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VERTICAL INTERVAL TEST SIGNALS–

REPROGRAMMING TEKTRONIX SIGNAL GENERATORS

television application note no. 19

Sections 73.682 (a) (21) and 73.676 (f) (1) of the FCC rules, regarding placement of test signals in the vertical blanking interval of the television signal, have been amended. Line 19 of fields 1 and 2 has been set aside for the Vertical Interval Reference (VIR) Signal. The VIT signals required for remote TV transmitter operation have been reassigned as follows:

Signal	From	To
Multiburst	Line 18, Field 1	Line 17, Field 1
Color Bars	Line 18, Field 2	Line 17, Field 2
Composite*	Line 19, Fields 1 and 2	Line 18, Fields 1 and 2

*As before, the Commission states the composite signal will be inserted on both fields if the broadcaster does not opt for a suitable test signal of his own choosing on field 2.

This application note deals only with the 147 Option 1, 147A Option 1, 149, and 149A. These generators have all been factory programmed for remote TV transmitter operation and may be easily reprogrammed for the new FCC VIT signal line assignments. The VIR programming information contained in this note applies to *all* 147, 147A, 149, and 149A instruments. Other sections apply as indicated.

147 Option 1 Reprogramming

Applies to All 147 Option 1's.

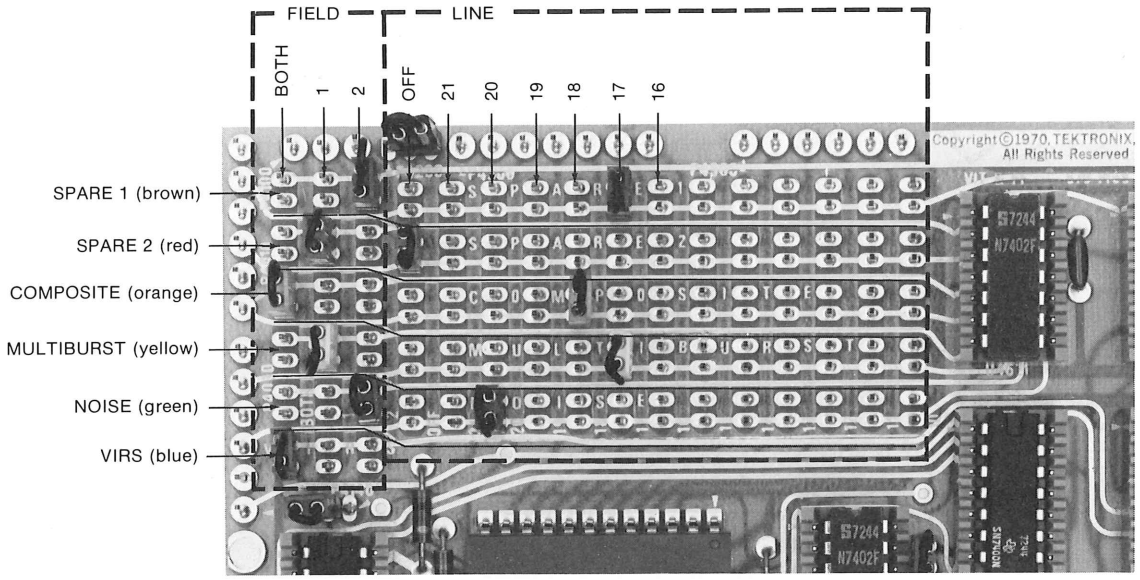

Figure 1. VIT and Full Field Logic Board

The *new* VIT signal programming is shown on the board in Figure 1. Changes are:

1. Multiburst — line 18 to line 17
   Composite — line 19 to line 18
   Spare 1 — line 18 to line 17
2. Change the external color bar VIT source to line 17.
3. As factory programmed, the VIR signal generating logic is disabled. To enable this logic, connect pin 21 to pin 12 in P9014. P9014 is the remote plug located on the 147 rear panel.

To obtain the correct programming for the VIR signal, refer to the section titled "147 and 149 VIR Programming."

147A Option 1 Reprogramming

Applies to All 147A Option 1's with Serial Numbers Starting B12 and Below.

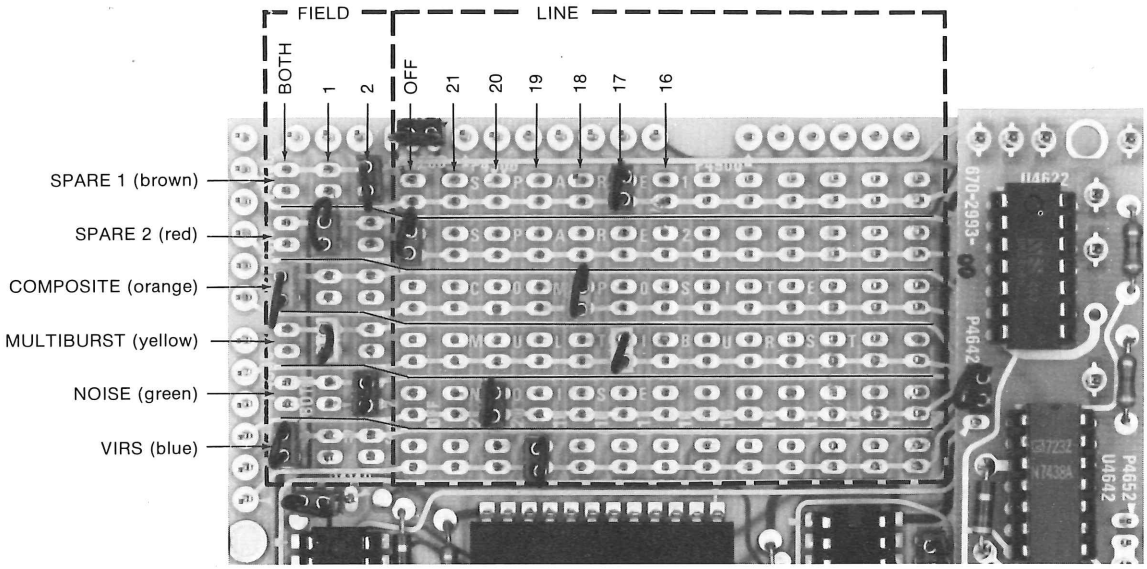

Figure 2. VIT and Full Field Logic Board

The *new* VIT signal programming is shown on the board in Figure 2. Changes are:

1. Multiburst — line 18 to line 17
   Composite — line 19 to line 18
   Spare 1 — line 18 to line 17
   VIRS Line — line 20 to line 19
   VIRS Field — both
2. Change the external color bar VIT source to line 17.
3. As factory programmed, the VIR signal generating logic is disabled. To enable this logic, connect pin 21 to pin 12 in P9014. P9014 is the remote plug located on the 147A rear panel.

149 Reprogramming

Applies to All 149's.

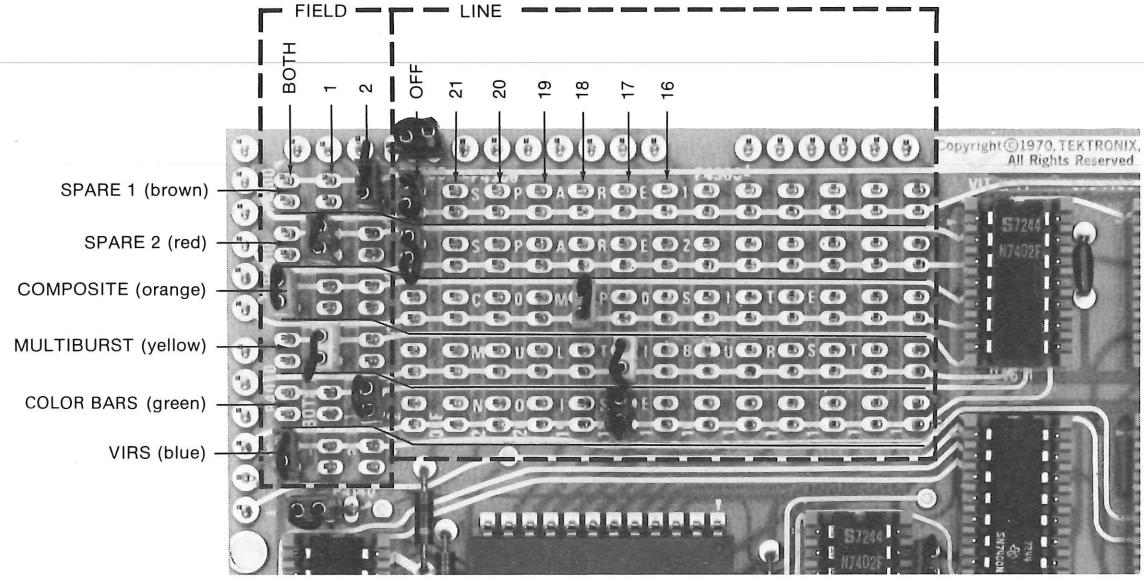

Figure 3. VIT and Full Field Logic Board

The *new* VIT signal programming is shown on the board in Figure 3. Changes are:

1. Multiburst — line 18 to line 17
   Composite — line 19 to line 18
   Color Bars — line 18 to line 17

To obtain the correct programming for the VIR signal, refer to the section titled "147 and 149 VIR Programming."

149A Reprogramming

Applies to All 149A's with Serial Numbers Starting B07 and Below.

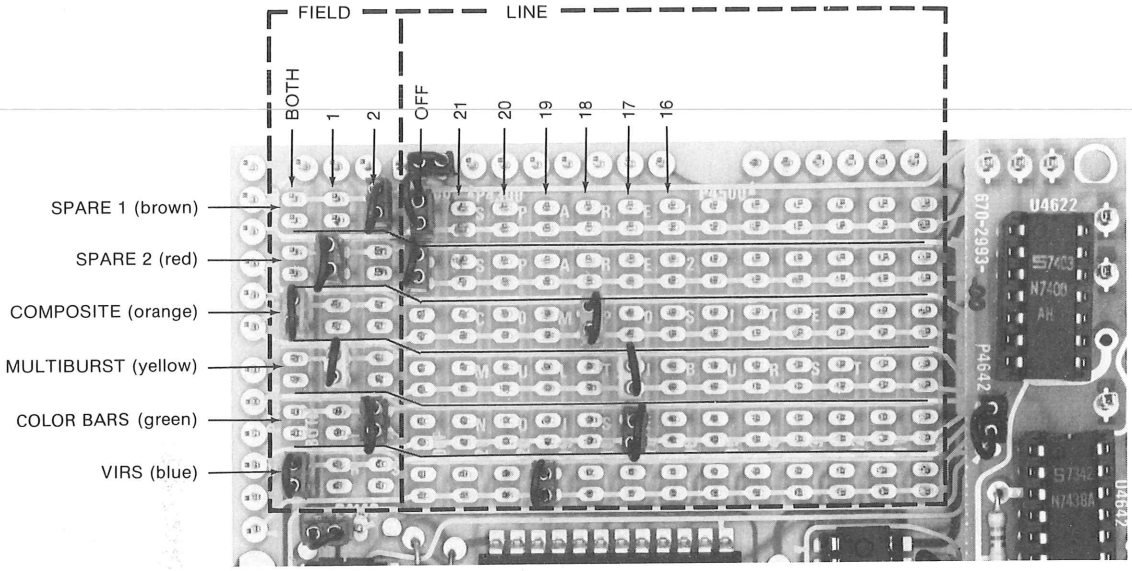

Figure 4. VIT and Full Field Logic Board

The *new* VIT signal programming is shown on the board in Figure 4. Changes are:

1. Multiburst — line 18 to line 17
   Composite — line 19 to line 18
   Color Bars — line 18 to line 17
   VIRS Line — line 20 to line 19
   VIRS Field — both

147 and 149 VIR Programming

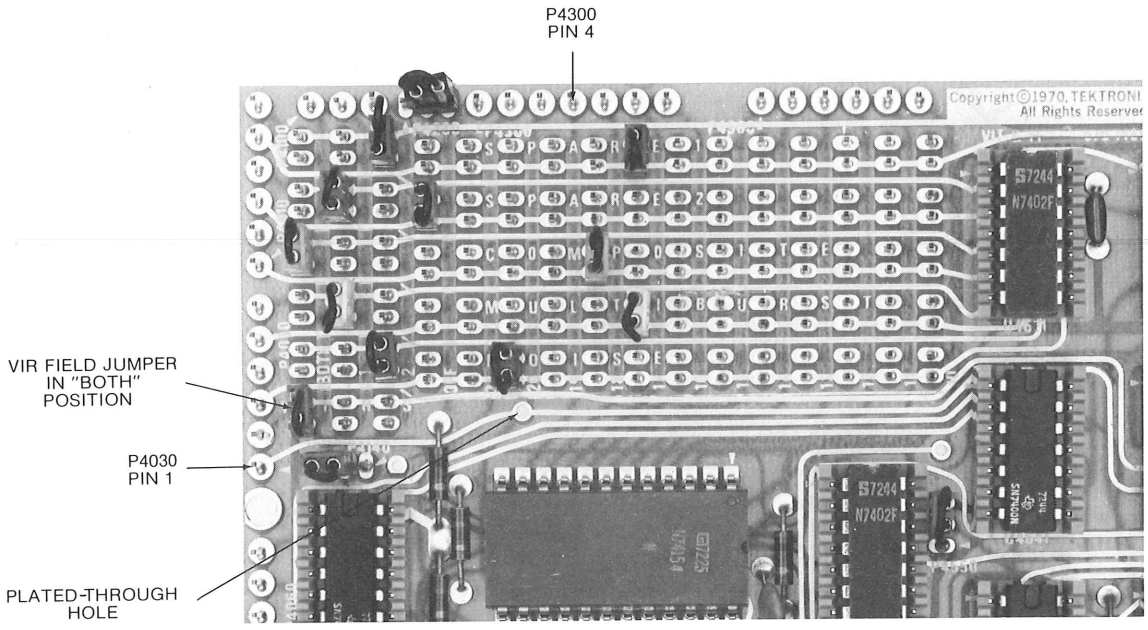

Figure 5. VIT and Full Field Logic Board

The VIR signal in 147 and 149 generators is hardwired for line 20. To obtain a programmable VIR, make the following changes. Refer to Figure 5.

1. Remove the conductive material from the plated—through hole by drilling the hole with a slightly oversize drill. Check to insure continuity between the top and bottom of the board is broken.
2. Connect a wire from P4030 pin 1 to P4300 pin 4.
3. Change the VIR field jumper to Both.

1441 VIR Programming

To program the 1441 for line 19 VIR insertion:

Move the gray on white wire on P1808 from line count pin 20 to line count pin 19. P1808 is located on the Timing Board. The field programming jumper, P2050, located on the Modulator Board, should be placed in the BOTH position.

1440 VIR Programming

To program the 1440 for line 19 operation:

Move the jumper on P3280 to connect the pin number 19 to the common center bus. The field recognition jumper, P3130, should be in the BOTH position. The line and field jumpers are located on the Timing Board.

VIR Signal on Monochrome Programming

The obvious benefit of owning a Tektronix 1440 Automatic Video Corrector is continuous automatic adjustment of the video signal whenever the VIR signal is present. If VIR is present on the monochrome signal, the 1440 will continue to operate automatically on video and sync gains.

To insert VIR on monochrome signals, program your VIR generator as follows:

1. 147 and 149—lift pin 11 of U4761. U4761 is located on the VIT and Full Field Logic Board.
2. 147a and 149A—Place the jumper on pins 2 and 3 of P4779. P4779 is located on the VIT and Full Field Logic Board. Pin 1 of P4779 is indexed with an arrow on the board.
3. 1441—On the Modulator Board. Place the jumper on P2090 in the CONT position.