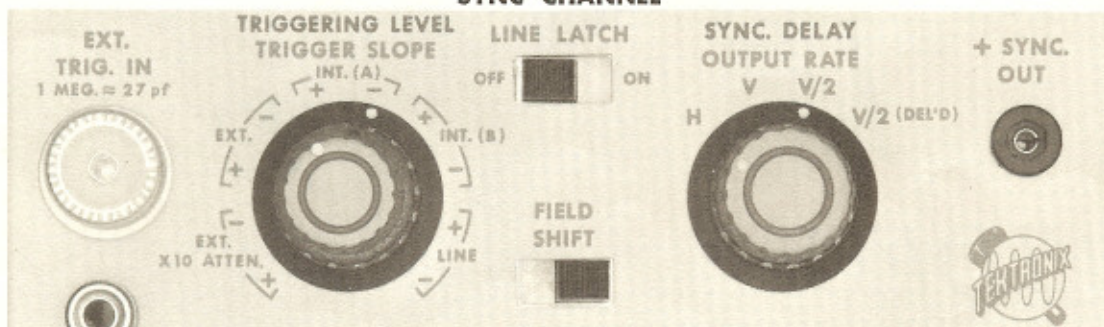
KEYED CLAMP AND BANDPASS FILTER



Keyed line-by-line backporch clamp.
 Switch-selected filters for IRE, Hi-Pass, Flat, or

Normal (optimum transient) bandpass characteristics.

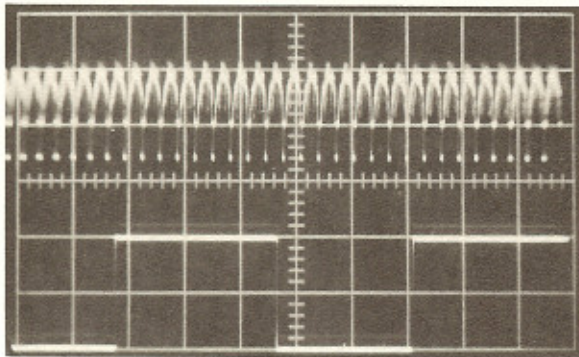
SYNC CHANNEL



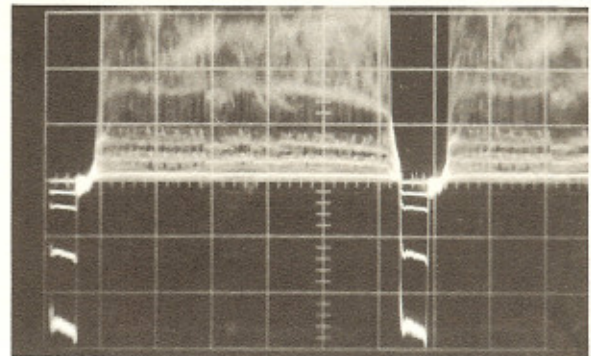
Sync for triggering the sweep separated from 50 mv of composite video signal.
 Sync available from Channel ±A, Channel ±B,

±External or ±Line (power).
 Output rates of H, V, V/2, or V/2 (delayed).

Typical video waveform displays showing the capabilities of the Type V Video Plug-In Unit in a Tektronix Type 533 Oscilloscope. Photographs were taken with a Tektronix Type C-12 Camera. Film was Polaroid* 44.
 *Registered trademark of the Polaroid Corp.



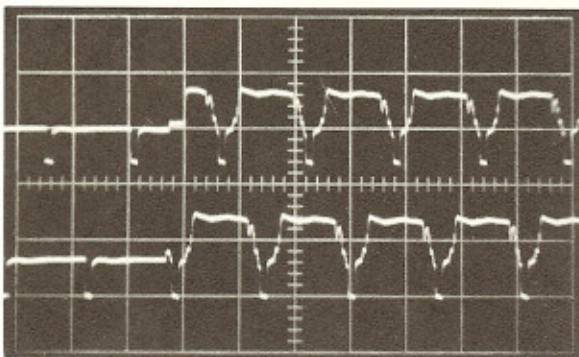
Top: Video signal. Bottom: 1 v calibrator signal.
 Sweep speed 200 μ sec/cm.



Sweep speed 50 μ sec/cm. Vertical sensitivity 0.5 v/cm.

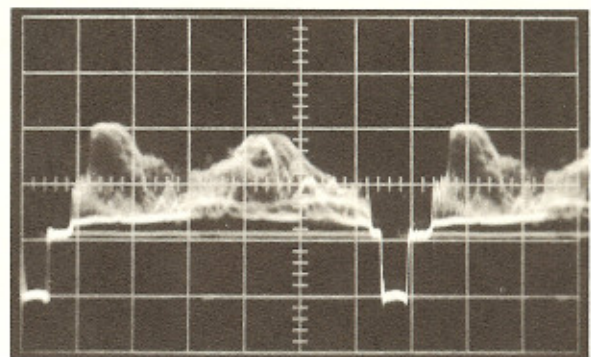
Display shows dual-trace capabilities of the Type V unit. Both channels have a bandwidth of 15 mc (3 db) in the Normal filter position. In the Flat position the response is flat within 1% to 10 mc.

Keyed line-by-line clamp. Video signals of 3 volts to 50 mv are shown clamped to the backporch level. This feature allows easy set-up measurements. (multiple exposure)



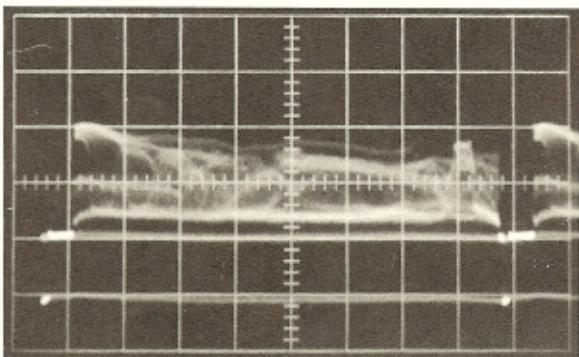
Vertical sensitivity 1 v/cm. Sweep speed 500 μ sec/cm.

Alternate mode display shows portion of two interlaced fields. Sweep triggered by "V" triggers. X10 horizontal magnifier was used.



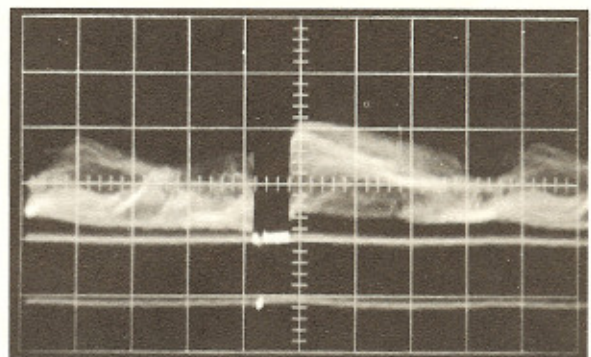
Vertical sensitivity 0.5 v/cm. Sweep speed 20 msec/cm.

Single channel display shows the solid triggering of the Tektronix Type 533 Oscilloscope with the Type V unit trigger pulses. Output Rate switch set at H position.



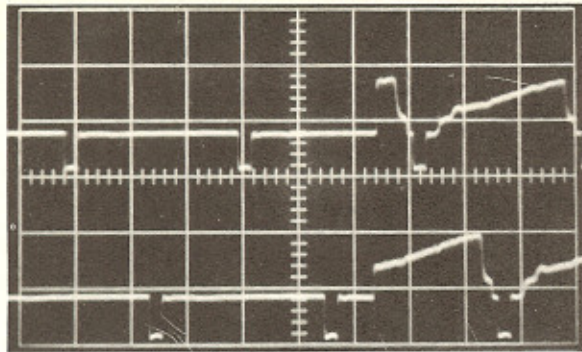
Vertical sensitivity 1 v/cm. Sweep speed 500 μ sec/cm.

Field-rate triggers allow display of one complete vertical field. Output Rate switch at V position.

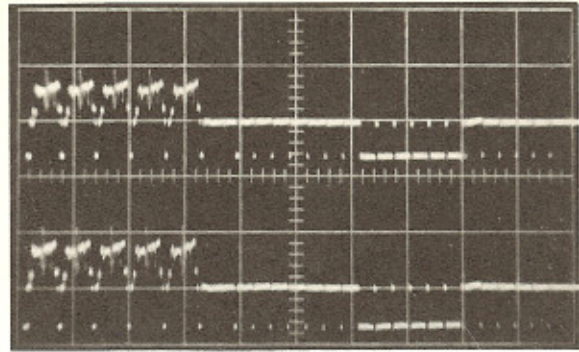


Vertical sensitivity 0.5 v/cm. Sweep speed 20 msec/cm.

Illustrates the sync delay capabilities of the Type V unit. V/2 triggers initiate the oscilloscope sweep at a time, after the vertical group, which is determined by the position of the Sync Delay control.



Vertical sensitivity 0.5 v/cm. Sweep speed 20 μ sec/cm.



Vertical sensitivity 1 v/cm. Sweep speed 100 μ sec/cm.

The top waveform shows field #2. The bottom waveform was taken after the Field Shift switch was pushed once. It shows field #1. Taken with approximately 170 msec delay. (double exposure)

The V/2 position allows viewing of the same field on both channels when using the Alternate mode of operation. Photo taken with approximately 160 ms of delay and a sweep speed of 100 μ sec/cm.

TENTATIVE SPECIFICATIONS

CHANNELS A AND B

Calibrated sensitivity — 0.05 v/cm to 20 v/cm in nine calibrated steps. Continuously variable (uncalibrated) to 50 v/cm. AC X10 position increases sensitivity to 5 mv/cm.

Risetime — 6 nsec (Type V Unit only) in AC or DC position.

8 nsec (Type V Unit only) in AC X10 position.

Frequency Response — DC to 15 mc in Tektronix Type 533 Oscilloscope.

Filters — Switch allows selection of one of four filters:

- IRE — bandpass conforms to IRE Standard.
- Hi-Pass — passes 3.58 mc color subcarrier.
- Flat — sine wave response flat to 10 mc $\pm 1\%$.
- Normal — optimum transient response.

Operating Modes — Channel A only.

Channel B only.

Alternate (A and B, dual-trace).
A-B (differential).

Input Impedance — 1 megohm paralleled by 20 pf.

Input Coupling — AC or DC, AC X10. Signal can be displayed either sync negative or sync positive.

SYNC CHANNEL

Keyed Clamp — Line-by-line backporch clamp.

Trigger Slope — Switch permits choice of the following trigger sources: Ext. X10 Atten., Ext., Int. Ch A, Int. Ch B, or Line.

The triggering point can be on either the rising or falling slope of the triggering waveform.

Trigger Level — Selects the level at which incoming waveform will trigger sweep. 50 mv of composite video signal required for reliable operation.

Output Rate — A four-position switch allows selection of the following:

H — horizontal line rate.

V — field rate.

V/2 — frame rate.

V/2 (del'd) — frame rate with time of occurrence dependent upon Sync Delay setting.

Sync Delay — Determines time of occurrence of output trigger; allows observation of any part of a given field.

\pm Sync Out — A positive pulse, generated by a blocking oscillator, used for triggering the sweep.

Line Latch — In this position the sweep is triggered by the first horizontal sync pulse after the delay set by the sync Delay control.

Field Shift — Selects other field.

Ext. Trigger Input — 1 megohm paralleled by 27 pf. Has ground post for double GR plug.

MECHANICAL SPECIFICATIONS

Construction — Aluminum-alloy chassis.

Finish — Photo-etched anodized panel.



Please check with your Field Engineer for price and availability.

Tektronix, Inc.

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TEKTRONIX ENGINEERING REPRESENTATIVES: Heathcote Electronics, Portland, Oregon • Seattle, Washington. Tektronix is represented in twenty overseas countries by qualified engineering organizations. In Europe please write Tektronix Inc., Victoria Ave., St. Sampsons, Guernsey C.I., for the address of the Tektronix Representative in your country.