

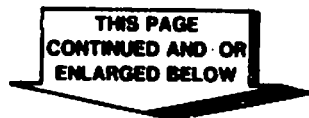
R706

PROCESSOR TYPE PDP-8 FAMILY

VT01-00001 CODE: D ML: A
NOVEMBER-69 - PROBLEM: The VT01 cannot be used with the multiterminal system. The cursor rings when the scope is selected and deselected; 5 msec are required before it is fully settled.
CORRECTION: Add a #54-08567 cursor damping board that disconnects the X and Y signals from the cursor when the terminal is selected.
In-plant effectivity - all future VT01's

VT01-00002 CODE: P ML: B
JANUARY-70 - PROBLEM: Wrong wires called out.
CORRECTION: Correct drawing A-SP-VT01-K-1 to indicate correct type of wire.
In-plant effectivity - documentation change

VT01-00003 CODE: P
APRIL-70 - PROBLEM: Documentation change: Part description is not adequate
CORRECTION: Change: 54-08567 description from Scope Board to Cursor Damping Circuit; 54-08274 description from Scope Board to Scope Input Module.
In-plant effectivity - documentation change only



VT01-B0004 CODE: F
OCTOBER-70 - PROBLEM 1: Tektronix modified all scopes above serial number B142240 to accept a hard copy unit, #4601. In doing this, there are some wiring conflicts with the DEC modification.
CORRECTION 1: Remove wires that are in conflict.
PROBLEM 2: Write line above serial number B142240 is not compatible with logic levels.
CORRECTION 2: Add circuit to write line for logic compatibility.
PROBLEM 3: Scopes above serial number B142240 have cursor damping circuit built in.
CORRECTION 3: Remove DEC cursor damping board.

NOTE: For break-in effectivity, all VT01 storage scopes serial #B142240 and above use latest revision prints; for VT01 storage scopes below #B142240 use revision "A" prints.
In-plant effectivity - retrofit immediately
Field effectivity - retrofit as required
(Time To Install And Test 1.5 Hours) (Kit Contents - FCO/Prints and Parts)

VT01-B0005 CODE: F
SEPTEMBER-70 - PROBLEM: Tektronix modified all scopes, #B142240 and above, to accept a hard copy unit, #4601. Doing this resulted in some wiring conflicts with the cable.
CORRECTION: Change the #70-06289 cable on scopes, serial #B142240 and future. Below #B142240 the cable stays as it was.

NOTE: On scopes, serial #B142240 and above, use latest revision print. For those below serial #142240, use revision "A" print.
In-plant effectivity - retrofit immediately
Field effectivity - retrofit all VT01's as required
(Time To Install And Test .5 Hour) (Kit Contents - FCO/Prints and Parts)

VT01-B0006 CODE: F ML: C

SEPTEMBER-70 - PROBLEM 1: Tektronix modified all scopes, serial number B142240 and above, to accept a hard copy unit, #4601. Doing this resulted in some wiring conflicts with our modification.

CORRECTION 1: Rewrite modification procedure to eliminate wiring conflicts.

PROBLEM 2: Write line, serial number B142240A and above, is not compatible with logic levels.

CORRECTION 2: Add to modification procedure to eliminate wiring conflicts.

PROBLEM 3: Scopes serial number B142240 and above have cursor damping circuit built in.

CORRECTION 3: Remove cursor damping board from modification procedure

NOTE: All VT01 storage scopes, serial #B142240 and above, use latest revision prints. To modify VT01 storage scope below serial #B142240, use revision "A" prints.

In-plant effectivity - retrofit immediately

Field Effectivity - retrofit VT01's as required

(Time To Install And Test 1.5 Hours.) (Kit Contents - FCO/Prints and Parts)

VT01-00007 CODE: P

MAY-71 - CORRECTION 1: Change part number of Item 1 from 54-09152 to 54-09154.

PROBLEM 2: Tektronix changed pin assignments of a ground signal from pin "L" to pin "P".

CORRECTION 2: Change Wire Table to reflect proper pin assignment.

In-plant effectivity - documentation change only

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digital

EQUIPMENT CORPORATION

PARTS LIST ENGINEERING CHANGE ORDER

CHANGE NO. ~~VT01-00004~~

DOCUMENTATION PROJECT NUMBER

ACT PROD. LINE TYPE OR DISCRETE

8 1 0 7 1

MANUFACTURING PROJECT NUMBER

ACT PROD. LINE TYPE OR DISCRETE

STOCK DISPOSITIONS CODE

SC=SCRAP RN=RETAIN
RK=REWORK NC=NO CHANGE

ACTION TAKEN

PARTS ADDED
NPO=NO PARTS ON ORDER
POR=PARTS ON ORDER
IS=PARTS IN STOCK

PRODUCTION ENGINEER

W.R. Miller

DESIGN ENGINEER

Al DeLuca

PARTS DELETED

ITEM NO.	PART NO.	NO. DEL. PER UNIT	STOCK DISP.	DESCRIPTION
1	C-1A-5408567	1	RN	Cursor Damping Bead
2	1300444	1	RN	Resistor 3.9K 1/4w 5%
3	9107350-11		RN	#22 AWG strd teflon wire (brown)
4	9107350-77		RN	#22 AWG strd teflon wire (violet)

PARTS ADDED

ITEM NO.	PART NO.	NO REQD PER UNIT	DESCRIPTION	ACTION TAKEN
20	C-1A-5409152	1	VT01 write thru mod	POK

DWG LOC

Sheet 3 of 10

D-1+2

C-1+2

1. ON ALL SCOPES CHANGE R342 FROM
~~8.2K TO 3.3K (ITEM 11)~~ DELETE D340
BOTH LOCATED ON STORAGE
CIRCUIT BOARD T2.

~~5. ADD WIRE (ITEM # 11) FROM CENTER
CONDUCTOR OF "X" 4 TO P1-22 GND
AT BNC END ONLY~~

~~6. ADD WIRE (ITEM # 10) FROM CENTER
CONDUCTOR OF "Y" J2 TO P1-9 GND
AT BNC END ONLY~~

~~7. ADD WIRE (ITEM # 9) FROM CENTER
CONDUCTOR OF "Z" J3 TO P1-23~~

⑤

WRITE-THRU MOD

SPIRIT 10F2
ECO# VT01-00004 D-UA-VT01-0-0

NEW
REV
B

VT01-FCO-3

DWG LOC.
A-5

ADD
↓

USE THIS PRINT FOR TEKTRONIX
611 SCOPE ABOVE SERIAL NUMBER
B142240 FOR THOSE BELOW USE
REV "A"

DWG LOC
C-2

↑
ADD

20 (SEE NOTE) ⁵

J1 (~~SEE NOTE~~)

J2 (~~SEE NOTE~~)

J3 (~~SEE NOTE~~)

DWG LOC.
D-5

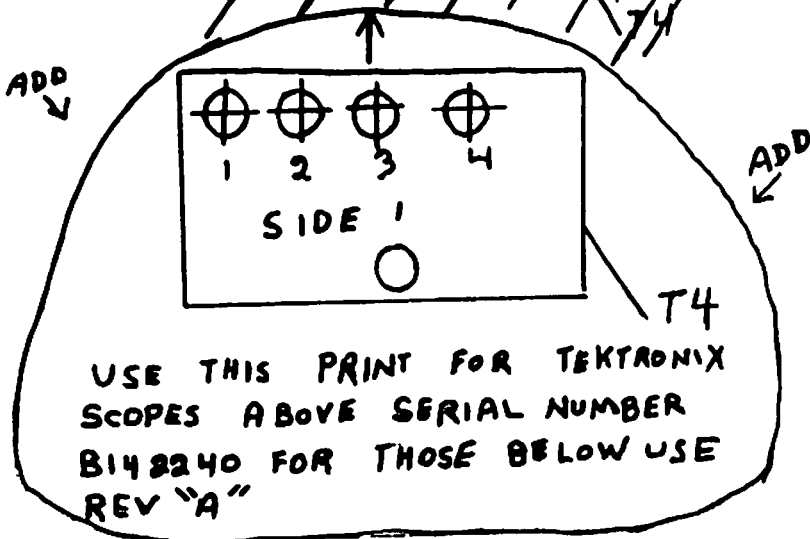
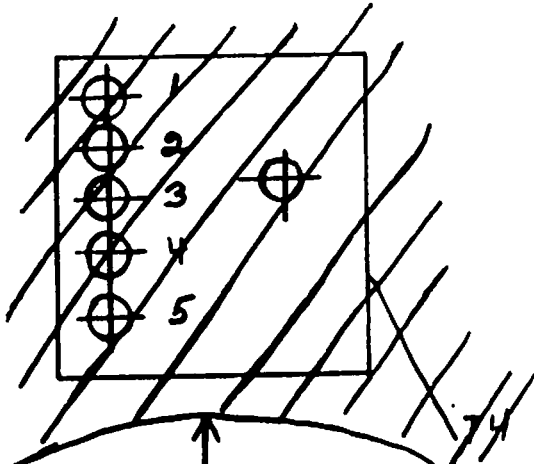
~~SEE NOTE # 114~~

SPIRIT 2 OF 2
ECO # VT01-00004 D-UA-VT01-0-0

NEW
REV
B

VT01-RO-4

VT01-FCO-5



USE THIS PRINT FOR TEKTRONIX
SCOPES ABOVE SERIAL NUMBER
B142240 FOR THOSE BELOW USE
REV "A"

SPIRIT 1 OF 4

ECO# VT01-~~0000~~4 D-UA-VT01-0-0

NEW
REV
B

VT01-FCO-5

sheet 6 of 10

SIGNAL		DESCRIPTION			CONNECTIONS		REMARKS
NAME	ITEM NO	AWG	COLOR	FROM	TO		
GND	16	22	RED	T4-1	T3-V	INT CONN	
GND	17	22	BLK	T4-2	T2-V	INT CONN	
	23	22	YEL	T4-3	T3-V	INT CONN	
	18	22	GRN	T4-T2	T2-V	INT CONN	
-20V	15	22	WHT	T4-5	T3-V	INT CONN	

ADD
x

SIGNAL		DESCRIPTION			CONNECTIONS		REMARKS
NAME	ITEM NO	AWG	COLOR	FROM	TO		
+20V	16	22	YEL WHT	T4-1	T3- A400	INT CONN	
GND	17	22	BLK WHT	T4-3	*** *** **	INT CONN	
WRITE IN	23	22	GRN WHT	T4-2	P18	INT CONN	
WRITE OUT	18	22	RED WHT	T4-4	XXX XXX	INT CONN	

SPRIT 20F4

ADD

ECO # VT01-00004 D-UA-VT01-00

NEW
REV
B

VT01-FCO-6

Sheet 7 of 10

SIGNAL NAME	ITEM NO	AWG	COLOR	FROM	TO	REMARKS
X-IN	11	22	CLEAR	8	PI-1	DELETE EXISTING WIRE FROM PI+P2 TO X BNC
X-IN RTN		22	SHIELD	7	PI-2	
AD						
SIGNAL NAME	ITEM NO	AWG	COLOR	FROM	TO	REMARKS
X-OUT	11	22	CLEAR	12	PI-1 J 1" X CENTER CONDUCTOR	ADD
Y-IN RTN	11	22	CLEAR	14	PI-16	DELETE EXISTING WIRE FROM PI5+PI6 TO "Y" BNC.
Y-IN		22	SHIELD	13	PI-15	
Y-OUT	11	22	CLEAR	ADD 15	PI-16 J 2" Y" CENTER CONDUCTOR	ADD
X-1	10	22	Y/B	PI-16	PI-25	
X-2	4	22	BRN	PI-17	PI-24	

SPIRIT 30F4

ECO # VT01-00004 D-UA-VT01-0-0

NEW
REV
B

VT01-FCD-7

~~CONNECT BRN/WHT WIRE FROM
T4-5 TO END OF R306 ADJACENT
TO PINK ON T2.~~

ADD
↓

REMOVE EXISTING WIRE (RED/WHT)
FROM PIN P1-8 + SPLICE TO
(RED/WHT) WIRE FROM TERM PIN
T4-4

CONNECT TO COMM. GND LUG AS
IN NOTE 3 OF SHEET 1.

↑
ADD

SPIRIT 40F4
ECO# VT01-0004

D-UA-VT01-0-0

NEW
REV
B

VT01-FC0-8

	DWG NO./PART NO.	DESCRIPTION	QUAN VAR.
14	9101350-71	#22 AWG STRD TEFLON WIRE (BRN)	Q/A
10	9107350-71	#20 AWG STRD TEFLON WIRE (VIO)	Q/A
14	13004111	RESISTOR 3.9K 1/4W 5% 90	✓
20	270-5408547-00 <u>2-IA-5409152-0-0</u> ADD	CURSOR DAMPING BOARD <u>VT01 WRITE THUR MOD.</u> ADD	

ECO# VT01-00004 A-PL-VT01-0-0

NEW
REV
B

VT01-PCD-9

Sheet 10 of 10

DWG. NO. / PART NO.	DESCRIPTION	QUAN. VAR
54-8567 ADD <u>540 9152</u>	CURSOR DAMPING CIRCUIT <u>VT01 WRITE THRU MOD.</u> ↑ ADD	

ECO = VT01-00004 A-AL-VT01-0-0

NEW
REV
B

VT01-FCO-10

ITEM NO.	DESCRIPTION		CONNECTION	
	AWG	COLOR	FROM	TO
6	22	RED	P1-K2	P2-23 (4) ADD
11	22	YEL	P2-21	P2-22
12	22	ORN	P2-9	P2-13

A/B	22	AWG	STD	TE	FINS	(ORN)	9107350	33	12
A/R	22	AWG	STD	TE	FINS	(YEL)	9107350	44	11
QTY	DESCRIPTION						PART NO.		ITEM NO.

USE THIS PRINT FOR TEKTRONIX
611 SCOPES. SN B142290 + FUTURE
FOR THOSE BELOW USE REV. "A"

ADD

NEW
REV
B

ECO# VTOI-00005 D-IA-7006289-0-0

VT01-FCO-12



EQUIPMENT CORPORATION

PARTS LIST ENGINEERING CHANGE ORDER

CHANGE NO. VT01-00006					
DOCUMENTATION PROJECT NUMBER					
ACT	PROD.LINE	TYPE	OR	DISCRETE	
	B 1 1			0 1 7	1 1 1
MANUFACTURING PROJECT NUMBER					
ACT	PROD.LINE	TYPE	OR	DISCRETE	

STOCK DISPOSITIONS CODE	ACTION TAKEN
SC=SCRAP RN=RETAIN	PARTS ADDED
RK=REWORK NC=NO CHANGE	NPO=NO PARTS ON ORDER
	POR=PARTS ON ORDER
	IS=PARTS IN STOCK

PRODUCTION ENGINEER W.H. Miller

DESIGN ENGINEER A. J. ...

PARTS DELETED

ITEM NO.	PART NO	NO. DEL. PER UNIT	STOCK DISP.	DESCRIPTION
123	C-IA-5408567-1-0	1	RN	Cursor Damping Board
21	9107350-77	1 ft.	RN	Wire 22 strd tef ins violet
115	9107350-11	1 ft.	RN	Wire 22 strd tef ins brown
17	1300444	1	RN	Resistor 3.9K, 1/4W, 5A

PARTS ADDED

ITEM NO	PART NO	NO REQD PER UNIT	DESCRIPTION	ACTION TAKEN
123	C-IA-5409152	1	VT01 Write thru mod.	POR
115	9107400-94	1 ft.	Wire 22 awg Tracer Wht/Yellow	IS

VT01-FCO-144

	FIELD SERVICE TECHNICAL MANUAL				Option or Designator
	12 Bit <input checked="" type="checkbox"/>	16 Bit <input checked="" type="checkbox"/>	18 Bit <input checked="" type="checkbox"/>	36 Bit <input type="checkbox"/>	VT01

Title ERASE RETURN PROBLEM				Tech Tip Number	VT01-TT-1
Processor Applicability		Author	Al Shiner	Rev	0
AN		Approval	Larry Lewis	Date	1/74
X					Cross Reference

The VT01 (Tektronix 611) storage scope requires 400-500 ms. to erase. However, an additional 400-500 ms. recovery time is required before a second erase can be issued. Writing can be resumed when ready sets at the end of the erase interval, but if a second erase is issued within 400-500 ms. after completion of the first, the erase interval one shot in the VT01 will not respond. The result is erase signal constantly asserted. VT01 will not perform the second erase nor assert return, and ready flag will not come true again. Pushing the erase button the scope will erase and restore ready. The problem has not been serious because there is no reason for back to back erases ever being programmed.

Since a service call could be logged for this problem, the Engineer should be able to explain the limitation of the Tektronix equipment in this regard.

Title VT01 Modification to VT01-A				Tech Tip Number	VT01-TT-3
Processor Applicability		Author	Ed Reed	Rev	0
AN		Approval	Marie Menger	Date	6/12/75
X					Cross Reference

Confusion exists on this option because of incomplete and erroneous documentation.

VT01, is the 611 with the VT01K modification. This adds T1, the 5408274 bipolar scope input module which reduces the effects of noise and ripple. It also adds as T4 the 5409154 module which makes the WRITE-THRU signal input compatible with a TTL driver. (Newest VT01A's have this circuit already added by Tektronix.)

VT01K, the modification procedure/scope kit is print set 0A-NL-VT01-K, latest Rev. Early scopes below S142240 were modified to revision B of these prints. If it is necessary to modify an early scope, revision B prints must be ordered. A separate procedure, called VT01KA for newer scopes, was never developed. The VT01K procedure was ECO'd up to date instead. (Field installation of this kit is not recommended, however.)

Scopes below serial no. S142240 probably have T1, the 5408274 bipolar, scope input module; and T4, the 5408567 module, which is the cursor damping fix necessary for multi-terminal systems.

VT01A, scope serial no. S142240 and later, has its own cursor damping circuitry and is used without any DEC modification. The VT01A does not have the DEC T1 bi-polar module

7806209, the Interface cable, for scopes below S/W S142240, was made to print 0 D-1A-7806209-0-0, revision A. Cables for present scopes are made to print revision B. (Change had to be made because the copier signal lines conflicted with the pins DEC had used.)

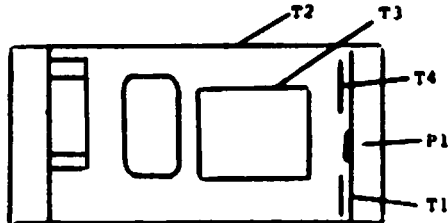
PAGE 1	PAGE REVISION 4	PUBLICATION DATE August 1975
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Title VT01 Modification to VT01A				Tech Tip Number VT01-TT-2	
All Processor Applicability		Author Ed Reed		Rev 0	
Approval		Date 6/12/75		Cross Reference	

The VT01-A is used on the AA11, AR11 and VP15. The VT01 is used on the XW8-E, XV15, XV8, XV8-1, VS08 and VP09.

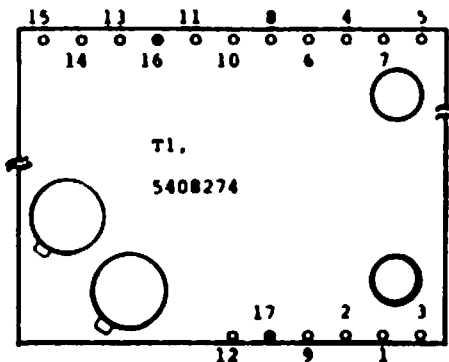
The following drawings are intended for use with the 611 manual, and the control and interface prints of the particular system on which it is installed. DEC reference to the scope modules are: T2 on the top, T3 on the right side, of the scope, viewed from the front with the cover removed.

T2 is the standard Tektronix storage circuit board and T3 is the high-voltage regulator board. In the VT01, T1 is added below the program plug, P1, with a standoff and screw thru the lower power cord bracket. T4 is mounted the same way at the top power cord bracket.

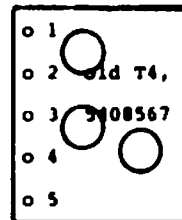
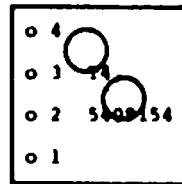


PHYSICAL PIN LAYOUTS

View from component side



● Not Used



NOTE: The foregoing information is standard. However, some variations on connections may be encountered because of scope serial no. level (variations of circuit boards) or variations which crept in due to the original hand modification.

PAGE 1

FIELD SERVICE TECHNICAL MANUAL

Option or Designator

12 Bit 16 Bit 18 Bit 36 Bit

VT01

Title

VT01 Modification to VT01-A (continued)

Tech Tip

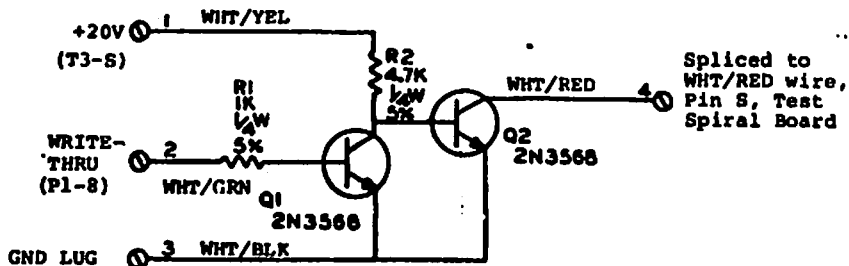
Number VT01-TT-2

Author Ed Reed Rev 0

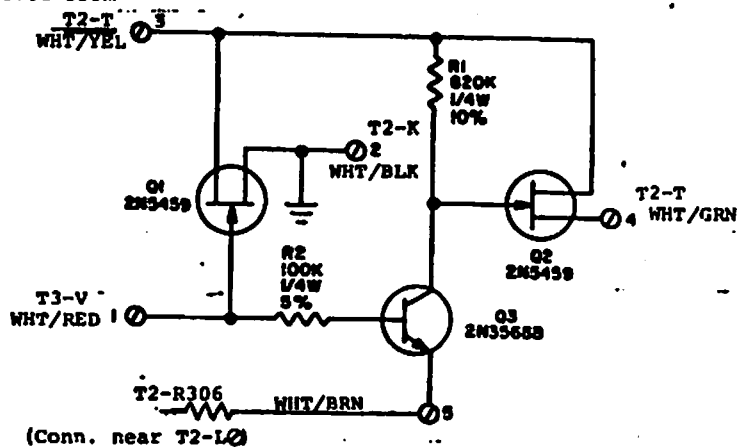
Approval Herle Wagner Date 6/12/75

Cross Reference

5409154, T4



Spliced to wire removed from

5408567, Early Scope
Cursor Damping Fix (T4)

PAGE 3

PAGE REVISION 0

PUBLICATION DATE August 1975

digital	FIELD SERVICE TECHNICAL MANUAL				C P L Option or Designator
	12 Bit <input checked="" type="checkbox"/>	16 Bit <input checked="" type="checkbox"/>	18 Bit <input checked="" type="checkbox"/>	36 Bit <input type="checkbox"/>	VT01

Title VT01 Modification to VT01-A (continued)				Tech Tip Number VT01-TT-2	
All Processor Applicability		Author pd Reed		Rev 0	
x		Approval Harle Wagner		Date 6/12/75	
				Cross Reference	

Because of the usage of the option on a variety of interfaces there are a couple of things to be aware of.

The X and Y BNC's in parallel with the Program Plug, lead to the attenuator board, behind the aluminum shield, under T3.

The taps on the attenuator board are wired straight-through to be normally used with 1-volt signals but 5-volt signals or other input values may be used depending on the values of the resistors on the attenuating tape. Various values are described in the Operating Instructions of the 611 manual.

	<u>IN TAPS</u>	<u>OUT TAPS</u>		<u>Remarks</u>
X-axis	D	C	-	Straight-through
	E	B	-	X attenuation
	F	A	-	Horizontal Shield
Y-axis	I	J	-	Straight-through
	H	K	-	X10 Attenuation
	G	L	-	Vertical Shield

(NOTE: The input voltage range is limited to about ± 15 volts with T1 installed.)

Also, switches SW02 for the horizontal, and SW204 for the vertical, amplifiers select the beam origin position. They are found on the left side of the scope near the upper right-hand corner of the X-Y deflection board.

With a zero-volt input to the X and Y axes the beam is located:



Lower Left

Switches to the rear for + V inputs



Center

Switches in the center for + V inputs



Upper Right

Switches to the front, for -V inputs

Finally the gains for X and Y are adjusted equally to 8.1 cm, from zero to full-scale deflection, for square format. The Y-gain is increased to 10.5cm deflection for rectangular format.

C P L

Title VT01 Modification to VT01-A		Tech Tip Number VT01-TT-2	
Processor Applicability All		Author Ed Reed	Rev 0
		Approval Merle Wagner	Date 6/12/75
Cross Reference			

The first scopes were originally shipped with T1, the 5408274, installed.
Here is a brief synopsis of the ECO's to the opti.:

ECO #VT01-00001 Added T4, the 5408567 cursor damping fix.
-00002 Changed horizontal and vertical input wiring to shielded microdot.
-00003 Corrected T1 and T4 description on VT01 accessory l1st.
-00004 Scopes serial #B142240 and later: replaced 5408567 with 5409154 write-through mod as T4, changed wires on P1 which conflicted with 4601 hard-copy unit signals.
-00005 Changed program cable 7006289 to match P1 after ECO #4.
-00006 VT01 Modification procedure updated to reflect ECO #4 level.
VT01-00007 Corrects part #5409154 on VT01 parts list (was listed as 5409152 in error.)
VT01A-00001 Obsoleted VT01A assembly documents since the VT01A is used unmodified under the VT01A option designation.

Title FIELD HANDLING AND REPLACEMENT OF CRTS		Tech Tip Number VT01-TT-2	
Author BOB JOHNSON	F.S. Office MAYNARD	Date 6.16.78	Revision 0
Processor Applicability	Mgr/Sup. RON MINEZZI	Date 6.16.78	Cross Reference
	Approvals	Date	SAFETY-TT-4

THIS TECH TIP IS FOR CROSS REFERENCE ONLY.

VT01-TT-6

**VT01
SCOPE ASSEMBLY
FCO Cross Reference**

**A Chronological Listing of Field Retrofit FCO's Which Must Be
Considered in the Field Installation and Maintenance of This Option/Module/Power Supply**

• Indicates FCO Conjunction Must Be Considered With Prior FCO

- 1 VT01-80004 OCT 70**
QUICK SYNOPSIS
Provides logic compatibility between Tektronix
scopes and DEC scope assembly
QUICK CHECK
Grn/Wht wks from T4-2 to P1-8
- 1 VT01-80005 SEP 70**
QUICK SYNOPSIS
Requires cable change for compatibility be-
tween modified Tektronix scopes and DEC
scope assembly
QUICK CHECK
Red wks at P1-K2
- 1 VT01-80006 SEP 70**
QUICK SYNOPSIS
Corrects wiring to accept a hard copy unit
's46011)
QUICK CHECK
22 AWG Tracer wht/yellow