

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 ground 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 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.

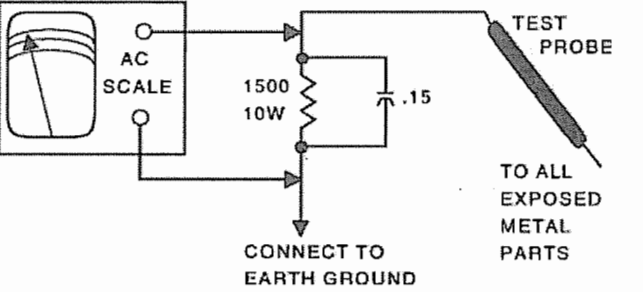
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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

Momentarily apply a short between test points XRP1 and XRP2. The receiver should lose raster and sound. If receiver does not lose raster and sound, the shutdown circuit should be repaired. To resume normal operation, remove the short for approximately 2 seconds and then the receiver will turn on by itself.

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

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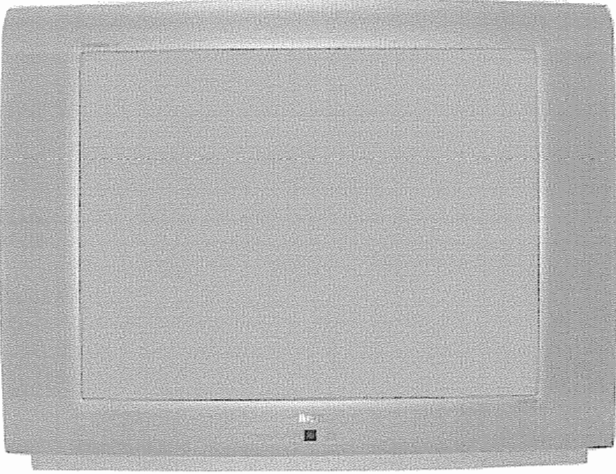
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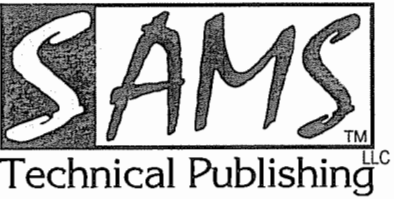
RCA
Model 32F650TYX1 (Chassis ITC008LWP)



Representative Model

Essential coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts list



MARCH 2006 SET 5120

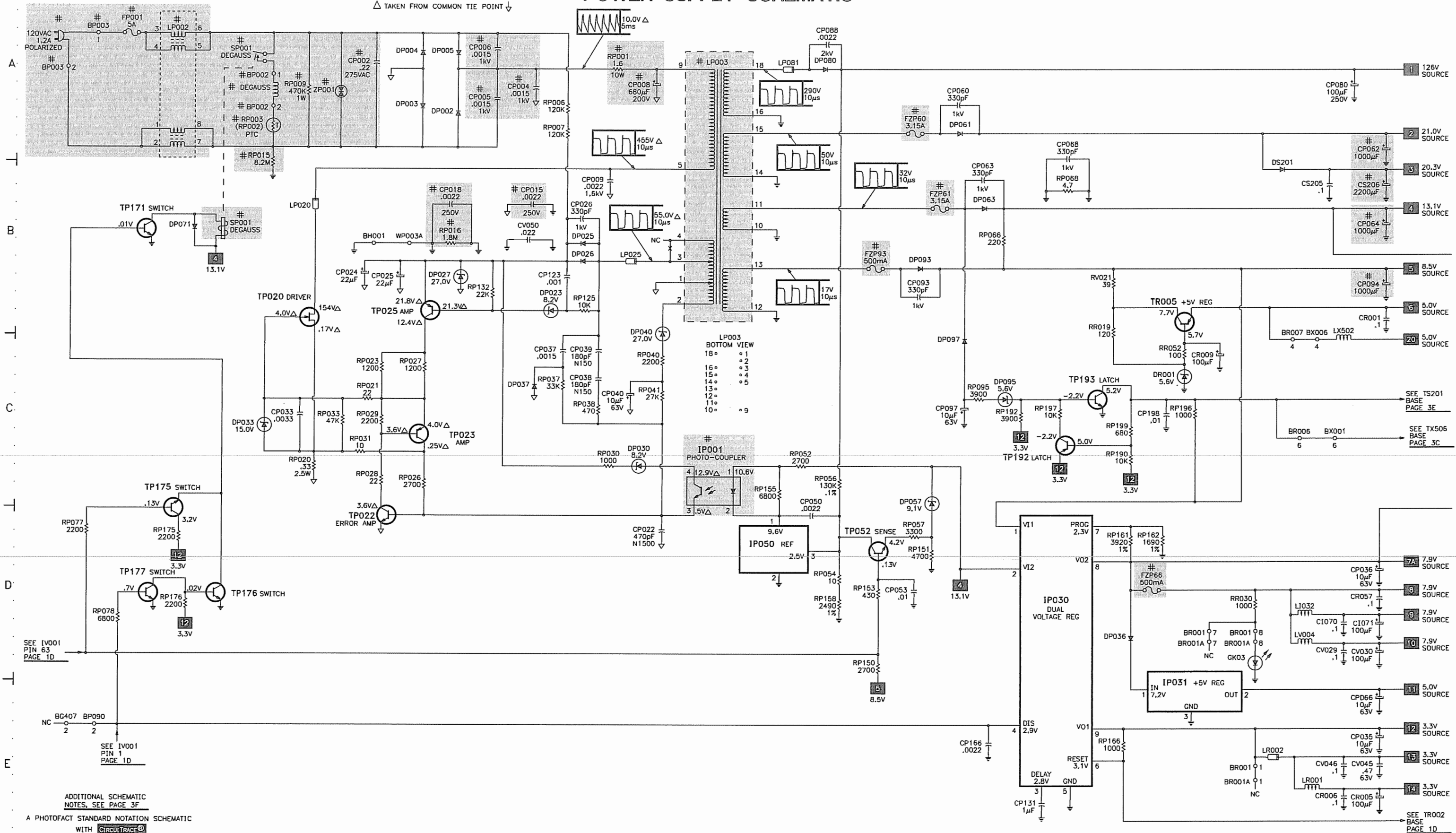
For a Complete List of Manuals,
Visit www.samswebsite.com

SET 5120

MODEL 32F650TYX1 (CHASSIS ITC008LWP)

RCA

POWER SUPPLY SCHEMATIC

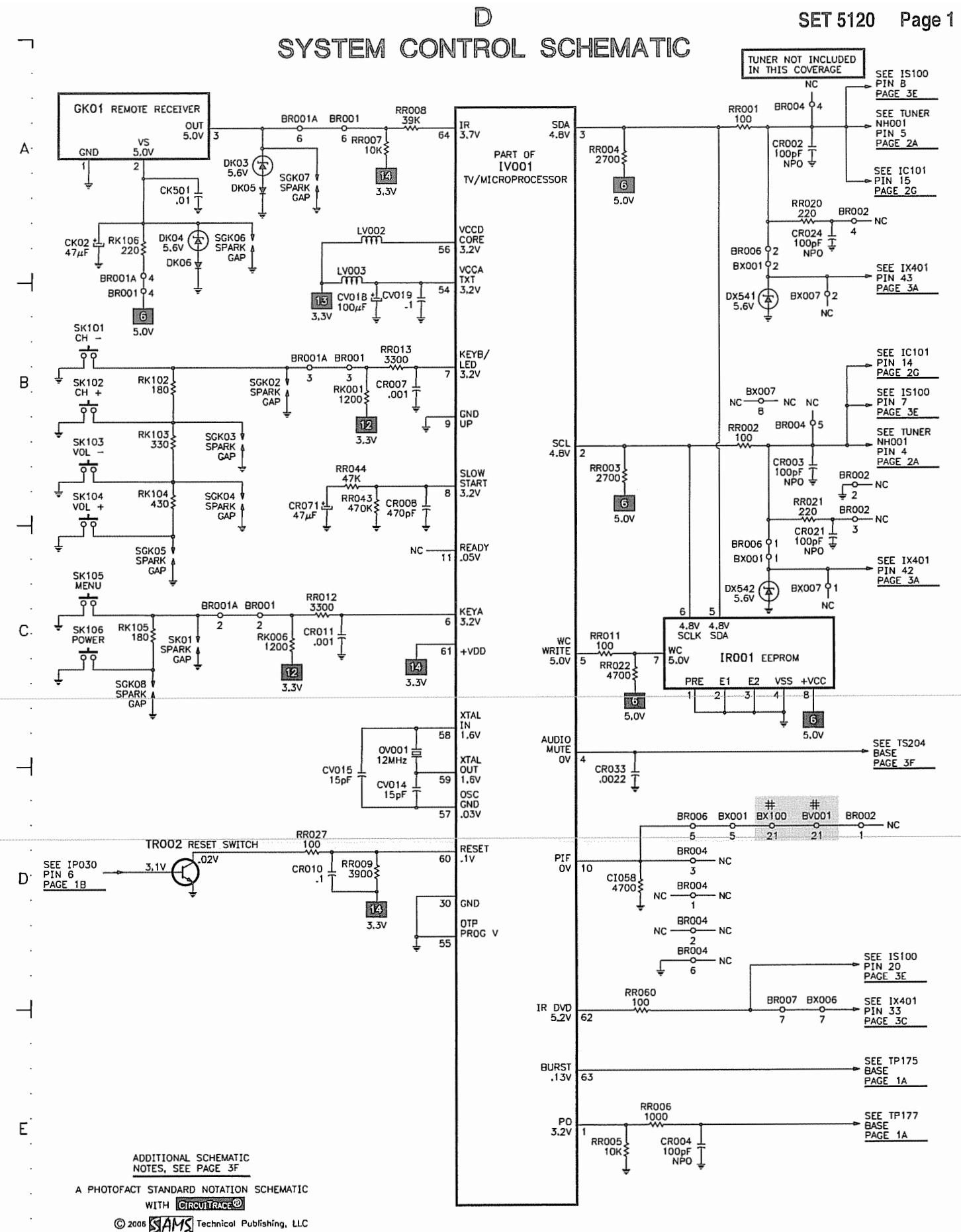


ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3F

A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH **CircuitTrace**

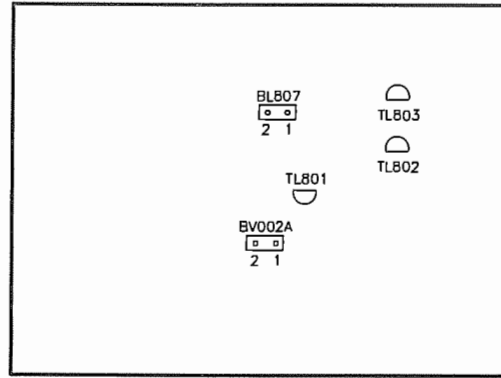
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SEE TR002
BASE
PAGE 1D

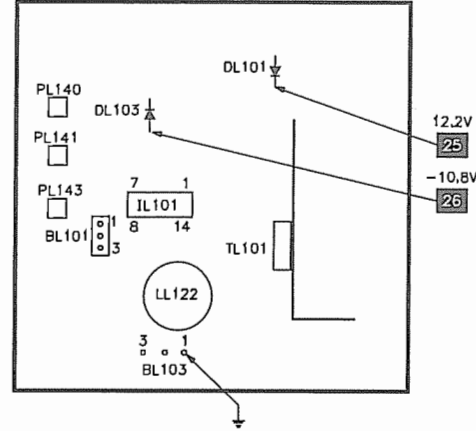


PLACEMENT CHART

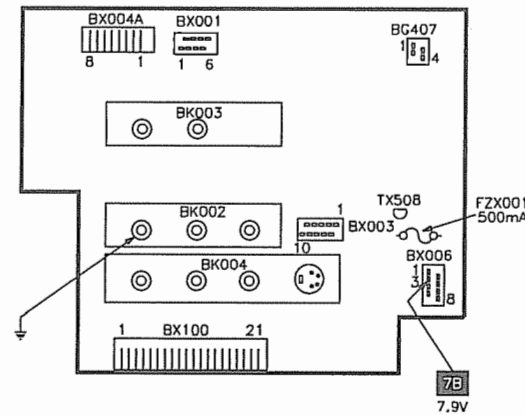
EFC BOARD



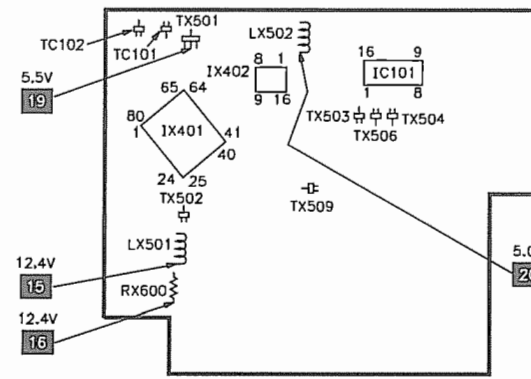
PIN CUSHION BOARD



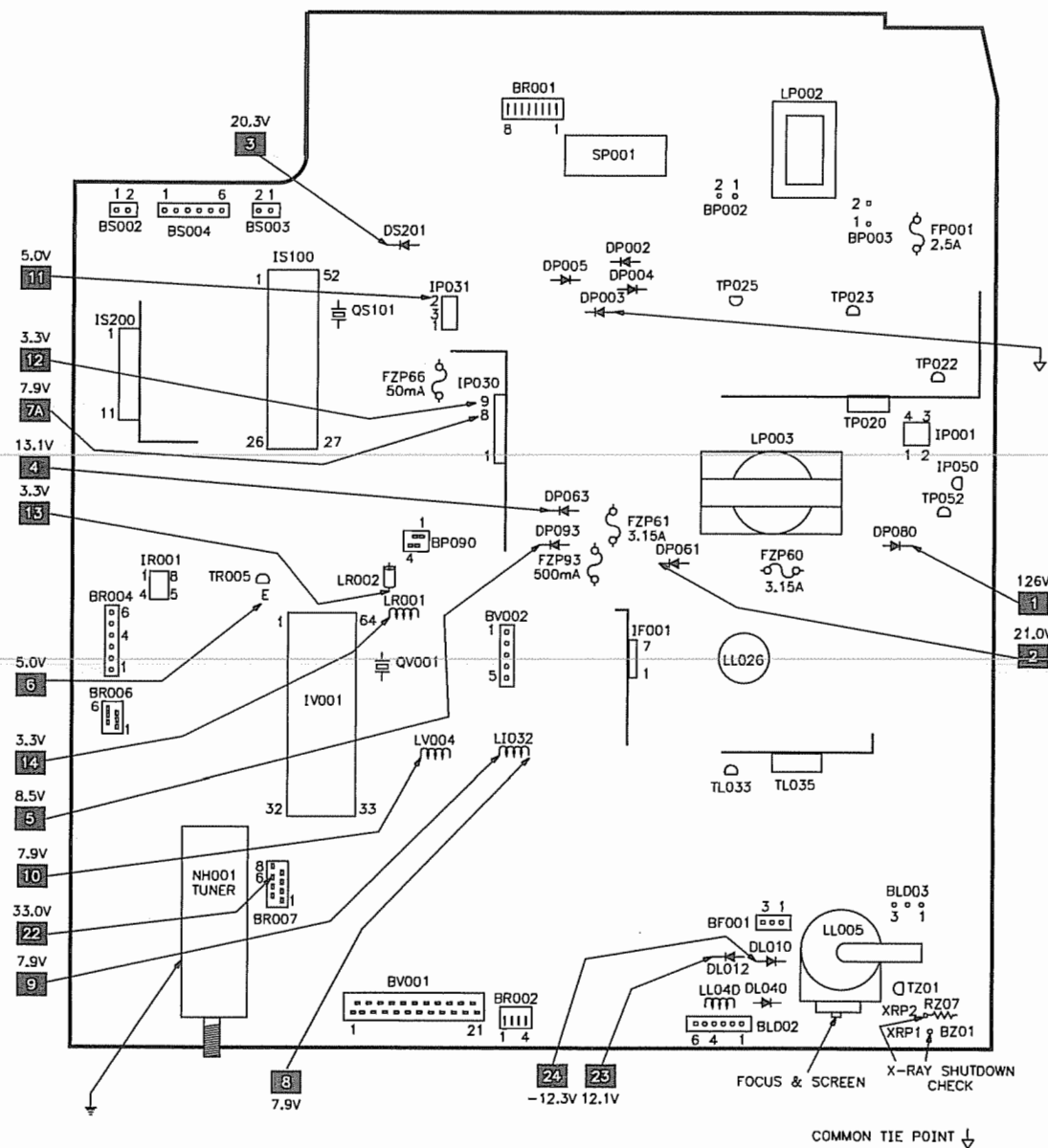
MAV BOARD - TOP VIEW



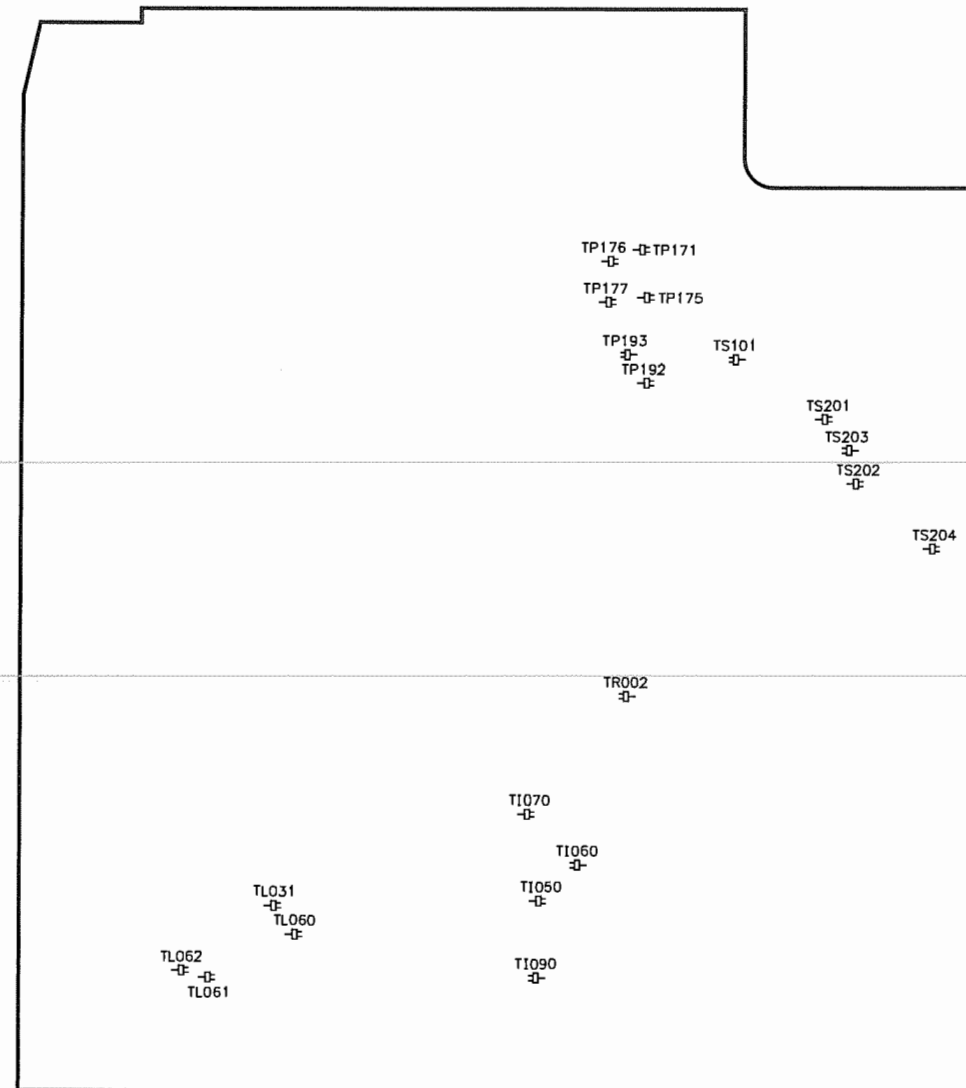
MAV BOARD - BOTTOM VIEW



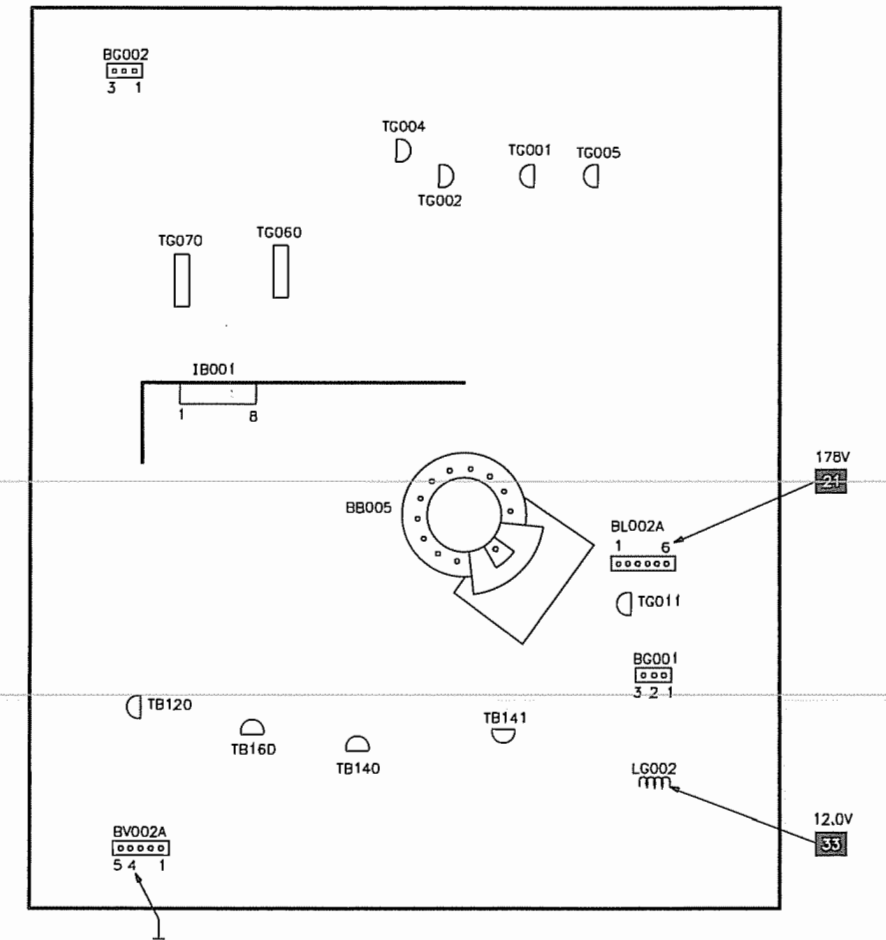
MAIN BOARD - TOP VIEW



MAIN BOARD - BOTTOM VIEW



CRT BOARD

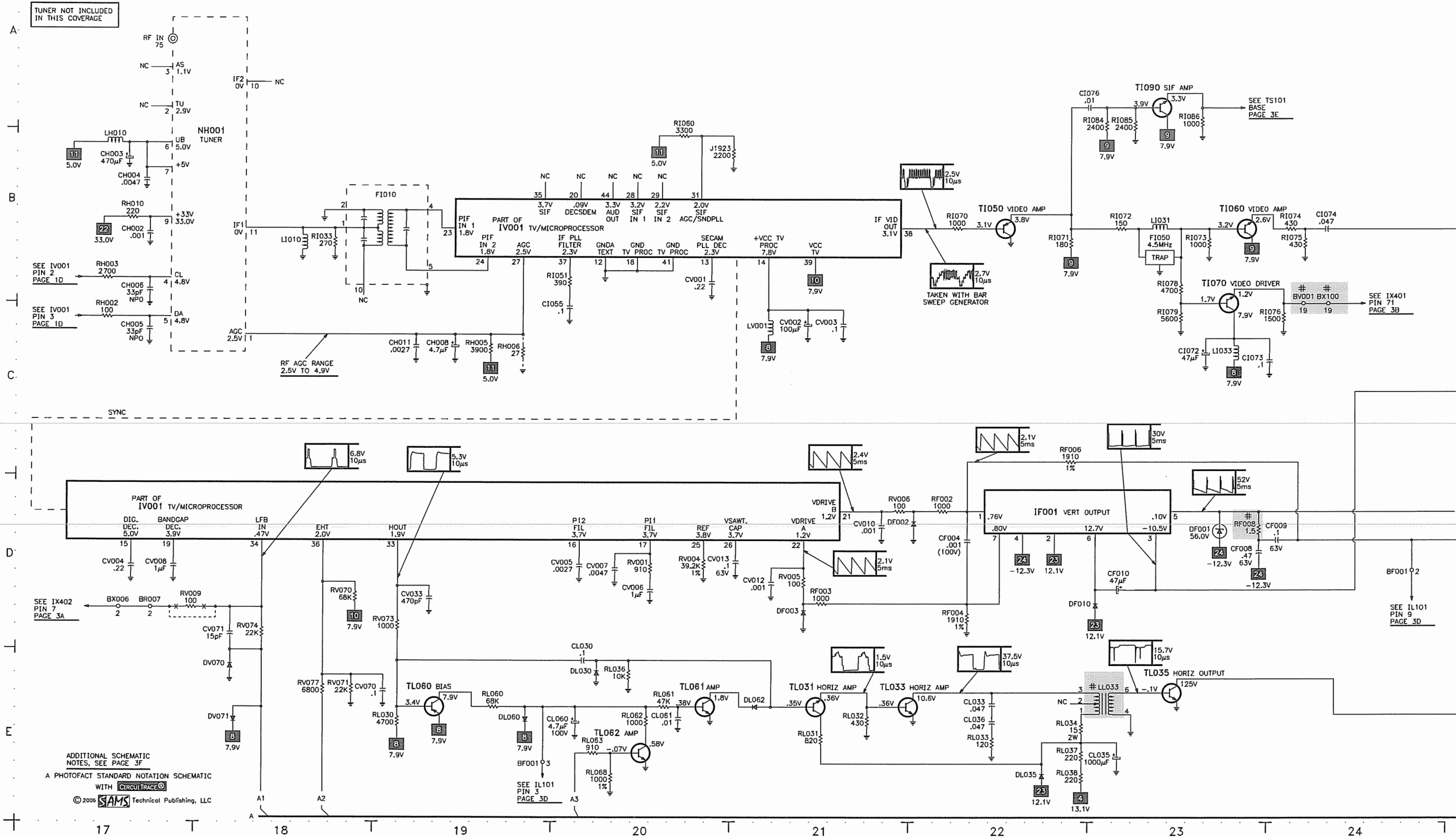


RCA MODEL 32F650TVX1 (CHASSIS ITC008LWP)

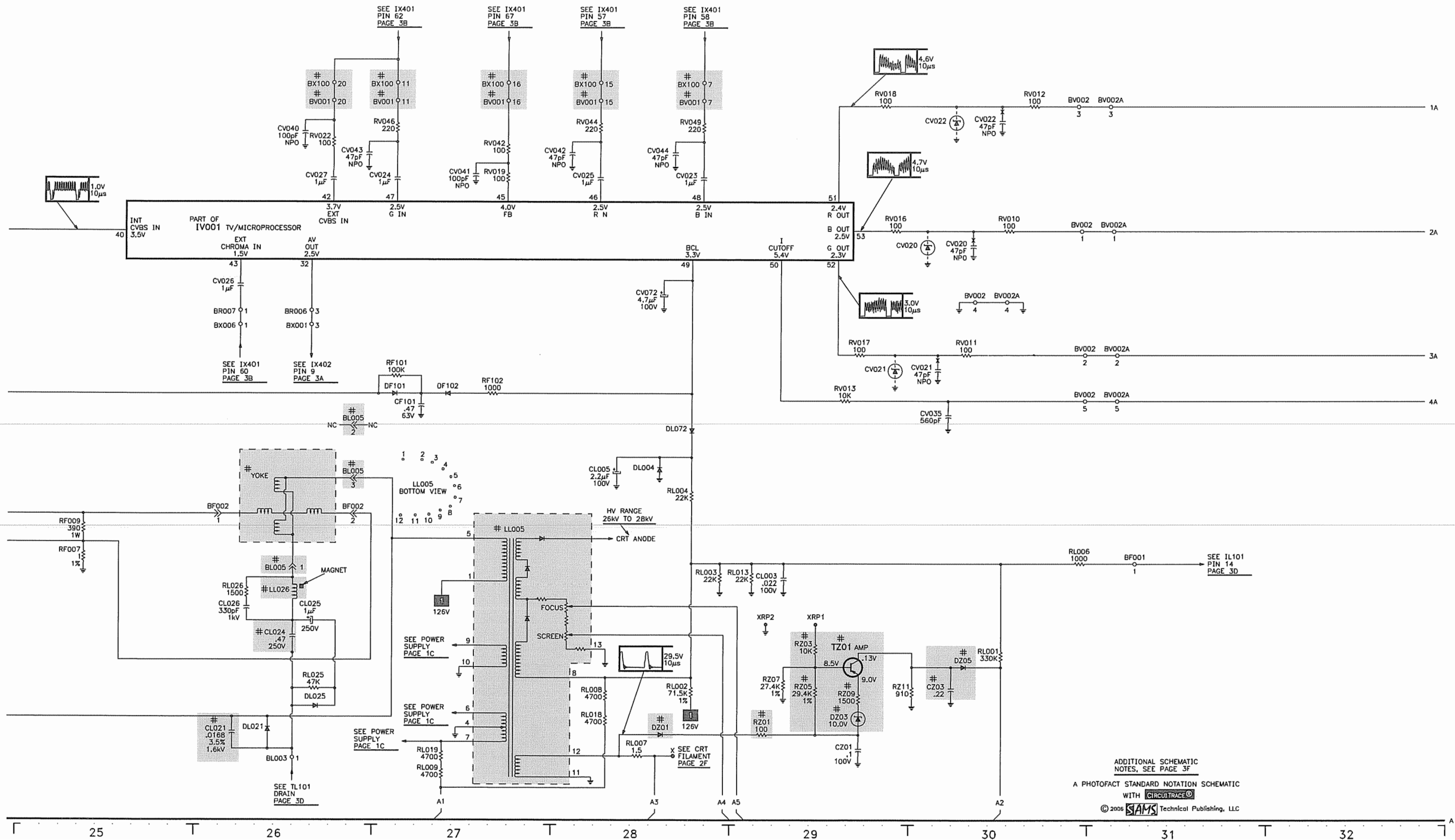
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TELEVISION SCHEMATIC

B



TELEVISION SCHEMATIC continued

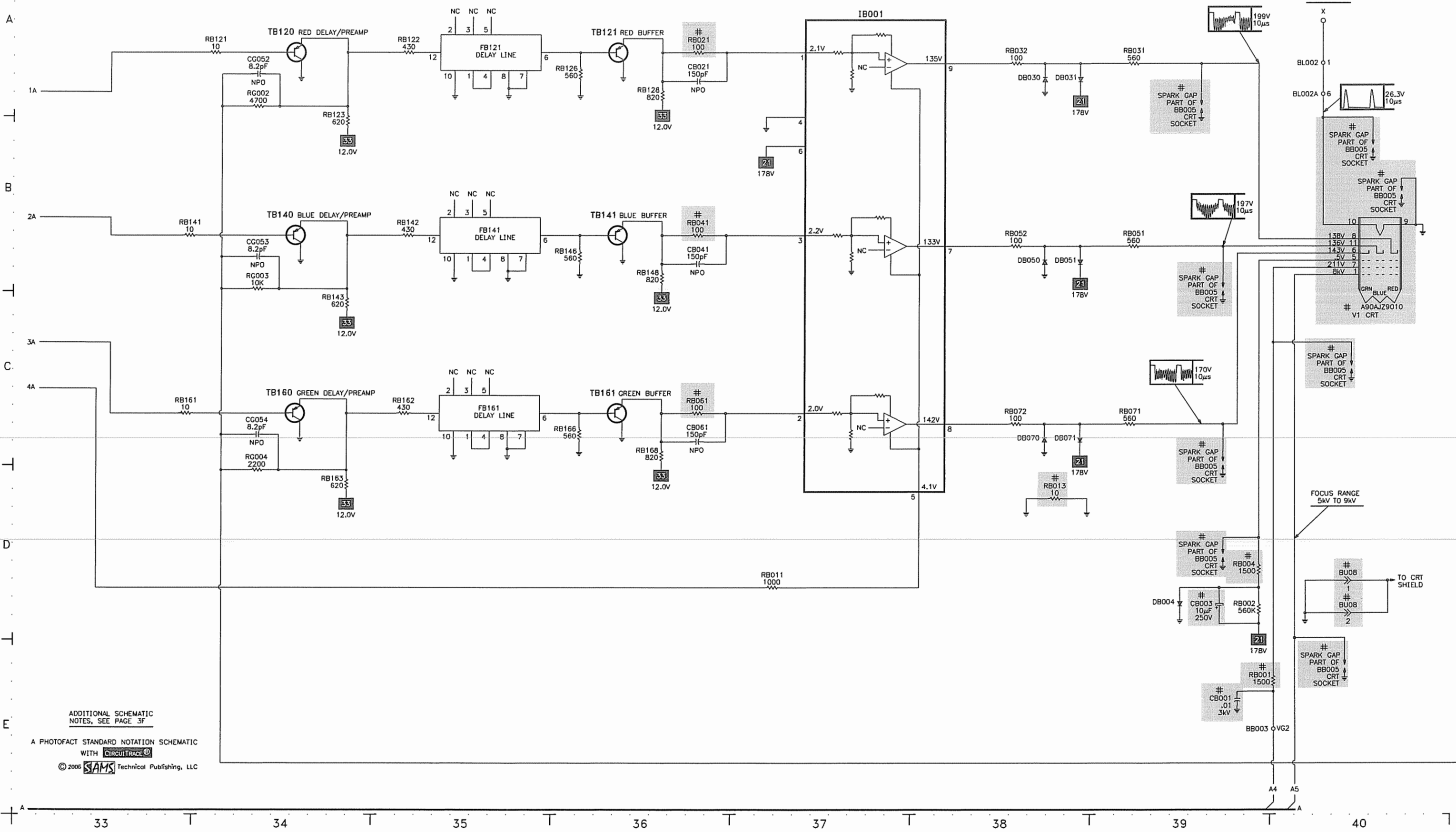


ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3F

A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH **CIRCUITRACE®**

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CRT SCHEMATIC

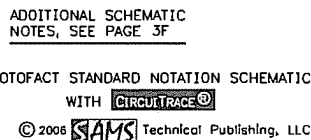


ADDITIONAL SCHEMATIC
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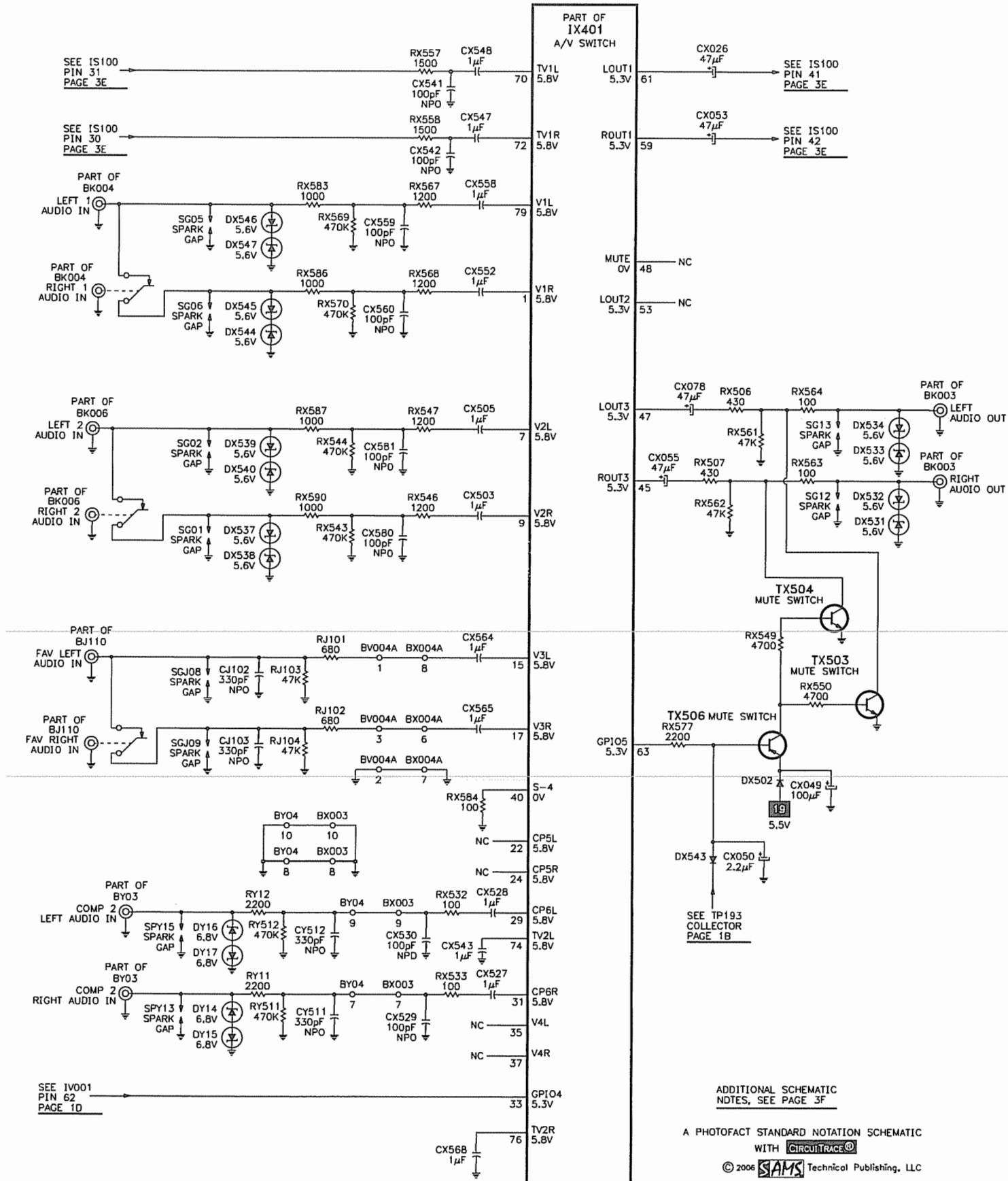
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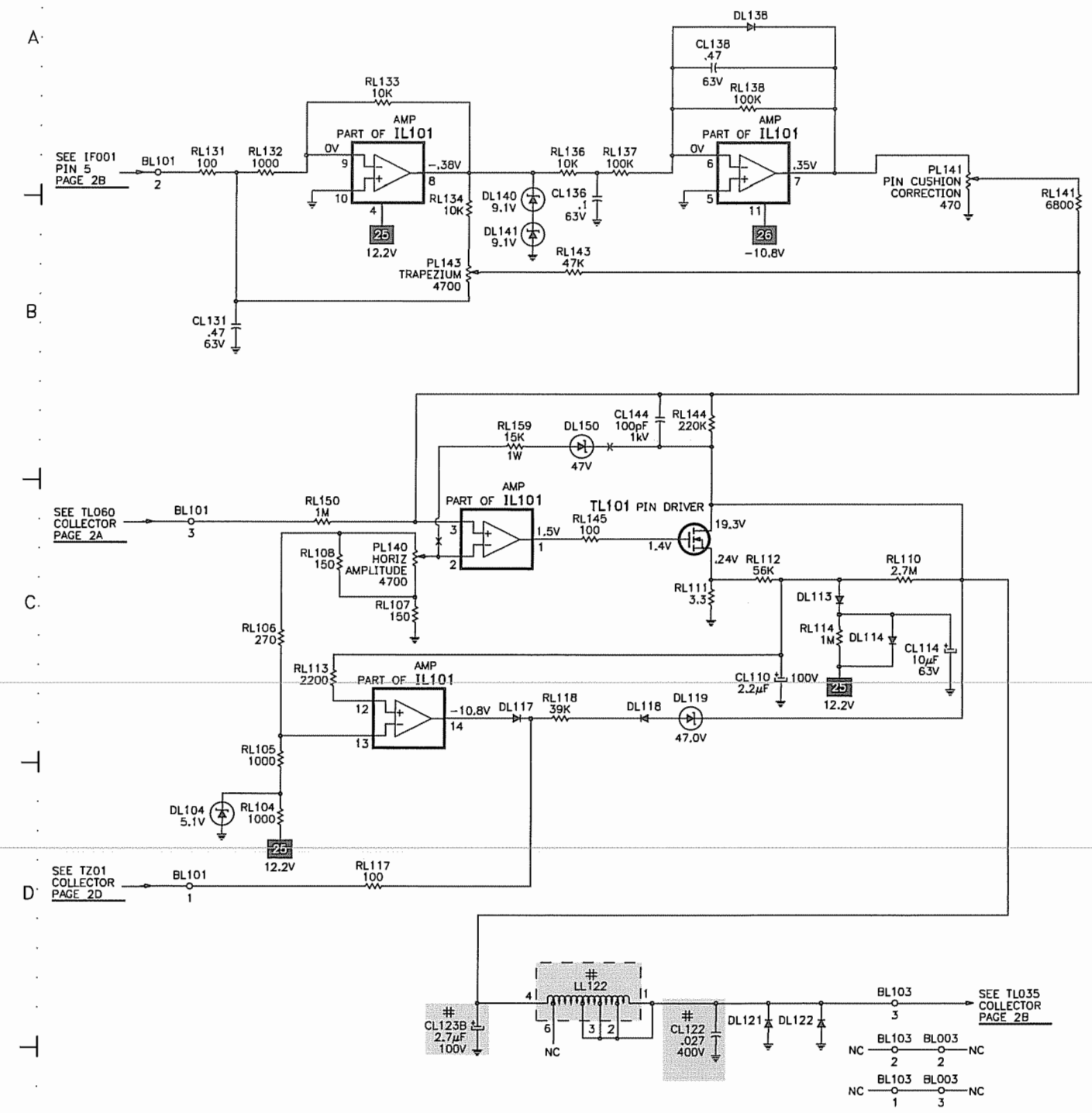
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C
MAV SCHEMATIC continued



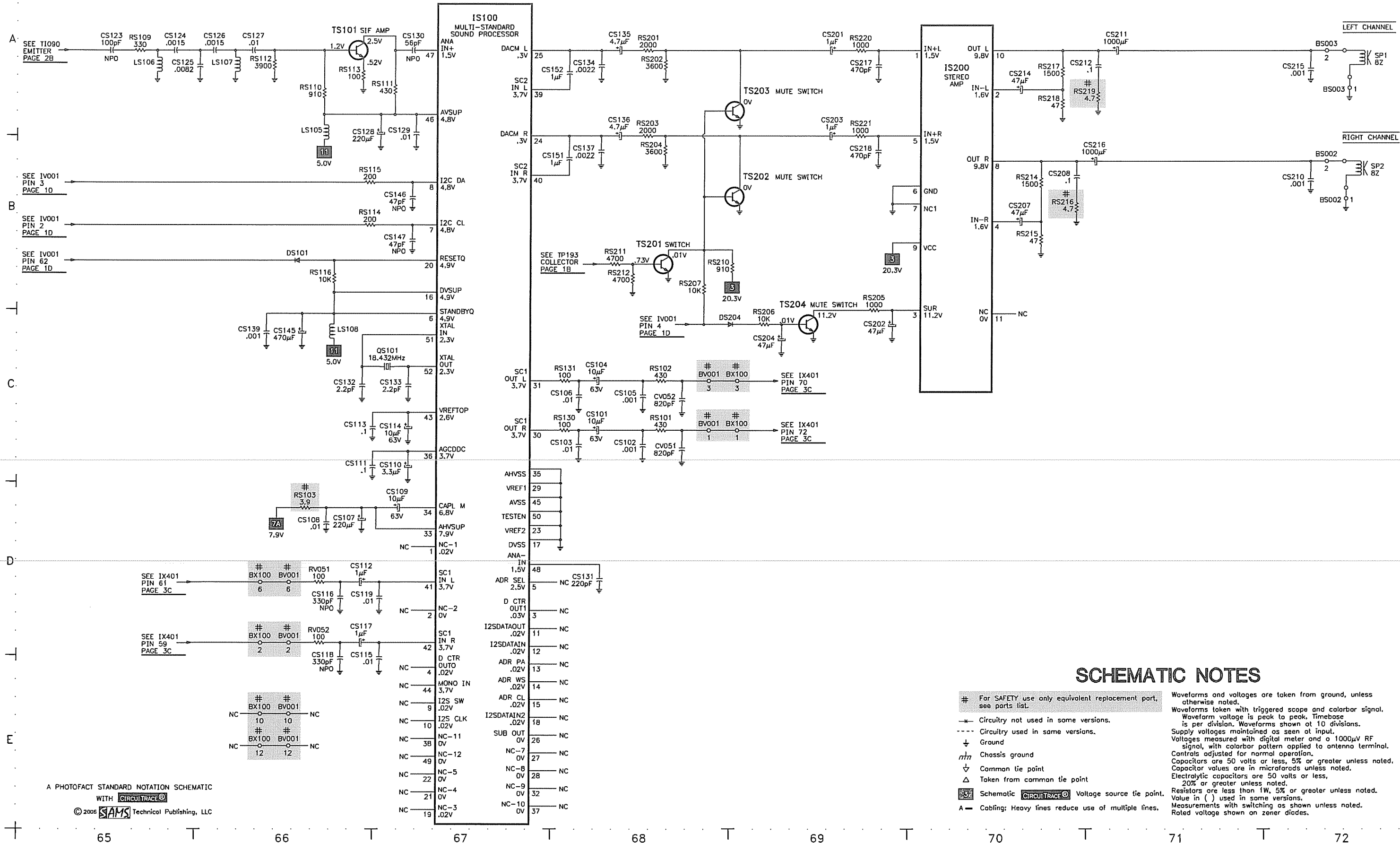
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PIN CUSHION SCHEMATIC



ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3F

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AUDIO SCHEMATIC

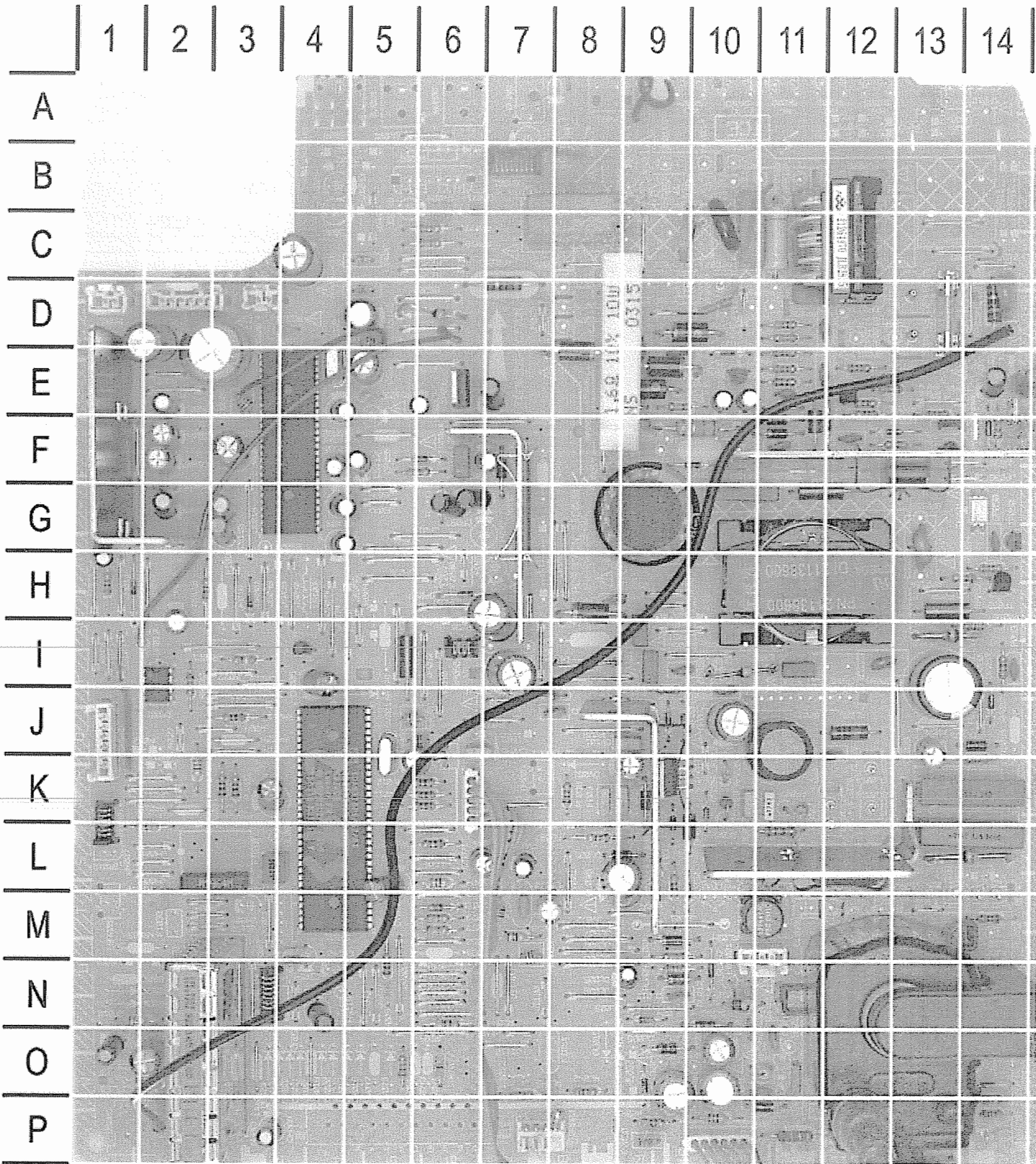


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SCHEMATIC COMPONENT LOCATION GUIDE

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BJ110	D57	CI071	D8	CP080	A8	CS202	C69	CX505	C58	DF102	C27	DV070	E18	IL101	C62	RB071	C39	RG041	D44	RL102	E10	RP125	B4	RS218	A70	RX561	C59	TG005	C45
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CG007	C46	CP009	B4	CS123	A65	CV035	C30	CX568	E58	DP005	A3	DZ01	E28	LX003	B50	RG002	B34	RL018	E28	RP021	C2	RS111	A67	RX526	C49	RZ11	E29	V1	C40
CG008	D45	CP015	B3	CS124	A65	CV040	B26	CX569	A54	DP023	B3	DZ03	E29	LX004	B51	RG003	C34	RL019	E27	RP023	C3	RS112	A66	RX530	C53	SK101	B13	XRP1	D29
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CG014	D44	CP025	B																										

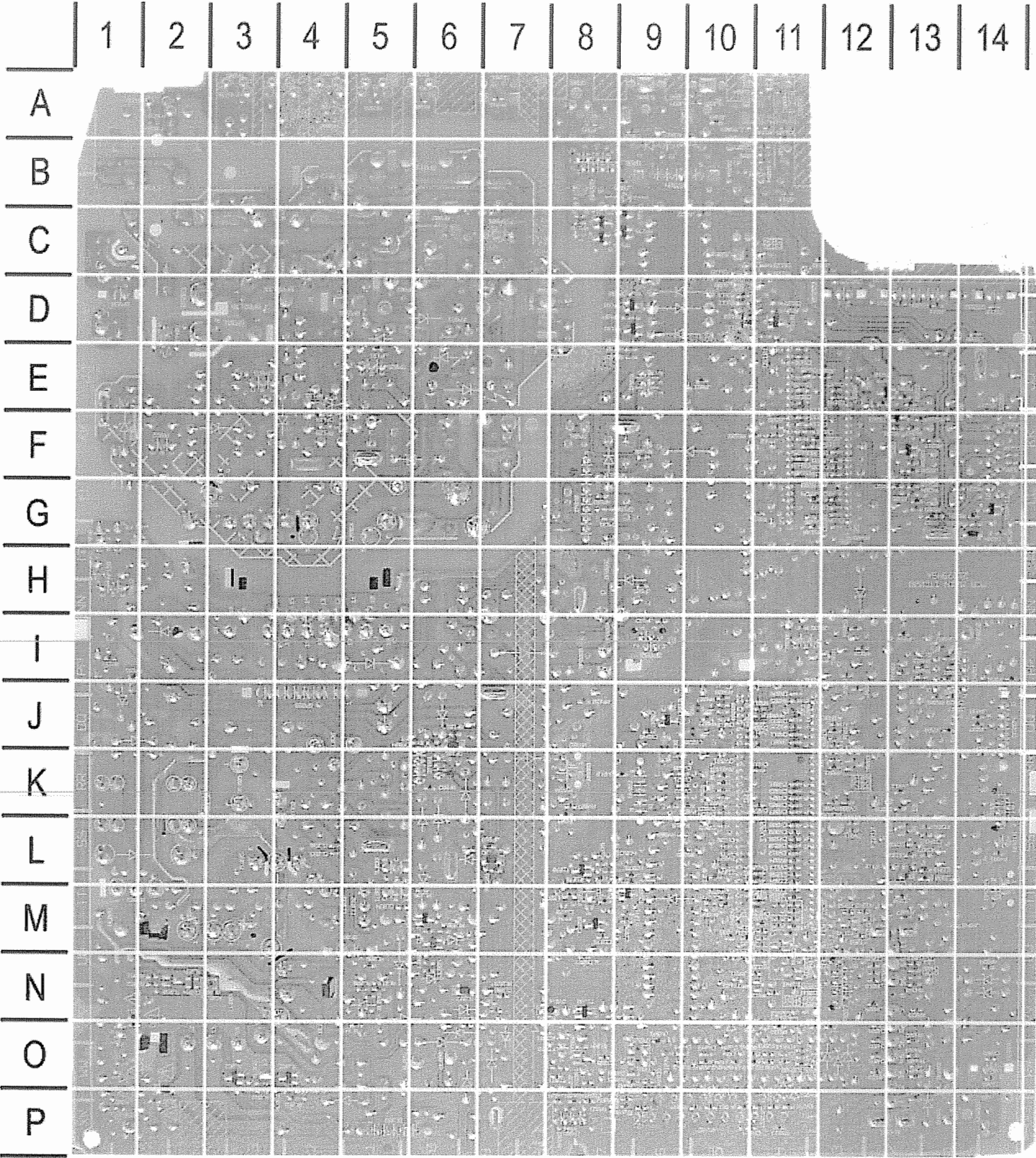
MAIN BOARD - TOP VIEW



MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

BF001	M10	CL060	L11	CS110	F4	DL040	P11	IP030	F7	RL007	P11	RP068	J9
BF002	K12	CP002	C10	CS112	F5	DL060	M9	IP031	E6	RL010	O11	RP077	C6
BL002	P10	CP004	E9	CS114	E4	DL062	N10	IP050	G14	RL012	N10	RP078	C6
BL003	M14	CP005	M9	CS117	E6	DL072	N6	IR001	I2	RL025	K14	RP095	F6
BL005	K12	CP006	E8	CS128	D5	DP002	D10	IS100	E3	RL026	J12	RR011	J3
BP002	D10	CP008	G9	CS135	G3	DP003	E9	IS200	F1	RL031	L9	RR030	I2
BP003	D13	CP009	G10	CS136	G3	DP004	E9	IV001	J4	RL033	L11	RS103	E5
BP090	I6	CP015	G13	CS145	F3	DP005	E8	LH010	N1	RL034	L10	RS114	H1
BR001	B7	CP018	D14	CS201	E2	DP023	E11	LI031	M7	RL037	L8	RS115	H2
BR002	P7	CP022	F13	CS202	E1	DP025	F11	LI032	M7	RL038	K8	RS214	G2
BR004	K1	CP024	E10	CS203	G2	DP026	F11	LI033	M7	RL041	P9	RS216	E1
BR006	L1	CP025	E10	CS204	H1	DP027	F10	LL005	N13	RL042	O8	RS219	D4
BR007	N3	CP026	F11	CS206	E3	DP030	F14	LL026	J11	RL043	O7	RV005	K3
BS002	D1	CP033	F12	CS207	F2	DP033	F13	LL040	P10	RL044	N6	RV006	K3
BS003	D3	CP035	F7	CS211	D1	DP036	F7	LP002	C12	RP001	E8	RV009	N5
BV001	P4	CP036	G6	CS214	F2	DP037	E10	LP003	H11	RP003	C9	RV010	K6
BV002	K6	CP037	E11	CS216	C4	DP040	F12	LP020	G11	RP006	E9	RV011	K6
CF003	K8	CP038	D11	CV002	K2	DP057	J14	LP025	F11	RP007	E9	RV012	K6
CF005	K9	CP039	E11	CV013	L3	DP061	I10	LP081	H13	RP009	L11	RV021	I3
CF008	K10	CP040	E14	CV018	K5	DP063	H8	LR001	J5	RP015	D7	RV022	L6
CF009	K11	CP050	G14	CV030	L5	DP071	B6	LR002	I5	RP016	D14	RV046	O5
CF010	K9	CP053	I14	CV045	J6	DP080	I13	LS105	D5	RP020	F10	RV073	M6
CF101	J9	CP060	J10	CV050	P9	DP093	I8	LS106	C5	RP021	E12	RV077	M6
CH003	O2	CP062	J10	CV072	L7	DP095	G6	LS107	D5	RP023	E11	RZ05	P14
CH008	P3	CP063	H8	CZ01	P14	DP097	H6	LS108	E3	RP026	E12	RZ07	P14
CI071	L7	CP064	H7	DF001	L10	DR001	H3	LV001	K2	RP027	E11	SP001	C8
CI072	M7	CP066	E7	DF002	K9	DS101	H1	LV002	I6	RP028	E12	TL033	L10
CL003	O11	CP068	I9	DF003	J9	DS201	D6	LV003	K6	RP029	E12	TL035	L12
CL005	N9	CP080	I13	DF010	K9	DV071	M6	LV004	L6	RP030	E11	TP020	F13
CL010	O11	CP088	I12	DF102	L7	DZ03	O14	NH001	P2	RP031	E12	TP022	F13
CL011	O11	CP093	J8	DH001	N2	DZ05	O9	QS101	E4	RP033	F13	TP023	E12
CL012	N9	CP094	I7	DL004	N9	FI010	L3	QV001	K5	RP037	D11	TP025	E10
CL013	O9	CP097	G6	DL010	N10	FI050	M7	RF004	J9	RP038	D11	TP052	H14
CL021	L14	CR005	I4	DL011	N10	FP001	D13	RF006	K10	RP040	E13	TR005	I4
CL024	K14	CR009	I2	DL012	N9	FZP60	I11	RF007	K11	RP041	F14	TZ01	O14
CL025	J13	CR071	O1	DL013	O9	FZP61	I9	RF008	K10	RP052	H14	XRP1	P14
CL026	J12	CS101	N4	DL021	L14	FZP66	F6	RF009	K10	RP054	H14	XRP2	P14
CL035	L9	CS104	G4	DL025	J14	FZP93	I9	RL001	M9	RP056	I14	ZP001	C10
CL040	O11	CS107	E5	DL030	L10	IF001	K9	RL002	M14	RP057	I14		
CL041	O10	CS109	G4	DL035	L9	IP001	G14	RL004	N9	RP066	J8		

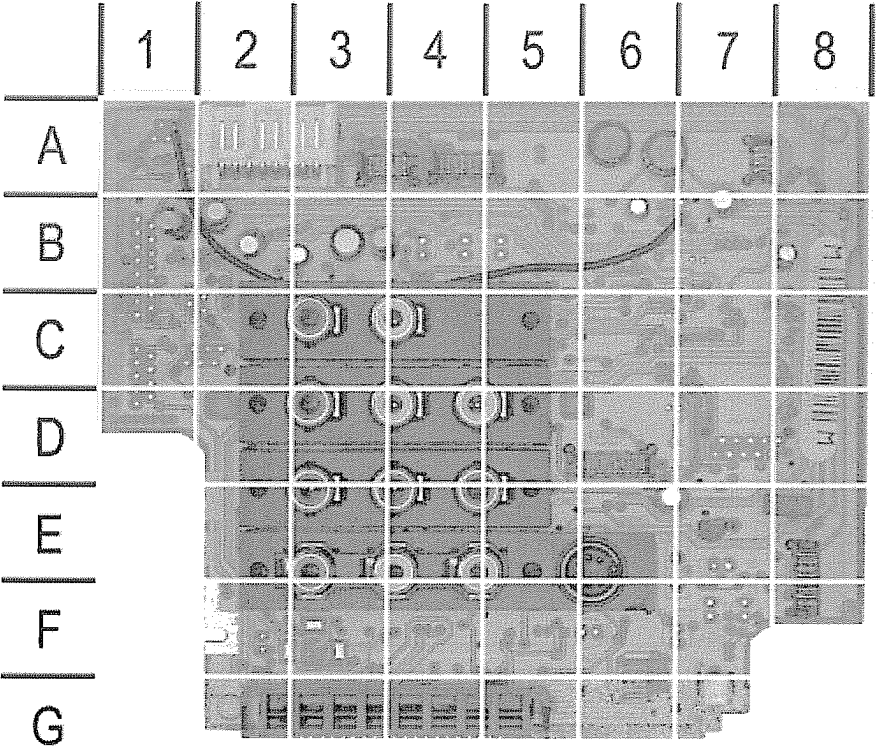
MAIN BOARD - BOTTOM VIEW



MAIN BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

CF004	J6	CS105	O11	CV005	K11	LI010	M13	RL036	M6	RR021	P8	RV017	K10
CH001	N13	CS106	G11	CV006	K12	RF002	K6	RL060	N6	RR022	I13	RV018	K10
CH002	N13	CS108	F11	CV007	K11	RF003	J6	RL061	P4	RR027	J10	RV019	L9
CH004	O12	CS111	F11	CV008	L11	RF101	J6	RL062	P4	RR043	O14	RV042	O10
CH005	O12	CS113	E11	CV010	L11	RF102	L7	RL063	P3	RR044	N14	RV044	O10
CH006	O12	CS115	F11	CV012	L11	RH002	O13	RL068	O3	RR052	I12	RV049	O9
CH011	P13	CS116	O11	CV014	J11	RH003	O13	RP125	F4	RR060	J11	RV051	P10
CI055	M11	CS118	O11	CV015	J11	RH005	O13	RP132	E4	RS101	O12	RV052	O11
CI058	K13	CS119	F11	CV019	K11	RH006	O13	RP150	J8	RS102	O11	RV070	M10
CI070	L9	CS123	C11	CV020	K10	RH010	N13	RP151	I1	RS109	C11	RV071	M11
CI073	M8	CS124	C10	CV021	K10	RI033	L13	RP153	I1	RS110	D10	RV074	M10
CI074	L10	CS125	C10	CV022	K10	RI051	M11	RP155	G1	RS111	D10	RZ01	P2
CI076	M9	CS126	C10	CV023	K10	RI060	M11	RP158	H1	RS112	D10	RZ03	P1
CL030	M6	CS127	D11	CV024	L10	RI070	L10	RP161	G8	RS113	D10	RZ09	O1
CL033	L4	CS129	E11	CV025	K10	RI071	M9	RP162	G8	RS116	F12	RZ11	N1
CL036	L4	CS130	D11	CV026	L10	RI072	M8	RP166	F9	RS130	G11	TI050	M8
CL061	P4	CS131	E11	CV027	L10	RI073	L9	RP175	C8	RS131	G11	TI060	M9
CP123	F4	CS132	E11	CV029	L11	RI074	L9	RP176	C8	RS201	F13	TI070	L8
CP131	G8	CS133	E11	CV033	N10	RI075	L9	RP190	E9	RS202	F13	TI090	N8
CP166	G8	CS134	G12	CV035	K9	RI076	O9	RP192	D9	RS203	G13	TL031	M6
CP198	D9	CS137	G12	CV040	O9	RI078	L8	RP196	D9	RS204	G13	TL060	M6
CR001	I13	CS139	F12	CV041	O10	RI079	L8	RP197	D9	RS205	G14	TL061	O4
CR002	J13	CS146	E12	CV042	O10	RI084	O8	RP199	E9	RS206	G14	TL062	O3
CR003	I13	CS147	E12	CV043	O10	RI085	O8	RR001	J13	RS207	F13	TP171	C9
CR004	J11	CS151	F11	CV044	O10	RI086	O8	RR002	I13	RS210	E12	TP175	C9
CR006	J11	CS152	F11	CV046	J9	RK001	A4	RR003	I13	RS211	E12	TP176	C8
CR007	J11	CS205	F14	CV051	P11	RK006	A4	RR004	I13	RS212	E13	TP177	C8
CR008	J11	CS208	D14	CV052	P11	RL003	N2	RR005	J11	RS215	G13	TP192	D9
CR010	J10	CS210	D14	CV070	M11	RL006	N5	RR006	J11	RS217	E13	TP193	D9
CR011	J11	CS212	E13	CV071	M10	RL008	N5	RR007	J10	RS218	E13	TR002	J9
CR021	P8	CS215	D12	CZ03	O1	RL009	N5	RR008	J10	RS220	E13	TS101	D11
CR024	P8	CS217	E14	DF101	J6	RL013	N2	RR009	J10	RS221	G14	TS201	E12
CR033	J11	CS218	F14	DS204	G14	RL018	N5	RR012	J12	RV001	K12	TS202	F13
CR057	N8	CV001	K11	DV070	N8	RL019	O5	RR013	J12	RV004	L11	TS203	F13
CS102	O11	CV003	K11	DZ01	P2	RL030	M6	RR019	I12	RV013	K10	TS204	G14
CS103	G12	CV004	K11	J1923	M11	RL032	L5	RR020	P8	RV016	K10		

MAV BOARD - TOP VIEW



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BG407	A7	BX004A	A3	CX014	E6	CX055	B2
BK002	E5	BX006	E8	CX015	B8	CX078	B4
BK003	C5	BX007	A4	CX026	B1	FZX001	E8
BK004	E6	BX100	G2	CX038	B6	LX003	A6
BX001	A3	CC101	B8	CX049	B3	LX004	A6
BX003	D6	CX001	B7	CX050	B3	TX508	E8

MAV BOARD - BOTTOM VIEW

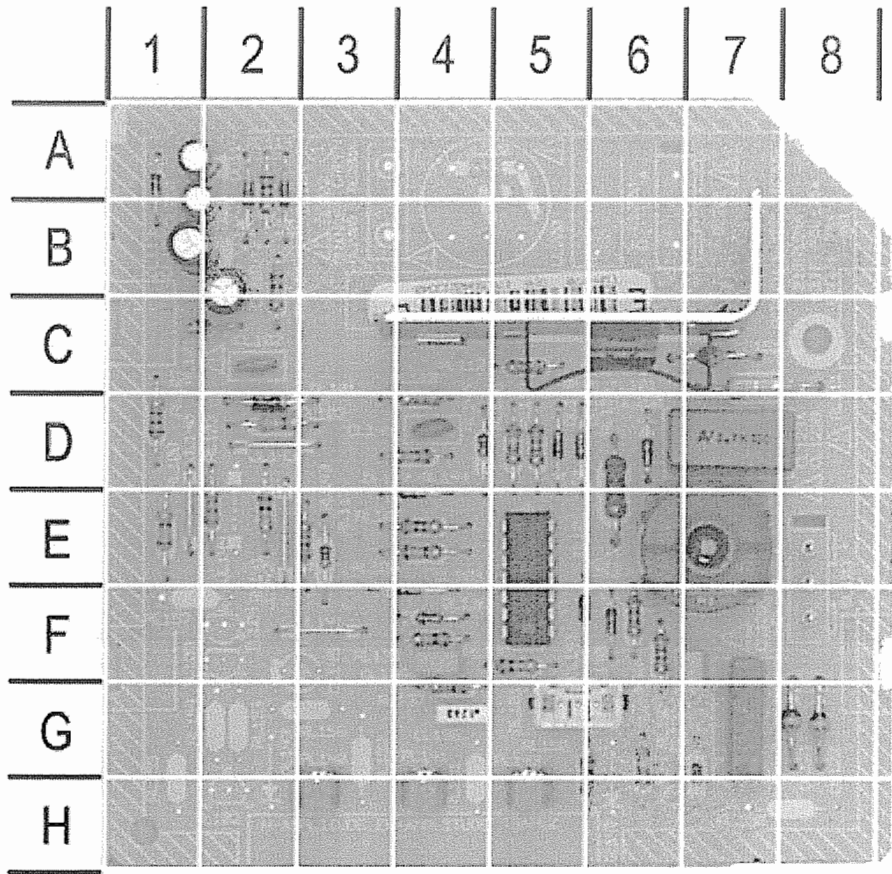


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MAV BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

CC102	B5	CX533	A4	DX513	D4	DX543	B6	RC121	B5	RX547	D7	RX587	D7
CX503	D6	CX534	B4	DX514	D4	DX544	E6	RX501	B6	RX549	B6	RX590	D7
CX505	C5	CX536	A3	DX519	E5	DX545	E6	RX502	B6	RX550	C6	RX594	E3
CX506	B4	CX537	B3	DX520	E5	DX546	E5	RX505	D5	RX551	A4	RX595	E3
CX507	B3	CX541	G7	DX521	E6	DX547	E5	RX506	B6	RX553	E2	RX596	E4
CX508	D3	CX542	F6	DX522	E6	IC101	B5	RX507	B7	RX554	E2	RX597	D5
CX509	D2	CX543	B2	DX523	E6	IX401	C2	RX508	C2	RX555	D1	RX598	D6
CX510	G5	CX544	C3	DX524	E7	IX402	B3	RX510	E2	RX556	E4	RX599	D6
CX511	D2	CX545	C2	DX525	E5	LX501	E3	RX511	A2	RX557	G6	RX600	E2
CX512	A6	CX546	B2	DX526	E4	LX502	A4	RX512	A2	RX558	G6	RX601	D5
CX513	E4	CX547	B2	DX527	F3	RC101	B5	RX513	E3	RX560	B2	RX602	D5
CX515	E3	CX548	B2	DX528	F3	RC102	B5	RX514	F3	RX561	C6	RX603	D5
CX516	E3	CX552	E6	DX529	E3	RC103	B5	RX518	C3	RX562	C6	RX604	E2
CX518	C3	CX558	D5	DX530	E4	RC107	B5	RX524	D7	RX563	C6	RX605	E2
CX519	C3	CX559	E5	DX531	C7	RC109	B6	RX525	D5	RX564	C6	TC101	A2
CX520	D3	CX560	E6	DX532	C7	RC110	B6	RX526	E5	RX567	D5	TC102	A2
CX521	D3	CX564	A7	DX533	C5	RC111	B6	RX530	C2	RX568	E6	TX501	A2
CX522	D2	CX565	A7	DX534	C6	RC112	B6	RX532	D3	RX569	E5	TX502	E2
CX524	A6	CX568	B1	DX535	D1	RC113	B6	RX533	D3	RX570	E6	TX503	C5
CX525	C2	CX569	A6	DX536	D1	RC114	B6	RX535	D1	RX575	E4	TX504	B7
CX527	C3	CX580	D7	DX537	D7	RC115	A6	RX536	C3	RX577	B6	TX506	B6
CX528	D3	CX581	D7	DX538	D7	RC116	A2	RX537	C3	RX579	C7	TX509	D5
CX529	D3	DX501	E3	DX539	D6	RC117	A2	RX539	A4	RX581	C7		
CX530	D3	DX502	B6	DX540	D6	RC118	B5	RX543	D7	RX583	E5		
CX531	B4	DX503	B2	DX541	B6	RC119	B5	RX544	D7	RX584	C3		
CX532	E2	DX504	D1	DX542	B5	RC120	B5	RX546	D7	RX586	E6		

PIN CUSHION BOARD



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PIN CUSHION BOARD, GRIDTRACE LOCATION GUIDE									
BL101	G5	CL144	D4	DL140	F6	RL106	E4	RL133	F6
BL103	E8	DL101	D2	DL141	F6	RL107	D1	RL134	G6
CL101	B2	DL103	F4	IL101	E5	RL108	E1	RL136	F5
CL102	C2	DL104	A2	LL122	E7	RL110	D4	RL137	G4
CL103	B1	DL113	A1	PL140	H3	RL111	C7	RL138	F4
CL110	A1	DL114	A2	PL141	H4	RL112	C5	RL141	E2
CL114	A1	DL117	E4	PL143	H5	RL113	D5	RL143	E3
CL122	G7	DL118	D5	RL101	C1	RL114	A2	RL144	D4
CL123B	D7	DL119	D5	RL102	D2	RL117	E3	RL145	D4
CL131	F7	DL121	G8	RL103	E2	RL118	D5	RL150	G6
CL136	G4	DL122	G8	RL104	B2	RL131	G7	TL101	C6
CL138	F4	DL138	F4	RL105	E4	RL132	F6		

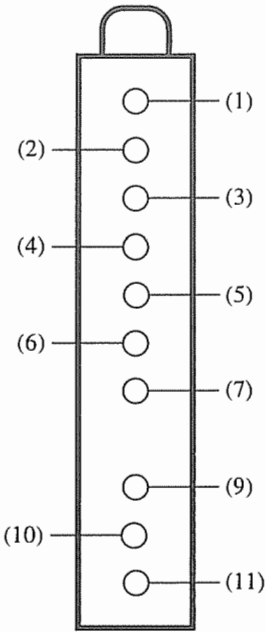
TUNER INFORMATION

TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
(1) AGC	2.5V	2.7V	3.3V
(2) TU	2.9V	4.5V	5.3V
(3) AS	1.1V	1.1V	1.1V
(4) CL	4.8V	4.8V	4.8V
(5) DA	4.8V	4.8V	4.8V
(6) UB	5.0V	5.0V	5.0V
(7) +5V	5.0V	5.0V	5.0V
(9) +33V	33.0V	33.0V	33.0V
(10) IF2	0V	0V	0V
(11) IF1	0V	0V	0V

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



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

MISCELLANEOUS ADJUSTMENTS

SERVICE MENU

The following adjustment procedures are accessed thru a service menu. To access the service menu, turn the receiver on, using the front panel controls, press the volume - button and hold it down, then press and release the power button. Press and release the menu button. Release the volume - button. The screen will display a one line menu, on the left the parameter P00, and on the right the value of that parameter. Adjustments are made by selecting the proper parameter and changing the value of that parameter. To change the parameter number use channel up and down buttons. To adjust the current value of that parameter use volume + and - buttons. This information is listed at the beginning of the alignment. When these parameters are modified, the T-Chip and the corresponding EEPROM are updated. All service adjustments are bus controlled, except focus and screen.

NOTE: Before making any changes to any of the values, record the On Set values. In order to adjust the RF AGC, audio or video levels, tuner, PIP, or stereo circuits, the ChipperCheck hardware, a TV/PC interface box, and the software must be used. This can be purchased from Sencore Electronics @ 1-800-SENCORE.

SERVICE ADJUSTMENT PARAMETERS

Parameter No.	Display	Parameter Name	On Set Value	Value Range	Comment
00 (1)	-	-	Must be set to 76.	-	May not advance until value is set to 76.
01	ERR1	Error Code 1	0	0 - 255	Displays the first error detected. Set to 0 before exiting. See Error Codes Chart.
02	ERR2	Error Code 2	0	0 - 255	Displays the second error detected. Set to 0 before exiting. See Error Codes Chart.
03	ERR3	Error Code 3	0	0 - 255	Displays the last error detected. Set to 0 before exiting. See Error Codes Chart.
04	VG2	VG2	3	0 – 3	Read only, do not change value.
05	BCF	Read BCF Status	0	0 – 1	Read only, do not change value.
06 (2)	VS	Vertical Slope	35	0 - 63	Tune in a crosshatch pattern, adjust until the center is just visible.
07	VSH	Vertical Shift	28	0 - 63	Tune in a crosshatch pattern, adjust for slight overscan vertically.
08 (2)	VA	Vertical Amplitude	45	0 - 63	Tune in a crosshatch pattern, adjust for best linearity vertically.
09	HSH	Horizontal Shift	39	0 - 63	Tune in a crosshatch pattern, adjust for slight horizontal overscan.
10	SC	S Correction	25	0 - 63	Tune in a crosshatch pattern, adjust to center the pattern on the screen.
11	EW	EW Width	32	0 - 63	Tune in a crosshatch pattern, adjust for slight horizontal overscan.
12	PB	EW Parabola Width	32	0 - 63	Tune in a crosshatch pattern, adjust for straight vertical lines on left and right of the center.
13	UCP	EW Top Corner Parabola Tilt	32	0 - 63	Tune in a crosshatch pattern, adjust for straight vertical lines on top left and right corners.
14	LCP	EW Bottom Corner Parabola	32	0 - 63	Tune in a crosshatch pattern, adjust for straight vertical lines on bottom left and right corners.
15	TP	EW Trapezium	32	0 - 63	Tune in a crosshatch pattern, adjust for best compromise on left and right of vertical lines.
16	HP	Horizontal Parallelogram	32	0 – 63	Tune in a crosshatch pattern, adjust to set vertical lines perpendicular to horizontal lines.
17	HB	Horizontal Bow	32	0 - 63	Tune in a crosshatch pattern, adjust for straight vertical lines on top and bottom.
18	VX	Vertical Zoom	32	0 - 63	-
19	AGC	AGC	28	0 - 63	-
20	CDL	Cathode Drive Level	08	0 - 15	-
21	SBRI	Sub Brightness	09	1 - 17	Tune in a gray scale pattern, adjust to have first bar black and distinction between other bars.
22	SCOL	Sub Saturation	11	1 - 17	Tune in an air signal, adjust for best color.
23	SHUE	Sub Hue	08	1 - 17	Tune in an air signal, adjust for best flesh tone.
24	BLOR	Black Level Offset Red	35	0 - 63	See the color temperature adjustment.
25	BLOG	Black Level Offset Green	33	0 - 63	See the color temperature adjustment.
26	WPR	White Point Red	20	0 - 63	See the color temperature adjustment.
27	WPG	White Point Green	20	0 - 63	See the color temperature adjustment.
28	WPB	White Point Blue	18	0 - 63	See the color temperature adjustment.
29	PW	Peak White	(3)	0 - 63	Set to the values of White Point Red, Green, and Blue.
30	YDL	Y Delay Adjustment	05	0 - 15	-
31	SOC	SOC	3	0 - 3	-
32	OIF	Offset IF	32	0 - 63	-
33	GE	GE (For Kidpass Activation)	0	0 - 1	Value 0 = Enable, value 1= Disable. To reset the password, with the set off press and hold the volume down on the front panel, and the clear button on the remote for at least 5 seconds.

- (1) Pass number for service adjustment parameters.
- (2) Misalignment of Vertical Slope (Parameter 6) and Vertical Amplitude (Parameter 8) can trigger the Pin Cushion Board to activate the shutdown circuit. In this case temporary disconnect BL101 on the Pin Cushion Board to restart the unit and reset both parameters.
- (3) White Point Red = 20, White Point Green = 20, and White Point Blue = 18.

ERROR CODES CHART

Error Code DEC	Error Code HEX	Error Location	Condition Indicated
0	00	No error code	-
136	88	IS100	IS100 fails to acknowledge.
138	8A	IX401	IX401 fails to acknowledge.
194	C2	Tuner	Tuner fails to acknowledge.

ERROR CODES

If certain failures occur, the matching error codes will be stored in the EEPROM. These error codes will be displayed in Parameters 01, 02, and 03. The first failure error code will be stored at Parameter 01 and the second failure error code will be stored at Parameter 02. Parameter 03 will be updated to display the most recent failure occurred in the chassis. If a failure of a bus IC occurred, the normal acknowledgment checking of that bus will be disabled in the service mode and the address of that IC which failed will be stored in one of the error code parameters. After every repair is done to the chassis it is recommended to check the error code parameters and reset them back to value 0.

HIGH VOLTAGE CHECK

Tune in a picture. Set brightness, contrast, and color to minimum. Connect a high voltage probe to CRT anode. High voltage should measure 26kV to 28kV.

PIN CUSHION

NOTE: This adjustment is used only on 4/3 sets.

Tune in a crosshatch signal. Adjust brightness, contrast, and color for 50%. Turn PL140 control full counter clockwise, located on the E/W board. Put the set in service mode, check Horizontal Shift (Parameter 09) and adjust if needed. Check Vertical Slope (Parameter 06), Vertical Shift (Parameter 07), Vertical Amplitude (Parameter 08), and adjust if any adjustment is needed. Adjust PL140 control for slight overscan. Adjust PL141, for straight vertical lines on the left and right edges of the display. Adjust PL143 for the best compromise on the left and right of the vertical lines. Repeat adjusting the controls to obtain straight vertical lines over the entire screen.

COLOR TEMPERATURE

NOTE: Allow the set to warm up for at least 15 minutes before performing the color temperature adjustment.

Turn on the set, access the main menu, select Picture, then select Picture Preset, and then select Natural. This will reset the customer controls. Tune in a gray scale stair case pattern, place the set into service mode, adjust Black Level Offset Red (Parameter 24) and Black Level Offset Green (Parameter 25) to value of 42. Adjust White Point Red (Parameter 26) to value of 10. Adjust White Point Green (Parameter 27) and White Point Blue (Parameter 28) to produce the best gray tones in the first bars of the gray scale.

Readjust White Point Red (Parameter 26) to produce the best picture quality. Adjust Black Level Offset Red (Parameter 24) and Black Level Offset Green (Parameter 25) for the best white level on the last steps of the gray scale.

Adjusting biases and drives may affect the overall brightness. Check the low light to high light gray scale tracking. Repeat the procedure, if necessary, to obtain the best performance. Tune in an air signal and adjust the brightness for best picture in normal room lighting. If screen control is adjusted after the color temperature alignment is complete; the color temperature should be checked again to ensure that it has not been affected by adjusting the screen control.

PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Type No.	Mfr. Part No.	NTE Part No.
DB004	-	257783	-	DS101	1N4148	198589	NTE519
DB030, 31	-	230757	-	DS201	-	244834	-
DB050, 51	-	230757	-	DS204	-	248798	-
DB070, 71	-	230757	-	DV070	-	248798	-
DF001	-	261158	-	DV071	1N4148	198589	NTE519
DF002, 03	1N4148	198589	NTE519	DX501	-	263630	-
DF010	-	259231	-	DX502	-	248798	-
DF101, 02	-	248798	-	DX503	-	243276	-
DG001, 02	1N4148	198589	NTE519	DX504	-	243897	-
DH001	-	215489	-	DX513, 14	-	243276	-
DJ011, 12	-	243276	-	DX519 Thru	-	-	-
DJ09	-	243276	-	DX542	-	243276	-
DJ10	-	243276	-	DX543	-	248798	-
DK03	-	243276	-	DX544 Thru	-	-	-
DK04, 05, 06	-	215488	NTE136A	DX547	-	243276	-
DL004	-	231093	-	DY11 Thru	-	-	-
DL010	-	244870	-	DY17	-	220638	NTE5014A
DL011	-	259231	-	# DZ01	-	248798	-
DL012	-	259601	-	# DZ03	-	159429	NTE5019T1
DL013	-	259231	-	# DZ05	1N4148	198589	NTE519
DL021	-	242907	-	GK03	-	-	-
DL025	-	244870	-	IB001	-	257787	-
DL030	1N4148	198589	NTE519	IC101	-	263573	-
DL035	-	259231	-	IF001	-	232109	NTE1788
DL040, 60	-	244870	-	IL101	-	263569	-
DL062	1N4148	198589	NTE519	# IP001	-	257786	-
DL072	-	248798	-	IP030	-	263567	-
DL101	-	244870	-	IP031	-	215528	-
DL103	1N4148	198589	NTE519	IP050	-	231525	-
DL104	-	231093	-	IR001	-	244898	-
DL113, 14, 17, 18	1N4148	198589	NTE519	IS100	-	263572	-
DL119	-	260726	-	IS200	-	215526	NTE7146
DL121, 22	-	244834	-	IV001	TDA9378	264079	-
DL138	-	259549	-	IX401	LA79500E	262444	-
DL140, 41	-	232622	-	IX402	-	263571	-
DL150	-	260726	-	TB120, 21	BC556B	198749	NTE159
DL801, 02	1N4148	198589	NTE519	TB140, 41	BC556B	198749	NTE159
DP002 Thru	-	-	-	TB160, 61	BC556B	198749	NTE159
DP005	-	263582	-	TC101, 102	-	256808	-
DP023	-	232545	-	TG001	-	259513	-
DP025, 26	-	244870	-	TG002	-	219354	NTE188
DP027	-	244835	-	TG004	-	215977	-
DP030	-	232545	-	TG005	BC556B	198749	NTE159
DP033	-	223694	-	TG011	-	259513	-
DP036	1N4001	198597	NTE116	TG060	-	259873	-
DP037	-	230757	-	TG070	-	259874	-
DP040	-	244835	-	TI050	-	256808	-
DP057	-	232622	-	TI060, 70, 90	-	259545	-
DP061	-	244834	-	TL031	-	259545	-
DP063	-	243844	-	TL033	-	259531	-
DP071	1N4148	198589	NTE519	TL035	-	230760	-
DP080	-	263632	-	TL060	-	259548	-
DP093	-	244834	-	TL061	-	263641	-
DP095	-	215488	NTE136A	TL062	-	259545	-
DP097	-	230757	-	TL101	-	256868	-
DR001	-	215488	NTE136A	TL801	-	259513	-

RCA
MODEL 32F650TYX1 (CHASSIS ITC008LWP)

PARTS LIST continued

Item No.	Type No.	Mfr. Part No.	NTE Part No.
TL802	-	219354	NTE188
TL803	-	215977	-
TP020	-	263692	-
TP022	-	198743	NTE123AP
TP023	-	257827	-
TP025	-	230764	NTE159
TP052	-	198743	NTE123AP
TP171	-	219349	NTE2408
TP175, 76, 77	-	219349	NTE2408
TP192	-	219348	NTE2409
TP193	-	219349	NTE2408
TR002	-	259547	-
TR005	-	219354	NTE188
TS101	-	219349	NTE2408
TS201	-	219349	NTE2408
TS202, 03	-	206088	NTE2414
TS204	-	219349	NTE2408
TX501	-	263682	-
TX502	-	219349	NTE2408
TX503, 04	-	259545	-
TX506	-	225588	-
TX508	-	257827	-
TX509	-	259545	-
# TZ01	-	147665	NTE159

Item No.	Function/Rating	Mfr. Part No.	Notes
# BB005	Socket	261161	CRT
BJ110	Jack	250673	Assembly
BJ111	Jack	238963	SVHS
BK002	Jack	263656	Assembly
BK003	Jack	263658	Assembly
BK004	Jack	263663	Assembly
BK006	Jack	263658	Assembly
# CB001	.01 3kV	257795	-
# CB003, 06	10µF 20% 250V	223809	-
CB021, 41, 61	150pF 5% 50V NPO	143874	-
CG005	680pF 20% 1kV	190538	-
CG014	2.2pF ±.25pF 50V NPO	258714	-
CG048	47pF 10% 250V NPO	157314	-
CG052, 53, 54	8.2pF 50V NPO	259965	-
CH005, 06	33pF 50V NPO	256816	-
CJ102, 03	330pF 50V NPO	256821	-
CL010, 12	330pF 20% 1kV	259366	-
# CL021	.0168 1.6kV 3.5%	237355	-
# CL024	.47 5% 250V	235469	-
CL026, 40	330pF 20% 1kV	259366	-
CL102	330pF 20% 1kV	259366	-
# CL122	.027 5% 400V	263590	-
# CL123B	2.7µF 10% 100V	263596	-
CL144	100pF 20% 1kV	263608	-
# CP002	.22 20% 275VAC	263691	-
# CP004, 05, 06	.0015 20% 1kV	263607	-
# CP008	680µF 20% 200V	190560	-
CP009	.0022 20% 1.6kV	263583	-
# CP015, 18	.0022 20% 250V	248747	-

Item No.	Function/Rating	Mfr. Part No.	Notes
CP022	470pF 5% 50V N1500	198572	-
CP026	330pF 20% 1kV	230972	-
CP038, 39	180pF 5% 50V N150	251318	-
CP060	330pF 20% 1kV	230972	-
# CP062	1000µF 20% 25V	201162	-
CP063	330pF 20% 1kV	230972	-
# CP064	1000µF 20% 25V	201162	-
CP068	330pF 20% 1kV	230972	-
CP088	.0022 20% 2kV	227078	-
CP093	330pF 20% 1kV	230972	-
# CP094	1000µF 20% 25V	201162	-
CR002, 03, 04	100pF 50V NPO	256818	-
CR021, 24	100pF 50V NPO	256818	-
CS116, 18	330pF 50V NPO	256821	-
CS123	100pF 50V NPO	256818	-
CS130	56pF 10% 50V NPO	243363	-
CS146, 47	47pF 10% 50V NPO	256817	-
# CS206	2200µF 20% 25V	260637	-
CV020, 21, 22	47pF 50V NPO	256817	-
CV040, 41	100pF 50V NPO	256818	-
CV042, 43, 44	47pF 50V NPO	256817	-
CX529, 30	100pF 50V NPO	256818	-
CX541, 42	100pF 50V NPO	256818	-
CX559, 60	100pF 50V NPO	256818	-
CX580, 81	100pF 50V NPO	256818	-
CY511, 12	330pF 50V NPO	256821	-
# CZ03	.22 +80% -20%	243641	-
# DEGAUSS	Degaussing	263554	-
FI010	Filter	263690	45.75MHz
FI050	Trap	219314	4.5MHz
FB121, 41, 61	Delay Line	-	-
# FP001	Fuse	175425	5Amp, 125V
# FZP60, 61	IC Protect	259219	3.15Amp, 125V
# FZP66, 93	IC Protect	260617	500mAmp, 125V
# FZX001	IC Protect	260617	500mAmp, 125V
# FZX02	Fuse	263678	315mAmp, 125V
GK01	Receiver	251320	Remote
LG001	60µH	258169	-
LG002	10µH	214580	-
LH010	10µH	214580	-
LI010	1µH	243496	-
LI031	12µH	257828	-
LI032	10µH	214580	-
LI033	10µH	263702	-
# LL005 (1)	Horizontal Output	262343	-
# LL026	Horizontal Linearity	263687	-
# LL033	Horizontal Drive	263679	-
LL040	10µH	214580	-
# LL122	650µH	256791	-
# LP002	Line Choke	263675	-
# LP003	SMT	262349	-
LP020	Ferrite Bead	244840	-
LP025	Ferrite Bead	235858	-
LP081	Ferrite Bead	244840	-
LR001	10µH	263702	-
LR002	Ferrite Bead	244840	-

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes	Item No.	Function/Rating	Mfr. Part No.	Notes
LS105	10μH	263702	-	Z COIL	Field Cancel	237832	-
LS106, 07	1μH	248755	-	# ZP001	ERZV14D511	247377	-
LS108	10μH	263702	-		Fuse Holder	244842	-
LV001	10μH	214580	-		PC Board	263364	Comp In 2
LV002, 03	10μH	263702	-		PC Board	263365	EFC
LV004	10μH	214580	-		PC Board	263372	Pin Cushion (EWM)
LX003, 04	220μH	259237	-		PC Board	263378	Front A/V Input
LX501, 02	10μH	248869	-		PC Board	263387	Front Panel
NH001	Tuner	248782	CTF5800		PC Board	263405	MAV
PL140	4700 Horizontal Amplitude	263581	-	#	Power Cord	263429	AC, Polarized
PL141	470 Pin Cushion Correction	263580	-		Transmitter	261666	Remote, RCR615TFM1
PL143	4700 Trapezium	263581	-				
QS101	Filter	263646	18.432MHz				
QV001	Filter	259636	12MHz				
# RB001, 04	1500	244871	-				
# RB013	10	241261	-				
# RB021, 41, 61	100 5% 1/4W	198656	-				
RF004, 06	1910 1% 1/4W	263619	-				
RF007	1 1% .7W	258715	-				
# RF008	1.5 5% 1/4W	256797	-				
RG025	2700 5% 3W	263706	-				
RG026, 27	2200 5% 3W	190559	-				
RL002	61.9K 1% .4W	263621	-				
# RL010	.1 10%	220609	-				
# RL012	.22 5%	247263	-				
RL068	1000 1%	252359	-				
# RL101	18 5% 1/4W	220605	-				
# RP001	1.6 10% 10W	263602	-				
# RP003	PTC	-	-				
# RP009	470K 5% 1W	263654	-				
# RP015	8.2M 10% 1/2W	234388	-				
# RP016	1.8M 10% 1/2W	220333	-				
RP056	130K .1%	247719	-				
RP158	2490 1% 1/16W	263649	-				
RP161	3920 1%	253727	-				
RP162	1690 1%	262451	-				
# RS103	3.9 5% 1/4W	230997	-				
# RS216, 19	4.7 5% 1/4W	235901	-				
RV004	39.2K 1%	253848	-				
# RZ01	100 5% 1/16W	243653	-				
# RZ03	10K	242690	-				
# RZ05	29.4K 1% 1/4W	197519	-				
RZ07	27.4K 1% 1/4W	151883	-				
# RZ09	1500 5%	256759	-				
SK101	Switch	257860	Channel -				
SK102	Switch	257860	Channel +				
SK103	Switch	257860	Volume -				
SK104	Switch	257860	Volume +				
SK105	Switch	257860	Menu				
SK106	Switch	257860	Power				
# SP001	Relay	256573	Degaussing				
SP1, 2	Speaker	253674	160 X 60mm, 8 Ohms, 12W				
SVM COIL	-	-	-				
# V1 (1)	CRT	A90AJZ9010	A90AJZ90X10				
# YOKE (2)	-	-	-				

Important Parts Information

Parts not listed in the parts list are commonly available at your local electronics parts retailer.

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

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors.

NTE Electronics, Inc. (NTE)

Sencore, Inc.

RCA

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