

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check inner board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

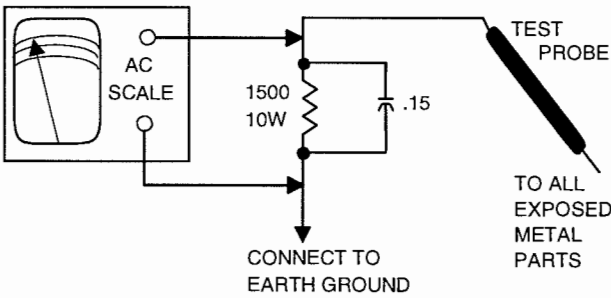
SAFETY CHECKS -- FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15μF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500μA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC. Connect a jumper wire to XRP1 and XRP2. The set should go into shutdown, losing picture and sound. If set does not go into shutdown the shutdown circuit requires repair. To resume normal operation, remove jumper wire.

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by Howard W. Sams & Company as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to Howard W. Sams & Company by the manufacturers of the specific type of replacement part listed.

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Page 1 SET 4023



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SET 4023

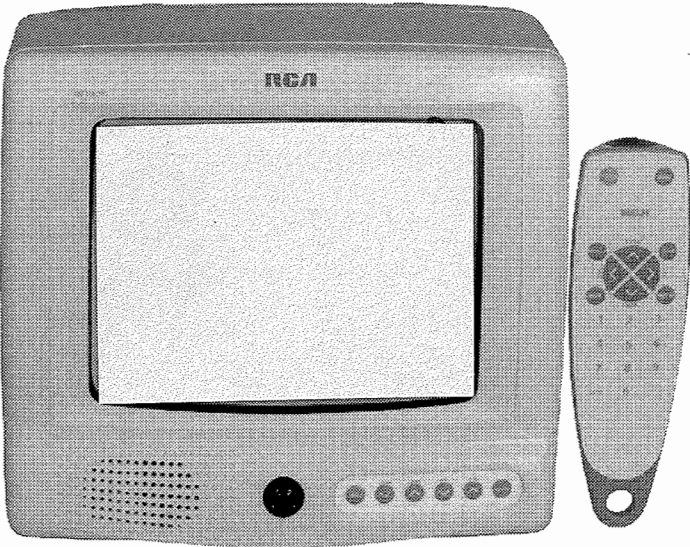
MODEL E09310WHF24 (CHASSIS TX825MB)

RCA

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RCA  
Model E09310WHF24 (Chassis TX825MB)



Essential coverage  
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

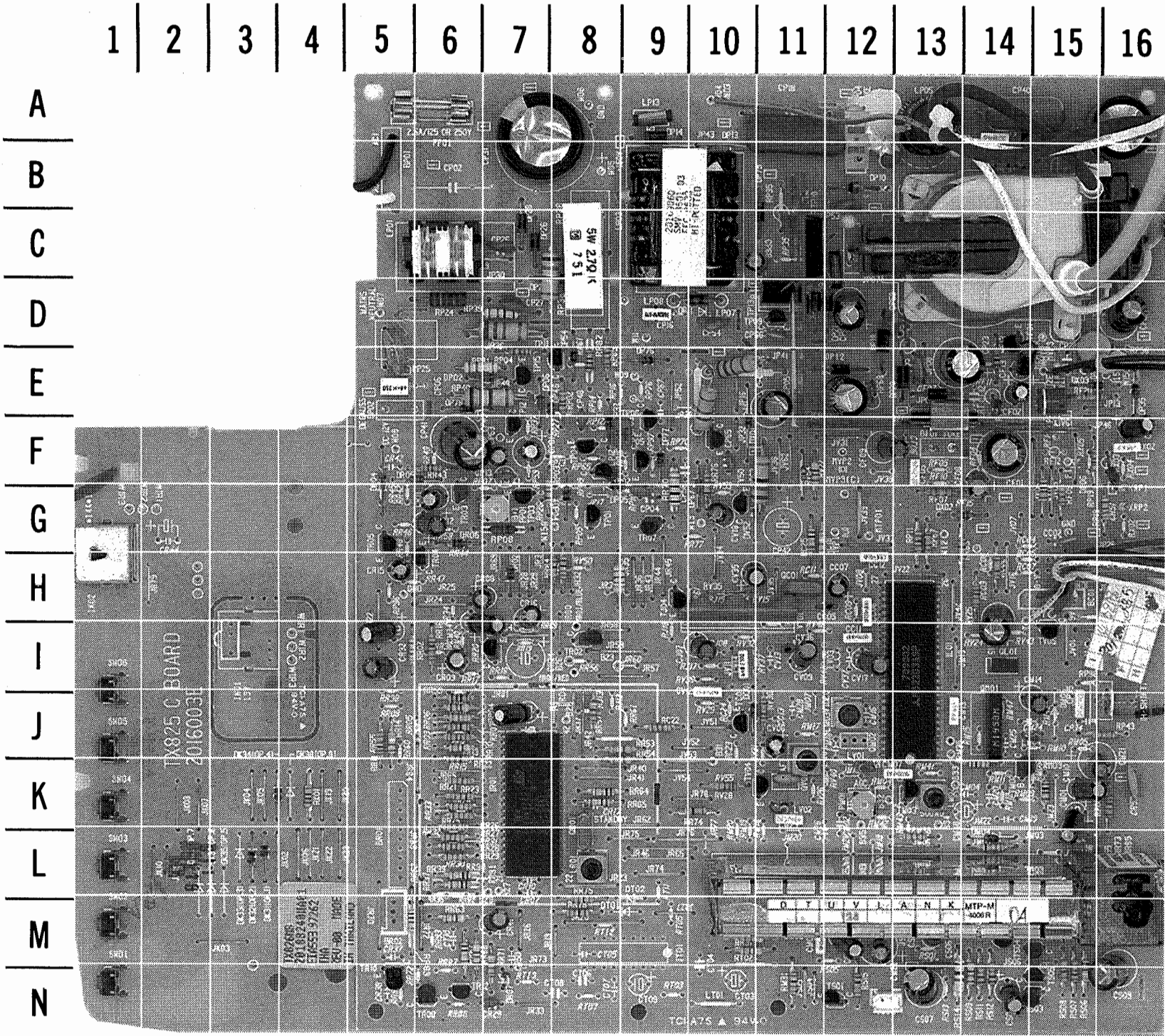
Coverage includes this additional model and chassis:

MODEL	CHASSIS
E09310WHC24	TX825MB



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AUGUST 1998 SET 4023

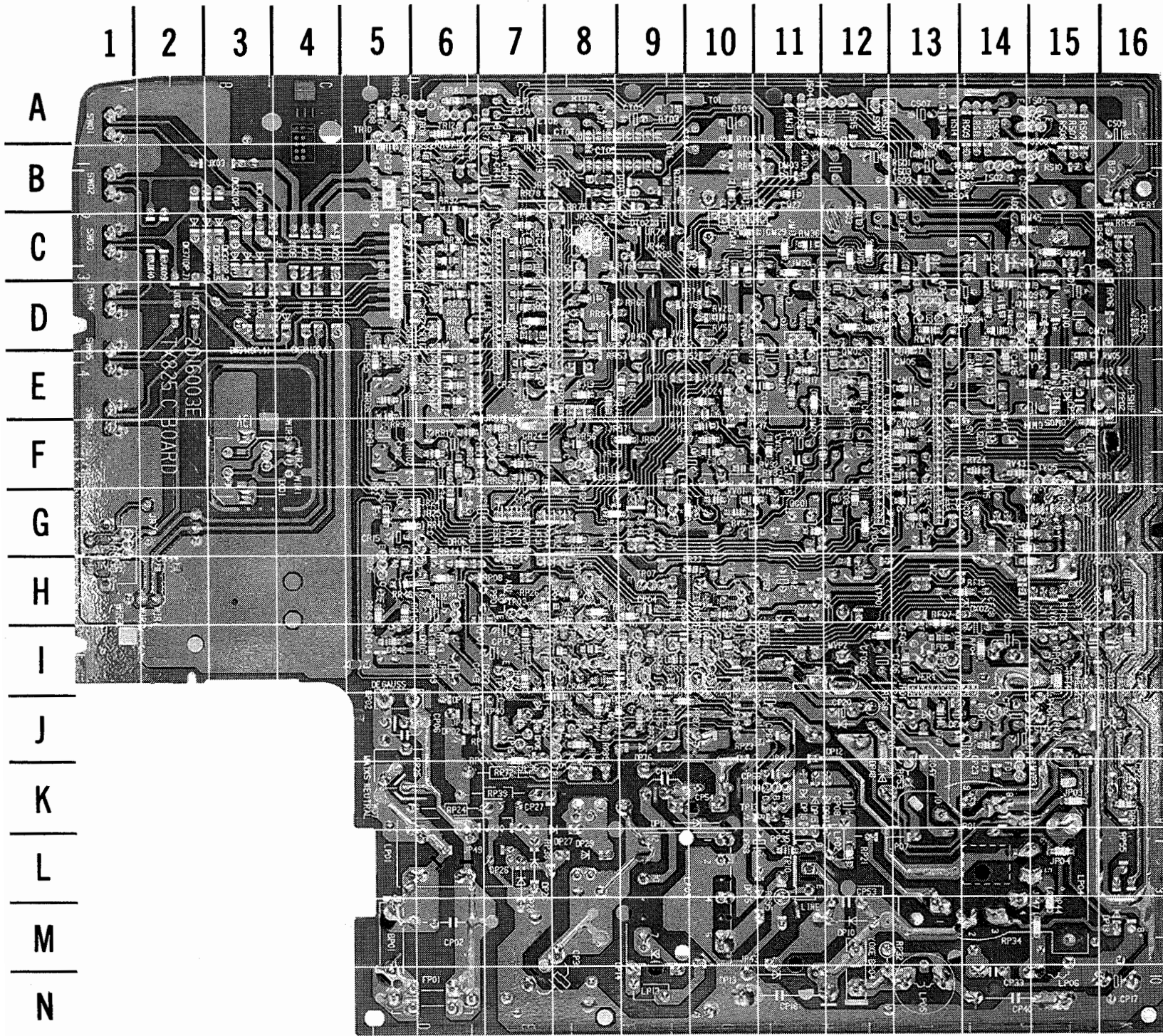
MAIN BOARD - TOP VIEW



MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE													
BF01	F-13	CP27	D-7	DK31	L-3	IR01	J-7	RP04	E-7	RR29	L-6	SW04	K-1
BP01	B-5	CP31	A-7	DK32	L-3	JM05	L-14	RP06	K-16	RR37	L-6	SW05	J-1
BP02	E-5	CP33	A-14	DK34	K-3	JR35	H-9	RP08	G-7	RR39	L-6	SW06	J-1
BP04	A-12	CP35	J-15	DM03	M-11	JV17	G-15	RP11	G-13	RR43	F-6	TC01	J-10
BS01	N-12	CP40	A-14	DM04	L-14	LM02	K-13	RP18	G-16	RR51	M-10	TF01	D-14
CC02	G-14	CP41	F-6	DP02	E-7	LM03	J-12	RP19	F-15	RR52	M-10	TJ04	H-9
CC03	H-14	CP47	F-16	DP04	G-8	LM04	J-15	RP23	E-10	RR53	J-8	TM02	K-15
CC04	H-14	CP48	F-8	DP05	G-8	LM07	K-11	RP24	D-6	RR54	J-8	TM03	K-13
CC05	H-12	CP53	B-12	DP06	E-8	LM08	L-15	RP25	E-5	RR57	J-8	TP01	G-8
CC06	H-12	CP54	D-10	DP10	B-12	LP01	C-6	RP28	C-8	RR59	J-6	TP02	F-8
CC07	H-12	CP55	E-13	DP11	D-10	LP02	C-12	RP32	B-12	RR63	M-6	TP03	G-7
CC11	I-12	CP59	D-12	DP12	E-12	LP03	C-9	RP34	B-14	RR64	K-8	TP04	F-8
CC12	H-12	CP63	F-7	DP13	A-11	LP04	C-14	RP38	C-8	RR65	K-8	TP05	F-9
CF01	F-14	CP65	F-10	DP14	A-9	LP05	A-13	RP39	D-7	RR67	M-6	TP06	F-9
CF02	E-14	CP66	D-11	DP15	D-11	LP06	B-15	RP40	E-7	RR68	M-6	TP09	D-11
CF05	F-13	CP68	C-11	DP16	D-11	LP11	C-11	RP43	J-16	RR70	G-9	TP10	C-11
CF08	F-14	CR08	H-7	DP18	D-12	LP13	A-9	RP53	D-13	RR71	N-7	TP11	E-8
CF09	F-12	CR09	I-6	DP19	B-16	LR01	L-8	RP55	C-16	RR73	L-16	TP12	F-7
CF13	E-14	CR11	G-6	DP20	E-13	LS02	M-16	RP56	E-16	RR74	K-10	TP13	D-11
CJ07	I-10	CR12	G-6	DP21	D-12	LV01	K-12	RP62	F-11	RR75	M-8	TP14	F-10
CM01	K-15	CR15	H-5	DP26	C-7	LV02	K-11	RP63	E-16	RR76	G-10	TP15	E-7
CM03	M-11	CR16	H-7	DP27	D-8	PF01	E-15	RP67	G-13	RR78	M-8	TR01	I-7
CM07	K-13	CR29	N-7	DP28	C-7	PM01	K-12	RP68	E-12	RR83	G-14	TR02	I-8
CM10	L-15	CR31	I-5	DP29	C-8	PP01	G-7	RP72	D-7	RR84	H-8	TR03	G-6
CM13	J-13	CR32	I-5	DP35	E-16	PP02	J-16	RP81	E-6	RR85	L-16	TR04	H-6
CM14	J-15	CR40	J-7	DP37	F-8	QC01	H-11	RP82	E-8	RR89	M-5	TR05	G-5
CM15	I-14	CR41	M-7	DP46	E-8	QL01	I-14	RP85	E-8	RS06	N-15	TR07	G-9
CM21	K-15	CR52	K-16	DP54	E-8	QM01	J-14	RP87	E-10	RS07	N-15	TR08	N-6
CM22	L-12	CS01	M-12	DP67	G-10	QR01	L-8	RP95	C-11	RS08	N-15	TR10	N-5
CM23	K-11	CS02	M-14	DP75	C-11	QV01	K-11	RR01	J-6	RS09	N-14	TR12	N-6
CM34	I-7	CS03	M-13	DP76	E-9	RC02	H-14	RR02	I-5	RS10	M-15	TS01	N-12
CP01	F-7	CS05	N-14	DP77	F-9	RC18	G-11	RR04	J-6	RS11	M-14	TS02	M-14
CP03	F-9	CS06	M-13	DP78	E-6	RC22	J-9	RR07	J-6	RS12	M-14	TS03	N-15
CP04	G-9	CS07	N-13	DR02	H-7	RC25	G-11	RR10	J-6	RS14	M-13	TS04	M-15
CP05	E-11	CS09	N-16	DR04	F-5	RF01	E-14	RR11	J-5	RS15	N-12	TS05	N-15
CP06	E-5	CV06	J-11	DR05	F-6	RF07	G-13	RR13	J-6	RV21	E-15	TV04	K-11
CP08	D-12	CV09	I-11	DR06	G-6	RF09	G-15	RR14	J-5	RV22	F-11	TV05	I-15
CP13	F-9	CV12	J-10	DR07	N-7	RF13	E-14	RR16	I-6	RV25	H-14	TV50	G-10
CP16	D-9	CV14	I-10	DV52	G-10	RF20	E-15	RR21	K-6	RV28	K-10	VV01	H-10
CP17	A-16	CV17	I-12	DX01	F-10	RK01	K-4	RR22	J-6	RV30	J-11	XRP1	G-16
CP18	A-11	CV18	G-10	DX02	G-14	RM03	K-15	RR23	K-6	RV52	H-8	XRP2	G-16
CP20	E-12	CV35	H-11	DX03	E-15	RM31	N-11	RR24	K-6	RV54	F-11		
CP22	D-16	CV36	I-11	FP01	A-6	RM35	K-14	RR25	K-6	RX03	F-16		
CP23	E-14	CX02	F-16	IF01	E-13	RM38	L-13	RR26	L-6	SW01	N-1		
CP25	D-15	DC01	J-10	IK02	G-1	RP02	E-8	RR27	L-6	SW02	M-1		
CP26	C-7	DF04	E-13	IL01	J-13	RP03	G-7	RR28	L-6	SW03	L-1		

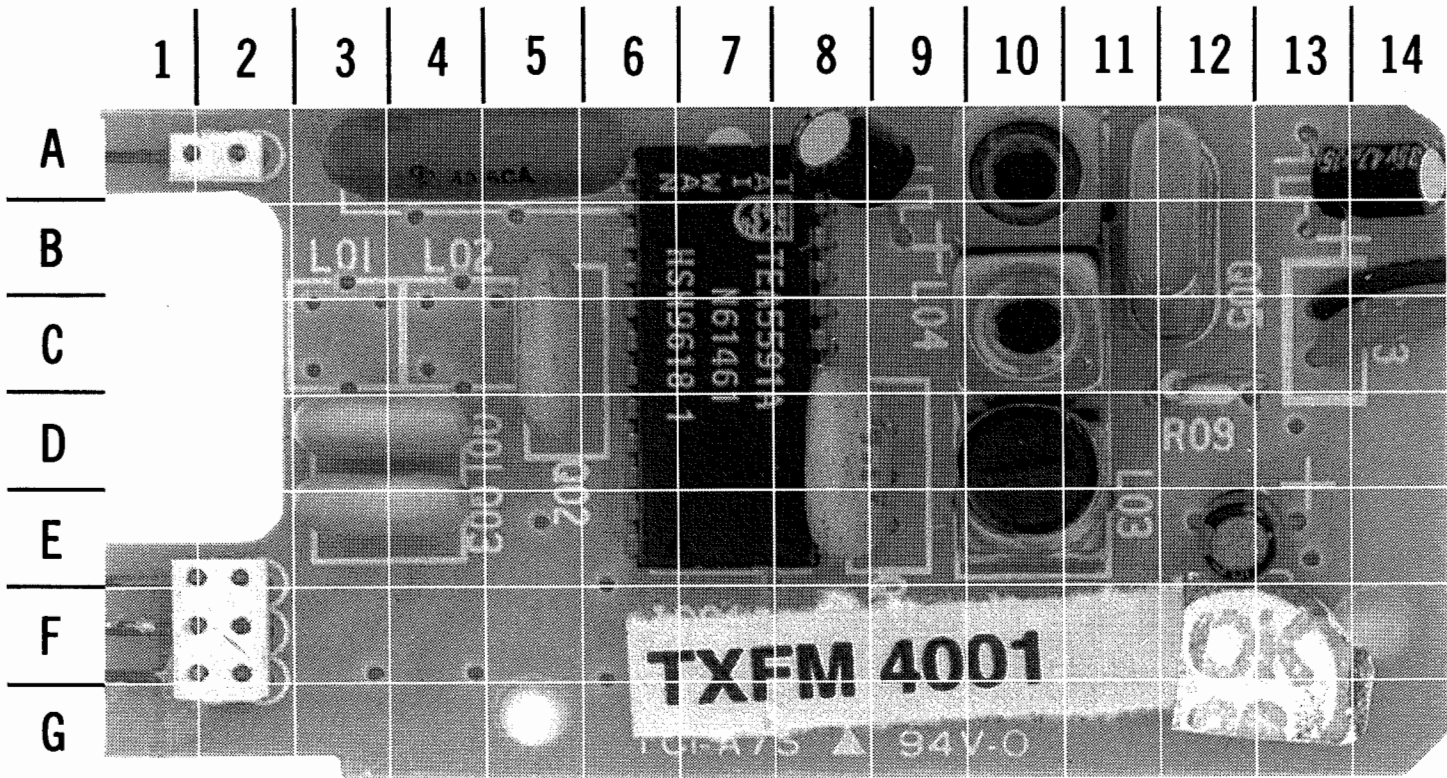



MAIN BOARD - BOTTOM VIEW



MAIN BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE													
CC08	G-13	CR07	C-7	RC06	G-14	RM16	C-11	RP64	K-16	RR45	H-5	RS13	A-13
CC13	E-11	CR10	C-7	RC07	G-14	RM17	E-11	RP65	I-8	RR46	H-5	RV24	F-14
CF06	I-13	CR17	D-8	RC09	G-12	RM19	C-10	RP70	I-9	RR47	G-5	RV26	D-11
CF07	J-13	CR18	D-7	RC11	G-11	RM20	C-10	RP76	J-9	RR48	H-5	RV29	E-10
CF14	F-15	CR19	D-7	RC15	F-13	RM36	C-11	RP96	G-5	RR49	I-6	RV31	E-11
CJ08	F-10	CR20	E-7	RC23	E-10	RM40	F-6	RP97	I-9	RR55	E-5	RV32	F-10
CM02	D-12	CR21	B-10	RC24	E-10	RM41	D-13	RP98	F-15	RR56	F-8	RV33	F-11
CM04	D-14	CR22	B-10	RC26	G-13	RM42	D-12	RR03	E-6	RR58	H-6	RV34	G-10
CM05	E-13	CR23	E-7	RF04	I-14	RM43	C-13	RR05	E-5	RR60	E-5	RV36	F-10
CM11	F-13	CR25	D-7	RF05	I-13	RM45	C-14	RR06	E-6	RR61	E-9	RV37	F-10
CM12	F-13	CR26	D-7	RF10	I-13	RP05	H-8	RR08	E-5	RR62	B-5	RV40	D-12
CM16	E-12	CR27	C-7	RF11	J-14	RP07	H-6	RR09	E-6	RR66	C-7	RV41	F-11
CM17	E-13	CR28	C-7	RF15	H-13	RP09	H-8	RR12	E-6	RR69	F-7	RV43	F-14
CM18	E-12	CR37	B-5	RJ12	E-8	RP10	H-9	RR17	F-7	RR72	A-6	RV50	G-8
CM19	D-14	CR38	A-5	RJ13	E-8	RP12	I-8	RR18	F-8	RR77	H-10	RV53	H-10
CM20	D-14	CR42	I-5	RJ15	G-10	RP13	I-8	RR19	F-7	RR82	A-5	RV55	D-10
CM24	E-15	CR50	B-7	RJ17	F-10	RP14	J-8	RR20	F-6	RR86	A-6	RX02	H-16
CM25	E-14	CV07	E-13	RJ18	F-9	RP15	I-9	RR30	C-6	RR87	A-6	RX04	I-16
CM26	C-12	CV08	E-13	RM04	D-12	RP16	J-8	RR31	C-6	RR92	B-6	RX05	I-15
CM27	B-11	CV13	F-11	RM05	E-15	RP21	L-12	RR32	C-6	RR93	B-6		
CM28	E-11	CV15	G-10	RM06	D-15	RP26	H-7	RR33	D-6	RR95	C-16		
CM29	C-10	CV19	G-13	RM09	D-14	RP27	J-8	RR34	G-6	RS01	B-13		
CM30	B-13	CV51	F-13	RM10	E-15	RP35	L-11	RR36	F-6	RS02	B-14		
CP34	E-15	RC03	G-14	RM11	D-14	RP37	I-7	RR38	E-5	RS03	C-12		
CP49	J-6	RC04	H-14	RM12	D-14	RP59	I-7	RR42	H-5	RS04	B-14		
CP67	J-9	RC05	G-14	RM15	E-14	RP61	J-8	RR44	H-6	RS05	B-12		

FM CONVERTER - TOP VIEW

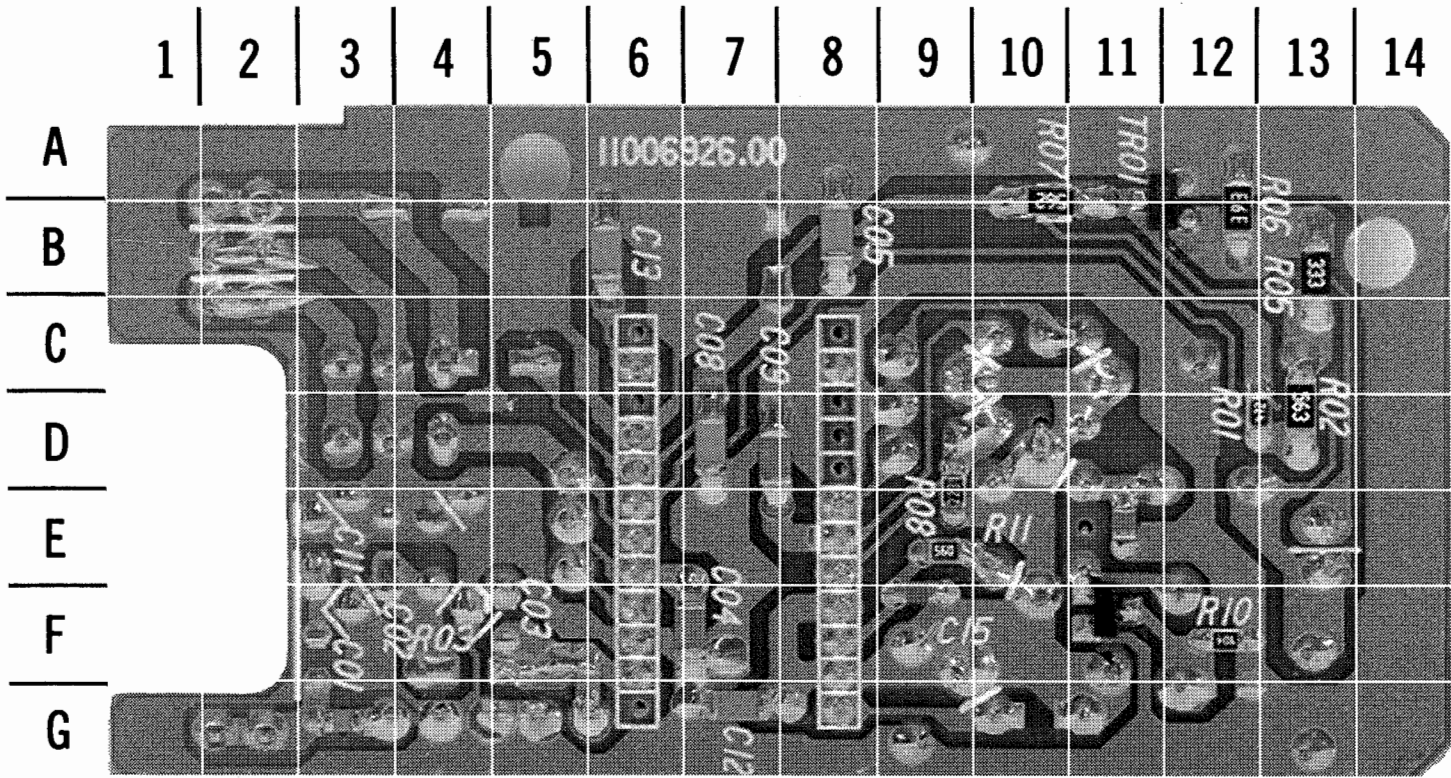


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FM CONVERTER BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C06	E-12	IC01	A-6	L05	A-10	Q03	E-3	Q06	A-4
C07	A-14	L03	D-10	Q01	D-4	Q04	D-8	R09	C-12
C10	A-8	L04	C-10	Q02	C-5	Q05	B-12		

FM CONVERTER - BOTTOM VIEW



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FM CONVERTER BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C04	F-7	C12	G-7	C16	G-3	R05	B-13	R10	F-12
C05	B-8	C13	B-6	C17	G-6	R06	B-12	R11	E-9
C08	D-7	C14	E-11	R01	D-12	R07	B-10	TR01A	B-12
C09	D-7	C15	F-9	R02	D-13	R08	E-9	TR02A	F-11

RCA

MODEL E09310WHF24 (CHASSIS TX825MB)



A

B

TELEVISION SCHEMATIC

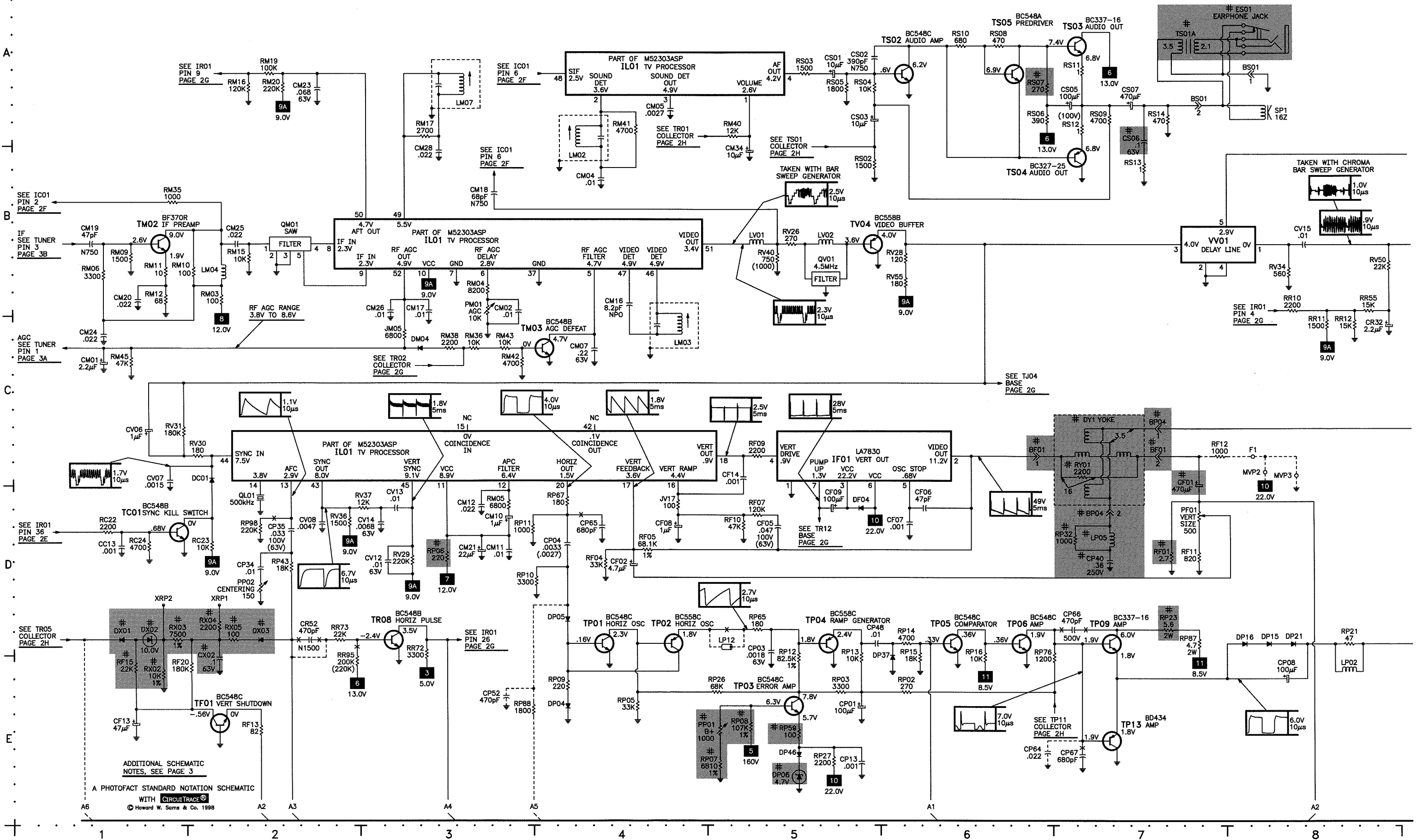
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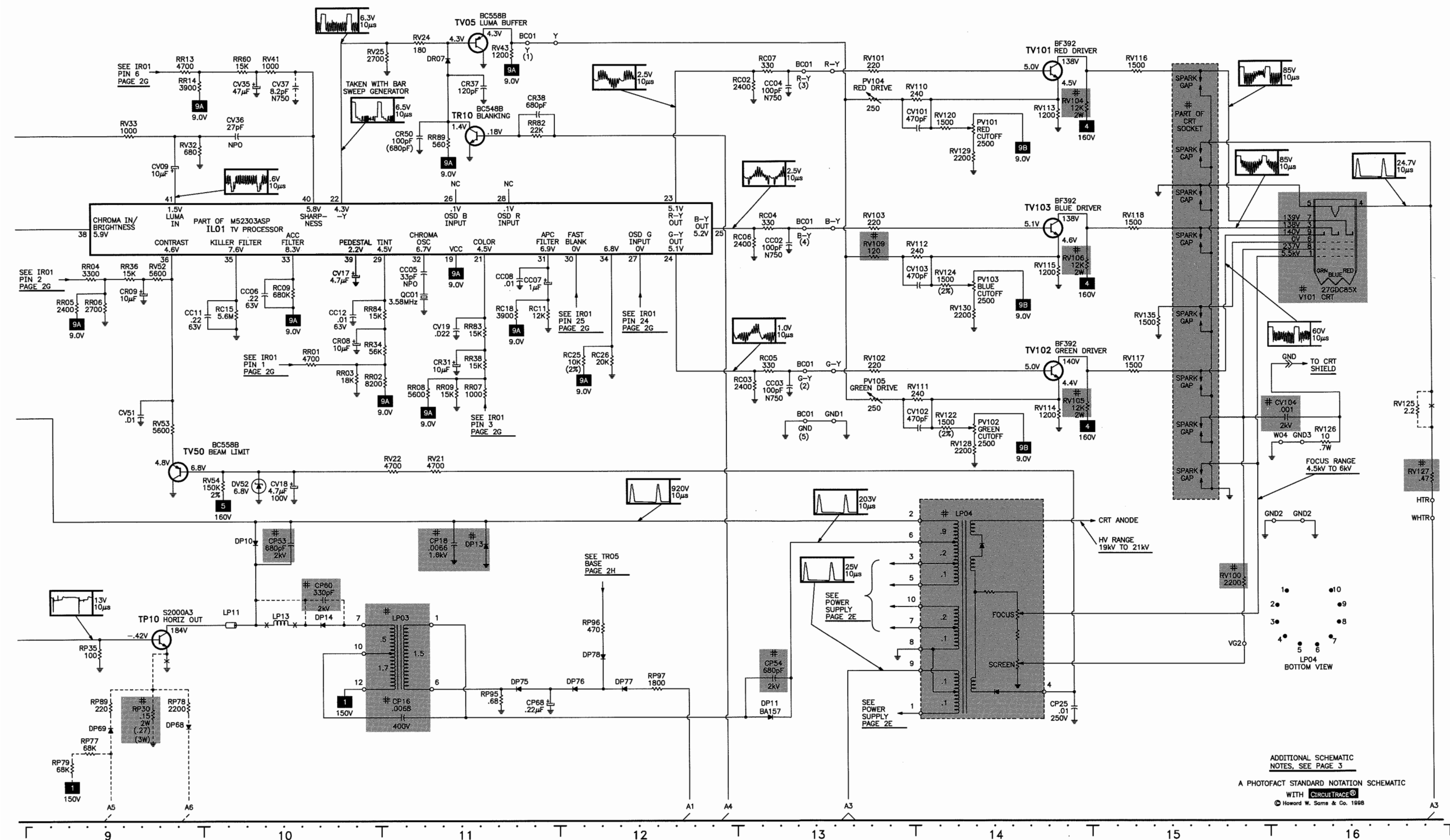
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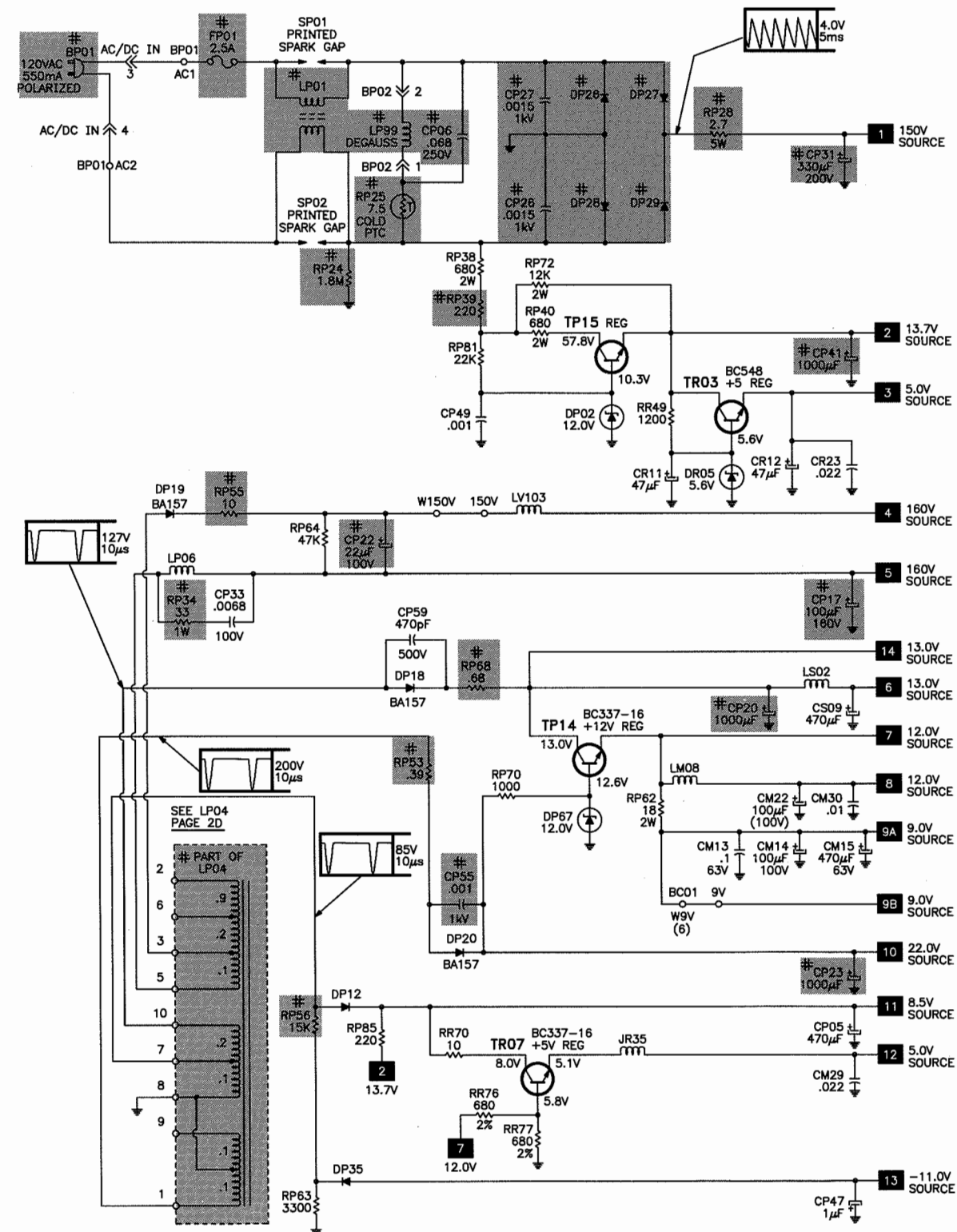
E



ADDITIONAL SCHEMATIC NOTES, SEE PAGE 3  
A PHOTOFAC STANDARD NOTATION SCHEMATIC  
WITH CIRCUITTRACE  
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**TELEVISION SCHEMATIC** continued

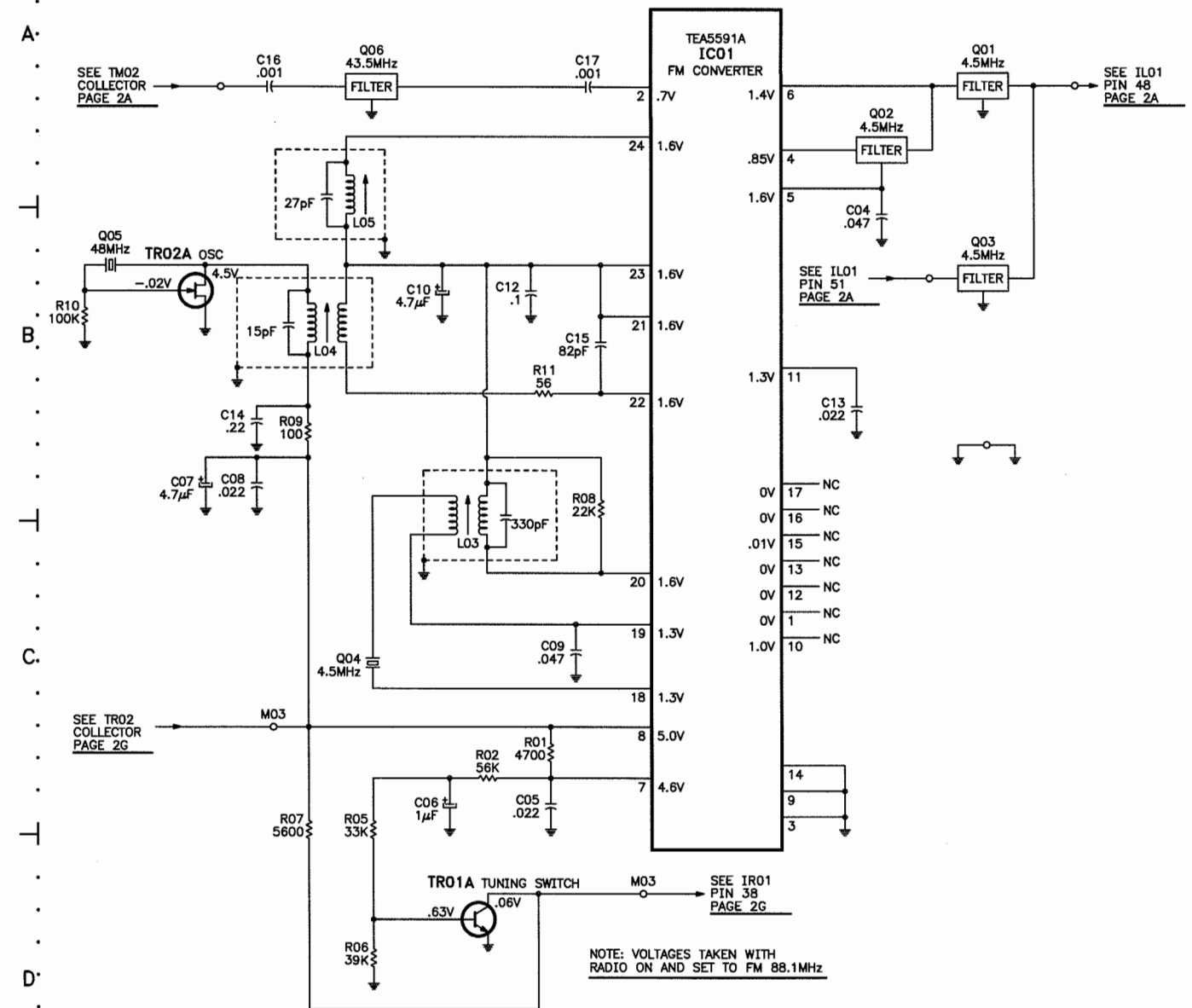
# E POWER SUPPLY SCHEMATIC



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# F FM CONVERTER SCHEMATIC

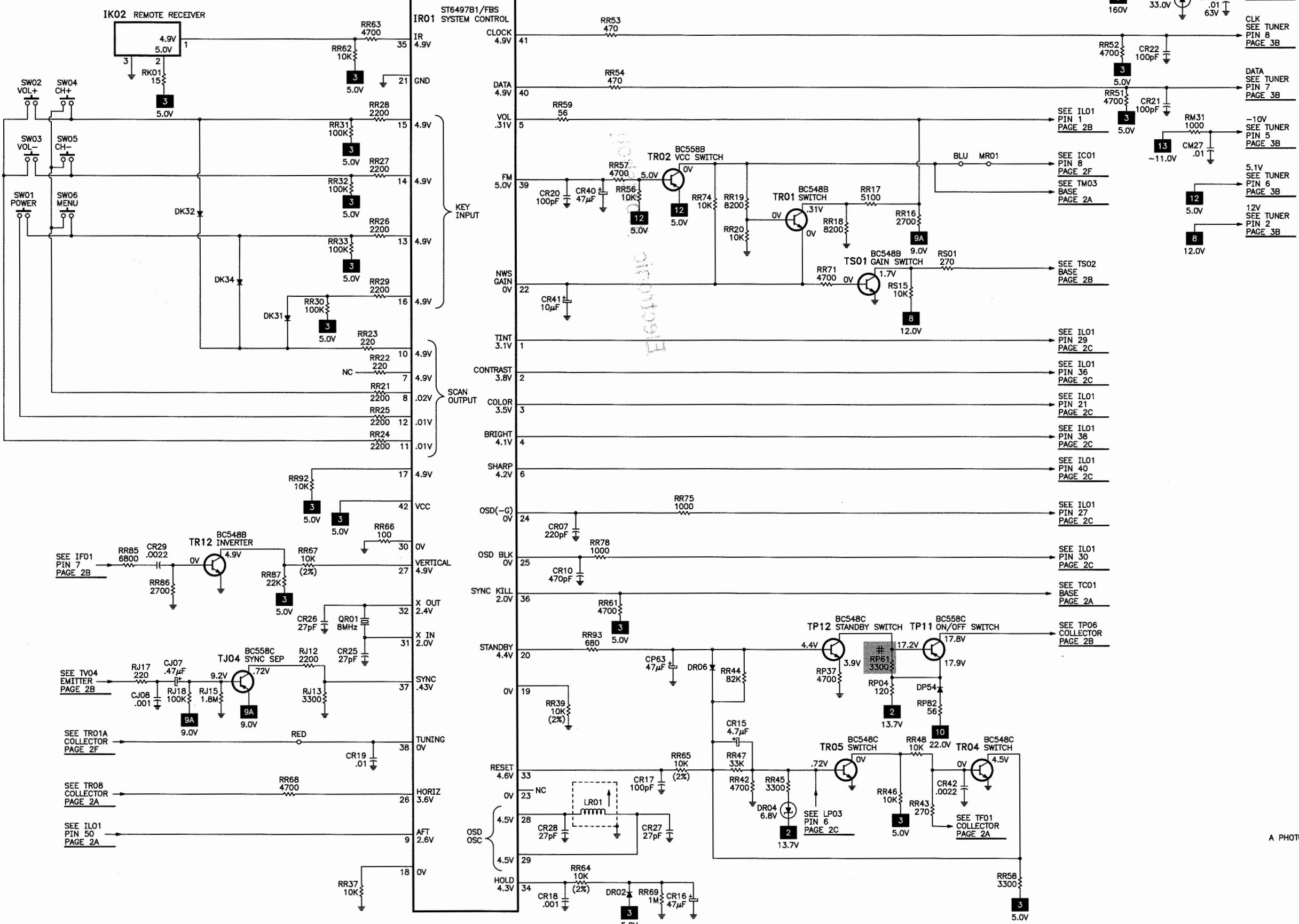


NOTE: VOLTAGES TAKEN WITH  
RADIO ON AND SET TO FM 88.1MHz

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SYSTEM CONTROL SCHEMATIC

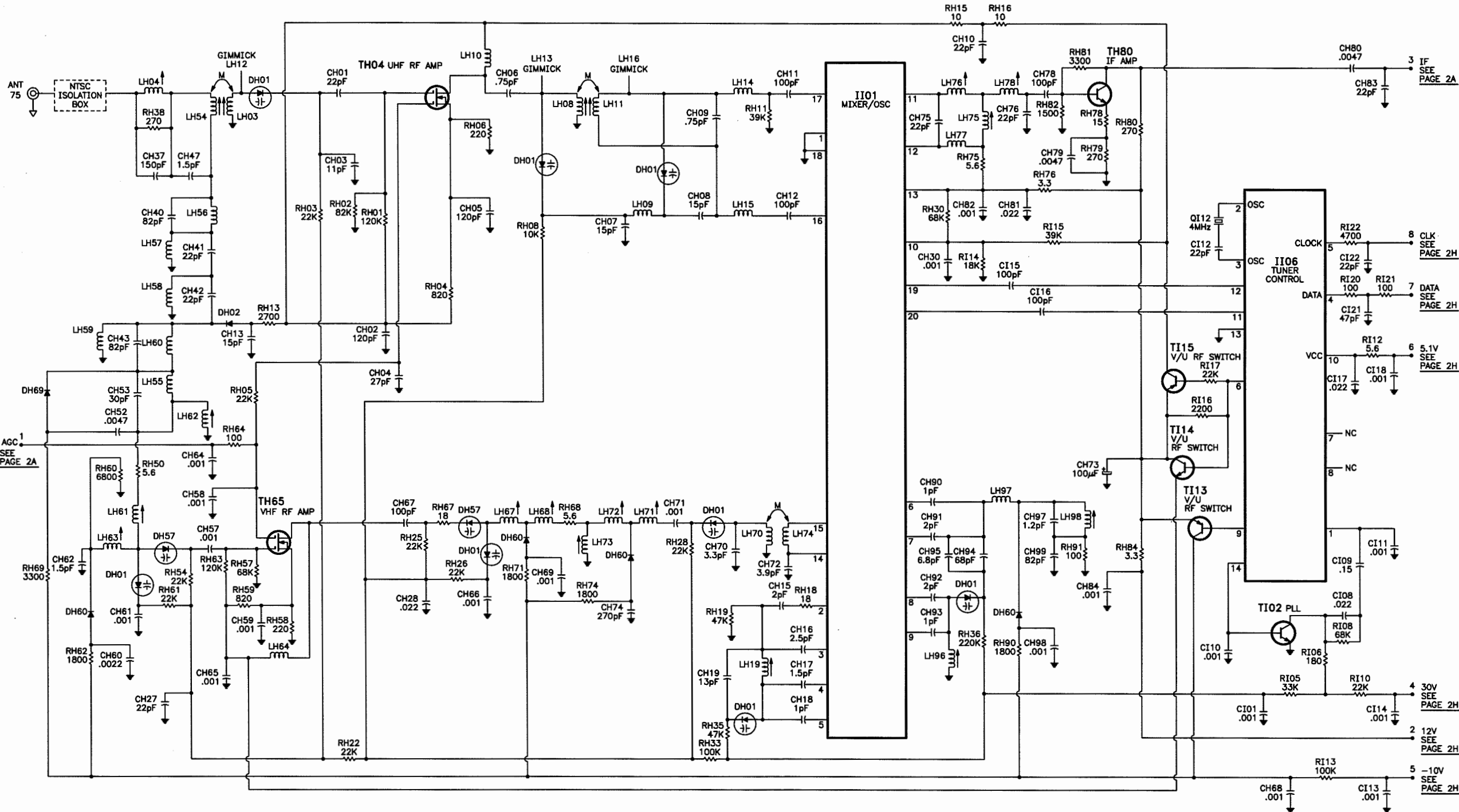


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MODEL E09310WHF24 (CHASSIS TX825MB)



TUNER SCHEMATIC

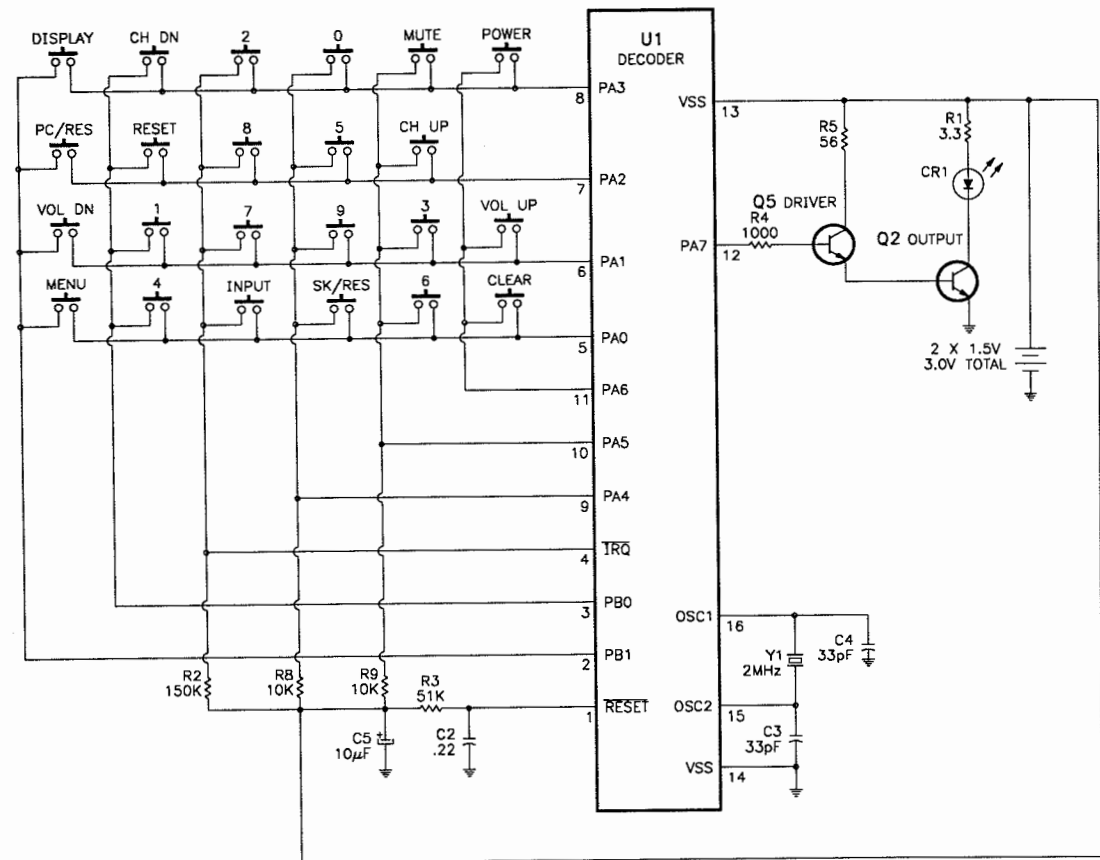


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REMOTE TRANSMITTER SCHEMATIC

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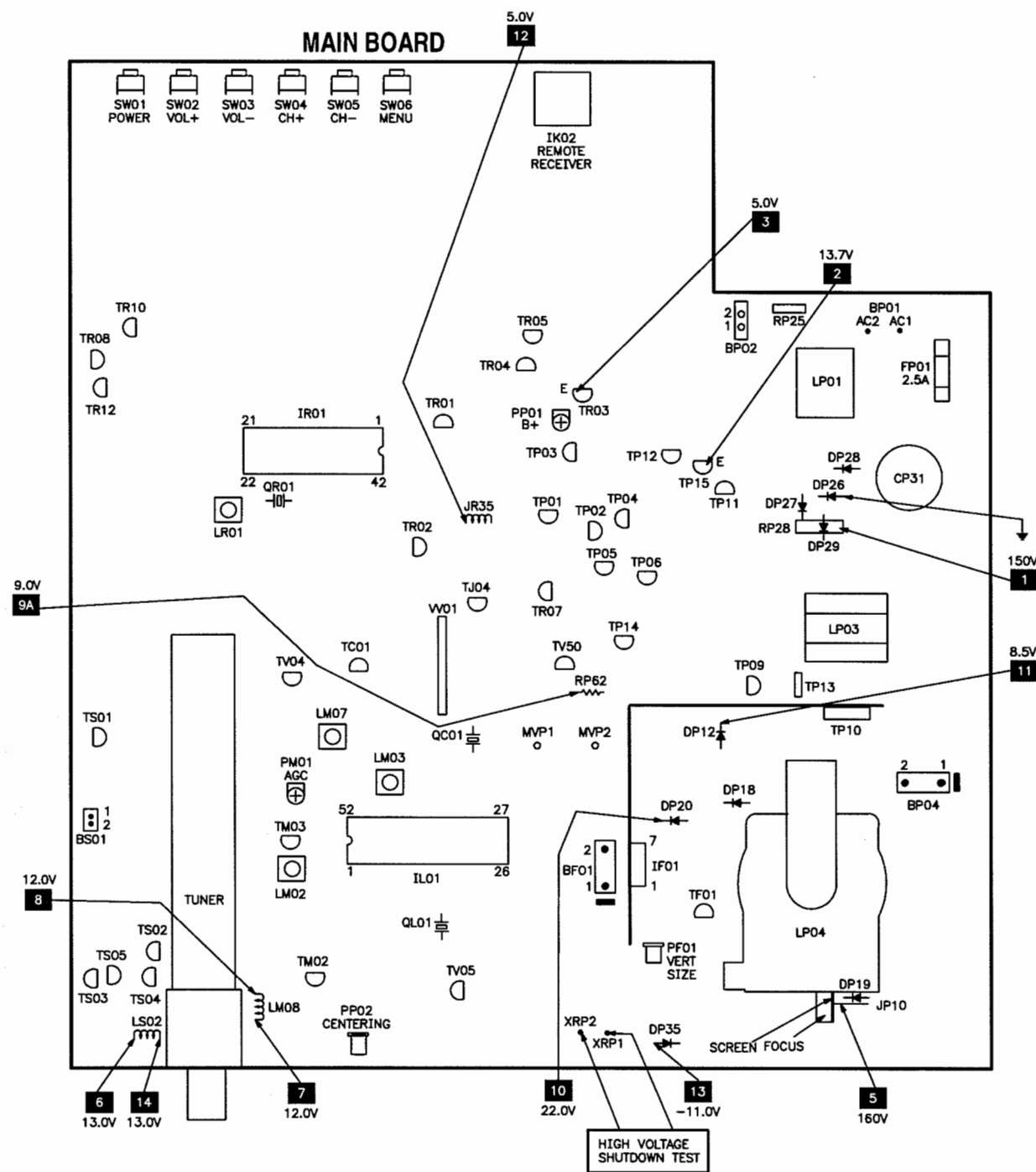


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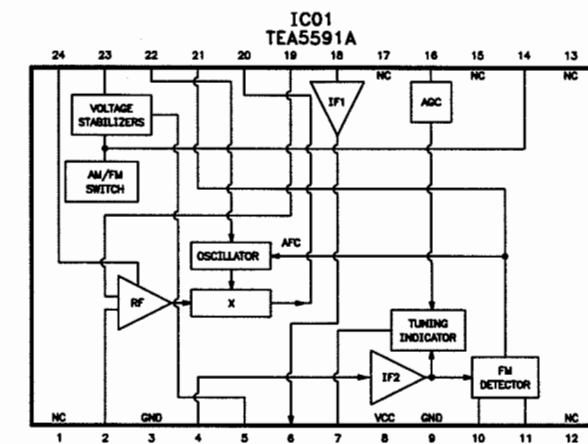
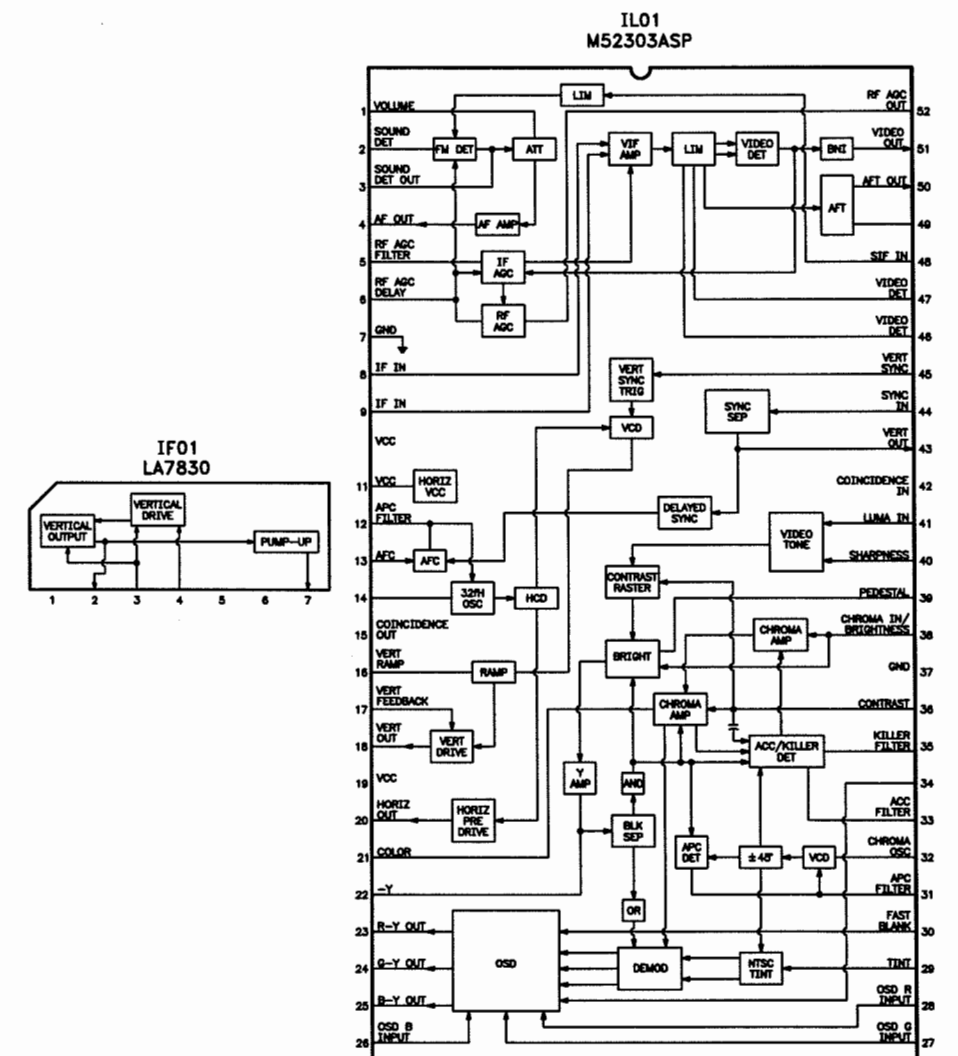
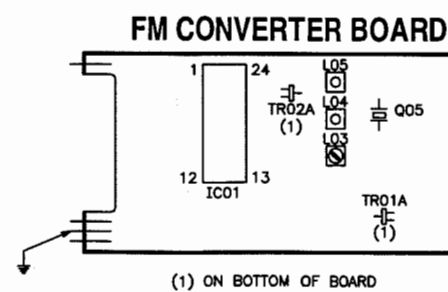
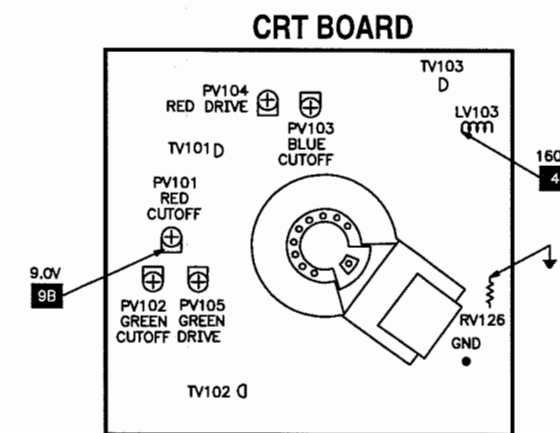
SCHEMATIC COMPONENT LOCATION GUIDE

BP01	A-17	CP05	D-20	CS05	A-6	DV52	D-10	R07	D-21	RP09	E-4	RR14	A-10	RR89	B-11	RV130	C-14
C04	B-23	CP06	A-18	CS06	B-7	DX01	D-1	R08	C-22	RP10	D-3	RR16	B-30	RR92	C-27	RV135	C-15
C05	C-22	CP08	E-8	CS07	A-7	DX02	D-1	R09	B-21	RP11	D-3	RR17	B-29	RR93	D-28	RX02	E-1
C06	C-22	CP13	E-5	CS09	C-20	DX03	D-2	R10	B-21	RP12	E-5	RR18	B-29	RR95	E-2	RX03	D-1
C07	B-21	CP16	E-11	CV06	C-1	DY1	C-7	R11	B-22	RP13	E-5	RR19	B-29	RS01	B-30	RX04	D-2
C08	B-21	CP17	C-20	CV07	D-1	ES01	A-8	RC02	A-13	RP14	D-6	RR20	B-29	RS02	B-5	RX05	D-2
C09	C-22	CP18	D-11	CV08	D-2	FP01	A-17	RC03	C-13	RP15	E-6	RR21	C-27	RS03	A-5	RY01	D-7
C10	B-22	CP20	C-19	CV09	B-9	IC01	A-23	RC04	B-13	RP16	E-6	RR22	C-27	RS04	A-5	SP1	A-8
C12	B-22	CP22	C-18	CV12	D-3	IF01	C-5	RC05	C-13	RP18	A-31	RR23	C-27	RS05	A-5	SW01	B-25
C13	B-23	CP23	D-20	CV13	D-3	IK02	A-26	RC06	B-13	RP19	A-31	RR24	C-27	RS06	A-6	SW02	A-25
C14	B-21	CP25	E-14	CV14	D-3	IL01	A-4	RC07	A-13	RP21	D-8	RR25	C-27	RS07	A-6	SW03	B-25
C15	B-22	CP26	B-19	CV15	B-8	IL01	B-10	RC09	C-10	RP23	D-7	RR26	B-27	RS08	A-6	SW04	A-25
C16	A-21	CP27	A-19	CV17	B-10	IL01	B-3	RC11	C-11	RP24	B-18	RR27	B-27	RS09	A-7	SW05	B-25
C17	A-22	CP31	B-20	CV18	D-10	IL01	C-2	RC15	C-10	RP25	B-18	RR28	B-27	RS10	A-6	SW06	B-25
CC02	B-13	CP33	C-17	CV19	C-11	IR01	A-27	RC18	C-11	RP26	E-4	RR29	B-27	RS11	A-7	TC01	D-1
CC03	C-13	CP34	D-2	CV35	A-10	JM05	C-3	RC22	D-1	RP27	E-5	RR30	B-27	RS12	B-7	TF01	E-2
CC04	A-13	CP35	D-2	CV36	B-10	JR35	E-19	RC23	D-2	RP28	B-19	RR31	B-27	RS13	B-7	TJ04	D-26
CC05	B-11	CP40	D-7	CV37	A-10	JV17	D-4	RC24	D-1	RP30	E-9	RR32	B-27	RS14	A-7	TM02	B-1
CC06	C-10	CP41	B-20	CV51	C-9	L03	C-22	RC25	C-12	RP32	D-7	RR33	B-27	RS15	B-29	TM03	C-3
CC07	B-11	CP47	E-20	CV101	B-13	L04	B-21	RC26	C-12	RP34	C-17	RR34	C-11	RV21	D-11	TP01	D-4
CC08	B-11	CP48	D-5	CV102	C-13	L05	B-21	RF01	D-7	RP35	E-9	RR36	B-9	RV22	D-11	TP02	D-4
CC11	C-10	CP49	B-18	CV103	C-13	LM02	B-4	RF04	D-4	RP37	D-29	RR37	E-27	RV24	A-11	TP03	E-5
CC12	C-10	CP52	E-3	CV104	C-16	LM03	C-4	RF05	D-4	RP38	B-18	RR38	C-11	RV25	A-11	TP04	D-5
CC13	D-1	CP53	D-10	CX02	E-2	LM04	B-2	RF07	D-5	RP39	B-18	RR39	D-28	RV26	B-5	TP05	D-6
CF13	E-1	CP54	E-13	DC01	D-2	LM07	A-3	RF09	C-5	RP40	B-18	RR42	E-29	RV28	B-6	TP06	D-6
CF14	C-5	CP55	D-18	DF04	D-5	LM08	D-19	RF10	D-5	RP43	D-2	RR43	E-30	RV29	D-3	TP09	D-7
CF01	D-7	CP59	C-18	DK31	B-26	LP01	A-18	RF11	D-7	RP53	D-2	RR44	D-29	RV30	C-2	TP10	D-9
CF02	D-4	CP60	D-10	DK32	B-26	LP02	E-8	RF12	C-7	RP55	C-17	RR45	E-29	RV31	C-1	TP11	D-30
CF05	D-5	CP63	D-28	DK34	B-26	LP03	D-11	RF13	E-2	RP56	D-18	RR46	E-29	RV32	B-10	TP12	D-29
CF06	D-6	CP64	E-6	DM03	A-31	LP04	D-14	RF15	E-1	RP59	E-5	RR47	E-29	RV33	B-9	TP13	E-7
CF07	D-6	CP65	D-4	DM04	C-3	LP04	D-17	RF20	E-2	RP61	D-29	RR48	E-29	RV34	B-8	TP14	D-19
CF08	D-4	CP66	D-7	DP02	B-19	LP05	D-7	RJ12	D-26	RP62	D-19	RR49	B-19	RV36	D-2	TP15	B-19
CF09	D-5	CP67	E-7	DP04	E-4	LP06	C-17	RJ13	D-27	RP63	E-18	RR51	A-31	RV37	D-2	TR01	B-29
CJ07	D-26	CP68	E-11	DP05	D-4	LP11	D-10	RJ15	D-26	RP64	C-18	RR52	A-31	RV40	B-5	TR01A	D-22
CJ08	D-26	CP07	C-28	DP06	E-5	LP12	E-5	RJ17	D-26	RP65	D-5	RR53	A-28	RV41	A-10	TR02	B-28
CM01	C-1	CR08	C-10	DP10	D-10	LP13	D-10	RJ18	D-26	RP67	D-4	RR54	A-28	RV43	A-11	TR02A	B-21
CM02	C-3	CR09	C-9	DP11	E-13	LP99	A-18	RK01	A-26	RP68	C-18	RR55	C-8	RV50	B-8	TR03	B-19
CM03	A-31	CR10	D-28	DP12	D-18	LR01	E-28	RM03	B-2	RP70	D-18	RR56	B-28	RV52	B-9	TR04	E-30
CM04	B-4	CR11	C-19	DP13	D-11	LS02	C-19	RM04	B-3	RP72	B-18	RR57	B-28	RV53	C-9	TR05	E-29
CM05	A-4	CR12	C-19	DP14	D-10	LV01	B-5	RM05	D-3	RP76	E-6	RR58	E-30	RV54	D-10	TR07	E-18
CM07	C-4	CR15	E-29	DP15	D-8	LV02	B-5	RM06	B-1	RP77	E-9	RR59	B-28	RV55	B-6	TR08	D-3
CM10	D-3	CR16	E-28	DP16	D-7	LV103	C-18	RM09	B-1	RP78	E-9	RR60	A-10	RV100	D-15	TR10	B-11
CM11	D-3	CR17	E-28	DP18	C-18	PF01	D-7	RM10	B-2	RP79	E-9	RR61	D-28	RV101	A-13	TR12	D-26
CM12	D-3	CR18	E-28	DP19	C-17	PM01	C-3	RM11	B-1	RP81	B-18	RR62	A-27	RV102	C-13	TS01	B-29
CM13	D-19	CR19	E-27	DP20	D-18	PP01	E-5	RM12	B-1	RP82	D-30	RR63	A-27	RV103	B-13	TS01A	A-7
CM14	D-19	CR20	B-28	DP21	D-8	PP02	D-2	RM15	B-2	RP85	D-18	RR64	E-28	RV104	A-14	TS02	A-6
CM15	D-20	CR21	A-31	DP26	A-19	PV101	B-14	RM16	A-2	RP87	D-7	RR65	E-28	RV105	C-14	TS03	A-7
CM16	C-4	CR22	A-31	DP27	A-19	PV102	C-14	RM17	B-3	RP88	E-3	RR66	D-27	RV106	B-14	TS04	B-7
CM17	C-3	CR23	C-20	DP28	B-19	PV103	C-14	RM19	A-2	RP89	E-9	RR67	D-26	RV109	B-13	TS05	A-6
CM18	B-3	CR25	D-27	DP29	B-19	PV104	A-13	RM20	A-2	RP95	E-11	RR68	E-26	RV110	A-13	TV04	B-5
CM19	B-1	CR26	D-27	DP35	E-18	PV105	C-13	RM31	B-31	RP96	D-12	RR69	E-28	RV111	C-13	TV05	A-11
CM20	B-1	CR27	E-28	DP37	E-6	Q01	A-23	RM35	B-1	RP97	E-12	RR70	E-18	RV112	B-13	TV50	D-9
CM21	D-3	CR28	E-28	DP46	E-5	Q02	A-23	RM36	C-3	RP98	D-2	RR71	B-29	RV113	B-14	TV101	A-14
CM22	D-19	CR29	D-26	DP54	D-30	Q03	B-23	RM38	C-3	RR01	C-10	RR72	E-3	RV114	C-14	TV102	C-14
CM23	A-2	CR31	C-11	DP67	D-19	Q04	C-22	RM40	B-5	RR02	C-11	RR73	D-2	RV115	B-14	TV103	B-14
CM24	C-1	CR32	C-8	DP68	E-9	Q05	B-21	RM41	B-4	RR03	C-10	RR74	B-29	RV116	A-15	V101	C-16
CM25	B-2	CR37	A-11	DP69	E-9	Q06	A-21	RM42	C-3	RR04	B-9	RR75	C-28	RV117	C-15	VV01	B-7
CM26	C-3	CR38	B-11	DP75	E-11	QC01	C-11	RM43	C-3	RR05	C-9	RR76	E-18	RV118	B-15		
CM27	B-31	CR40	B-28	DP76	E-12	QL01	D-2	RM45	C-1	RR06	C-9	RR77	E-18	RV120	B-14		
CM28	B-3	CR41	B-28	DP77	E-12	QM01	B-2	RP02	E-6	RR07	C-11	RR78	D-28	RV122	C-14		
CM29	E-20	CR42	E-30	DP78	E-12	QR01	D-27	RP03	E-5	RR08	C-11	RR82	B-11	RV124	C-14		
CM30	D-20	CR50	B-11	DR02	E-28	QV01	B-5	RP04	D-29	RR09	C-11	RR83	C-11	RV125	C-16		
CM34	B-5	CR52	D-2	DR04	E-29	R01	C-22	RP05	E-4	RR10	C-8	RR84	C-11	RV126	C-16		
CP01	E-5	CS01	A-5	DR05	C-19	R02	C-22	RP06	D-3	RR11	C-8	RR85	D-26	RV127	D-16		
CP03	D-5	CS02	A-5	DR06	D-28	R05	D-22	RP07	E-5	RR12	C-8	RR86	D-26	RV128	C-14		
CP04	D-4	CS03	A-5	DR07	A-11	R06	D-22	RP08	E-5	RR13	A-9	RR87	D-26	RV129	B-14		

## PLACEMENT CHART



## IC FUNCTIONS



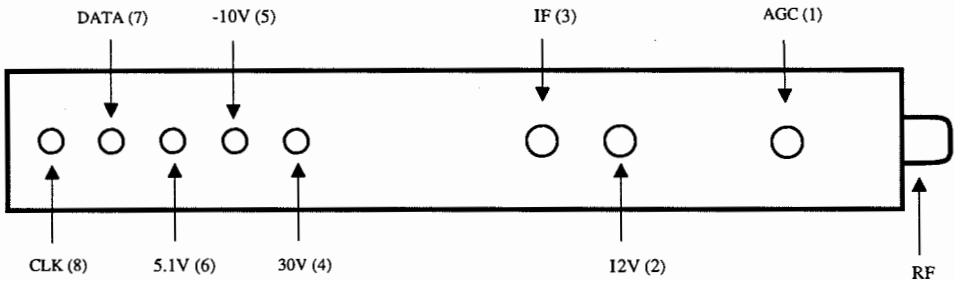


TUNER INFORMATION

TUNER VOLTAGE CHART			
Pin	VHF Low Band	VHF High Band	UHF Band
AGC (1)	4.1V	4.2V	4.9V
12V (2)	12.0V	12.0V	12.0V
IF (3)	0V	0V	0V
30V (4)	33.0V	33.0V	33.0V
-10V (5)	-11.5V	-5.6V	-11.5V
5.1V (6)	5.0V	5.0V	5.0V
DATA (7)	4.9V	4.9V	4.9V
CLK (8)	4.9V	4.9V	4.9V

NOTE: VHF Low Band voltages taken on channel 2.  
VHF High Band voltages taken on channel 7.  
UHF Band voltages taken on channel 14.

TUNER TERMINAL GUIDE



SCHEMATIC NOTES

# For SAFETY use only equivalent replacement part, see parts list.

✕ Circuitry not used in some versions.

--- Circuitry used in some versions.

⏏ Ground

⏏ Chassis ground

▽ Common tie point

△ Taken from common tie point

3 Schematic CIRCUITRACE® Voltage source tie point.

A Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless noted otherwise.  
Waveforms taken with triggered scope and colorbar signal. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.  
Supply voltages maintained as seen at input.  
Voltages measured with digital meter and a 1000µV RF signal, with colorbar pattern, applied to antenna terminal.  
Controls adjusted for normal operation.  
Capacitors are 50 volts or less, 5% or greater unless noted.  
Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.  
Resistors are 1/2W or less, 5% or greater unless noted.  
Value in ( ) used in some versions.  
Measurements with switching as shown, unless noted.  
Rated voltage shown on zener diodes.

TEST EQUIPMENT

Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	Sencore No.	Equipment	Sencore No.
Oscilloscope	SC3100	Isolation Transformer	PR570
Generators		Capacitance Analyzer	LC102
RGB	CM2125	CRT Analyzer	CR7000
Multiburst Signal	VG91	AC Leakage Tester	PR570
Color Bar	VG91	Inductance Analyzer	LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3100	Field Strength Meter	SL753
Frequency Meter	SC3100	Transistor Tester	TF46
Hi-Voltage Probe	HP200	Horizontal Analyzer	HA-2500
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

PARTS LIST

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- Custom Components Corporation (Chek-A-Color)
  - NTE Electronics, Inc. (NTE)
  - Philips ECG Company (ECG)

- Terrell & Nobis (TNI Electronics)
  - Sencore, Inc.
  - Thomson Consumer Electronics, Inc. (SK, TCE)

SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
DC01	-	198589	NTE519	ECG519	SK3100
DF04	-	198597	NTE116	ECG116	SK3313
DK31, 32, 34	-	198589	NTE519	ECG519	SK3100
DM03	-	198600	-	-	-
DM04	-	198589	NTE519	ECG519	SK3100
DP02	-	220637	-	-	-
DP04, 05	-	198589	NTE519	ECG519	SK3100
# DP06	-	223083	-	-	-
DP10	-	225441	-	-	-
DP11	BA157	198590	NTE558	ECG558	SK3998
DP12	-	198590	NTE580	ECG580	-
# DP13	-	198596	-	-	-
DP14	-	210226	-	-	-
DP15, 16	-	198597	NTE116	ECG116	SK3313
DP18, 19, 20	BA157	198590	NTE558	ECG558	SK3998
DP21	-	198597	NTE116	ECG116	SK3313
# DP26, 27, 28, 29	-	209919	NTE125	ECG125	SK3032A
DP35, 37	-	198589	NTE519	ECG519	SK3100
DP46, 54	-	198589	NTE519	ECG519	SK3100
DP67	-	220637	-	-	-
DP68, 69	-	198589	NTE519	ECG519	SK3100
DP75	-	198590	NTE580	ECG580	-
DP76, 77, 78	-	198589	NTE519	ECG519	SK3100
DR02	-	198589	NTE519	ECG519	SK3100
DR04	-	220638	NTE5014A	-	-
DR05	-	220639	-	-	-
DR06, 07	-	198589	NTE519	ECG519	SK3100
DV52	-	220638	NTE5014A	-	-
# DX01	-	198589	NTE519	ECG519	SK3100
# DX02	-	159429	NTE5019T1	ECG5019T1	SK9970
# DX03	-	198589	NTE519	ECG519	SK3100
IC01	TEA5591A	210533	-	-	-
IF01	LA7830	188086	NTE1773	ECG1773	SK9752
IL01	M52303ASP	210543	-	-	-
IR01	ST6497B1/FBS	220096	-	-	-
TC01	BC548B	198743	NTE123AP	ECG123AP	SK3854
TF01	BC548C	198746	NTE199	ECG199	SK3245
TJ04	BC558B	198745	NTE159	ECG159	SK3466
TM02	BF370R	206017	-	-	-
TM03	BC548B	198743	NTE123AP	ECG123AP	SK3854
TP01	BC548C	198746	NTE199	ECG199	SK3245
TP02	BC558C	198747	NTE159	ECG159	SK3466
TP03	BC548C	198746	NTE199	ECG199	SK3245
TP04	BC558C	198747	NTE159	ECG159	SK3466
TP05, 06	BC548C	198746	NTE199	ECG199	SK3245
TP09	BC337-16	216099	NTE123AP	ECG123AP	SK3854
TP10	S2000A3	198794	-	-	-
TP11	BC558C	198747	NTE159	ECG159	SK3466
TP12	BC548C	198746	NTE199	ECG199	SK3245
TP13	BD434	220673	NTE153	ECG153	SK3274
TP14	BC337-16	216099	NTE123AP	ECG123AP	SK3854
TP15	-	198752	-	-	-
TR01	BC548B	198743	NTE123AP	ECG123AP	SK3854

# For SAFETY use only equivalent replacement part.

PARTS LIST continued

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
TR01A	-	216434	-	-	-
TR02	BC558B	198745	NTE159	ECG159	SK3466
TR02A	-	210548	-	-	-
TR03	BC548B	198743	NTE123AP	ECG123AP	SK3854
TR04, 05	BC548C	198746	NTE199	ECG199	SK3245
TR07	BC337-16	216099	NTE123AP	ECG123AP	SK3854
TR08, 10, 12	BC548B	198743	NTE123AP	ECG123AP	SK3854
TS01	BC548B	198743	NTE123AP	ECG123AP	SK3854
TS02	BC548C	220674	NTE199	ECG199	SK3245
TS03	BC337-16	216099	NTE123AP	ECG123AP	SK3854
TS04	BC327-25	220675	NTE298	ECG298	SK3450
TS05	BC548A	220674	NTE199	ECG199	SK3245
TV04, 05	BC558B	198745	NTE159	ECG159	SK3466
TV50	BC558B	198745	NTE159	ECG159	SK3466
TV101, 02, 03	BF392	198763	NTE287	ECG287	SK3433

CONTROLS & RESISTORS

Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
PF01	500 Vertical Size	198627	-
PM01	10K AGC	198628	-
# PP01	1000 B+	198629	-
PP02	150 Centering	225631	-
PV101	2500 Red Cutoff	216051	-
PV102	2500 Green Cutoff	216051	-
PV103	2500 Blue Cutoff	216051	-
PV104	250 Red Drive	216052	-
PV105	250 Green Drive	216052	-
RC25	10K 5% 1/4W	-	QW310
	10K 2% 1/4W	829310	QW310
# RF01	2.7 5% 1/2W	198648	HW2D7
RF05	68.1K 1% .16W	198790	-
# RF15	22K 5% .16W	198714	-
# RP06	220 5% 1/4W	209917	QW122
# RP07	6810 1% .16W	220649	-
# RP08	107K 1% .4W	224232	-
RP12	82.5K 1% .16W	220651	-
# RP18	8200 5% 1/4W	175366	QW282
# RP19	9100 5% 1/4W	829291	QW291
# RP23	5.6 5% 2W	220652	2W5D6
# RP24	1.8M 10% 1/2W	220333	HW518
# RP25	7.5 Cold PTC	198688	-
# RP28	2.7 10% 5W Wirewound	220653	5W2D7
# RP30	.27 5% 3W	221585	-
	.15 5% 2W	832B15	-
# RP32	1000 10% 1/2W	206386	HW210
# RP34	33 5% 1W	198695	1W033
# RP39	220 5% .43W	220656	-
# RP53	.39 5% 1/4W	198701	-
# RP55	10 5% .35W	210185	-
# RP56	15K 5% 1/4W	198703	QW315
# RP59	100 5% .16W	198660	-
# RP61	3300 5% .16W	198638	-
# RP68	.68 5% .4W	216049	-
RR39, 64, 65, 67	10K 5% 1/4W	-	QW310
	10K 2% 1/4W	829310	QW310
RR76	680 2% 1/4W	-	QW168
	680 5% 1/4W	220664	QW168
RR77	680 2% .16W	220665	-
# RS07	270 5% 1/4W	220648	QW127
RV54	150K 2% 1/4W	175566	QW415
# RV100	2200 5% 1/2W	176632	HW222
# RV104, 05, 06	12K 5% 2W	183193	2W312
# RV109	120 5% 1/4W	210196	QW121
RV122, 24	1500 5% 1/4W	-	QW215
	1500 2% 1/4W	829215	QW215
# RV127	.47 5% 1/2W Nonflammable	210248	-
# RX02	10K 1% 1/4W	198739	-
# RX03	7500 1% 1/2W	198741	-
# RX04	2200 5% .16W	198698	-
# RX05	100 5% .16W	198660	-
# RY01	2200 5% 1/2W	176632	HW222

# For SAFETY use only equivalent replacement part.



PARTS LIST continued

CAPACITORS & ELECTROLYTICS

Item No.	Rating	Mfr. Part No.
CC02, 03, 04	100pF 5% 50V N750	198579
CC05	33pF 5% 50V NPO	210153
# CF01	470µF 20% 25V	220623
CM16	8.2pF 10% 50V NPO	202047
CM18	68pF 5% 50V N750	198554
CM19	47pF 5% 50V N750	198555
# CP06	.068 20% 250V	220627
# CP16	.0068 10% 400V	225439
# CP17	100µF 160V	194728
# CP18	.0066 1.6kV	198562
# CP20	1000µF 20% 16V	185862
# CP22	22µF 20% 100V	210156
# CP23	1000µF 20% 25V	190721
# CP26, 27	.0015 10% 1kV	198565
# CP31	330µF 200V	182286
# CP40	.36 5% 250V	198567
# CP41	1000µF 20% 25V	190721
# CP53	680pF 2kV	225440
# CP54	680pF 2kV	225440
# CP55	.001 1kV	198570
# CP60	330pF 2kV	198569
CR52	470pF 5% 50V N1500	198572
CS02	390pF 5% 50V N750	220630
# CS06	.1 10% 63V	220631
CV36	27pF 5% 50V NPO	220634
CV37	8.2pF 10% 50V N750	220918
# CV104	.001 2kV	198806
# CX02	.1 10% 63V	198551

# For SAFETY use only equivalent replacement part.

COILS & TRANSFORMERS

Item No.	Function/Rating	Mfr. Part No.
# DY1	Yoke	198776
	Horiz 2.8mH Vert 28.0mH	
JR35	100µH	220641
L03	4.5MHz	210621
L04	42.5MHz	210237
L05	49.5MHz	210238
LM02	Sound Detect	198613
LM03	Video Detect	206385
LM04	.82µH	198615
LM07	AFT	210787
LM08	47µH	198617
# LP01	Line Filter	190507
LP02	6µH	198619
# LP03	Switch Mode	224231
# LP04 (1)	Horizontal Output	198621
# LP05	112µH	198623
LP06	50µH	198624
LP11	Ferrite Bead	224167
LP12	Ferrite Bead	224167
LP13	6µH	198619
# LP99	Degaussing	198785
LR01	35µH	205430
LS02	47µH	198617
LV01	1.5µH	198783
LV02	12µH	198782
LV103	150µH	210247
# TS01A	Earphone	198801

# For SAFETY use only equivalent replacement part.  
(1) Focus and screen controls are part of LP04.

PARTS LIST continued

MISCELLANEOUS

Item No.	Description	Mfr. Part No.	Notes
# BP01	Line Cord	226566	AC, Polarized
# ES01	Jack	198802	Earphone
# FP01	Fuse	198605	2.5Amp, 250VAC
IK02	Receiver	216467	Remote
Q01	Filter	210239	4.5MHz
Q02	Filter	210240	4.5MHz
Q03	Filter	210239	4.5MHz
Q04	Filter	210240	4.5MHz
Q05	Filter	210622	48MHz
Q06	Filter	210547	43.5MHz
QC01	Filter	198630	3.58MHz
QL01	Crystal	198633	500kHz
QM01	Filter	210250	SAW
QR01	Crystal	210549	8MHz
QV01	Filter	205431	4.5MHz
SP1	Speaker	198787	1.5" X 3", 16 Ohms, 2W
SW01	Switch	215500	Power
SW02	Switch	215500	Volume +
SW03	Switch	215500	Volume -
SW04	Switch	215500	Channel +
SW05	Switch	215500	Channel -
SW06	Switch	215500	Menu
# V101	CRT	27GDC85X	-
VV01	Delay Line	198753	-
	Adapter	232919	Antenna 75 To 300 Ohms
	Antenna	233720	UHF/VHF
#	Connector	200489	Antenna
	Magnet	179805	Beam Bender
	PC Board	225476	CRT
	PC Board	210628	Earphone
	PC Board	210629	FM Converter
#	Socket	224146	CRT
	Transmitter	235443	Remote (CRK10B1W)
	Tuner (1)	231110	UHF/VHF (M-4006R)
	Wedges	161019	Yoke Positioning (3 Used)

# For SAFETY use only equivalent replacement part.  
(1) Contact TNI Electronics for replacement; order by part number on tuner.

CABINET PARTS

Item	Mfr. Part No.
Button Cluster	235438
# Cabinet Front	MK2024
# Cabinet Rear	BK2025
IR Window	235436

# For SAFETY use only equivalent replacement part.



Created with pride by the employees  
of Howard W. Sams & Company.

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RCA

MODEL E09310W/HF24 (CHASSIS TX825MB)