



# Wizards Workshop

\*\*\*\*\*  
\*\* ALL SERVICE QUESTIONS FROM EUROPE, MIDDLE EAST, \*\*  
\*\* AND AFRICA SHOULD BE ADDRESSED TO THE EUROPEAN \*\*  
\*\* MARKETING CENTER SERVICE GROUP IN THE NETHERLANDS. \*\*  
\*\*\*\*\*

TEKTRONIX INTERNAL USE ONLY

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PERSONNEL CHANGES

NEW HIRES

RUTH WHITE - Dayton

Ruth has joined Tek as a Field Specialist and comes to Tek with two years of experience working for a major computer manufacturer.

Welcome Ruth!

\*\*\*\*\*

WALLY LIZOTTE - Dallas

Wally will be working as a Field Service Specialist in the Tulsa area. He was recently discharged from the US Army where he performed component level repair on cryptographic systems.

Welcome Wally!

\*\*\*\*\*

DAVE VENNITTI - Denver

Dave begins with Tek as an ET-I following four years in the Air Force gaining PMEL experience.

Welcome Dave!

\*\*\*\*\*

BOB EPPS III - Denver

Bob recently retired from the Air Force with over 21 years experience, both in photography and PMEL. He begins with Tek as an ET-I.

Welcome Bob!

\*\*\*\*\*

JC MEADE - Denver

JC is now a T&M JET and a recent graduate of Denver's Electronic Technical Institute.

\*\*\*\*\*

MIKE MAYERS - Chicago

Beginning June 1st Mike will be joining Tek as an ET-1 on the swing shift. He comes to us from General Electric where he repaired and calibrated Tektronix and other manufacturer's equipment.

Welcome Mike!

\*\*\*\*\*

JIM EVILSIZER - Dallas

Jim has joined Tek as a JET on the day shift. He came to us from Mostek, where he was an electronic technician performing repairs on temperature equipment.

Welcome Jim!

\*\*\*\*\*

## NEW HIRES (continued)

### GLEN SHORE - Cleveland

Glen comes to Tek from Case Western Reserve University where he was an Electronic Technician for the Engineering Design Center. He is now performing the duties of Field Service Specialist I.

Welcome Glen!

## TRANSFERS

### PETER VAMBARIS - Sydney Service Centre

Peter has rejoined Tek as a customer engineer in Sydney. He recently returned from Greece where he spent three years as a Sales/Service representative with the Tektronix Distributor.

\*\*\*\*\*

### EILENE DICKEY - Service Support, Beaverton

Effective May 26, 1981, Eilene has assumed product support responsibilities for Accessories. Her new title is Performance Assurance Engineer I.

Eilene previously worked in Accessories Manufacturing and Factory Service. Her latest position was lead person for Cameras and Probes.

Accessory servicing questions can be addressed to Eilene at Extension 8692 Merlo and M/S 53-108.

Keep up the good work Eilene!

\*\*\*\*\*

## PROMOTIONS

### STEVE JONES - Huntsville

Steve has recently been promoted to Field Service Specialist III. He has been with Tek since 1974 and working in IDD since 1976. His superior technical skill has been a major factor in his outstanding contribution to the Huntsville Field Service operation.

Congratulations Steve!

\*\*\*\*\*

### JUDY HEALEA - Seattle

Judy has been promoted to Service CSR and will be handling customer accounts H-Z and secretarial support for Andy Spence. She joins CSR, Joan Moschetti, who handles accounts M-Z and supports Dave Critton.

Congratulations to Judy!

\*\*\*\*\*

PROMOTIONS (continued)

AL SCHMITT - Factory Service, Beaverton

Al has been promoted to Service Center Supervisor I responsible for Modular Repair Center swing shift.

Congratulations Al!

\*\*\*\*\*

DWIGHT WHITTUM - Factory Service, Beaverton

Dwight has been promoted to Service Center Supervisor. He brings to his new position a high level of skill and experience gained while T&M group leader in Factory Service.

Congratulations Dwight!

\*\*\*\*\*

JIM FRAME - Factory Service, Beaverton

Jim has been promoted to Service Center Manager responsible for the T&M portion of Factory Service. Jim has been with Tek 12½ years and brings to his new position a wealth of experience and education. He has worked as a Final Assembler, as a Test Technician in the Production Plants, a scheduler for Machine Insertion, and a Material Administrator for Central Manufacturing.

Jim has also managed groups in Metals, Item Data Management, and Factory Service. He has earned an Associate Degree in Management from PCC, and is a Senior in the University of Portland BBA Program.

Ed Ohlmann, Dwight Whittum, and Jim Bevens, all Service Center Supervisors, will report to Jim.

Congratulations Jim, and we wish you continued success!

\*\*\*\*\*

NEWS ITEMS

PATTY STEVENSON, Indianapolis has returned from leave of absence and full-time motherhood. Mother and son (Joey) are doing fine. Welcome back Patty!

\*\*\*\*

LARRY HAGA, FSS in the Dallas Field Office, and wife Patty are the proud parents of a new baby girl. Her name is Ingrid Kareen and she was born on April 21, 1981. Congratulations!

\*\*\*\*

NEWS ITEMS (continued)

BOB WRUBLE, Service Operations Manager - Beaverton, recently celebrated his 25th Anniversary with Tektronix. Bob has gained invaluable experience in the varied positions he has held during those years. The Service Organization is drawing from that experience for the betterment of U.S. and International Service.

Our congratulations to Bob and a wish for many more years of success with Tek!

\*\*\*\*

CHINH NGUYEN, a Santa Clara Service Center T&M Technician, has met all requirements for US Citizenship.

Welcome Chinh as a citizen of our great country!

\*\*\*\*

--Editor

## GENERAL

### MANUAL CORRECTION REQUESTS

Tektronix manual writers strive to produce concise, correct manuals. At the same time, these writers will be the first to admit that the perfect Service or Operation Manual is indeed a rarity.

None know what shortcomings lay in our publications better than the specialists who wrestle with products and their associated manuals in the real world. Feedback from these individuals is therefore vital to maintaining and improving our manual quality.

We of Service Support urge you to continue your part in maintaining Tek manuals. Use your Manual Correction Requests to communicate your "discoveries" with Manuals Maintenance (63-003 for IDD products and 76-165 for all others). Accompany your M.C.R.'s with copies of marked-up schematics, diagrams or pages of text.

Share your notes and corrections with Tek's publishing staff. Maybe the next specialist won't have to lose time rediscovering what you already know.

Thanks.

--George Kusiowski  
63-503, ext. 3928 (WI)

### SERVICE SUPPORT RELOCATION

The Beaverton Service Support will be moving on June 2, 1981 to Building 53-108 from 58-511. The following is a list of our new phone extensions.

Todd Paulus	8685
Patti Villareal	8686
Roy Lindley	8687
Mike Laurens	8688
John Eaton	8689
Lynn Sperley	8690
Dick Freshour	8691
Eileen Dickey	8692
Rich Kuhns	8693
Rich Andrusco	8694
Bill Bean	8695
Tom Fox	8697
Brenda Mohr	8698

Please bear with us as it will take us a few days to get settled in and operating normally. Thank you for your patience.

--Patti Villareal  
53-108, Ext. 8686

## SERVICE UPDATE PROGRAMS STATUS

Please use this article to update your lists of approved Service Update Programs.

Service Update Programs are driven by Service Support for implementing special product modifications which correct either of the following:

1. Safety Hazards
2. Performance Deviations

In the U.S., these programs are identified as Activity Code 18. All other modification categories are billable or covered by warranty, maintenance agreement, and rental. The key to determining if a program is free to the customers program is to look for the words "Service Update Program". Also look for kit part numebers 045 or 046. These are the only authorized kits for Service Update Programs. All Service Update Programs are authorized by Service Support management in conjunction with the appropriate business unit.

(Article and charts continued on the following pages)

Submitted by--  
Don Taylor  
U.S. Service Accounting



## IDD SERVICE UPDATE PROGRAMS

Dick Schilling  
x3931, 63-503

Service Update #	Product/Option	Description	Part Number of Kit	Status	Publication	Comments
102	4014, 15, 16, Opt 5	F/W update to V3.0 charged to Code 18	045-0014-00	Complete	Svc Update Plan 4/4/80	Completion Wizard to be published in this or next printing. Svc Up- date termination plan is being written. This was a mandatory update replaced by 040- 0990-00.
104	4663*	Fuse holder bracket replacement, potential safety problem charge to Code 18.	040-0932-00	Active	IOC - Steve Prunty - Jim Tiano 5/5/80	Mandatory Safety Update
110	4924*	Charge to Code 18 to make compatible with 4052	V1 to V4 050-0860-02 V2 to V4 050-0942-01 V3 to V4 050-0924-01	Active	4052 Svc Impact notice	To be performed as needed.
114	4081*	Mod to Floating Point processor charged to Code 18.	050-1218-00	Active	Wizard 1/25/80 Update Plan 1/16/80	All kits shipped waiting return of Floating Point pro- cessors.
1023	4663	Major Mod Interim level fix Phase I Final fix Phase II	046-0002-00	Active	Service Update Plan 8/27/80	Update of approxi- mately 300 4663 - Phase I of two phase program.

## IDD SERVICE UPDATE PROGRAMS

Dick Schilling  
x3931, 63-503

Revised 5/27/81

Service Update #	Product/Option	Description	Part Number of Kit	Status	Publication	Comments
1024	634	Performance & reliability update	045-0015-00	Active	Service Organization Bulletin 3/10/80	Mandatory-Wizard article was written. Termination date 10/17/81.
1025	4054	Placing electronic relay in power line circuit.	045-0017-00	Active	Svc Update Plan 12/10/80	Specification corrective action.
1026	4052 R09	Firmware update	045-0019-00	Active	Svc Update Plan 12/10/80	Fixes firmware "bugs" which causes unit to hang busy.

\* Note: this update program was under development before current 045/046 kit update program guidelines and therefore uses another type of parts kit.

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Wally Karstad  
x1285, 92-236

Service Update #	Product/Option	Description	Part Number of Kit	Status	Publication	Comments
2000	834R03	Firmware change	045-0018-00	Active	SOB 11/18/80	Kits available.
--	634	High Voltage Mode	--	--	--	Wilsonville
--	851	Ohm Mode	045-0003-00	Active	Wizard	To be closed Apr 82
2001	CG551AP	Firmware update	045-0020-00	Active	Service Update Plan 12/18/80 1/30/81	Kits available.
2003	834R02	Firmware Update	045-0022-00	Active	Wizard May 81	Kit to be available June 81.

June 5, 1981

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# SERVICE UPDATE PROGRAMS STATUS (CONTINUED)

Revised 5/27/81

## TEST & MEASUREMENT SERVICE UPDATE PROGRAMS

Todd Paulus  
x1493, 58-511

Service Update #	Product/Option	Description	Part Number of Kit	Status	Publication	Comments
--	7L18	Spot-of-Gold Connectors	Return to Beaverton	Active	SOB 10/6/80	Will be completed by AP305
--	5000/7000	Spot-of-Gold Connectors	175-xxxx-xx	Complete	Wizard 4/4/80	Terminates AP109
--	T900	Intermittent Vertical Attenuators	343-0564-00 343-0565-00	Complete	Wizard 12/17/80	Terminates 1/1/81
--	413	Power Supply	040-0961-00	Active	SOB 5/6/80 Wizard 6/13/80	Safety corrective action - run indefinitely.
--	C30B	X-sync wiring error	no parts	Active	SOB 5/6/80	Terminate 12/31/80
--	7904/R7903 7704A	CRT X-ray Mod	Multiple parts (See Wizard)	Active	SOB 8/4/78 Wizard 9/29/78	Safety corrective action - will run indefinitely.
--	221	Power Supply Insulation	045-0016-00	Active	SOB 5/30/80	Safety corrective action - will run indefinitely.
--	7D15	Socket rework	10 + sockets return to Beaverton	Complete	SOB 7/24/79	Terminates AP109
--	Model 3 Scoopcart	Waber Power Strip Replacement	Exchange - Beaverton	Active	IOC 6/18/80	Safety corrective action-will run indefinitely.
--	TV Instruments	Spot-of-Gold Socket Rework	Return to Beaverton	Active	SOB 11/1/79	Terminates AP204 Return via manufacturing Repair and Return Program.
--	7904/R7903 7704A	CRT x-Ray Mod	Multiple parts (See Wizard)	Active	SOB 8/4/78 Wizard 9/29/78	Safety corrective action-will run indefinitely.

TEST & MEASUREMENT  
SERVICE UPDATE PROGRAMS

Todd Paulus  
x1493, 58-511

Service Update #	Product/Option	Description	Part Number of Kit	Status	Publication	Comments
3001	1502/1503	Battery Pack Mod	040-0971-00	Active	IOC 12/17/80	Terminates June 30 1981.
3002	468	SCR Replacement	045-0023-00	Active	Wizard 4/10/81	Will run indefinitely.



## ADMINISTRATIVE SUPPORT

### REPORT DISTRIBUTION

For your convenience here is a list of correct mail stations to use when mailing forms and reports to Beaverton. Our mail room handles approximately half a million pieces of incoming and interplant mail per AP. Properly addressed mail is an important efficiency factor in the Beaverton operation.

- |   |            |
|---|------------|
| 1. Time Distribution Sheets (TDS)   | M/S 56-063 |
| 2. Service Information System Copies<br>of the Service Record                             | M/S 53-114 |
| 3. Module Exchange Packets Of The<br>On-Site Service Record                               |            |
| a. With Module For Exchange   | M/S 56-095 |
| b. If Repair Done In Field  | M/S 53-114 |
| 4. Component Failure Warranty<br>Information Copy of the Service<br>Record with Component | M/S 53-114 |
| 5. Job Number Reports   | M/S 56-037 |

--Bill Duerden  
56-037, Ext. 8938

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 3, 1863. It is a very important document, as it contains the President's message to Congress regarding the state of the Union and the progress of the war.

2. The second part of the document is a report from the Secretary of the War Department, dated January 10, 1863. It contains a detailed account of the military operations of the Army during the year 1862, and a statement of the condition of the Army at the beginning and end of the year.

3. The third part of the document is a report from the Secretary of the Navy Department, dated January 10, 1863. It contains a detailed account of the naval operations of the Navy during the year 1862, and a statement of the condition of the Navy at the beginning and end of the year.

4. The fourth part of the document is a report from the Secretary of the Department of the Interior, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

5. The fifth part of the document is a report from the Secretary of the Department of the Treasury, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

6. The sixth part of the document is a report from the Secretary of the Department of the State, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

7. The seventh part of the document is a report from the Secretary of the Department of the War, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

8. The eighth part of the document is a report from the Secretary of the Department of the Navy, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

9. The ninth part of the document is a report from the Secretary of the Department of the Interior, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

10. The tenth part of the document is a report from the Secretary of the Department of the Treasury, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

11. The eleventh part of the document is a report from the Secretary of the Department of the State, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

12. The twelfth part of the document is a report from the Secretary of the Department of the War, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

13. The thirteenth part of the document is a report from the Secretary of the Department of the Navy, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

14. The fourteenth part of the document is a report from the Secretary of the Department of the Interior, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.

15. The fifteenth part of the document is a report from the Secretary of the Department of the Treasury, dated January 10, 1863. It contains a detailed account of the operations of the Department during the year 1862, and a statement of the condition of the Department at the beginning and end of the year.



## LABORATORY INSTRUMENT DIVISION

TM500

### CG551AP OPTION 01 FIELD INSTALLATION

The standard CG551AP can be retrofitted to an Option 01 by ordering the 5MHz Precision Time Base, Part Number 119-1187-00, and installing it in the top rear corner of the A4 Time Mark Board. No other circuit modification is necessary. The Automatic Reference Select circuitry detects the Option 01 Time Base.

Thanks to Erik Rutten of EMC for informing us this information is not readily available.

--Terry Turner  
92-236, Ext. 1288

### 5000 SERIES

### 5223, GPIB CONVERSION KIT AND RETROFIT MAINTENANCE NOTES

Reference: MSR 1101-52  
040-0946-00 Product Modification Kit

The GPIB conversion for the 5223 is a Service Center installable kit which up-grades a standard 5223, bench or rackmount, to an Option 10, with IEEE-488 interface. The P/N for this kit is 040-0996-00.

When installing the Option 10 040 Kit in standard instruments, there is a step that isn't clearly explained in the procedure. On Step 36 of the procedure, it tells you how to route the cables between the Digitizer and Interface circuit boards. In some cases you will find that P23 and P24 cables are too short to be connected. To cure this you can pull sufficient cable out of the bundle to make proper connection, as there is plenty of extra length at the other end.

--John Eaton  
58/511, Ext. 1237

## 7000 SERIES

### 7704A, 7854, R7903 AND 7904 FIELD REPLACEMENT CRT'S

When CRT's are shipped for replacements, they will no longer include the termination resistors. If the instrument you are replacing the CRT in does not have 182 ohm termination resistors, the following appropriate resistor should be ordered:

7704A = 307-0292-00

7854 = 307-0292-15

R7903 = 307-0292-03

7904 = 307-0292-03

--Dick Freshour  
58/511, Ext. 1238

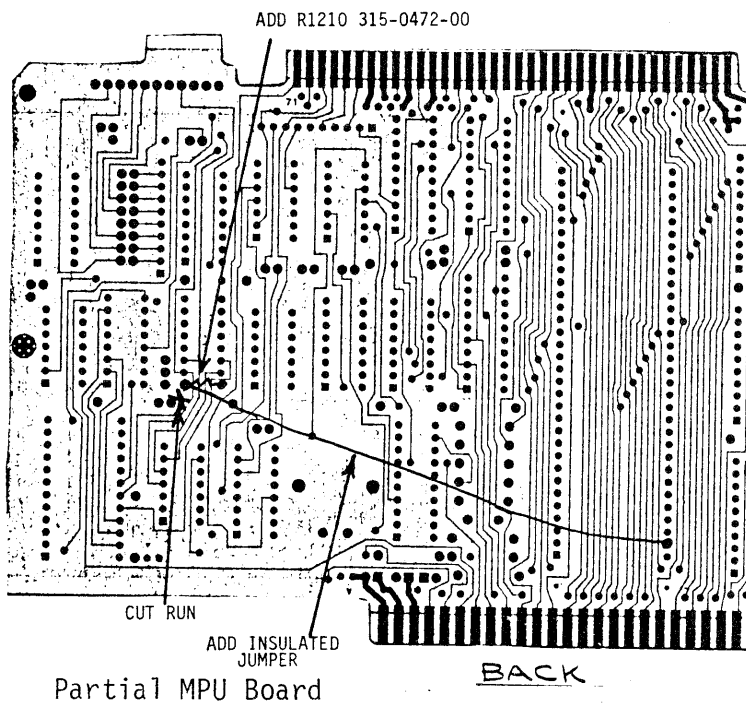
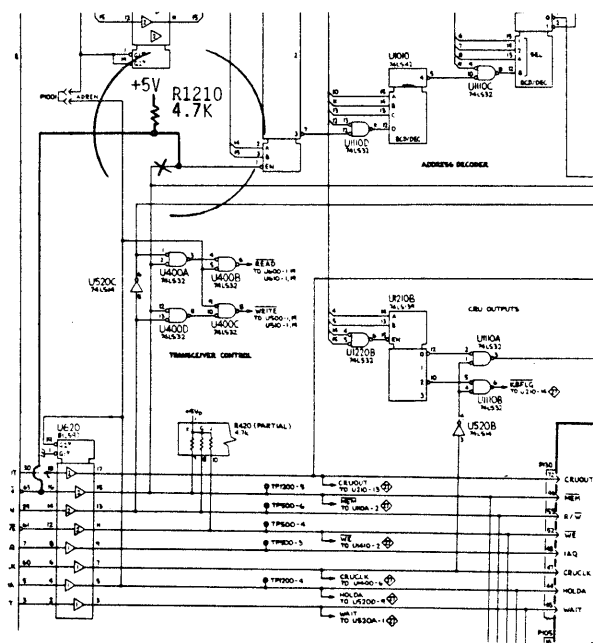
## 7854, POSSIBLE CONTINUOUS ACQUIRE

Reference: 7854 Instruction Manual P/N 070-2874-01

### 28 Microprocessor and Control Corporate Mod #M43319

There is a possibility that when single or multiple acquires are requested, the instrument may not stop acquiring. To cure this cut the run going to the enable line of U1210A. Add R1210, a pull-up resistor, P/N 315-0472-00, as per the following drawings.

DIAGRAM 28 Microprocessor and Control - Partial



--John Eaton  
58/511, Ext. 1237



## COMMUNICATIONS DIVISION

### SPECTRUM ANALYZERS

#### HIGH PERFORMANCE WAVEGUIDE MIXERS - SUPPORT

The FDI Business Unit is in the process of converting all Waveguide Mixers from nine digit part numbers (i.e. 016-XXXX-XX) to product numbers (i.e. WMXXXX). The productizing of these mixers creates some support problems because they are not field repairable.

The following list indicates the current part numbered mixers affected and the new nomenclature.

<u>FREQUENCY RANGE</u>	<u>OLD</u>	<u>NEW</u>
18 to 26.5GHz	016-0631-01	WM 490 K
26.5 to 40.0GHz	016-0632-01	WM 490 A
40 to 60GHz	016-0634-01	WM 490 U
60 to 90GHz		WM 490 E
90 to 140GHz		WM 490 F
* 18 to 40GHz set	016-0662-00	WM 490-2
* 18 to 60GHz set	016-0657-00	WM 490-3
* 18 to 90 GHz set		WM 490-4
* 18 to 140GHz set		WM 490-5

\*Each set includes a mahogany case (004-1651-00) and a coaxial connecting cable with SMA fitting (012-0649-00).

At present the nine digit part numbers are set up on the Repair/Return program. As soon as these mixers are shipped with the new designations the existing nine digit part numbers will be deleted in Customer Service but they will remain listed under the Repair/Return program in the SQI. This will assure support of existing mixers already in the field. The mixers shipped with the new WMXXXX designation will not be listed under the Repair/Return program since they are now products. To support them I have requested that all support documentation, i.e. Data Sheets, Operators Manuals, etc. to note the following:

#### "FOR SERVICE"

SHIP TO: Tektronix, Inc.  
P. O. Box 500  
Beaverton, Oregon 97077

ATTN: Factory Service

(Article continued on the following page)

HIGH PERFORMANCE WAVEGUIDE MIXERS - SUPPORT(CONTINUED)

When Factory Service receives these mixers they will be internally handled just like the nine digit part numbers under Repair/Return. None of the Waveguide Mixers will be offered a maintenance contract.

CAUTION: *The new "WMXXXX" designation makes these Waveguide Mixer Assys. PRODUCTS and they are serialized. ANY MIXER ASSY. BEING RETURNED FOR SERVICE MUST NEVER BE EXCHANGED. The repaired mixer must have the same serial number as the mixer which was sent in by the customer.*

--Rich Andrusco  
58-511, Ext. 1241

492/492P SERVICE MANUAL VOLUME #2--MANUAL CHANGE INFORMATION TO OFFSET MIXER AREA

Reference: Corporate Mod #M41234 & M42109  
492/492P Service Manual #2, P/N 070-2852-02

492 EFF SN B010740-up  
492P EFF SN B011036-up

REPLACEABLE ELECTRICAL PARTS AND SCHEMATIC DIAGRAM CHANGES

CHANGE TO:

A50A2	670-5520-01	CKT BOARD ASSY:STROBE DRIVER
A50A2C1032	-----	SELECTED
A50-2-2105	-----	SELECTED

The above parts are located on the A50A2 STROBE DRIVER circuit board assembly and shown on the CONTROLLED OSCILLATOR, OFFSET MIXER & STROBE DRIVER diagram 42.

CHANGE TO:

A50A3	670-5522-01	CKT BOARD ASSY:OFFSET MIXER
-------	-------------	-----------------------------

ADD:

A50A3C1022	283-0203-00	CAP.,FXD, CER DI:0.47UF,20%,50V
A50A3Q2021	151-0434-00	TRANSISTOR:SILICON,PNP
A50A3R1022	315-0510-00	RES.,FXD,CMPSN:510 OHM,5%,0.25W
A50A3R1023	315-0101-00	RES.,FXD,CMPSN:100 OHM,5%,0.25W
A50A3R2026	315-0102-00	RES.,FXD,CMPSN:1K OHM,5%,0.25W

The above parts are located on the A50A3 OFFSET MIXER circuit board assembly and shown on the CONTROLLED OSCILLATOR, OFFSET MIXER & STROBE DRIVER diagram 42.

CHANGE TO:

A50A4	670-5521-02	CKT BOARD ASSY:ERROR AMPLIFIER
A50A4R1037	315-0510-00	RES.,FXD,CMPSN:51 OHM,5%,0.25W

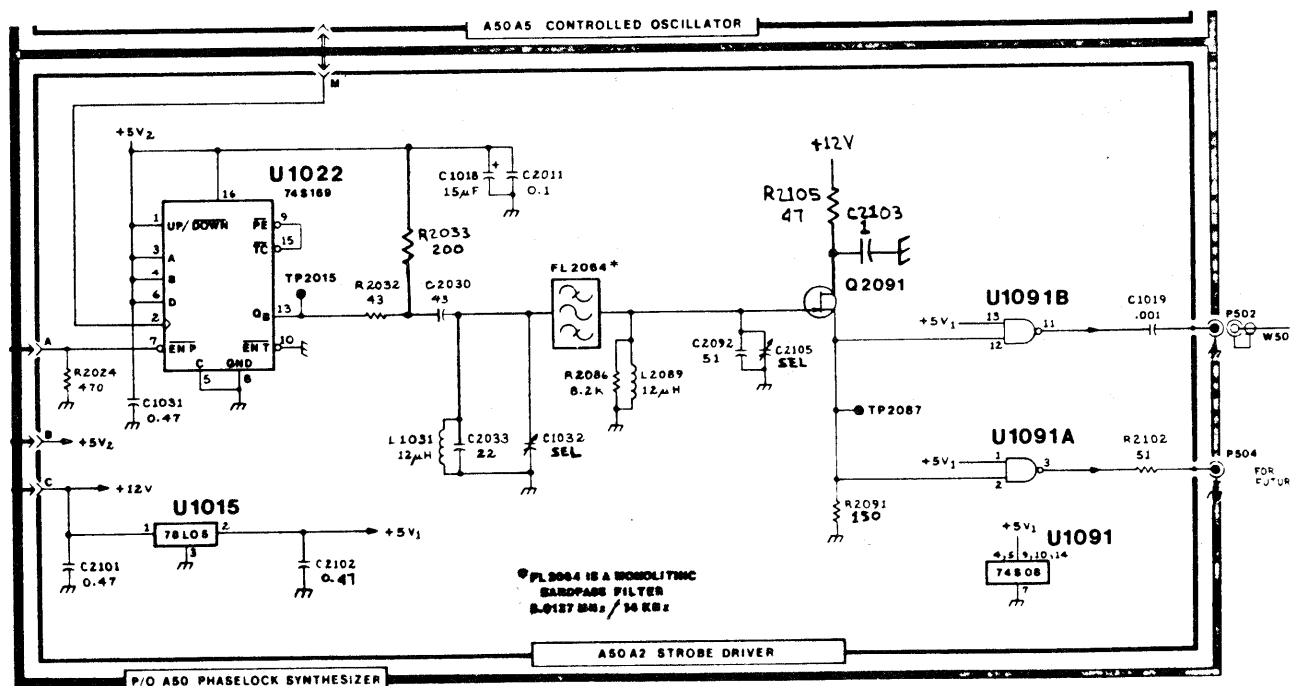
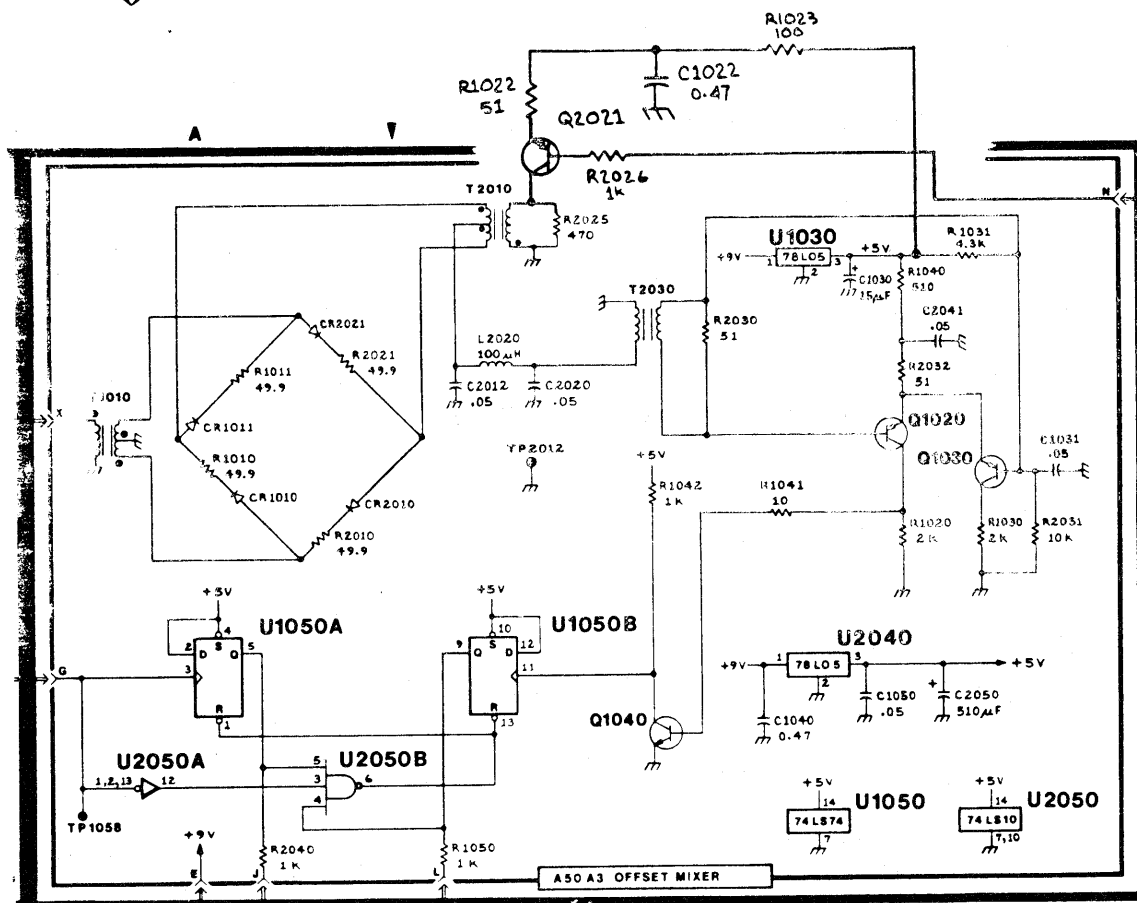
REMOVE:

A50A4C1055	283-0177-00	CAP.,FXD,CER DI:1UF,+80-20%,25V
A50A4C1067	283-0204-00	CAP.,FXD,CER DI:0.01UF,20%,50V
A50A4C3016	283-0032-00	CAP.,FXD,CER DI:470PF,5%,500V
A50A4L1045	108-0598-00	COIL,RF:200UH
A50A4Q2058	151-0391-00	TRANSISTOR:SILICON,PNP
A50A4R1052	315-0513-00	RES.,FXD,CMPSN:51K OHM,5%,0.25W

(Article continued on the following page)

A50A4C3010	283-0203-00	CAP.,FXD,CER DI:180PF,5%,500V
A50A4R1035	315-0101-00	RES.,FXD,CMPSN:100 OHM,5%,0.25W
A50A4R3010	315-0100-00	RES.,FXD,CMPSN:10 OHM,5%,0.25W
A50A4R3060	301-0100-00	RES.,FXD,CMPSN:10 OHM,5%,0.50W
A50A4W1050	131-0566-00	BUS CONDUCTOR:DUMMY RES,2.375,22 AWG

DIAGRAM 42 CONTROLLED OSCILLATOR, OFFSET MIXER & STROBE DRIVER - Partial

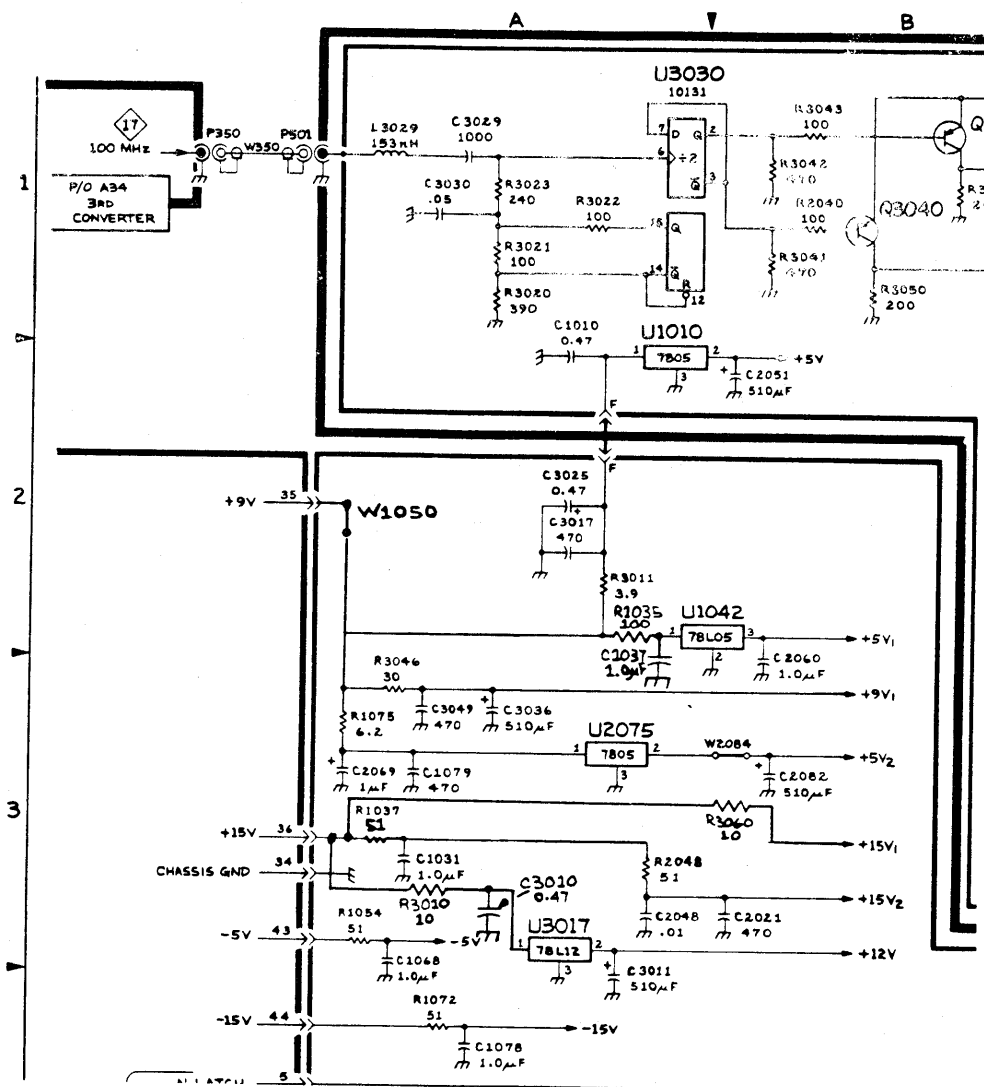


FL 2004 IS A MONOLITHIC  
SANDPAPER FILTER  
2.0127 MM. / 50 KM.

## CONTROLLED OSCILLATOR, OFFSET MIXER & STROBE DRIVE



DIAGRAM 41 ERROR AMPLIFIER AND SYNTHESIZER - Partial



--Rich Kuhns  
58/511, Ext. 6782

## TELEVISION PRODUCTS

### TDC PLL CIRCUIT FAILURE MODE

A failure mode exists in the single channel TDC's. A fault in the Phase Lock Loop of the Local Oscillator will cause the Local Oscillator output frequency to "search" back and forth over several megahertz range. This can be misinterpreted when utilizing the 067-0886-XX type of test modulators for the RF source. Due to a tendency of the modulator's RF OUT signal and the demodulator's in-band received signal to oscillate or "search" in apparent synchronism the real problem is masked. This searching effect is best detected by observing the LO OUT of the TDC with a spectrum analyzer.

Thanks to Jim Zook in TV Engineering for this hint.

--Bill Bean  
58-511, Ext. 1498

### 528A TRANSFORMER SCREWS

It has been determined that for space reasons, two different lengths of screws are necessary for mounting the power transformer. The two new screws are P/N 212-0576-00 and go in transformer holes closest to the rear of the instrument.

--Bill Bean  
58/511, Ext. 1498

### 528 OPTION 3 MAIN CIRCUIT BOARD ASSEMBLY

In the past, when a Main Circuit Board was needed for replacement in the 528 Option 3, a 670-0588-06 was ordered and subsequently moded for Option 3 requirements.

A part number for the 528 Option 3 has been established to correct this oversight. The new number is 670-0588-10.

--Bill Bean  
58/511, Ext. 1498

#### 1410 LINE FILTER

A random sampling of subject line filters (119-0813-00) has found that in every part in the sampling, the voltage selector boards were very hard to remove. In most cases, damage to the board was noted. Please check stock and purge and reorder as necessary. 1411 also uses the same part.

--Bill Bean  
58/511, Ext. 1498

#### 1420 HV OSCILLATOR

If intermittent HV Oscillator operation is reported and everything seems to check good when operating, a possible place to look for a problem is Q430 (151-0140-00). If this transistor has a lower than normal beta ( $<40$  in this circuit), it may or may not start on its own.

Thanks to Tom Doak in Philadelphia for this one.

--Bill Bean  
58/511, Ext. 1498



SERVICE INSTRUMENT DIVISION

PORTABLES

2335, 2336 MAINTENANCE INFORMATION

SQI Information:

	<u>Quote</u>	<u>Clean</u>	<u>Cal Hours</u>
2335	.75	.75	2.50
2336	.75	.75	2.75

Manual P/N's:

2335 - 070-4116-00  
2336 - 070-4118-00

Pilot change information not yet in the manual. Pilot changes have been made on all instruments starting with B010100.

PC 47 Window frames added to front panel push buttons  
P/N 426-1072-00

PC 52 R80 P/N 315-0470-00, 47 $\Omega$ , 5%, added in series with  
C80 to ground on the A13/A23 board.

PC 53 Added, two springs, P/N 214-0536-01, one under each  
handle securing screw. Added, five ground clips,  
P/N 131-2770-00, to the lid assembly.

Cabinet Removal:

Unlike most portables, which have all the cabinet securing screws on the rear of the instrument, the 2335/2336 have the addition of six Phillips-head screws on the rim band around the front panel. These screws must be loosened in order for the cabinet to come off correctly.

Q156 Bent Over:

Q156 is located on the rear of the vertical out/H.V. power supply board (A15). If the scope is tip'd on it's side and leaned back on the rear corner, there is the possibility of bending Q156 and eliminating the H.V. shut down/over voltage protection circuit.

--Mike Laurens  
58/511, Ext. 1499



INFORMATION DISPLAY DIVISION

4016/GMA125 CRT RETURNS

CRT Product Assurance is receiving a large number of 4016/GMA125 CRTs, P/N's 154-0807-01 and 154-0808-01, packed in their boxes with the faceplate pointing up. This results in broken electron guns and severely bent shields due to transportation and handling. The boxes were designed to have the CRT faceplate packed pointing down.

In order to perform failure analysis it is necessary to have unbroken faceplates. Please pack these CRTs with the faceplate pointing down and help reduce the 50% breakage factor.

Information supplied by--  
Vern Isaac  
CRT Product Assurance

4611/4612 COPY BELT RELIABILITY

CRT Product Assurance has assumed responsibility for reliability testing and field failure analysis of the copy belt "thorn belt" used in the 4611 and 4612 copier (P/N 214-2830-01).

When belts are replaced, please return defective ones to:

Vern Isaac  
46-234

Be sure to include a failure copy of the Service Record with the belt. In other words, these should be processed using the same procedure you would use for a defective CRT.

Information supplied by--  
Vern Isaac  
CRT Product Assurance

#### 4611/12 NIB BOUNCE CORRECTION

The original illustration accompanying the May 8, 1981 Wizards Workshop article "4611/12 Nib Bounce" did not copy correctly. The printing process failed to show a column of skips evident on the original.

An exaggerated illustration depicting nib bounce is shown below.



--George Kusiowski  
63/503, ext. 3928 (WI)

#### 463X: ADHESIVE FOR LIGHT SEALS

Although numerous adhesives can (and have) been used to secure the 463X cassette holder light seals in place, only one is recommended. A 5 oz. tube of this adhesive is orderable under p/n 006-0367-01.

Besides securing the light seal on the hardcopy cassette holders, this adhesive may also be used to attach panels to subpanels, or cement metal plate labels in place.

--George Kusiowski  
63-503 EXT. 3928 (WI)



## LABORATORY INSTRUMENT DIVISION

### MICROCOMPUTER DEVELOPMENT PRODUCTS (MDP)

#### B-PHASE MICROLAB AND PERSONALITY CARD COMPATIBILITY

There are two B-Phase Personality cards that are not directly replaced by the production models.

The production 3870 Personality Card has a major hardware change from the B-Phase model. The software operating system, on floppy disc, for the 3870 personality card has also been changed. The production software will not function with the B-Phase personality card and the B-Phase software will not function with the production personality card.

The 8085 Personality Card has a major firmware change from the B-Phase model. We would advise replacing the two EPROMs with the current version. The current EPROM part numbers are 160-0224-00 and 160-0225-00.

All the B-Phase personality cards will function in the production Microlab. However, not all the production personality cards will function properly in the B-Phase Microlab. At this time only the Z80 personality card will not function properly with the B-Phase Microlab. The self-test and processor test features will not function properly with the B-Phase Microlab. The production Microlab supports break-points in hardware that are not implemented in the B-Phase model. Therefore, tests that depend on break-points for proper operation will not function in the B-Phase Microlab. Microlab personality cards produced for new emulators will utilize the break-point hardware and therefore, will not function properly in the B-Phase Microlab.

We will take this opportunity to state the support policy for the B-Phase Microlabs:

"B-Phase Microlab units will not be supported or maintained by the Business Unit, by Customer Service, or by Service Support under any circumstances."

--Kevin King, Brad Griffin  
92-236, Ext. 1636, 1608

92-515

MICHAEL A MIHALIK  
COMBINATION WIZARD