

CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove six screws holding cabinet back and remove back. Disconnect HV anode, CRT socket, Deflection Yoke connectors, Degaussing Coil connector, Speaker connectors, ground leads and all required cabling. Slide Tuner Control Module from cabinet side. Remove two screws from bottom of cabinet holding Main Board assembly to cabinet bottom and slide board assembly from cabinet.

CRT REMOVAL

Follow "Chassis Removal" procedure and lay set facedown on a soft protective surface. Loosen and remove CRT neck assemblies. Remove four screws holding CRT to cabinet front and lift CRT out of cabinet. DO NOT LIFT CRT BY NECK.

SERVICING IN THE FIELD

CRT IMPLSION PROTECTION AND CLEANING

Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE DEVICES

A 4-amp fuse is used for AC line protection. (See photo, Cabinet - Rear View.)

VHF/UHF TUNER

See Miscellaneous Adjustments.

CHANNEL TUNING

Channel Up and Down buttons are provided for channel scanning with ten numbered buttons on Remote Transmitter. These are provided for two-digit entry, direct entry access channel selection. Fine tuning is automatic.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horiz Freq Control.

FOCUS

The focus may be varied by a Focus Control. (See photo, Cabinet - Rear View.)

AGC

The AGC may be varied by an RF AGC Control. (See photo, Cabinet - Rear View.)

CENTERING

Vertical centering is accomplished by proper adjustment of the vertical centering switch. (See photo, Cabinet - Rear View.)

SET 2629 FOLDER 1

SAMS

PHOTOFACT®

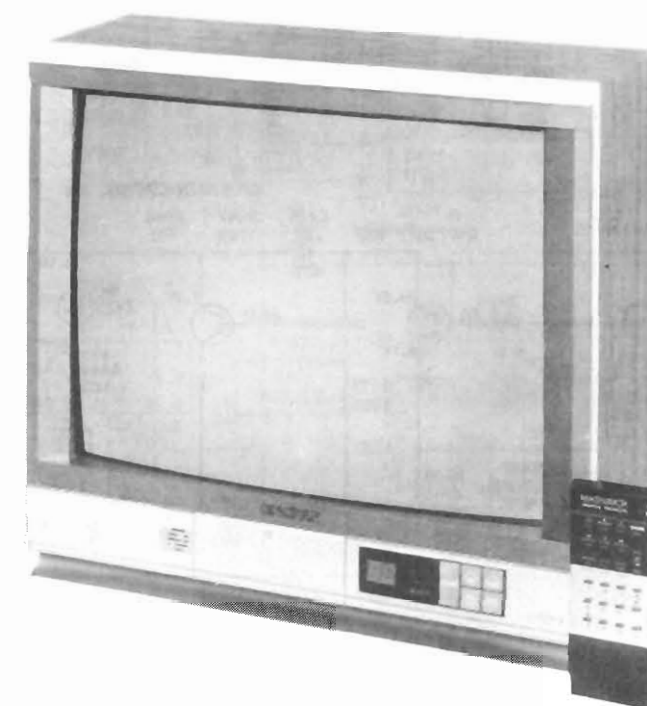
For Supplier Address See PHOTOFACT Index

MAGNAVOX CHASSIS
19C801/2/3, 20C802/3/4/5/6

MODEL S

EMK672PE01
EMK672PE02
EMK672PE03
EMK672PE04
RG4332WA01
RG4332WA02
RG4332WA03
RG4332WA04

Reprint Copy Set



Model RG4332WA05

SAFETY PRECAUTIONS

See Page 1

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The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co. as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co. by the manufacturers of the particular type of replacement part listed.

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U.S.A. 88PD01587

Printed in U.S. of America

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SET 2629 FOLDER 1



10 9 8 7 6 5 4 3 2 1 0

MAGNAVOX CHASSIS

SET 2629 FOLDER 1

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SAFETY PRECAUTIONS

SERVICE WARNING

Service work should be performed only by qualified service technicians who are familiar with safety checks and guide lines.

- 1. For continued safety, no modification of any circuit should be attempted unless recommended by manufacturer.
- 2. Disconnect power source before replacing parts as some parts may be electrostatic sensitive.
- 3. Use an isolation transformer between the line cord and power receptacle, when servicing chassis.

SERVICING HIGH VOLTAGE AND PICTURE TUBE

When servicing the High Voltage circuits, extreme caution should be used.

- 1. Discharge static High Voltage by connecting a 10 kohms resistor in series with a test lead between chassis and anode lead of picture tube.
- 2. Wear shatter-proof eye protection (goggles) when handling the picture tube in case of implosion.
- 3. DO NOT lift picture tube by the neck.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Service personnel should be aware of the procedures and instructions covering x-ray radiation. The only potential source of x-ray in present day solid state receivers and monitors is the picture tube.

- 1. It is only when High Voltage is excessive that x-ray radiation is capable of being emitted from shell of picture tube. Be sure the High Voltage is set at specified level.
- 2. An accurate High Voltage meter should be available at all times. Meter calibration should be checked periodically.
- 3. High Voltage should be kept at rated value - NO HIGHER. Higher voltages may cause x-ray radiation or failure of other associated components. DO NOT depend on protection circuit to keep voltages at rated value.
- 4. Every time a chassis is serviced, High Voltage should be checked at various brightness levels to be sure it is regulating properly.
- 5. While troubleshooting a set with excessive High Voltage, avoid being close to picture tube. DO NOT operate longer than it is necessary to locate the cause of excessive High Voltage. Use a variable AC transformer to regulate voltage.
- 6. Many components, electrical and mechanical, in present chassis have safety related characteristics which are not evident with visual inspection. When these components are known, they are identified with a # on the schematic and in the parts list. When replacing these components, for SAFETY, use only an equivalent replacement part.

SAFETY CHECKS-FIRE AND SHOCK HAZARD

Cold Leakage Checks (Sets with isolated ground.)

- 1. Unplug the AC cord and connect a jumper across the two prongs on the plug.
- 2. Turn on power switch.
- 3. Measure the resistance, with an Ohm meter, between the jumpered AC plug and any exposed metal cabinet parts on the set such as: antenna screw heads, control shafts, handle brackets. Exposed metal parts that have a return path should measure between 200 kohms and 5 megohm. Parts without a return path must measure infinity.

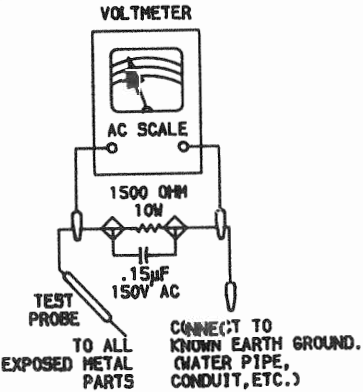
Leakage Current Hot Check

- 1. Plug the AC cord directly into AC outlet. DO NOT use an isolation transformer.
- 2. Connect a 1500 Ohm 10 watt resistor, in parallel with a .15μF 150V AC capacitor, between any exposed metal parts on the set and a good earth ground such as a water pipe. (See Figure below.)
- 3. Using an AC volt meter, with 1000 Ohms per volt or more sensitivity, measure the voltage across the resistor. Check each exposed part and measure voltage at each point.
- 4. Reverse the AC plug and repeat voltage measurement at each point.
- 5. The voltage at any point should not exceed .75 volts RMS. This corresponds to .5 milliamps AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected.

GENERAL GUIDE LINES

A final SAFETY check before returning the set to customer.

- 1. Check area repaired for poorly soldered or de-soldered connections. Check entire circuit board surface for solder splashes.
- 2. Check interboard wiring for pinched wires or wires contacting any high-wattage resistors.
- 3. Check that all control knobs, shields, covers, grounds and mounting hardware have been replaced. Be sure to replace all insulators.



TROUBLESHOOTING AID

Note: Waveforms taken with triggered scope, Keyed-Rainbow generator. Schematic voltages measured with digital meter, no signal. Controls adjusted for normal operation.

PICTURE or SOUND

NO PIC, NO SOUND, NO RASTER: Check AC power supply and sources generated from Horizontal Output Transformer (T504). Refer to "Troubleshooting" Power Supply and Horizontal circuits.

NO PIC, NO SOUND, HAS RASTER: Check IF-AGC and source voltages from Horizontal Output Transformer (T504). Refer to "Troubleshooting" IF-AGC and Horizontal circuits.

NO PIC, HAS SOUND, NO RASTER: Check Horizontal Output Transformer (T504) source and Video circuit. Refer to "Troubleshooting" Horizontal and Video circuits.

NO PIC, HAS SOUND, HAS RASTER: Refer to "Troubleshooting" Video circuit.

HAS PIC, NO SOUND: Refer to "Troubleshooting" Audio circuit.

OVERLOADED PICTURE: Refer to "Troubleshooting" IF-AGC circuit.

LOW OR EXCESSIVE BRIGHTNESS: Check Video and Luminance circuits. Refer to "Troubleshooting" Video circuit.

SWEEP

NO RASTER, HAS SOUND: Check HV rectifier, Part of Horizontal Output Transformer (T504). Refer to "Troubleshooting" Horizontal circuit.

NO RASTER, NO SOUND: Refer to "Troubleshooting" Horizontal circuit.

NO VERT DEFLECTION: Refer to "Troubleshooting" Vertical circuit.

POOR VERT LIN OR FOLDOVER: Refer to "Troubleshooting" Vertical circuit.

POOR HORIZ LIN OR FOLDOVER: Refer to "Troubleshooting" Horizontal circuit.

NARROW PICTURE: Refer to "Troubleshooting" Horizontal circuit.

VERT OFF FREQUENCY: Refer to "Troubleshooting" Vertical circuit.

HORIZ OFF FREQUENCY: Refer to "Troubleshooting" Horizontal circuit.

SYNC

NO VERT/HORIZ SYNC: Refer to "Troubleshooting" Sync circuit.

RASTER

YELLOW (NO BLUE): Check Chroma and Blue Output circuits. Refer to "Troubleshooting" Raster circuit.

CYAN (NO RED): Check Chroma and Red Output circuits. Refer to "Troubleshooting" Raster circuit.

MAGENTA (NO GREEN): Check Chroma and Green Output circuits. Refer to "Troubleshooting" Raster circuit.

COLOR (B/W operating normally)

NO COLOR: Refer to "Troubleshooting" Chroma circuit.

WEAK COLOR: Refer to "Troubleshooting" Chroma circuit.

NO COLOR SYNC: Refer to "Troubleshooting" Chroma circuit.

NO GREEN: Check Chroma and Green Output circuits. Refer to "Troubleshooting" Raster circuit.

NO BLUE: Check Chroma and Blue Output circuits. Refer to "Troubleshooting" Raster circuit.

NO RED: Check Chroma and Red Output circuits. Refer to "Troubleshooting" Raster circuit.

INCORRECT HUE (TINT): Refer to "Troubleshooting" Chroma circuit.

TEST JIG HOOKUP

FUNCTION	Chek-A-Color ADAPTER NO.
CRT YOKE YOKE SETTING	B239
	YP2A
	Focus Tap

TROUBLESHOOTING

POWER SUPPLY DESCRIPTION

When 120V AC is supplied to the set, 156V* is developed at TP22. The voltage developed at TP22 is simultaneously applied to Switch Mode Regulator Transistor (Q400), Duty Cycle Control Transistors (Q402, Q403) through Resistors and Switched Mode Transformer (T401) to initialize the power supply into operation. After the circuit has been pulsed into operation, its operation is sustained by feedback pulses from Horizontal Output Transformer (T401) and bias voltages from Opto Isolator IC (IC404) and Main Control Amp Transistor (Q406) and Differential Amp Transistor (Q407). The pulses developed by Transformer T401 are rectified by diodes to provide operating voltages for the rest of the set. Diodes D431 and D433 provide a rectified operating voltage for Mode Switch Transistor (Q410), Standby Power Switch Transistors (Q431, Q432) and Voltage Regulator IC (IC309) in Standby mode. In Standby mode the Power Supply is operating at a reduced potential because of the loading provided by Transistors Q410, Q431, Q432, IC309 and the 13.0V applied across Zener Diode Z435. In Standby mode 18.9V is present at TP4; 2.87V at TP5; 4.4V at TP8; 3.8V at TP10; Transistor Q402 E-49V, B-51V, C-1.9V; Transistor Q403 E-1.9V, B-1.7V, C-.51V; Transistor Q406 E3.8V, B3.8V, C.99V and Transistor Q407 E1.8V, B.96V, C3.8V. When the Power button is depressed, Transistor Q410 is turned on which turns off Transistor Q432. This action removes the 13.0V across Zener Diode Z435 and the load provided by Transistors Q410, Q431 and Q432, enabling the Power Supply to go to full Power mode, thus providing the proper operating voltages for the rest of the set.

*With respect to Isolated ground.

POWER SUPPLY

Check the AC Fuse F400. If fuse is open, check Bridge Rectifier Diodes D404 thru D407, Capacitors C400, C404 thru C407, Thermistor R401, Electrolytic C403 and Switch Mode Regulator Transistor (Q400). Apply 120V AC and check for 155V* at the collector of Transistor Q400. If this voltage is absent, check Line Filter (L400), Thermistor R403 and the winding of Switched Mode Transformer (T401) from pins 5 to pins 7. If 155V* is present at the collector of Transistor Q400, depress the Power Switch and check for 130V at TP4. If this voltage is absent, check the voltages, wave-

forms and components associated with Transformer T401, Transistor Q400, Duty Cycle Control Transistors (Q402, Q403), Differential Amp Transistor (Q407), Main Control Amp Transistor (Q406), Standby Power Switch Transistors (Q431, Q432) and Mode Switch Transistor (Q410). If 130V is present at TP4, refer to the "Horizontal" section of this Troubleshooting guide. If Transformer T401 is being overloaded by a short or other condition, a very loud high frequency sound will be heard coming from the set.

*With respect to Isolated ground.

HORIZONTAL

Determine if the TV is in shutdown, refer to the "High Voltage Shutdown" section of this Troubleshooting guide. If the TV is not in shutdown, inject a horizontal signal at the base of the Horizontal Output Transistor (Q501). If horizontal deflection is now present, check the voltages, waveforms and components associated with pin 7, 23 thru 28 of IF/Sync/Sound IC (IC201) and the Horizontal Driver Transistor (Q500). If there is still no horizontal sweep, check the voltages, waveforms and components associated with Transistor Q501 and the Horizontal Output Transformer (T504). Check Diodes D502, D506 and associated components for defects. The high voltage rectifier is part of Transformer T504 and if defective will affect the performance of the horizontal circuits. If the horizontal oscillator is off frequency, check the voltages, waveforms and components associated with pins 23, 24 and 28 of IC201. Horizontal linearity or width problems may be caused by Capacitors C501, C502, C504 and C505 being defective.

HIGH VOLTAGE SHUTDOWN TEST

Apply 120V AC, turn set On, set all customer controls for normal operation and apply a variable 30V supply to TP9 through an isolation diode. Set should lose raster and sound. If set does not lose raster and sound, the shutdown circuit should be repaired. To resume normal operation, remove AC Power and wait 30 seconds then turn set On.

HIGH VOLTAGE SHUTDOWN

The high voltage is monitored by Diode D506 rectifying pulses from the Horizontal Output Transformer (T504) and applying the voltage to the cathode of Zener Diode Z503. Should the

TROUBLESHOOTING (Continued)

high voltage increase, the rectified voltage at the cathode of Zener Diode Z503 will also increase and trigger Zener Diodes Z503 and Z504 into conduction. This triggers Over-voltage Shutdown SCR (SCR505) which shuts down the set. To troubleshoot, disconnect Diode D506 from the circuit and check the voltage at TP4. If the voltage is more than 135V, troubleshoot the power supply. If the voltage at TP4 is less than 130V, check the components associated with the collector circuit of the Horizontal Output Transistor (Q501) and SCR505. Return Diode D506 to the circuit.

Voltages Taken In Shutdown		
	SCR505	TP4
K	0V	.9V
G	.74V	
A	.9V	

IF-AGC

Inject a video IF signal at the IF Input and check for video on the CRT. If video is present, check the Tuner, Tuner Control and Tuner AFT circuit. If there is no video on the CRT, check for a video waveform at TP1. If video is present, refer to the "Video" section of this Troubleshooting guide. If there is no video at TP1, apply AGC bias to pin 19 of IF/Sync/Sound IC (IC201). If video is present at TP1, check the voltages and components associated with the AGC circuit at pins 1, 5 and 19 of IC201. If there is no video at TP1, check the voltages, waveforms and components associated with pins 7 thru 10, 17, 18 and 22 of IC201 and IF Preamp Transistor (Q240). A defective AGC circuit can cause an overloaded picture, excessive snow or loss of audio and video. See the AGC Voltage Chart for AGC voltages with signal.

IC201		
Pin 1		3.9V
Pin 5		5.2V
Pin 19		4.5V

AUDIO

Select an active TV channel and check for an audio waveform at pin 12 of IF/Sync/Sound IC (IC201). If there is no audio, check the voltages, waveforms and components associated with Sound IF IC (IC202) and pin 11 thru 15 of IC201. If audio is present at pin 12 of IC20, check the voltages, waveforms and components associated with Audio Output IC (IC280). Check the voltage at pin 7 of IC280, it should measure 2.6V at mute and 7.1 at Maximum volume.

VIDEO

Inject a video signal at TP1 and check for video on the CRT. If video is present, troubleshoot the "IF/AGC" section. If there is no video on the CRT, check for a video waveform at pins 13, 14 and 15 of Chroma/Luminance IC (IC640). If there is no video at pins 13, 14 and 15 of IC640, check the voltages, waveforms and components associated with pins 1, 7 and 9 thru 15 of IC640 and Transistors Q600, Q605, Q610, Q615, Q620. If video is present at pins

13, 14 and 15 of IC640, check the voltages, waveforms and components associated with the CRT and Output Transistors (Q26, Q40 and Q47). If the brightness is inadequate or cannot be controlled, check the voltages and components associated with pins 7 and 12 of IC640 and pin 7 of the CRT.

VERTICAL

Inject a vertical drive signal at pin 3 of IF/Sync/Sound IC (IC201). If vertical deflection is now present, check the voltages, waveforms and components associated with pins 2, 3, 4 and 27 of IC201. If there is still no vertical sweep, check the voltages, waveforms and components associated with the Vertical Output IC (IC580). Vertical linearity or height problems may be caused by the vertical feedback and bias circuits, check Electrolytics C582, C584 and C585 for defects.

SYNC

Check for a video waveform at TP6. If the video waveform is missing, check the components associated with TP6. If a video waveform is present at TP6 and there is no vertical or horizontal sync, Capacitor C227 or IC201 may be defective.

RASTER

Check the CRT and CRT voltages. If there is no Red, check the voltages and components associated with pin 15 of Chroma/Luminance IC (IC640) and Red Output Transistor (Q26). If there is no Green, check the voltages and components associated with pin 14 of IC640 and Green Output Transistor (Q40). If there is no Blue, check the voltages and components associated with pin 13 of IC640 and Blue output Transistor (Q47). If the raster has a keystone shape, check the Deflection Yoke (DY1). If the raster has height or width problems, refer to the "Vertical", "Horizontal" and "Power Supply" sections of this Troubleshooting guide.

CHROMA

Check for a chroma waveform at pin 3 of Chroma/Luminance IC (IC640). If the waveform is missing, check the components associated with pin 3. If the chroma waveform is present at pin 3, check for the proper chroma waveforms at pins 13, 14 and 15 of IC640. If these waveforms are missing, check the voltages, waveforms and components associated with pins 1 thru 6, 8 and 16 thru 24 of IC640. Check the 7.16MHz oscillator at pins 20 and 22 of IC640. Check the voltages and components associated with the Color Control and pin 5 of IC640. If there is no color sync, check the voltages, waveforms and components associated with pin 8 of IC640. If there is inadequate Tint Range, check the voltages and components associated with the Tint Control and pin 21 of IC640. If the proper chroma waveforms are present at pin 13, 14 and 15 of IC640, refer to the "Raster" section of this Troubleshooting guide.

TEST EQUIPMENT

Test Equipment listed by Manufacturer illustrates typical or equivalent equipment used by SAMS' Engineers to obtain measurements and is compatible with most types used by field service technicians.

Equipment	B & K Precision Equipment No.	Sencore Equipment No.	Notes
OSCILLOSCOPE	1560, 1564, 1541	SC61	
GENERATORS			
RGB	1249,1260		
MULTIBURST SIGNAL	1251,1260	VA62	
COLOR BAR	1211A,1249,1251,1260	VA62,CG25	
ANALOG VOM	277,111,116		
DIGITAL VOM	2830,2806	DVM37,DVM56,SC61	
FREQUENCY METER	1803,1805	FC71,SC61	
HI-VOLTAGE PROBE	HV-44	HP200	
VOM/DMM			
Accessory probes	PR-28(HV)		
ISOLATION TRANSFORMER	TR110,1604,1653,1655	PR57	
CAPACITANCE ANALYZER	820,810,830	LC53,LC75,LC76, LC77	
CRT ANALYZER	467,470	CR70	
TEMPERATURE PROBE	TP-28,TP-30		
AC LEAKAGE TESTER	1655	PR57	
LOGIC PROBE	DP51,DP21		
LOGIC PULSER	DP101,DP31		
INDUCTANCE ANALYZER	875	LC53,LC75,LC76, LC77	
FLYBACK YOKE TESTER	875	LC53,VA62	
TV STEREO GENERATOR	2009	ST65,ST66	
FIELD STRENGTH METER		FS73,FS74	

TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer and observe power supply polarity. Maintain line voltage at 120V AC. Allow a 20-minute warm-up period for receiver and test equipment.
Suggested Alignment Tools: GC ELECTRONICS

PRELIMINARY INSTRUCTIONS

Set the channel selector to the highest unused channel. Set scope sweep to external. Connect scope vertical input to scope vertical input on sweep/marker generator. Connect scope external horizontal input to scope horizontal input on sweep/marker generator. Ground test equipment to TV chassis unless specified otherwise. Use only enough generator output to provide a usable indication.
Note: Response may vary slightly from that shown.
Connect a 6.7V Bias to TP210 (Pin 10 IC201).

VIDEO IF ALIGNMENT (SWEEP MARKER GENERATOR)

DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
TP244 (Emitter of Q244)	TP240 (Base of Q240)	44MHz (10MHz Sweep)	45.75MHz	Adjust L205 for Maximum 45.75MHz marker. See Figure 1.

TV ALIGNMENT INSTRUCTIONS (Continued)

VIDEO IF ALIGNMENT (BAR SWEEP GENERATOR)

BAR SWEEP GENERATOR	SCOPE INPUT	REMARKS
Antenna Terminals	TP244	Perform Video IF Adjustments per SWEEP/MARKER GENERATOR Instructions above. See Figure 2.

SOUND IF ALIGNMENT

Tune in a station and adjust L213 for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce the signal while aligning for undistorted output by adjusting L213.

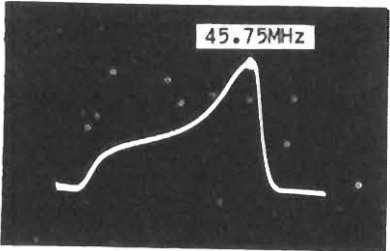


Figure 1

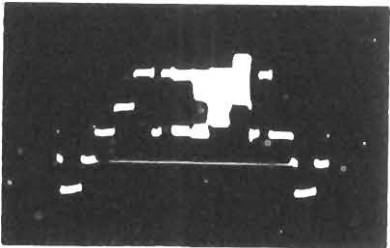
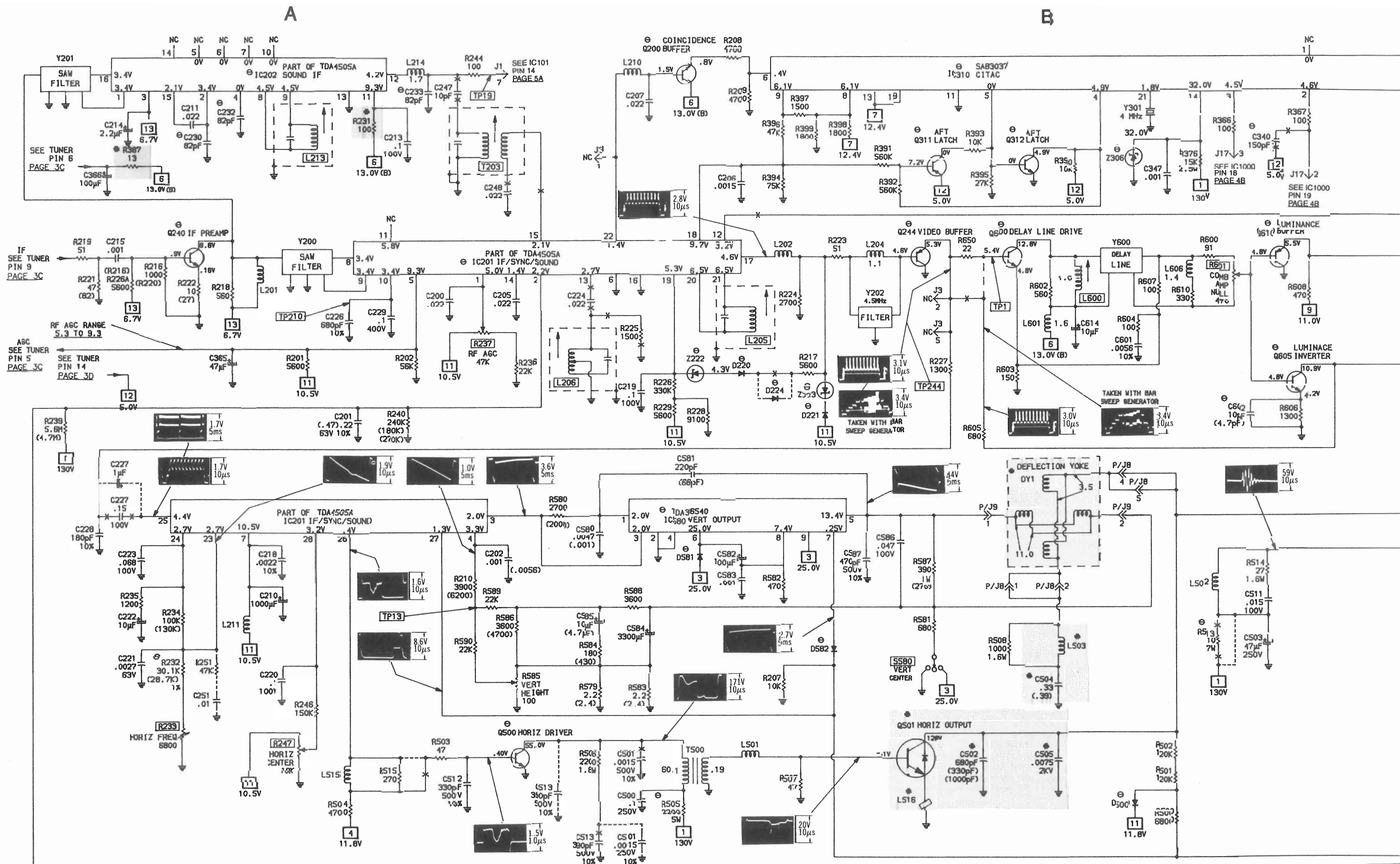
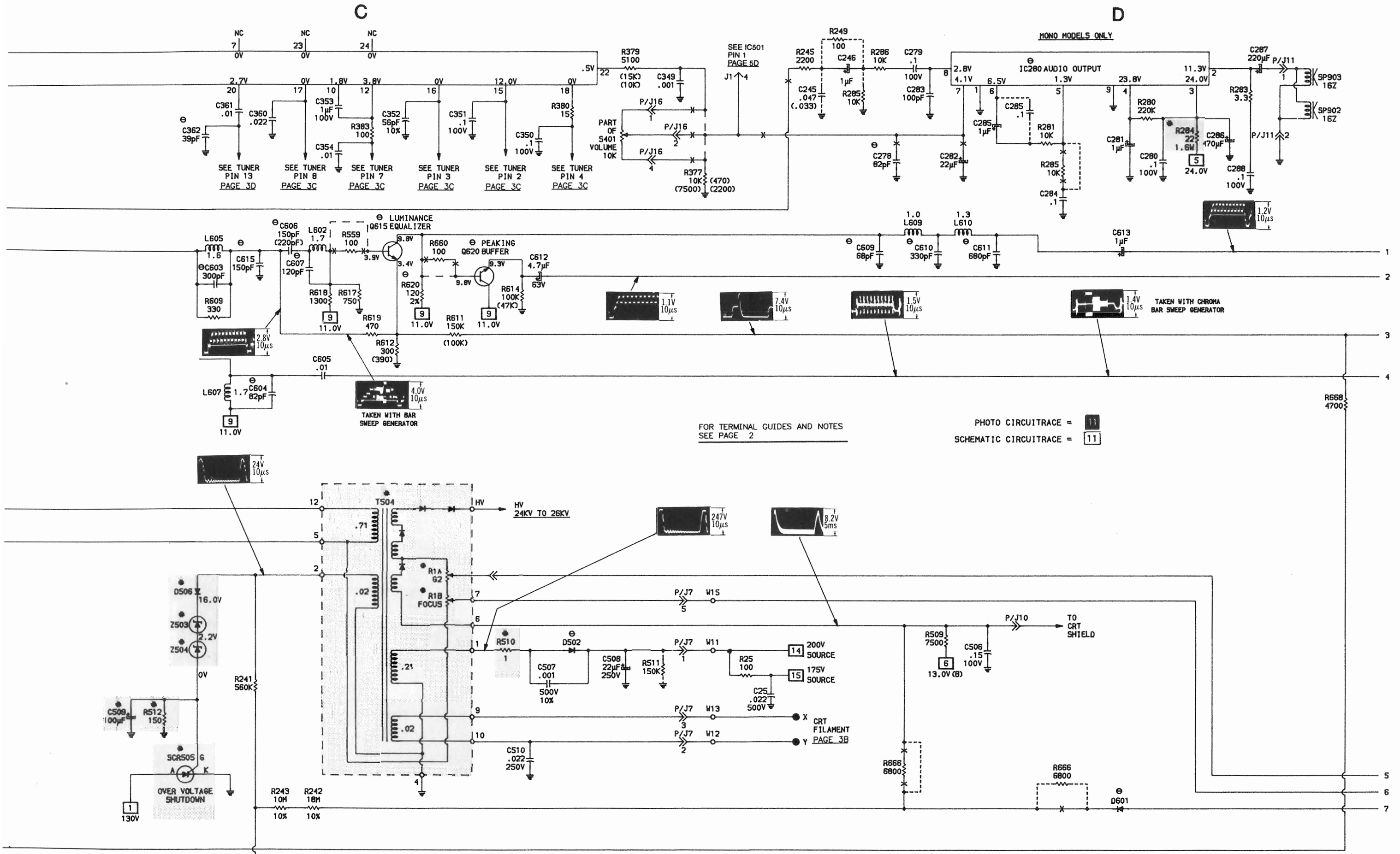
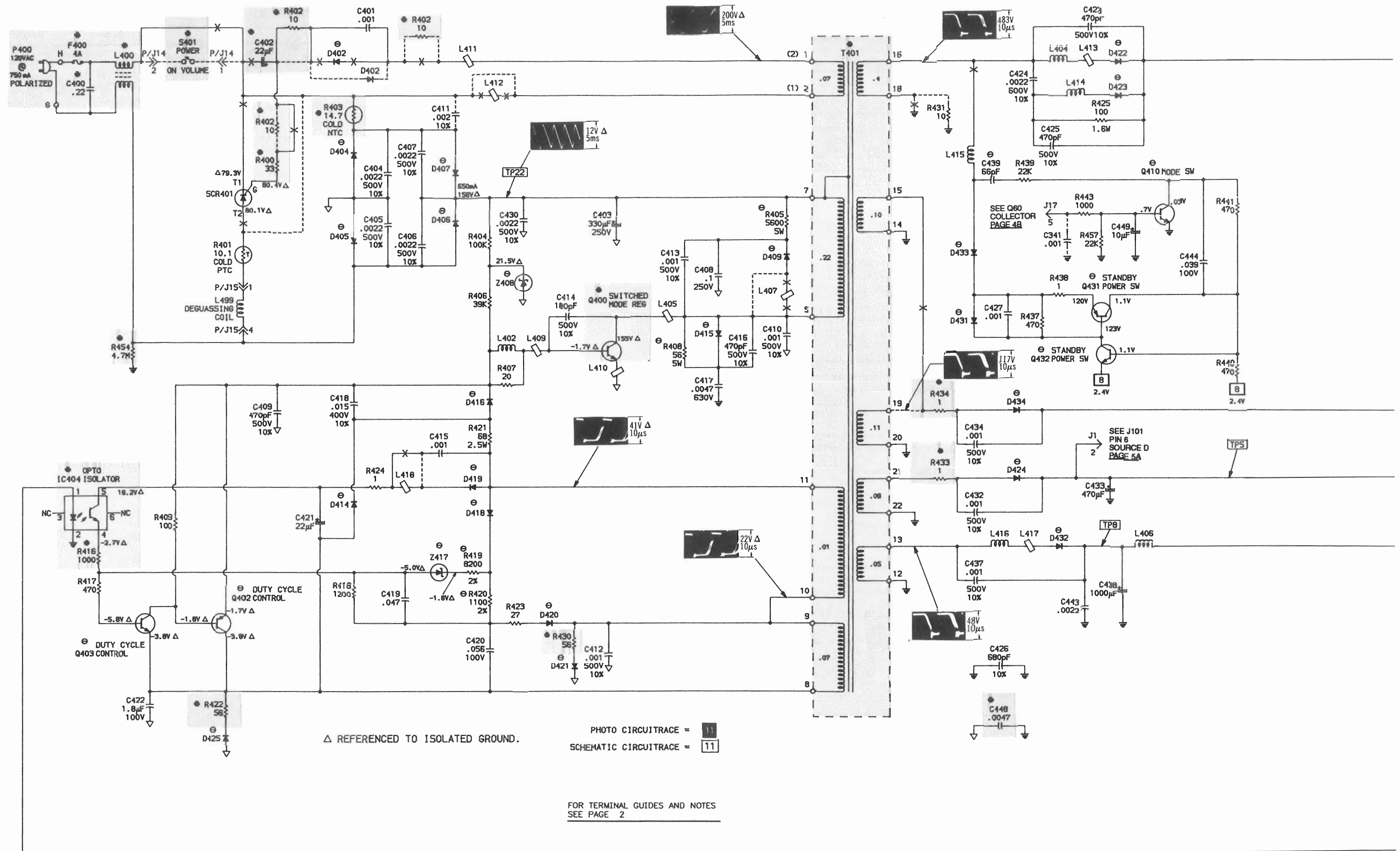
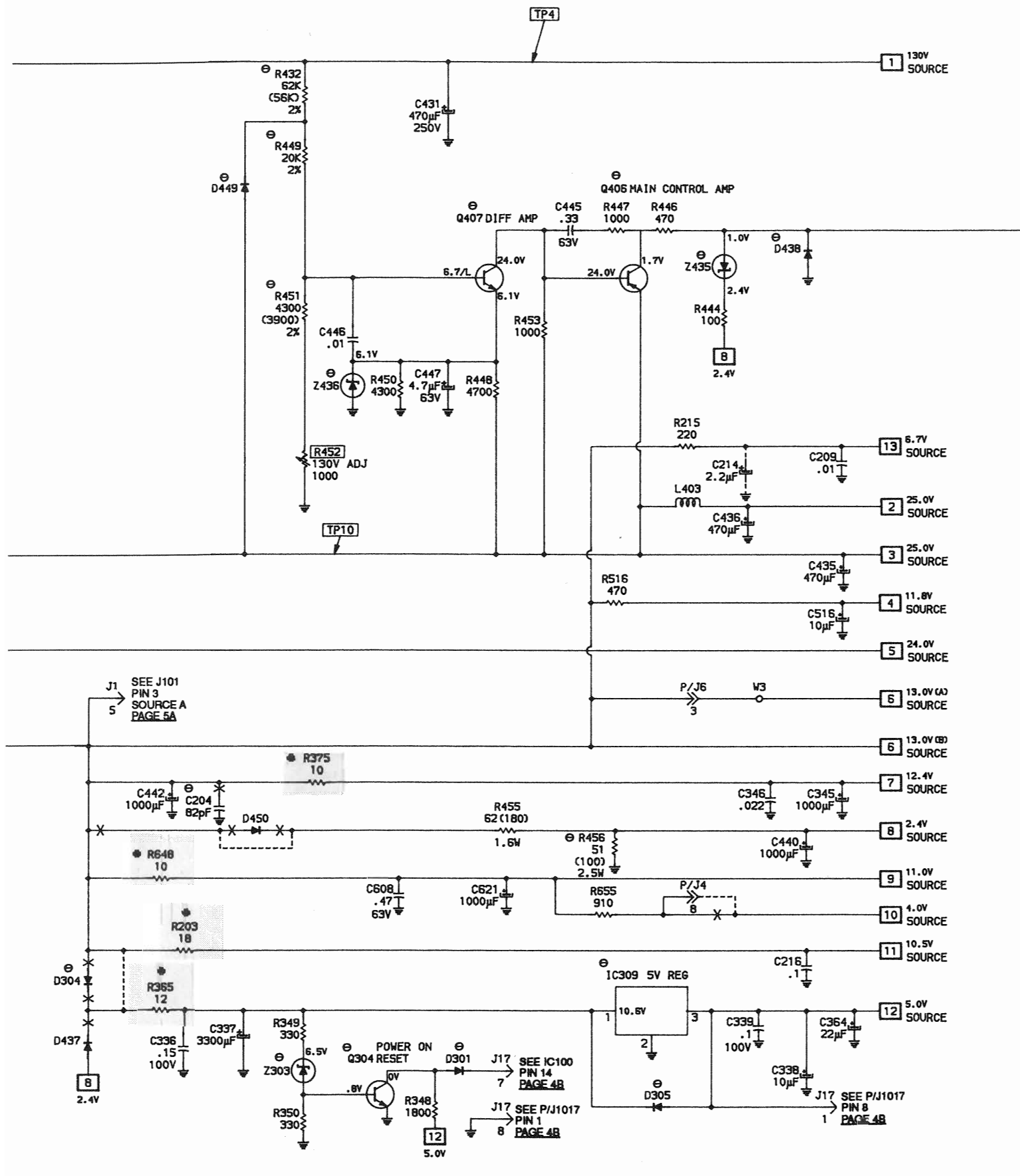


Figure 2



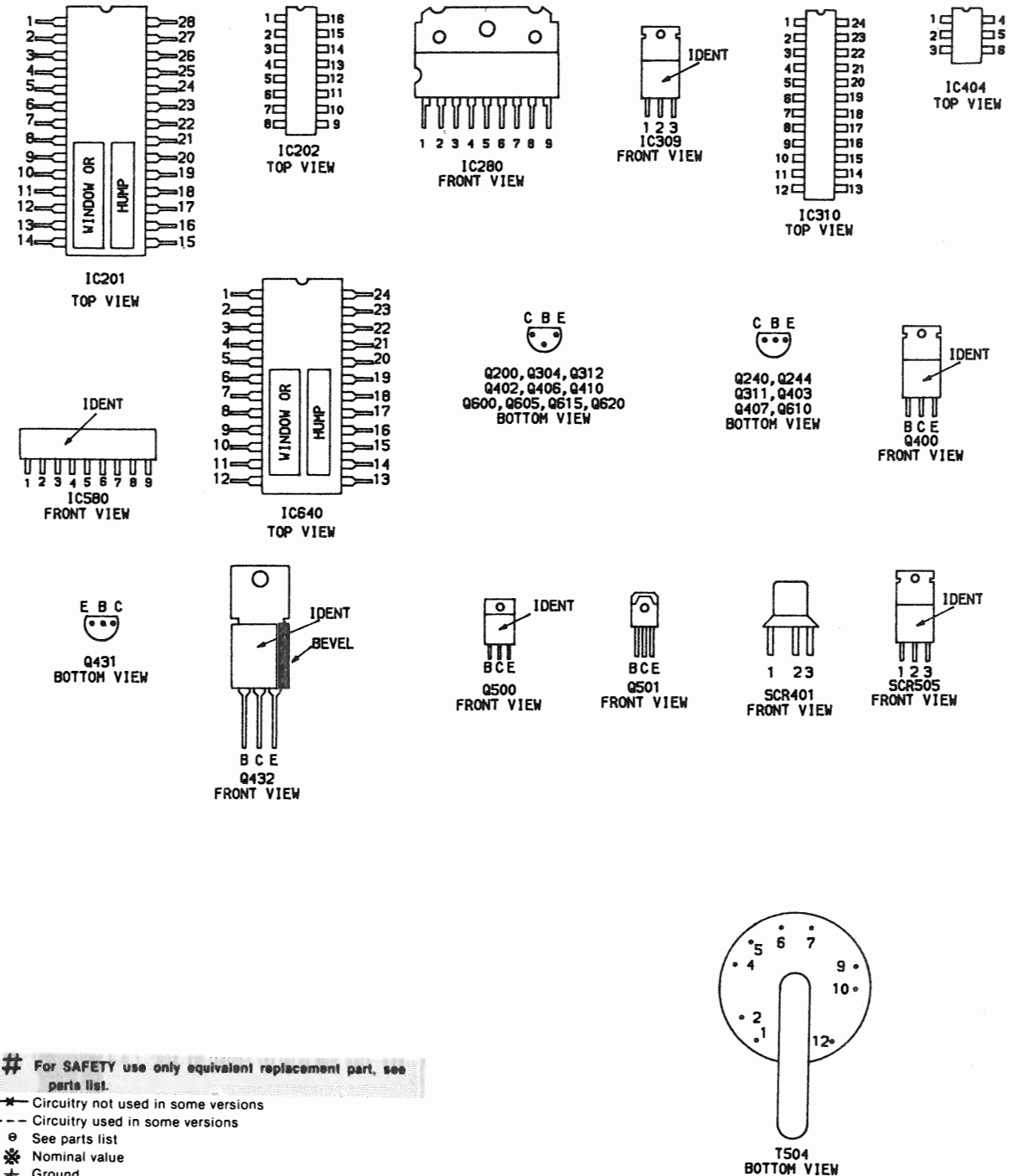






POWER SUPPLY

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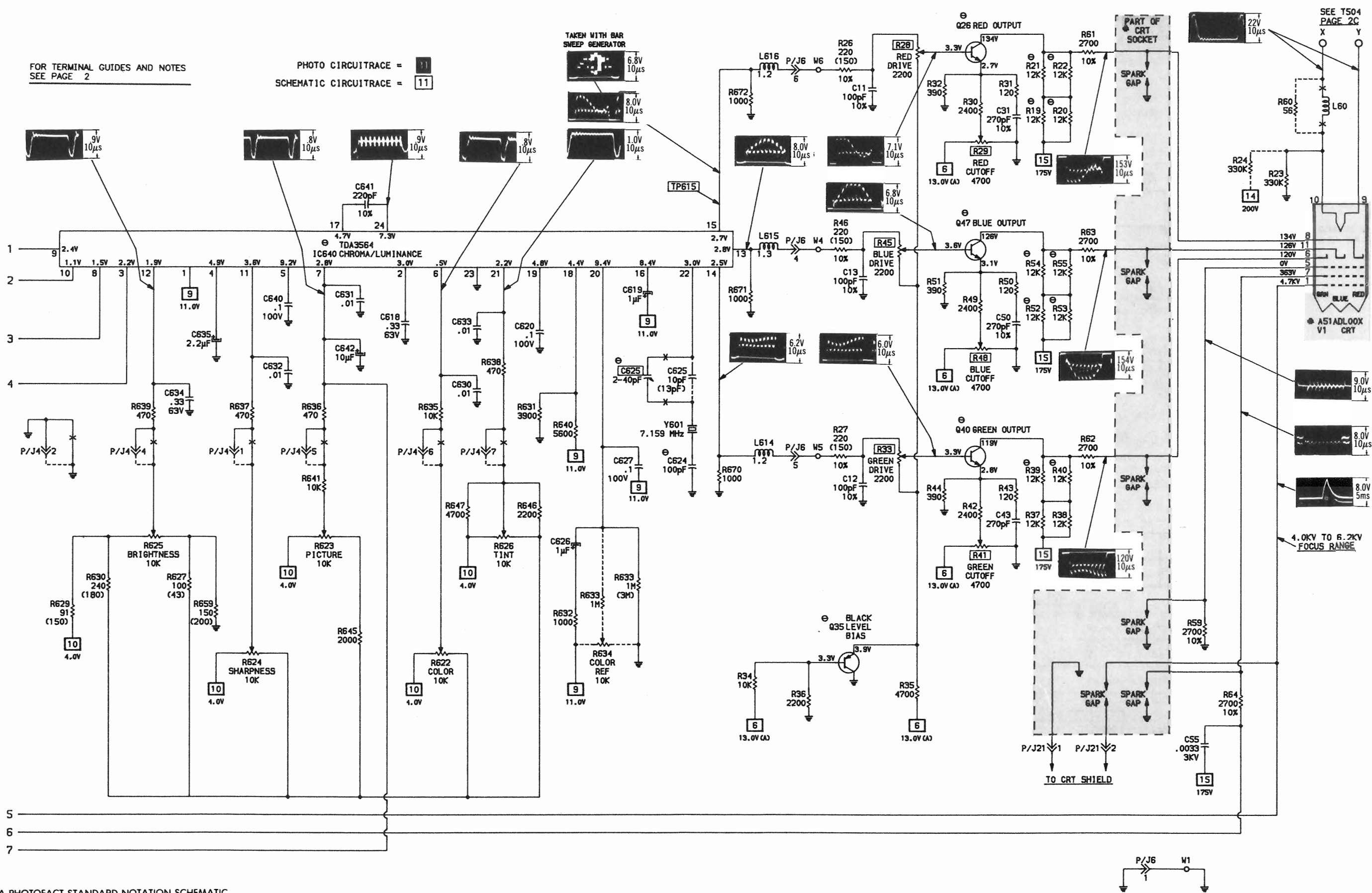
- # For SAFETY use only equivalent replacement part, see parts list.
- Circuitry not used in some versions
 - - - Circuitry used in some versions
 - ⊕ See parts list
 - ⊗ Nominal value
 - ⊥ Ground
 - ⏏ Chassis
 - ▽ Common tie point
- Waveforms and voltages are taken from ground, unless noted otherwise.
- Waveforms: triggered scope, keyed rainbow generator.
- Item numbers in rectangles appear in the alignment/adjustment instructions.
- Supply voltages maintained as shown at input.
- Voltages measured with digital meter, no signal.
- Controls adjusted for normal operation.
- Terminal identification may not be found on unit.
- Capacitors are 50 volts or less, 5% unless noted.
- Electrolytic capacitors are 50 volts or less, 20% unless noted.
- Resistors are 1/2W or less, 5% unless noted.
- Value in () used in some versions.

TERMINAL GUIDES AND NOTES

H

A

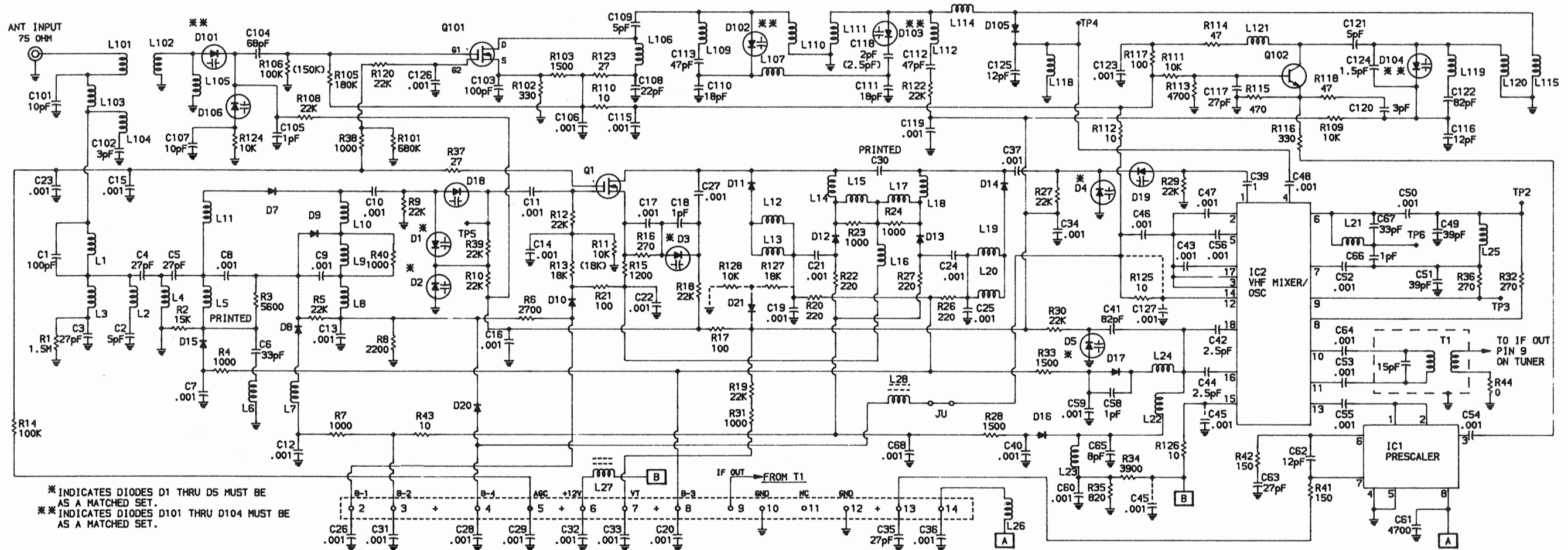
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A PHOTOFACIT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE
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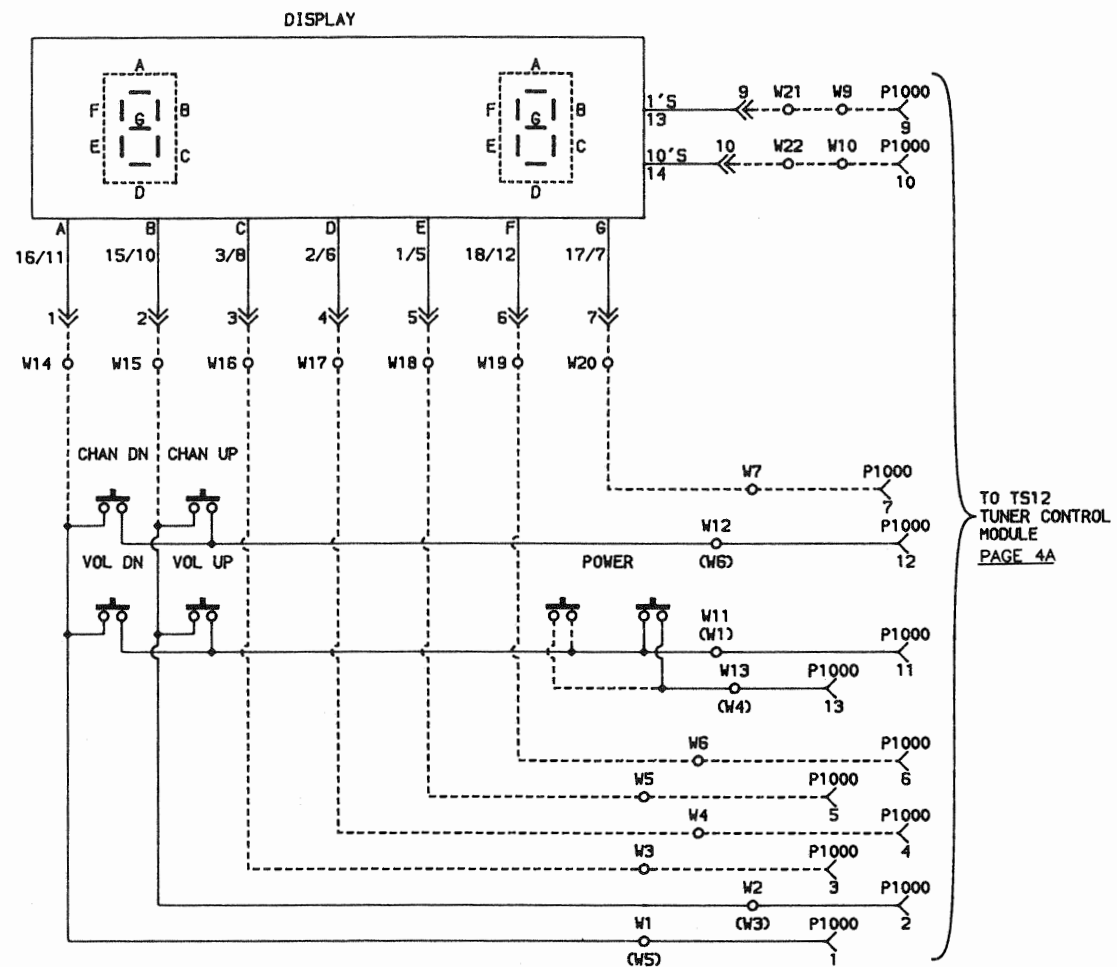
CHROMA/LUMINANCE/CRT

CHROMA/LUMINANCE/CRT

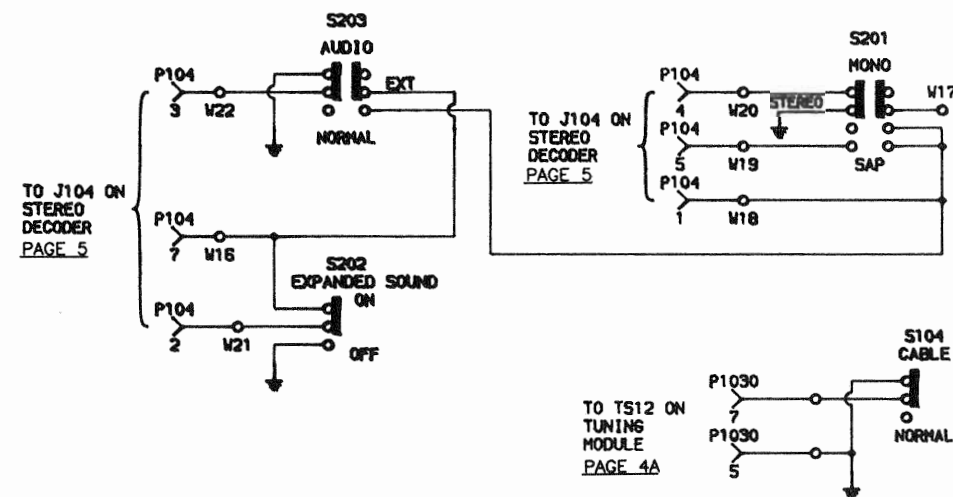
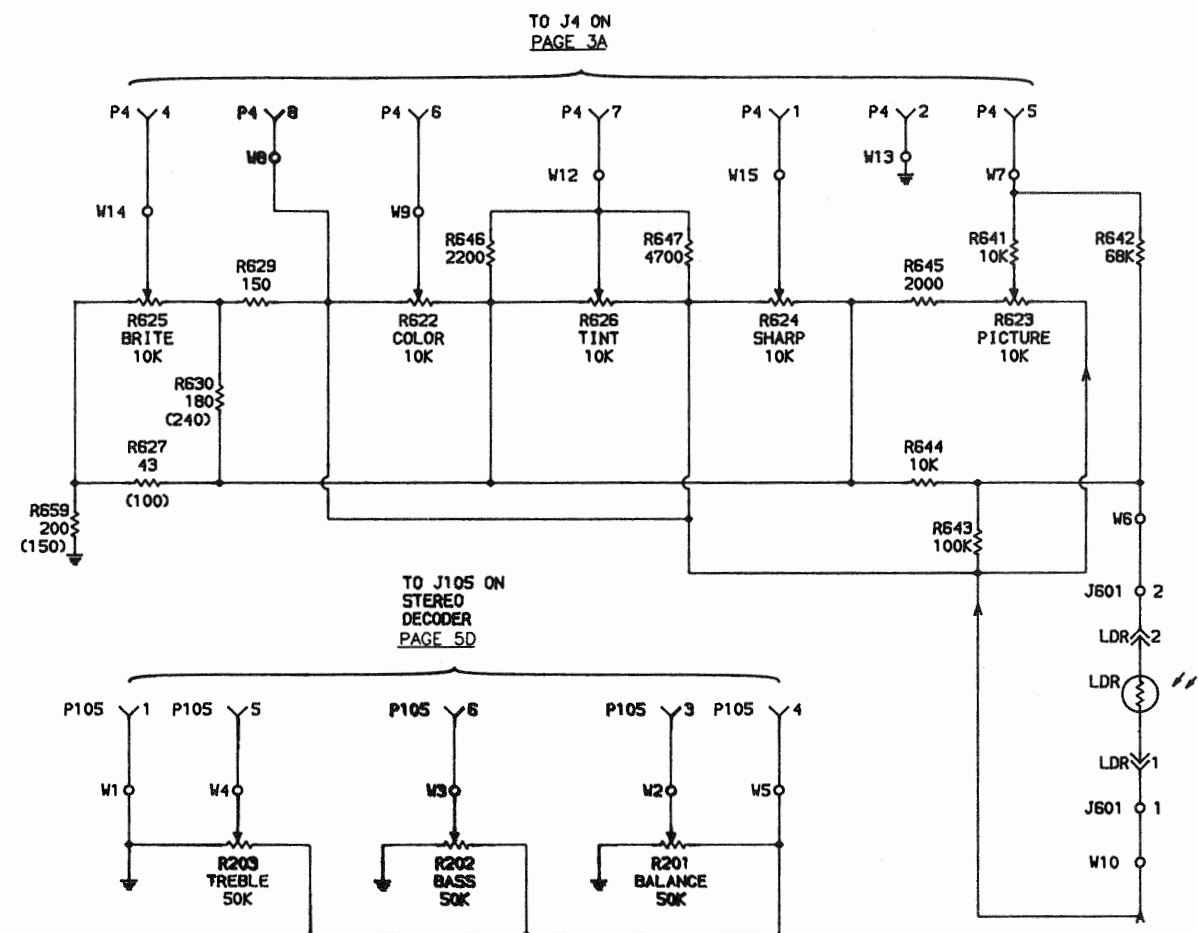


* INDICATES DIODES D1 THRU D5 MUST BE AS A MATCHED SET.
** INDICATES DIODES D101 THRU D104 MUST BE AS A MATCHED SET.

FOR TERMINAL GUIDES AND NOTES
SEE PAGE 2



CHANNEL SELECTOR SWITCHES MODULE, ASW052,53,54,58,59



FOR TERMINAL GUIDES AND NOTES
SEE PAGE 2

TO TS12
TUNER CONTROL
PAGE 4E

P1030 1 W1

P1030 3 W3

P1030 2 W2

S701 ADD

S702 DELETE

TO TS12
TUNER CONTROL
PAGE 4E

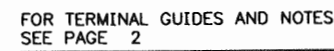
P1030 7 W7

P1030 4 W4

P1030 8 W8

S704 NORMAL

S703 PROGRAM



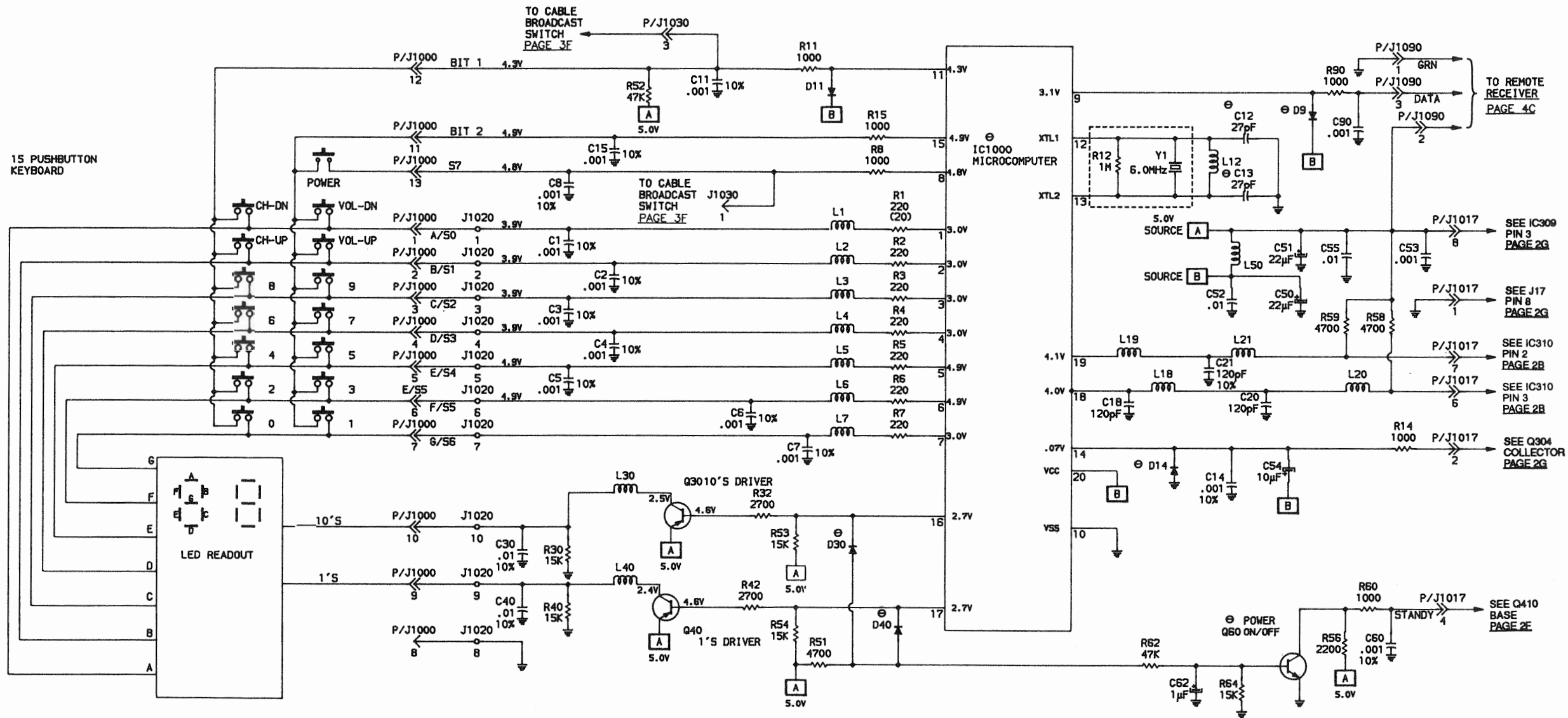
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Page 3

A

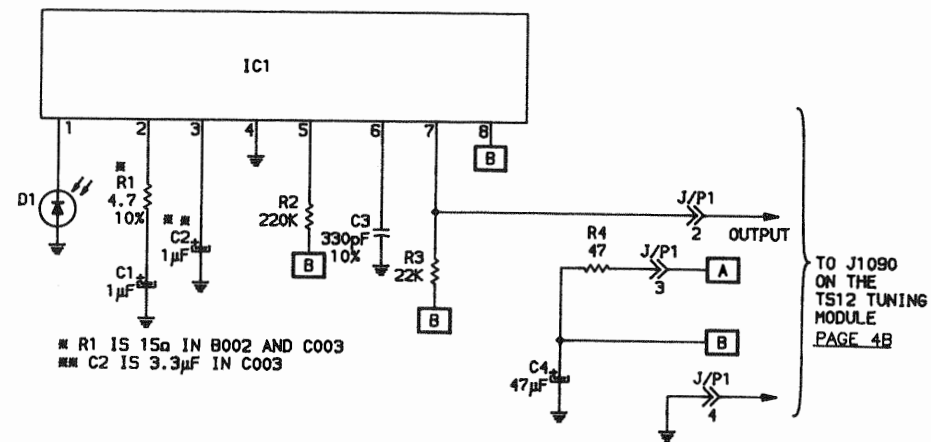
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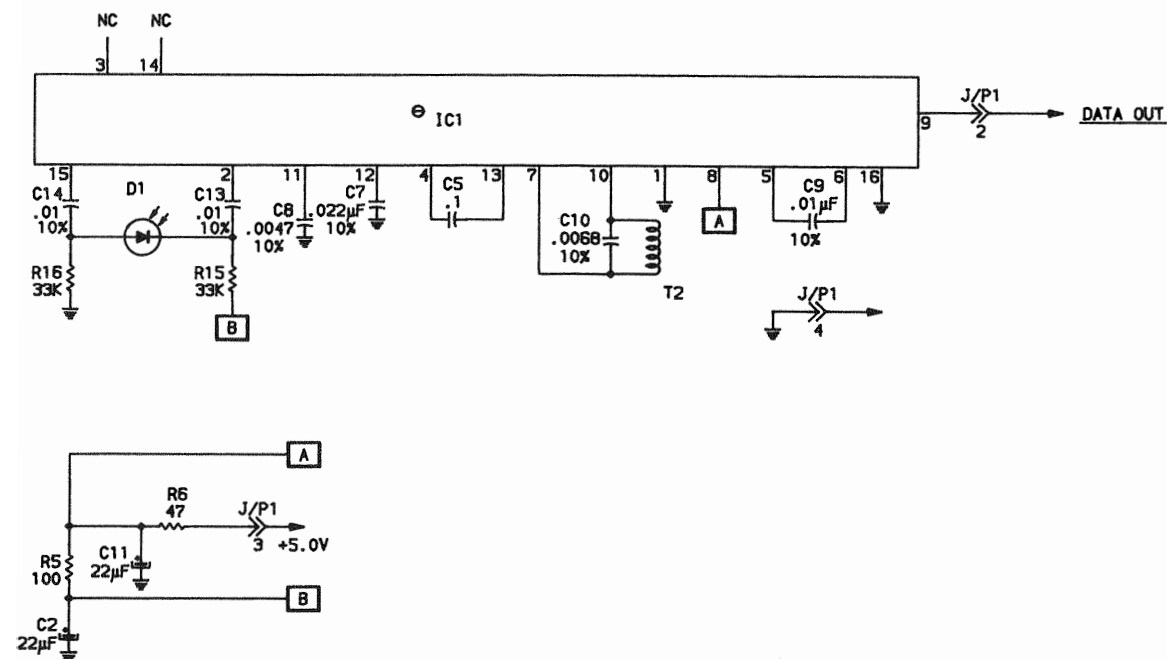
FOR TERMINAL GUIDES AND NOTES
SEE PAGE 2

C

REMOTE CONTROL RECEIVER MODULE, ARR002-A001



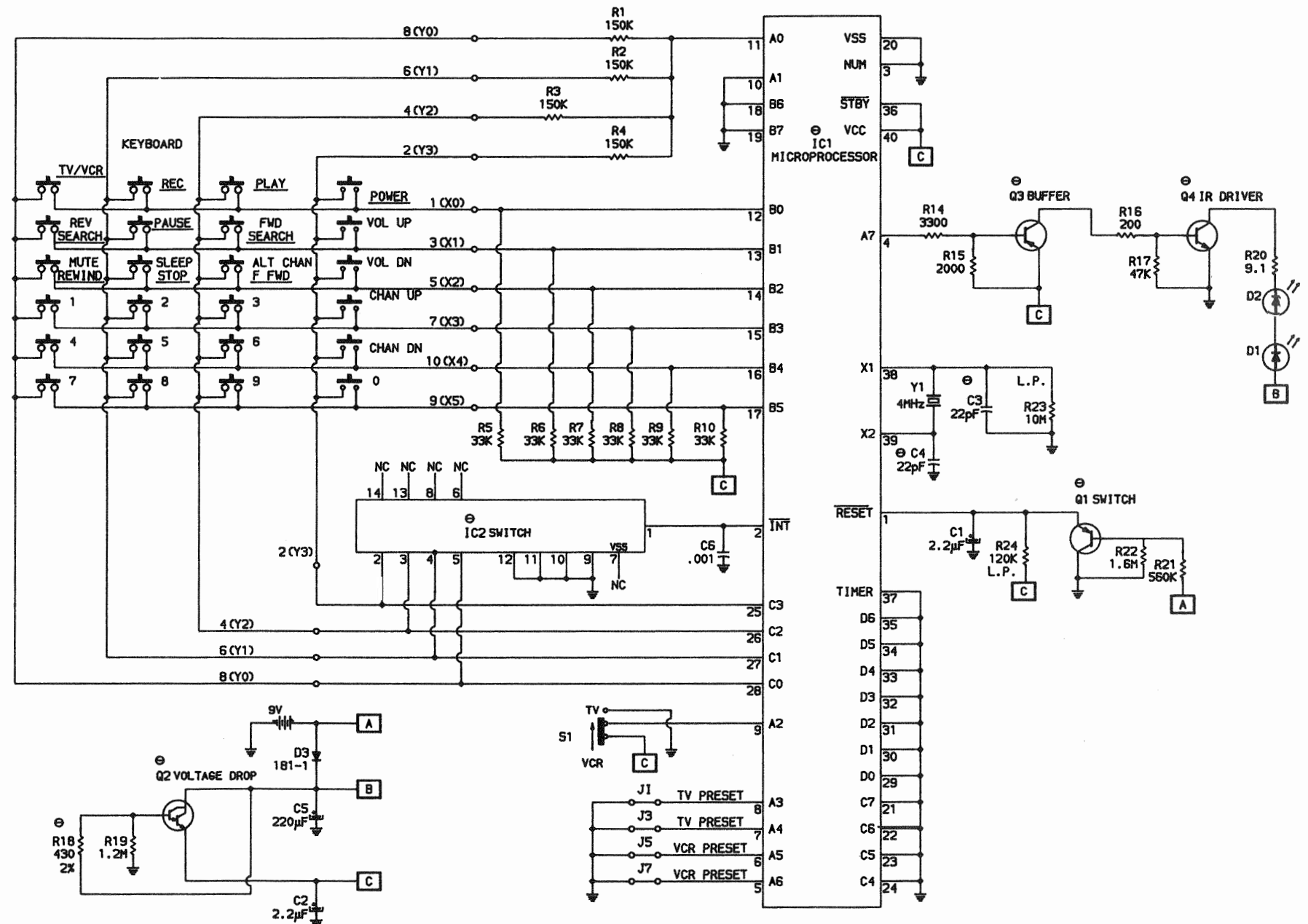
REMOTE CONTROL RECEIVER MODULE, ARR007-A001,-B002,-C003

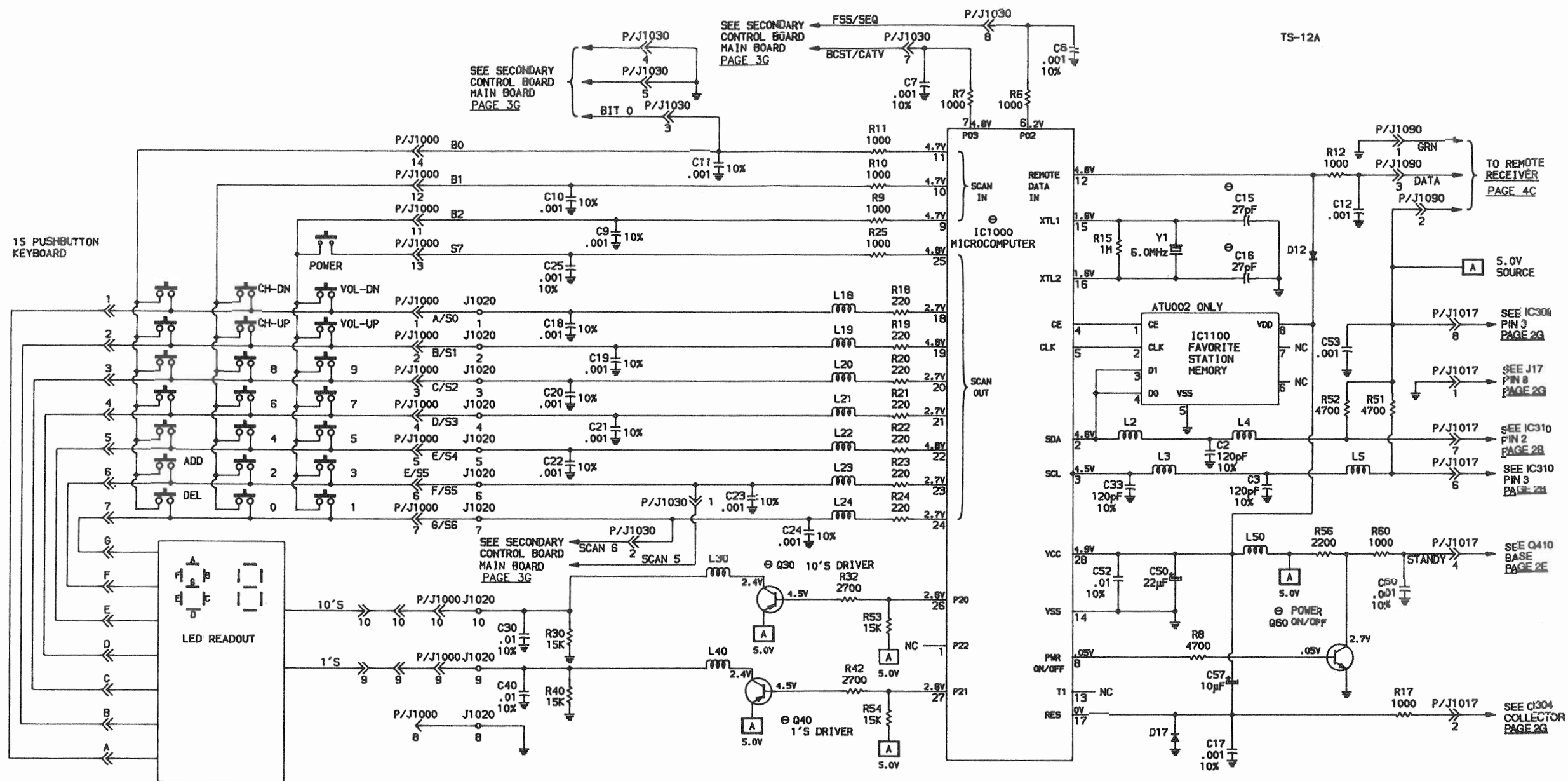


FOR TERMINAL GUIDES AND NOTES
SEE PAGE 2

REMOTE CONTROL RECEIVER MODULE

D





FOR TERMINAL GUIDES AND NOTES
SEE PAGE 2

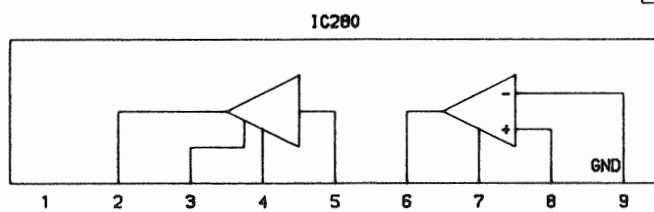
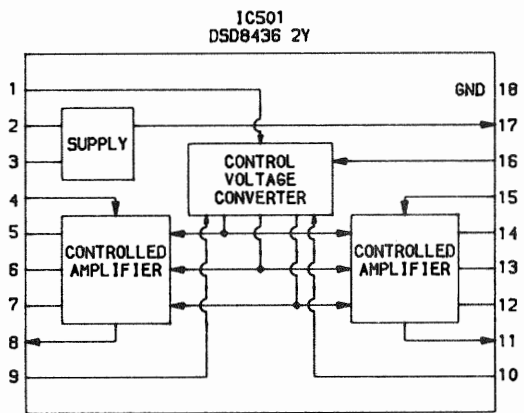
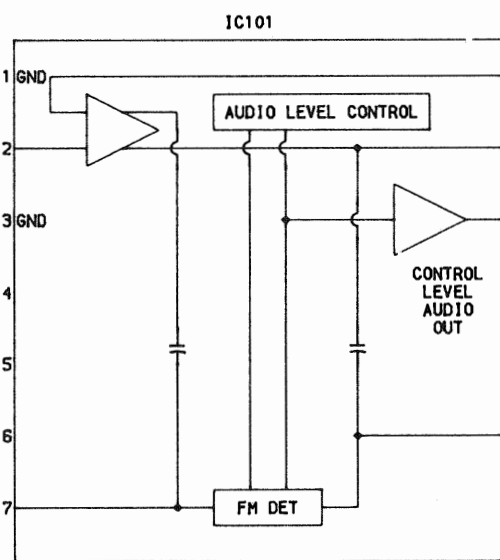
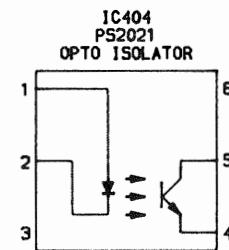
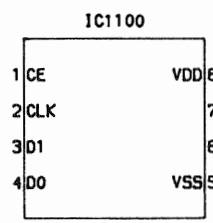
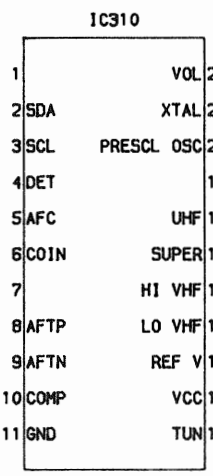
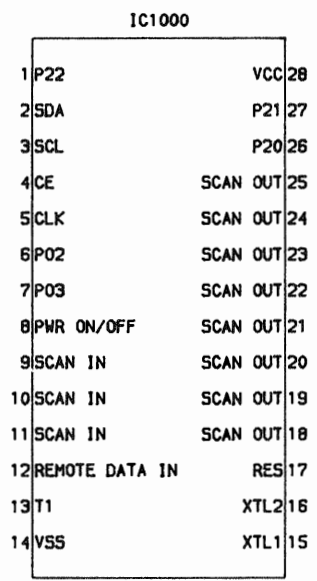
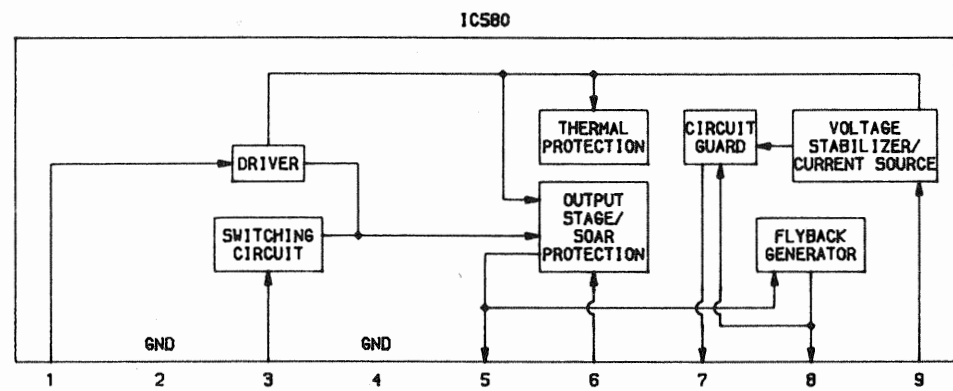
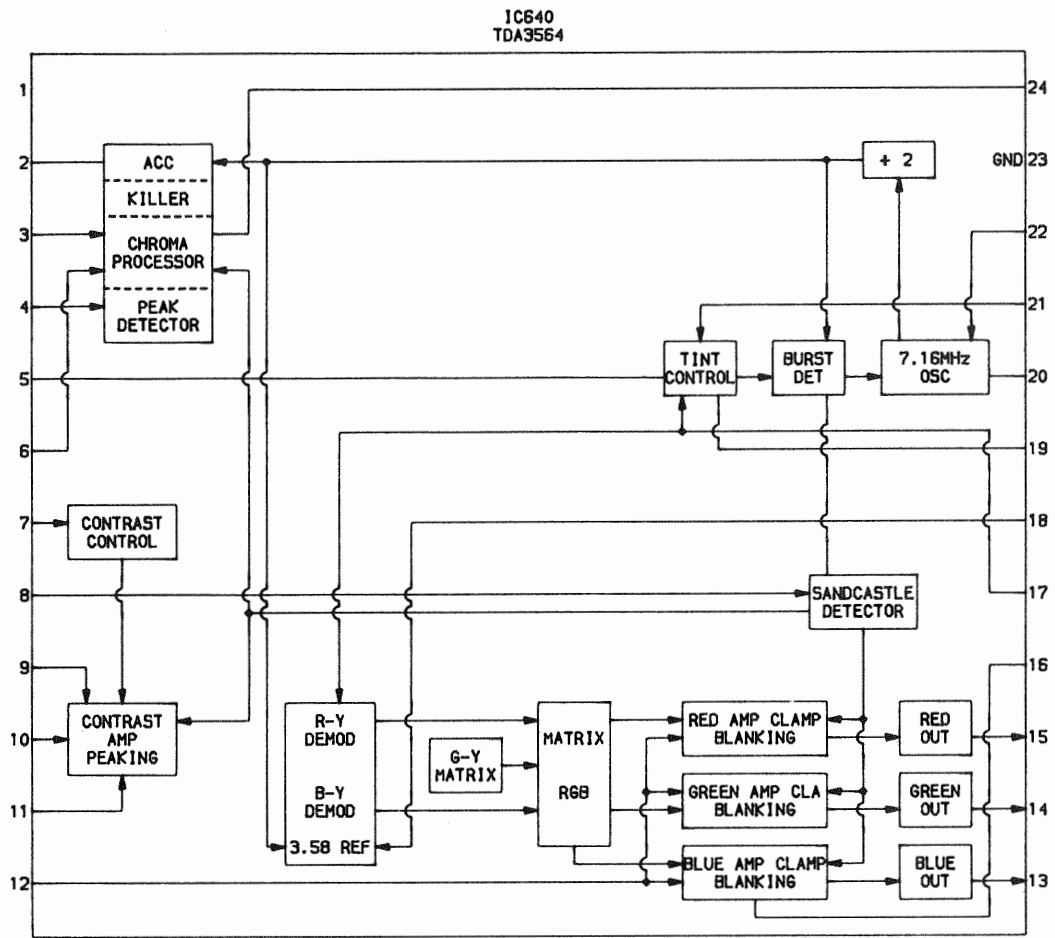
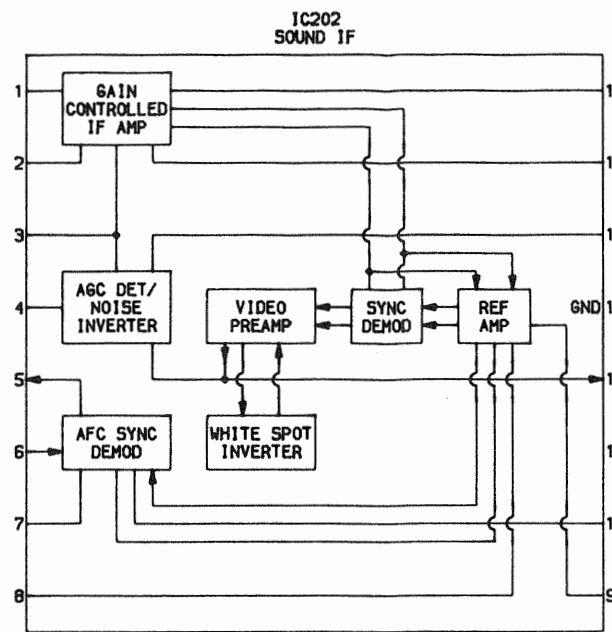
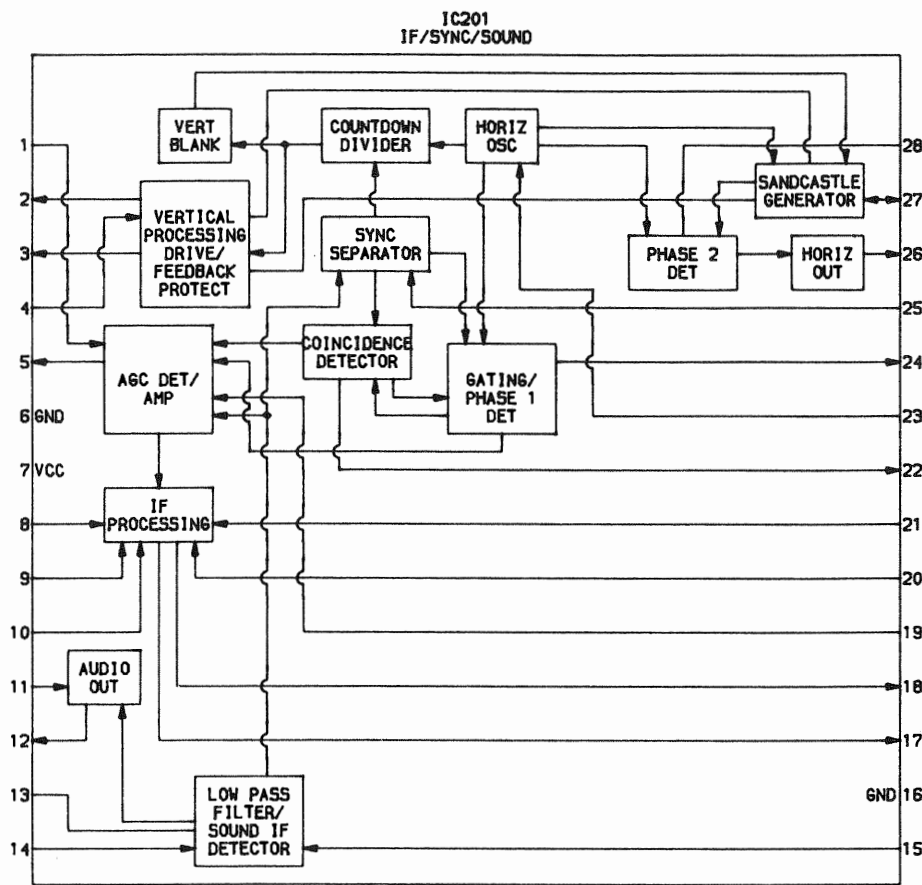
A PHOTOFACIT STANDARD NOTATION SCHEMATIC
WITH **CIRCUITRACE**

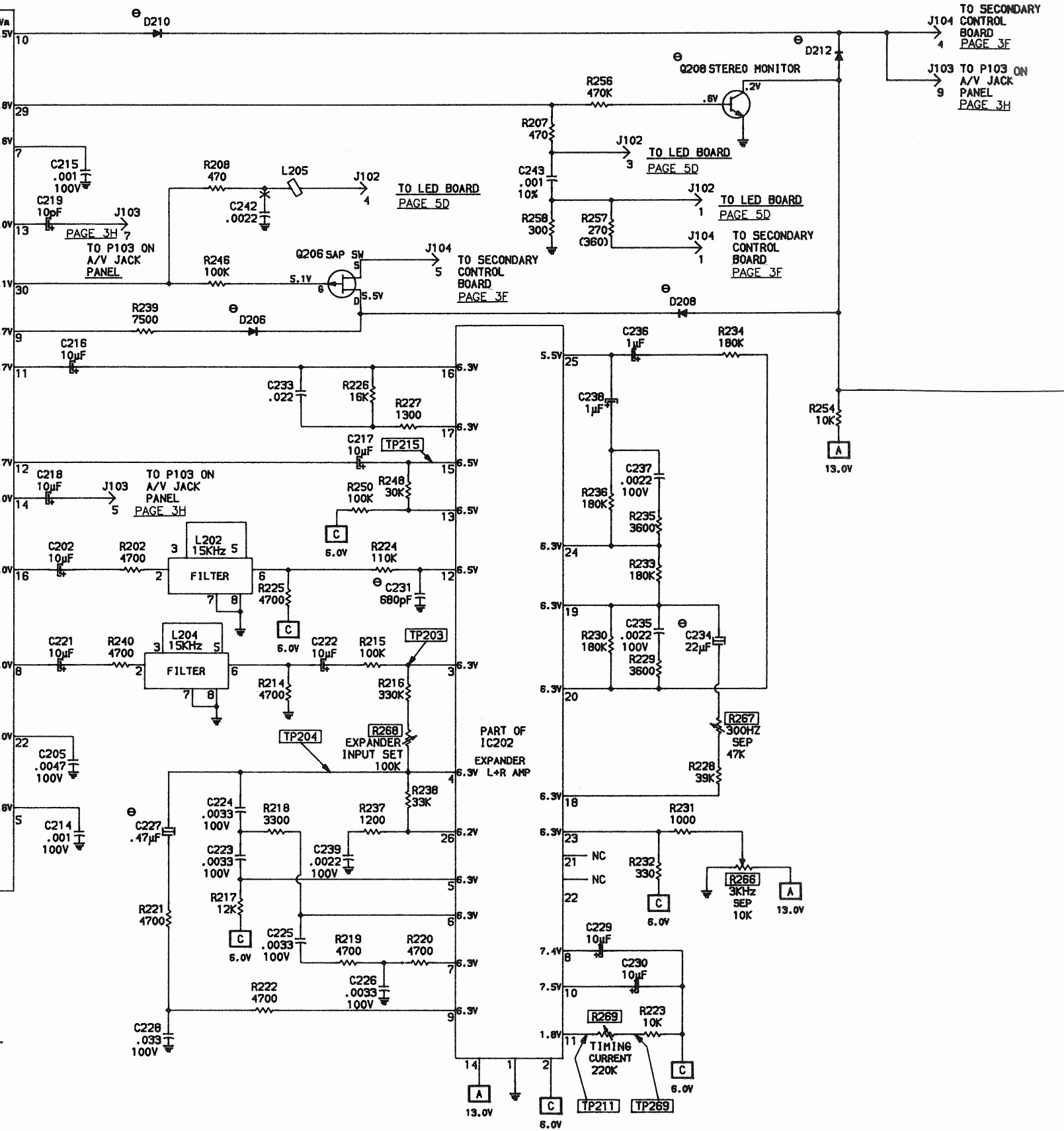
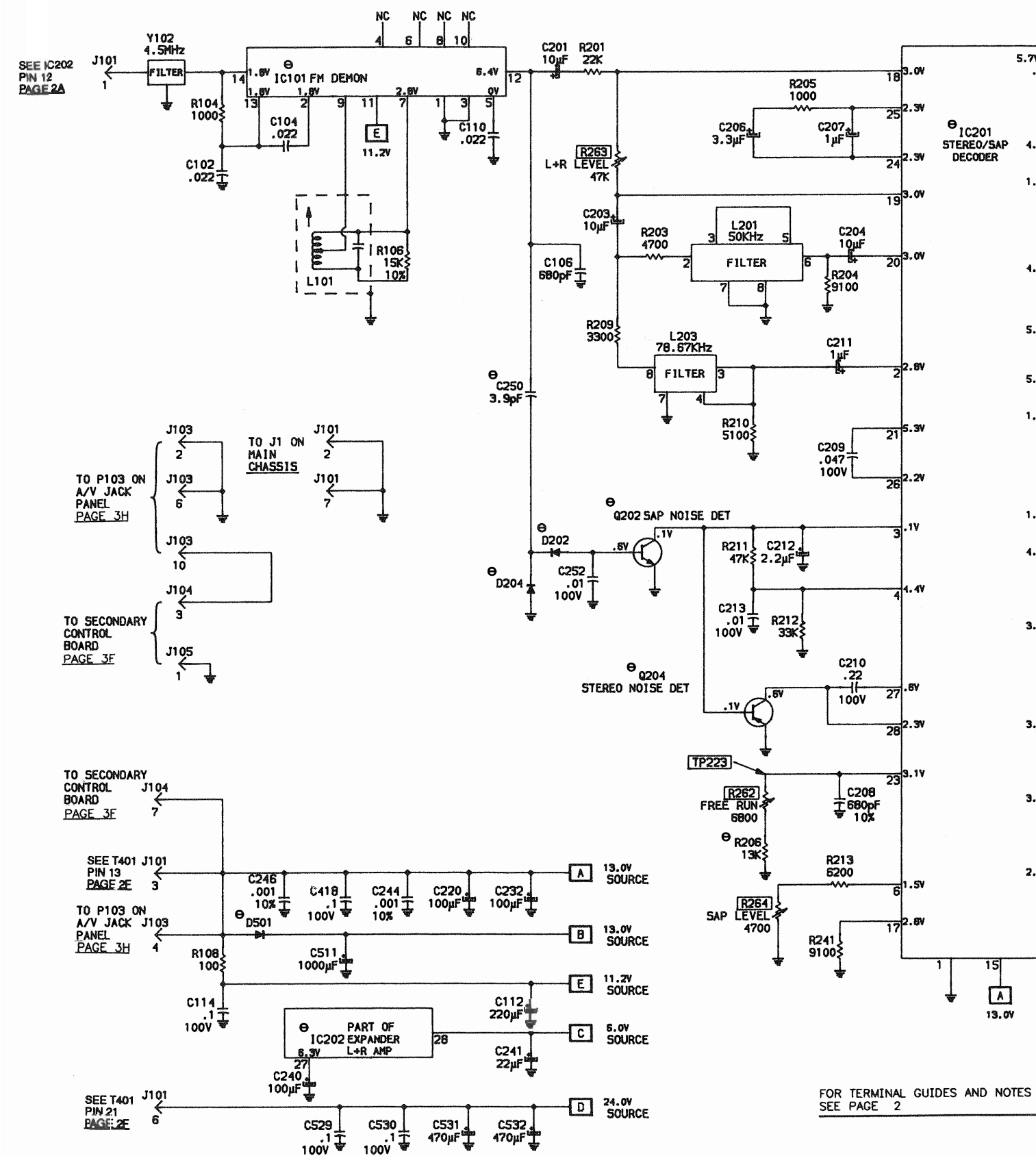
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TUNER CONTROL, ATU001-B002, ATU002-A001 (TS-12A)

E

F

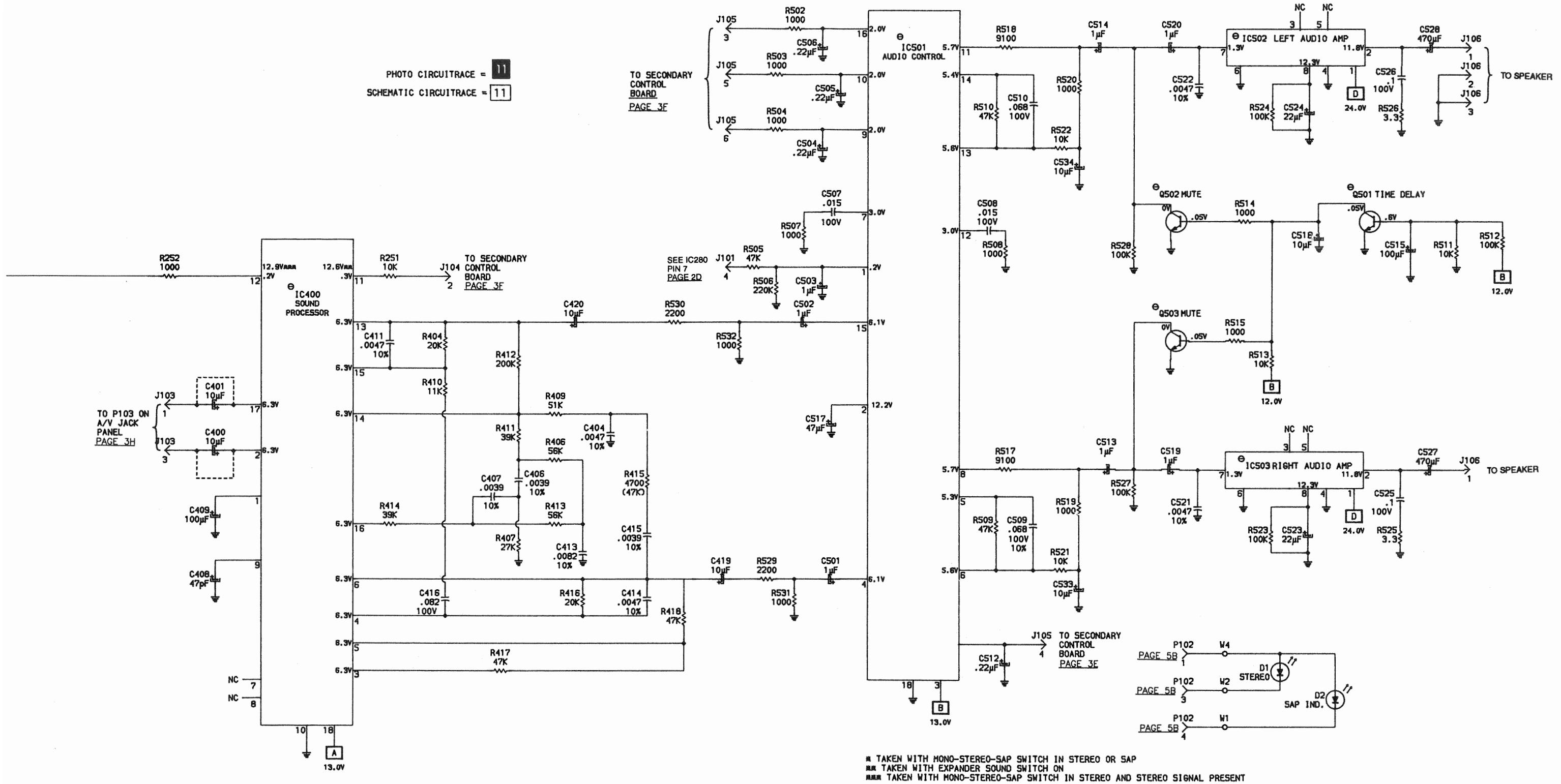




C

D

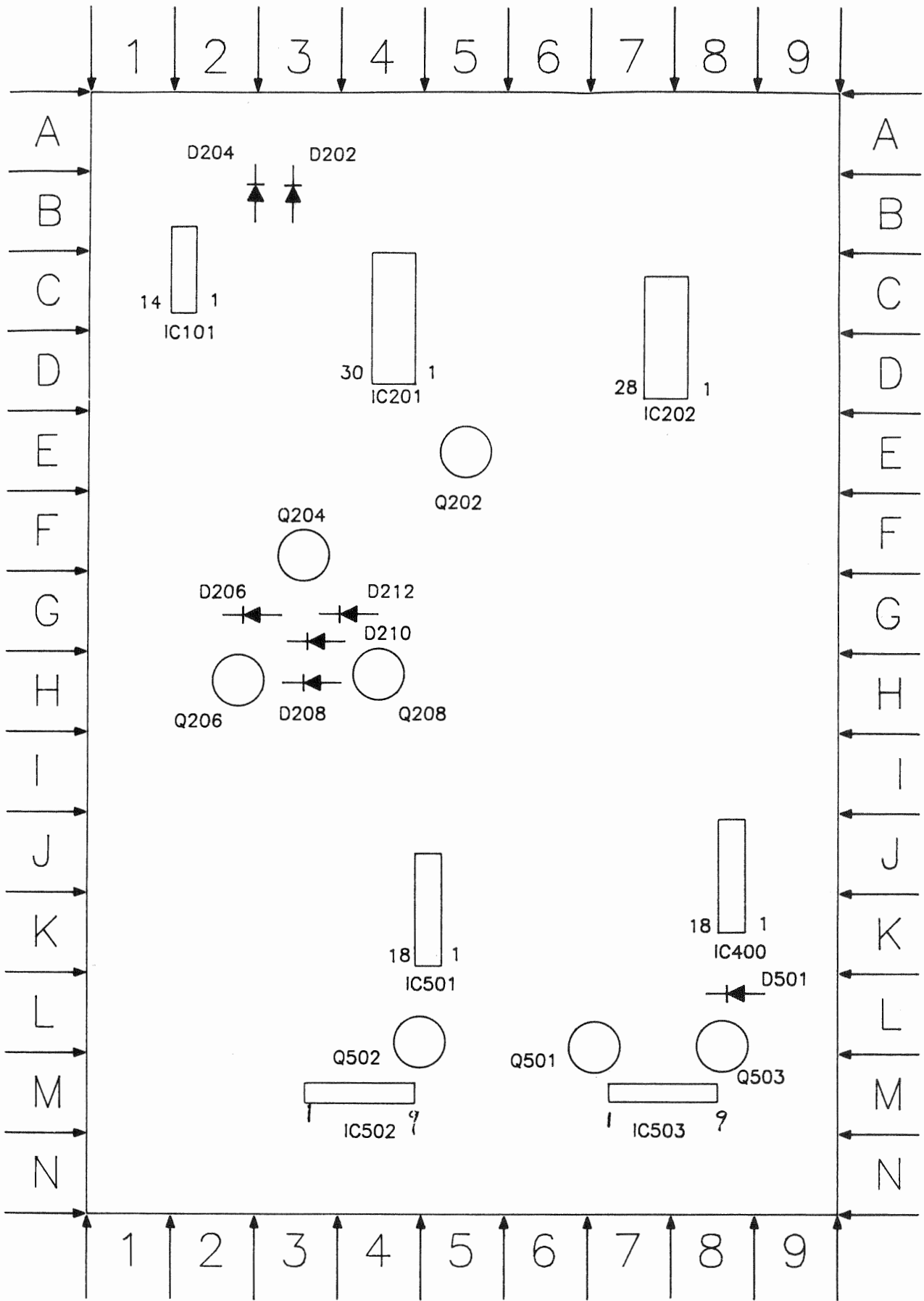
PHOTO CIRCUITTRACE = 11
SCHEMATIC CIRCUITTRACE = 11



■ TAKEN WITH MONO-STEREO-SAP SWITCH IN STEREO OR SAP
■ TAKEN WITH EXPANDER SOUND SWITCH ON
■ TAKEN WITH MONO-STEREO-SAP SWITCH IN STEREO AND STEREO SIGNAL PRESENT

STEREO DECODER PANEL ASD002-B002 GridTrace LOCATION GUIDE

C102	D-1	C506	L-3	R209	B-4	R514	L-7
C104	D-2	C507	J-5	R210	F-4	R515	L-8
C106	B-1	C508	J-3	R211	D-5	R517	K-6
C110	C-2	C509	K-6	R212	D-6	R518	J-3
C112	E-1	C510	K-4	R213	D-6	R519	L-5
C114	B-2	C511	K-4	R214	E-8	R520	J-3
C201	A-3	C512	L-3	R215	E-8	R521	K-5
C202	B-4	C513	L-6	R216	E-8	R522	J-3
C203	B-4	C514	K-2	R217	F-8	R523	M-8
C204	C-4	C515	L-6	R218	E-9	R524	N-5
C205	D-3	C516	L-6	R219	D-9	R525	N-6
C206	E-3	C517	L-4	R220	D-9	R526	N-2
C207	E-3	C519	L-9	R221	F-9	R527	L-8
C208	E-3	C520	M-4	R222	E-9	R528	M-3
C209	F-3	C521	L-9	R223	A-8	R529	J-6
C210	F-3	C522	M-4	R224	A-7	R530	J-6
C211	D-4	C523	N-8	R225	A-7	R531	J-6
C212	D-5	C524	N-6	R226	A-7	R532	J-6
C213	D-5	C525	N-7	R227	A-7	Y102	
C214	C-5	C526	N-3	R228	E-6		
C215	C-6	C527	N-6	R229	G-5		
C216	C-5	C528	N-3	R230	G-5		
C217	C-6	C529	M-9	R231	F-7		
C218	B-6	C530	N-5	R232	F-6		
C219	B-6	C531	N-8	R233	H-5		
C220	B-5	C532	N-4	R234	G-5		
C221	G-5	C533	L-5	R235	H-5		
C222	F-8	C534	K-3	R236	H-5		
C223	F-9	D202	B-3	R237	F-7		
C224	F-9	D204	B-3	R238	G-8		
C225	C-9	D206	G-2	R239	G-4		
C226	G-9	D208	H-3	R240	F-8		
C227	G-9	D210	G-3	R241	A-4		
C228	H-9	D212	G-3	R246	H-2		
C229	C-9	D501	L-8	R248	B-7		
C230	B-9	IC101	C-2	R250	A-8		
C231	A-8	IC201	D-4	R251	I-8		
C232	B-8	IC202	D-8	R252	I-8		
C233	A-6	IC400	K-9	R254	H-3		
C234	F-6	IC501	L-5	R256	H-3		
C235	G-6	IC502	M-3	R257	I-1		
C236	G-6	IC503	M-7	R258	H-1		
C237	H-6	J101	D-2	R262	E-3		
C238	H-6	J102	H-2	R263	A-4		
C239	G-7	J103	I-5	R264	D-6		
C240	F-7	J104	J-2	R266	H-7		
C241	F-7	J105	L-2	R267	F-6		
C242	F-2	J106	N-2	R268	D-8		
C243	G-2	L101	A-2	R269	B-8		
C244	B-5	L201	D-3	R404	J-8		
C246	C-8	L202	A-5	R406	K-7		
C250	B-2	L203	E-4	R407	L-7		
C252	C-3	L204	E-7	R409	J-8		
C400	J-9	L205	G-2	R410	I-7		
C401	H-8	Q202	E-5	R411	K-7		
C404	J-7	Q204	F-3	R412	J-8		
C406	K-7	Q206	H-3	R413	K-7		
C407	K-7	Q208	H-4	R414	K-7		
C408	I-8	Q501	M-7	R415	K-7		
C409	K-9	Q502	M-5	R416	I-9		
C411	I-7	Q503	L-8	R417	I-9		
C413	K-7	R104	C-1	R418	I-9		
C414	I-8	R106	B-2	R502	K-3		
C415	I-8	R108	F-2	R503	J-2		
C416	I-7	R114	B-2	R504	J-4		
C418	L-8	R201	A-3	R505	K-2		
C419	I-7	R202	A-4	R506	K-2		
C420	J-6	R203	C-3	R507	J-5		
C501	J-6	R204	C-3	R508	L-2		
C502	J-5	R205	E-4	R509	K-6		
C503	L-2	R206	E-2	R510	K-4		
C504	J-5	R207	G-2	R511	L-8		
C505	J-4	R208	F-4	R513	L-7		



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STEREO DECODER, ASD002-B002
SET 2629 FOLDER 1

MISCELLANEOUS ADJUSTMENTS

RF AGC ADJUSTMENT

Tune in a station and allow a 15-minute warm-up time. Adjust RF AGC Control (R237) clockwise until snow (noise appears in picture and then counterclockwise until snow just disappears.

130V B+ ADJUSTMENT

Allow a 15-minute warm-up time and maintain line voltage at 120V AC. Connect a digital voltmeter to TP4, low side to chassis ground. Set Volume, Brightness and Picture Controls to MINIMUM. Adjust 130V Adjust Control (R452) for 130V ± 1.0V DC reading on meter.

HORIZONTAL FREQUENCY ADJUSTMENT

Tune in a station and allow a 15-minute warm-up time. Place a short from TP6 to chassis ground. Adjust Horizontal Frequency Control (R233) until picture stops or slowly floats across screen. Remove short from TP6 and check all active channels for proper horizontal lock-in.

HORIZONTAL CENTERING ADJUSTMENT

Tune in a station and allow a 15-minute warm-up time. Adjust Horizontal Centering Control (R247) to position the picture horizontally for best viewing.

BLACK AND WHITE TRACKING

Tune in a station and allow a 15-minute warm-up time. Set Screen Control fully counterclockwise. Set Brightness, Picture and Color Controls to MINIMUM. Adjust Red (R28), Green (R33) and Blue (R45) Drive Controls fully clockwise. Set Red (R29, Green (R41) and Blue (R48) Cut Off Controls to their mechanical center. Place a jumper from TP13 to ground. Advance Screen Control to produce a dim line of one color. Adjust Cut Off Controls of two remaining colors to produce a dim white line. Disconnect the jumper from TP13 and ground. Tune in a station and set Brightness and Picture Controls for sufficient brightness to produce a normal picture. Adjust Red (R28), Green (R33) and Blue (R45) Drive Controls to produce a normal black and white picture. Turn Brightness and Picture Controls to Maximum and check for blooming and/or retrace and adjust Screen Control slightly counterclockwise to eliminate problem.

COMB FILTER ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Connect oscilloscope to TP615 (Pin 15 of IC640), low side to ground. Adjust Chroma Amp Null Control (R601) and Chroma Phase Null Coil (L600) for MINIMUM Chroma Component in waveform.

COLOR OSCILLATOR ADJUSTMENT

Tune in a color bar signal, adjust Color Oscillator Control (C625) until color just locks in. Check color sync while switching from channel to channel.

PURITY ADJUSTMENT

Allow a 15-minute warm-up time. Set Red Cut Off Control (R29) fully clockwise. Set Blue (R48) and Green (R41) Cut Off Controls fully counterclockwise. Loosen deflection yoke and remove rubber wedges. Move yoke assembly forward against the CRT bell. Adjust purity magnets to center the vertical red band on the CRT. Pull deflection yoke back to produce a uniform red screen. Use Cut Off Controls to produce blue and green fields to check purity of blue and green. Tighten deflection yoke, replace rubber wedges and perform Black and White Tracking.

CONVERGENCE ADJUSTMENT

Tune in a crosshatch pattern and allow a 15-minute warm-up time. Spread and rotate the tabs of the 4-pole magnets to converge the red and blue lines at the center of the screen. Spread and rotate the 6-pole magnets to converge the red/blue with the green lines at the center of the screen. Remove wedges between CRT and deflection yoke. Tilt the deflection yoke vertically and horizontally to converge the edges of the screen. Replace rubber wedges.

VERTICAL CENTERING

Tune in a picture, set Vert Centering Switch S580 for proper vertical centering of picture.

STEREO ADJUSTMENTS

Note: Adjustments were made using B&K Model 2009 MTS TV/Stereo generator. Allow 15 minute warm-up time before performing adjustments.

L&R ADJUSTMENTS ADJUSTMENT

Connect Generator to antenna terminal. Select 1kHz Audio frequency, Pilot switch On, L&R Modulating Signal. Connect scope to TP215 (pin 15 of IC202) and ground. Adjust L&R Level Control (R263) for 250mv p-p amplitude of waveform.

VCO ADJUSTMENT

Connect Generator to antenna terminal. Select 1kHz Audio frequency, Pilot switch On, L&R Modulating Signal. Connect Counter to TP223 (pin 23 of IC201), low side to ground. Select Stereo mode on receiver. Adjust VCO (Free Run) Control (R262) for 62.936kHz±.01kHz. Check to see that stereo indicator is on.

SEPARATION ADJUST

Connect Generator to antenna terminal. Select 300Hz Audio frequency, Pilot switch On, L Modulating Signal. Select Stereo mode on receiver. Connect scope to right speaker terminals. NOTE: Do not short speaker terminals together. Adjust 300Hz Separation Control (R267) for MINIMUM amplitude of waveform. Select 8kHz Audio Frequency on generator. Adjust 3kHz Separation Control (R266) for MINIMUM amplitude of waveform.

SAP LEVEL ADJUSTMENT

Connect Generator to antenna terminal. Select 1kHz Audio frequency, SAP switch On, Modulating Signal. Select SAP mode on receiver. Connect scope to right speaker terminals.

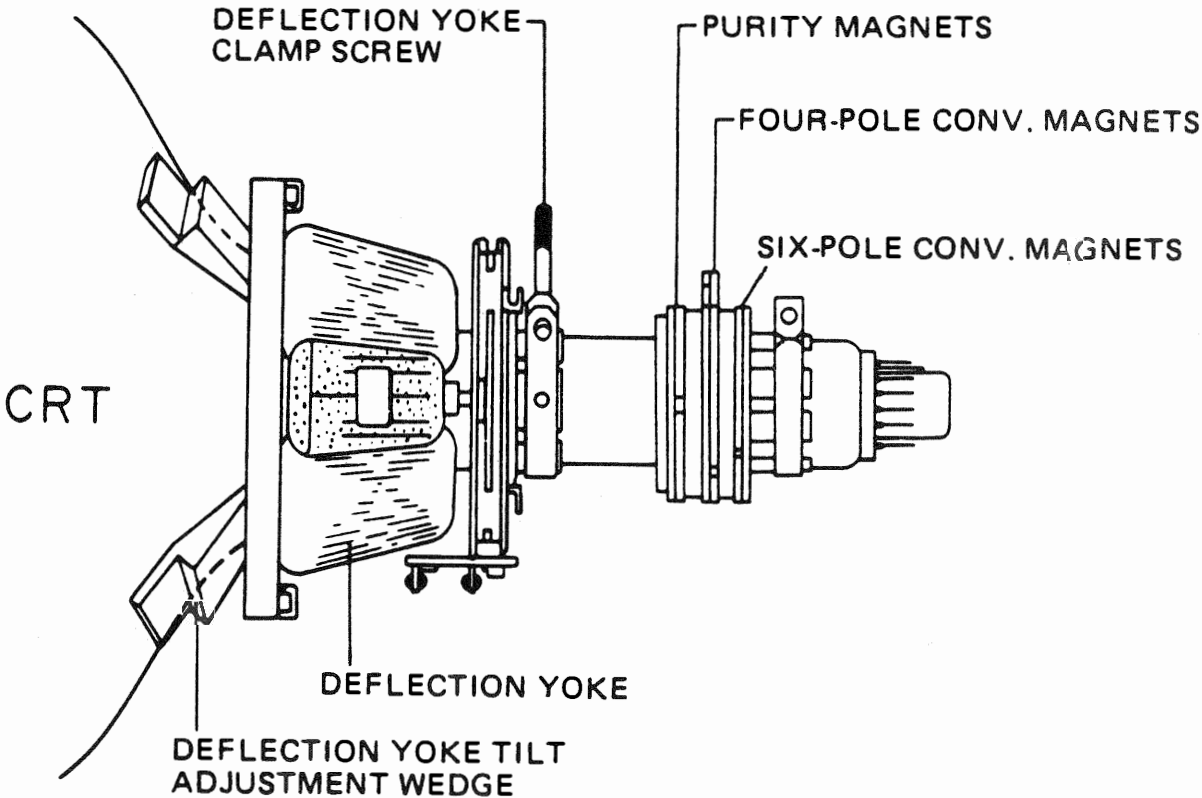
Note: Do not short speaker terminals together. Adjust SAP Level Control (R264) for 4.8V p-p amplitude of waveform.

TIMING ADJUSTMENT

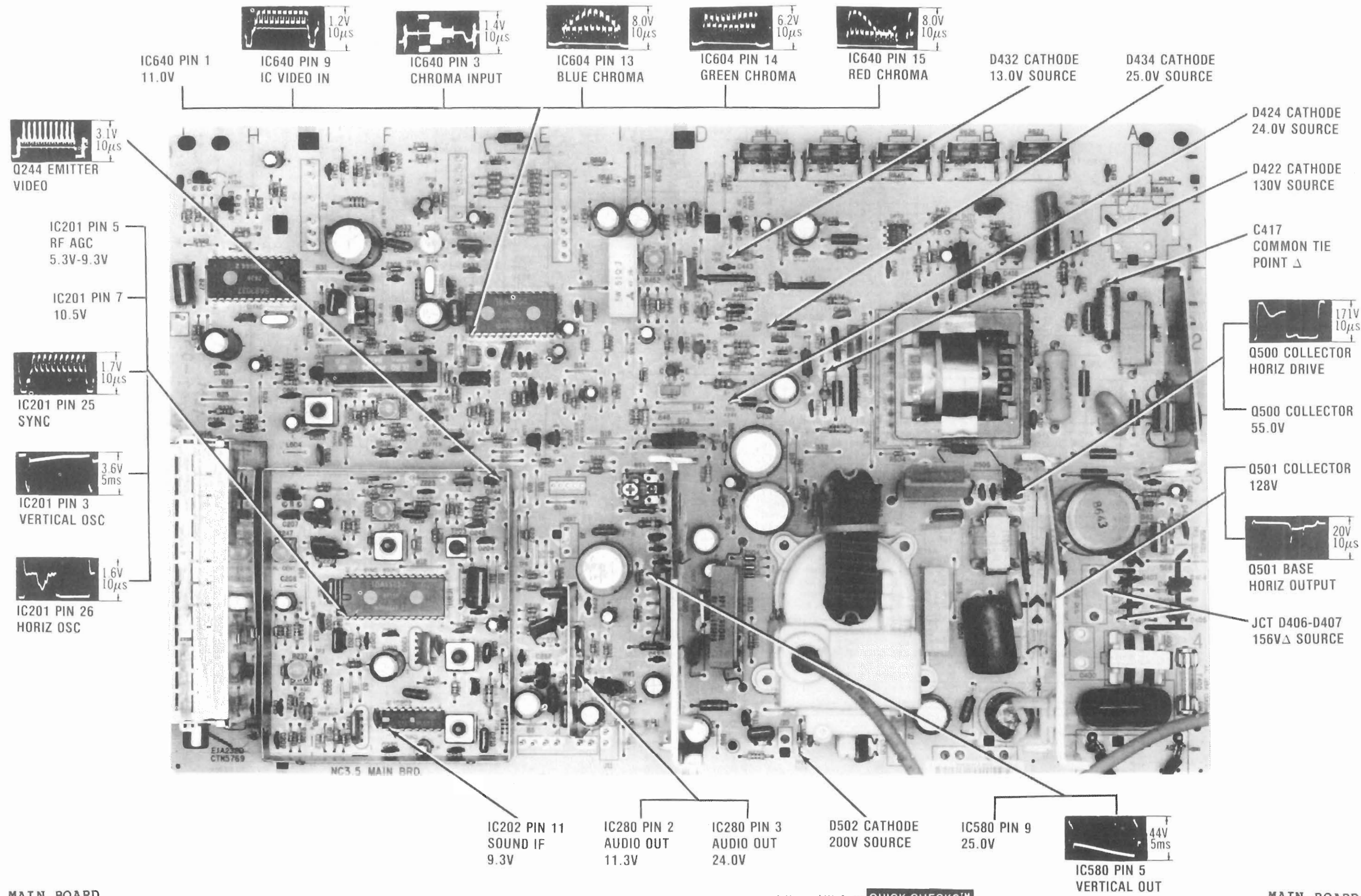
Connect Generator to antenna terminals. Select 1kHz Audio frequency, Pilot switch On, L&R Modulating Signal. Select Stereo mode on receiver. Connect DC Digital Voltmeter to TP211 (pin 11 of IC202) and TP269 (junction of R223 and (R269)). Adjust Timing Control (R269) for 1.94VDC.

EXPANDER INPUT ADJUSTMENT

Connect Generator to antenna terminal. Select 1kHz Audio frequency, Pilot switch On, L&R Modulating Signal. Select Stereo mode on receiver. Connect DC Digital Voltmeter to TP203 (Pin 3 of IC202) and TP204 (Pin 4 of IC202). Adjust Expander Input Control, (R268) for 36mV ± .5mV.

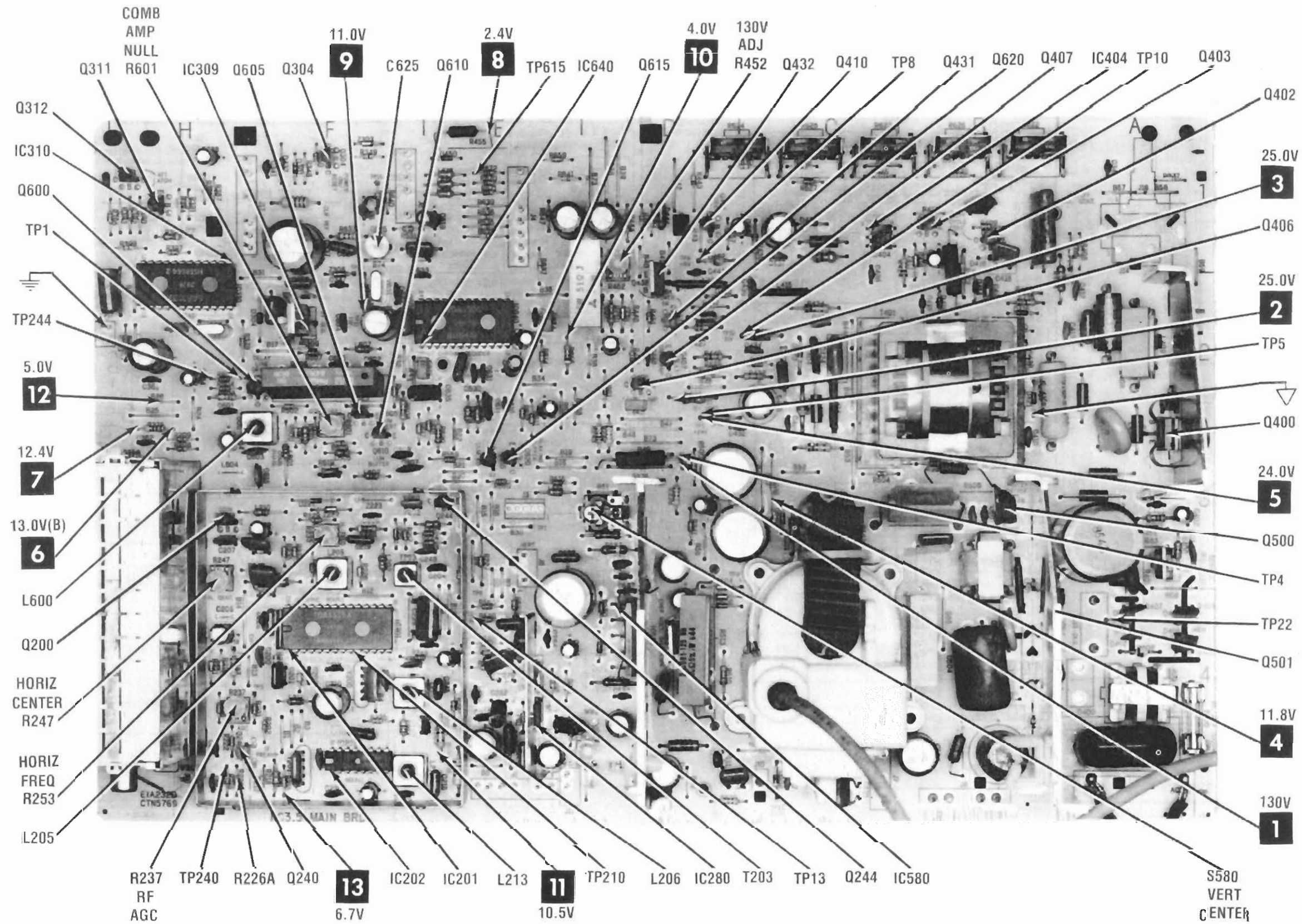


CRT NECK ASSEMBLY



MAIN BOARD

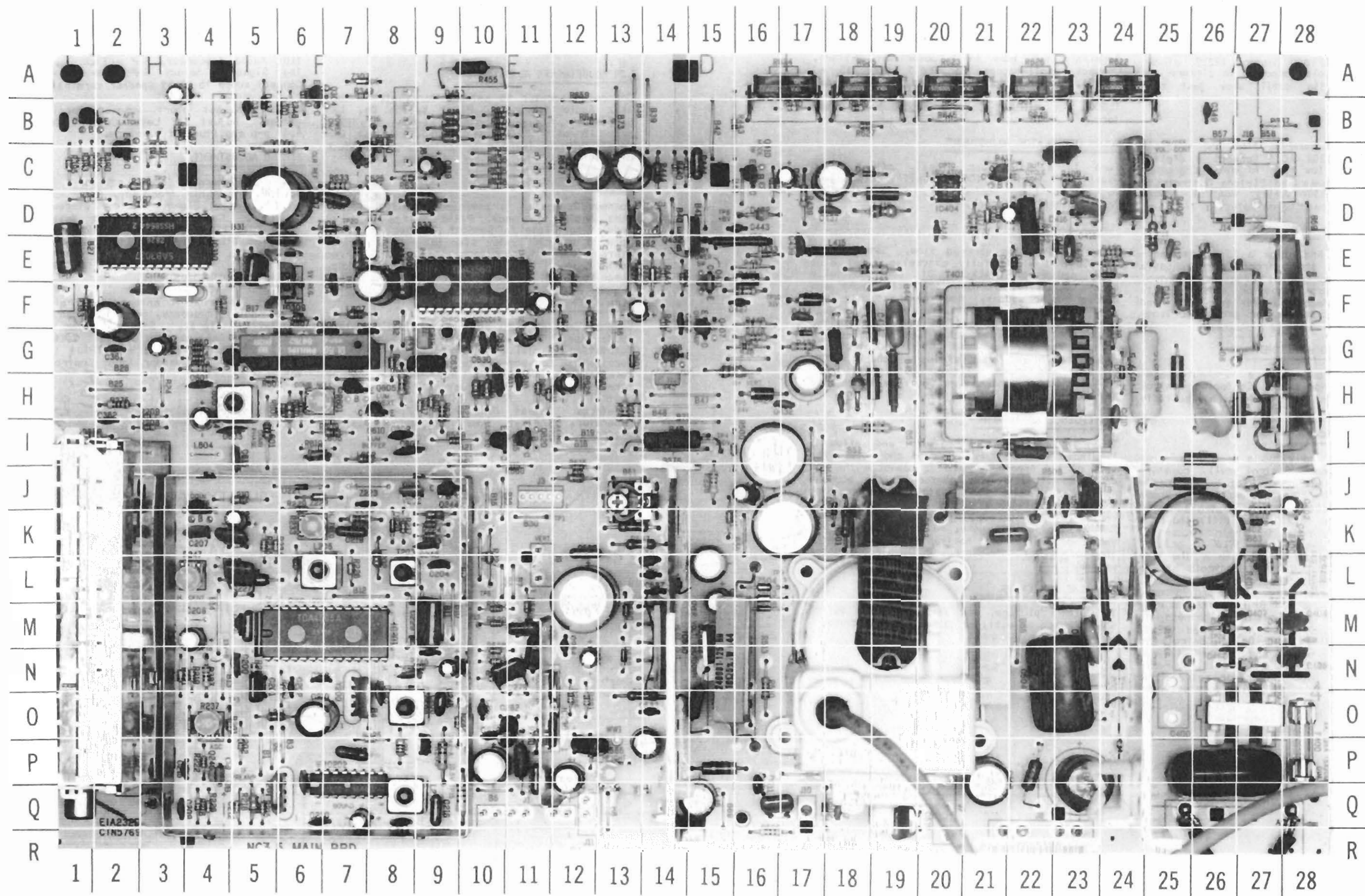
MAIN BOARD



NOTE: ARROWS ON IC'S INDICATE PIN 1 UNLESS NOTED

MAIN BOARD

MAIN BOARD



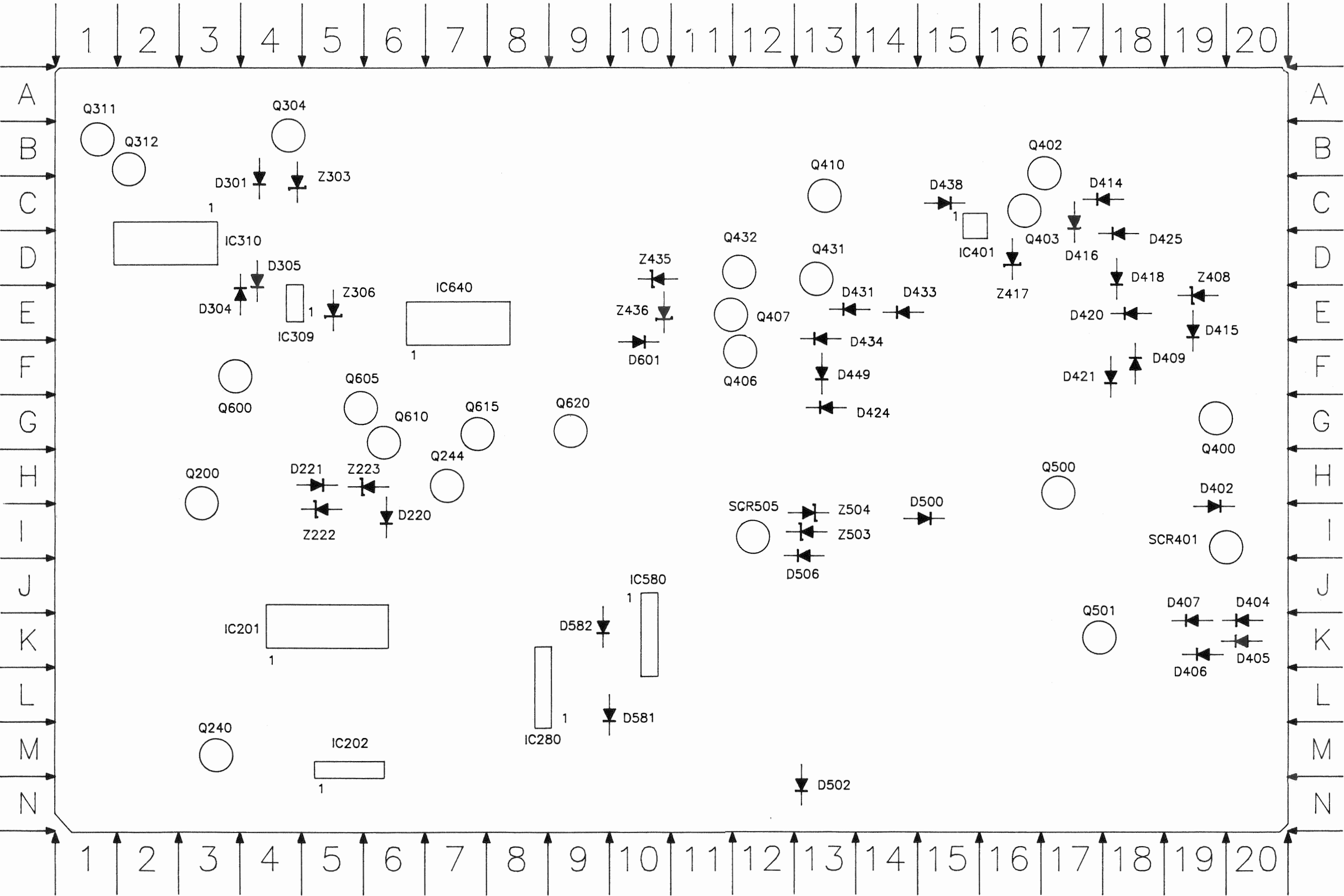
MAIN BOARD

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MAIN BOARD

MAIN BOARD (G008 & H009) - GridTrace LOCATION GUIDE

C200	N-5	C410	H-24	C614	H-4	L201	Q-5	R219	N-4	R423	E-24	R623	A-20
C201	N-5	C411	K-28	C615	I-5	L202	L-8	R221	N-3	R424	D-21	R624	A-17
C202	N-6	C412	E-25	C618	G-9	L204	K-9	R222	P-4	R425	G-18	R625	A-18
C204	L-9	C413	F-25	C619	C-9	L205	L-6	R223	K-9	R430	G-24	R626	A-22
C205	N-8	C414	H-27	C620	D-9	L206	O-8	R224	K-9	R432	G-17	R627	B-18
C206	J-7	C415	E-21	C621	F-8	L210	J-5	R225	P-8	R433	I-19	R629	B-18
C207	K-4	C416	F-26	C624	E-8	L211	O-5	R226	L-7	R434	E-19	R630	B-17
C209	Q-3	C417	F-26	C625	D-8	L213	Q-8	R226A	Q-4	R437	E-16	R631	C-8
C210	O-6	C418	D-23	C626	Q-7	L214	P-8	R227	L-10	R438	F-16	R632	B-8
C211	P-6	C419	C-23	C627	D-7	L400	O-27	R228	K-7	R439	D-17	R633	C-7
C213	P-7	C420	E-23	C628	G-10	L402	F-27	R229	J-6	R440	C-14	R635	C-10
C214	Q-7	C421	D-22	C631	G-10	L403	F-15	R231	Q-10	R441	C-14	R636	C-10
C215	P-3	C422	C-24	C632	E-12	L404	G-19	R232	L-6	R443	B-16	R637	D-12
C216	Q-9	C423	F-19	C633	D-9	L405	G-25	R233	K-6	R444	C-14	R638	C-10
C218	N-6	C424	F-19	C634	E-12	L406	E-16	R234	K-5	R446	E-14	R639	C-10
C219	K-7	C425	H-18	C635	G-9	L407	G-24	R235	K-5	R447	F-14	R640	B-8
C220	M-5	C426	D-20	C640	G-10	L409	F-27	R236	O-4	R448	G-16	R641	B-12
C221	L-5	C427	F-16	C642	G-11	L410	H-27	R237	O-4	R449	F-16	R645	B-20
C222	K-5	C430	H-26	D220	K-8	L411	I-26	R239	J-15	R450	E-13	R646	B-22
C223	K-5	C431	I-15	D221	J-6	L412	J-25	R240	N-6	R451	E-14	R647	C-23
C224	O-8	C432	H-17	D301	B-6	L413	H-19	R241	K-15	R452	D-14	R648	E-7
C226	N-9	C433	L-15	D304	E-5	L414	H-19	R242	H-13	R453	G-16	R650	G-4
C227	L-5	C434	F-17	D305	E-5	L415	E-18	R243	H-13	R454	O-25	R655	F-12
C228	M-5	C435	H-17	D402	K-27	L416	D-19	R244	O-9	R455	A-10	R659	A-12
C229	M-9	C436	Q-15	D404	M-28	L417	D-19	R245	N-9	R456	D-13	R660	J-11
C230	Q-6	C437	D-18	D405	N-28	L418	F-22	R246	L-5	R457	C-16	R666	P-15
C232	Q-8	C438	C-18	D406	N-27	L501	L-24	R247	L-4	R500	I-16	R668	H-13
C233	P-9	C439	E-17	D407	M-26	L502	Q-20	R280	P-11	R501	K-18	R670	B-10
C245	O-9	C440	C-13	D409	G-25	L503	O-23	R281	O-12	R502	K-20	R671	B-10
C246	N-9	C442	C-12	D414	D-22	L515	J-12	R283	P-12	R503	I-22	R672	B-10
C247	M-9	C443	D-16	D415	F-26	L516	M-25	R284	P-11	R504	I-20	S580	J-13
C248	K-9	C444	C-15	D416	D-23	L600	I-5	R285	O-12	R505	J-21	SCR401	L-27
C278	O-10	C445	H-14	D418	E-24	L601	I-5	R286	N-10	R506	I-22	SCR505	N-15
C279	N-11	C446	F-14	D419	E-22	L602	I-7	R348	B-6	R507	O-23	T203	L-8
C280	P-11	C447	F-13	D420	F-24	L605	I-7	R349	A-7	R508	P-22	T401	F-21
C281	P-12	C448	H-26	D421	H-24	L606	H-6	R350	A-6	R510	O-16	T500	L-23
C282	O-11	C449	C-17	D422	H-18	L607	F-7	R365	B-5	R512	M-16	T504	M-19
C283	O-10	C500	K-21	D423	F-18	L609	H-10	R366	B-3	R513	N-15	TP1	G-4
C284	N-12	C501	J-23	D424	H-16	L610	H-10	R367	B-4	R514	O-15	TP5	H-16
C285	N-12	C502	M-23	D425	D-24	L614	B-9	R375	H-2	R515	J-12	TP8	D-16
C286	P-10	C503	K-17	D431	E-16	L615	B-9	R376	I-14	R516	J-17	TP10	F-17
C287	P-12	C504	N-23	D432	D-16	L616	B-9	R377	B-27	R559	I-9	TP13	M-10
C288	M-11	C505	M-21	D433	E-16	Q200	J-4	R379	F-4	R579	P-13	TP19	P-9
C336	E-5	C506	Q-16	D434	F-17	Q240	P-4	R380	L-1	R580	M-13	TP22	M-26
C337	D-5	C507	Q-18	D437	B-5	Q244	J-9	R383	F-1	R581	K-13	TP210	N-7
C338	A-3	C508	Q-21	D438	C-18	Q304	A-6	R387	N-4	R582	O-14	TP240	Q-4
C339	E-6	C509	M-15	D449	G-17	Q311	C-2	R390	Q-2	R583	P-14	TP244	G-3
C340	C-5	C510	Q-19	D450	A-9	Q312	B-1	R391	C-3	R584	N-10	TP615	B-10
C341	B-5	C511	Q-16	D500	J-18	Q400	H-27	R392	C-1	R585	P-13	Y200	N-7
C345	F-2	C512	J-22	D502	Q-18	Q402	D-23	R393	C-1	R586	N-10	Y201	P-6
C346	F-3	C513	J-22	D506	M-16	Q403	C-21	R394	C-3	R587	K-13	Y202	J-8
C347	E-7	C516	J-18	D581	P-14	Q406	G-14	R395	C-1	R588	M-11	Y301	F-3
C349	B-26	C580	L-14	D582	N-13	Q407	F-15	R396	C-2	R589	M-10	Y600	G-6
C350	O-1	C581	L-14	D601	G-13	Q410	C-16	R397	D-2	R590	M-10	Y601	E-8
C351	P-1	C582	P-14	F400	Q-28	Q431	F-15	R398	E-1	R600	H-6	Z222	J-6
C352	I-1	C583	O-14	IC201	N-5	Q432	D-15	R399	D-1	R601	H-6	Z303	A-7
C353	F-1	C584	M-12	IC202	Q-6	Q500	J-23	R400	K-28	R602	H-5	Z306	D-7
C354	J-1	C585	N-11	IC280	P-12	Q501	M-25	R401	L-26	R603	G-4	Z408	D-25
C360	K-1	C586	K-12	IC309	F-6	Q600	G-4	R402	K-27	R604	G-4	Z417	D-21
C361	G-2	C587	L-14	IC310	D-4	Q605	H-7	R403	H-28	R605	G-5	Z435	D-13
C362	I-2	C601	H-4	IC404	C-20	Q610	H-8	R404	E-25	R606	G-8	Z436	E-14
C364	G-3	C602	G-7	IC580	M-14	Q615	I-10	R405	G-25	R607	F-6	Z503	L-16
C365	N-1	C603	I-4	IC640	F-9	Q620	I-11	R406	D-25	R608	H-8	Z504	L-16
C366	M-4	C604	F-7	J1	Q-2	R201	O-4	R407	F-26	R609	I-7		
C400	P-26	C605	G-7	J4	B-11	R202	P-5	R408	F-27	R610	H-6		
C401	J-27	C606	I-6	J6	C-8	R203	P-9	R409	C-23	R611	H-11		
C402	J-28	C607	I-8	J7	R-20	R207	L-10	R416	D-21	R612	H-11		
C403	K-26	C608	E-8	J8	R-23	R208	I-3	R417	C-21	R614	F-12		
C404	M-28	C609	I-8	J9	L-11	R209	H-3	R418	C-23	R617	H-9		
C405	N-28	C610	H-11	J10	Q-17	R210	N-5	R419	D-22	R618	H-9		
C406	N-27	C611	H-10	J11	Q-12	R215	Q-5	R420	E-24	R619	I-6		
C408	F-25	C612	F-11	J15	M-15	R216	Q-4	R421	D-22	R620	H-9		
C409	F-28	C613	H-12	J17	D-4	R217	K-8	R422	D-22	R622	A-24		



MAIN BOARD (B002 & B003)

MAIN BOARD (B002 & B003)

MAIN BOARD (B002 & B003) - GridTrace LOCATION GUIDE

C200	K-4	C409	C-17	C620	D-7	L213	M-6	R230	N-4	R443	B-12	R635	B-9
C201	K-4	C410	G-18	C621	E-6	L214	L-7	R231	M-7	R444	D-12	R636	B-9
C202	K-4	C412	E-19	C624	D-6	L400	L-19	R232	H-4	R446	E-11	R637	D-8
C205	K-6	C413	F-19	C625	D-6	L402	E-20	R233	I-5	R447	E-11	R638	C-9
C206	H-6	C414	F-20	C626	C-6	L403	F-12	R234	I-4	R448	E-12	R639	B-9
C207	I-3	C415	D-17	C627	C-7	L405	G-19	R235	I-4	R449	E-12	R640	B-5
C208	J-3	C416	E-19	C630	F-7	L406	D-13	R236	L-3	R450	E-10	R641	B-11
C209	N-3	C417	G-19	C631	F-7	L409	G-20	R237	L-3	R451	E-11	R645	B-15
C210	L-5	C418	C-17	C632	F-8	L410	G-19	R239	G-17	R452	D-11	R646	B-16
C211	N-4	C419	C-16	C633	D-7	L415	E-14	R240	K-4	R453	E-12	R648	E-6
C212	M-4	C420	C-18	C634	F-9	L416	D-15	R242	F-11	R454	L-18	R650	H-8
C213	L-6	C421	D-17	C640	F-7	L417	D-15	R243	F-11	R455	A-7	R655	D-9
C214	N-6	C422	D-18	C641	D-7	L418	E-17	R244	L-7	R456	D-10	R656	D-10
C215	M-3	C423	F-14	C642	E-9	L501	J-17	R245	K-6	R457	C-12	R659	B-9
C216	M-7	C426	D-16	D220	I-6	L502	K-12	R246	I-4	R500	H-15	R666	L-11
C218	K-5	C427	E-13	D221	H-5	L503	M-17	R247	I-3	R501	I-14	R668	G-10
C219	I-5	C430	G-19	D301	C-4	L515	H-10	R280	L-8	R502	I-15	R670	D-8
C220	J-4	C431	G-14	D304	E-4	L516	J-18	R281	K-9	R503	H-16	R671	D-8
C221	I-3	C432	G-13	D305	D-4	L600	G-4	R283	L-9	R504	I-16	R672	D-8
C222	I-4	C433	G-13	D402	H-20	L601	G-4	R284	M-8	R505	I-16	S401	C-19
C223	I-4	C434	E-13	D404	J-20	L602	H-6	R286	K-8	R506	H-17	S580	H-10
C224	K-5	C435	F-13	D405	K-19	L604	G-3	R348	C-4	R507	L-17	SCR401	I-20
C226	K-7	C436	M-11	D406	K-20	L605	G-5	R349	F-5	R508	M-16	SCR505	I-12
C227	J-4	C437	D-14	D407	J-19	L606	G-4	R350	A-4	R509	N-12	T203	I-6
C228	J-4	C438	C-15	D409	F-18	L607	F-5	R365	C-4	R510	K-12	T401	E-15
C229	J-6	C439	D-14	D414	C-17	L609	G-7	R366	D-3	R511	N-14	T500	J-17
C230	N-5	C440	C-11	D415	E-19	L610	G-7	R367	C-3	R512	I-12	T504	K-14
C231	L-5	C442	D-10	D416	C-17	L614	C-7	R375	F-2	R513	J-12	TP1	H-8
C232	N-6	C443	C-14	D418	D-18	L615	C-7	R376	G-12	R514	K-11	TP4	G-12
C233	L-7	C444	C-12	D419	D-17	L616	C-7	R377	B-20	R515	G-10	TP5	G-13
C245	K-7	C445	F-11	D420	E-18	Q200	H-3	R379	E-3	R516	H-15	TP8	D-12
C246	K-7	C446	E-11	D421	F-18	Q240	M-3	R380	H-1	R579	M-10	TP10	F-12
C247	J-7	C447	E-10	D424	G-13	Q244	H-3	R383	D-1	R580	J-10	TP13	J-8
C248	I-7	C448	H-19	D425	C-18	Q304	B-4	R387	K-3	R581	I-10	TP19	L-8
C278	K-8	C500	I-16	D431	E-14	Q311	B-1	R390	C-1	R582	K-10	TP22	J-19
C279	K-8	C501	H-16	D432	D-14	Q312	B-2	R391	B-2	R583	M-10	TP210	K-5
C280	M-8	C502	K-17	D433	E-14	Q400	G-20	R392	C-1	R584	J-8	TP240	M-3
C281	L-9	C503	H-13	D437	B-4	Q402	C-17	R393	C-1	R585	M-10	TP244	H-8
C282	K-8	C504	K-17	D438	C-15	Q403	C-17	R394	B-2	R586	J-8	TP615	E-8
C283	K-8	C505	K-16	D449	F-13	Q406	F-12	R395	C-1	R587	I-10	Y200	L-5
C284	K-9	C506	N-12	D500	I-15	Q407	E-12	R396	C-2	R588	J-9	Y201	M-4
C285	K-9	C507	M-13	D502	N-13	Q410	C-13	R397	C-2	R589	J-8	Y202	H-6
C286	L-7	C508	M-16	D506	I-13	Q431	D-13	R398	D-1	R590	I-8	Y301	E-3
C287	M-9	C509	H-12	D581	L-10	Q432	D-12	R399	B-2	R600	G-4	Y600	F-4
C288	J-9	C510	N-14	D582	K-10	Q500	H-17	R400	I-20	R601	G-5	Y601	D-6
C336	D-4	C511	L-11	D601	F-10	Q501	K-18	R401	J-19	R602	G-3	Z222	H-5
C337	C-5	C512	H-17	F400	L-20	Q600	F-3	R402	H-20	R603	F-3	Z223	H-6
C338	A-2	C513	H-17	IC201	K-4	Q605	G-5	R403	I-20	R604	F-3	Z303	C-4
C339	D-5	C516	H-15	IC202	M-5	Q610	G-6	R404	E-18	R605	F-4	Z306	E-6
C345	E-2	C580	J-10	IC280	L-9	Q615	G-7	R405	G-18	R606	F-6	Z408	D-19
C346	E-2	C581	I-10	IC309	E-4	Q620	G-9	R406	D-19	R607	F-4	Z417	D-16
C347	E-5	C582	L-10	IC310	C-3	R201	L-3	R407	E-20	R608	G-6	Z435	D-10
C349	B-19	C583	L-10	IC404	C-15	R202	I-6	R408	F-20	R609	G-5	Z436	E-11
C350	K-1	C584	J-10	IC580	J-10	R203	M-7	R409	C-17	R610	G-5	Z503	I-13
C351	M-1	C585	J-8	IC640	F-6	R207	I-7	R416	D-16	R611	G-9	Z504	I-13
C352	G-1	C586	I-9	J1	M-9	R208	G-2	R417	C-16	R612	G-8		
C353	D-1	C587	J-10	J3	H-8	R209	G-2	R418	C-16	R614	F-8		
C354	G-1	C601	F-3	J4	B-8	R210	K-4	R419	D-17	R617	G-6		
C360	G-1	C602	F-6	J6	C-8	R215	N-4	R420	D-15	R618	G-7		
C361	E-1	C603	H-4	J7	N-14	R216	N-3	R421	D-17	R619	H-5		
C362	F-1	C604	F-5	J8	N-17	R217	I-6	R422	D-17	R620	G-8		
C364	F-2	C605	F-5	J9	N-17	R218	N-3	R423	D-19	R622	A-17		
C366	J-3	C606	H-5	J10	N-13	R219	I-3	R424	D-16	R623	A-15		
C385	L-1	C607	H-6	J11	M-9	R220	N-3	R430	F-18	R624	A-12		
C400	M-19	C608	G-6	J16	J-19	R221	K-3	R431	H-11	R625	A-13		
C401	H-19	C609	G-7	J17	C-3	R222	M-3	R432	F-13	R626	A-16		
C402	H-20	C610	G-8	L201	N-4	R223	I-7	R433	F-14	R627	B-13		
C403	J-19	C611	G-8	L202	L-4	R224	I-7	R434	F-14	R629	B-13		
C404	J-20	C612	F-8	L204	H-7	R225	L-6	R437	E-14	R630	B-12		
C405	K-20	C613	F-10	L205	I-5	R226	I-5	R438	D-14	R631	B-6		
C406	K-19	C614	G-3	L206	L-6	R227	I-8	R439	C-14	R632	B-5		
C407	J-19	C618	F-6	L210	H-3	R228	I-6	R440	C-11	R633	C-7		
C408	F-19	C619	B-6	L211	L-4	R229	H-5	R441	C-13	R634	C-6		

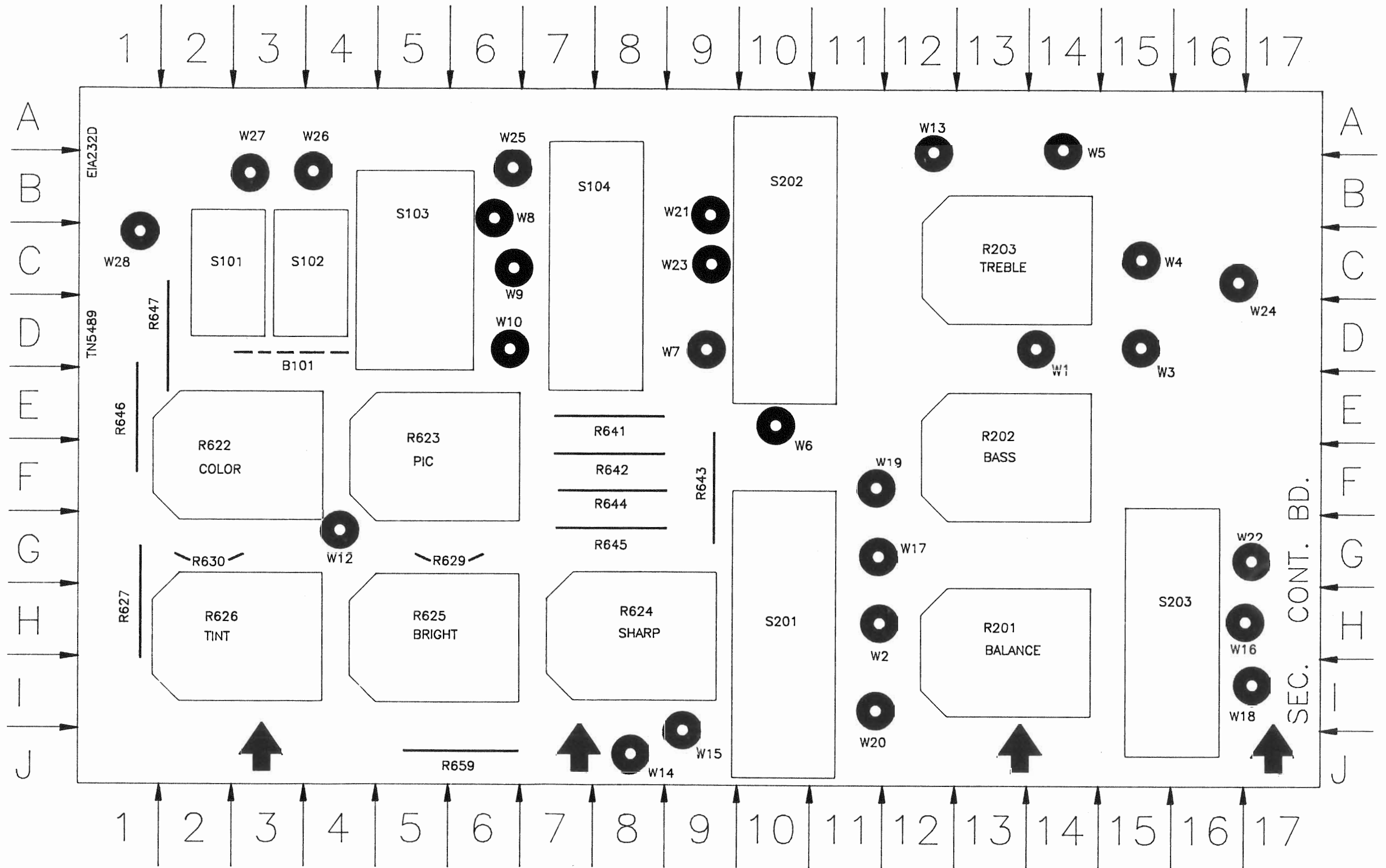


MAIN BOARD (D005 & D006) - GridTrace LOCATION GUIDE

C200	L-4	C407	J-19	C614	G-3	L201	N-4	R223	I-7	R432	F-14	R626	A-16
C201	L-4	C408	F-19	C615	H-3	L202	I-6	R224	I-7	R433	F-14	R627	B-14
C202	L-4	C409	B-18	C618	F-6	L204	I-7	R225	M-6	R434	F-14	R629	A-14
C205	L-6	C410	G-18	C619	B-6	L205	J-5	R226	J-5	R437	E-14	R630	A-12
C206	I-6	C412	E-19	C620	D-7	L206	L-7	R227	I-8	R438	E-14	R631	B-6
C207	I-3	C413	F-19	C621	E-6	L210	H-3	R228	I-6	R439	C-15	R632	B-5
C208	K-3	C414	F-20	C624	E-6	L211	L-4	R229	I-5	R440	C-12	R633	C-7
C209	N-3	C415	D-17	C625	D-6	L213	M-6	R230	N-7	R441	C-13	R635	B-9
C210	L-5	C416	E-20	C626	C-6	L214	M-7	R231	I-4	R443	B-12	R636	B-10
C211	N-5	C417	G-19	C627	C-7	L400	L-19	R232	I-4	R444	D-10	R637	D-9
C212	M-5	C418	C-18	C630	F-7	L402	E-20	R233	I-5	R446	E-11	R638	B-9
C213	M-6	C419	C-16	C631	F-8	L403	F-12	R234	J-4	R447	F-11	R639	B-10
C214	N-6	C420	C-18	C632	F-8	L405	G-19	R235	I-4	R448	E-12	R640	B-6
C215	M-3	C421	D-17	C633	E-7	L406	D-13	R236	L-3	R449	E-12	R641	B-11
C216	N-7	C422	D-19	C634	F-9	L409	G-20	R237	M-3	R450	E-11	R645	B-15
C218	L-5	C423	F-14	C635	F-7	L410	G-19	R239	G-12	R451	E-11	R646	B-16
C219	I-5	C426	D-16	C640	F-7	L415	E-14	R240	L-4	R452	D-11	R647	B-15
C220	K-4	C427	E-14	C641	D-7	L416	D-15	R242	F-11	R453	E-12	R648	E-6
C221	J-3	C430	G-19	C642	F-9	L417	D-15	R243	F-11	R454	L-18	R650	H-8
C222	I-4	C431	G-15	D220	I-6	L418	E-17	R244	L-7	R455	A-7	R655	D-9
C223	J-4	C432	G-13	D221	H-5	L501	J-18	R245	K-6	R456	D-10	R659	B-9
C224	L-6	C433	G-13	D301	C-4	L502	K-12	R246	J-4	R457	C-12	R666	G-10
C226	K-7	C434	E-13	D304	E-4	L503	N-17	R247	J-3	R500	H-15	R670	D-8
C227	J-4	C435	F-13	D305	E-4	L515	H-10	R280	M-8	R501	I-15	R671	D-8
C228	K-4	C436	M-11	D402	H-20	L516	J-18	R281	L-9	R502	I-15	R672	D-8
C229	K-6	C437	D-14	D404	K-20	L600	G-4	R283	M-8	R503	H-16	S401	C-20
C230	N-5	C438	C-15	D405	K-20	L601	G-4	R284	M-8	R504	I-15	S560	I-10
C231	M-5	C439	D-14	D406	K-20	L602	H-6	R285	K-8	R505	I-16	SCR401	I-20
C232	N-6	C440	C-11	D407	K-20	L604	H-3	R286	K-8	R506	H-17	SCR505	I-12
C233	L-7	C442	D-10	D409	F-19	L605	H-5	R348	C-4	R507	L-17	T203	J-6
C245	L-7	C443	C-15	D414	C-18	L606	G-4	R349	B-5	R508	M-16	T401	E-16
C246	K-7	C444	C-13	D415	F-19	L607	F-6	R350	A-4	R509	N-12	T500	J-17
C247	J-7	C445	F-11	D416	C-18	L609	G-7	R365	C-4	R510	K-12	T504	L-14
C248	I-7	C446	E-12	D418	E-18	L610	G-7	R366	D-4	R511	N-14	TP1	I-8
C278	L-8	C447	E-10	D419	E-17	L614	C-8	R367	C-3	R512	I-12	TP4	H-12
C279	K-8	C448	H-19	D420	E-18	L615	D-8	R375	F-2	R513	J-12	TP5	G-13
C280	M-8	C449	C-14	D421	F-18	L616	C-8	R376	H-12	R514	K-11	TP8	D-14
C281	L-9	C500	I-16	D424	G-13	Q200	I-3	R377	B-20	R515	H-10	TP10	G-12
C282	L-8	C501	H-17	D425	C-18	Q240	M-3	R379	E-3	R516	I-15	TP13	J-8
C283	L-8	C502	K-17	D431	E-14	Q311	H-7	R380	E-1	R517	M-10	TP19	L-8
C284	L-9	C503	H-13	D432	D-14	Q304	B-4	R383	E-1	R580	K-10	TP22	K-9
C285	K-9	C504	K-17	D433	E-15	Q312	B-1	R387	L-3	R581	I-10	TP210	K-5
C286	L-8	C505	K-16	D434	F-13	Q400	C-2	R390	C-1	R582	L-10	TP240	M-3
C287	M-9	C506	N-12	D437	B-4	Q402	G-28	R391	B-2	R583	M-10	TP244	I-8
C288	K-9	C507	N-13	D438	C-15	Q403	B-17	R392	C-1	R584	J-8	TP615	E-8
C336	E-4	C508	M-16	D449	F-13	Q406	C-17	R393	C-1	R585	M-10	Y200	L-5
C337	C-5	C509	H-12	D500	I-15	Q407	F-12	R394	B-2	R586	J-8	Y201	N-4
C337	C-5	C510	N-15	D502	N-13	Q410	E-12	R395	C-1	R587	I-10	Y202	H-6
C338	A-3	C511	L-12	D506	I-13	Q431	C-13	R396	C-2	R588	J-9	Y301	E-3
C339	D-5	C512	H-17	D581	M-10	Q432	D-13	R397	C-2	R589	J-8	Y600	F-4
C345	E-2	C513	I-17	D582	K-10	Q500	E-12	R398	D-1	R590	J-8	Y601	F-4
C346	E-2	C516	H-15	D601	F-10	Q501	H-17	R399	B-2	R600	G-4	Z222	H-5
C347	E-5	C580	J-10	F400	M-20	Q600	K-18	R400	I-20	R601	G-5	Z223	H-6
C349	B-19	C581	J-10	IC201	K-4	Q605	F-3	R401	J-20	R602	G-3	Z303	C-5
C350	K-1	C582	M-10	IC202	N-5	Q610	G-6	R402	I-20	R603	F-3	Z309	E-5
C351	M-1	C583	L-10	IC280	M-9	Q615	G-8	R403	I-20	R604	F-3	Z408	E-20
C352	G-1	C584	J-10	IC309	E-5	Q620	G-9	R404	E-19	R605	F-4	Z417	D-16
C353	D-1	C585	K-8	IC310	C-3	R201	L-3	R405	G-19	R606	F-6	Z435	D-11
C354	G-1	C586	I-9	IC404	C-16	R202	M-4	R406	D-19	R607	F-4	Z436	E-11
C360	G-1	C587	J-10	IC580	J-10	R203	M-7	R407	E-20	R608	G-6	Z503	I-13
C361	F-1	C601	F-3	IC640	F-6	R207	M-7	R408	E-20	R609	G-5	Z504	I-13
C363	D-1	C602	J1	J3	N-9	R208	J-7	R409	C-17	R610	G-5		
C364	F-2	C603	H-4	J4	H-8	R209	G-2	R416	D-17	R611	G-9		
C365	L-1	C604	F-5	J5	B-8	R210	G-2	R417	C-16	R612	G-8		
C366	K-3	C605	F-5	J7	C-8	R215	K-4	R418	C-16	R614	F-9		
C385	L-1	C606	H-5	J8	N-15	R216	N-4	R419	D-17	R617	G-6		
C400	M-19	C607	H-6	J9	N-17	R217	N-3	R420	E-19	R618	G-7		
C401	H-20	C608	G-6	J10	I-9	R218	I-6	R421	D-17	R619	H-5		
C402	H-20	C609	H-7	J11	N-13	R219	N-3	R422	D-18	R620	H-8		
C403	J-19	C610	G-8	J14	N-9	R220	L-3	R423	E-19	R622	A-18		
C404	J-20	C611	G-8	J15	C-19	R221	N-3	R424	D-16	R623	A-15		
C405	K-20	C612	F-8	J17	K-19	R222	L-3	R430	E-18	R624	A-12		
C406	K-20	C613	G-10		C-3		M-3	R431	H-12	R625	A-14		

SECONDARY
CONTROL MODULE,
ASC192-A001
-GridTrace
LOCATION GUIDE

B101	D-3
R201	H-13
R202	E-13
R203	C-13
R622	E-2
R623	E-5
R624	H-3
R625	H-5
R626	H-8
R627	H-1
R629	G-5
R630	G-2
R641	E-8
R642	F-8
R643	F-9
R644	F-8
R645	G-8
R646	E-1
R647	D-2
R659	J-6
S101	C-2
S102	C-2
S103	C-5
S104	C-7
S201	H-10
S202	C-10
S203	H-15



CHASSIS BREAKDOWN

20C803 (-00AA,-00BB,-00CC & -00DD)

EMC833	Main Chassis Board Asm (-00AA & -00CC)
340293	Varactor Tuner Module
EMC835	Main Chassis Board Asm (-00BB & -00DD)
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
ATC417	Tuner Control Unit Asm
ARR007	Remote Receiver Module
ASW054	Five Function Scan Module
ATU001	TS12A Tuning System Module (-00AA & -00BB)
ATU009	TS12C Tuning System Module (-00CC & -00DD)
ANT004	Antenna Input Asm

20C804 (-00BB,-00CC & -00DD)

EMC833	Main Chassis Board Asm (-00AA & -00CC)
340293	Varactor Tuner Module
EMC835	Main Chassis Board Asm (-00BB & -00DD)
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
ATC415	Tuner Control Unit Asm
ARR007	Remote Receiver Module
ASW052	Five Function Scan Module
ATU001	TS12A Tuning System Module (-00AA & -00BB)
ATU009	TS12C Tuning System Module (-00CC & -00DD)
ANT004	Antenna Input Asm

20C805 (-00AA,-00BB,-00CC & -00DD)

EMC833	Main Chassis Board Asm (-00AA & -00CC)
340293	Varactor Tuner Module
EMC835	Main Chassis Board Asm (-00BB & -00DD)
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
ATC416	Tuner Control Unit Asm
ARR007	Remote Receiver Module
ASW053	Five Function Scan Module
ATU001	TS12A Tuning System Module (-00AA & -00BB)
ATU009	TS12C Tuning System Module (-00CC & -00DD)
ANT004	Antenna Input Asm

20C806 (-00AA & -00BB)

EMC833	Main Chassis Board Asm (-00AA)
340293	Varactor Tuner Module
EMC835	Main Chassis Board Asm (-00BB)
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
ATC480	Tuner Control Unit Asm
ARR007	Remote Receiver Module
ASW054	Five Function Scan Module
ATU002	TS12A Tuning System Module (-00AA & -00BB)
ANT008	Antenna Input Asm

CHASSIS BREAKDOWN

19C801 (-00BB)

EMC821	Main Chassis Board Asm
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
AVS001	Decoder/Jack Panel Asm
ASD002	Stereo Decoder Panel
AVJ014	Audio Jack Panel
ASC192	Secondary Control Module
ATC422	Tuner Control Unit Asm
ALD037	Stereo/SAP Indicator Module
ARR007	Remote Receiver Module
ASW059	Five Function Scan Module
ATU009	TS12C Tuning System Module

19C802 (-00AA & -B002)

EMC821	Main Chassis Board Asm
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
AVS001	Decoder/Jack Panel Asm
ASD002	Stereo Decoder Panel
AVJ014	Audio Jack Panel
ASC192	Secondary Control Module
ATC420	Tuner Control Unit Asm
ALD035	Stereo/SAP Indicator Module
ARR007	Remote Receiver Module
ATU001	TS12A Tuning System Module (-00AA)
ATU009	TS12C Tuning System Module (-00BB)

19C803 (-00AA & -B002)

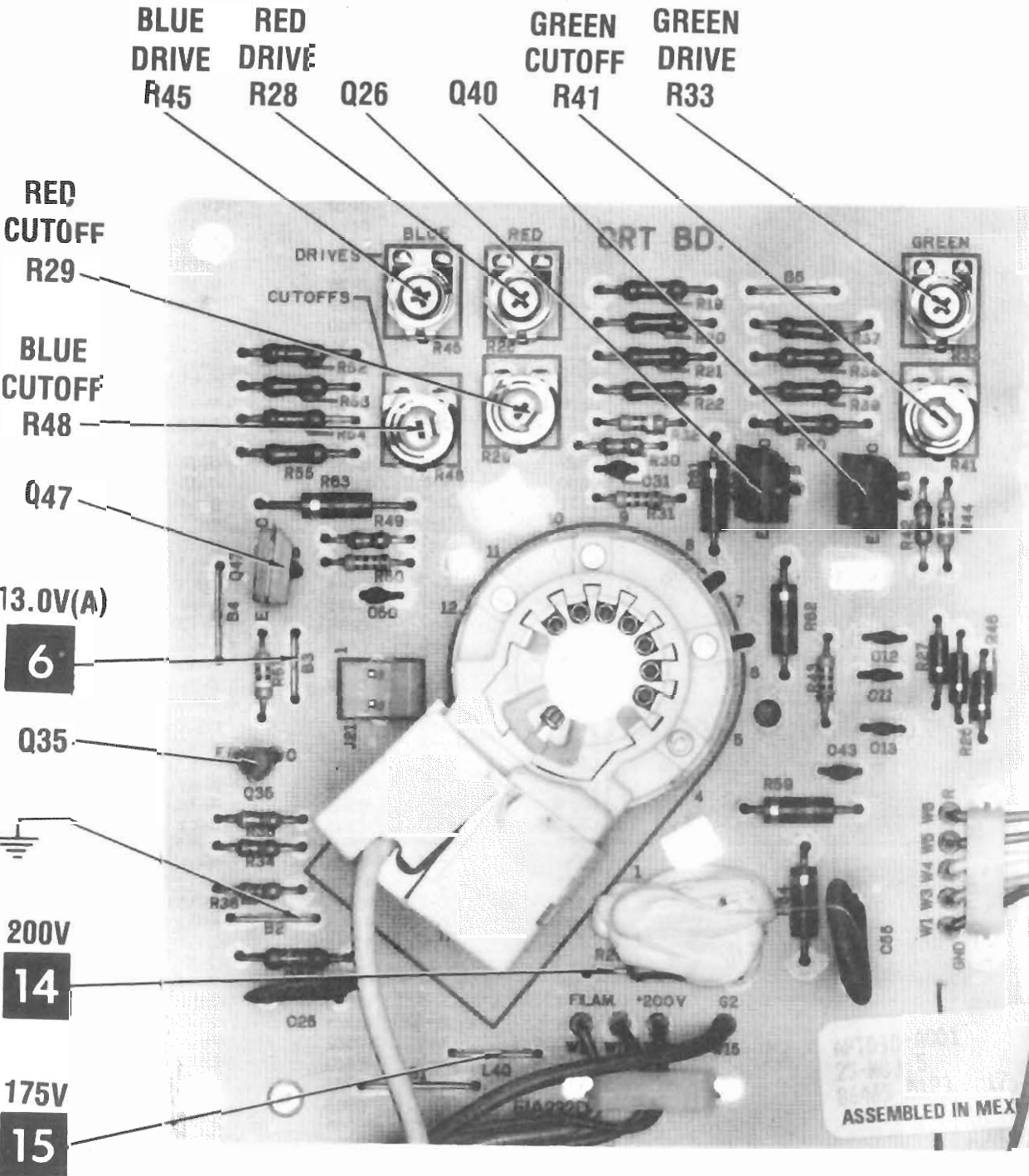
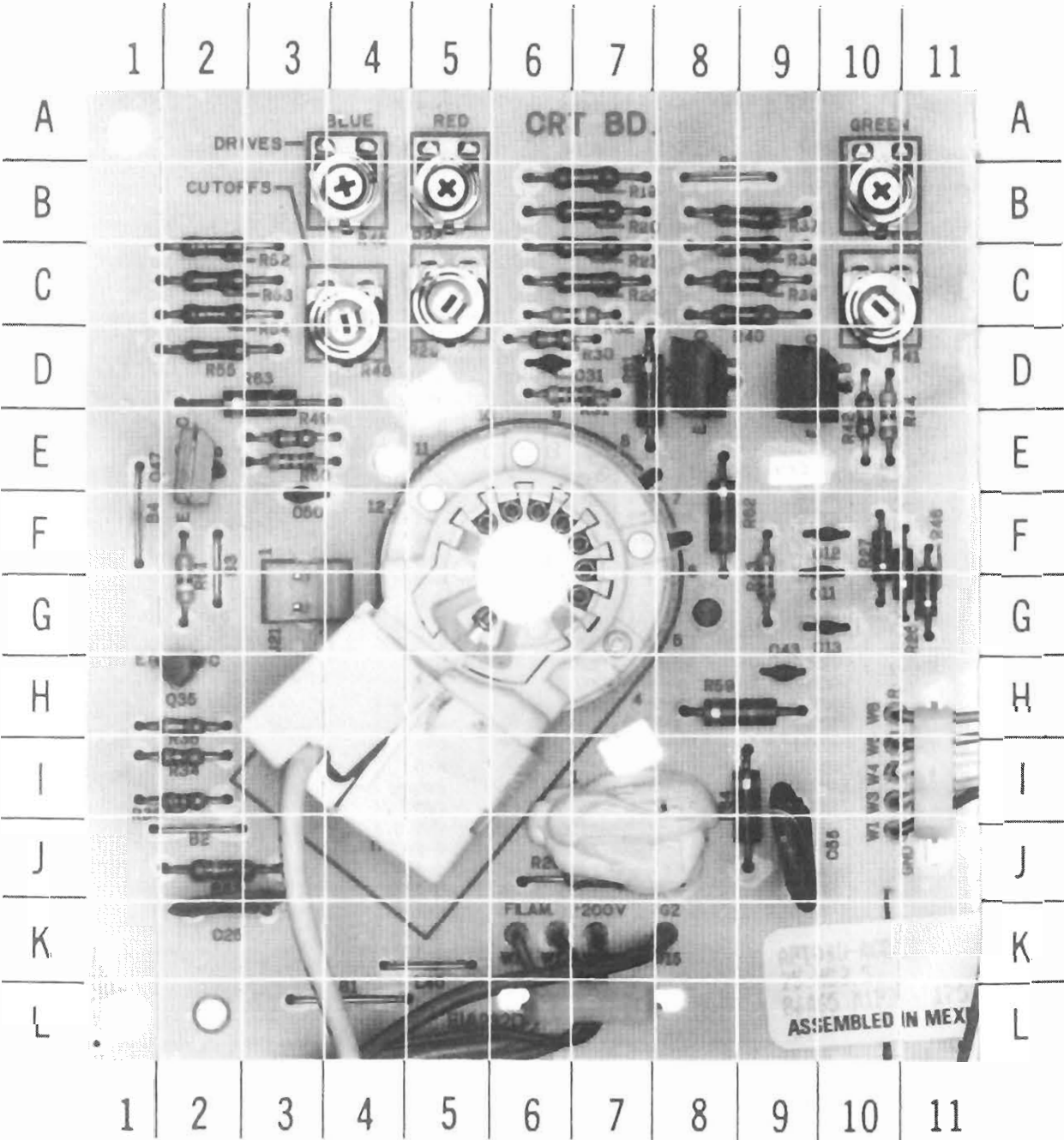
EMC821	Main Chassis Board Asm
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
AVS001	Decoder/Jack Panel Asm
ASD002	Stereo Decoder Panel
AVJ014	Audio Jack Panel
ASC192	Secondary Control Module
ATC421	Tuner Control Unit Asm
ALD036	Stereo/SAP Indicator Module
ARR007	Remote Receiver Module
ASW058	Five Function Scan Module
ATU0001	TS12A Tuning System Module (-00AA)
ATU009	TS12C Tuning System Module (-00BB)

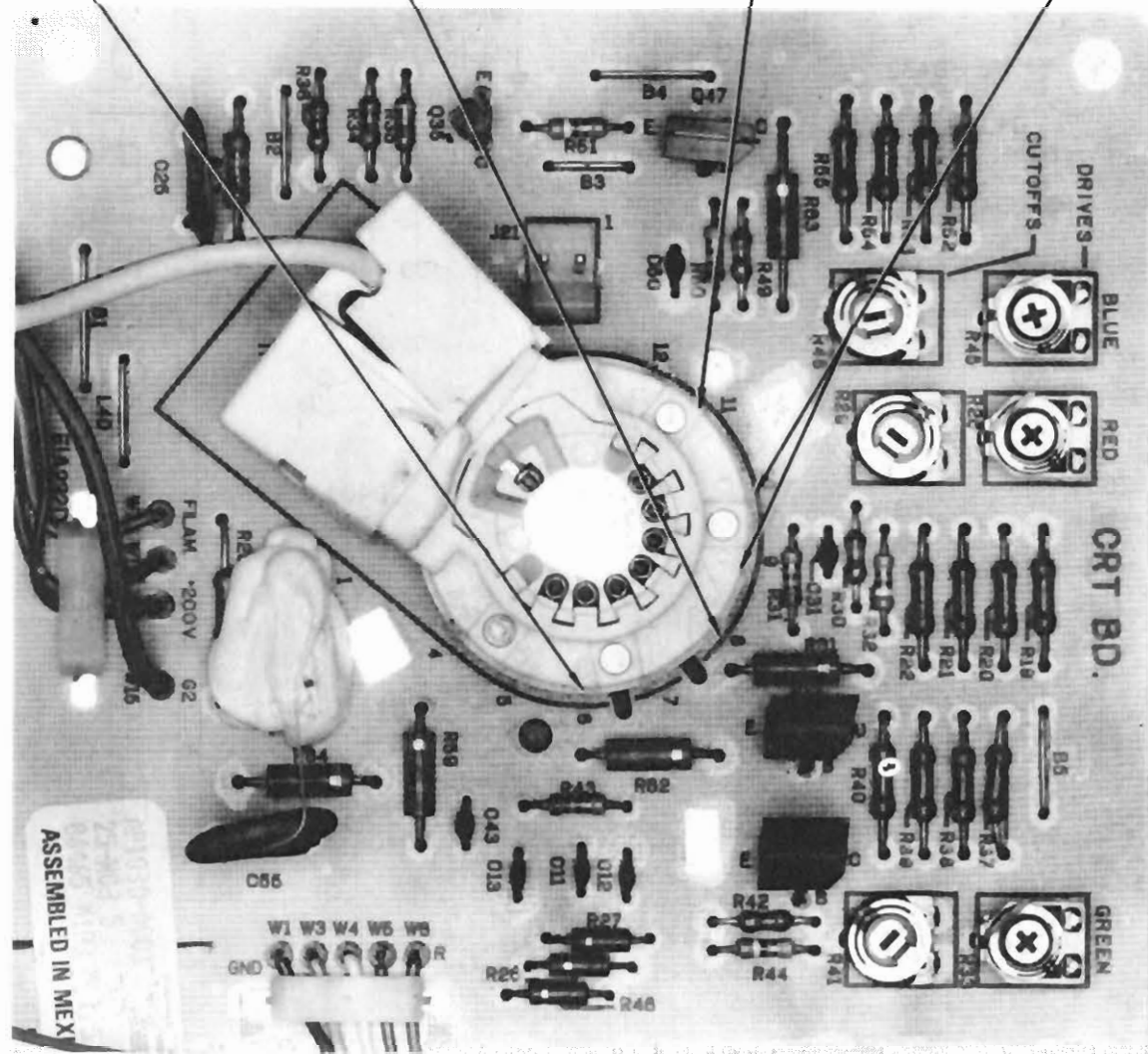
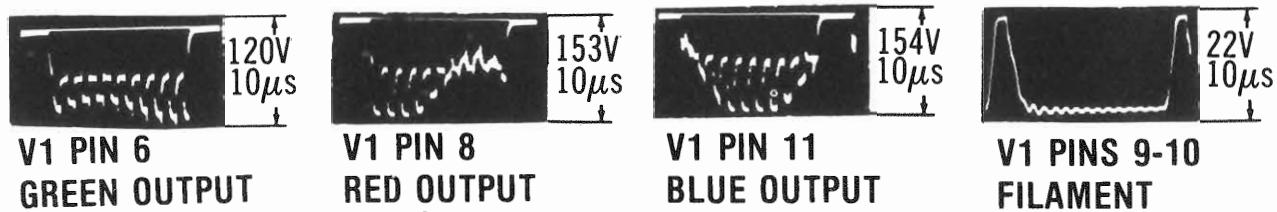
20C802 (-00AA,-00BB,-00CC & -00DD)

EMC834	Main Chassis Board Asm (-00AA & -00CC)
340293	Varactor Tuner Module
EMC836	Main Chassis Board Asm (-00BB & -00DD)
340293	Varactor Tuner Module
APT030	CRT Socket Board Module
ATC418	Tuner Control Unit Asm
ASW055	Twelve Button Scan Module
ATU001	TS12A Tuning System Module (-00AA & -00BB)
ATU006	TS12C Tuning System Module (-00CC & -00DD)
ANT004	Antenna Input Asm

CRT BOARD - GridTrace LOCATION GUIDE

C11	F-10	R19	B-7	R33	B-10	R48	C-4
C12	F-10	R20	B-7	R34	i-2	R49	E-3
C13	G-10	R21	C-7	R35	H-2	R50	E-3
C25	K-2	R22	C-7	R36	I-2	R51	G-2
C31	D-6	R23	J-2	R37	B-9	R52	C-2
C43	H-9	R25	J-7	R38	C-9	R53	C-2
C50	F-2	R26	G-11	R39	C-9	R54	C-2
C55	J-4	R27	F-10	R40	C-9	R55	D-2
J21	G-3	R28	B-5	R41	C-10	R59	H-8
L60	I-7	R29	C-5	R43	G-9	R61	D-7
Q26	D-8	R30	D-6	R44	E-10	R62	F-8
Q35	H-2	R31	D-7	R45	B-4	R63	D-3
Q40	D-9	R32	C-7	R46	G-11	R64	J-9
Q47	E-2						

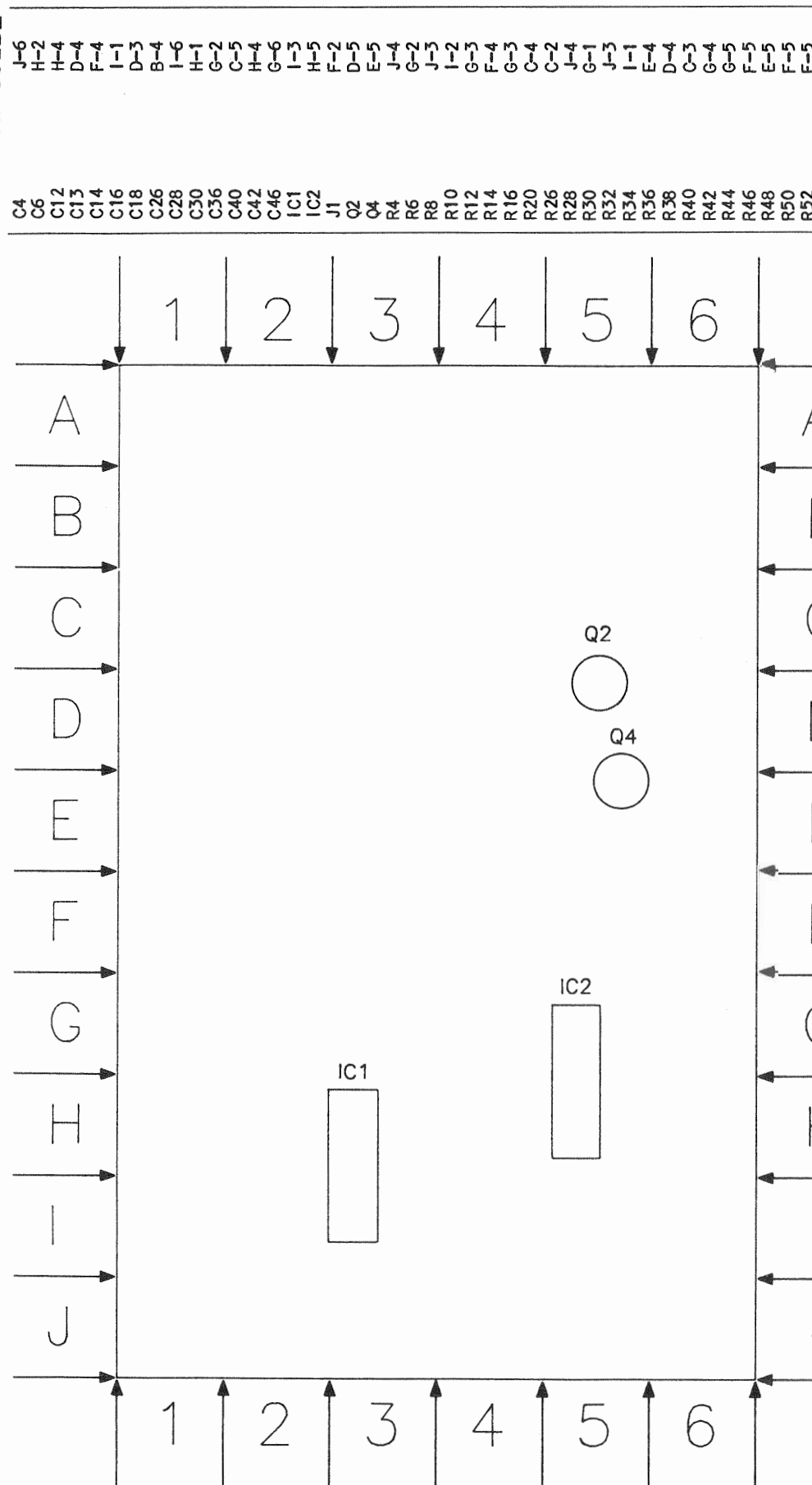




CRT BOARD

A Howard W. Sams **QUICK-CHECKS™** Photo

AUDIO INPUT/OUTPUT
JACK PANEL
-GridTrace
LOCATION GUIDE

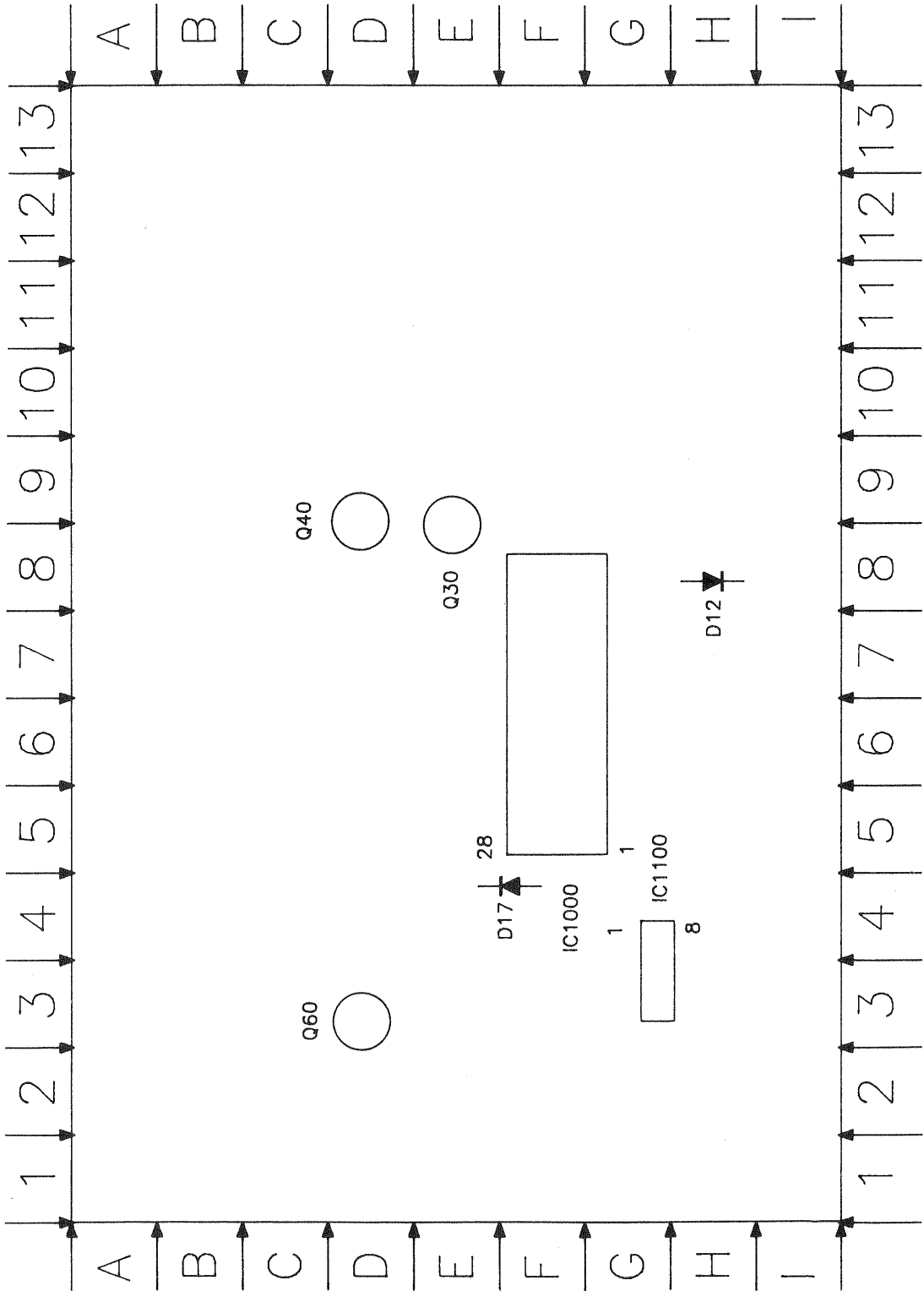


A Howard W. Sams **GRIDTRACE™** Photo

AUDIO INPUT/OUTPUT JACK PANEL, AVJ014-A001
SET 2629 FOLDER 1

TUNER CONTROL, ATU001-B002, ATU002-A001 (TS-12A) -GridTrace LOCATION GUIDE

F-5	D17
G-5	IC1000
G-4	IC1100
B-11	J1000
B-13	J1017
B-13	J1020
F-13	J1030
D-2	J1090
F-4	L2
B-9	L20
B-9	L21
C-9	L22
C-9	L23
C-9	L24
E-10	L30
D-10	L40
C-6	L50
E-9	Q30
D-9	Q40
D-3	Q60
H-6	R6
H-7	R7
F-3	R8
H-9	R9
H-9	R10
H-9	R11
H-8	R12
F-9	R15
C-4	R17
A-8	R18
B-8	R19
B-8	R20
B-8	R21
C-8	R22
C-8	R23
C-8	R24
E-7	R25
I-12	R30
D-8	R32
H-12	R40
D-8	R42
C-5	R51
C-5	R52
B-6	R54
D-2	R56
C-4	R60
F-9	Y1



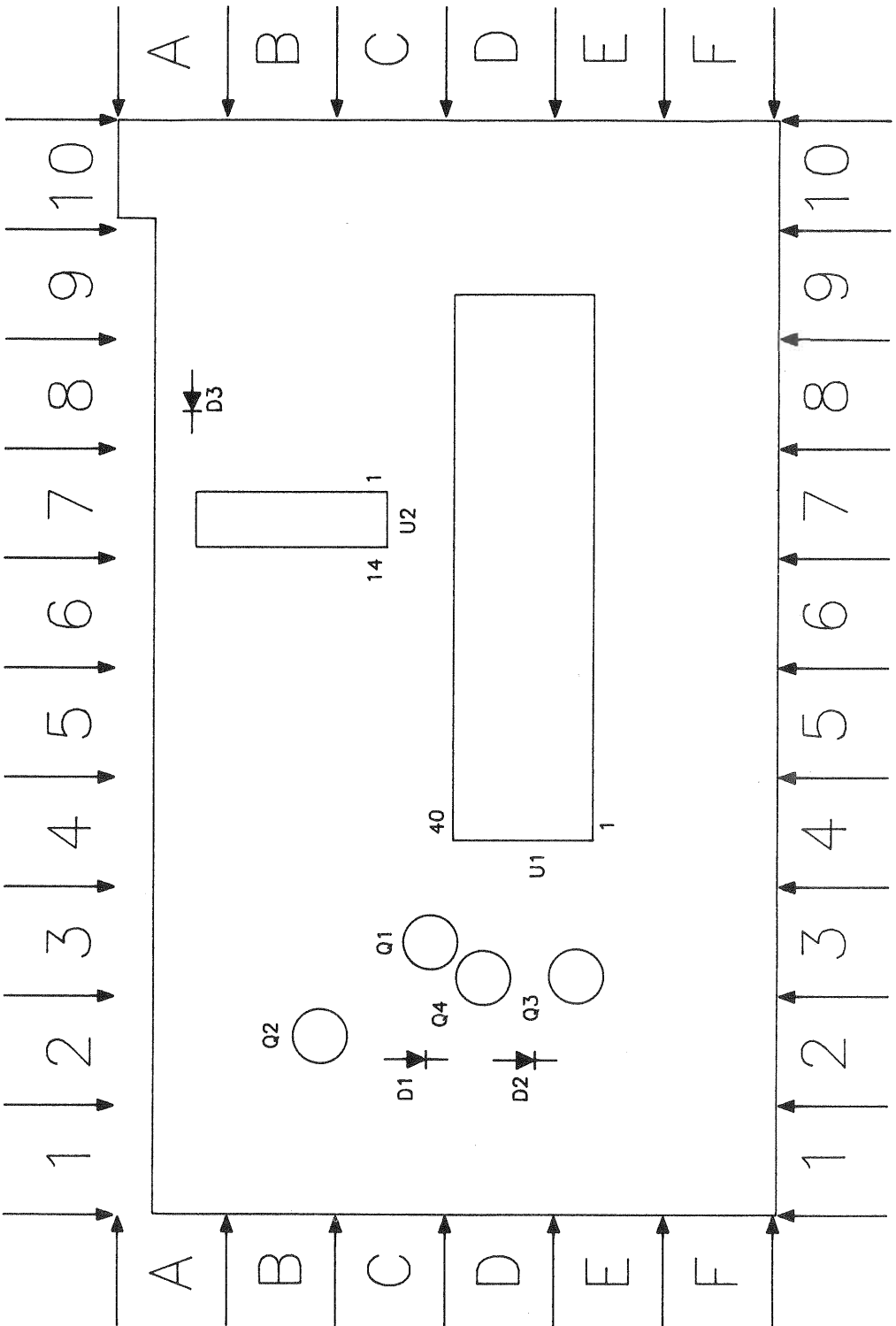
TUNER CONTROL, ATU001-B002, ATU002-A001 (TS-12A) A Howard W. Sams GRIDTRACE™ Photo

REMOTE CONTROL TRANSMITTER TUMA5G

- GridTrace

LOCATION GUIDE

C1	B-5
C2	D-9
C3	B-3
C4	C-4
C5	A-4
C6	F-4
D1	C-2
D2	D-2
D3	A-8
Q1	C-3
Q2	B-2
Q3	E-2
Q4	D-2
R1	B-9
R2	B-9
R3	C-9
R4	B-9
R5	F-9
R6	E-7
R7	C-9
R8	B-9
R9	F-7
R10	F-7
R14	E-3
R15	D-4
R16	D-3
R17	C-2
R18	B-1
R19	B-1
R20	E-2
R21	C-5
R22	B-2
R23	C-5
R24	F-3
SW1	F-1
U1	E-4
U2	C-7
X1	B-3

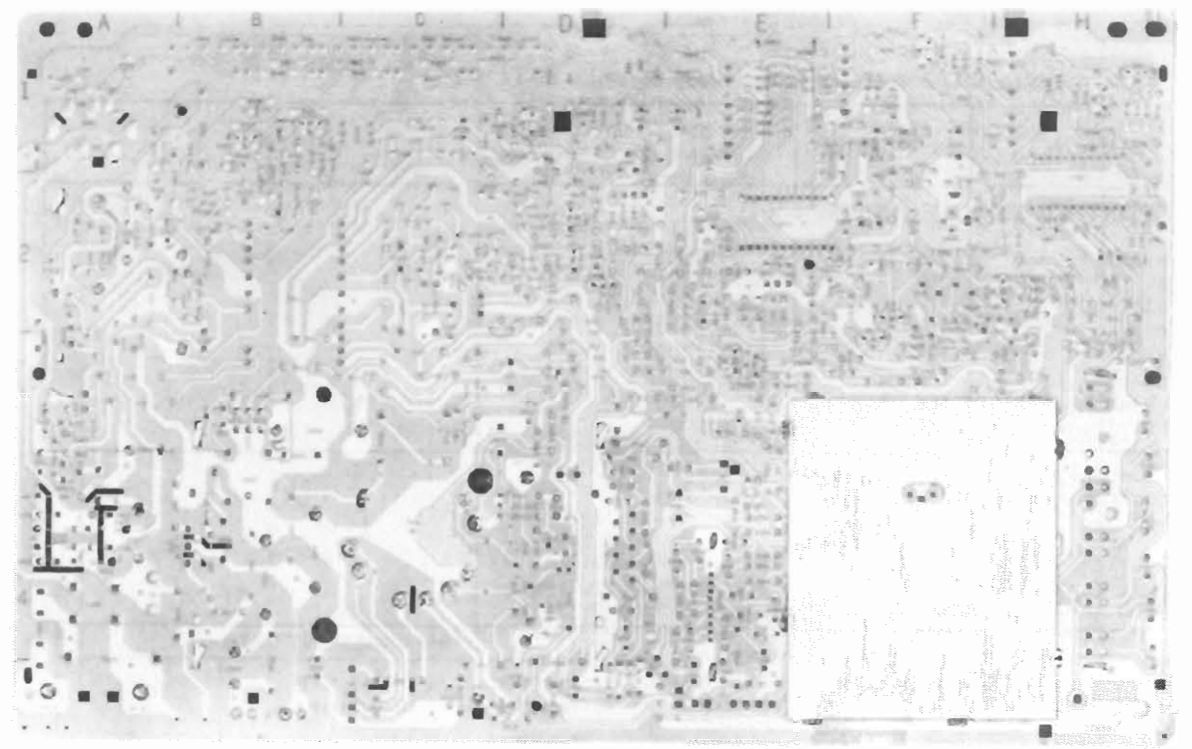
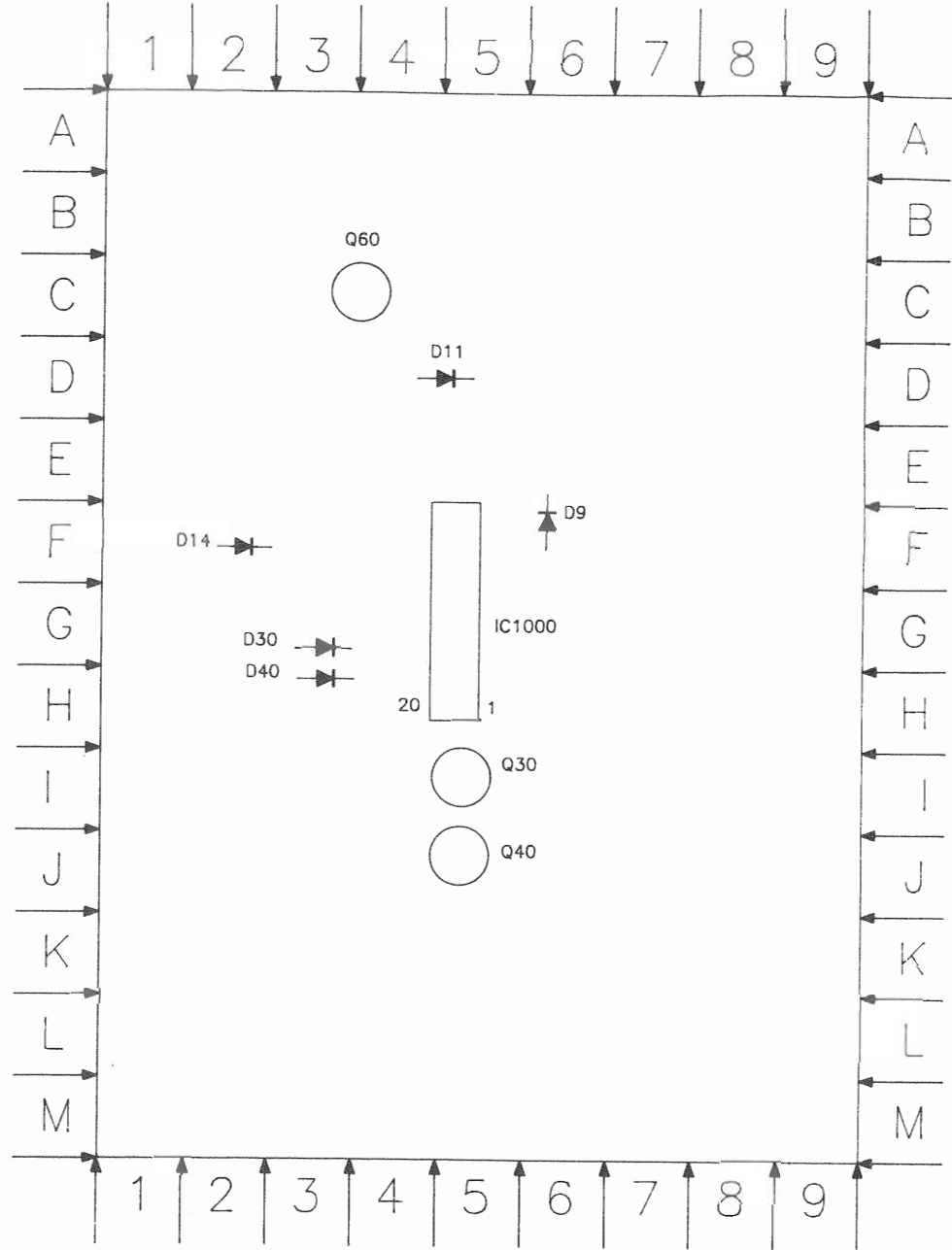


A Howard W. Sams GRIDTRACE™ Photo

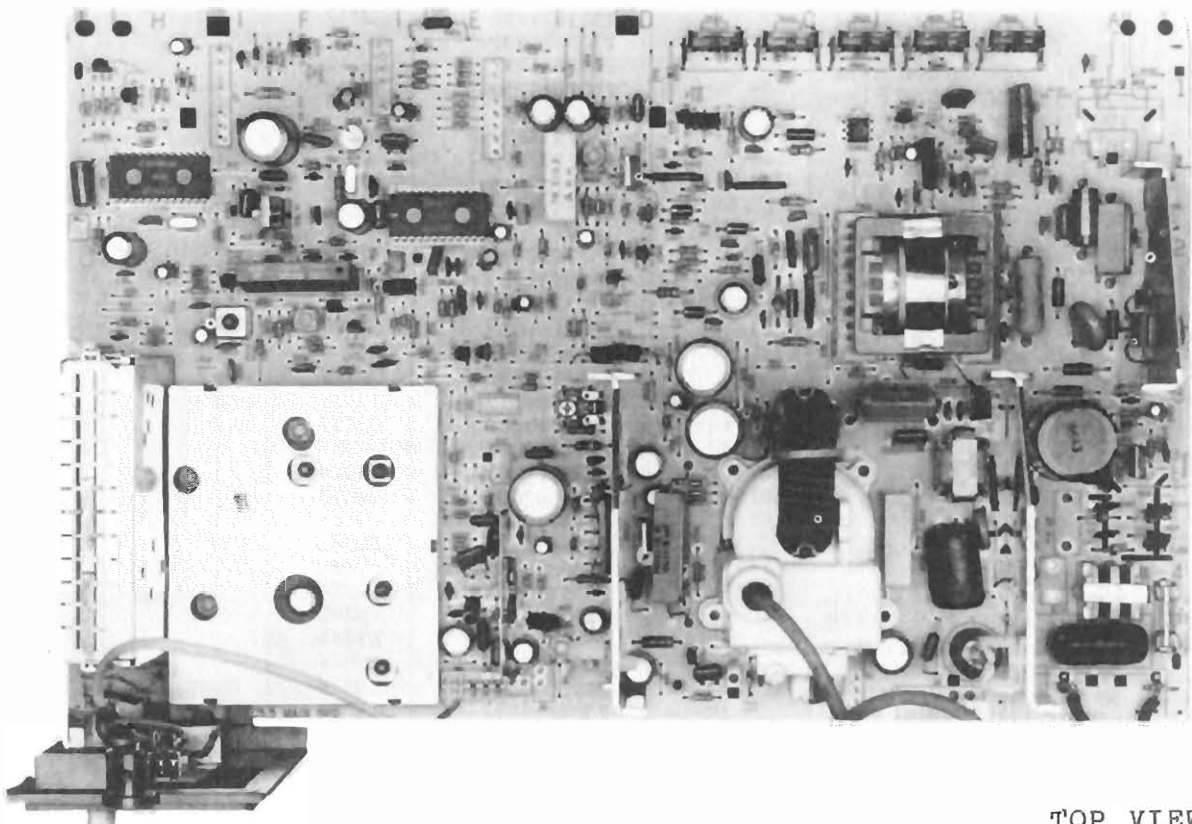
REMOTE CONTROL TRANSMITTER, TUMA5G

TUNER CONTROL, ATU006,9-A001 (TS-12C) -GridTrace LOCATION GUIDE

C1	L-9	C53	A-5	L5	I-7	R8	G-6
C2	K-8	C54	G-3	L6	I-7	R11	D-3
C3	L-8	C55	F-8	L7	I-7	R12	E-3
C4	L-8	C60	B-8	L18	D-5	R14	B-4
C5	L-8	C62	C-3	L19	E-5	R15	G-3
C6	K-6	C90	A-8	L20	D-6	R30	L-2
C7	L-6	D9	E-6	L21	D-7	R32	I-3
C8	L-4	D11	D-5	L30	I-6	R40	L-2
C11	L-3	D14	F-3	L40	I-6	R42	I-4
C12	E-4	D30	G-4	L50	E-6	R51	I-3
C13	E-4	D40	H-4	Q30	I-5	R52	I-3
C14	C-4	IC1000	H-5	Q40	I-5	R53	I-3
C15	L-3	J1000	K-8	Q60	C-3	R54	I-4
C18	B-4	J1017	B-8	R1	G-9	R56	B-4
C20	D-6	J1020	M-8	R2	G-8	R58	E-7
C21	D-6	J1030	M-4	R3	G-8	R59	F-7
C30	M-5	J1090	A-6	R4	G-8	R60	B-4
C40	L-6	L1	I-9	R5	G-7	R62	D-3
C50	E-7	L2	I-8	R6	G-7	R90	C-7
C51	F-8	L3	I-8	R7	G-7	Y1	F-4
C52	E-5	L4	I-8				



BOTTOM VIEW



TOP VIEW

MAIN BOARD-SHIELD LOCATION

PARTS LIST AND DESCRIPTION

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFG. PART No./ TYPE No.					
		NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
MAIN BOARD						
D220,1	5301810001	NTE177	ECG177	SK9091/177	103-131	
D301	5301810001	NTE177	ECG177	SK9091/177	103-131	
D304	5302990002					
D305	5301810001	NTE177	ECG177	SK9091/177	103-131	
D402	5302990002					
D404,5,6,7	5302620001	NTE506	ECG506	SK3175A	212-Z9007	
D409	5303100003	NTE580	ECG580	SK5036/580	212-Z9000	
D414	5302990001					
D415	5302600002	NTE580	ECG580	SK5036/580	212-Z9000	
D416	5302990001					
D418	5301810001	NTE177	ECG177	SK9091/177	103-131	
D419	5302990002					
D420,1	5301810001	NTE177	ECG177	SK9091/177	103-131	
D422	5303051003	NTE580	ECG580	SK5036/580	212-Z9000	
D423	5303101003	NTE580	ECG580	SK5036/580	212-Z9000	
D424	5302600002	NTE580	ECG580	SK5036/580	212-Z9000	
D425	5303010002					
D431	5302600001	NTE580	ECG580	SK5036/580	212-Z9000	
D432	5303260003					
D433	5303100003	NTE580	ECG580	SK5036/580	212-Z9000	
D434	5302600002	NTE580	ECG580	SK5036/580	212-Z9000	
D437	5302990001					
D438,449,450	5301810001	NTE177	ECG177	SK9091/177	103-131	
D500	5301810001	NTE177	ECG177	SK9091/177	103-131	
D502	5303100003	NTE580	ECG580	SK5036/580	212-Z9000	
D506	5302660001	NTE177	ECG177	SK9091/177	103-131	
D581	5302990001					
D582	5301810001	NTE177	ECG177	SK9091/177	103-131	
D601	5301810001	NTE177	ECG177	SK9091/177	103-131	
IC201	TDA4505A 61250700001					
IC202	TDA2545A 6125880001					
IC280	TDA1013A 6124670001					
IC309	612479-1 6124790001	NTE960 NTE960	ECG960 ECG960	SK3591/960 SK3591/960	221-Z9043 221-Z9043	
IC310	SAB3037 6125450001					
IC404	PS2021 5302980001	NTE3041 NTE3041	ECG3041 ECG3041	SK2041/3041 SK2041/3041		
IC580	TDA3654Q 6124440001	NTE1567 NTE1567	ECG1567 ECG1567	SK7805/1567 SK7805/1567		
IC640	TDA3564 6125080001 6126150001					
Q200	435-1	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
Q240	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	442-1	NTE319P *	ECG319P *	SK9432/319P *	121-Z9021 *	
	6104420001	NTE319P *	ECG319P *	SK9432/319P *	121-Z9021 *	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFG. PART No./ TYPE No.					
		NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
Q244	434-1	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
Q304	6104340001	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
	435-1	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
Q311	434-1	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
Q312	6104340001	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
	435-1	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
Q400	532-3					
	6105320003					
	6105610001					
Q402	C327(EUROPE)	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
	6103690001	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
Q403	500-1	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
Q406	6105000001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	C557(EUROPE)	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
	6104980001	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
Q407	500-4	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
Q410	6105000004	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	435-1	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
Q431	360-1	NTE128	ECG128	SK3024/128	121-792 *	
Q432	6103600001	NTE288	ECG288	SK3434/288	121-Z9046	
	C3038	NTE51	ECG51	SK9452/51		
	6105510001	NTE51	ECG51	SK9452/51		
Q500	BF819	NTE198	ECG198	SK3220/198	121-Z9028	
	6105310001	NTE198	ECG198	SK3220/198	121-Z9028 *	
Q501	433-2	NTE2302	ECG2302	SK9422		
	6104330002	NTE2302	ECG2302	SK9422		
Q600,605	435-1	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
Q610	434-1	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
	6104340001	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
Q615,620	435-1	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
SCR401	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
	611019-1					
SCR505	6110190001	NTE56008	ECG56008	SK3660/56008		
	BT151-500R	NTE5466	ECG5466	SK9294/5466	185-Z9022	
	6110180001	NTE5456	ECG5457	SK3598/5457	185-Z9010	
Z222	5301571439	NTE5008A	ECG5008A	SK4A3/5008A	103-279-08	
Z222	5303291519					
Z223	5302491829					
Z303	5301571569	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
Z306	5301571330	NTE5036A	ECG5036A	SK33A/5036A	103-Z9004	
Z408	5301571220	NTE5030A	ECG5030A	SK22A/5030A	103-144	
Z417	5301571130					
Z435	5303020003	NTE5021T1	ECG5021T1			
Z436	5302541039	NTE5013A	ECG5013A	SK6A2/5013A	103-Z9008	
Z503	5303291629					
Z504	5302491160					
	5302491689					

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFR. PART No./ TYPE No.					NOTES
		NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	
CRT BOARD						
Q26	250-3	NTE171	ECG171	SK3201/171	121-822	
	6102500003	NTE171	ECG171	SK3201/171	121-822	
Q35	C558(EUROPE)	NTE159 *	ECG159 *	SK3466/159 *	121-29003 *	
	6104340001	NTE159 *	ECG159 *	SK3466/159 *	121-29003 *	
Q40, 47	250-3	NTE171	ECG171	SK3201/171	121-822	
	6102500003	NTE171	ECG171	SK3201/171	121-822	
ANTENNA INPUT MODULE (ANT008-A001)						
D702	2303030002					
AUDIO JACK PANEL (AVJ014-A001)						
IC1, 2	6121860001	NTE4016B	ECG4016B	SK4016B	HE-442-99	
Q2, 4	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-29000A *	

For SAFETY use only equivalent replacement part.
* Lead configuration may vary from original.

COILS (RF-IF)

ITEM No.	FUNCTION	MFR. PART No.	ITEM No.	FUNCTION	MFR. PART No.
MAIN BOARD			L502	RF Choke (15uH)	3620440004
L201	RF Choke (.68uH)	3618130680	L503	Horiz Linearity	3620280005 (3)
L202	Peaking (1.2uH)	3618131299			3620280004 (4)
L204	Peaking (4.7uH)	3618134799	L515	RF Choke (180uH)	3618131819
L205	Video Det 45.75MHz	3617990008	L600	Comb Filter Adj (12-20uH)	3619660003
L206	Discriminator 4.5MHz	3619680005 (1)	L601	RF Choke (10uH)	3618131005
L210	Peaking (2.2uH)	3618132290	L602	Peaking (10uH)	3618131005
L211	RF Choke (2.2uH)	3618132290	L605	Peaking (10uH)	3618131005
L213	Detector (45.75MHz)	3617990008	L606	Peaking (18uH)	3618131805
L214	Peaking (12uH)	3618131209	L607	RF Choke (15uH)	3618131505
L400	Line Choke	3619150003	L609	Peaking (3.3uH)	3618133395
L402	Peaking (3.3uH)	3618353395	L610	Peaking (6.8uH)	3718136895
L403	RF Choke (12uH)	3618351209	L614	Peaking (6.8uH)	3618136899
L404	RF Choke (3.57uH)	3620430001 (5)	L615	Peaking (6.8uH)	3618136899
L406	RF Choke (12uH)	3620410001	L616	Peaking (6.8uH)	3618136899
L414	RF Choke (5.3uH)	3620410002	T203	Sound Input 4.5MHz	3620111001
L415	Peaking (10uH)	3620410003 (2)	CRT SOCKET BOARD		
L416	RF Choke (1uH)	3618351099	L40	Peaking (15uH)	3618135609
L501	Peaking (10uH)	3620410003	L60	Peaking (10uH)	3620410003

For SAFETY use only equivalent replacement part. (4) Used in main chassis board EMC833 and EMC834.
(1) Monural chassis only. (5) Early production.
(2) Remote chassis only.
(3) Used in main chassis board EMC821, EMC835 or EMC836.

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFR. PART No.	ITEM No.	RATING	MFR. PART No.
# C402	22 35V	2702152135 (1)			
# C509	100 25V	2702151225			

For SAFETY use only equivalent replacement part.
Items Not Listed Are Normally Available At Local Distributors.
(1) Used in Remote versions only.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	ITEM No.	RATING	MFR. PART No.
C204	82 NPO 50V 5%	2508418205	C581	220 50V 5%	
C230	82 NPO 50V 5%	2508418205		68 NPO 50V 5%	2508416805
C232	82 NPO 50V 5%	2508418205	C602	10 NPO 50V 10%	2508411008
C233	82 NPO 50V 5%	2508418205	C603	300 N750 50V 5%	2508433015
C247	10 NPO 50V 5%	2507391009	C604	82 NPO 50V 5%	2508418205
C278	82 NPO 50V 5%	2508418205	C606	150 N220 50V 5%	2508421515
C340	150 N220 50V 5%			220 50V 5%	
C362	39 NPO 50V 5%	2508413905	C607	120 NPO 50V 5%	2508411215
# C400	.22 120VAC	2509842240	C609	68 NPO 50V 5%	2508416805
C439	68 N750 50V 5%	2508586805	C610	330 50V 5%	
# C448		2509360001 (1)		330 N750 50V 5%	2508433315
	.0047 125VAC	2506260014 (2)	C611	680 50V 10%	
# C502	680 2KV 10%	2508350015		680 N220 50V 10%	2508446819
	.001 2KV 10%	2508350005	C615	150 N220 50V 5%	2508421515
	330 2KV 10%	2508350011	C624	100 NPO 50V 5%	2508411015
# C504	.33 400V 10%	2508050006	C625	2 40pF Trimmer	
	.39 400V 10%	2508050001		10 NPO 50V 5%	2508411008
# C505	.0075 2KV 5%	2508187525			

For SAFETY use only equivalent replacement part.
Items Not Listed Are Normally Available At Local Distributors.

(1) Used in 20" chassis only.
(2) Used in 19" chassis only.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM NO.	FUNCTION	RESISTANCE	MFR. PART NO.	NOTES
# R1A	G2		(1)	
# R1B	Focus		(1)	
R28	Red Drive	2200	2204202222	
R29	Red Cut-Off	4700	2204204722	
R33	Green Drive	2200	2204202222	
R41	Green Cut-Off	4700	2204204722	
R45	Blue Drive	2200	2204202222	
R48	Blue Cut-Off	4700	2204204722	
R233	Horiz Freq	6800	2204806822	
R237	RF AGC	47K	2204804732	
R247	Horiz Centering	10K	2204801032	
R452	130V Adj	1000	2204801022	
R585	Vert Height	100	2204801012	
R601	Comb Amp Null	470	2204804712	
R622	Color	10K	2204730001	
R623	Picture	10K	2204730001	
R624	Sharpness	10K	2204730001	
R625	Brightness	10K	2204730001	
R626	Tint	10K	2204730001	
R634	Color	10K	2204801032	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM NO.	FUNCTION	RESISTANCE	MFGR. PART NO.	NOTES
SECONDARY CONTROL MODULE (ASC192-A001)				
R201	Balance	50K	2204590011	
R202	Bass	50K	2204590011	
R203	Treble	50K	2204590011	
R622	Color	10K	2304590001	
R623	Picture	10K	2304590001	
R624	Sharpness	10K	2304590016	
R625	Brightness	10K	2304590001	
R626	Tint	10K	2304590001	

For SAFETY use only equivalent replacement part.
(1) Part of Horizontal Output Transformer Number T504, Part Number 3620551002.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	
R19	12K 2% 1/2W Carbon Film	2302821232	HW312	
R20	12K 2% 1/2W Carbon Film	2302821232	HW312	
R21	12K 2% 1/2W Carbon Film	2302821232	HW312	
R22	12k 2% 1/2W Carbon Film	2302821232	HW312	
R37	12K 2% 1/2W Carbon Film	2302821232	HW312	
R38	12K 2% 1/2W Carbon Film	2302821232	HW312	
R39	12K 2% 1/2W Carbon Film	2302821232	HW312	
R40	12K 2% 1/2W Carbon Film	2302821232	HW312	
R52	12K 2% 1/2W Carbon Film	2302821232	HW312	
R53	12K 2% 1/2W Carbon Film	2302821232	HW312	
R54	12K 2% 1/2W Carbon Film	2302821232	HW312	
R55	12K 2% 1/2W Carbon Film	2302821232	HW312	
# R203	18 5% 1/2W Carbon Film	2302231805	HW018	
#	18 1/2W Metal Film	2302271895	HW018	
#		2302231015	HW110	
R231	100 5% 1/2W Carbon Film	2303323012		
R232	30.1K 1% 1/8W Carbon Film			
	28.7K 1% 1/8W Carbon Film			
# R284	22 5% 1.6W Metal Film	2303092295		
# R365	12 5% 1/2W Carbon Film	2302231205	HW012	
#	12 1/2W Metal Film	2302271295	HW012	
# R375	10 5% 1/4W Carbon Film	2302181005	QW010	
#	10 1/3W Metal Film	2302681095		
# R387	13 5% 1/4W Carbon Film	2302181305	QW013	
#	13 1/3W Metal Film	2302681395		
# R400	33 5% 1/4W Carbon Film	2302813305 (1)	QW033	
# R401	10.1 Cold PTC	2302070008		
# R402	10 5% 1/4W Carbon Film	2302811005	QW010	
#	10 1/4W	2303242001 (1)	QW010	
#		2303240001		
R403	14.7 Cold NTC	2303240001		
R405	5600 5% 5W WW	2303315625	5W256	
R408	56 5% 5W WW	2400800143	5W056	
# R416	1000 5% 1/8W Carbon Film	2303151025	EW210	
R419	8200 2% 1/8W Carbon Film	2303158222	EW282	
R420	1100 2% 1/4W Carbon Film	2302811122	EW211	
# R422	56 5% 1/4W Metal Film	2302685695	QW056	
# R430	56 5% 1/4W Metal Film	2302685695	QW056	
R432	62K 2% 1/4W Carbon Film	2302816232	QW362	
	56K 2% 1/4W Carbon Film		QW356	
# R433	1 5% 1/2W Metal Film	2302231095	HW1D0	
# R434	1 5% 1/2W Metal Film	2302231095	HW1D0	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	
R449	20K 2% 1/4W Carbon Film	1202812032	QW320	
R451	4300 2% 1/8W Carbon Film	2303154322	EW243	
#	3900 2% 1/8W Carbon Film		EW239	
R454	4.7M 5% 1/2W Metal Film	2302674755	HW547	
R505	2200 10% 5W WW	2400800181	5W222	
# R510	1 5% 1/8W Carbon Film	2302181095		
#	1 1/3W Metal Film	2302681085		
# R512	150 5% 1/4W Carbon Film	2302811515	QW115	
R513	10 5% 7W WW	2400810125		
R620	120 2% 1/4W Carbon Film	2302811212	QW112	
# R648	10 5% 1/2W Carbon Film	2302231005	HW010	
#	10 1/2W Metal Film	2302271095	HW010	

For SAFETY use only equivalent replacement part.
(1) Used In Remote version only.

COILS & TRANSFORMERS

ITEM No.	FUNCTION	MFGR. PART No.	OTHER IDENTIFICATION	NOTES
# DY1	Yoke Horiz 2.4mH 90° Vert 19.5mH	3620380001 3620770001(2) 3619830003(2)		
# T401	Switch Mode	3620570001	3112 38 31041(1)	(1) Number on unit.
# T500	Horiz Drive	3204030003	30541(1)	
# T504	Horiz Output	3620551002	362055-2(1)	(2) May be used In some versions.
#		3620550005 (2)		
#		3620550007 (2)		
#		3620550006 (2)		
#		3620550008 (2)		

For SAFETY use only equivalent replacement part.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP901	2" X 3 1/2" 0V PM	5823011001		
SP902	16 Ohm 3/4" Pelzo Tweeter	5801160001		

WIRING DATA

High Voltage Lead	Use BELDEN No. 8868 (24 KV)
Shielded Hook-up Wire	Use BELDEN No. 8401 or 8421 (Single-Conductor) 8208 (Two-Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8529 (Solid) Available in 13 Colors 8522 (Stranded) Available in 13 Colors
75-Ohm Tuner Input Lead	Use BELDEN No. 8241
300-Ohm Antenna Lead-in	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) 4-Conductor 8485 (Round) 5-Conductor 8488 (Round) 8-Conductor

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
# F400	Fuse	1815205400	4 Amp @ 125VAC Slow Blow
L405	Fuse Clips	7340420002	2 Used
L409	Ferrite Bead	3640460003	
L410	Ferrite Bead	3640460001	
L411	Ferrite Bead	3640460003	
L413	Ferrite Bead	3640050001 (1)	
L417	Ferrite Bead	3640460003	
L418	Ferrite Bead	3640460003	
# L499	Degaussing Coil	3640460001	
L516	Degaussing Coil	3620210001 (2)	
P400	Ferrite Bead	3620210007	
S580	Cord	4614070006 (3)	AC Power, Polarized
V1	Cord	4614070004 (4)	
	Switch	1606720001	Vertical Center
	CRT	A51ADL00X	Models EMK672PE01,-2 and RG4332WA01,-3
		A48AAN-01XP	Board EMC821
		A66AAM03X	Boards EMC835 and EMC 836
		A51JFC60X	Models EMK672PE01,-3 and RG4332WA02,-4
Y200	Filter	3620600001	SAW
Y201	Filter	3620700001	
Y202	Filter	3617560001	4.5MHz
Y301	Crystal	5604440004	4MHz
Y600	Delay Line	3615790006	
Y601	Crystal	5604450002	7.1590 MHz
	Antenna		UHF RUSSELL REPLACEMENT BOW-4H
	Antenna		VHF RUSSELL REPLACEMENT POR-12H
			RUSSELL REPLACEMENT Rods SIM-4H
	Wedge	6458520001	Yoke (2 used)
	Wedge	6458520002	Yoke

For SAFETY use only equivalent replacement part.
(1) Remote chassis only.
(2) Used in chassis 19C801, 19C802 and 19C803.
(3) Used in Models RG4332WA01, RG4332WA02, RG4332WA03 and RG4332WA04.
(4) Used in Models EMK671PE01, EMK672PE02, EMK672PE03 and EMK675PE04.

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	PART No.	PART No.	PART No.
MODEL	EMK672	RG4332		
Cabinet, Front	1459830031			
Cabinet, Back	1459730004	1459730004		
Crystal - LED	1460520006			
Door - Secondary Control	1459840005	1459840002		
Cover - LED		1460520001		
Front Assembly		7053140001		
Grille - Speaker	1521130003	1521130003		
Jack - Headphones		1816410001		
Knob - Secondary Controls (5 Used)	1459770002	1459770002		
Latch - Door	1219940001	1219940001		
LED - Channel Display	5303200002	5303200002		
Overlay - Address Assembly		1521140003		
Overlay - Control	1521140006			
Pushbutton-Channel Up	1459860005	1459860005		
Pushbutton-Channel Down	1459860006	1459860006		
Pushbutton-Power	1459910002	1459910002		
Pushbutton-Volume Up	1459860007	1459860007		
Pushbutton-Volume Down	1459860008	1459860008		

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

PARTS LIST Audio Jack Panel, Secondary Control Module, Antenna Input Module

ITEM No.	DESCRIPTION	MFGR. PART No.	ITEM No.	DESCRIPTION	MFGR. PART No.
AUDIO JACK PANEL (AVJ014-A001)			ANTENNA ASSEMBLY (ANT004)		
CAPACITORS			MISCELLANEOUS		
C12	10mf 50V Electrolytic	2701591150		Slide Switch (Cable/Normal)	1606640005
C18	10mf 50V Electrolytic	2701591150			
C26	10mf 50V Electrolytic	2701591150	ANTENNA INPUT MODULE (ANT008-A001)		
C40	10mf 50V Electrolytic	2701591150	CONTROLS		
C42	.1mf 50V Electrolytic	2701591950	R710	Volume Limiter, 500 ohm	2204130026
C46	.1mf 50V Electrolytic	2701591950	SWITCHES		
SEMICONDUCTORS			S701	Momentary Switch (Add)	
IC1	Integrated Circuit Stereo/Mono Switch	6121860001	S702	Momentary Switch (Delete)	
IC2	Integrated Circuit TV/Aux Switch	6121860001	S703	Slide Switch (Program/Scan)	
Q2	Transistor (NPN) Audio Buffer	6104350001	S704	Slide Switch (Cable/Normal)	
Q4	Transistor (NPN) Audio Buffer	6104350001	MISCELLANEOUS		
SECONDARY CONTROL MODULE (ASC192-A001)			D702	Silicon Diode	5301810001
CONTROLS			5 FUNCTION SWITCH MODULE (ASW052/3/4/8/9)		
R201	Bal Control 50K 20%	2204590011	MISCELLANEOUS		
R202	Bass Control 50K 20%	2204590011		Momentary Switches (6 used on ASW059, 5 used on all others)	1606880004
R203	Treble Control 50K 20%	2204590011			
R622	Color Control 10K 20%	2304590001			
R623	Picture Control 10K 20%	2304590001			
R624	Sharp Control 10K 20%	2304590016			
R625	Bright Control 10K 20%	2304590001			
R626	Tint Control 10K 20%	2304590001			
SWITCHES					
S104	Cable/Normal Switch	1607100001			
S201	Mono/Stereo/SAP Switch	1607110001			
S202	Expanded Sound Switch	1607110001			
S203	TV/Aux Switch	1607100001			

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.					NOTES
		NTE PART No.	ECG PART No.	TCE PART No.	ZENITH PART No.	
TUNER CONTROL BOARD (ATU001, ATU002)						
D12	5301811001	NTE177	ECG177	SK9091/177	103-131	
D17	5302471001	NTE112	ECG112	SK3089/112	103-61	
IC1000	6125560002					
IC1100	6124850002					
Q30, 40	6102230001	NTE159	ECG159	SK3466/159	121-Z9003	
Q60	6102320002	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A *	

PARTS LIST AND DESCRIPTION

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFR. PART No./ TYPE No.					NOTES
		NTE PART No.	ECG PART No.	TCE PART No.	ZENITH PART No.	
STEREO DECODER PANEL (ASD002-B002)						
D202, 4, 6	5301810001	NTE177	ECG177	SK9091/177	103-131	
D208	5302470001	NTE112	ECG112	SK3089/112	103-61	
D210, 212	5301810001	NTE177	ECG177	SK9091/177	103-131	
D501	5303100001	NTE580	ECG580	SK5036/580	212-Z9000	
IC101	6123700001	NTE1580	ECG1580	SK7743/1580		
IC201	6125630001					
IC202	6125640001					
IC400	6124720001					
IC501	6124120002					
IC502, 3	6123270001	NTE1566	ECG1566	SK7726/1566		
Q202	6104350004	NTE199 *	ECG199 *	SK3245/199 *	121-972 *	
Q204	6104340001	NTE159 *	ECG159 *	SK3466/159 *	121-Z9003 *	
Q206	6103620001					
Q208	6104350004	NTE199 *	ECG199 *	SK3245/199 *	121-972 *	
Q501, 2, 3	6104350001	NTE123AP *	ECG123AP *	SK3854/123AP *	121-Z9000A *	
REMOTE CONTROL TRANSMITTER (TUMA5G)						
D1, 2	5302740001					
D3	5301810001	NTE177	ECG177	SK9091/177	103-131	
Q1	6102230001	NTE159	ECG159	SK3466/159	121-Z9003	
Q2	6104430001	NTE48	ECG48			
Q3	6102230001	NTE159	ECG159	SK3466/159	121-Z9003	
Q4	6102240001	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A	
U1 [IC1]	6125670004					
U2 [IC2]	6125660001					
TUNER CONTROL BOARD (ATU006/7/9)						
D9, 11	5301811001	NTE177	ECG177	SK9091/177	103-131	
D14	5302471001	NTE112	ECG112	SK3089/112	103-61	
D30, 40	5301811001	NTE177	ECG177	SK9091/177	103-131	
IC1000	612576-1 6125760001 6125710001 6125780001					
Q30, 40	6102230001	NTE159	ECG159	SK3466/159	121-Z9003	
Q60	6102320002	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A *	
UHF/VHF TUNER						
D1 THRU D5	1716580001					MATCHED SET
D7 THRU D17	5303040001					
D18, 19	5302300003					
D20, 21	5303040001					
D101 THRU D104	1716580001					MATCHED SET
D105, 6	5302300003					
IC1	6124400001					
IC2	6124990002					
Q1	6105210001					
Q101	6105360001					
Q102	6105150002					

* Lead configuration may vary from original.

PARTS LIST RC RECEIVER MODULES/RC TRANSMITTER

ITEM No.	DESCRIPTION	MFG. PART No.	NOTES
REMOTE CONTROL RECEIVER MODULE (ARR002-A001)			
CAPACITORS			
C2	22uF 25V Electrolytic	2701682125	
C11	22uF 25V Electrolytic	2701682125	
SEMICONDUCTORS			
D1	Photo Diode	5302350001	
D2	Silicon Diode	5303176001	
IC1	Remote Rec IC	6124500001	
TRANSFORMERS			
T2	Inductor	3619870001	
REMOTE CONTROL RECEIVER MODULE (ARR007-A001/B002/C003)			
CAPACITORS			
C1	1uF Electrolytic	2702141050	
C2	1uF Electrolytic	2702141050	
C4	47uF 25V Electrolytic	2702145125	
SEMICONDUCTORS			
D1	Photo Diode	5302350001	
IC1	Remote Rec IC	6125700001	
REMOTE CONTROL TRANSMITTER (TUMA5G)			
CAPACITORS			
C1	2.2uF Electrolytic	2702032050	
C2	2.2uF Electrolytic	2702032050	
C3	22pF 5% NPO	2508412205	
C4	22pF 5% NPO	2508412205	
C5	220uF 16V Electrolytic	2702032216	
RESISTORS			
R18	430k 2%	2302814342	
SEMICONDUCTORS			
D1	Infrared Light Emitting Diode	5302740001	
D2	Infrared Light Emitting Diode	5302740001	
D3	Diode, Silicon	5301810001	
Q1	Transistor, PNP (Sw)	6102230001	
Q2	Transistor, Darlington (Voltage Drop)	6104430001	
Q3	Transistor, PNP (Buffer)	6102230001	
Q4	Transistor, NPN (IR Driver)	6102240001	
IC1	Microprocessor IC (01 Vers Ion)	6125670004	
	Microprocessor (11 Vers Ion)	6125990001	
	Microprocessor (21 Vers Ion)	6125990002	
IC2	Dual Quad Input NOR Gate	6125660001	
MISCELLANEOUS			
S1	Switch (TV/VCR)	1607320001	
X1	Crystal, 4MHz	5604480004	

PARTS LIST TUNER CONTROL MODULES, TUNER CONTROL UNIT ASSEMBLY, UHF/VHF TUNER MODULE

ITEM No.	DESCRIPTION	MFGR. PART No.	ITEM No.	DESCRIPTION	MFGR. PART No.	ITEM No.	DESCRIPTION	MFGR. PART No.	ITEM No.	DESCRIPTION	MFGR. PART No.
TUNER CONTROL BOARD (ATU001, ATU002)			COILS			TUNER CONTROL UNIT ASSEMBLY (ATC417)			UHF/VHF TUNER		
CAPACITORS			CONTROL MODULES			SEMI CONDUCTORS					
C15	27pF 5% NPO	2507392705	L1	Peaking Coil 4.7uH	3618134799	ARR007	Remote Rec Module	ARR007-A001	D1-b5	Matched Set of	1716580001
C16	27pF 5% NPO	2507392705	L2	Peaking Coil 4.7uH	3618134799	ASW054	5 Function Sw Module	ASW054-A001	D7	Varactor Diodes	5303040001
C50	22uF 25V Electrolytic	2701682125	L3	Peaking Coil 4.7uH	3618134799	TUNER CONTROL UNIT ASSEMBLY (ATC418)			D8	Diode, High Freq,	5303040001
C57	10uF Electrolytic	2701681150	L4	Peaking Coil 4.7uH	3618134799	CONTROL MODULE			D9	Diode, High Freq,	530340001
COILS			L5	Peaking Coil 4.7uH	3618134799	TUNER CONTROL UNIT ASSEMBLY (ATC420)			D10	Diode, High Freq,	5303040001
L2	Peaking Coil 4.7uH	3618134799	L6	Peaking Coil 4.7uH	3618134799	CONTROL MODULES			D11	Diode, High Freq,	5303040001
L3	Peaking Coil 4.7uH	3618134799	L7	Peaking Coil 4.7uH	3618134799	ALD035	Stereo/SAP Ind Module	ALD035-A001	D12	Diode, High Freq,	5303040001
L4	Peaking Coil 3.3uH	3618133399	L18	Peaking Coil 4.7uH	3618134799	ARR007	Remote Rec Module	ARR007-A001	D13	Diode, High Freq,	5303040001
L5	Peaking Coil 3.3uH	3618133399	L19	Peaking Coil 4.7uH	3618134799	MISCELLANEOUS			D14	Diode, High Freq,	5303040001
L18	Peaking Coil 4.7uH	3618134799	L20	Peaking Coil 3.3uH	3618133399	# SW	Power Switch	1607240001	D15	Diode, High Freq,	5303040001
L19	Peaking Coil 4.7uH	3618134799	L21	Peaking Coil 3.3uH	3618133399	LDR	Light Depend Resistor	2303160002	D16	Diode, High Freq,	5303040001
L20	Peaking Coil 4.7uH	3618134799	L22	Peaking Coil 4.7uH	3618134799	TUNER CONTROL UNIT ASSEMBLY (ATC421)			D17	Diode, High Freq,	5303040001
L21	Peaking Coil 4.7uH	3618134799	L23	Peaking Coil 4.7uH	3618134799	CONTROL MODULES			D18	Diode, Varactor	5302300003
L22	Peaking Coil 4.7uH	3618134799	L24	Peaking Coil 4.7uH	3618134799	ALD036	Stereo/SAP Ind Module	ALD036-A001	D19	Diode, Varactor	5302300003
L23	Peaking Coil 4.7uH	3618134799	L30	Peaking Coil 4.7uH	3618134799	ARR007	Remote Rec Module	ARR007-A001	D20	Diode, High Freq,	5303040001
L24	Peaking Coil 4.7uH	3618134799	L40	Peaking Coil 4.7uH	3618134799	ASW058	5 Function Sw Module	ASW058-A001	D21	Diode, High Freq,	5303040001
L30	Peaking Coil 4.7uH	3618134799	L50	Peaking Coil 12uH	3618131209	MISCELLANEOUS			(3402930003 and 0004 only)		
L40	Peaking Coil 4.7uH	3618134799	MISCELLANEOUS			LDR	Light Depend Resistor	2303160002	D101 -	Matched Set of	1716580001
L50	Peaking Coil 12uH	3618131209	Y1	Ceramic Resonator 6MHz	3620560002	TUNER CONTROL UNIT ASSEMBLY (ATC422)			D104	Diode, Schottky	5302300003
MISCELLANEOUS			SEMICONDUCTORS			CONTROL MODULES			D105	Diode, Varactor	5302300003
Y1	Ceramic Resonator 6MHz	3620560002	D9	Silicon Diode (Not Used In ATU006)	5301811001	ALD037	Stereo/SAP Ind Module	ALD037-A001	Q1	Transistor, N-Ch, Dual	6105210001
SEMICONDUCTORS			D11	Silicon Diode	5301811001	ARR007	Remote Rec Module	ARR007-A001	Q101	Transistor, N-Ch, Dual	6105360001
D12	Silicon Diode	5301811001	D14	Schottky Diode	5302471001	ASW059	5 Function Sw Module	ASW059-A001	Q102	Transistor, NPN	6105150002
D17	Schottky Diode	5302471001	D30	Silicon Diode (Not Used In ATU006)	5301811001	MISCELLANEOUS			IC1	Prescaler I.C.	6124400001
Q30	Transistor, PNP (10's Driver)	6102230001	D40	Silicon Diode (Not Used In ATU006)	5301811001	LDR	Light Depend Resistor	2303160002	IC2	VHF Mixer/Osc IC	6124990002
Q40	Transistor, PNP (1's Driver)	6102230001	Q30	Transistor, PNP (10's Driver)	6102230001	TUNER CONTROL UNIT ASSEMBLY (ATC480)					
Q60	Transistor, NPN (Power On/Off)	6102320002	Q40	Transistor, PNP (1's Driver)	6102230001	CONTROL MODULES					
IC1000	Microcomputer IC	6125560002	Q60	Transistor, NPN (Not Used In ATU006)	6102320002	ARR007	Remote Rec Module	ARR007-A001			
IC1100	Favorite Station Memory IC (ATU002 only)	6124850002	IC1000	Microcomputer (AT006)	6125710001	ASW054	5 Function Sw Module	ASW054-A001			
TUNER CONTROL BOARD (ATU006/7/9)			IC1000	Microcomputer (AT009)	6125760001						
CAPACITORS			TUNER CONTROL UNIT ASSEMBLY (ATC415)								
C12	27pF 5% NPO	2507392705	CONTROL MODULES								
C13	27pF 5% NPO	2507392705	ARR007	Remote Rec Module	ARR007-A001						
C50	22uF 25V Electrolytic	2701682125	ASW052	5 Function Sw Module	ASW052-A001						
C51	22uF 25V Electrolytic	2701682125	TUNER CONTROL UNIT ASSEMBLY (ATC416)								
C54	10uF Electrolytic	2701681150	CONTROL MODULES								
C62	1uF Electrolytic	2701681050	ARR007	Remote Rec Module	ARR007-A001						
			ASW053	5 Function Sw Module	ASW053-A001						

For SAFETY use only equivalent replacement part.

MAGNAVOX CHASSIS
19C801/2/3, 20C802/3/4/5/6