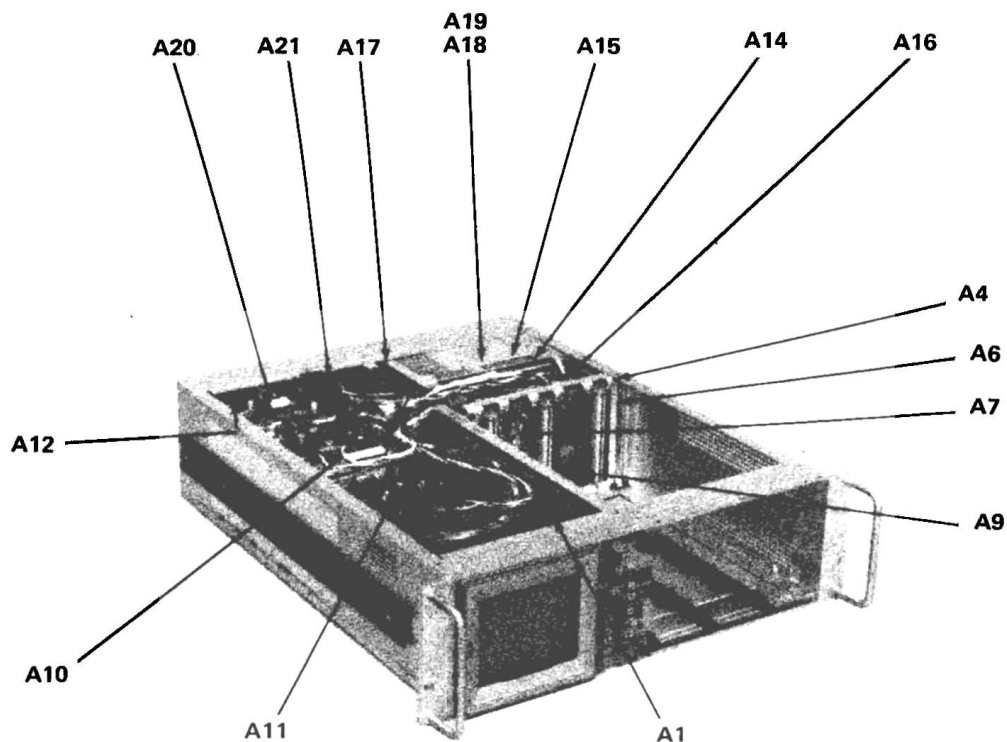
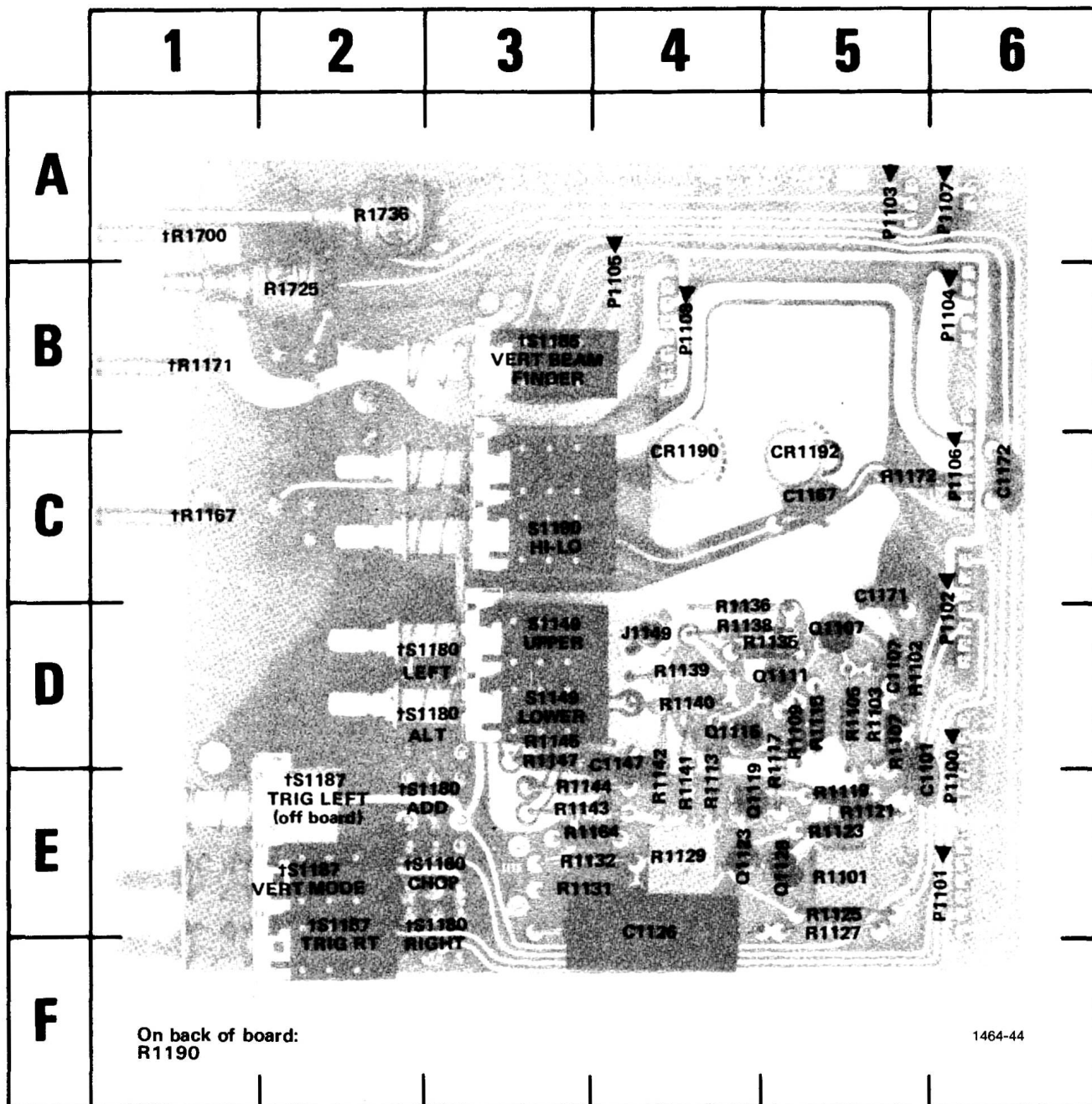


### STANDARD R7903

A1	FRONT PANEL Circuit Board	A13	OUTPUT SIGNALS Circuit Board
A2	FRONT PANEL Circuit Board	A14	LINE INVERTER Circuit Board
A4	MAIN INTERFACE Circuit Board	A15	CAP. RECTIFIER Circuit Board
A6	LOGIC Circuit Board	A16	POST REGULATOR Circuit Board
A7	TRIGGER SELECTOR Circuit Board	A17	FAN MOTOR Circuit Board
A9	VERTICAL INTERFACE Circuit Board	A18	HIGH VOLTAGE Circuit Board
A10	VERTICAL AMP. Circuit Board	A19	AUTO FOCUS Circuit Board
A11	HORIZONTAL AMP. Circuit Board	A20	Z AXIS Circuit Board
A12	OUTPUT SIGNALS Circuit Board	A21	READOUT Circuit Board



### OPTION 10 R7903



†Furnished as a unit.

**A1 Front Panel circuit board (Standard).**

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C1101	5E	P1100	6D	Q1107	5D	R1109	5D	R1135	4D	R1167	1C
C1107	5D	P1101	6E	Q1111	5D	R1113	4E	R1136	4D	R1171	1B
C1126	4E	P1102	6D	Q1115	4D	R1115	5D	R1138	4D	R1172	5C
C1147	4D	P1103	5A	Q1119	4E	R1117	5D	R1139	4D	R1700	1A
C1167	5C	P1104	6B	Q1123	4E	R1119	5E	R1140	4D	R1725	2A
C1171	5C	P1105	4B	Q1128	5E	R1121	5E	R1141	4E	R1736	2A
C1172	6C	P1106	6C			R1123	5E	R1142	4E		
		P1107	6A	R1101	5E	R1125	5E	R1143	3E	S1149	3D
CR1190	4C	P1108	4B	R1102	5D	R1127	5E	R1144	3E	S1180	2D-E
CR1192	5C			R1103	5D	R1129	4E	R1145	3D	S1185	3B
				R1105	5D	R1131	3E	R1147	3D	S1187	2E
J1149	4D			R1107	5D	R1132	3E	R1164	3E	S1190	3C



## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

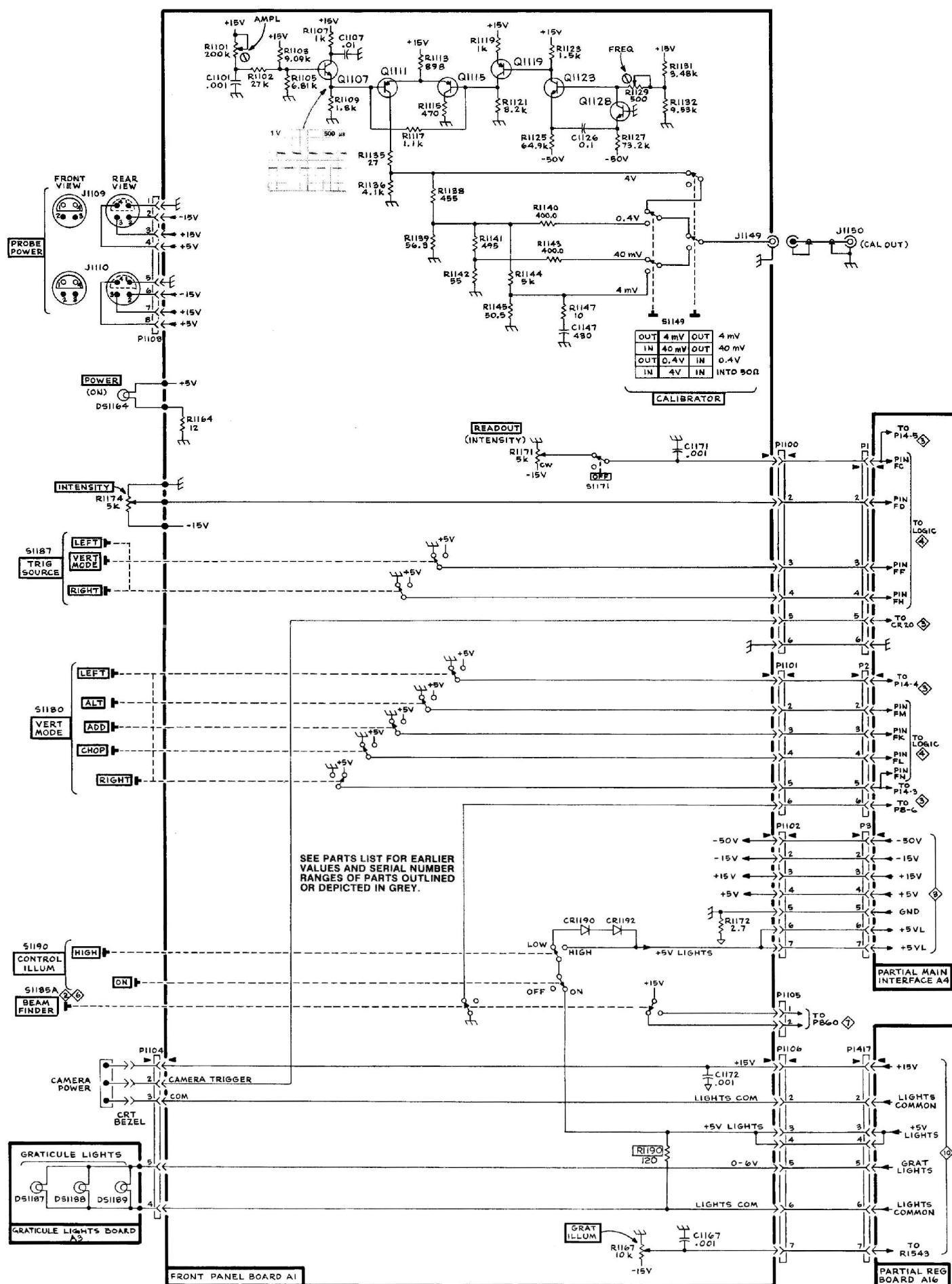
### Waveforms

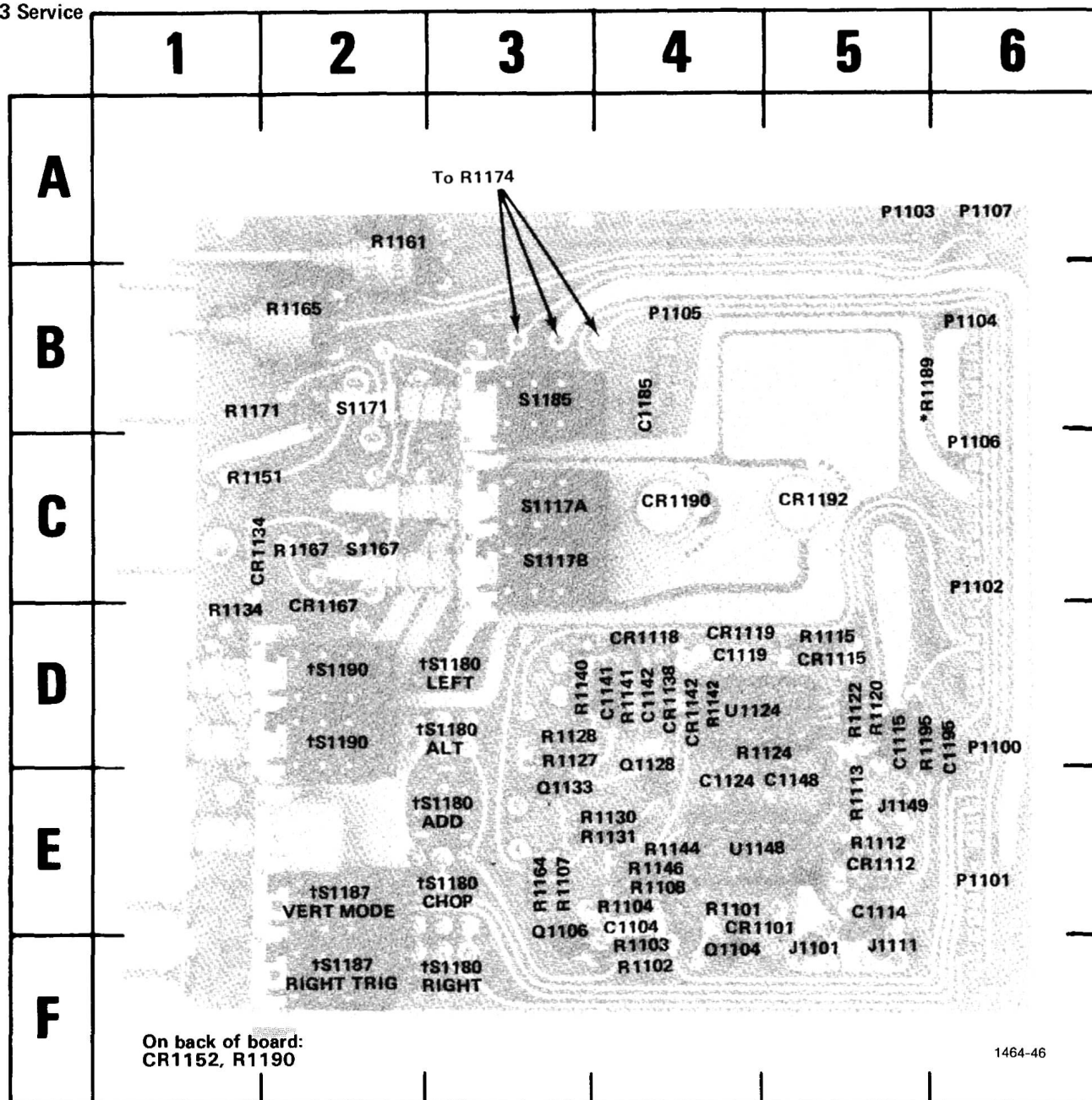
Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.





†Furnished as a unit.

\*See Parts List for  
serial number ranges.

A2 Front Panel Circuit board (Option 10).

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C1104	4E	CR1118	4D	P1101	6E	R1101	4E	R1128	3D	R1195	5D
C1114	5E	CR1119	4D	P1102	6C	R1102	4F	R1130	4E	S1117A	3C
C1115	5D	CR1134	1C	P1103	5A	R1103	4F	R1131	4E	S1117B	3C
C1119	4D	CR1138	4D	P1104	6B	R1104	4E	R1134	1D	S1167	2C
C1124	4E	CR1142	4D	P1105	4B	R1107	3E	R1140	3D	S1171	2B
C1141	4D	CR1167	2D	P1106	6C	R1108	4E	R1141	4D	S1180	3D-F
C1142	4D	CR1190	4C	P1107	6A	R1111	5E	R1142	4D	S1185	3B
C1148	5E	CR1192	5C			R1112	5E	R1144	4E	S1187	2E-F
C1185	4B			Q1104	4F	R1113	5E	R1146	4E	S1190	2D
C1195	6D	J1101	5F	Q1106	3E	R1115	5D	R1151	2C		
		J1111	5F	Q1128	4D	R1120	5D	R1164	3E	U1124	4D
CR1101	4E	J1149	5E	Q1133	3E	R1122	5D	R1167	2C	U1148	4E
CR1112	5E					R1124	5D	R1171	1B		
CR1115	5D	P1100	6D			R1127	3D	R1189	6B		

## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

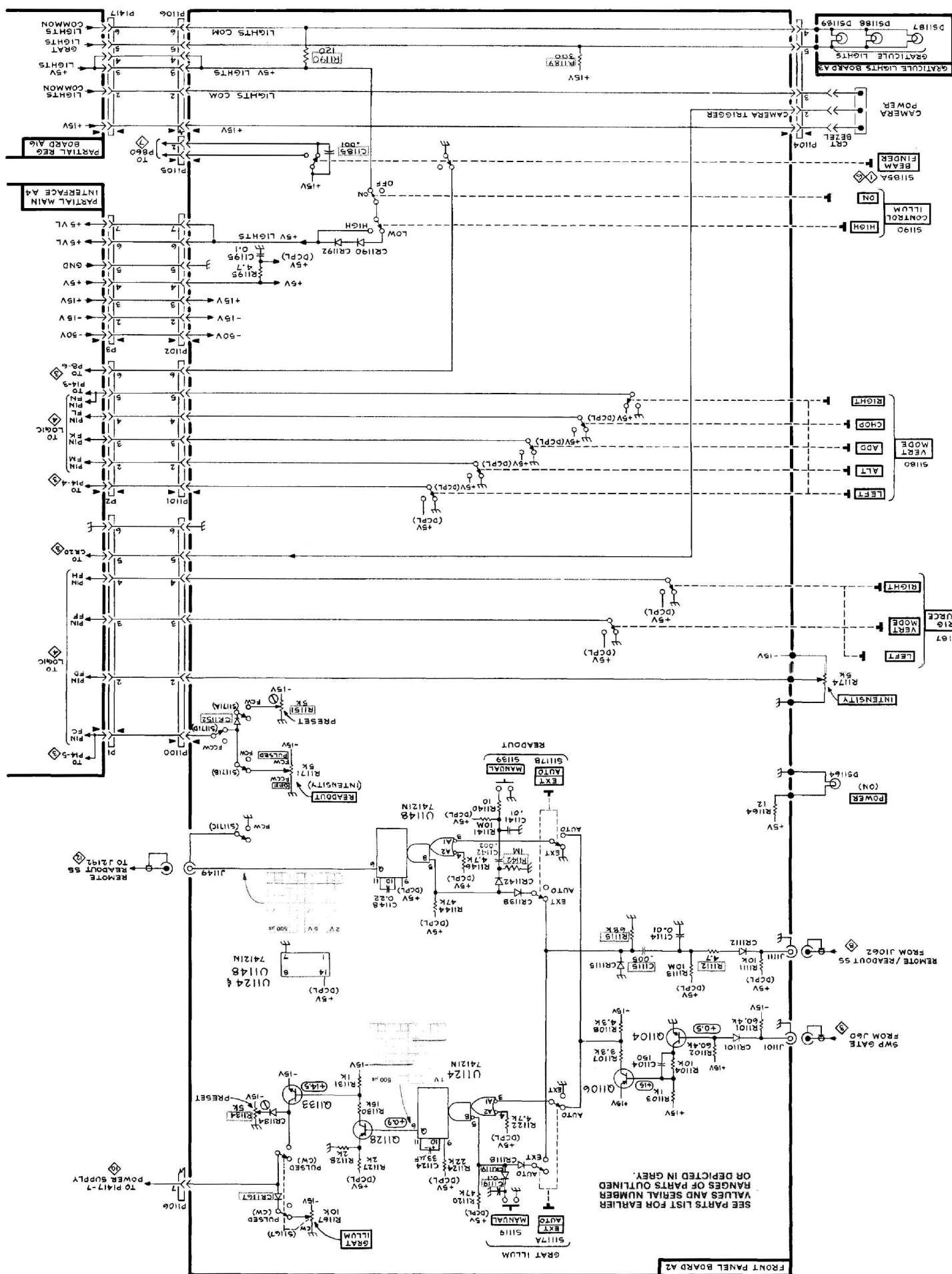
### Waveforms

Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

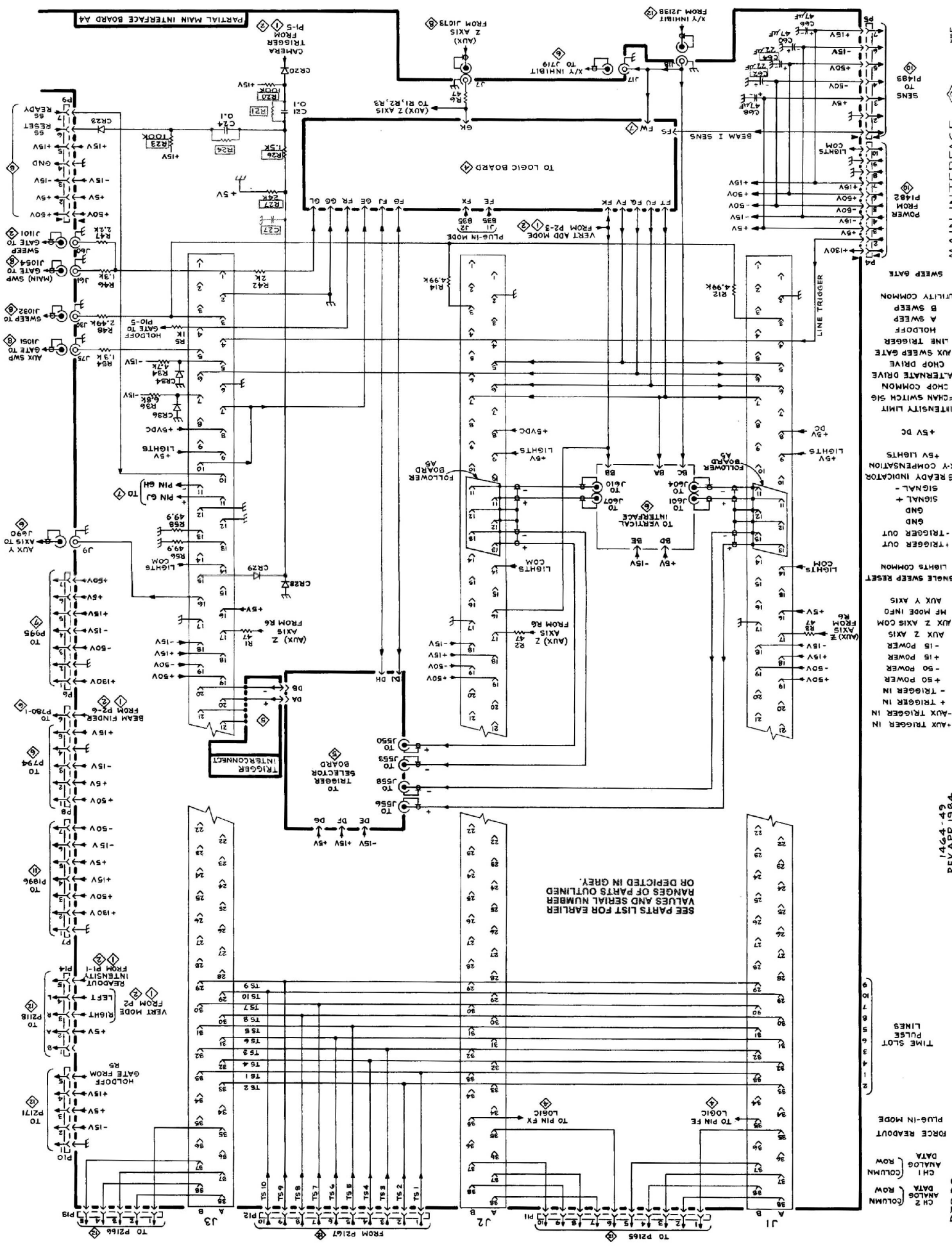
Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.



**A4 Main Interface circuit board.**

REV. D MAR 1978





SEE PARTS LIST FOR EARLIER  
VALUES AND SERIAL NUMBER  
OR DEPICTED IN GREY.



## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response    DC to 75 MHz Deflection factor       5 mV to 5 V/Div Input impedance        1 M $\Omega$ 20 pF Sweep rate               500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance       10 M $\Omega$ Range                    0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

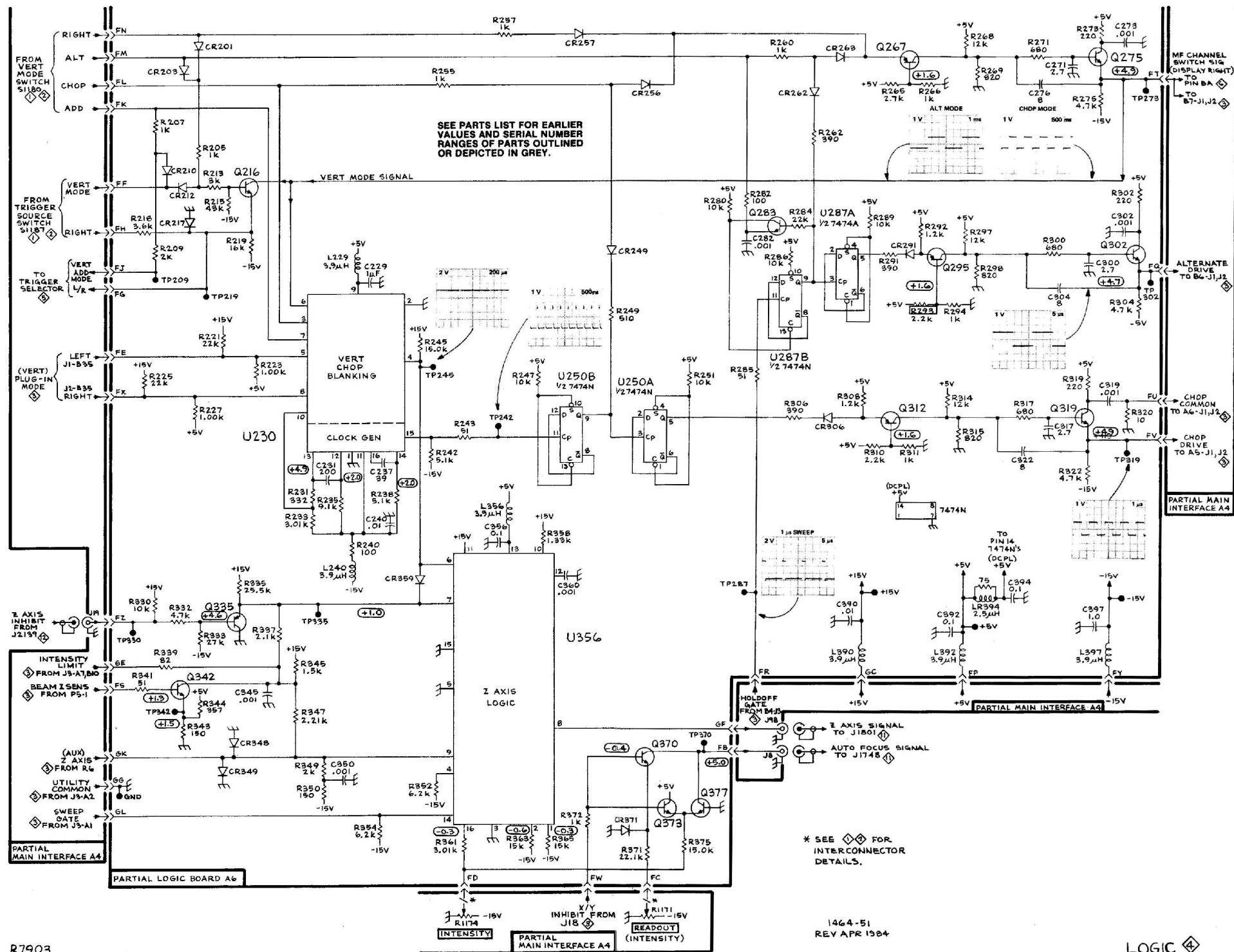
### Waveforms

Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.



	1	2	3	4	5	6
A						

**A7 Trigger Selector circuit board, SN B181040-above.**

C5511  
C5531  
C5540  
C5569  
R5540

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C5516	2B	L5565	4B	R5514	3B	R5548	4B	R5583	3D
C5536	2C	L5567	5C	R5515	2A	R5552	4C	R5584	4D
C5553	3C			R5516	2B	R5553	3C	R5586	5C
C5563	5B	LR5502	3B	R5520	2B	R5554	4C	R5587	5C
C5567	5C	LR5505	3B	R5522	2C	R5558	4B	R5588	5C
C5580	3D	LR5522	2C	R5524	5B	R5559	4B	R5590	5D
C5588	5C	LR5525	2C	R5525	2C	R5561	5C	R5595	2A
C5590	5D			R5526	2C	R5563	5B	R5597	1B
		Q5569	4B	R5527	2C	R5565	4B	R5598	2D
CR5520	2B	Q5577	5C	R5528	3C	R5566	4C		
CR5569	4A			R5530	3C	R5567	4C	U5502	5B
CR5572	4B	R5501	3A	R5531	3B	R5568	4A	U5510	3B
CR5582	4D	R5502	2A	R5532	3C	R5569	5B	U5530	3C
		R5504	5B	R5533	2C	R5570	5A	U5550	4B
E5579	4C	R5505	2A	R5534	3C	R5573	4A		
		R5506	2B	R5535	2C	R5574	5B	VR5563	5B
J5512	1B	R5507	2B	R5536	2C	R5575	5A	VR5565	5B
J5516	1A	R5508	3B	R5538	3C	R5576	5B	VR5566	5C
J5530	1C	R5510	2B	R5539	3B	R5578	5C		
J5534	1C	R5512	2B	R5546	3B	R5580	4C	W5584	4C
J5590	5C	R5513	2B	R5547	3B	R5582	4C		

	1	2	3	4	5	6
A						

**Located on back of board:  
R5568**

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C5516	3B	LR5522	2C	R5524	5A	R5558	4B	R5595	2A
C5536	2C	LR5525	2C	R5525	2D	R5559	4B	R5597	2B
C5553	6C			R5526	2C	R5561	5C	R5598	3D
C5563	4C	Q5569	5B	R5527	2C	R5563	6C		
C5567	5B	Q5579	5C	R5528	3C	R5565	4B	U5502	4B
C5580	4C			R5530	3C	R5566	4C	U5510	3B
C5588	6C	R5501	4B	R5532	3C	R5567	5B	U5530	3C
C5590	6C	R5502	2B	R5533	2C	R5569	5A	U5550	4C
		R5504	5A	R5534	3C	R5570	5B		
CR5520	2C	R5505	2A	R5535	2C	R5574	5B	VR5563	5B
CR5572	5B	R5506	2B	R5536	2C	R5575	5B	VR5565	5B
CR5574	6C	R5507	2B	R5538	3C	R5576	5C	VR5566	5C
CR5584	4D	R5508	3B	R5539	3C	R5578	5C		
		R5510	2B	R5541	3A	R5580	4C		
J5590	5C	R5512	2B	R5542	3B	R5582	4C		
		R5513	2B	R5544	4C	R5583	4D		
L5565	5B	R5514	3B	R5545	4B	R5584	4C		
L5567	5C	R5515	2B	R5547	3C	R5586	5C		
		R5516	2B	R5552	4C	R5587	5C		
LR5502	3B	R5520	2D	R5553	4C	R5588	5D		
LR5505	3B	R5522	2C	R5554	4C	R5590	5C		





## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

### Waveforms

Waveforms shown on this diagram were obtained under the following conditions:

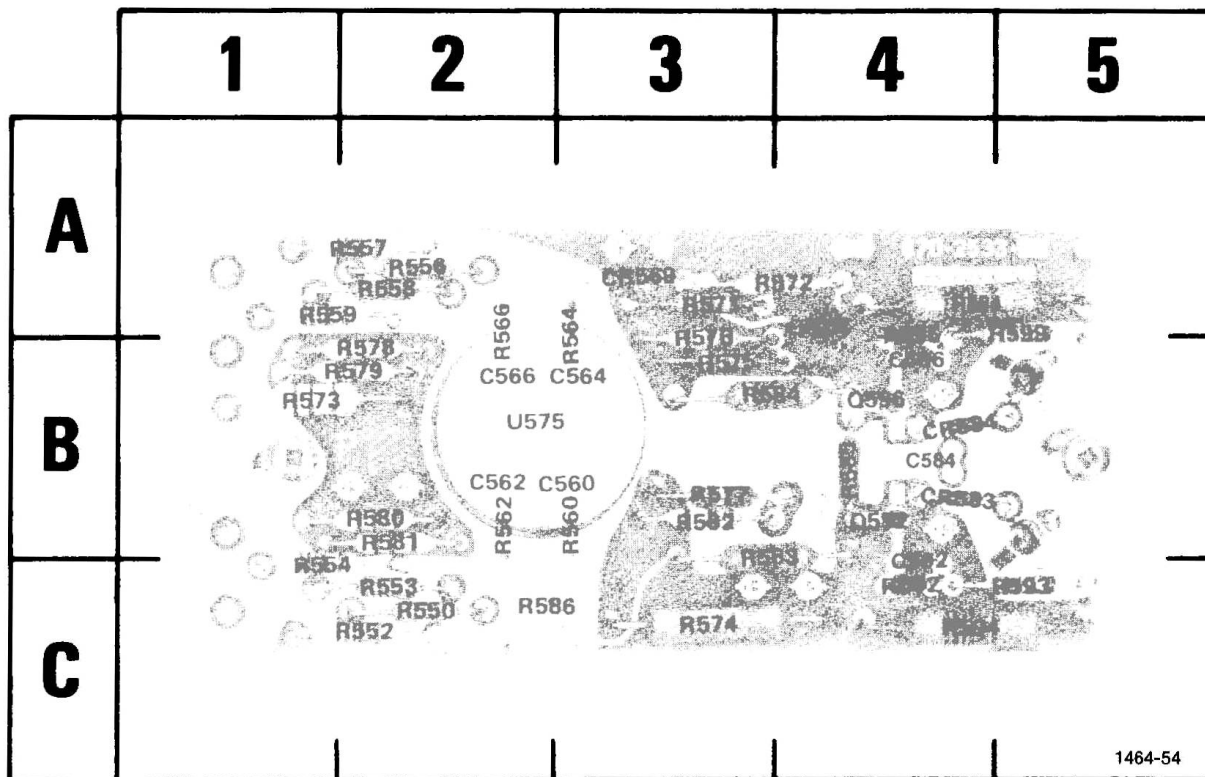
**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.



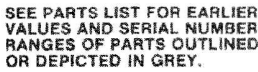
R7903 Service

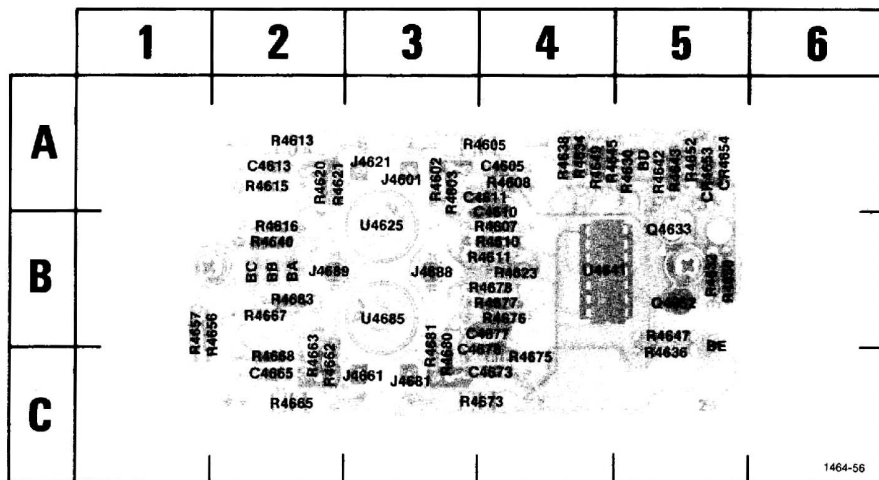


A7 Trigger Selector circuit board, SN B130524 - below.

REV JUN 1986

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C560	3B	R556	2A	R583	3C
C562	2B	R557	2A	R584	4B
C564	3B	R558	2A	R585	4B
C566	2B	R559	1A	R586	2C
C584	4B	R560	3B	R592	4C
C592	4C	R562	2B	R593	5C
C596	4B	R564	3A	R594	4C
		R566	2A	R596	4A
CR569	3A	R571	3A	R599	5A
CR583	4B	R572	8A		
CR584	4B	R573	1B	U575	2B
		R574	3C		
Q571	4A	R575	3B		
Q592	4B	R576	3A		
Q596	4B	R577	3B		
		R578	2B		
R550	2C	R579	2B		
R552	2C	R580	2B		
R553	2C	R581	2B		
R554	1C	R582	3B		





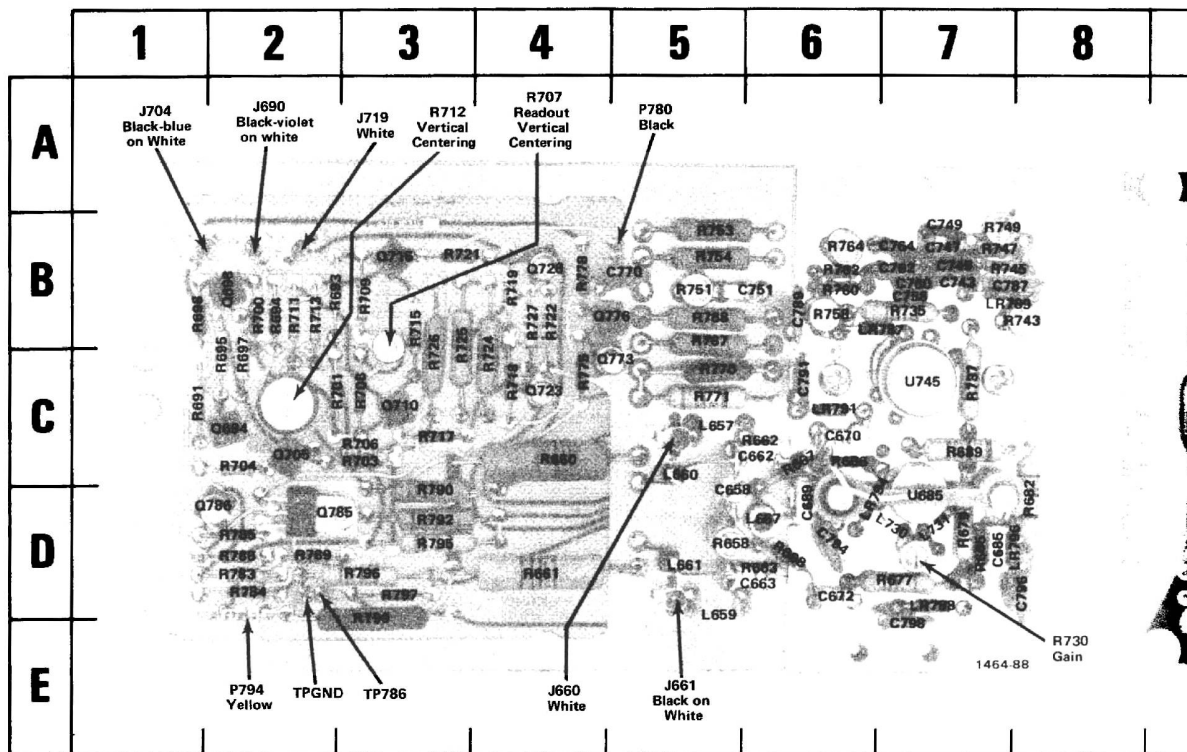
REV. E MAR 1978

**A9 Vertical Interface circuit board, SN B120000—above.**

**Located on back of board.**

L4621	R4625
L4601	R4685
L4661	R4687
L4681	R4689
R4627	R4669

CKT	GRID	CKT	GRID	CKT	GRID
NO	LOC	NO	LOC	NO	LOC
C4605	4A	R4607	4B	R4662	2C
C4610	4A	R4607	4B	R4663	2C
C4611	4A	R4610	4B	R4665	2C
C4613	2A	R4611	4B	R4667	2B
C4665	2C	R4613	2A	R4668	2C
C4673	4C	R4615	2A	R4673	4C
C4677	4B	R4616	2B	R4675	4C
C4678	4C	R4620	2A	R4676	4B
		R4621	2A	R4677	4B
CR4653	5A	R4623	4B	R4678	4B
CR4654	5A	R4630	5A	R4680	3B
		R4632	5B	R4681	3B
J4601	3A	R4634	4A	R4683	2B
J4602	3A	R4636	5C		
J4661	3C	R4638	4A	U4625	3B
J4681	3C	R4640	2B	U4641	4B
J4688	3B	R4642	5A	U4685	3B
J4689	2B	R4643	5A		
		R4645	4A		
Q4633	5B	R4547	5B		
Q4652	5B	R4649	4A		
		R4650	5B		
R4602	3A	R4652	5A		
R4603	3A	R4656	1B		
R4605	4A	R4657	1B		



**A10 Vertical Amplifier circuit board (front view) — SN B180000 — above.**

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C657	13C	C762	7B	LR791	6C	R663	6D	R709	3B	R751	
C658	5D	C764	7B	LR794	6D	R667	6C	R711	2B	R753	
C659	13B	C770	5B	LR796	7E	R668	6D	R712	3A	R754	
C662	6C	C787	7B	LR798	7D	R676	14B	R713	2B	R756	
C663	6D	C789	6B			R677	7D	R715	3B	R758	
C670	6C	C791	6C	P780	5A	R679	7D	R717	3C	R760	
C672	6D	C794	6D	P794	2E	R680	15C	R718	4C	R762	
C675	14B	C796	7E			R682	7E	R719	4B	R764	
C676	14B	C798	7D			R684	14B	R721	3B	R767	
C680	15C			Q694	2C	R685	7D	R722	4B	R768	
C681	14C	J660	4E	Q698	2B	R686	6C	R724	4C	R770	
C685	7D	J661	5E	Q705	2C	R688	14C	R725	3B	R771	
C689	6D	J690	2A	Q710	3C	R689	7C	R726	3B	R775	
C733	14C	J704	1A	Q716	3B	R691	1C	R727	4B	R778	
C734	14C	J719	3A	Q723	4C	R693	2B	R730	7E	R783	
C738	15C			Q728	4B	R694	2B	R732	14B	R784	
C739	14C	L657	5C	Q773	5C	R695	2C	R733	14B	R785	
C743	14C	L659	5D	Q776	5B	R697	2C	R734	14D	R786	
C738	15C	L660	5C	Q785	2D	R698	1B	R735	7B	R789	
C743	7B	L661	5D	Q786	2D	R700	2B	R737	7C	R790	
C745	7B	L667	6D			R701	2C	R738	15C	R792	
C747	7B	L730	7D	R657	13C	R703	3C	R741	14D	R795	
C749	7B	L731	7D	R658	5D	R704	2C	R743	7B	R796	
C751	6B			R659	13B	R706	3C	R745	7B	R797	
C758	7B	LR787	7B	R660	4C	R707	4A	R747	7B	R799	
C760	7B	LR789	7B	R661	4D	R708	3C	R749	7B		
				R662	6C						



## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

### Waveforms

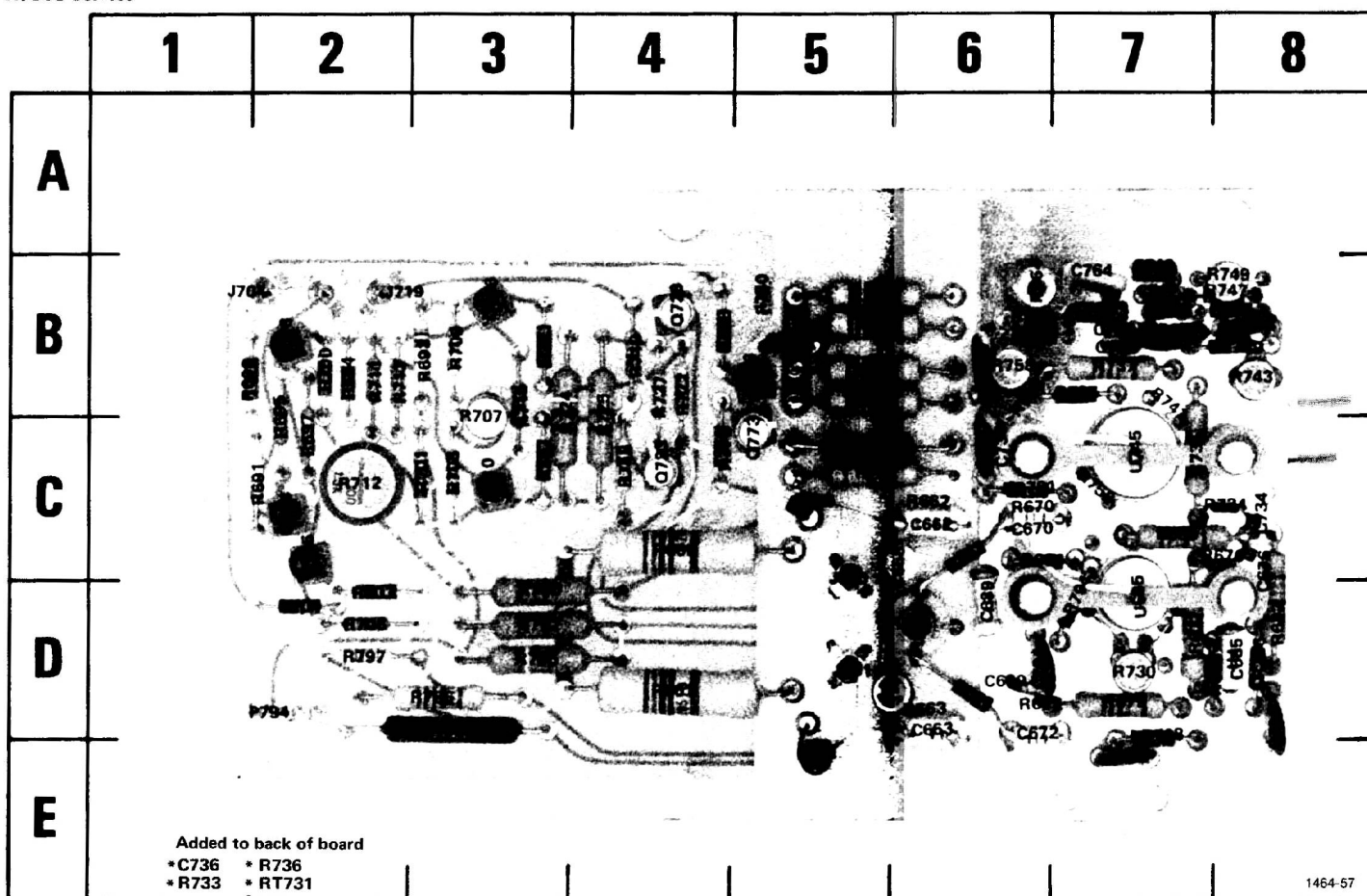
Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.





\*See Parts List for  
 serial number ranges.

A10 Vertical Amplifier circuit board (SN B120000 - B179999).

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C658	6C	C764	7B	LR789	8B	R658	6D	R695	2C	R721	3B	R762	6B
C662	6C	C770	5B	LR791	6C	R660	4C	R697	2C	R722	4B	R764	6B
C663	6D	C787	8B	LR794	7D	R661	4D	R698	1B	R724	3B	R767	5B
C670	6C	C789	6B	LR796	8D	R662	6C	R700	2B	R725	4B	R768	5B
C672	6D	C791	6C	LR798	7D	R663	6D	R701	3C	R727	4B	R770	5C
C676	8C	C794	6D			R667	6C	R703	2D	R730	7D	R771	5C
C680	6D	C796	8D	P780	5B	R668	6D	R704	2D	R734	8C	R775	4C
C685	8D	C798	7E	P794		R670	6C	R706	2D	R735	7C	R778	4B
C689	6D					R672	6D	R707	3B	R737	7B	R787	7B
C734	8C	J660	5C	Q694	2C	R676	8C	R708	3C	R738	6B	R790	3D
C738	6C	J661	5D	Q698	2B	R677	7D	R709	3B	R741	7B	R792	3D
C743	7B	J704	1B	Q705	2C	R679	7D	R711	2B	R745	8B	R795	3D
C745	7B	J719	2B	Q710	3C	R682	8D	R712	2C	R747	8B	R796	3D
C747	7B			Q716	3B	R685	8D	R713	2B	R749	8B	R797	2D
C749	7B	L660	5C	Q723	4C	R686	6C	R715	3B	R753	5B	R799	3D
C758	7B	L661	5E	Q728	4B	R689	7C	R717	3C	R754	5B		
C760	7B	L667	6D	Q773	5C	R691	2C	R718	4C	R756	7C	U685	7D
C762	7B			Q776	5B	R693	3B	R719	4B	R758	6B	U745	7C
						R694	2B			R760	6B		

## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

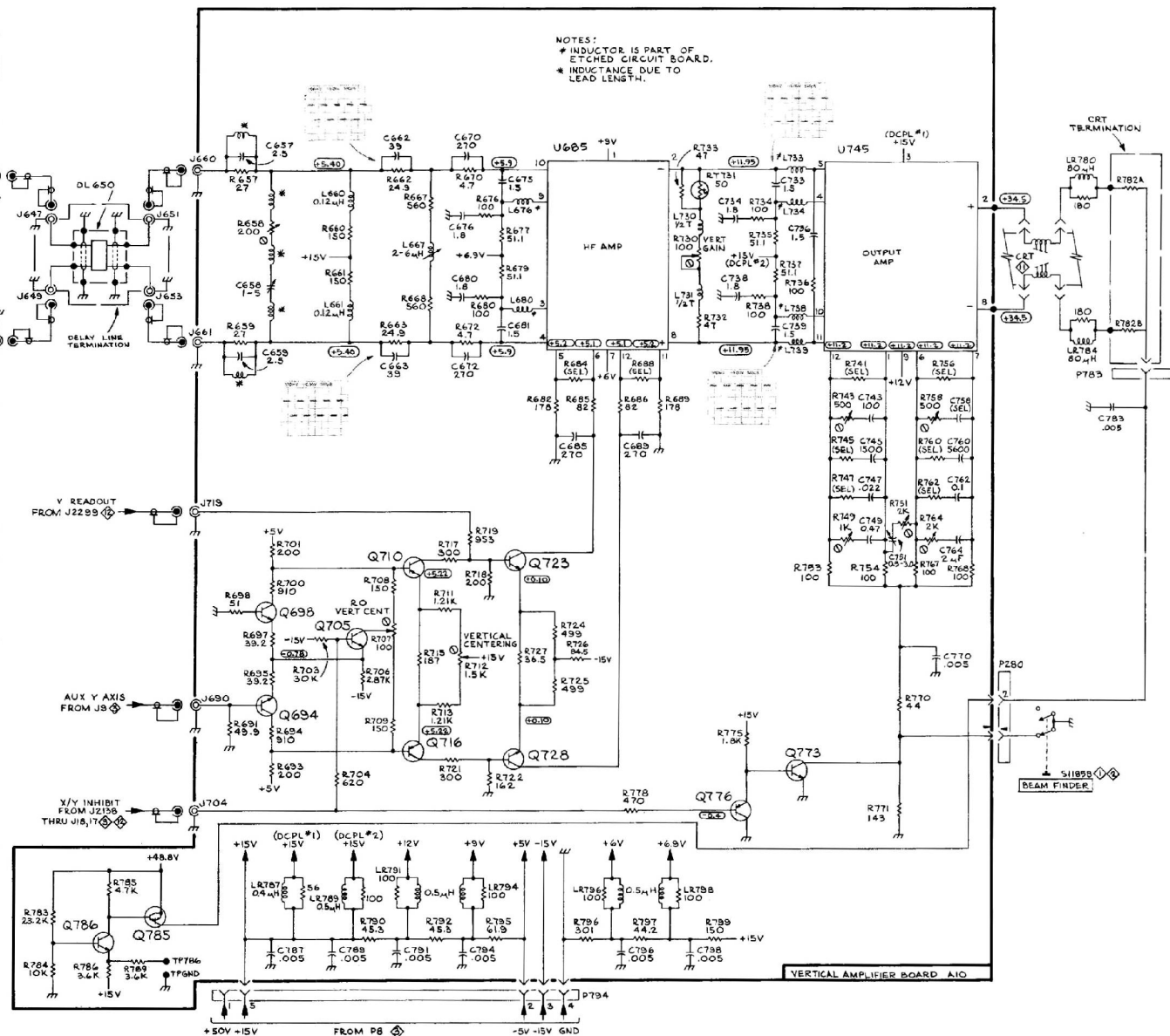
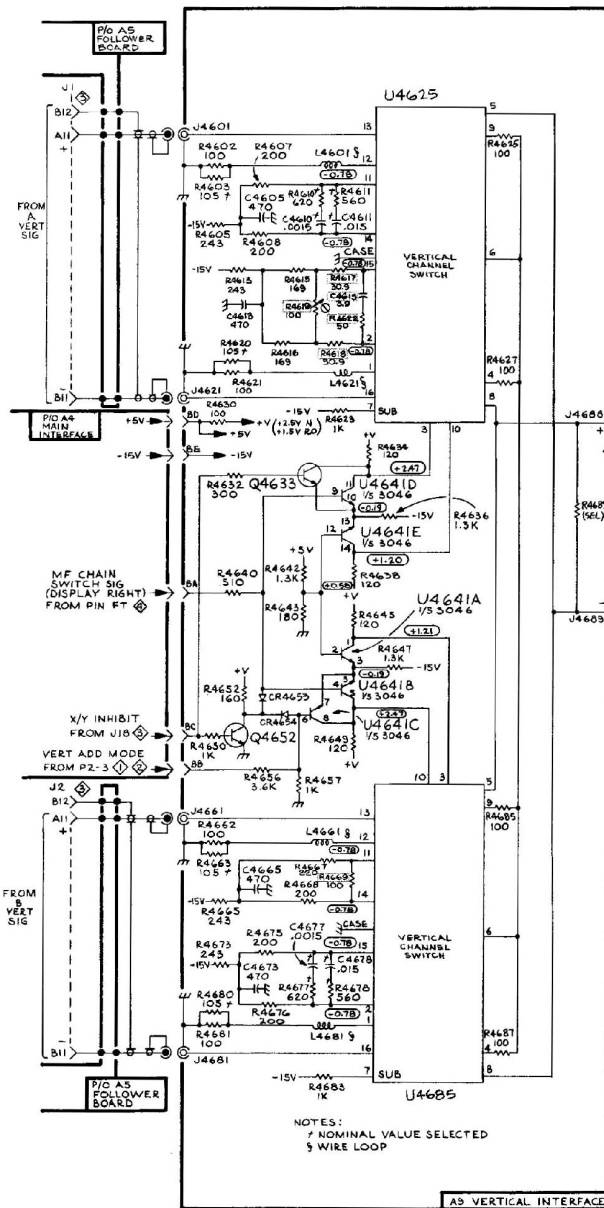
### Waveforms

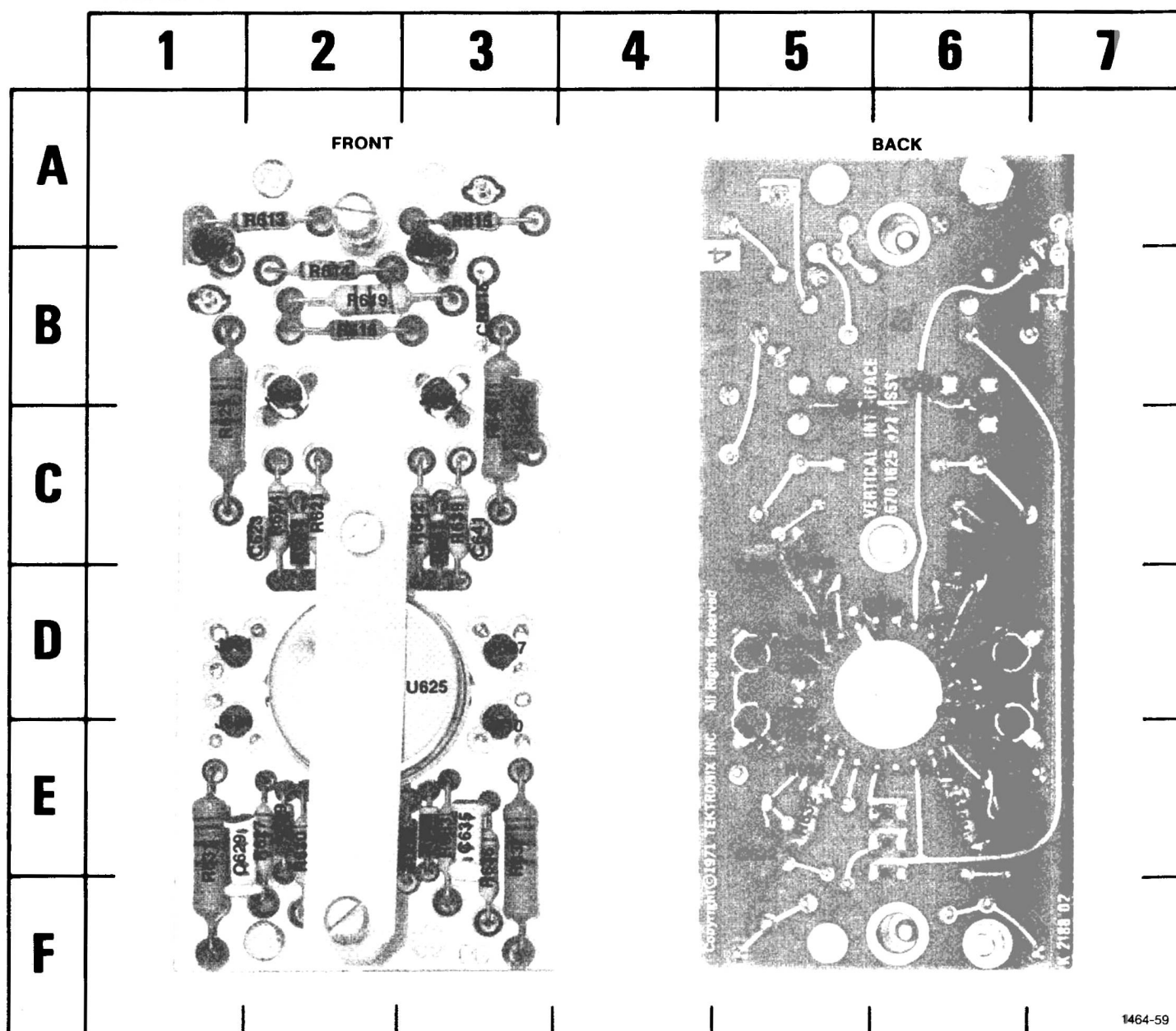
Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.





1464-59

A9 Vertical Interface circuit board, SN B119999 and below.

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C603	6D	CR615	3B	R605	6E	R622	6D	R636	3E
C606	6D			R606	6E	R623	2C	R637	3E
C609	5D	J601	1D	R608	5D	R624	2C	R638	5C
C612	5D	J604	1D	R609	5D	R625	1C	R639	3C
C620	6C	J607	3D	R611	5E	R626	6E	R640	5D
C623	2C	J610	3D	R612	5E	R627	2E	R641	3C
C626	6E	J643	2B	R613	2A	R628	6E	R642	3C
C629	1E	J645	3B	R614	2B	R629	2E	R643	3C
C632	5E			R615	3A	R630	2E	R644	5C
C635	3E	Q616	3B	R616	2B	R631	1E	R646	6D
C638	5D	Q617	1B	R618	3E	R632	5E		
C641	3C			R619	2B	R633	3E	U625	3D
C644	6B	R602	6D	R620	6C	R634	5E		
C645	3C	R603	6D	R621	2C	R635	3E		



## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

- Set front panel controls (knob type) to mid-range.
- Set VERT MODE for LEFT.
- Set TRIG SOURCE for VERT MODE.
- No plug-in units are installed.
- Voltmeter common is connected to chassis ground.

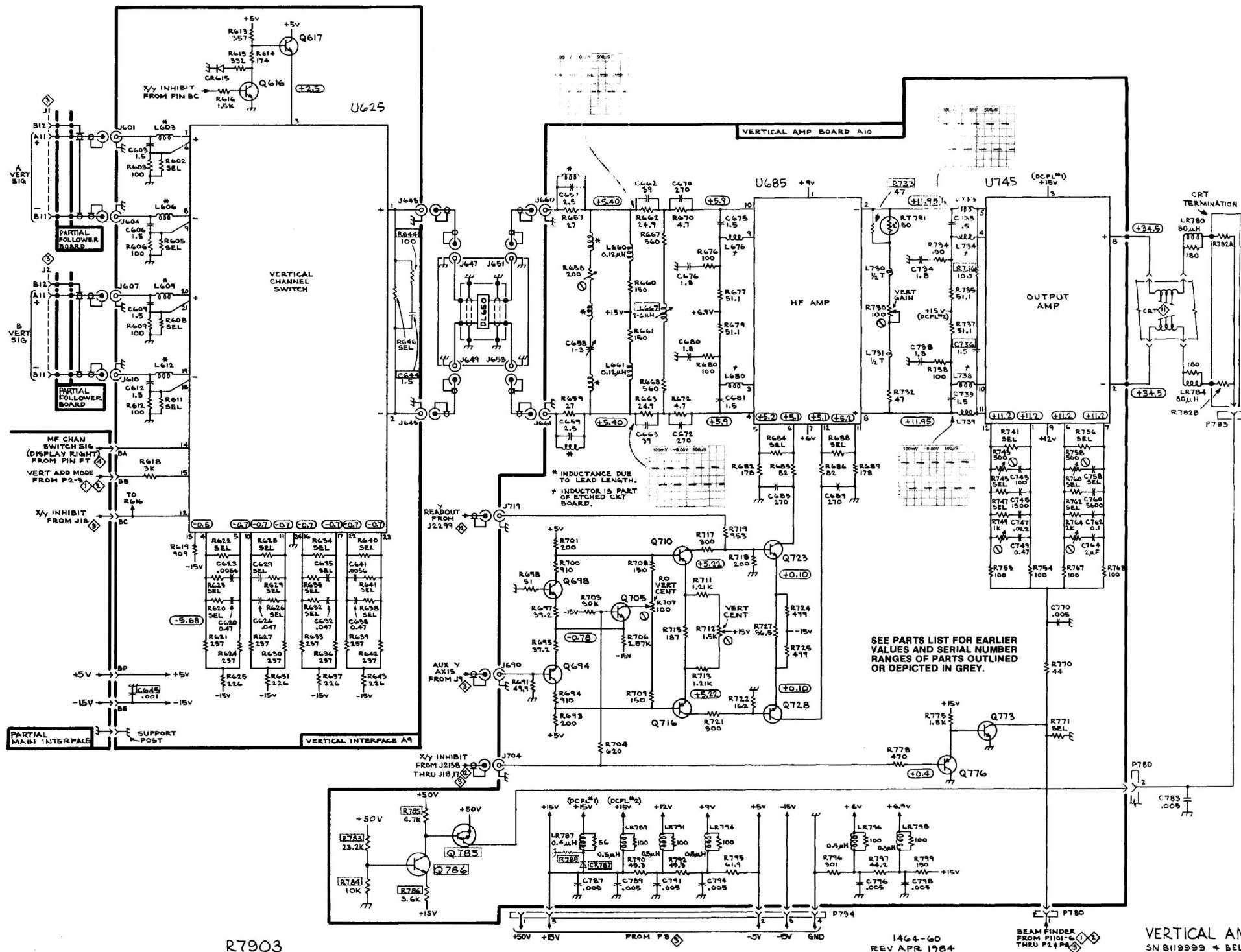
### Waveforms

Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.

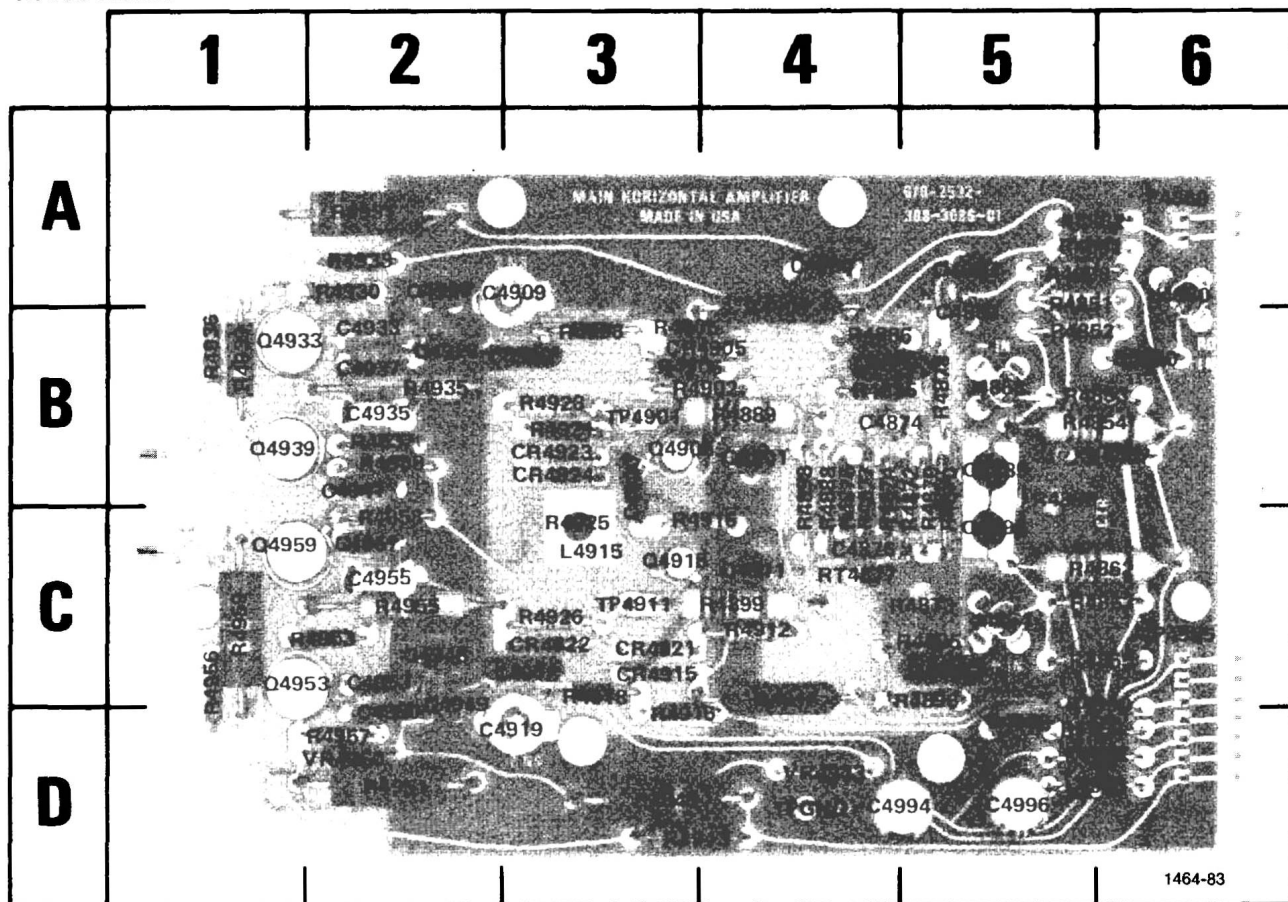


R7903

1464-60  
REV APR 1984

VERTICAL AMPLIFIER  
SN 8119999 & BELOW

# R7903 Service



A11 Horizontal Amplifier circuit board (SN B150000 - above).

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C4874	4B	C4994	5D	P4860	6A	R4850	6A	R4882	5A	R4921	3B	R4958	2C
C4876	4C	C4996	5D	P4995	6D	R4851	5A	R4883	5A	R4923	3B	R4959	1C
C4882	5B	C4997	6C			R4852	5B	R4885	4B	R4925	3C	R4990	5D
C4886	4B			Q4883	5A	R4853	6B	R4886	4B	R4926	3C	R4992	5D
C4896	5C	CR4905	3B	Q4885	5B	R4854	6B	R4888	4B	R4930	2A		
C4908	3B	CR4915	3C	Q4895	5C	R4862	5C	R4889	4B	R4931	2A	RT4877	4C
C4909	3A	CR4921	3C	Q4901	4B	R4863	5C	R4896	5C	R4933	2A		
C4918	3C	CR4922	3C	Q4905	3B	R4865	5C	R4898	4B	R4935	2B	TP4901	3B
C4919	3D	CR4923	3C	Q4911	4C	R4867	6B	R4899	4C	R4936	1B	TP4911	3C
C4920	3B	CR4924	3B	Q4915	3C	R4868	5B	R4902	3B	R4937	2B	TPGND	4D
C4933	2B			Q4928	2B	R4870	5B	R4904	4A	R4938	2B		
C4937	2B	J4850	6A	Q4929	2A	R4872	5B	R4905	3B	R4939	1B	VR4943	4D
C4941	2B	J4853	5B	Q4933	1B	R4873	5C	R4906	3B	R4943	3D	VR4950	2D
C4950	2D	J4854	5C	Q4939	1B	R4874	4B	R4908	3B	R4949	3D		
C4953	2C			Q4948	2C	R4876	4B	R4912	4C	R4951	2D		
C4955	2C	L4915	3C	Q4949	2C	R4877	4B	R4914	4C	R4853	2C		
C4957	2C	L4994	5D	Q4953	1C	R4878	5B	R4915	3D	R4955	2C		
C4990	4A			Q4959	1C	R4879	5B	R4916	4C	R4956	1C		
C4992	5D					R4881	5A	R4918	3C	R4957	2D		

## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response    DC to 75 MHz Deflection factor       5 mV to 5 V/Div Input impedance        1 M $\Omega$ 20 pF Sweep rate               500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance       10 M $\Omega$ Range                    0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

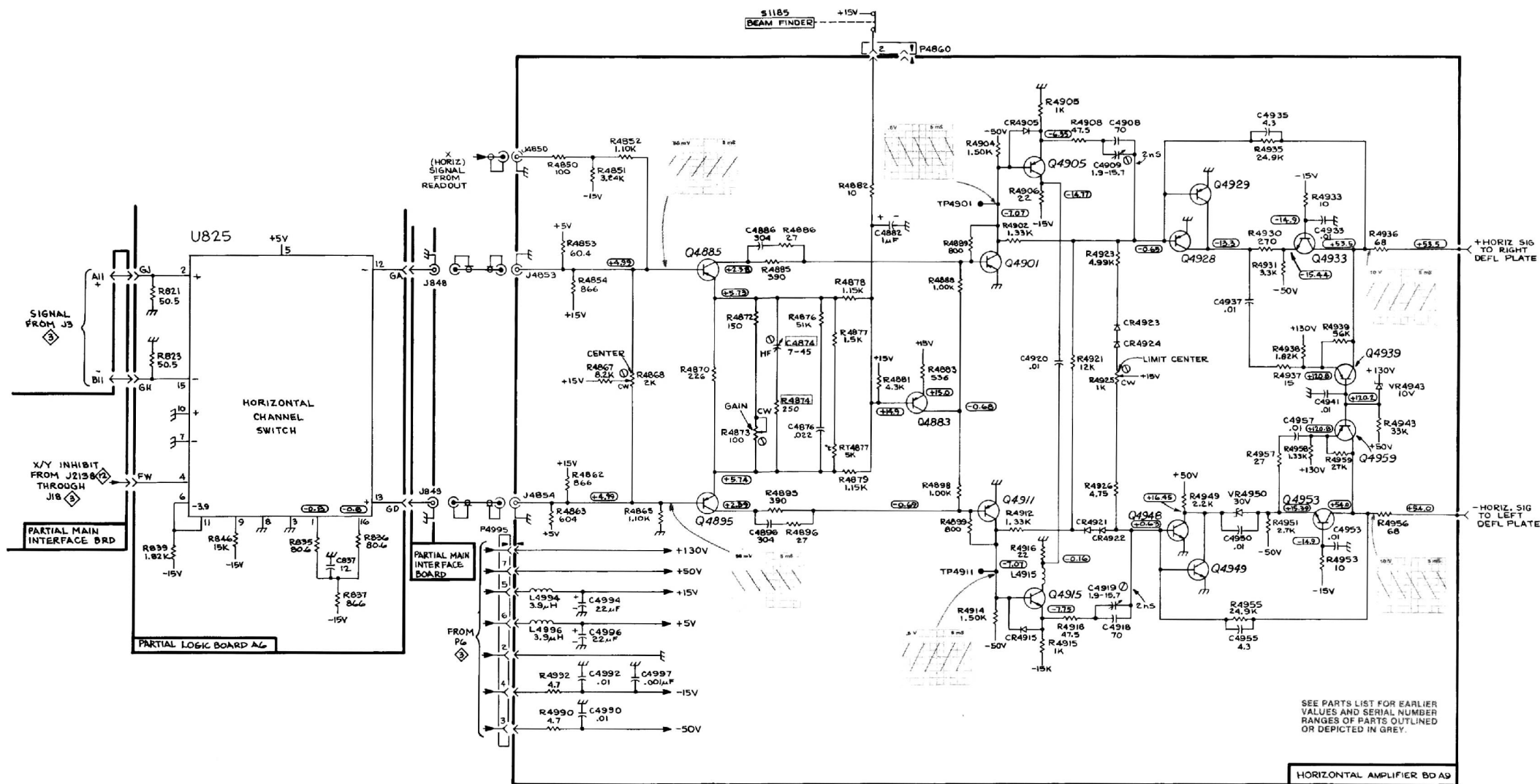
### Waveforms

Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.



R7903

(1590)1464-85  
REV SEP 1985

SN B150000 - ABOVE  
HORIZONTAL AMPLIFIER 7

REV JUN 1986

[illegible]

## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

### Waveforms

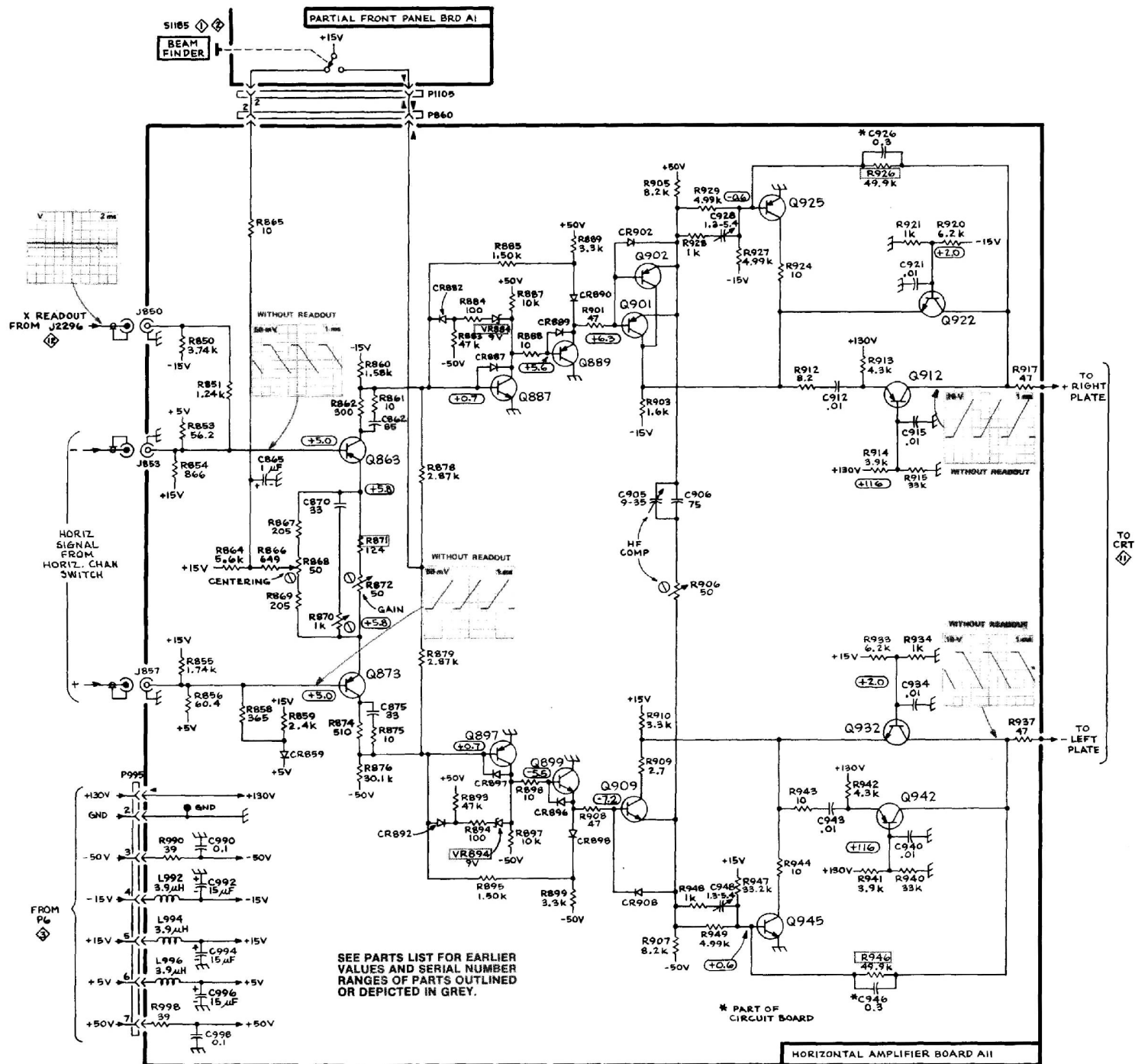
Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.





CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C1031	4B	CR1068	4D	Q1068	4C	R1046	2C	R1067	5D
C1032	4C					R1047	2C	R1068	5D
C1036	4C	J1032	5C	R1031	4C	R1051	3D	R1069	3C
C1038	2C	J1051	3D	R1032	4C	R1052	3D	R1071	3C
C1041	2B	J1054	3E	R1034	4C	R1055	2D	R1075	2D
C1046	2C	J1062	4B	R1036	3C	R1057	2D		
C1061	5E	J1073	2E	R1037	3C	R1058	3D	S1050	3D
C1062	4D			R1038	2C	R1059	5E		
		Q1034	4C	R1040	2C	R1061	4D		
CR1036	4C	Q1038	3C	R1041	2C	R1062	4D		
CR1038	3C	Q1040	2C	R1043	3B	R1063	5D		
CR1066	5C	Q1058	4D	R1044	3B	R1064	4D		
CR1067	4D	Q1063	4D	R1045	2B	R1065	5D		
						R1066	5C		



**A12 Output Signals circuit board. SN B160809 - below.**

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C1008	4A	CR1023	3B	Q1013	4B	R1012	4B	R1034	4C	R1059	5E
C1019	3B	CR1026	2B	Q1016	3B	R1013	2E	R1036	3C	R1061	4E
C1023	3B	CR1038	3C	Q1023	3B	R1014	2A	R1037	3C	R1062	4E
C1026	2B	CR1066	5D	Q1034	3D	R1017	3B	R1038	2D	R1063	4E
C1031	4C			Q1040	2D	R1018	3B	R1041	2C	R1064	4E
C1032	4D	J1006	5B	Q1058	4E	R1019	3B	R1043	2C	R1065	4E
C1036	4C	J1007	5B	Q1063	4E	R1021	3B	R1045	2C	R1066	5D
C1038	2D	J1032	5D	Q1068	4D	R1022	3B	R1046	2D	R1067	5D
C1041	2C	J1051	3E			R1023	3B	R1047	2D	R1069	3D
C1046	2D	J1054	3E	R1001	4B	R1025	2B	R1051	3E	R1071	3D
C1061	5E	J1062	4C	R1003	4B	R1026	2B	R1052	3E	R1075	2D
C1062	4E	J1073	2E	R1005	4B	R1027	2B	R1055	2E		
				R1010	4B	R1031	4D	R1057	2E	S1050	3E
				R1011	2A	R1032	4D	R1058	3E		

## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

### Waveforms

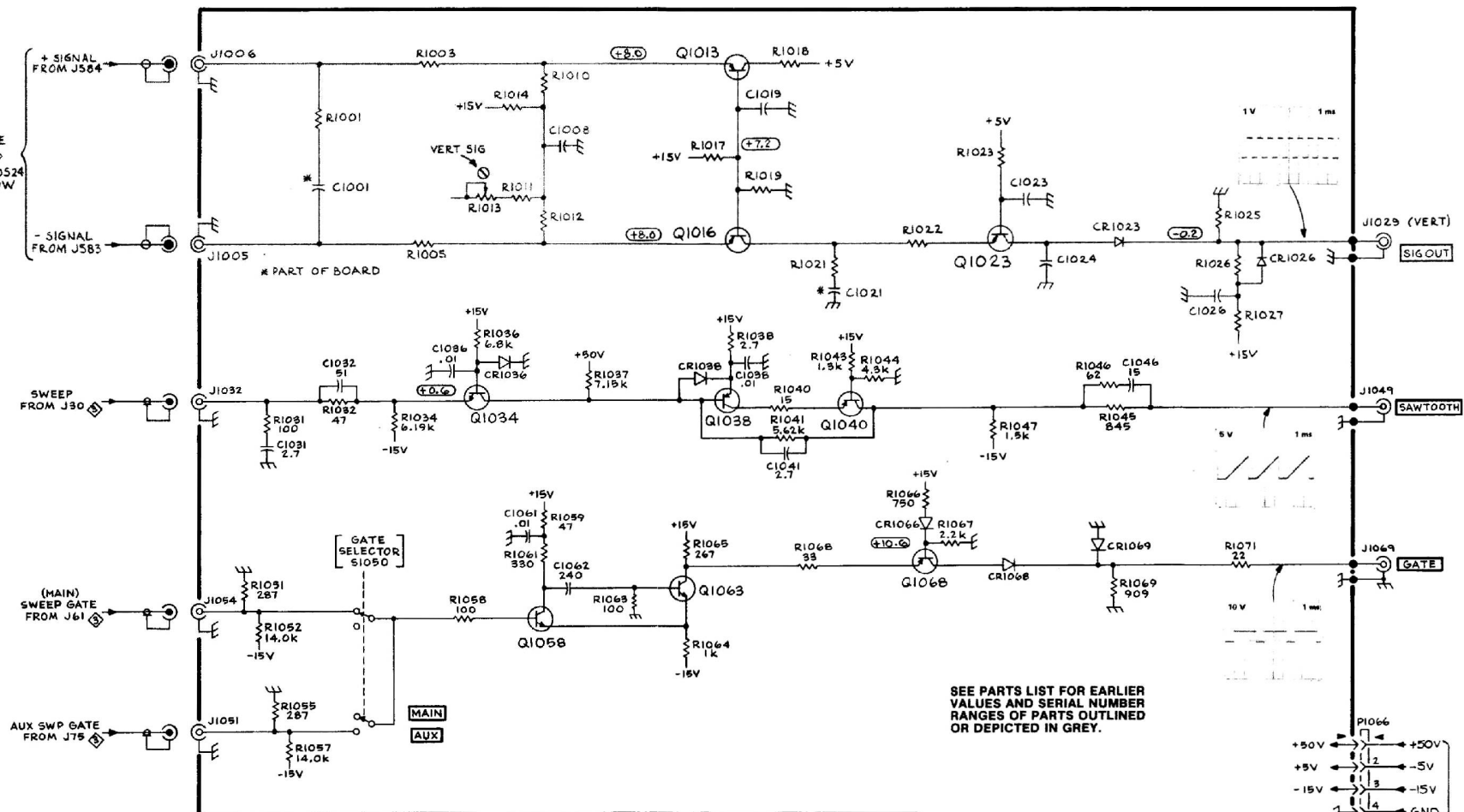
Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

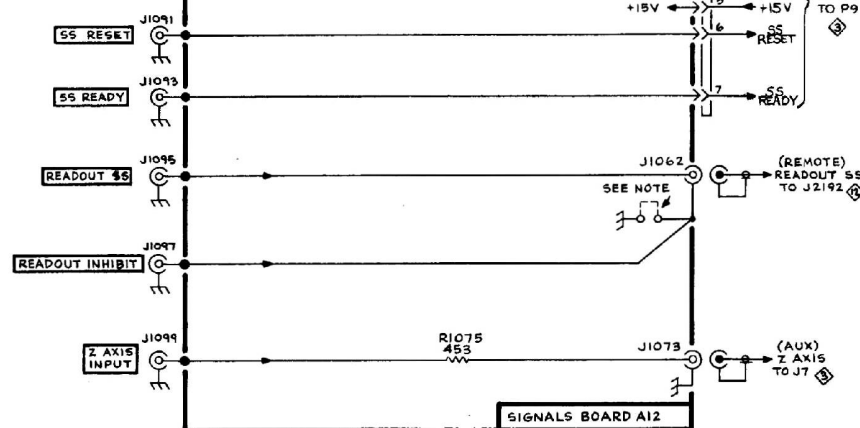
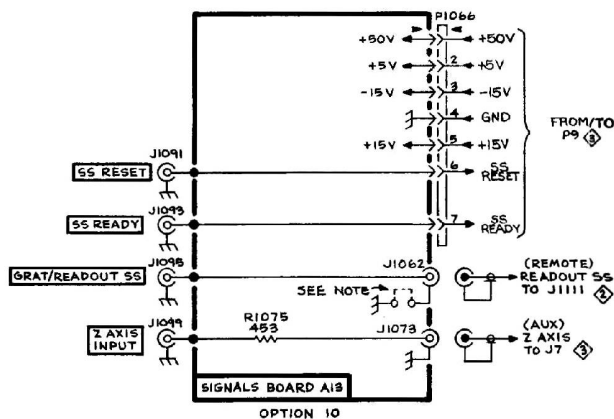
Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.

SEE  
5B30524  
+ BELOW



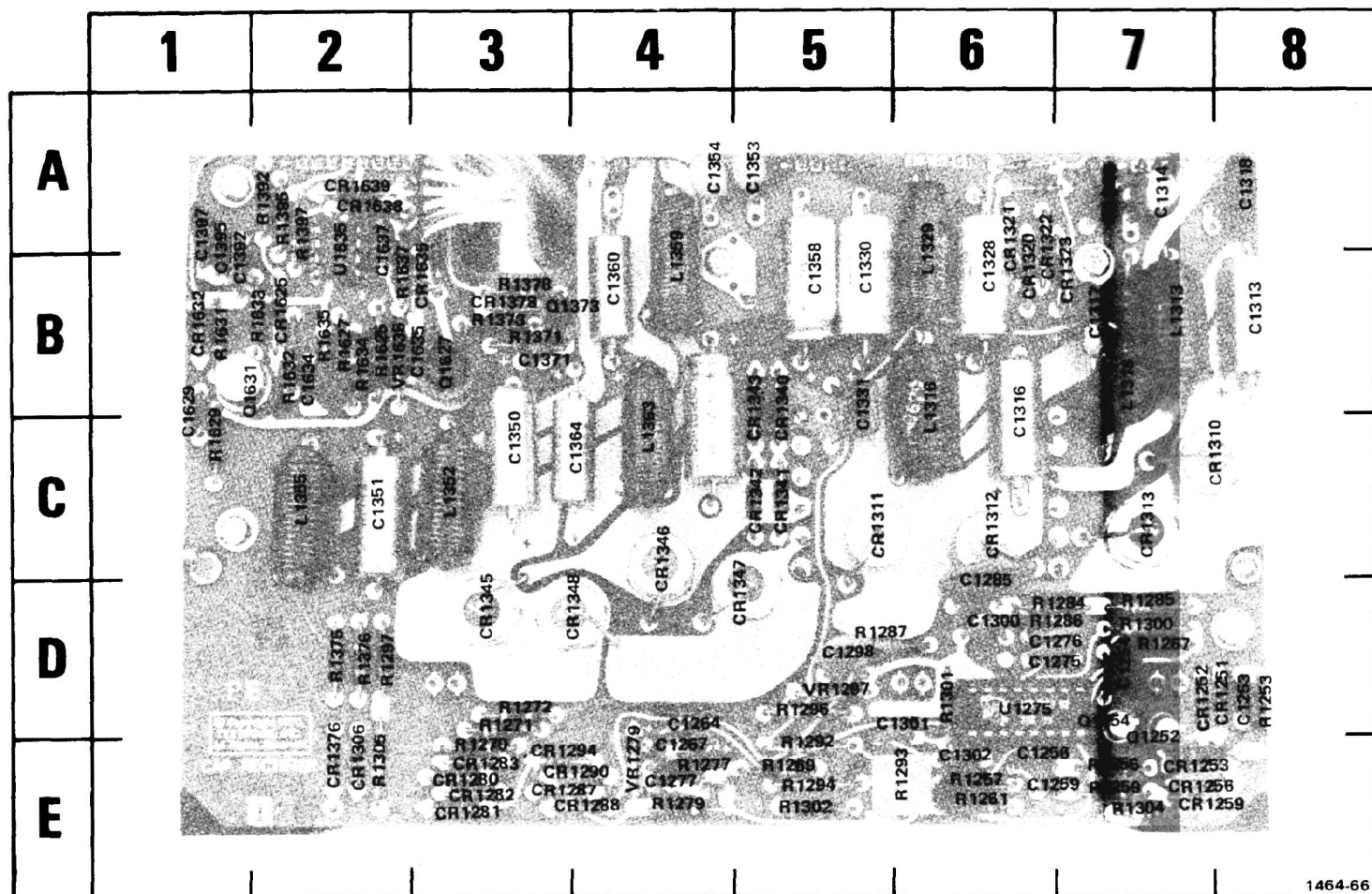
SEE PARTS LIST FOR EARLIER  
VALUES AND SERIAL NUMBER  
RANGES OF PARTS OUTLINED  
OR DEPICTED IN GREY.

NOTE:  
FOR PULSED PANEL  
OPTION 10, ADD STRAP  
TO GND. READOUT  
INHIBIT IS ELIMINATED  
AND READOUT SS BE-  
COMES GRAT/READOUT  
SS.



CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C1205	3A	C1242	4D	CR1243*	3G	Q1246	3G	R1239	3G	T1208	5B
C1206	3A	C1243	4C	CR1244	4E	Q1248	5D	R1240	3G	T1225	3D
C1217	4A	C1245	4D	CR1245*	3D			R1242	4D	T1230	5F
C1219	5C	C1249	5D	CR1249	4C	R1205	3A	R1243	4C	T1235	5E
C1227	2D					R1208	4A	R1244	4D		
C1228	2D	CR1215	3B	DS1208	4A	R1210	3C	R1245	5D	VR1246	5D
C1229	3F	CR1232	4E	DS1213	2A	R1213	2A	R1246	5D		
C1231	4E	CR1234	3E	DS1219	4C	R1219	5C	R1247	3D		
C1235	5E	CR1238	4F			R1221	2C	R1248	5D		
C1236	3C	CR1240	2G	L1229	3D	R1225	3D	R1249	5D		
C1238	4G	CR1241	3G			R1232	4E				
C1239	3G	CR1242	4E	Q1234	2E	R1236	2C	RT1209	3C		
				Q1241	2F						





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**A15 Cap. Rectifier circuit board.**

[illegible]



## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

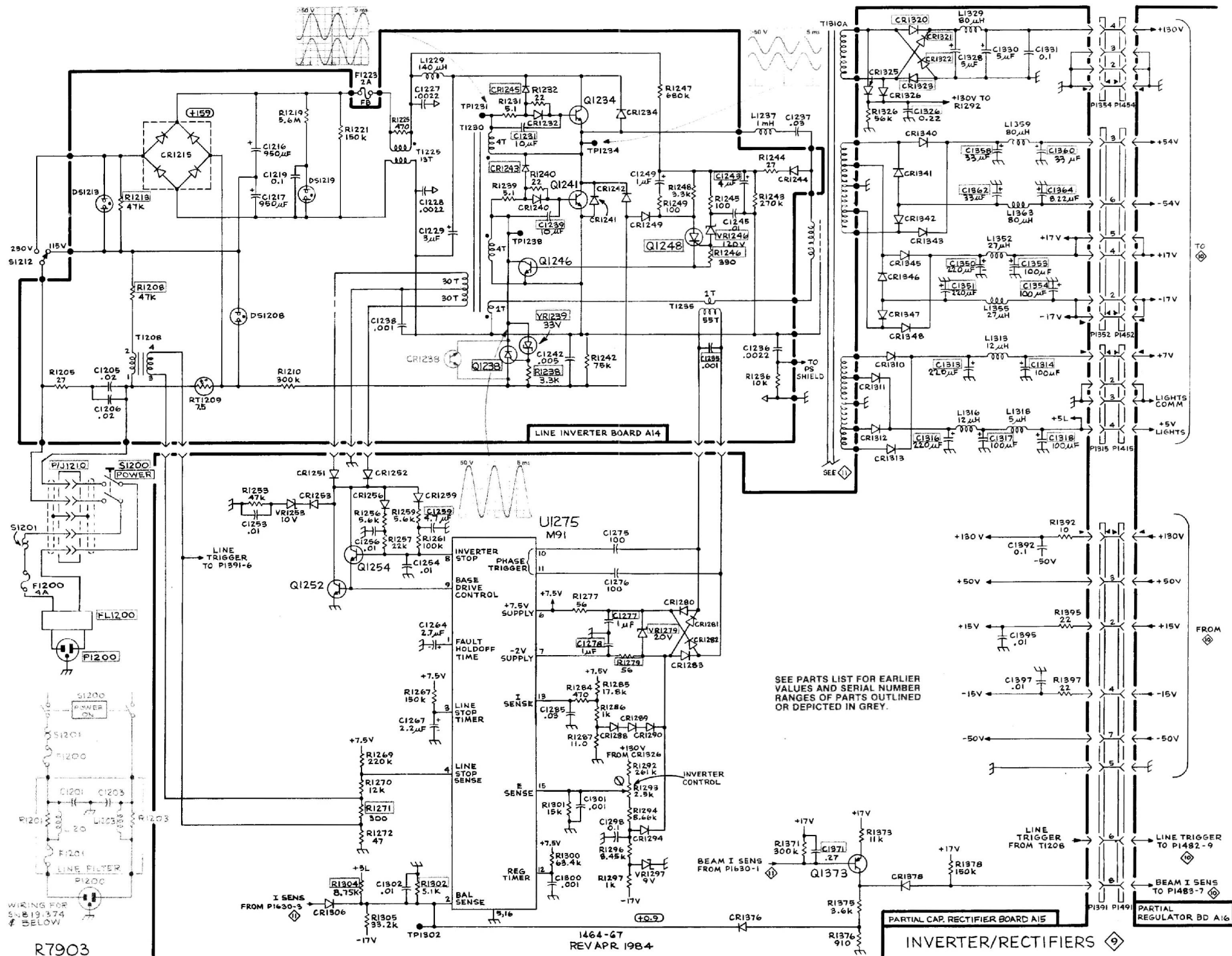
### Waveforms

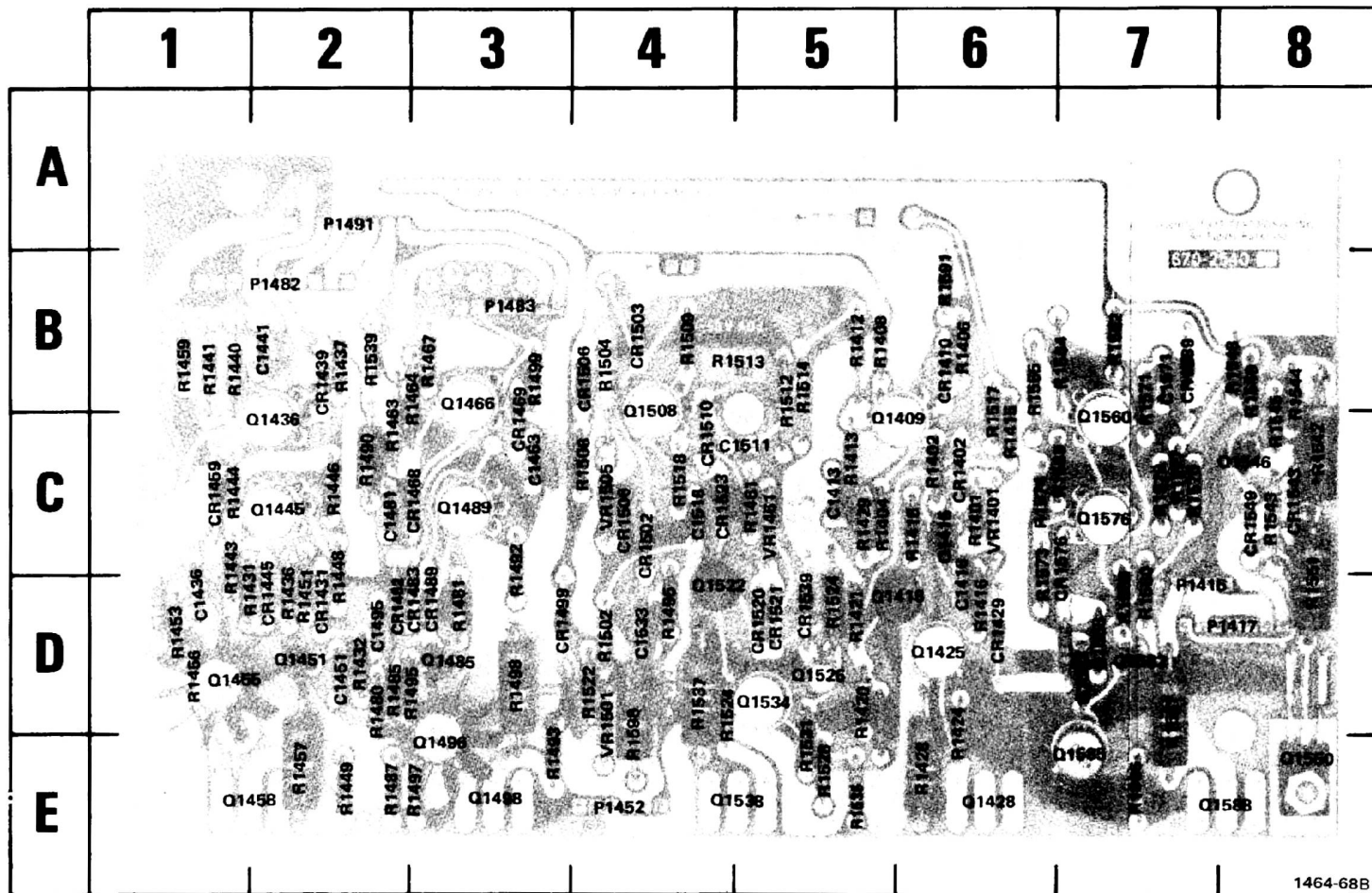
Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.





1464-68B

\*See Parts List for  
serial number ranges.

A16 L.V. Regulator circuit board

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## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

### Waveforms

Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.



**A19 Auto Focus circuit board.**

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C1605	2D	C1680	2C	DS1688	2C	R1642	3E
C1606	2D	C1681	3C			R1651	3C
C1607	3D			R1603	4C	R1652	3C
C1608	2D	CR1607	3D	R1604	3C	R1658	4B
C1609	2D	CR1608	3C	R1605	3D	R1659	4B
C1612	2D	CR1653	2A	R1609	2D	R1661	4A
C1642	2E	CR1655	4A	R1611	2D	R1671	3D
C1653	3A	CR1656	3B	R1612	1D	R1672	2D
C1654	4A	CR1658	5B	R1614	3D	R1682	2C
C1656	4A	CR1676	2C	R1616	4E	R1684	2B
C1657	3A	CR1679	1C	R1618	3D	R1686	2C
C1659	3B	CR1680	2C	R1619	3D	R1690	5B
C1676	3C			R1640	2E		
C1678	2D	DS1687	2B			U1615	5C



	1	2	3	4	5	6	7	8
A								

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## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 M $\Omega$ Range 0 – 500 V	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must have readout system).

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

Set front panel controls (knob type) to mid-range.

Set VERT MODE for LEFT.

Set TRIG SOURCE for VERT MODE.

No plug-in units are installed.

Voltmeter common is connected to chassis ground.

### Waveforms

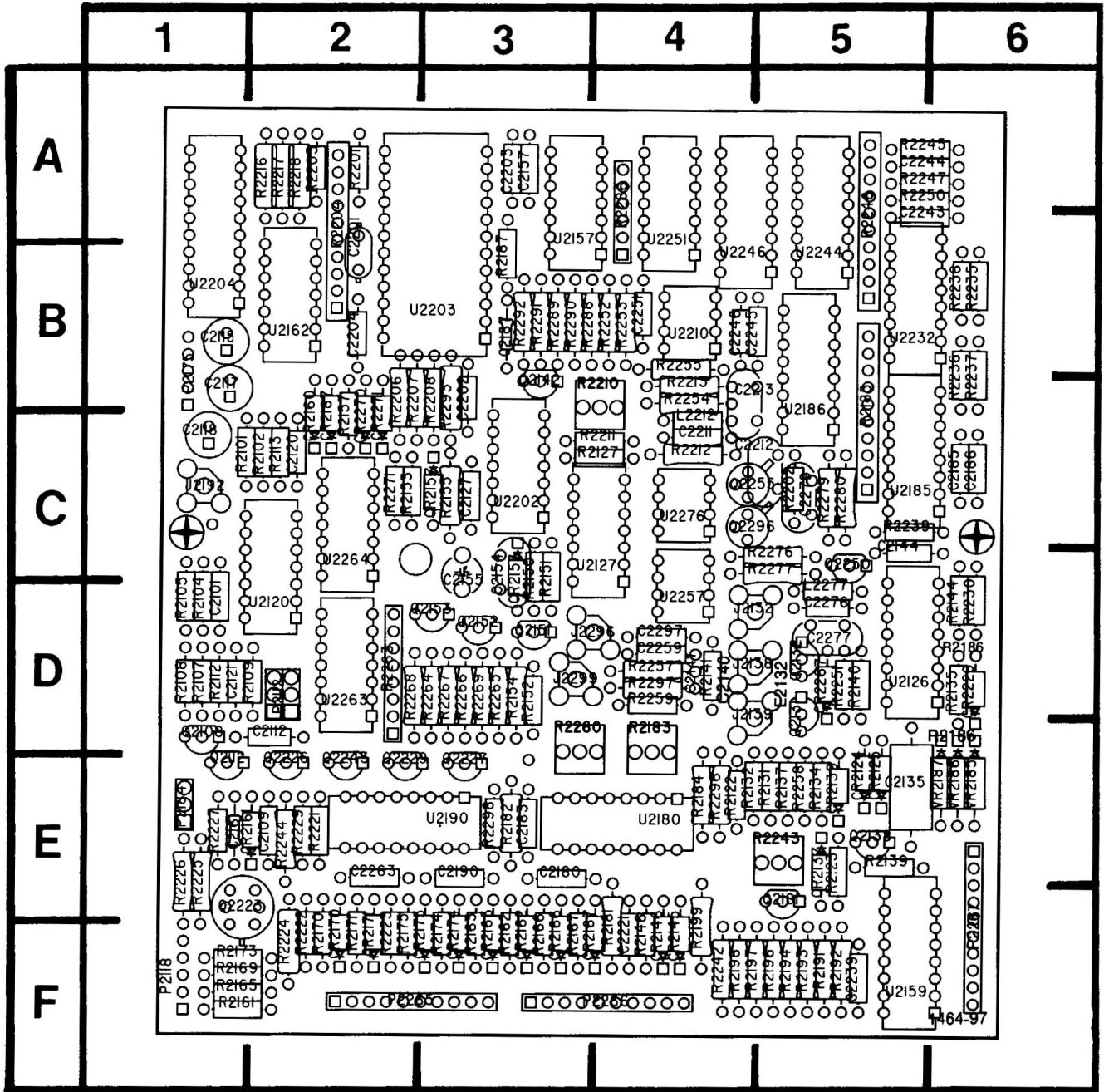
Waveforms shown on this diagram were obtained under the following conditions:

**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.



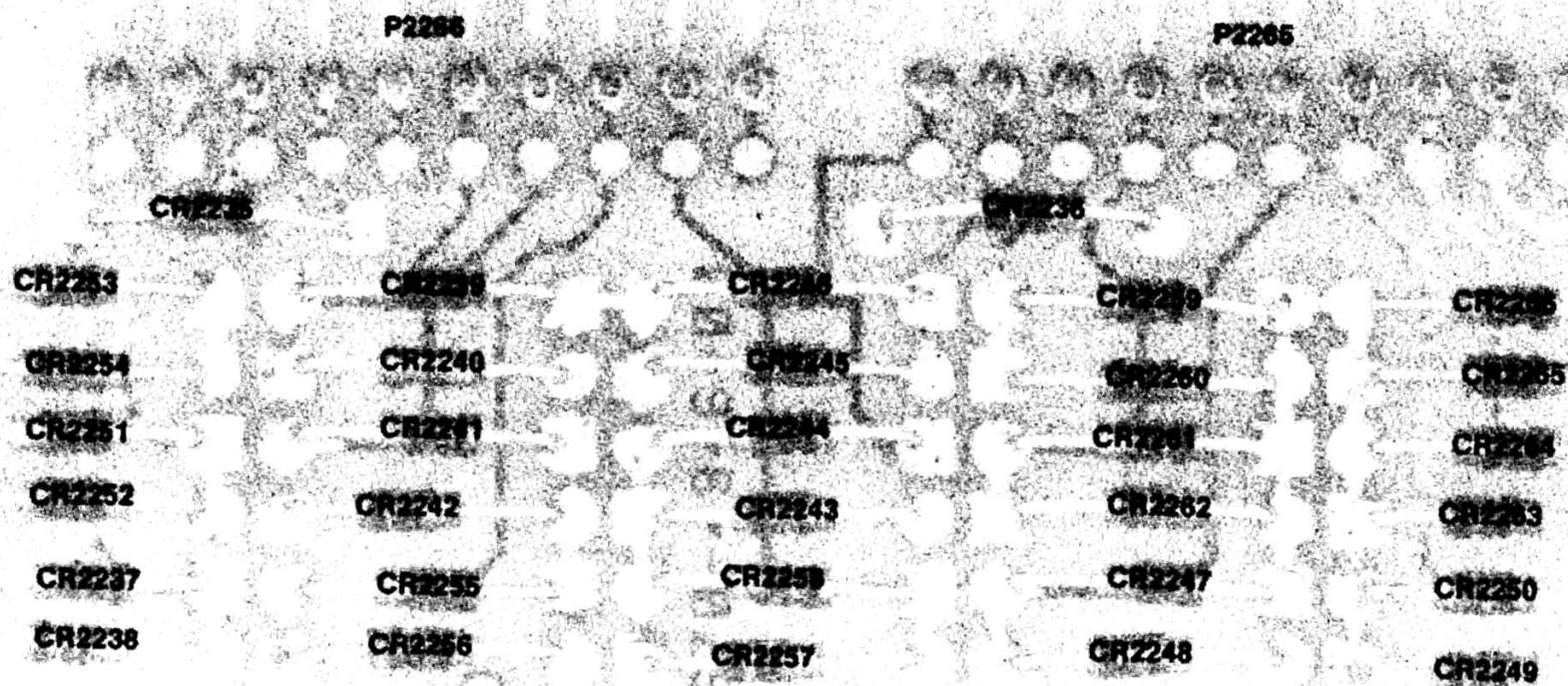


A21 Readout circuit board, SN B202462 & Up

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C2101	1D	CR2124	5E	Q2108	1D	R2152	3D	R2216	2A	R2279	2C
C2109	2E	CR2125	5E	Q2112	1E	R2153	2C	R2217	2A	R2280	2C
C2112	2D	CR2137	5E	Q2131	4D	R2154	3D	R2218	2A	R2286	4A
C2115	1B	CR2139	5E	Q2132	4D	R2155	3C	R2221	2E	R2288	3B
C2117	1B	CR2145	4F	Q2138	4E	R2157	2C	R2222	2F	R2289	3B
C2118	1C	CR2146	4F	Q2142	3B	R2161	1F	R2223	2F	R2290	3B
C2120	2C	CR2153	3D	Q2151	3D	R2162	3F	R2224	2F	R2291	3B
C2121	1D	CR2157	3C	Q2152	3D	R2163	3F	R2225	1E	R2292	3B
C2127	3C	CR2160	2C	Q2153	3D	R2165	1F	R2226	1E	R2293	3B
C2135	5C	CR2161	1E	Q2181	5E	R2166	3F	R2227	1E	R2296	4E
C2140	4D	CR2162	3F	Q2223	1E	R2167	3F	R2229	2E	R2297	4D
C2141	4D	CR2163	3F	Q2226	2E	R2169	1F	R2230	6D	R2298	3E
C2144	5C	CR2166	3F	Q2227	3E	R2170	2F	R2235	6B		
C2154	3D	CR2167	4F	Q2229	2E	R2171	2F	R2236	6B	U2120	3D
C2155	3D	CR2170	2F	Q2243	2E	R2173	1F	R2237	6B	U2126	5D
C2157	3A	CR2171	2F	Q2250	5C	R2174	3F	R2238	6B	U2126	4C
C2161	1E	CR2174	3F	Q2255	4C	R2175	2F	R2239	5C	U2157	3B
C2180	3E	CR2175	3F	Q2296	4C	R2181	4F	R2242	4F	U2159	5F
C2183	3E	CR2187	2C			R2182	3E	R2243	5E	U2162	2B
C2185	6C	CR2229	6D	R2101	1C	R2183	4D	R2244	2E	U2180	4E
C2186	6C	CR2267	5D	R2102	2C	R2184	4E	R2245	5A	U2185	5C
C2187	3B	CR2270	2C	R2104	1D	R2185	5C	R2246	5A	U2186	5C
C2190	3E	CR2271	2C	R2105	1D	R2187	3B	R2247	5A	U2190	3E
C2201	2B			R2107	1D	R2191	5F	R2250	5A	U2202	3C
C2202	3C	J2132	4D	R2108	1D	R2192	5F	R2251	5D	U2203	3B
C2203	3A	J2138	4D	R2109	1D	R2193	5F	R2252	4B	U2204	1B
C2204	2B	J2139	4D	R2112	1D	R2194	5F	R2253	4B	U2210	4B
C2211	4C	J2192	1C	R2113	2C	R2196	5F	R2254	4B	U2232	5B
C2212	4C	J2296	4D	R2122	4E	R2197	4F	R2255	4B	U2244	5B
C2213	4B	J2299	3D	R2123	5E	R2198	4F	R2257	4B	U2246	4B
C2221	4F			R2127	4C	R2199	4F	R2258	5E	U2251	4B
C2239	4F	L2212	4C	R2131	5E	R2201	2A	R2259	4D	U2257	4D
C2243	5A	L2277	5D	R2132	4E	R2202	5C	R2260	3D	U2263	2D
C2244	5A			R2134	5E	R2203	2A	R2263	2D	U2264	2C
C2245	4B	P2112	2D	R2135	6D	R2204	2A	R2264	3D	U2276	4C
C2246	4B	P2118	1F	R2137	5E	R2206	2C	R2265	3D		
C2251	4B	P2175	1B	R2139	5E	R2207	2C	R2266	3D	VR2185	6E
C2259	4D	P2184	1E	R2140	5D	R2208	3C	R2267	3D	VR2186	6E
C2263	2E	P2265	2F	R2141	4D	R2210	4B	R2268	2D	VR2187	6E
C2276	5D	P2266	4F	R2144	6D	R2211	4C	R2269	3D		
C2277	5D	P2267	6F	R2146	4F	R2212	4C	R2271	2C		
C2279	5C			R2150	3D	R2213	4B	R2276	2C		
C2297	4D			R2151	3D			R2277	2C		

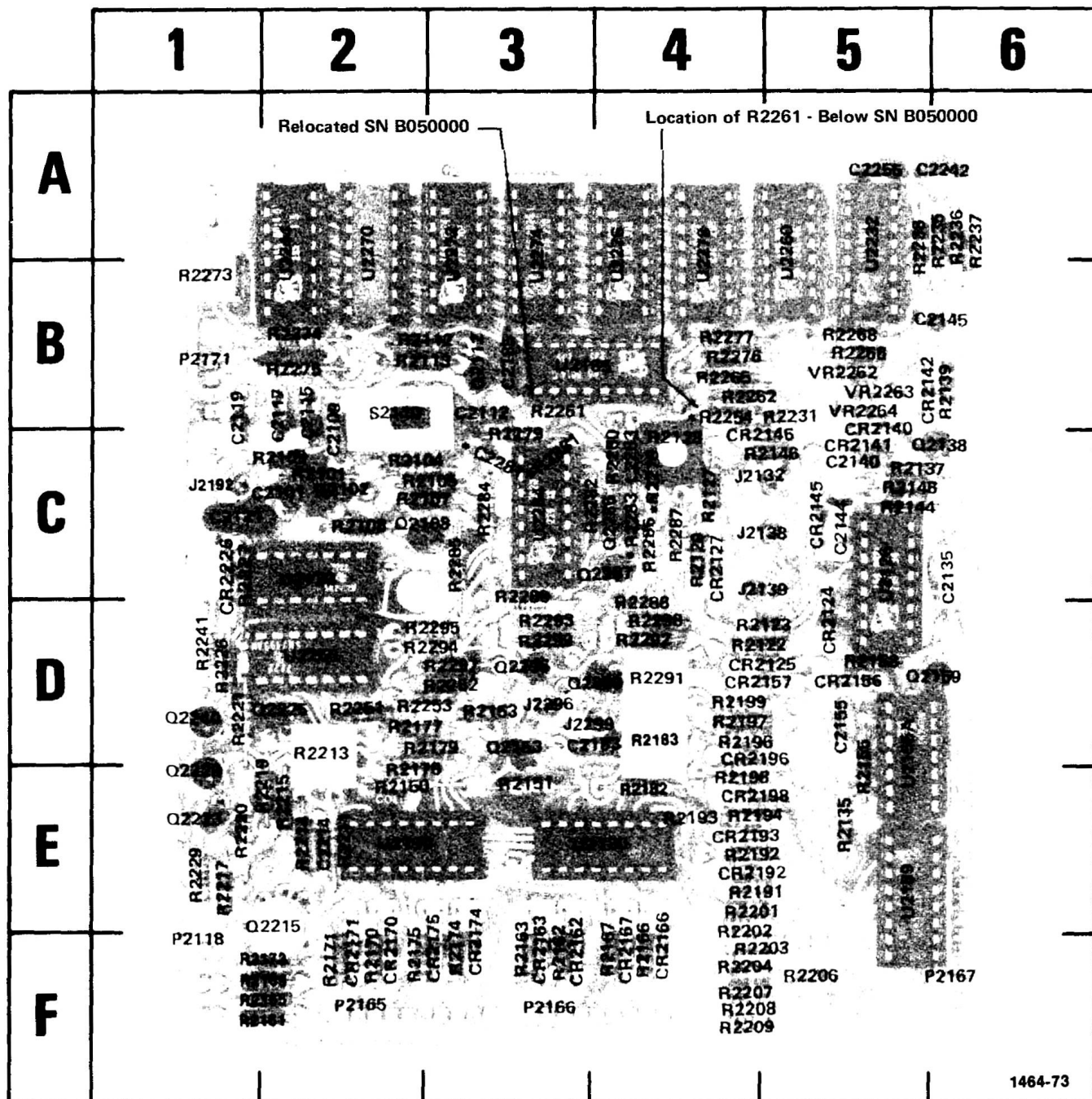
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SN B202462-UF





1464-73

\*See Parts List for  
serial number ranges.

A21 Readout circuit board, SN B202461 & Below.



CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C2101	2C	P2165	2F	R2169	2F	R2275	2B
C2109	2B	P2166	3F	R2170	2F	R2276	4B
C2112	3B	P2167	6F	R2171	2F	R2277	4B
C2115	2B	P2171	1B	R2173	2F	R2278	4C
C2117	2B			R2174	3F	R2279	3C
C2119	1B	Q2108	2C	R2175	2F	R2280	4C
C2121	1C	Q2112	3B	R2177	2D	R2281	3C
C2135	6C	Q2138	6C	R2178	2E	R2282	3C
C2140	5C	Q2153	3D	R2179	2D	R2283	4C
C2145	6B	Q2159	6D	R2182	4E	R2284	3C
C2155	5D	Q2215	2E	R2183	4D	R2285	3C
C2183	3D	Q2223	1E	R2191	5E	R2286	4C
C2185	3B	Q2225	2D	R2192	4E	R2287	4C
C2214	2E	Q2229	1E	R2193	4E	R2288	4D
C2242	6A	Q2240	1D	R2194	4E	R2289	3C
C2255	5A	Q2286	4C	R2196	4D	R2291	4D
C2281	3C	Q2287	4C	R2197	4D	R2292	4D
		Q2296	3D	R2198	4E	R2293	3D
		Q2299	3D	R2199	4D	R2294	3D
CR2124	5D			R2201	5E	R2295	3D
CR2125	5D	S2110	2B	R2202	5E	R2297	3D
CR2127	4C			R2203	5F	R2298	4D
CR2140	5B			R2204	4F	R2299	3D
CR2141	5C	R2101	2C	R2206	5F		
CR2142	5B	R2102	2C	R2207	4F	U2120	2C
CR2145	5C	R2104	2C	R2208	4F	U2126	5C
CR2146	5C	R2105	2C	R2209	4F	U2155A	5D
CR2156	5D	R2107	2C	R2211	2E	U2159	5E
CR2157	5D	R2108	2C	R2213	2D	U2180	4E
CR2162	3F	R2109	2C	R2214	2E	U2185	3B
CR2163	3F	R2112	2B	R2215	2E	U2190	2E
CR2166	4F	R2113	2B	R2217	1E	U2232	5A
CR2167	4F	R2122	5D	R2220	1E	U2244	2A
CR2170		R2123	5D	R2221	1D	U2250	2D
CR2171	2F	R2127	4C	R2226	1D	U2260	5A
CR2174	3F	R2128	4C	R2227	1C	U2270	2A
CR2175	3F	R2129	4C	R2229	1E	U2272	3A
CR2192	5D	R2135	5E	R2231	5B	U2274	3A
CR2193	4E	R2137	5C	R2235	6A	U2276	4A
CR2196	4D	R2139	6B	R2236	6A	U2278	4A
CR2198	4E	R2144	5C	R2237	6A	U2284	3C
CR2226	1C	R2146	5C	R2238			
		R2148	5C	R2251	2D	VR2262	5B
J1075	1C	R2150	2E	R2252	3D	VR2263	5B
J2132	4C	R2151	3E	R2253	2D	VR2264	5B
J2138	5C	R2153	3D	R2254	4B		
J2139	5C	R2155	5E	R2261	3B		
J2192	1C	R2158	5D	R2262	4B		
J2296	4D	R2161	2F	R2265	4B		
J2299	3D	R2162	3F	R2266	5B		
		R2163	3F	R2268	5B		
L2283	4C	R2165	2F	R2273	1A		
		R2166	4F	R2274	2B		
P2118	1F	R2167	4F				

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## VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained by using the recommended test equipment and test set-ups listed below.

### RECOMMENDED TEST EQUIPMENT

ITEM	SPECIFICATIONS	RECOMMENDED TYPE
Oscilloscope	Frequency response DC to 75 MHz Deflection factor 5 mV to 5 V/Div Input impedance 1 M $\Omega$ 20 pF Sweep rate 500 ns	Tektronix 7704A equipped with 7A15A Amplifier and 7B50A or 7B80 Time Base.
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.	Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance 10 m $\Omega$ Range 0—500 V have readout system).	Tektronix DM 501A with power module, Digital Multimeter (test oscilloscope must

### Voltage Measurements

Voltage measurements on this diagram were made under the following conditions:

- Set front panel controls (knob type) to mid-range.
- Set VERT MODE for LEFT.
- Set TRIG SOURCE for VERT MODE.
- No plug-in units are installed.
- Voltmeter common is connected to chassis ground.

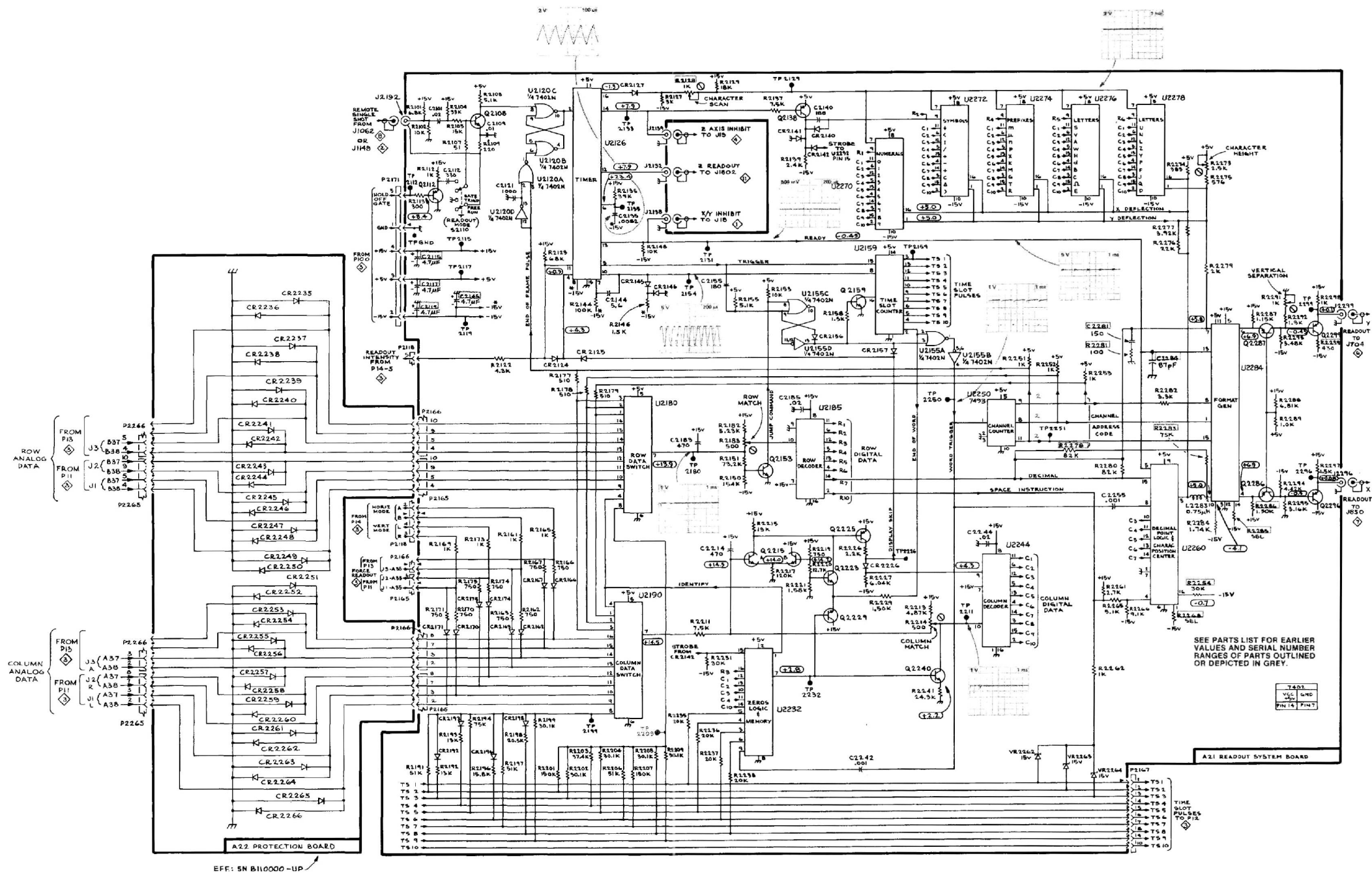
### Waveforms

Waveforms shown on this diagram were obtained under the following conditions:

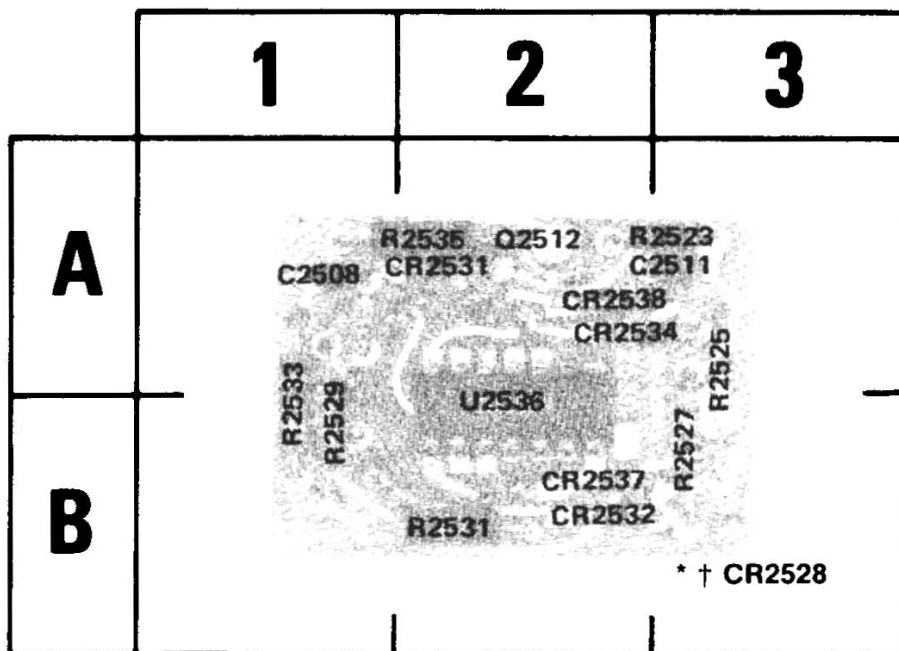
**R7903 OSCILLOSCOPE UNDER TEST.** Front panel controls are set the same as for voltage measurements. A 7A16A Vertical plug-in unit and a 7B80 Time Base unit are installed in the mainframe under test. A 4 Volts calibration signal is applied to the vertical amplifier. The vertical amplifier is set for 1 V/Division deflection centered on the CRT. The 7B80 is set for free running sweep, 1 ms/Division sweep rate. Readout information is being displayed.

**TEST OSCILLOSCOPE.** The test oscilloscope is internally triggered, with the vertical deflection indicated on the waveform photo. The test oscilloscope vertical input is AC coupled.

Waveforms shown are actual waveform photographs taken with a Tektronix Oscilloscope Camera System and Projected Graticule. Vertical deflection factor shown on waveform is the actual deflection factor from the probe tip. Voltages and waveforms on the diagrams (shown in grey) are not absolute and may vary between instruments because of component tolerances, internal calibration, or front-panel settings. Readouts are simulated in larger-than-normal type.



# R7903 Service



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\*See Parts List for  
serial number ranges.

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## A17 Fan Motor circuit board. SN B209999 & Below

CKT NO	GRID LOC
C2508	1A
C2511	3A
CR2531	2A
CR2532	2B
CR2534	2A
CR2537	2B
CR2538	2A
Q2512	2A
R2523	3A
R2525	3A
R2527	3B
R2529	1B
R2531	2B
R2533	1B
R2535	2A
U2536	2B

† ADDED TO BACK OF BOARD

## OPTION INFORMATION

Your instrument may be equipped with one or more options. This section describes those options, or directs the reader to where the option is documented.

Option 1	W/O CRT Readout:	Described in this section.
Option 3	EMI Modification:	Described in this section.
Option 4	Maximum Brightness CRT:	Described in this section.
Option 10	Pulsed Graticule:	Described in this section.
Option 13	Maximum Brightness CRT with Type P11 Phosphor	Described in this section.
Option 78	P11 Phosphor, CRT:	Described in this section.

## **OPTION 1**

### **Without CRT Readout**

This option deletes the Readout System. Operation of the instrument is unchanged except there is no alpha-numeric display on the CRT and the READOUT control is non-functional. The Readout board A21 has been replaced with a DUMMY READOUT Circuit Board Assembly, to maintain continuity of the remaining circuitry. The components shown on Readout board photo, Fig. 6-16, and schematic diagram 12 are not present in the Option 1 products. DUMMY READOUT board parts list information is located in this section.

#### **Parts List Changes**

**DELETE:**

A21	670-1900-02	Readout Circuit Board Assembly
-----	-------------	--------------------------------

**ADD**

670-2018-00	Dummy Readout Circuit Board Assembly
-------------	--------------------------------------



### **OPTION 3**

This option adds special shielding and equipment to the instrument for EMI protection when operated in most severe EMI environments. Also, in order to meet the EMI specifications, any unused plug-in compartment must be covered with an EMI shielded blank plug-in panel. One is required for each unused compartment. Order or use only Tektronix Part No. 016-0155-00 blank plug-in panel for this purpose.

EMI specifications may be found in Table 2-2 of the R7903 Operators manual.

Option 3 information may be located in the following sections of this manual:

Mechanical Parts Illustrations

Section 7, Fig. 4

Mechanical Parts List

Page 7-13 and 7-14

**OPTION 4**  
**Maximum Brightness CRT**

This option changes the standard CRT to a 4 x 5-cm type that provides maximum trace brightness.

**Parts List Changes**

**DELETE:**

V1725	154-0644-05	Standard 8 x 10-cm CRT, P31 phosphor
	331-0245-00	Mask, CRT

**ADD**

V1725	154-0661-05	4 x 5-cm CRT, P31 phosphor
	331-0318-00	Mask, CRT (4 x 5)

After installation of the 4 x 5-cm CRT, perform calibration steps 4 through 15 and steps 21 through 24 as outlined in Section 2 of this manual.

## **OPTION 10**

### **Pulsed Graticule**

This option provides a pulsed graticule circuit, and a pulsed readout circuit, in addition to the normal graticule and readout circuits.

Option 10 information may be located in the following sections of this manual:

Functions of Controls and Connectors	Page 1-3 and 1-4
Calibration	Page 2-30
Circuit Description	Page 3-24
Front Panel Diagram	Diagram—Tab 2
Front Panel Board Photo	A11 Circuit Board
Mechanical Parts List	Page 7-13 and 7-14
Mechanical Parts Illustration	Section 7, Fig. 4

**OPTION 13****Maximum Brightness CRT with Type P11 Phosphor**

This option changes the standard CRT to a 4 x 5-cm type that provides maximum trace brightness and optimum photographic writing speed.

**Parts List Changes****DELETE:**

V1725	154-0644-05	Standard 8 x 10-cm CRT, P31 phosphor
	331-0245-00	Mask,CRT

**ADD:**

V1725	154-0661-09	4 x 5-cm CRT,P11 phosphor
	331-0318-00	Mask,CRT (4 x 5)

After installation of the 4 x 5-cm CRT perform calibration steps 4 through 15 and steps 21 through 24 as outlined in Section 2 of this manual.

**OPTION 78**

**Type P11 Phosphor CRT**

This option changes the standard CRT to a type P11 phosphor CRT for optimum photographic writing speed.

**Parts List Changes**

**DELETE:**

V1725	154-0644-05	Standard 8 x 10-cm CRT, P31 phosphor
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**ADD:**

V1725	154-0644-09	8 x 10-cm CRT,P11 phosphor
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After installation of the CRT, perform calibration steps 4 through 15 and steps 21 through 24 as outlined in Section 2 of this manual.

## **MANUAL CHANGE INFORMATION**

At Tektronix, we continually strive to keep up with latest electronic developments by adding circuit and component improvements to our instruments as soon as they are developed and tested.

Sometimes, due to printing and shipping requirements, we can't get these changes immediately into printed manuals. Hence, your manual may contain new change information on following pages.

A single change may affect several sections. Since the change information sheets are carried in the manual until all changes are permanently entered, some duplication may occur. If no such change pages appear following this page, your manual is correct as printed.



DESCRIPTION

PG 42

Effective for all serial numbers

**REPLACEABLE ELECTRICAL PARTS LIST CHANGES**

**CHANGE TO:**

R684	317-0910-00	RES.,FXD,CMPSN:91 OHM,5%,0.125W
R684	317-0101-00	RES.,FXD,CMPSN:100 OHM,5%,0.125W
R684	317-0111-00	RES.,FXD,CMPSN:110 OHM,5%,0.125W
R684	317-0131-00	RES.,FXD,CMPSN:130 OHM,5%,0.125W
R684	317-0161-00	RES.,FXD,CMPSN:160 OHM,5%,0.125W
R684	317-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.125W
R684	317-0301-00	RES.,FXD,CMPSN:300 OHM,5%,0.125W
R684	317-0511-00	RES.,FXD,CMPSN:510 OHM,5%,0.125W
R684	-----	(R684 SELECTED)
R688	317-0910-00	RES.,FXD,CMPSN:91 OHM,5%,0.125W
R688	317-0101-00	RES.,FXD,CMPSN:100 OHM,5%,0.125W
R688	317-0111-00	RES.,FXD,CMPSN:110 OHM,5%,0.125W
R688	317-0131-00	RES.,FXD,CMPSN:130 OHM,5%,0.125W
R688	317-0161-00	RES.,FXD,CMPSN:160 OHM,5%,0.125W
R688	317-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.125W
R688	317-0301-00	RES.,FXD,CMPSN:300 OHM,5%,0.125W
R688	317-0511-00	RES.,FXD,CMPSN:510 OHM,5%,0.125W
R688	-----	(R688 SELECTED)
R741	317-0111-00	RES.,FXD,CMPSN:110 OHM,5%,0.125W
R741	317-0131-00	RES.,FXD,CMPSN:130 OHM,5%,0.125W
R741	317-0161-00	RES.,FXD,CMPSN:160 OHM,5%,0.125W
R741	317-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.125W
R741	317-0301-00	RES.,FXD,CMPSN:300 OHM,5%,0.125W
R741	317-0511-00	RES.,FXD,CMPSN:510 OHM,5%,0.125W
R741	317-0102-00	RES.,FXD,CMPSN:1K OHM,5%,0.125W
R741	-----	(R741 SELECTED)
R756	317-0111-00	RES.,FXD,CMPSN:110 OHM,5%,0.125W
R756	317-0131-00	RES.,FXD,CMPSN:130 OHM,5%,0.125W
R756	317-0161-00	RES.,FXD,CMPSN:160 OHM,5%,0.125W
R756	317-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.125W
R756	317-0301-00	RES.,FXD,CMPSN:300 OHM,5%,0.125W
R756	317-0511-00	RES.,FXD,CMPSN:510 OHM,5%,0.125W
R756	317-0102-00	RES.,FXD,CMPSN:1K OHM,5%,0.125W
R756	-----	(R756 SELECTED)
R4689	317-0431-00	RES.,FXD,CMPSN:430 OHM,5%,0.125W
R4689	317-0561-00	RES.,FXD,CMPSN:560 OHM,5%,0.125W
R4689	317-0821-00	RES.,FXD,CMPSN:820 OHM,5%,0.125W
R4689	317-0102-00	RES.,FXD,CMPSN:1K OHM,5%,0.125W
R4689	317-0122-00	RES.,FXD,CMPSN:1.2K OHM,5%,0.125W
R4689	317-0162-00	RES.,FXD,CMPSN:1.6K OHM,5%,0.125W
R4689	-----	(R4689 SELECTED)

**DESCRIPTION**

Manual Insert for Product Group 42

These changes are effective at serial number B210000.

The following changes to the R7903 Service Manual result from the utilization of a different ventilating fan in the R7903 Oscilloscope.

**REPLACEABLE ELECTRICAL PARTS LIST CHANGES**

**REMOVE:**

A17	670-2539-02	CKT BOARD ASSY:FAN MOTOR
C2508	290-0534-00	CAP.,FXD,ELCTLT:1UF,20%,35V
C2511	290-0536-00	CAP.,FXD,ELCTLT:10UF,20%,25V
CR2528	152-0107-00	SEMICOND DEVICE:SILICON,400V,400MA
CR2531	152-0141-02	SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35
CR2532	152-0141-02	SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35
CR2534	152-0141-02	SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35
CR2537	152-0141-02	SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35
CR2538	152-0141-02	SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35
Q2512	151-0301-00	TRANSISTOR:SILICON,PNP
R2523	315-0470-00	RES.,FXD,CMPSN:47 OHM,5%,0.25W
R2525	321-0239-00	RES.,FXD,FILM:3.01K OHM,1%,0.125W
R2527	321-0201-00	RES.,FXD,FILM:1.21K OHM,1%,0.125W
R2529	321-0022-00	RES.,FXD,FILM:16.5 OHM,1%,0.125W
R2529	— —	(R2529 STANDARD ONLY)
R2529	321-0022-00	RES.,FXD,FILM:16.5 OHM,1%,0.125W
R2529	— —	(R2529 OPTION 10 ONLY)
R2531	307-0059-00	RES.,FXD,CMPSN:6.2 OHM,5%,0.50W
R2531	— —	(R2531 STANDARD ONLY)
R2531	307-0059-00	RES.,FXD,CMPSN:6.2 OHM,5%,0.50W
R2531	— —	(R2531 OPTION 10 ONLY)
R2533	301-0271-00	RES.,FXD,CMPSN:270 OHM,5%,0.5W
R2535	301-0271-00	RES.,FXD,CMPSN:270 OHM,5%,0.5W
U2536	156-0281-00	MICROCIRCUIT,LI:4 TRANSISTOR ARRAY

**ADD:**

R2536	308-0175-00	RES.,FXD,WW:10 OHM,5%,10W
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**CHANGE TO:**

B2536	119-1545-01	FAN,TUBEAXIAL:12V,4.8W,RPM,35 CFM
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DESCRIPTION

**REPLACEABLE MECHANICAL PARTS LIST CHANGES**

**REMOVE:**

Fig. 1-86	378-0041-01	1	FILTER ELEM,AIR:
Fig. 1-105	378-0810-00	1	SHROUD,FAN:
Fig. 1-106	211-0008-00	2	SCREW,MACHINE:4-40 X 0.250,PNH,STL,CD PL
Fig. 1-107	210-0586-00	2	NUT,PL,ASSEM WA:4-40 X 0.25 STL CD PL
Fig. 1-108	369-0035-00	1	IMPLR,FAN AXIAL:PLASTIC
Fig. 1-109	343-0411-00	2	STRAP,RETAINING:2.494 X 0.8,STL TIN PL
Fig. 1-110	211-0510-00	2	SCREW,MACHINE:6-32 X 0.375,PNH,STL,CD PL
Fig. 1-111	210-0457-00	2	NUT,PL,ASSEM WA:6-32 X 0.312,STL,CD PL
Fig. 1-112	407-1235-00	1	BRACKET,FAN MTG:ALUMINUM
Fig. 1-113	211-0504-00	2	SCREW,MACHINE:6-32 X 0.250,PNH STL,CD PL
Fig. 1-114	-----	-	CKT BOARD ASSY:(SEE A17 REPL)
Fig. 1-115	131-0608-00	2	.TERMINAL,PIN:0.365 L X 0.025 PH BRZ GOLD
Fig. 1-116	136-0269-00	1	.SOCKET,PLUG-IN:14 CONTACT,LOW CLEARANCE
Fig. 1-117	147-0035-00	1	.MOTOR,DC:BRUSHLESS,10-15VDC,145MA

**ADD:**

Fig. 1-135	211-0530-00	4	SCREW,MACHINE:6-32 X 1.750,PNH,STL,CD PL,POZ
Fig. 1-136	378-0279-00	1	GRILL,FAN:3.125 DIA SQ
Fig. 1-137	119-1545-01	1	FAN,TUBEAXIAL:(SEE B2536 REPL)
Fig. 1-138	210-0457-00	4	NUT,PL,ASSEM WA:6-32 X 0.312,STL,CD PL
Fig. 1-139	211-0510-00	1	SCREW,MACHINE:6-32 X 0.375,PNH,STL,CD PL
Fig. 1-140	210-0202-00	1	TERMINAL,LUG:0.146 ID,LOCKING,BRZ,TIN PL
Fig. 1-141	210-0478-00	1	SPACER,POST:0.66 L W/6-32 THD THRU,AL
Fig. 1-142	308-0175-00	1	RESISTOR:(SEE R2536 REPL)
Fig. 1-143	174-0085-00	1	CA ASSY,SP,ELEC:2,26 AWG,8.0 L,RIBBON
Fig. 1-144	210-0601-00	1	EYELET,METALLIC:0.183 OD X 0.192 L,BRASS
Fig. 1-145	211-0553-00	1	SCREW,MACHINE:6-32 X 1.5,PNH,STL,CD PL

**CHANGE TO:**

Fig. 1-87	386-2471-01	1	PANEL,REAR:R7903
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**Section 7 — REPLACEABLE MECHANICAL PARTS**

**FIG. 1 FRONT & FRAME** as given in Section 7 only applies to instruments with serial numbers below B210000. The following diagram applies to instruments with serial number B210000 or above.

Date: 10-29-86

Change Reference: M58944

Product: R7903 OSCILLOSCOPE

Manual Part No.: 070-1464-00

**DESCRIPTION**

Product Group 42

These changes are effective at serial number B212774.

**REPLACEABLE ELECTRICAL PARTS LIST CHANGES**

**CHANGE TO:**

U2127            156-1172-02       MICROCKT,DGTL:DUAL 4-STAGE BIN CNTR,SCRN,74LS393

U2202           156-1172-02       MICROCKT,DGTL:DUAL 4-STAGE BIN CNTR,SCRN,74LS393

These parts are located on the Readout circuit board assembly and are listed on a MANUAL CHANGE INFORMATION C53/786.

Date: 10/21/85 Change Reference: M59099/REV.

Product: R7903 Oscilloscope Manual Part No.: 070-1464-00

**DESCRIPTION** Manual insert for Product Gp. 42

These changes are effective at serial number B202661.

**REPLACEABLE ELECTRICAL PARTS LIST CHANGES**

**ADD:**

C2140	281-0816-00	CAP.,FXD,CER DI:82PF,5%,100V
R2186	315-0241-00	RES.,FXD,CMPSN:240 OHM,5%,0.25W

Date: 11/26/85

Change Reference: M59522

Product: R7903 Oscilloscope

Manual Part No.: 070-1464-00

**DESCRIPTION**

Manual Insert for Product Group 42

**These changes are effective at serial number B202667.**

*The following changes apply to the parts list and schematic diagram given in Manual Change Information M51684 for the A15 Readout circuit board assembly installed in instruments with serial number B202642 or above.*

**REPLACEABLE ELECTRICAL PARTS LIST CHANGES**

**CHANGE TO:**

R2239

315-0104-00

RES.,FXD,FILM:100K OHM,5%,0.25W

**DIAGRAM CHANGES**

**READOUT SCHEMATIC**

Change R2239 from 30K to 100K.



Date: 3/18/86

Change Reference: M60367

Product: R7903 Oscilloscope

Manual Part No.: 070-1464-00

**DESCRIPTION**

Manual Insert for Product Group 42

**These changes are effective at serial number B212705.**

*The following changes are associated with a previous change to the A21 Readout circuit board assembly at serial number B202642.*

**REPLACEABLE ELECTRICAL PARTS LIST CHANGES**

*If the components indicated for change cannot be found in the Replaceable Electrical Parts List section of your manual, check for related change information at the rear of the manual.*

**CHANGE TO:**

	672-0572-05	CKT BOARD ASSY:READOUT PROTECTION #1(A21 & A22 WIRED)
A21	670-8620-04	CKT BOARD ASSY:READOUT
R2157	315-0621-00	RES.,FXD,FILM:620 OHM,5%,0.25W
R2250	315-0621-00	RES.,FXD,FILM:620 OHM,5%,0.25W
R2251	315-0472-00	RES.,FXD,FILM:4.7K OHM,5%,0.25W

**ADD:**

C2141	281-0767-00	CAP.,FXD,CER DI:330PF,20%,100V
C2259	281-0762-00	CAP.,FXD,CER DI:27PF,20%,100V
C2259	----	(NOMINAL VALUE,SELECTED)
C2259	281-0808-00	CAP.,FXD,CER DI:7PF,20%,100V
C2259	----	(C2259 SELECTABLE)
C2259	281-0811-00	CAP.,FXD,CER DI:10PF,10%,100V
C2259	----	(C2259 SELECTABLE)
C2259	281-0797-00	CAP.,FXD,CER DI:15PF,10%,100V
C2259	----	(C2259 SELECTABLE)
C2259	281-0759-00	CAP.,FXD,CER DI:22PF,10%,100V
C2259	----	(C2259 SELECTABLE)
C2259	281-0819-00	CAP.,FXD,CER DI:33PF,5%,50V
C2259	----	(C2259 SELECTABLE)
C2259	281-0763-00	CAP.,FXD,CER DI:47PF,10%,100V
C2259	----	(C2259 SELECTABLE)
C2259	281-0798-00	CAP.,FXD,CER DI:51PF,1%,100V
C2259	----	(C2259 SELECTABLE)
C2259	281-0799-00	CAP.,FXD,CER DI:62PF,2%,100V
C2259	----	(C2259 SELECTABLE)
C2297	281-0762-00	CAP.,FXD,CER DI:27PF,20%,100V
C2297	----	(NOMINAL VALUE,SELECTED)
C2297	281-0808-00	CAP.,FXD,CER DI:7PF,20%,100V
C2297	----	(C2297 SELECTABLE)

## DESCRIPTION

C2297	281-0811-00	CAP.,FXD,CER DI:10PF,10%,100V
C2297	-----	(C2297 SELECTABLE)
C2297	281-0797-00	CAP.,FXD,CER DI:15PF,10%,100V
C2297	-----	(C2297 SELECTABLE)
C2297	281-0759-00	CAP.,FXD,CER DI:22PF,10%,100V
C2297	-----	(C2297 SELECTABLE)
C2297	281-0819-00	CAP.,FXD,CER DI:33PF,5%,50V
C2297	-----	(C2297 SELECTABLE)
C2297	281-0763-00	CAP.,FXD,CER DI:47PF,10%,100V
C2297	-----	(C2297 SELECTABLE)
C2297	281-0798-00	CAP.,FXD,CER DI:51PF,1%,100V
C2297	-----	(C2297 SELECTABLE)
C2297	281-0799-00	CAP.,FXD,CER DI:62PF,2%,100V
C2297	-----	(C2297 SELECTABLE)

## DIAGRAM CHANGES

*If the diagrams indicated for change cannot be located in Section 6 of your manual, check for related change information at the rear of the manual.*

### READOUT SYSTEM (SN B202642 - UP)

#### A21 Readout circuit board assembly, SN B202642 - Up

Add C2141 across R2141 on the component locator diagram.

### READOUT SYSTEM (SN B202642 & UP)



Add 330 pF capacitor C2141 across resistor R2141.

Change R2157 and R2250 from 2.2k to 620.

Change R2251 from 20k to 4.7k.

Add **SEL** (selectable) as the value of C2259 and C2297.

Product: R7903 Oscilloscope Service

Manual Part No.: 070-1464-00

**DESCRIPTION**

PG. 42

Effective serial number B212876\*

**ELECTRICAL PARTS LIST CHANGES**

CHANGE TO:

A2	670-2538-03	CKT BOARD ASSY:FRONT PANEL PULSER (R7903 OPTION 10 ONLY)
CR210	152-0664-00	SEMICON DVC,DI: SCHOTTKY,SW,SI,70V,DO-35 (R7903 OPTION 10 ONLY)
CR359	152-0664-00	SEMICON DVC,DI: SCHOTTKY,SW,SI,70V,DO-35 (R7903 OPTION 10 ONLY)
CR1118	152-0141-02	SEMICON DVC,DI:SW,SI,30V,150MA,30V,D0-35 (R7903 OPTION 10 ONLY)
CR1119	152-0664-00	SEMICON DVC,DI: SCHOTTKY,SW,SI,70V,DO-351 (R7903 OPTION 10 ONLY)
CR1138	152-0141-02	SEMICON DVC,DI:SW,SI,30V,150MA,30V,D0-35 (R7903 OPTION 10 ONLY)
CR1142	152-0141-02	SEMICON DVC,DI:SW,SI,30V,150MA,30V,D0-35 (R7903 OPTION 10 ONLY)
CR1543	152-0664-00	SEMICON DVC,DI: SCHOTTKY,SW,SI,70V,DO-35 (R7903 OPTION 10 ONLY)
R1142	3315-0105-00	RES,FXD,FILM:1M OHM,5%0.25W

The above changes are located on the OPTION 10 FRONT PANEL 

\*Electrical Parts List reads SN B202663 for Option 10, it should read B212876.

**Date:** 10/22/87

**Change Reference: M64956**

Product: **R7903 Oscilloscope**

**Manual Part No.:** 070-1464-00

**PRODUCT GROUP CODE: 42**

**These changes are effective at serial number B212922.**

If the components listed for this change cannot be found in the Replaceable Electrical Parts List section of your manual, check for related change information at the rear of the manual.

A21	670-8620-06	CIRCUIT BD ASSY:READOUT
A22	672-0572-07	CIRCUIT BD ASSY:READOUT PROTECTION #1
CR2157	152-0322-00	SEMICOND DVC.DI:SCHOTTKY.SI.15V

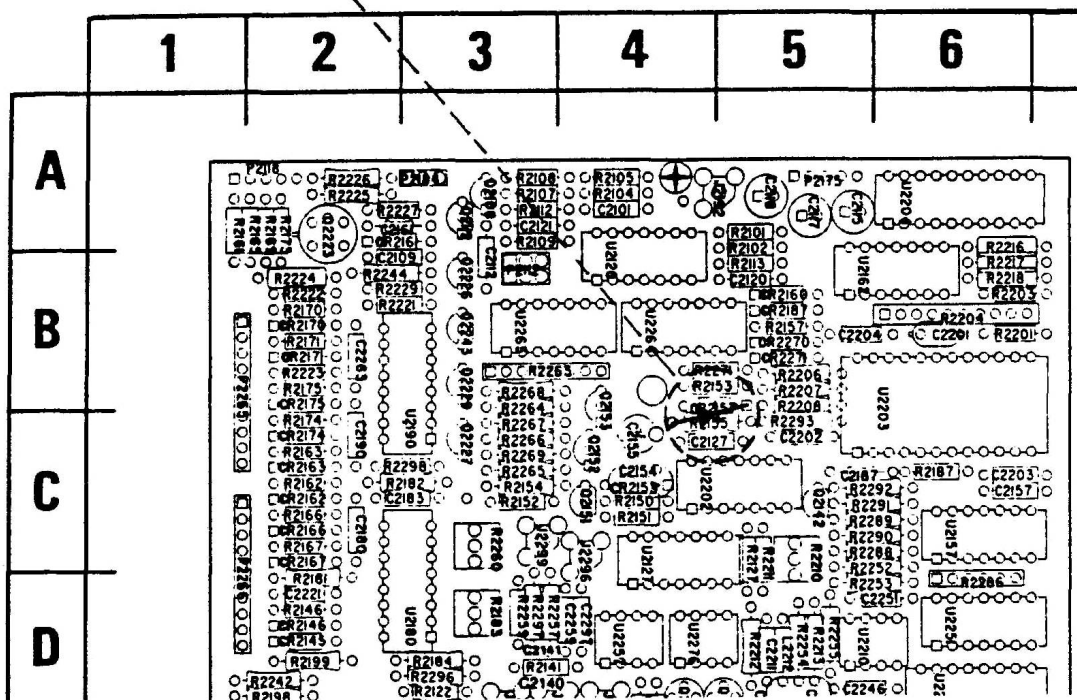
The above component is located in Assembly A21 and shown on diagram

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CR2157

Change to: 152-0322-00

Move CR2157 anode to R2155



## SCHEMATIC CHANGES

**READOUT SYSTEM  
SN B202462 & UP**

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## MANUAL CHANGE INFORMATION

Date: 3/24/88 Change Reference: M66489

Product: R7903 SERVICE

Manual Part No.: 070-1464-00

Product Group Code: 42

### DESCRIPTION

This change is effective at serial number B212983.

## REPLACEABLE ELECTRICAL PARTS LIST AND DIAGRAM CHANGES

If the components listed for this change cannot be found in the Replaceable Electrical Parts List section of your manual, check for related change information at the rear of the manual.

### CHANGE TO:

Component No.	Tektronix Part No.	Name & Description
A21	670-8620-07	CIRCUIT BD ASSY: READOUT
C2161	281-0812-00	CAP,FXD,CER DI:1000PF,10%,100V
C2239	281-0812-00	CAP,FXD,CER DI:1000PF,10%,100V
CR2161	152-0322-00	SEMICON DVC,DI:SCHOTTKY,SI,15V,DO-35

### REMOVE:

C2127	281-0773-00	CAP,FXD,CER DI:0.01UF,10%,100V
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### ADD:

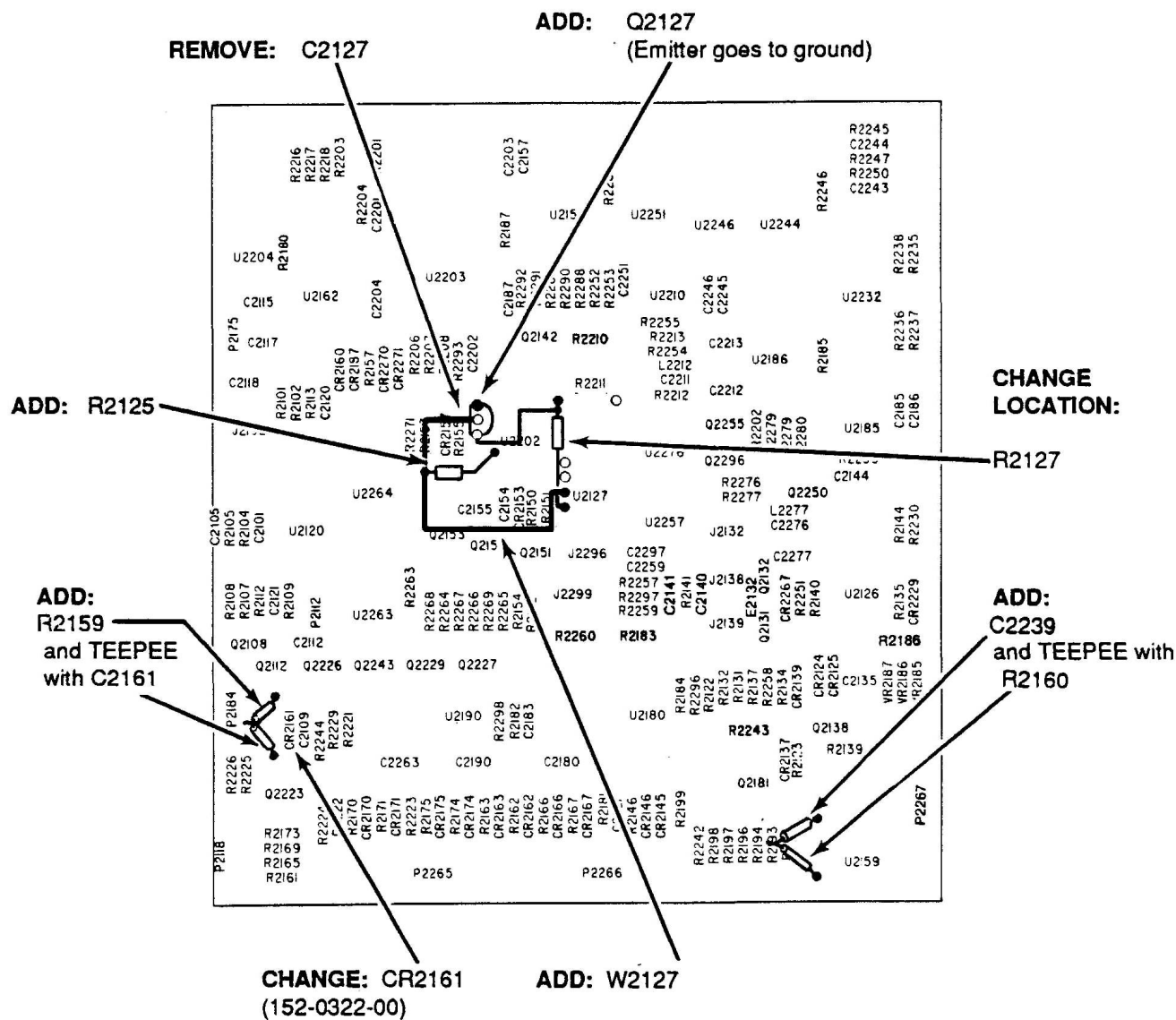
Q2127	151-0190-00	TRANSISTOR:NPN,SI,TO-92
R2125	315-0103-00	RES,FXD,FILM:10K OHM,5%,0.25W
R2159	315-0102-00	RES,FXD,FILM:1K OHM,5%,0.25W
R2160	315-0102-00	RES,FXD,FILM:1K OHM,5%,0.25W

SCHEMATIC, DIAGRAM AND MECHANICAL PARTS LIST CHANGES FOLLOW



**DIAGRAM CHANGES**READOUT SYSTEM  
SN B202462 & UP

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## READOUT SYSTEM

### SN B202462 & Up

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