

DIAGRAMS AND CIRCUIT BOARD ILLUSTRATIONS

Symbols

Graphic symbols and class designation letters are based on ANSI Standard Y32.2-1975.

Logic symbology is based on ANSI/IEEE 91-1984. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The overline on a signal name indicates that the signal performs its intended function when it is in the LO state.

Abbreviations are based on ANSI Y1.1-1972.

Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc., are:

Y14.15-1966 Drafting Practices.
Y14.2M-1979 Line Conventions and Lettering.
ANSI/IEEE 280-1985 Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering.

American National Standards Institute
1430 Broadway
New York, New York 10018

Component Values

Electrical components shown on the diagrams are in the following units unless noted otherwise:

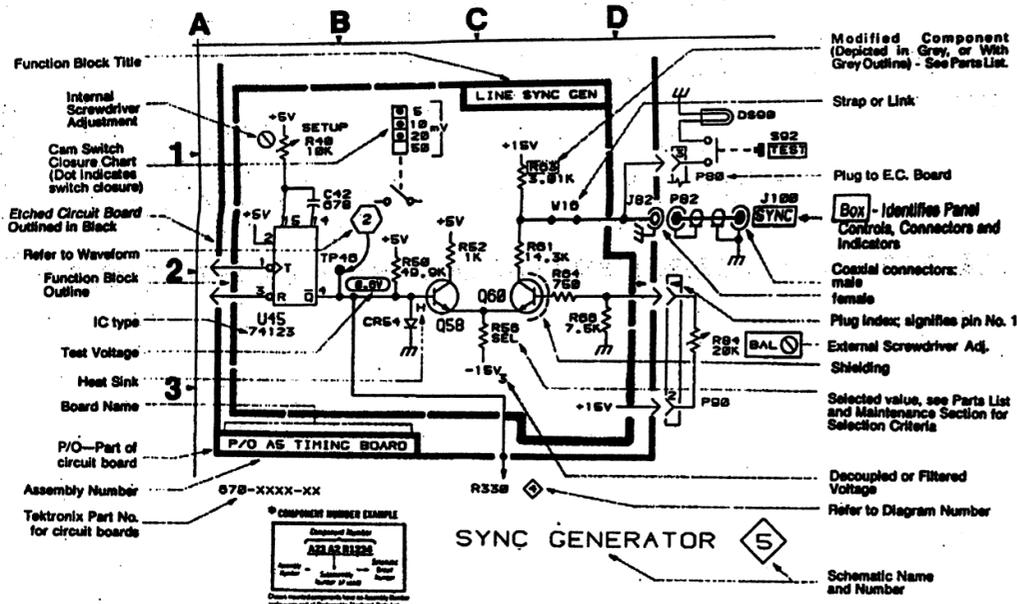
Capacitors Values one or greater are in picofarads (pF).
Values less than one are in microfarads (μF).
Resistors Ohms (Ω).

The information and special symbols below may appear in this manual.

Assembly Numbers and Grid Coordinates

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the circuit board outline on the diagram, in the title for the circuit board component location illustration, and in the lookup table for the schematic diagram and corresponding component locator illustration. The Replaceable Electrical Parts list is arranged by assemblies in numerical sequence; the components are listed by component number *(see following illustration for constructing a component number).

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table. When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration may only appear opposite the first diagram on which it was illustrated; the lookup table will list the diagram number of other diagrams that the circuitry of the circuit board appears on.



Identify any component mounted on circuit board and to locate that component in the schematic diagram.

1. Locate the Circuit Board Illustration.
 - a. Identify the Assembly Number of the circuit board that the component is on by using the Circuit Board location illustration in this section or the mechanical parts exploded views at the rear of this manual.
 - b. In the manual, locate the tabbed foldout page that corresponds with the Assembly Number of the circuit board. The circuit board assembly numbers and names are printed on the back side of the tabs (facing the rear of the manual).

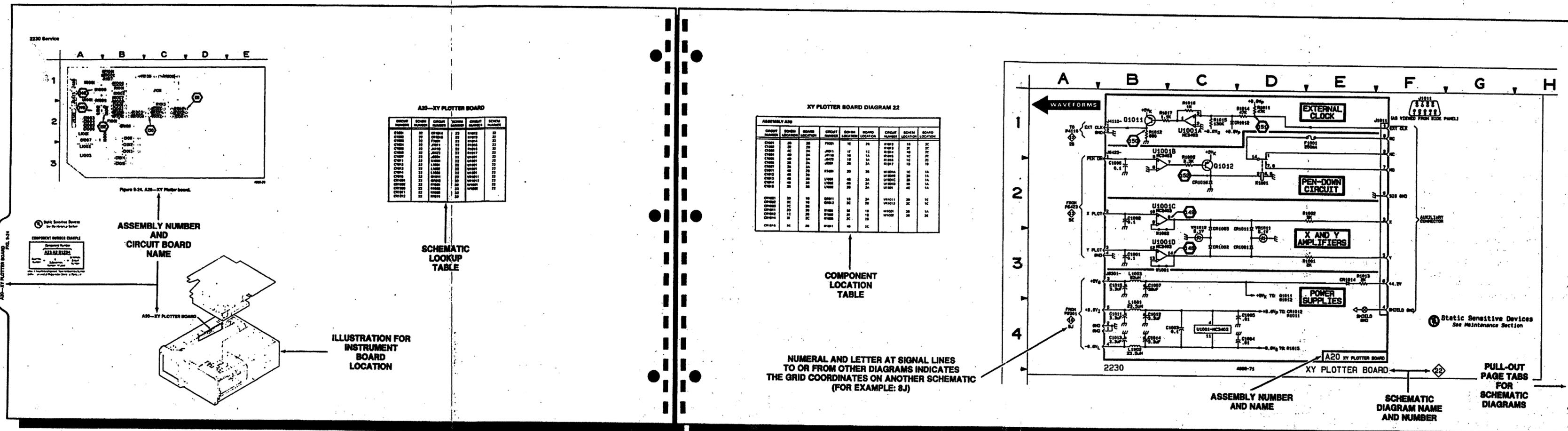
2. Determine the Circuit Number and Schematic Diagram.

- a. Compare the circuit board with its illustration. Locate the component you are looking for by area and shape on the illustration to determine its Circuit Number.
- b. Scan the lookup table next to the Circuit Board illustration to find the Circuit Number of the component.
- c. Read the SCHEM NUMBER column next to the component's circuit number to find the Schematic Diagram number.

3. Locate the Component on the Schematic Diagram.

- a. Locate the tabbed page that corresponds to the Schematic Diagram number. Schematic diagram numbers and names are printed on the front side of the tabs (facing the front of the manual).
- b. Locate the Assembly Number in the Component Location lookup table next to the schematic diagram. Scan the CIRCUIT NUMBER column of that table to find the Circuit Number of the component you are looking for in the schematic.
- c. In the SCHEM LOCATION column next to the component, read the grid coordinates of the component in the schematic.
- d. Using the grid coordinates given, find the component in the schematic diagram.

PULL-OUT PAGE TABS FOR CIRCUIT BOARD ILLUSTRATION



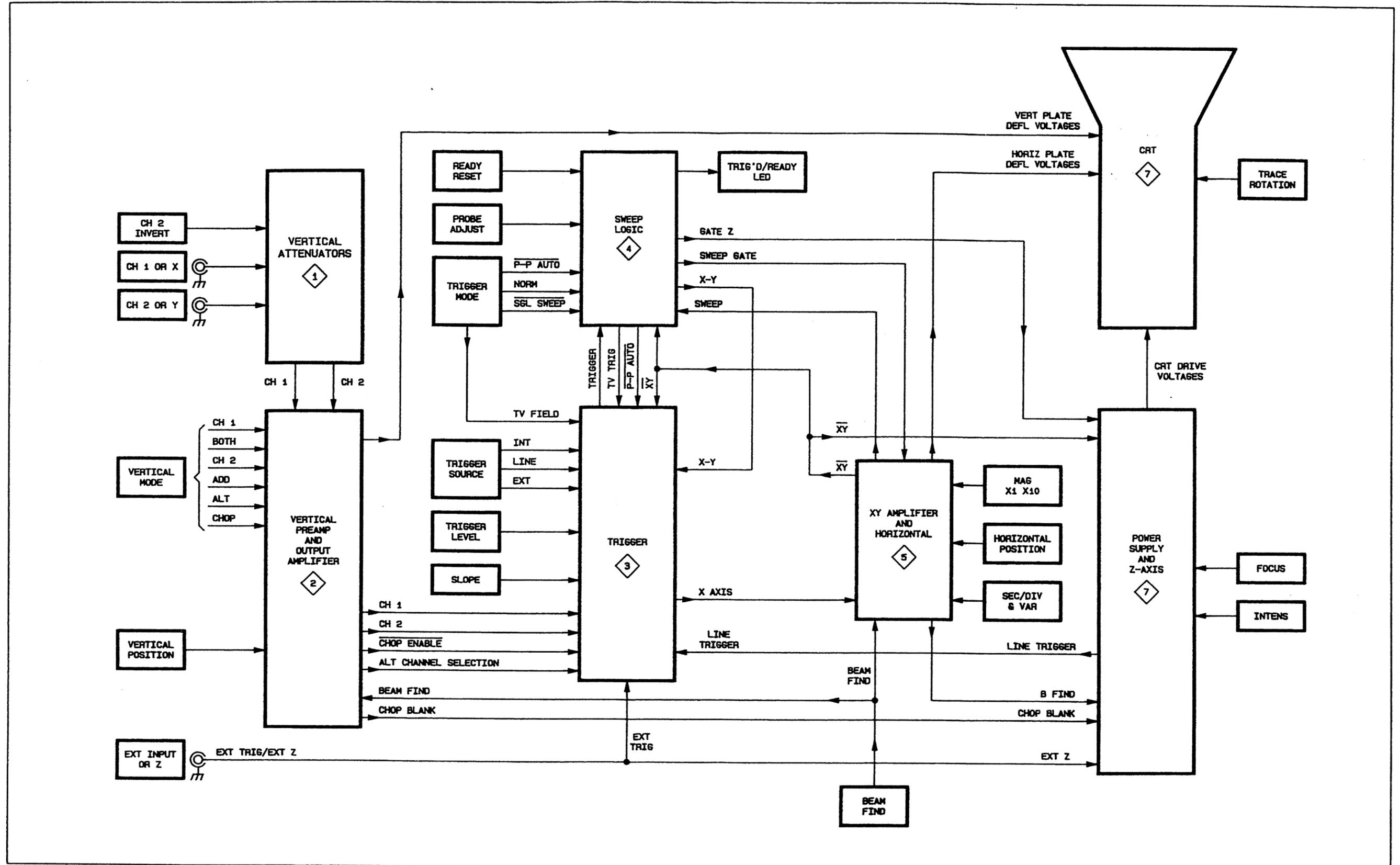


Figure 9-4. Block diagram.

VOLTAGE/WAVEFORM SETUP CONDITIONS

WAVEFORMS

On the left-handed pages preceding the schematic diagrams are test waveform illustrations that are intended to aid in troubleshooting the instrument. To test the instrument for these waveforms, perform the Initial Measurements Setup procedure first. Changes to the Initial Measurement Setup are noted at the beginning of each set of waveforms.

Horizontal

POSITION	Midrange
MAG	X1
SEC/DIV	0.2 ms
SEC/DIV Variable	CAL detent

Trigger

SLOPE	Positive (↗)
MODE	P-P AUTO
SOURCE	VERT MODE

DC VOLTAGES

Typical voltage measurements located on the schematic diagrams were obtained with the instrument operating under the conditions specified in the Initial Measurements Setup procedure. Control-setting changes required for specific voltages are indicated on each waveform page. Voltage measurements are referenced to the chassis ground.

RECOMMENDED TEST EQUIPMENT

Test equipment in Table 4-1 in the Performance Check Procedure, Section 4, of this manual meets the required specifications for testing this instrument.

POWER SUPPLY ISOLATION PROCEDURE

Each regulated supply has numerous feed points to external loads through the instrument. Diagram 8, power distribution, is used in conjunction with the schematic diagrams to determine the service jumper or component that may be lifted to isolate loads from the power supply.

If a supply comes up after lifting one of the isolating jumpers, it is very probable that short exists in the circuitry on that supply line. By lifting jumpers or other components in the supply line farther down the line, the circuit in which a short exists may be located.

Always set the POWER switch to OFF before soldering or unsoldering service jumpers or other components and before attempting to measure component resistance values.

INITIAL MEASUREMENTS SETUP

To test the instrument for waveforms and voltages, set the initial control settings as follows:

Vertical (Both Channels)

POSITION	Midrange
MODE	CH 1, NORM
VOLTS/DIV	5 mV
VOLTS/DIV Variable	CAL detent
AC-GND-DC	GND

OTHER PARTS

CIRCUIT NUMBER	SCHEM NUMBER	CIRCUIT NUMBER	SCHEM NUMBER	CIRCUIT NUMBER	SCHEM NUMBER
J100	1	P902	7	R51	6
J100	6	P906	7	R382	6
J151	1	P910	7	R983	7
J151	6				
J300	6	R1	1	T901	7
J590	4	R1	6		
		R51	1	V900	7

VERTICAL ATTENUATORS DIAGRAM 1

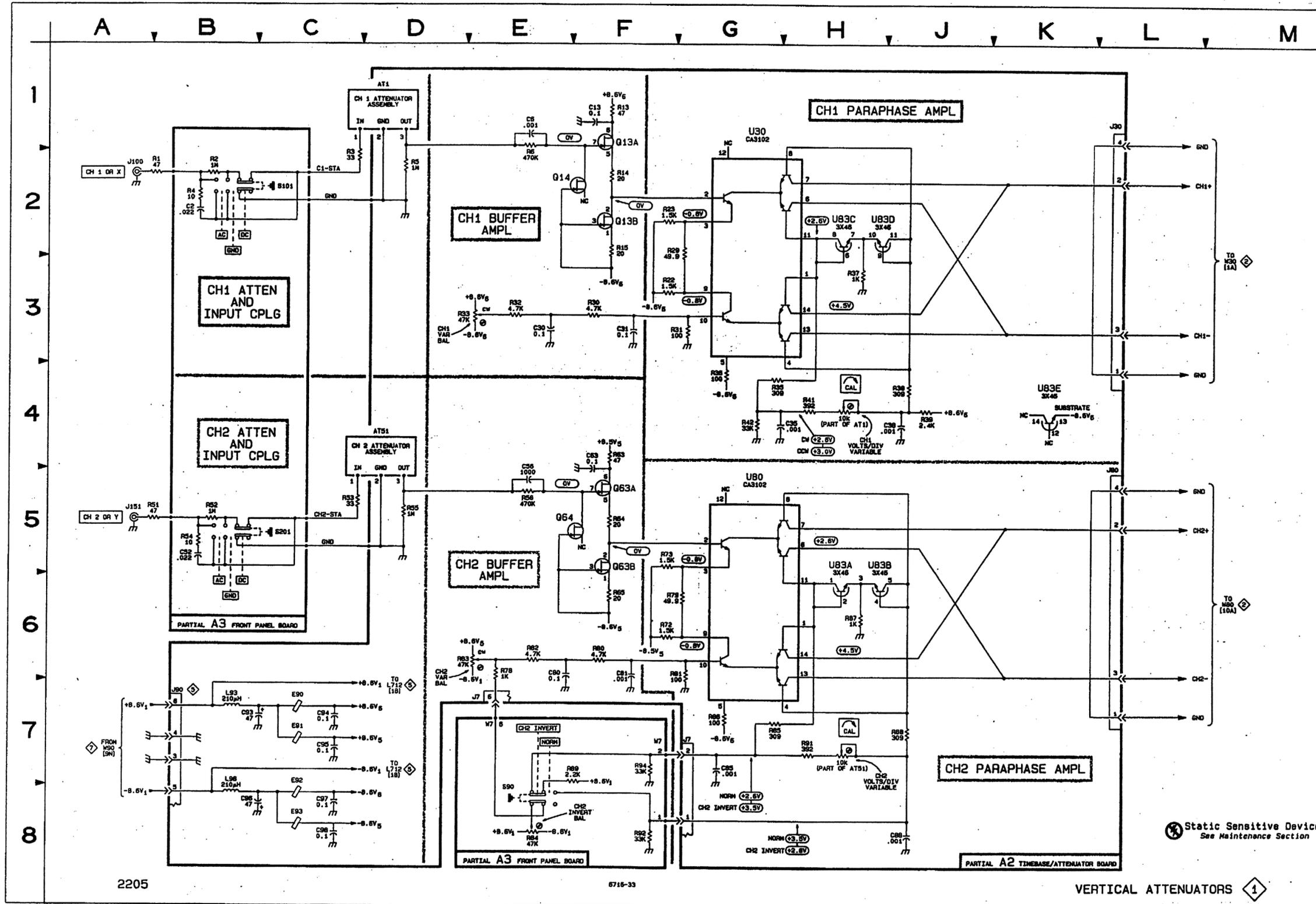
ASSEMBLY A2											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
AT1	1D	5B	E91	7C	1C	R13	1F	5B	R65	6F	4C
AT51	4D	5D	E92	7C	1B	R14	2F	4A	R72	6F	4C
			E93	8C	1B	R15	2F	4B	R73	5F	4C
C6	1E	4B	J7	7E	2D	R22	3F	4B	R78	6E	2D
C13	1F	5B	J7	7E	2D	R23	2F	4B	R79	6F	3C
C30	3E	2A	J7	7E	2D	R29	2F	3B	R80	6F	2C
C31	3F	3A	J30	1L	2A	R30	3F	2B	R81	6G	3C
C35	4H	2A	J80	5L	2C	R31	3F	3A	R82	6E	2C
C38	4J	2B	J90	7B	1C	R32	3E	2A	R83	6D	2C
C58	4E	4D				R33	3D	1B	R85	7G	2C
C63	4F	5C	L93	7B	1B	R35	4G	2B	R86	7G	4C
C80	6E	2C	L96	7B	1C	R36	4G	4B	R87	6H	2C
C81	6F	3C				R37	3H	1B	R88	7J	3C
C85	7G	2C	Q13A	1F	4B	R38	4J	3B	R91	7H	3C
C88	8J	2C	Q13B	2F	4B	R39	4J	2B			
C89	7B	1B	Q14	2E	4B	R41	4H	3B	U30	1G	3B
C94	7C	1B	Q83A	5F	4C	R42	4G	2B	U80	5G	3C
C95	7C	1C	Q83B	5F	4C	R53	5C	5D	U83A	5H	2B
C96	8B	1B	Q84	5E	4C	R55	5D	4D	U83B	5H	2B
C97	8C	1B				R56	5E	4C	U83C	2H	2B
C98	8C	1C	R3	2C	5B	R63	4F	5C	U83D	2H	2B
E90	7C	1B	R5	2D	4B	R64	5F	4C	U83E	4K	2B
			R6	2E	4B						

Partial A2 also shown on diagrams 5, 6 and 8.

ASSEMBLY A3											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C2	2B	4C	R52	5B	4C	R62	6F	2D	S101	2C	3B
C52	5B	4C	R54	5B	4C	R64	7F	2C	S201	5C	3C
R2	2B	4B	R89	7F	2C	S90	8E	2C	W7	7F	3D
R4	2B	4B									

Partial A3 also shown on diagrams 2, 3, 4, 6 and 8.

CHASSIS MOUNTED PARTS											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
J100	2A	CHASSIS	J151	5A	CHASSIS	R1	2B	CHASSIS	R51	5B	CHASSIS



Service

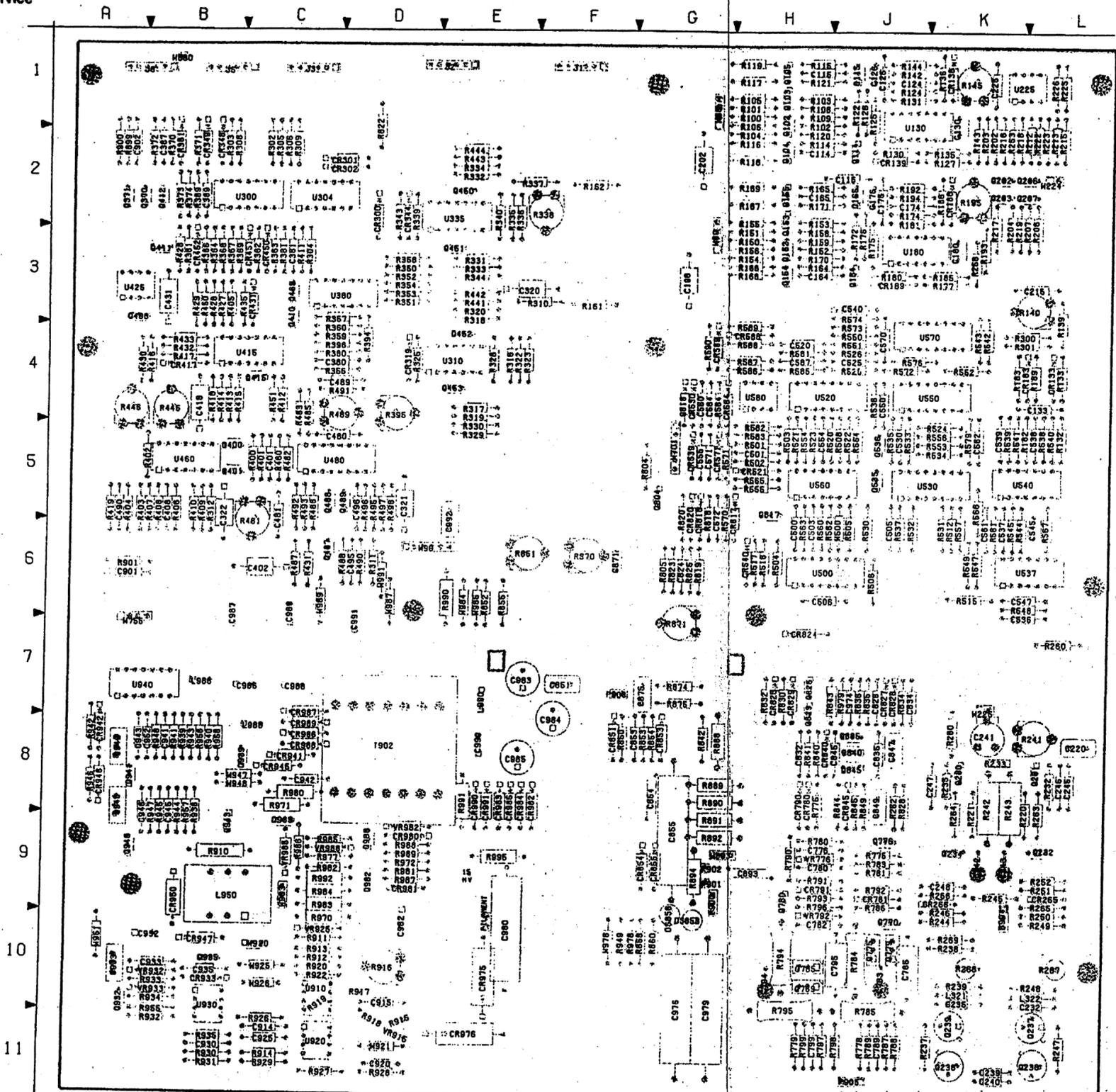
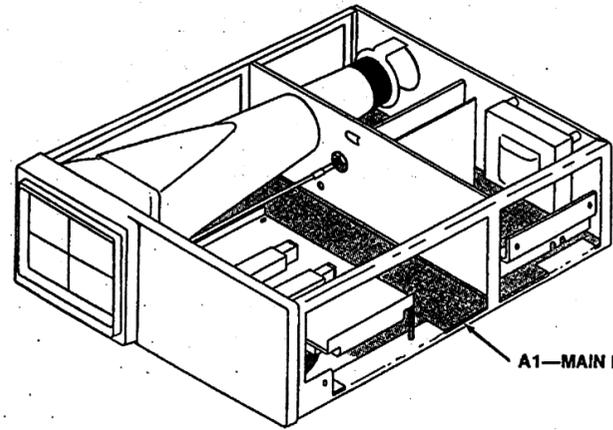
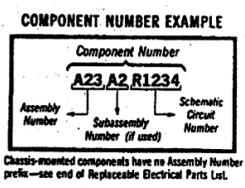


Figure 9-8. A1—Main board component view.

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⊗ Static Sensitive Devices
See Maintenance Section



A1—MAIN BOARD

CIRCUIT NUMBER	SCHEM NUMBER										
C114	2	C794	5	CR781	5	Q165	2	R126	2	R246	2
C115	2	C795	5	CR790	5	Q202	2	R127	2	R247	2
C116	2	C799	5	CR791	5	Q203	2	R130	2	R248	2
C124	2	C824	7	CR817	7	Q206	2	R131	2	R249	2
C125	2	C828	7	CR818	7	Q207	2	R132	2	R250	2
C126	2	C832	7	CR820	7	Q220	2	R133	2	R251	2
C130	2	C834	7	CR824	7	Q231	2	R135	2	R252	2
C133	2	C835	7	CR825	7	Q232	2	R136	2	R253	2
C164	2	C845	7	CR827	7	Q234	2	R139	2	R258	2
C185	2	C847	7	CR828	7	Q236	2	R140	2	R260	2
C174	2	C849	7	CR829	7	Q237	2	R142	2	R260	2
C175	2	C851	7	CR840	7	Q238	2	R143	2	R282	5
C176	2	C853	7	CR845	7	Q239	2	R144	2	R263	2
C180	2	C854	7	CR851	7	Q370	3	R145	2	R264	2
C198	2	C855	7	CR853	7	Q371	3	R150	2	R265	2
C202	2	C871	7	CR854	7	Q400	3	R151	2	R266	2
C215	2	C875	7	CR855	7	Q401	3	R152	2	R267	2
C220	2	C893	7	CR833	7	Q410	3	R153	2	R268	2
C225	2	C901	7	CR941	7	Q411	3	R154	2	R269	2
C232	2	C902	7	CR942	7	Q412	3	R155	2	R280	2
C235	2	C914	7	CR945	7	Q415	3	R156	2	R300	3
C239	2	C915	7	CR946	7	Q450	3	R158	2	R301	3
C240	2	C920	7	CR947	7	Q451	3	R159	2	R302	3
C241	2	C925	7	CR950	7	Q452	3	R161	2	R303	3
C242	2	C930	7	CR975	7	Q453	3	R161	8	R304	3
C243	2	C932	7	CR976	7	Q465	3	R162	2	R305	3
C245	2	C933	7	CR980	7	Q467	3	R162	8	R306	3
C246	2	C935	7	CR981	7	Q488	3	R164	2	R308	3
C247	2	C941	7	CR982	7	Q489	3	R165	2	R309	3
C248	2	C942	7	CR983	7	Q490	3	R166	2	R310	3
C320	3	C943	7	CR984	7	Q535	4	R167	2	R310	8
C321	3	C945	7	CR985	7	Q536	4	R168	2	R311	3
C322	3	C946	7	CR986	7	Q770	5	R168	2	R311	8
C380	3	C952	7	CR987	7	Q775	5	R170	2	R311	8
C381	3	C974	7	CR988	7	Q776	5	R171	2	R312	3
C387	3	C976	7	CR989	7	Q779	5	R172	2	R312	8
C389	3	C978	7	CR990	7	Q780	5	R174	2	R316	3
C401	3	C980	7	CR991	7	Q785	5	R175	2	R317	3
C402	3	C982	7			Q789	5	R176	2	R318	3
C408	3	C983	7	DS856	7	Q804	7	R177	2	R319	3
C418	3	C984	7	DS858	7	Q817	7	R180	2	R320	3
C431	3	C985	7			Q818	7	R181	2	R322	3
C480	3	C986	7	J1	2	Q819	7	R182	2	R323	3
C481	3	C987	7	J1	4	Q825	7	R182	2	R325	3
C489	3	C988	7	J1	6	Q829	7	R183	2	R326	3
C490	3	C989	7	J2	2	Q835	7	R185	2	R329	3
C495	3	C990	7	J2	6	Q840	7	R186	2	R330	3
C496	3	C991	7	J3	3	Q845	7	R188	2	R331	3
C500	4	C992	7	J3	6	Q852	7	R192	2	R332	3
C501	4			J3	8	Q853	7	R193	2	R333	3
C503	4	CR133	2	J5	4	Q835	7	R194	2	R334	3
C505	4	CR136	2	J5	6	Q839	7	R195	2	R335	3
C506	4	CR139	2	J6	4	Q841	7	R202	2	R336	3
C520	4	CR183	2	J6	6	Q842	7	R203	2	R337	3
C525	4	CR186	2			Q843	7	R204	2	R338	3
C530	4	CR189	2	L321	2	Q845	7	R208	2	R339	3
C536	2	CR265	2	L322	2	Q846	7	R207	2	R340	3
C537	2	CR266	2	L950	7	Q862	7	R212	2	R343	3
C538	2	CR300	3	L986	7	Q885	7	R213	2	R344	3
C539	2	CR301	3	L988	7	Q888	7	R215	2	R350	3
C540	2	CR302	3	L990	7			R216	2	R351	3
C545	2	CR319	3			R100	2	R217	2	R352	3
C547	2	CR344	3	P900	7	R101	2	R218	2	R353	3
C550	4	CR346	3	P901	7	R102	2	R219	2	R354	3
C554	4	CR349	3	P902	7	R103	2	R220	2	R356	3
C555	4	CR381	3	P903	7	R104	2	R221	2	R357	3
C560	4	CR417	3	P904	7	R105	2	R222	2	R358	3
C561	2	CR431	3	P905	5	R108	2	R223	2	R359	3
C562	2	CR450	3			R108	2	R225	2	R360	3
C570	4	CR451	3	Q102	2	R109	2	R226	2	R361	3
C571	4	CR452	3	Q103	2	R114	2	R228	2	R362	3
C572	4	CR521	4	Q104	2	R115	2	R232	2	R363	3
C584	4	CR530	4	Q105	2	R116	2	R233	2	R363	3
C587	4	CR539	2	Q114	2	R117	2	R235	2	R364	3
C776	5	CR540	4	Q115	2	R118	2	R237	2	R366	3
C780	5	CR571	4	Q152	2	R119	2	R238	2	R367	3
C782	5	CR584	4	Q153	2	R120	2	R239	2	R368	3
C783	5	CR588	4	Q154	2	R121	2	R240	2	R369	3
C785	5	CR589	4	Q155	2	R122	2	R242	2	R370	3
C789	5	CR780	5	Q164	2	R124	2	R243	2	R371	3
						R125	2	R244	2	R372	3
								R245	2	R373	3

A1—MAIN BOARD (cont)

CIRCUIT NUMBER	SCHEM NUMBER										
R374	3	R491	3	R562	4	R630	7	R698	7	U540	2
R380	3	R492	3	R563	4	R632	7	R699	7	U540	4
R381	3	R493	3	R564	4	R634	7	R640	7	U550	4
R389	3	R495	3	R565	4	R635	7	R641	7	U560	2
R384	3	R496	3	R566	2	R636	7	R642	7	U560	4
R395	3	R497	3	R567	2	R640	7	R643	7	U570	4
R398	3	R498	3	R570	4	R641	7	R644	7	U580	4
R400	3	R501	4	R571	4	R642	7	R645	7	U910	7
R401	3	R502	4	R572	4	R643	7	R646	7	U920	7
R402	3	R503	4	R573	4	R644	7	R647	7	U930	7
R403	3	R504	4	R574	4	R645	7	R648	7	U940	7
R404	3	R505	4	R576	4	R649	7	R649	7		
R405	3	R506	4	R579	4	R650	7	R655	7	VR776	5
R406	3	R508	4	R581	4	R651	7	R656	7	VR782	5
R407	3	R512	4	R582	4	R652	7	R657	7	VR915	7
R408	3	R515	4	R583	4	R653	7	R658	7	VR925	7
R409	3	R517	4	R584	4	R654	7	R670	7	VR932	7
R410	3	R518	4	R585	4	R655	7	R671	7	VR933	7
R411	3	R520	4	R586	4	R658	7	R672	7	VR982	7
R412	3	R521	4	R587	4	R660	7	R677	7	VR985	7
R413	3	R522	4	R588	4	R670	7	R678	7	VR988	7
R414	3	R523	4	R589	4	R671	7	R679	7		
R415	3	R524	4	R590	4	R674	7	R680	7	W30	2
R416	3	R525	4	R775	5	R675	7	R681	7	W80	2
R417	3	R528	4	R776	5	R688	7	R682	7	W90	7
R418	3	R530	4	R778	5	R689	7	R683	7	W90	8
R419	3	R531	4	R779	5	R690	7	R684	7	W224	2
R426	3	R532	3	R790	5	R691	7	R685	7	W225	2
R427	3	R533	4	R781	5	R692	7	R686	7	W500	4
R428	3	R533	4	R783	5	R694	7	R687	7	W590	4
R429	3	R534	4	R784	5	R699	7	R688	7	W701	4
R430	3	R535	4	R785	5	R900	7	R689	7	W755	5
R431	3	R536	4	R786	5	R901	7	R690	7	W893	7
R431	8	R537	4	R787	5	R910	7	R691	7	W903	7
R432	3	R538	2	R788	5	R911	7	R692	7	W920	7
R433	3	R539	2	R789	5	R912	7	R695	7	W921	7
R435	3	R540	2	R790	5	R913	7		W925	7	
R441	3	R541	2	R791	5	R914	7	T902	7	W926	7
R442	3	R542	3	R792	5	R915	7		W947	7	
R443	3	R543	3	R793	5	R916	7	U130	2	W948	7
R444	3	R544	2	R794	5	R917	7	U180	2	W951	7
R445	3	R545	2	R795	5	R918	7	U225	2	W976	7
R446	3	R547	2	R796	5	R919	7	U300	3	W984	7
R450	3	R548	2	R797	5	R920	7	U304	3	W984	8
R451	3	R549	2	R798	5	R922	7	U310	3	W985	7
R460	3	R550	4	R799	5	R926	7	U335	3	W987	7
R481	3	R551	4	R804	7	R927	7	U380	3	W987	8
R482	3	R552	4	R806	7	R928	7	U415	3	W989	7
R483	3	R553	4	R818	7	R929	7	U425	3	W989	8
R485	3	R554	4	R819	7	R930	7	U460	3	W991	7
R486	3	R555	4	R820	7	R931	7	U480	3	W991	8
R487	3	R556	4	R822	7	R932	7	U500	4		
R488	3	R557	4	R823	7	R933	7	U520	4		
R489	3	R560	4	R825	7	R934	7	U530	4		
R490	3	R561	2	R828	5	R935	7	U537	2		

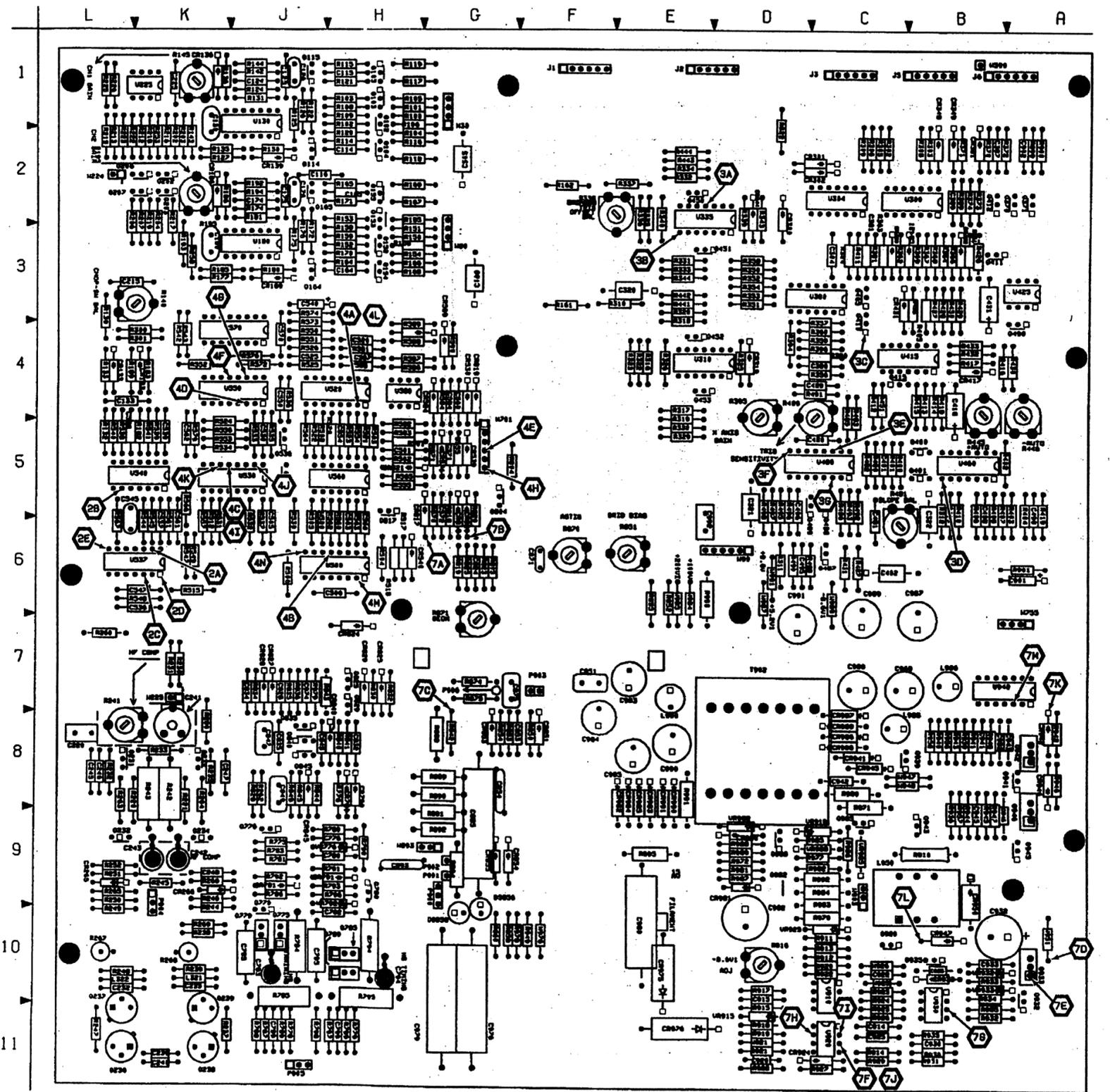
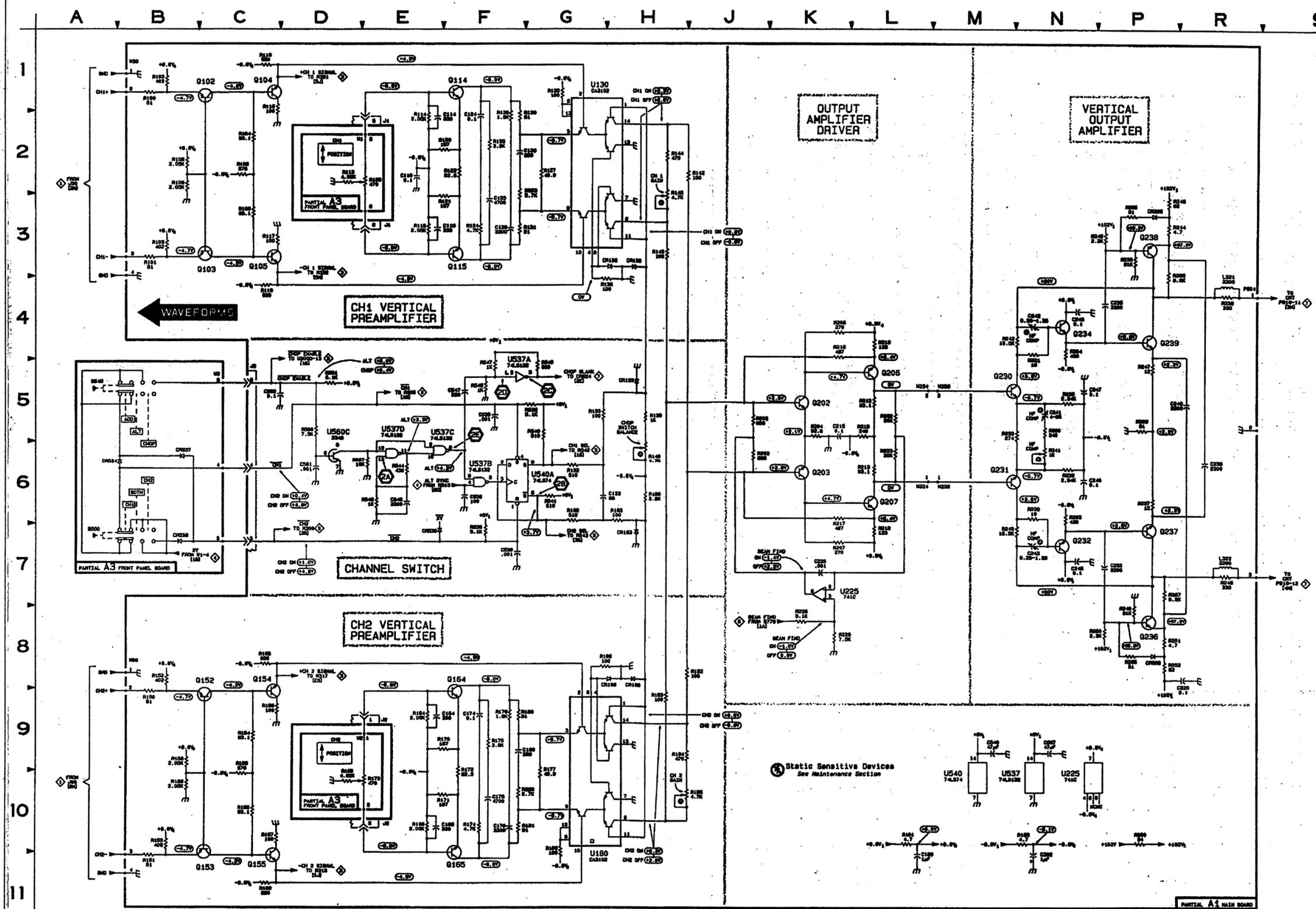
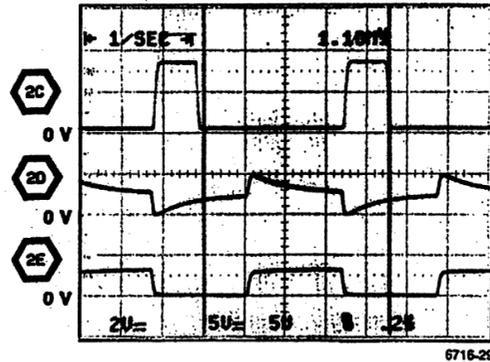
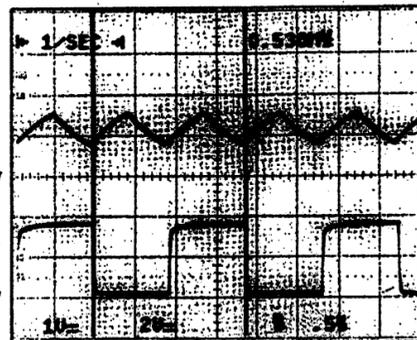


Figure 9-9. Circuit view of A1—Main board.

WAVEFORMS FOR DIAGRAM 2

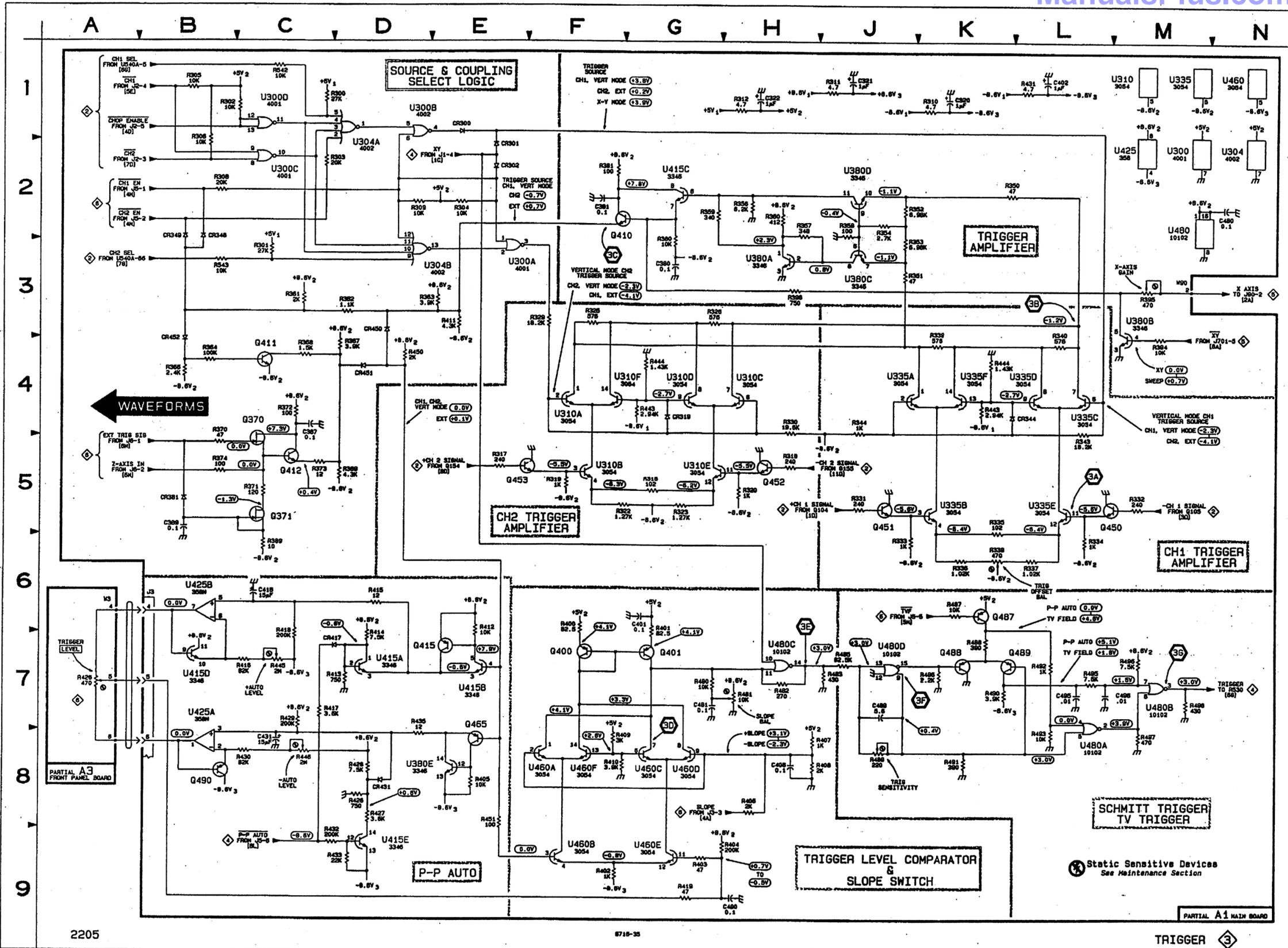
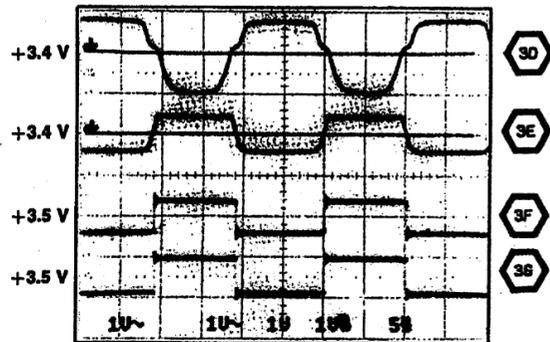
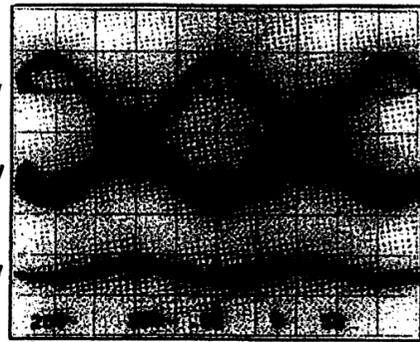
AC Waveforms
VERTICAL MODE BOTH and CHOP



WAVEFORMS FOR DIAGRAM 3

AC Waveforms

VOLTS/DIV 0.1 V
AC-GND-DC AC
SEC/DIV 5μs
Input signal 4-division, 50 kHz reference sine wave



SWEEP LOGIC DIAGRAM 4

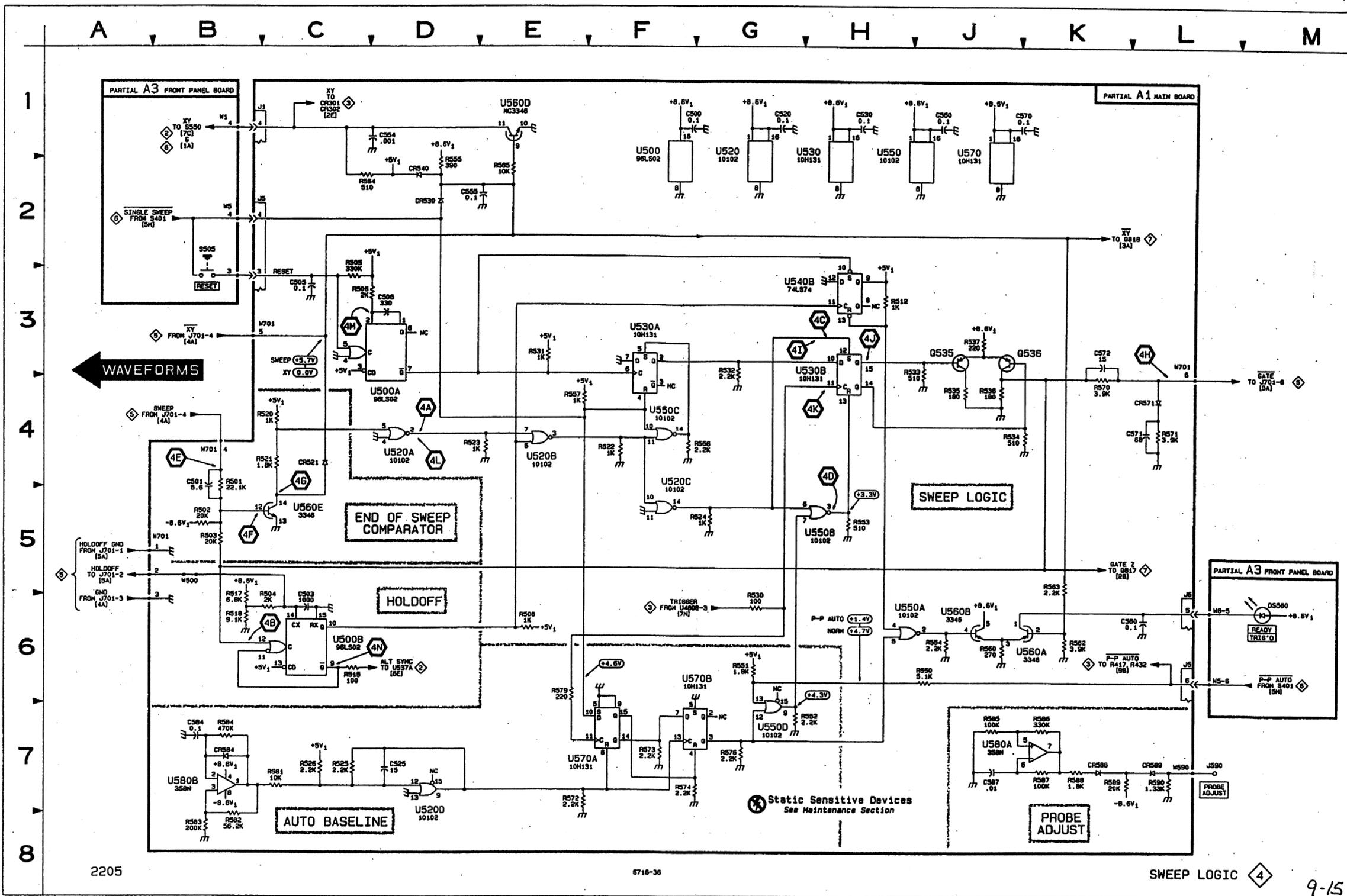
ASSEMBLY A1											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C500	1F	6H	C535	3J	6J	R552	7H	4K	U500	1F	6H
C501	4B	6H	C536	3J	6J	R553	5H	5K	U520A	4D	4H
C503	6C	6H				R554	6J	6H	U520B	4E	4H
C505	3C	6J	R501	4B	5H	R555	2D	6J	U520C	4F	4H
C506	3D	6H	R502	5B	5H	R556	4Q	5K	U520D	7D	4H
C520	1G	4H	R503	5B	5H	R557	4E	6K	U520	1Q	4H
C525	7D	4J	R504	6J	6H	R558	6J	6H	U530A	2F	6J
C530	1H	6J	R505	2C	6J	R559	6K	6J	U530B	3H	6J
C550	1I	6J	R506	3C	6J	R560	5K	6H	U530	1H	6J
C554	1D	5H	R507	6E	6J	R561	2C	6J	U540B	3Q	6K
C555	2D	5G	R508	3H	6K	R562	2E	6H	U520A	6J	4J
C560	6L	4G	R512	9C	6K	R563	6C	6J	U520B	6H	4J
C570	1K	4J	R515	6C	6H	R564	4L	6G	U520C	4F	4J
C571	4L	6J	R517	6B	6H	R565	7E	4J	U520D	7G	4J
C572	4L	6J	R518	6B	6H	R566	7F	4J	U520	1H	4J
C574	3K	6G	R520	4C	6J	R567	7F	4J	U580A	6J	6H
C584	7B	4G	R521	4C	6J	R568	7F	4J	U580B	6K	6H
C587	7J	4H	R522	4F	6J	R569	7G	4J	U580C	6K	6H
			R523	4D	5H	R570	6E	5K	U580D	1E	6H
CR621	4C	5H	R524	5G	6K	R571	7C	4H	U580E	6C	6H
CR630	2D	4G	R525	7C	4J	R572	6B	5H	U570A	7E	4J
CR640	2D	6H	R526	7C	4J	R573	6B	5H	U570B	6G	4J
CR571	4L	6G	R530	6G	6J	R574	7B	4G	U570	1J	4J
CR584	7B	4G	R531	3D	6K	R575	7J	4H	U580A	7J	4H
CR588	7K	4H	R532	3G	6J	R576	7K	4H	U580B	7B	4H
CR590	7L	4G	R533	3H	6J	R577	7K	4H			
			R534	4J	5K	R578	7K	4H	W500	5B	6J
J1	1B	1F	R535	4J	5J	R579	7K	4H	W590	7L	1B
J5	2C	1B	R537	4J	6J	R580	7L	4G	W701	3L	5G
J5	6L	1B	R538	3J	6J						
J6	6L	1A	R550	6J	4J				U500A	4D	6H
			R551	6G	4J				U500B	6C	6H

Partial A1 also shown on diagrams 2, 3, 5, 6, 7 and 8.

ASSEMBLY A3											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
DS500	6M	2F	S606	2B	2F	W1	1B	4A	W5	6L	4E
						W5	2B	4E	W5	6L	4F

Partial A3 also shown on diagrams 1, 2, 3, 6 and 8.

CHASSIS MOUNTED PARTS											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
J590	7L	CHASSIS									



2205

6716-36

SWEEP LOGIC 4

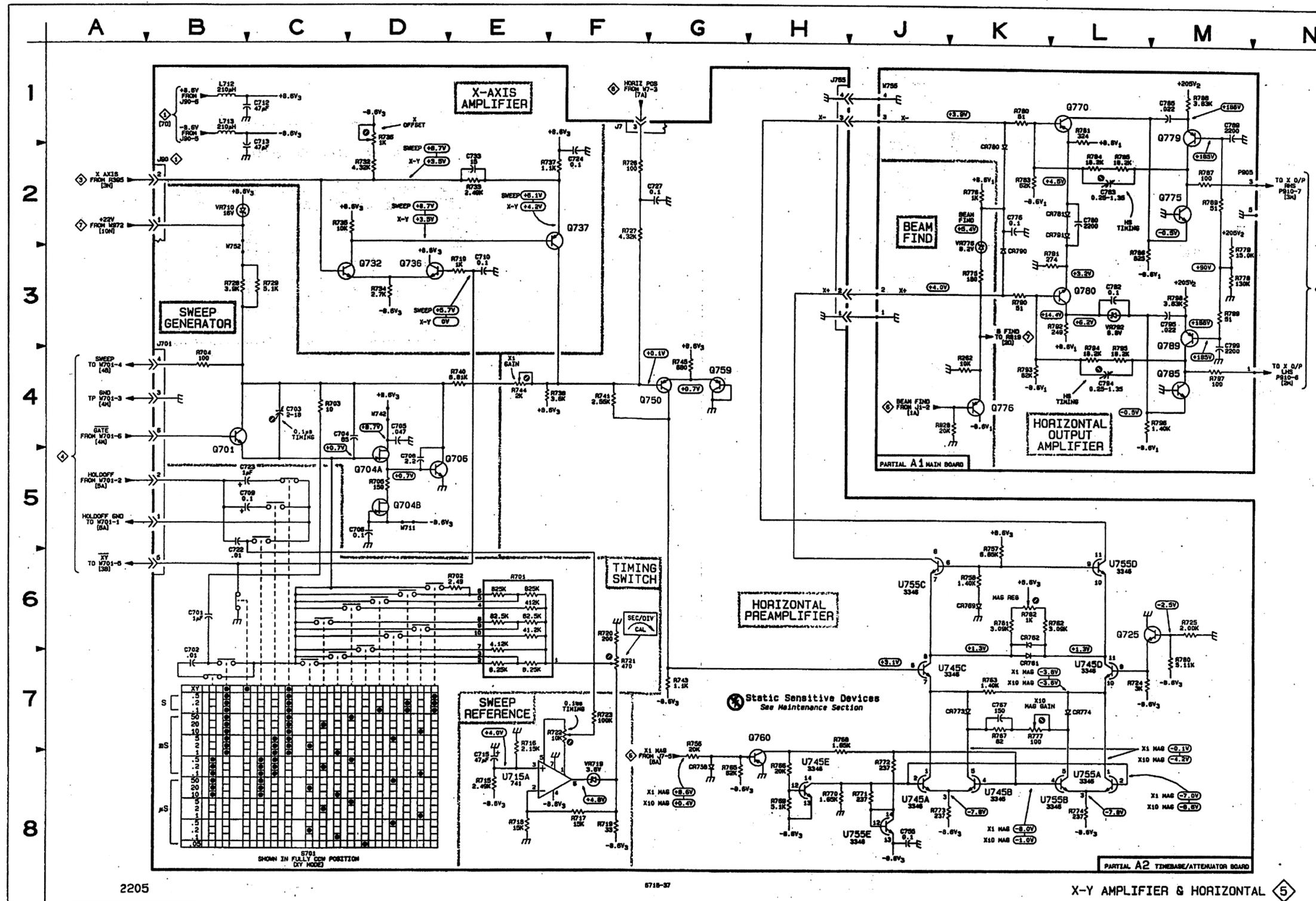
SWEEP GENERATOR & HORIZONTAL AMPLIFIER DIAGRAM 5

ASSEMBLY A1											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C776	2K	8H	P805	2M	11J	R770	2M	11H	R783	4K	8H
C780	2L	8H	Q770	1L	10J	R780	1K	8H	R784	3L	10H
C782	2L	10H	Q775	2M	10J	R781	1L	8J	R785	3L	10H
C783	2L	10J	Q776	4K	8J	R782	2K	8J	R786	4M	8H
C785	1M	13B	Q777	1M	10J	R783	2L	10J	R787	4M	11J
C789	1M	11J	Q778	3L	10H	R784	1M	10J	R788	3M	11J
C794	4L	10H	Q780	4M	10H	R785	3L	11J	R789	3M	11H
C795	3M	10J	Q785	4M	10H	R786	3M	11J	R828	4J	8J
C799	3M	11H	Q789	3M	10H	R787	1M	11J	VR776	2K	8H
CR780	1K	8H	R282	4K	8J	R788	2M	11J	VR782	3L	10H
CR781	2L	8J	R775	3K	8J	R789	3K	8H	W755	1J	7A
CR780	3K	8H	R778	2K	8H	R790	3L	8H			
CR791	2L	8H	R779	2M	11J	R791	3L	8H			
						R792	3L	8J			

Partial A1 also shown on diagrams 2, 3, 4, 6, 7 and 8.

ASSEMBLY A2											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C701	8B	4F	J755	1H	1F	R722	7F	1D	R788	8H	2F
C702	7B	4E				R723	7F	2D	R770	8H	2F
C703	4C	5F	L712	1B	1C	R724	7L	1D	R771	8J	1F
C704	4C	5F	L713	1B	1C	R725	8M	3F	R772	8J	1F
C705	4D	5F				R726	2F	3F	R773	8J	3F
C706	5D	5F	Q701	5B	4F	R727	2F	3F	R774	8L	1F
C708	5D	5F	Q704A	5D	4F	R728	3B	2D	R777	7K	1E
C709	5C	4E	Q704B	5D	5G	R729	3C	2D	R780	7M	2F
C710	1C	5F	Q708	5D	5F	R732	2D	1D	R782	6K	2F
C712	1C	1C	Q725	8L	2G	R733	2E	3E	S701	8C	2E
C713	1C	1C	Q732	3D	3E	R734	3D	2D			
C715	8E	2E	Q736	3D	3E	R735	2C	3E			
C722	8B	4E	Q737	2F	3E	R736	1D	1D	U715A	8E	1E
C723	5D	4E	Q750	4Q	3G	R737	2F	3E	U745A	8J	2F
C724	2F	3E	Q759	4Q	3Q	R740	4E	3F	U745B	8K	2F
C727	2G	3E	Q760	7H	2F	R741	4F	3Q	U745D	7L	2F
C733	2E	3E				R743	7G	3Q	U745E	8H	2F
C755	8J	2F	R701	8E	4F	R744	4E	3F	U755A	8L	1F
C767	7K	1E	R702	8E	5F	R745	4G	4Q	U755B	8L	1F
CR758	8G	2F	R704	4B	4F	R746	5K	2G	U755C	8J	1F
CR761	7K	2G	R705	5D	5F	R747	5K	2G	U755D	8L	1F
CR762	8K	2F	R710	3E	3D	R748	6K	2G	U755E	8J	1F
CR769	8K	2G	R715	8E	2E	R749	6K	2F			
CR773	7K	1E	R716	7E	1D	R751	6K	2F	VR710	2B	1D
CR774	7L	1E	R717	8F	1E	R752	7K	1E	VR719	8F	1E
J7	1F	2D	R718	8E	1E	R753	7K	1E	W711	5D	4G
J90	2B	1C	R719	8F	2E	R756	8G	2E	W742	4D	4G
J701	3B	4	R720	8F	2E	R757	7K	1E	W752	3B	1D
			R721	7F	2E	R758	7H	2F			

Partial A2 also shown on diagrams 1, 6 and 8.



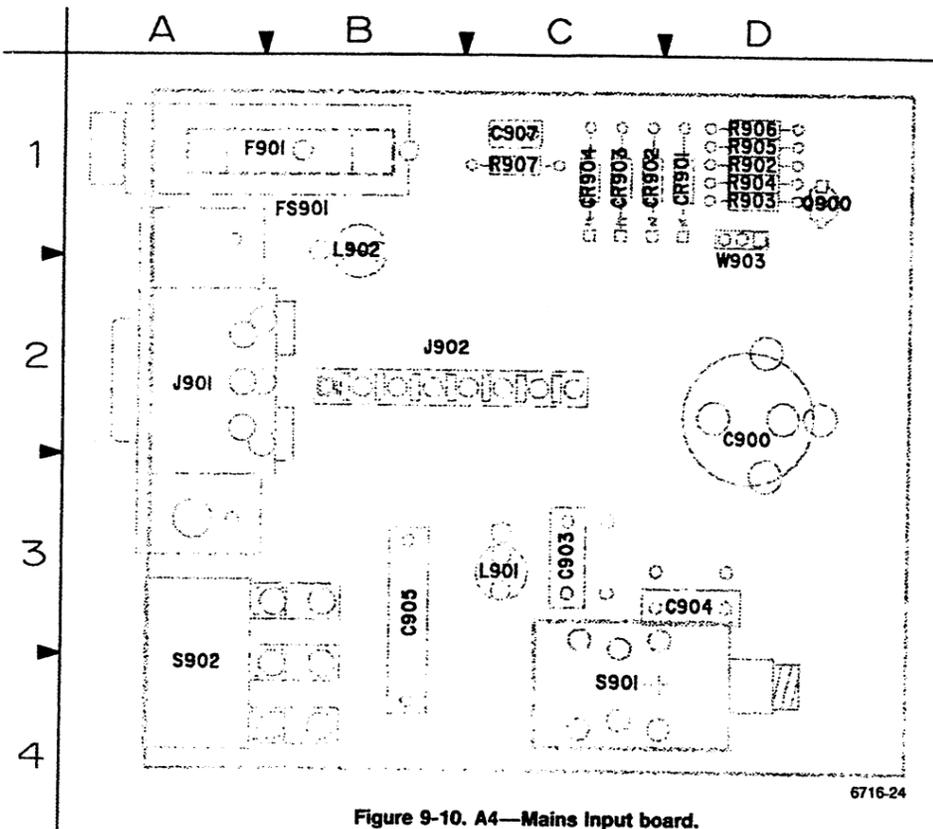
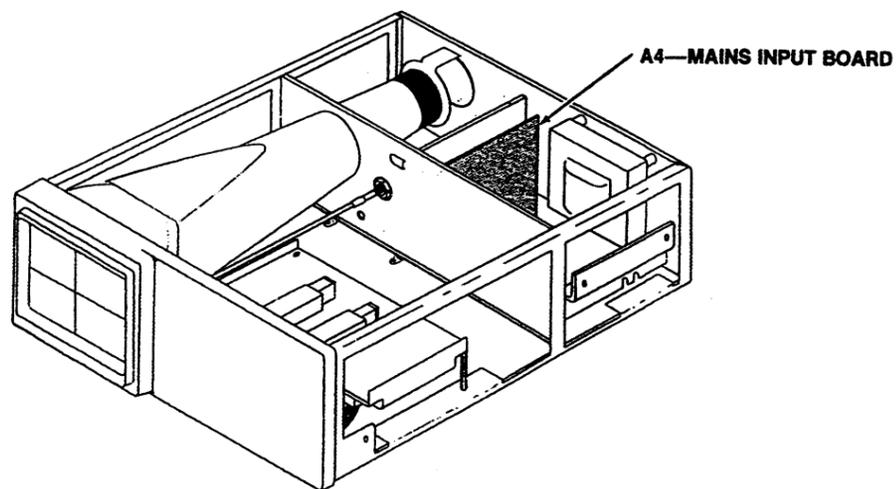


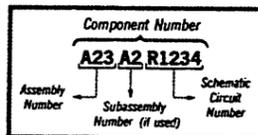
Figure 9-10. A4—Mains input board.

A4—MAINS INPUT BOARD					
CIRCUIT NUMBER	SCHEM NUMBER	CIRCUIT NUMBER	SCHEM NUMBER	CIRCUIT NUMBER	SCHEM NUMBER
C900	7			R903	7
C903	7	FS901	7	R904	7
C904	7			R905	7
C905	7	J901	7	R906	7
C907	7	J902	7	R907	7
CR901	7	L901	7	S901	7
CR902	7	L902	7	S902	7
CR903	7				
CR904	7	Q900	7	W903	7
F901	7	R902	7		



 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

FRONT PANEL CONTROLS DIAGRAM 6

ASSEMBLY A1											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
J1	1B	1F	J3	3B	12B	J6	5L	1A			
J2	2B	1E	J5	3L	1B						

Partial A1 also shown on diagrams 2, 3, 4, 5, 7 and 8.

ASSEMBLY A2											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
AT1	2L	5B	J7	5B	2D	R3	2L	5B			
AT51	2L	5D				R53	2L	5D			

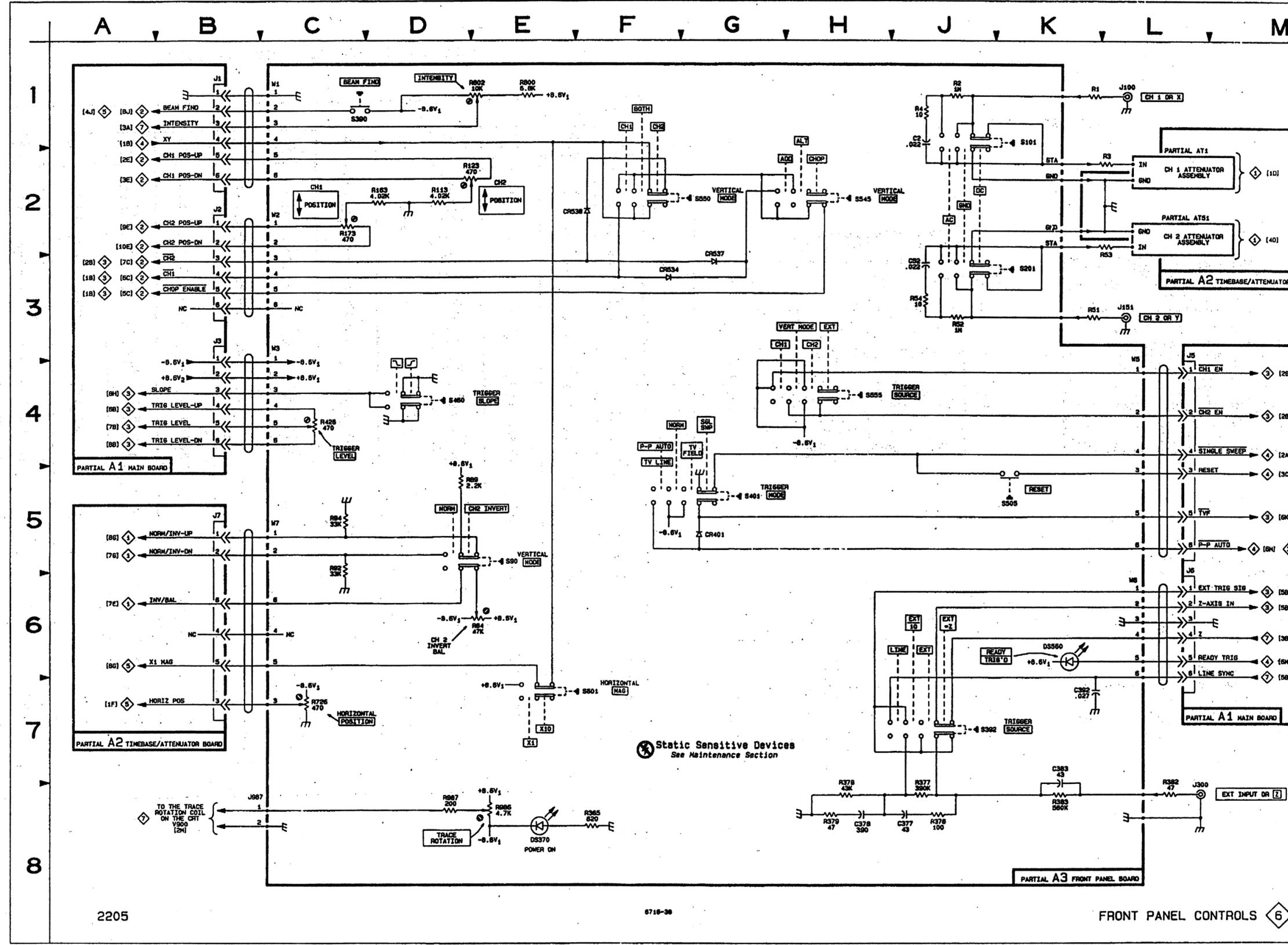
Partial A2 also shown on diagrams 1, 5 and 8.

ASSEMBLY A3											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C2	1J	4C	J987**	8B	2A	R377	7J	2F	S392	7J	3F
C52	3J	4C				R378	8H	2E	S401	5G	2F
C377	8J	2E	R2	1J	4B	R379	8H	2E	S460	4D	1F
C378	8H	2E	R4	1J	4B	R383	8K	4F	S506	4K	2F
C383	7K	4E	R52	3J	4C	R426	4C	1F	S545	2H	2C
C392	7K	2F	R54	3J	4C	R726	7C	1E	S550	2G	2B
CR401	5G	2F	R84	6E	3C	R800	1E	2A	S555	4H	3F
CR534	3F	2B	R89	5D	2C	R802	1E	1A	S801	7F	2E
CR537	3G	2B	R92	5C	2D	R986	8E	3A			
CR538	2E	2B	R94	5C	2C	R987	8D	2A	W1	1C	4A
DS370	8K	4A	R113	2D	1B	S90	5E	2C	W2	2C	2A
DS370	8E	4A	R123	2D	1B	S101	1K	3B	W3	3C	4D
DS560	8K	2F	R153	2D	1C	S201	3K	3C	W6	3L	4E
			R173	2C	1C	S390	1C	2A	W7	5C	3D
			R385	8F	3A						
			R378	8J	3F						

Partial A3 also shown on diagrams 1, 2, 3, 4 and 8.

CHASSIS MOUNTED PARTS											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
J100	1L	CHASSIS	J300	8L	CHASSIS	R1	1K	CHASSIS	R382	7L	CHASSIS
J151	3L	CHASSIS				R51	3K	CHASSIS			

**Not in Electrical Parts List



POWER SUPPLY, Z-AXIS, & CRT DIAGRAM 7

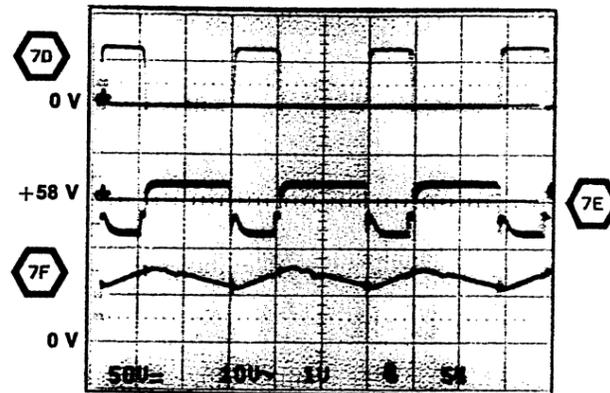
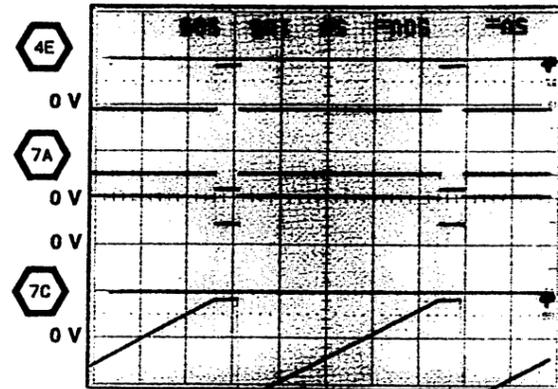
WAVEFORMS FOR DIAGRAM 7

AC Waveforms

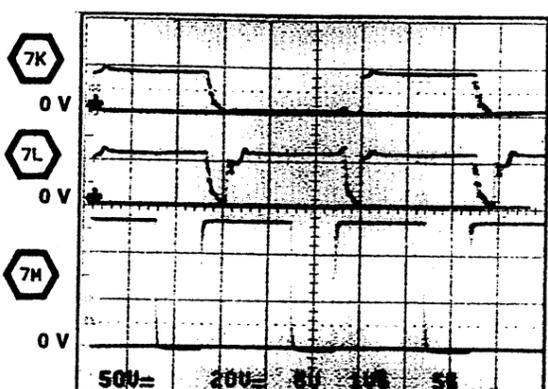
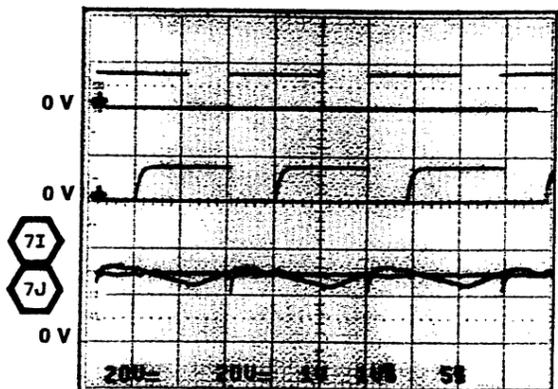
SEC/DIV 20 μs

1 VOLT PER DIVISION EQUALS 1 AMP PER DIVISION FOR WAVEFORM 7F

WAVEFORMS FOR DIAGRAM 7



1 VOLT PER DIVISION EQUALS 1 AMP PER DIVISION FOR WAVEFORMS 7I AND 7J



6716-32

ASSEMBLY A1

CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C824	3D	6G	CR942	8J	8A	R832	1E	7H	R946	8H	8A
C828	3E	7J	CR945	8K	8C	R834	3F	7J	R947	9H	9B
C832	1E	8H	CR946	8J	8A	R834	4F	7J	R948	7H	8B
C834	4F	7J	CR947	5K	10B	R835	3E	7J	R949	6K	10F
C835	3F	8J	CR950	5H	10B	R836	3E	7J	R955	6F	11B
C845	3F	8J	CR975	5K	10E	R840	3F	8H	R956	7H	8B
C847	2G	8J	CR976	5K	11E	R841	2F	8H	R957	10H	9B
C849	1G	8J	CR980	6F	9D	R842	2G	8G	R958	7G	8B
C851	4H	7F	CR981	6E	9D	R843	3F	7J	R970	6E	10C
C853	4J	8G	CR982	7L	9F	R844	2F	8J	R971	6J	8C
C854	3J	8G	CR983	8L	9E	R845	2F	8J	R972	6E	9D
C855	2G	9G	CR984	8L	9E	R849	1G	8J	R977	5C	9C
C871	4L	6F	CR985	8L	9E	R850	3H	8F	R978	4J	10G
C875	3K	7G	CR986	8L	9E	R851	3H	8E	R979	3E	7J
C893	2L	9H	CR987	9K	8C	R852	4H	6E	R980	6J	8C
C901	5B	6A	CR988	9K	8C	R853	4J	8G	R981	6D	9D
C902	5B	2A	CR989	9L	8C	R854	3J	8G	R982	6E	9C
C914	8E	11C	CR990	7K	9E	R855	3H	6E	R983	5E	9C
C915	9G	10D	CR991	7K	9E	R858	2J	10G	R984	2J	9C
C920	10F	11D				R860	2H	10G	R984	5E	9C
C925	9E	11C	DS856	2H	10G	R870	4K	6F	R985	6D	9C
C930	7F	11B	DS856	2H	10G	R871	3K	7G	R986	5D	9C
C932	5E	10B				R874	3K	7G	R987	6D	9D
C933	6G	10B	L950	5H	9B	R875	3K	7G	R988	6D	9D
C935	6G	10B	L988	9L	7B	R888	3J	8G	R989	7D	9D
C941	7H	8B	L988	9L	8C	R889	3J	8G	R990	10M	6E
C942	8J	8C	L990	7L	7E	R890	2J	8G	R991	10M	8E
C943	7J	8B				R891	2J	9G	R992	10M	9C
C945	9H	9B	P900**	5L	9G	R892	2J	9G	R995	5K	9E
C946	8J	9B	P901**	4L	9G	R894	2J	9G			
C952	7E	8B	P902**	4L	9G	R899	5B	2A	T902	5K	9D
C974	3E	7J	P903**	4L	7F	R900	5B	2A			
C976	5J	11G				R901	5B	6A	U910A	8F	10C
C978	4J	11G	Q804	3C	6G	R910	8H	9B	U910B	9F	10C
C980	5K	10E	Q817	2C	5H	R911	8G	10C	U920	8D	11C
C982	6E	10D	Q818	3C	4G	R912	8F	10C	U930	8F	10B
C983	8L	7E	Q825	1D	7H	R913	8F	10C	U940	7G	7A
C984	8L	8F	Q829	2E	8H	R914	8E	11C			
C985	8L	8E	Q835	3F	8J	R915	9G	11D	VR915	9G	11D
C986	8L	7B	Q840	3G	8H	R916	9G	10D	VR925	9D	10C
C987	9M	7B	Q845	2G	8H	R917	9G	10D	VR932	5F	10B
C988	9L	7C	Q832	6F	10A	R918	9G	11D	VR933	5F	10B
C989	9M	7C	Q833	5G	10A	R919	10F	10C	VR982	6E	9D
C990	7L	8E	Q835	7G	10B	R920	9F	10C	VR985	5D	9C
C991	7L	7D	Q839	6H	8C	R922	9F	10C	VR988	7D	9C
C992	10M	6E	Q941	7J	8A	R926	9D	11C			
			Q942	7J	8A	R927	8D	11C	W90	9M	8D
CR817	2C	6H	Q943	9H	9B	R928	8D	11D	W93	2L	9G
CR818	2D	6G	Q945	9J	9A	R929	8E	11C	W903	6B	9C
CR820	3D	6G	Q946	8J	9A	R930	7F	11B	W920	9E	10C
CR824	1E	7H	Q982	6E	9D	R931	7F	11B	W921	10F	11D
CR825	1E	7H	Q985	6E	9C	R932	7F	11B	W925	10E	10C
CR827	2E	7J	Q988	6D	9D	R933	6G	10B	W926	10E	10C
CR828	3E	7J				R934	5F	10B	W947	7K	8B
CR829	2E	7H	R804	3C	5G	R935	7F	11B	W948	8K	8B
CR840	3F	8J	R805	2C	6G	R936	7G	9B	W951	5G	10A
CR845	2F	8J	R818	2D	6G	R939	7H	8B	W976	5J	10F
CR851	3H	8F	R819	1C	6G	R940	6J	8B	W984	8M	6E
CR853	3H	8G	R820	2D	6G	R941	6J	8B	W985	8M	6E
CR854	2J	9G	R822	3D	2D	R942	7H	8A	W987	9M	6D
CR855	2H	9G	R823	3D	6G	R943	8H	8B	W989	9M	6C
CR933	7G	10B	R825	1D	6G	R944	9J	9B	W991	7M	6D
CR941	8K	8C	R830	2E	7H	R945	9J	9B			

Partial A1 also shown on diagrams 2, 3, 4, 5, 6 and 8.

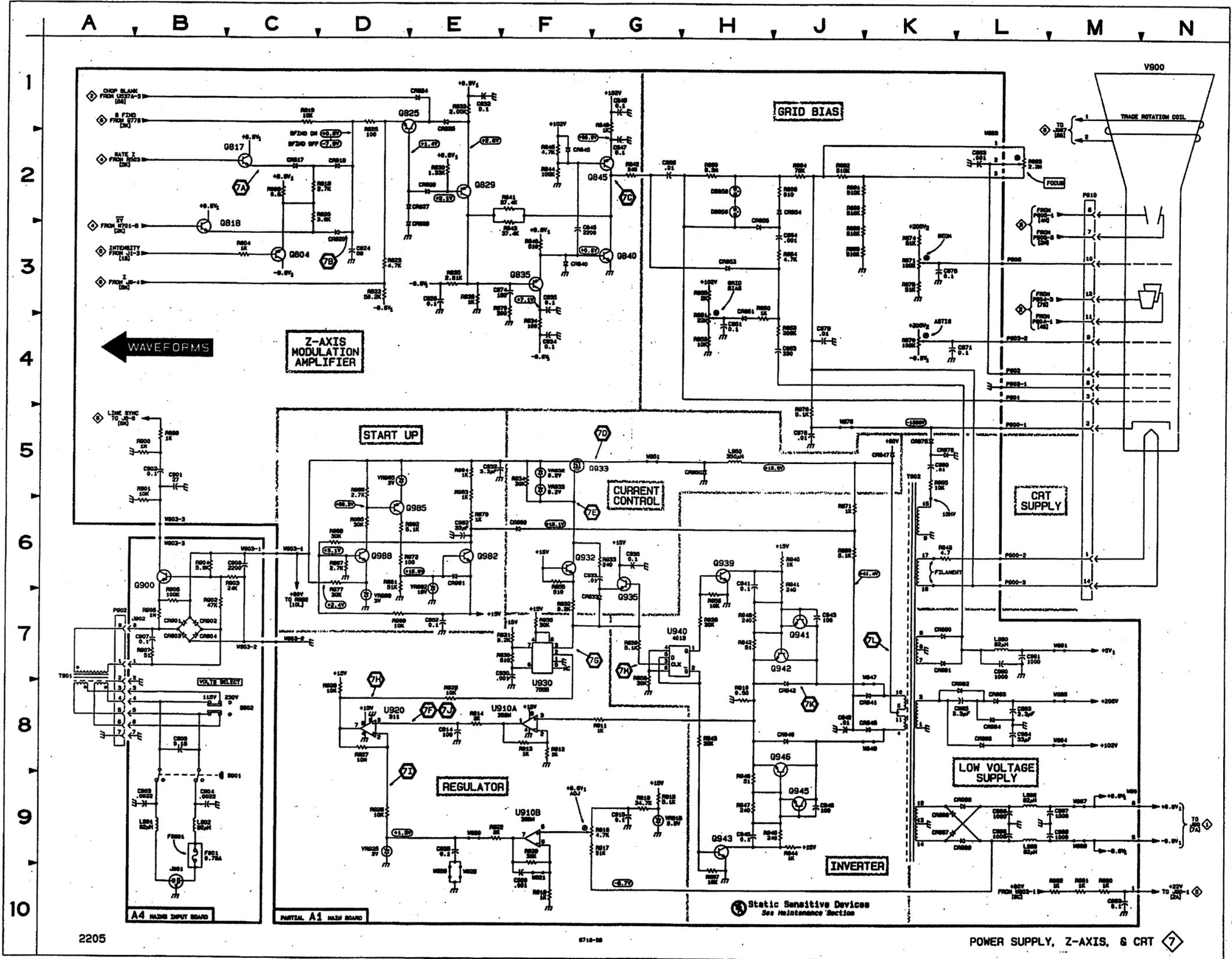
**Not in Electrical Parts List

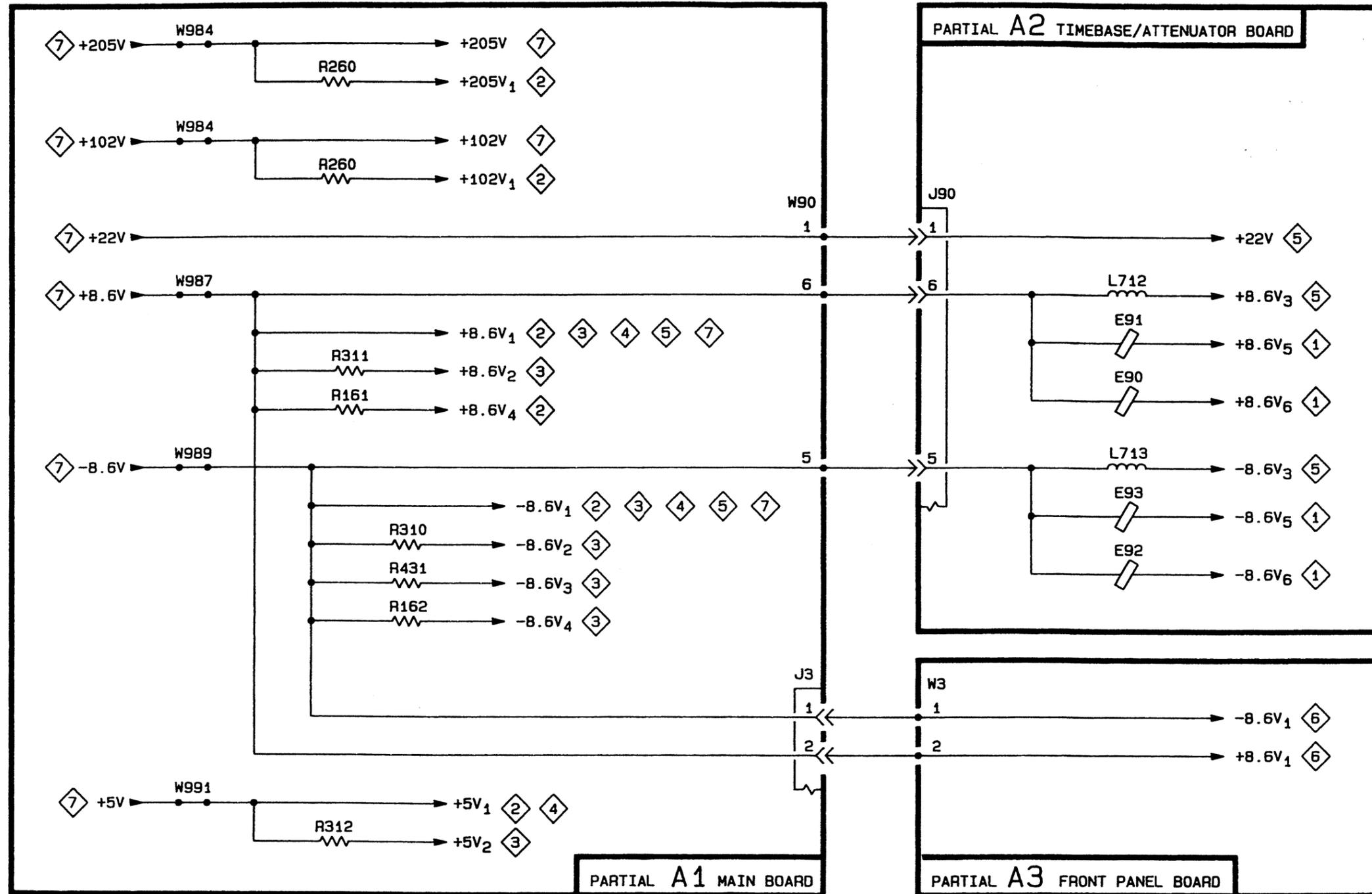
MORE

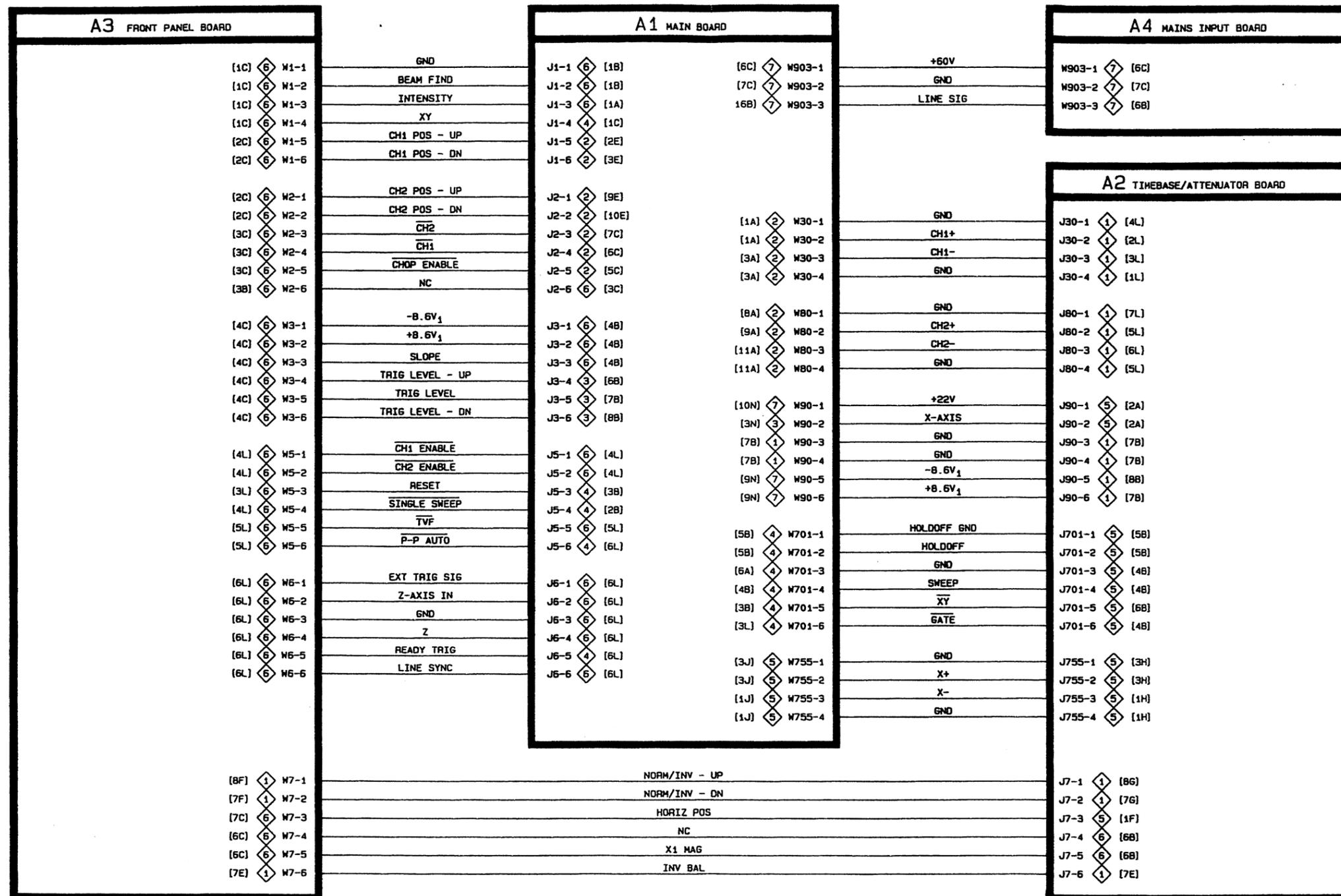
POWER SUPPLY, Z-AXIS, & CRT DIAGRAM 7 (CONT)

ASSEMBLY A4											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C900	6C	2D	CR904	7B	1C	L901	6B	3C	R905	6B	1D
C903	6B	3C				L902	6B	1B	R906	7B	1D
C904	6C	3D	F901	6B	1A	Q900	6B	1D	R907	7B	1C
C905	6B	3B							S901	6C	4C
C907	7B	1C	FS901	6B	1A	R902	7B	1D	S902	6C	4A
CR901	7B	1D	J901	10B	2A	R903	6C	1D	W903	6B	1D
CR902	7B	1C	J902	7B	2B	R904	6B	1D			
CR903	7B	1C									

CHASSIS MOUNTED PARTS											
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
P902	7A	CHASSIS	R993	2L	CHASSIS	T901	7A	CHASSIS	V900	1N	CHASSIS
P908	3L	CHASSIS									
P910	2M	CHASSIS									







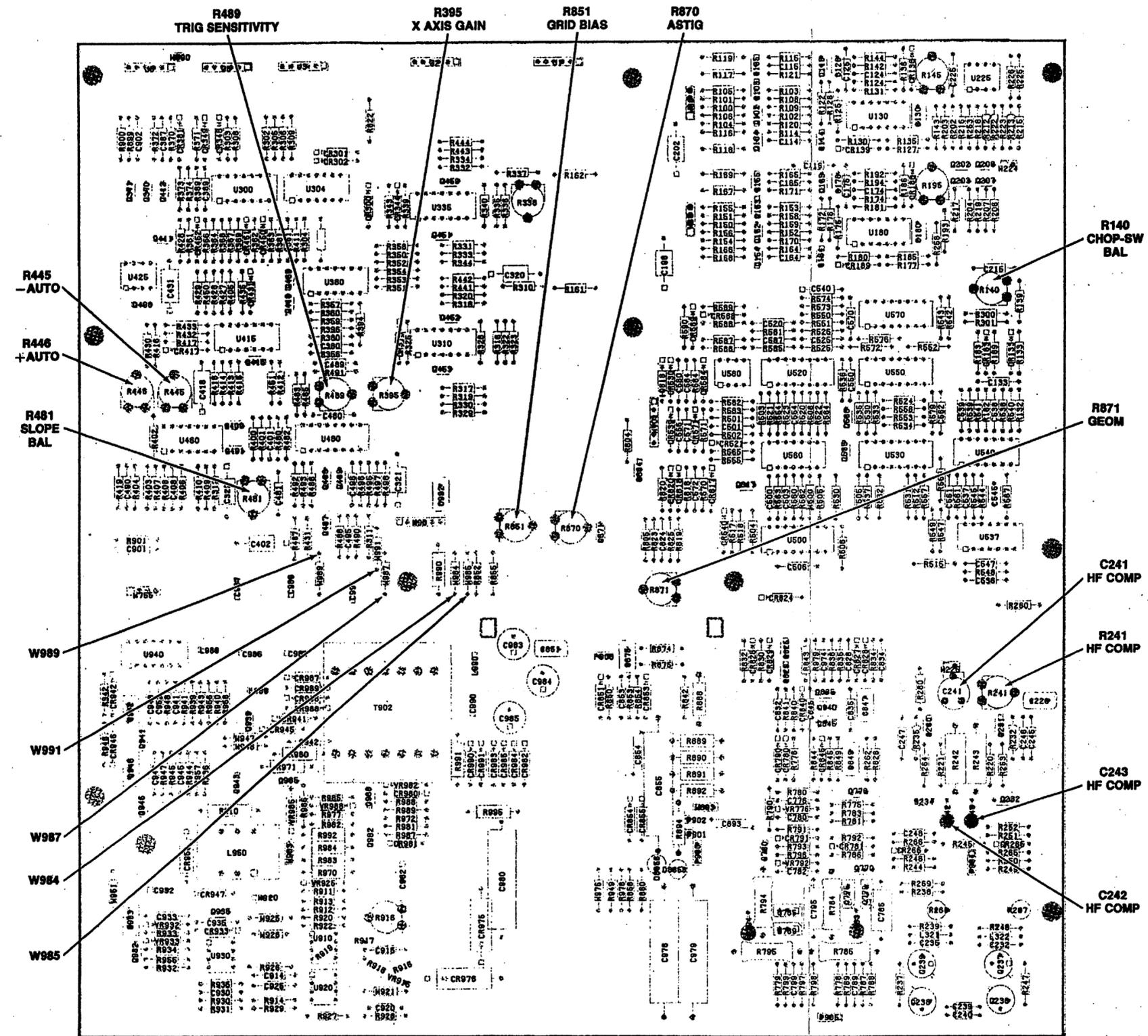


Figure 9-11. Adjustment locations of A1—Main board component view.

6716-27

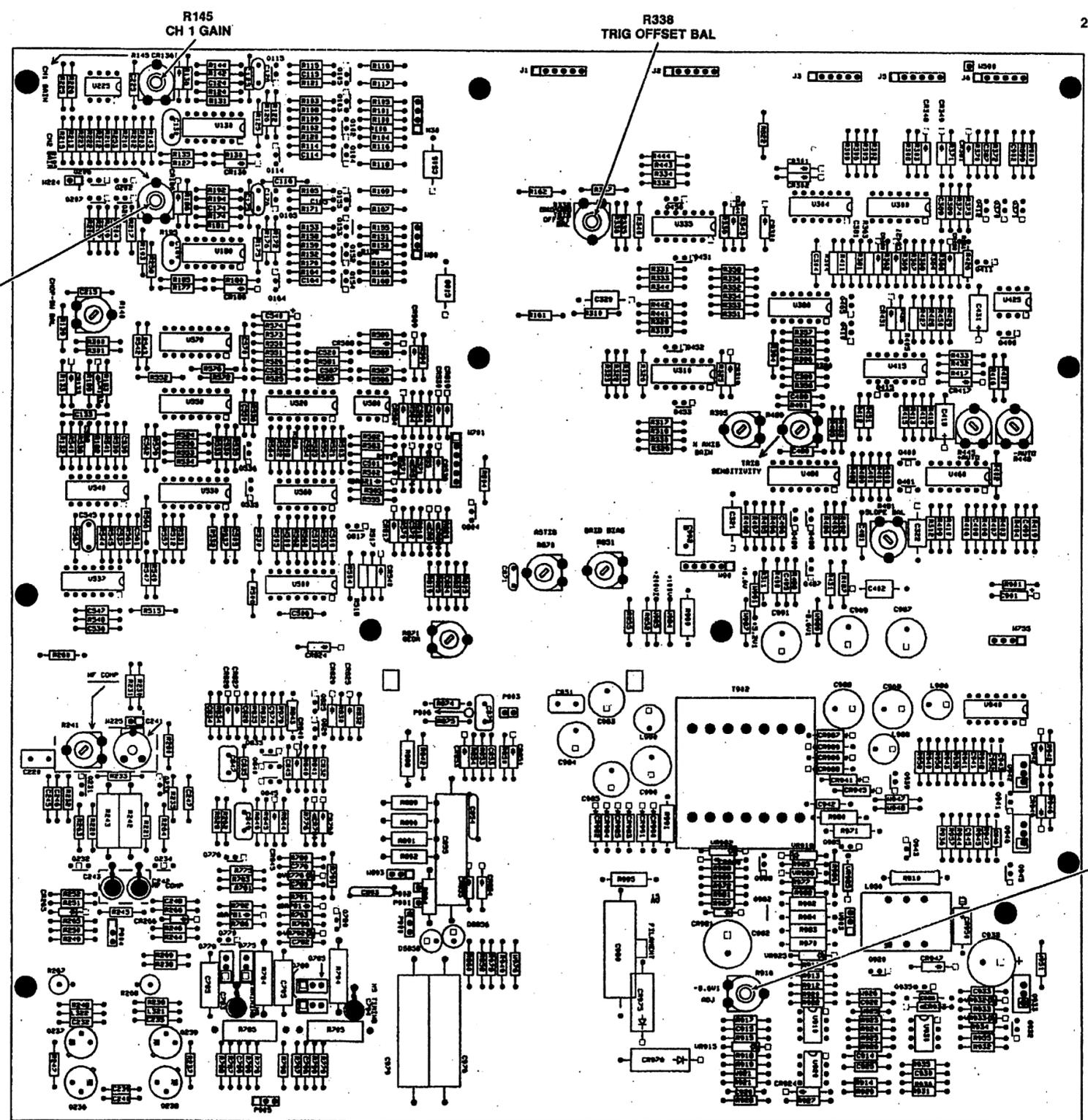


Figure 9-12. Adjustment locations of A1—Main board circuit view.

6716-28

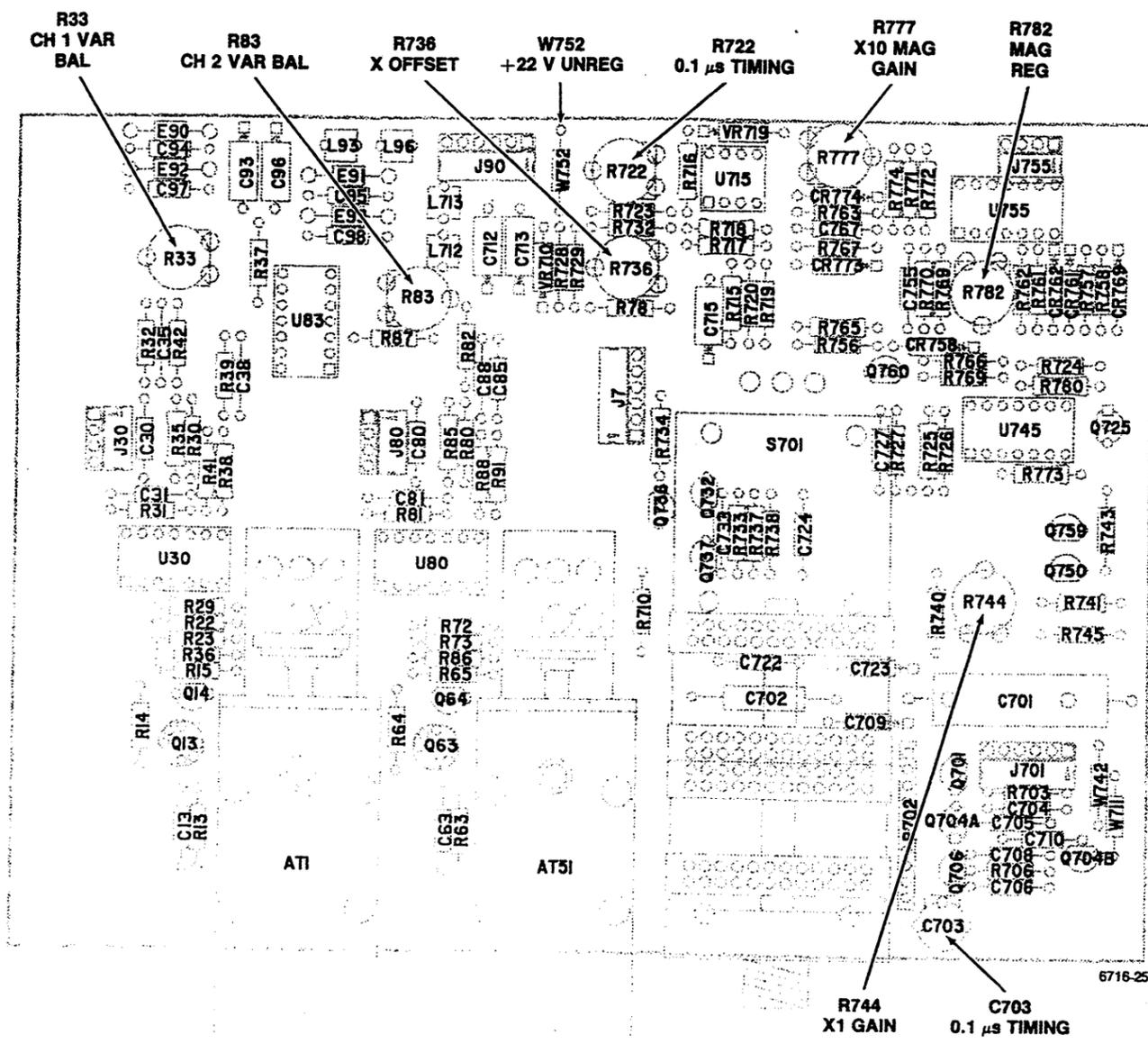


Figure 9-13. A2—Timebase/Attenuator board adjustment locations.

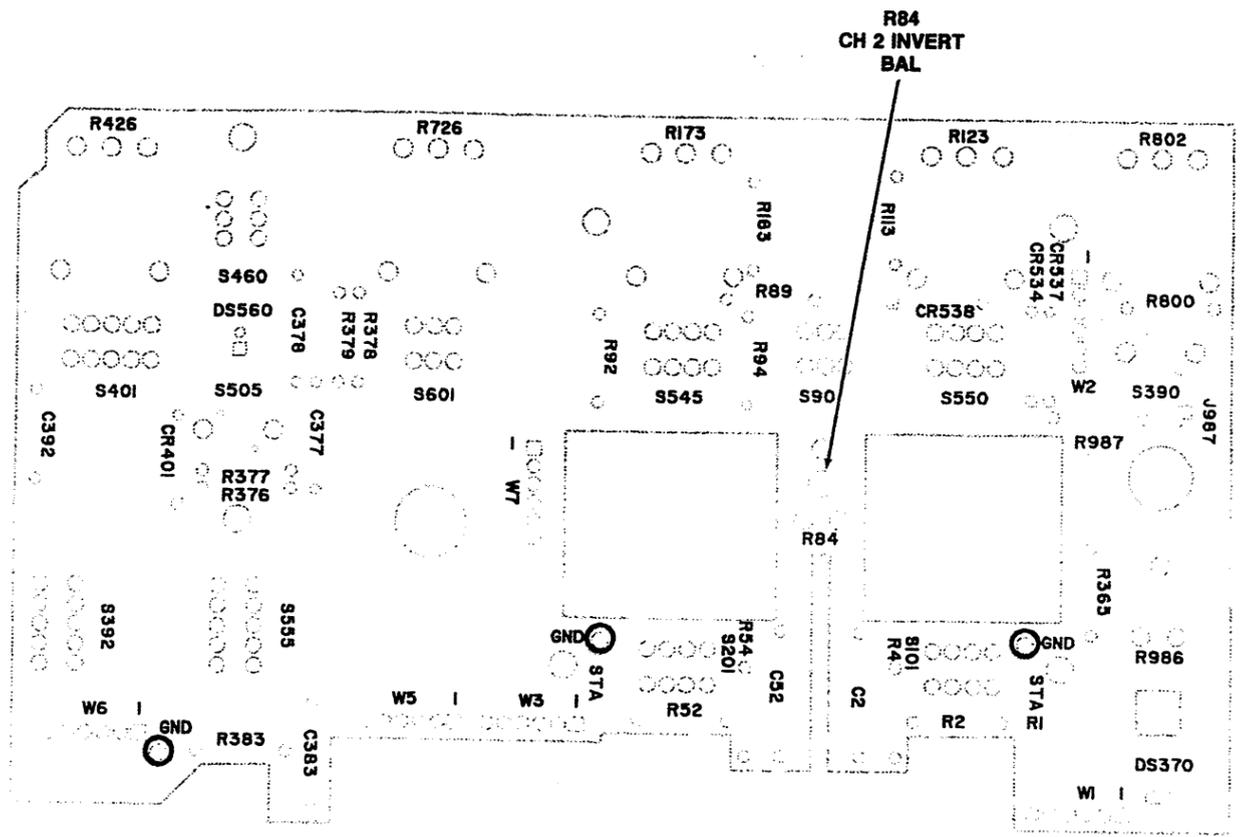
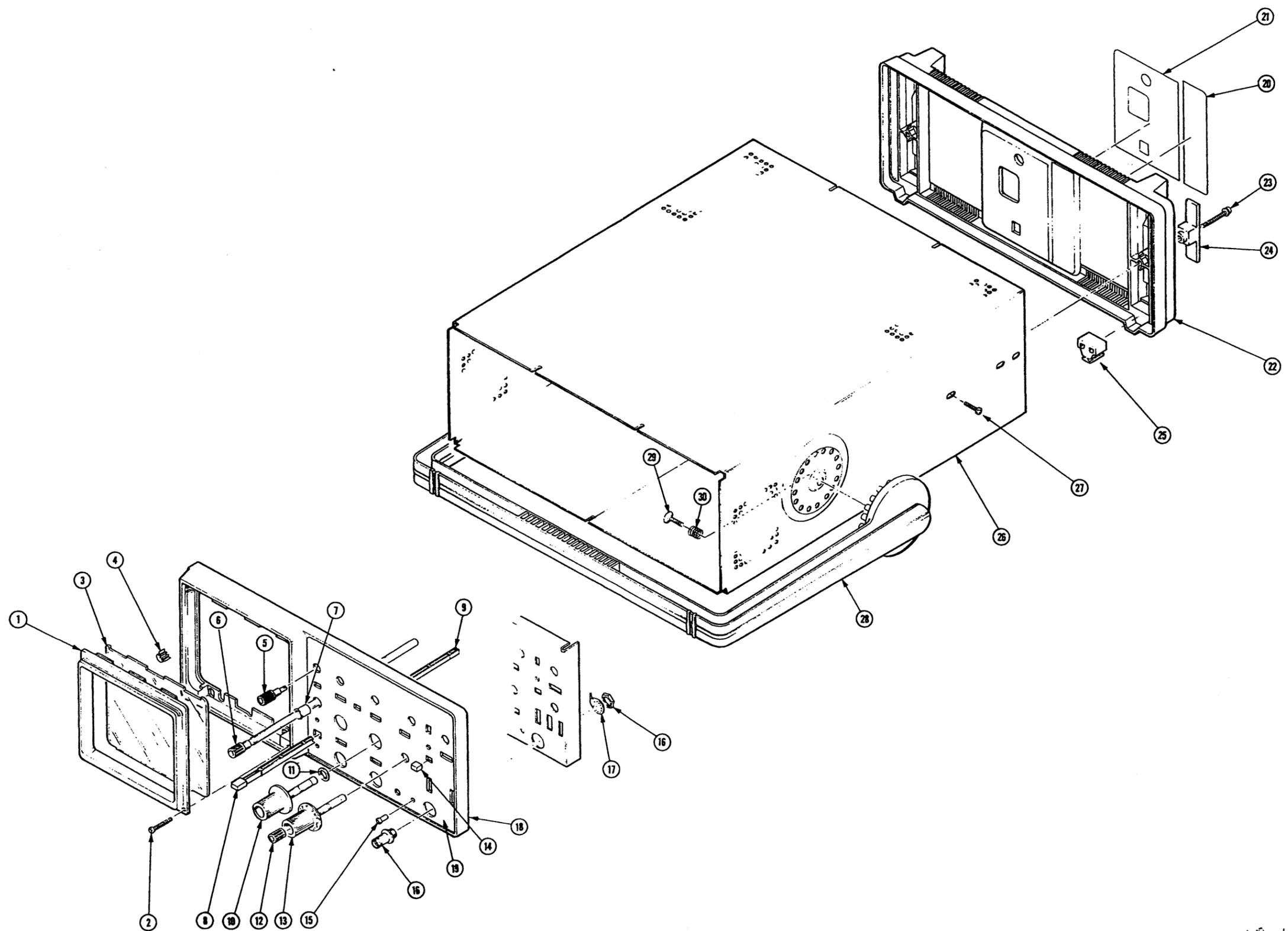
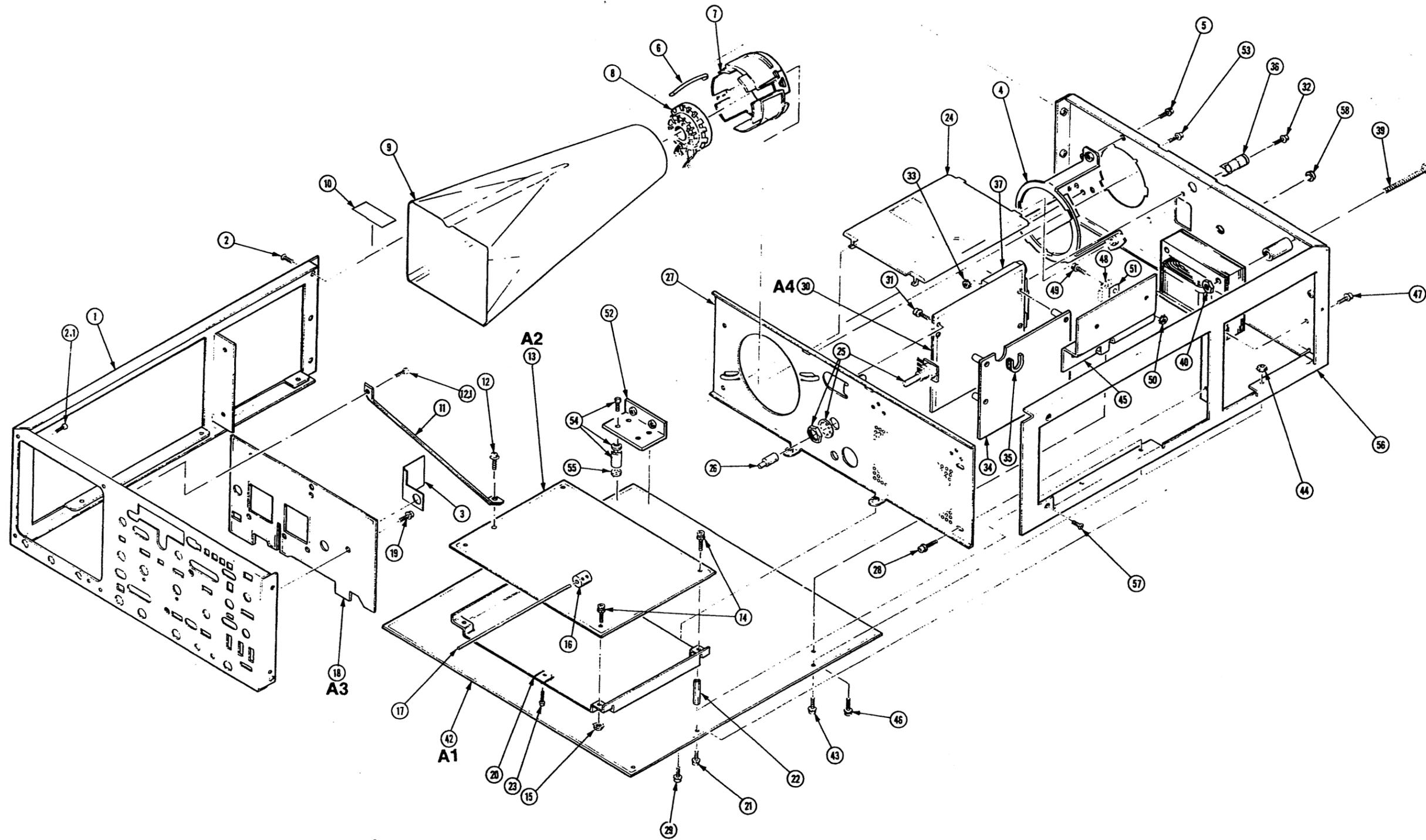


Figure 9-14. A3—Front Panel board adjustment location.



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