

CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

<b>CHASSIS REMOVAL</b> Remove six screws holding cabinet back. Disconnect antenna terminal leads and remove back. Disconnect HV anode, CRT socket, Deflection Yoke connector, Degaussing Coil connector, speaker connector, ground leads and all required cabling. Remove one screw holding main board assembly to cabinet front. Slide main board assembly out of cabinet side frame. CRT is accessible for removal at this point of disassembly. See CRT removal procedure.	<b>CRT REMOVAL</b> (Caution: Some versions sets employs CRTs with neck assemblies permanently bonded to CRT. DO NOT attempt to remove neck assemblies from CRT with TC13(Y), AT1231/93, TC20 suffix to type number.)  Follow "Chassis Removal" procedure and lay set facedown on a soft protective surface. Loosen and remove CRT neck assemblies (See caution). Remove four nuts holding CRT to cabinet front and lift CRT out of cabinet. <u>DO NOT LIFT CRT BY NECK.</u>
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SERVICING IN THE FIELD

<b>CRT IMPLOSION PROTECTION AND CLEANING</b> Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.	<b>CHANNEL TUNING</b> Channel Up and Down buttons are provided for channel scanning with ten numbered buttons (on Remote Transmitter) are provided for one or two-digit entry direct access channel selection. Fine tuning is automatic with fine tuning Up and Down buttons provided for additional fine tuning.
<b>FUSE DEVICES</b> A 4-amp fuse is used for low-voltage power supply protection. (See photo, Chassis - Top View.)	<b>HIGH VOLTAGE</b> For high voltage procedure, refer to Miscellaneous Adjustments.
<b>CHANNEL INDICATOR</b> Channel Indicator is accessible after removing cabinet back, and main board assembly.	<b>FOCUS</b> The focus may be varied by a Focus Control. (See photo, Cabinet - Rear View.)
<b>VHF/UHF TUNER</b> See Miscellaneous Adjustments.	<b>AGC</b> The AGC may be varied by an AGC Control. (See photo, Cabinet - Rear View.)

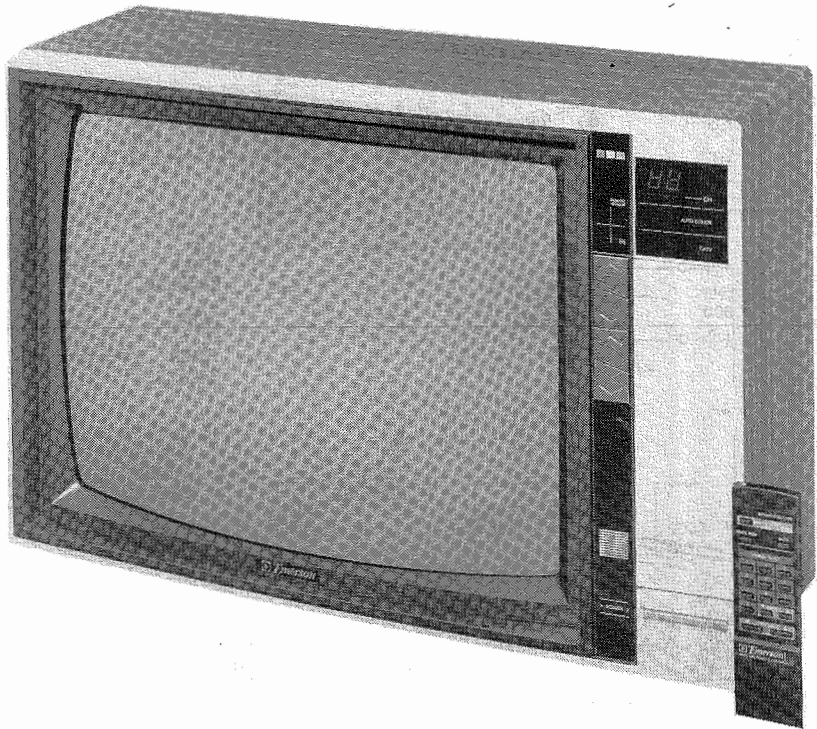
SET 2647 FOLDER 1

SAMS

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For Supplier Address See PHOTOFACT Index

EMERSON  
MODELS ECR2100, (SUFFIX A), (SUFFIX B)



Model ECR2100 (Suffix B)

SAFETY PRECAUTIONS

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EMERSON  
MODELS ECR2100, (SUFFIX A), (SUFFIX B)

SET 2647 FOLDER 1

SAMS

Howard W. Sams & Company

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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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DATE 3-89

SET 2647 FOLDER 1

10 9 8 7 6 5 4 3 2 1

SWITCHING SCHEMATIC

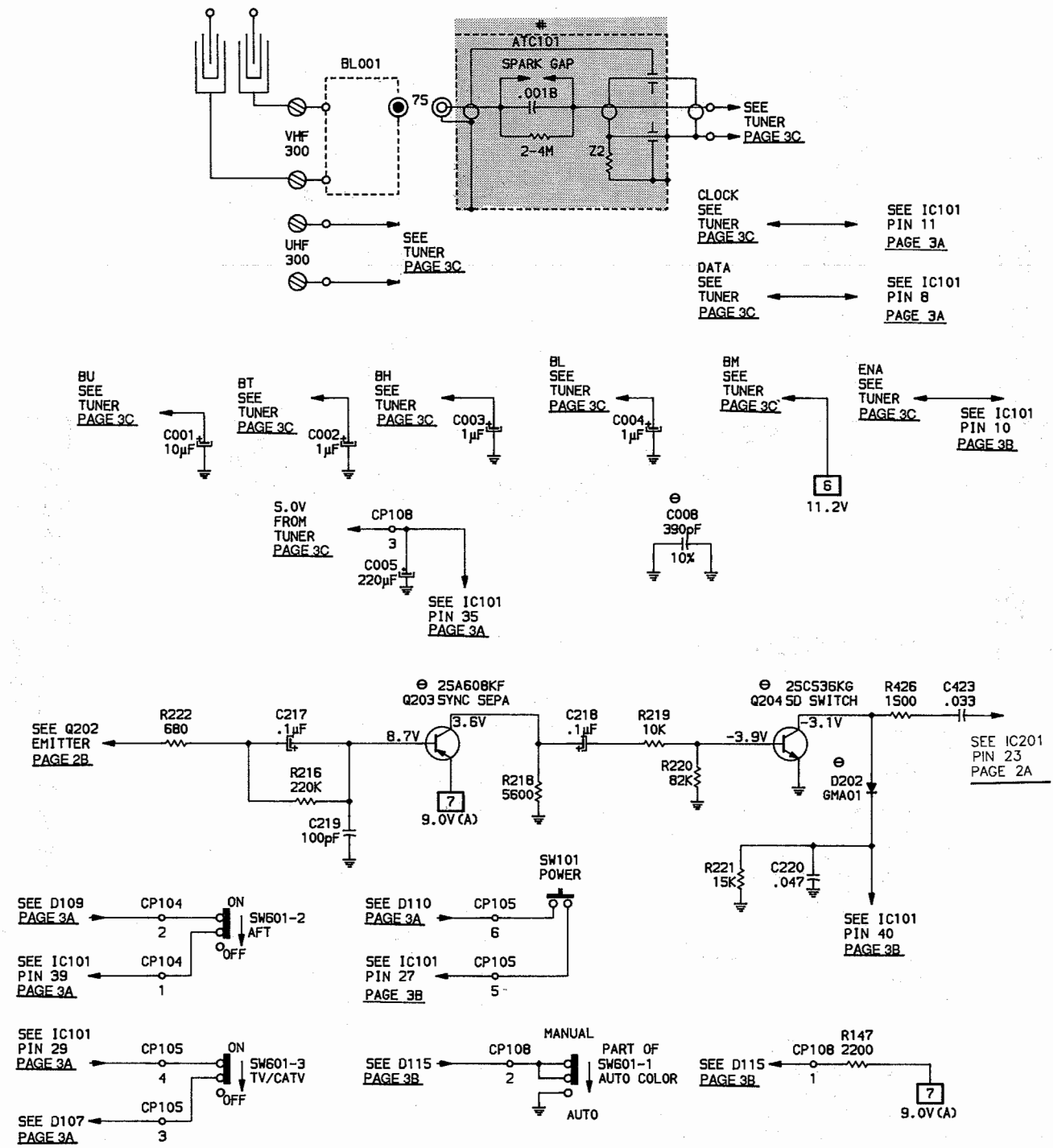
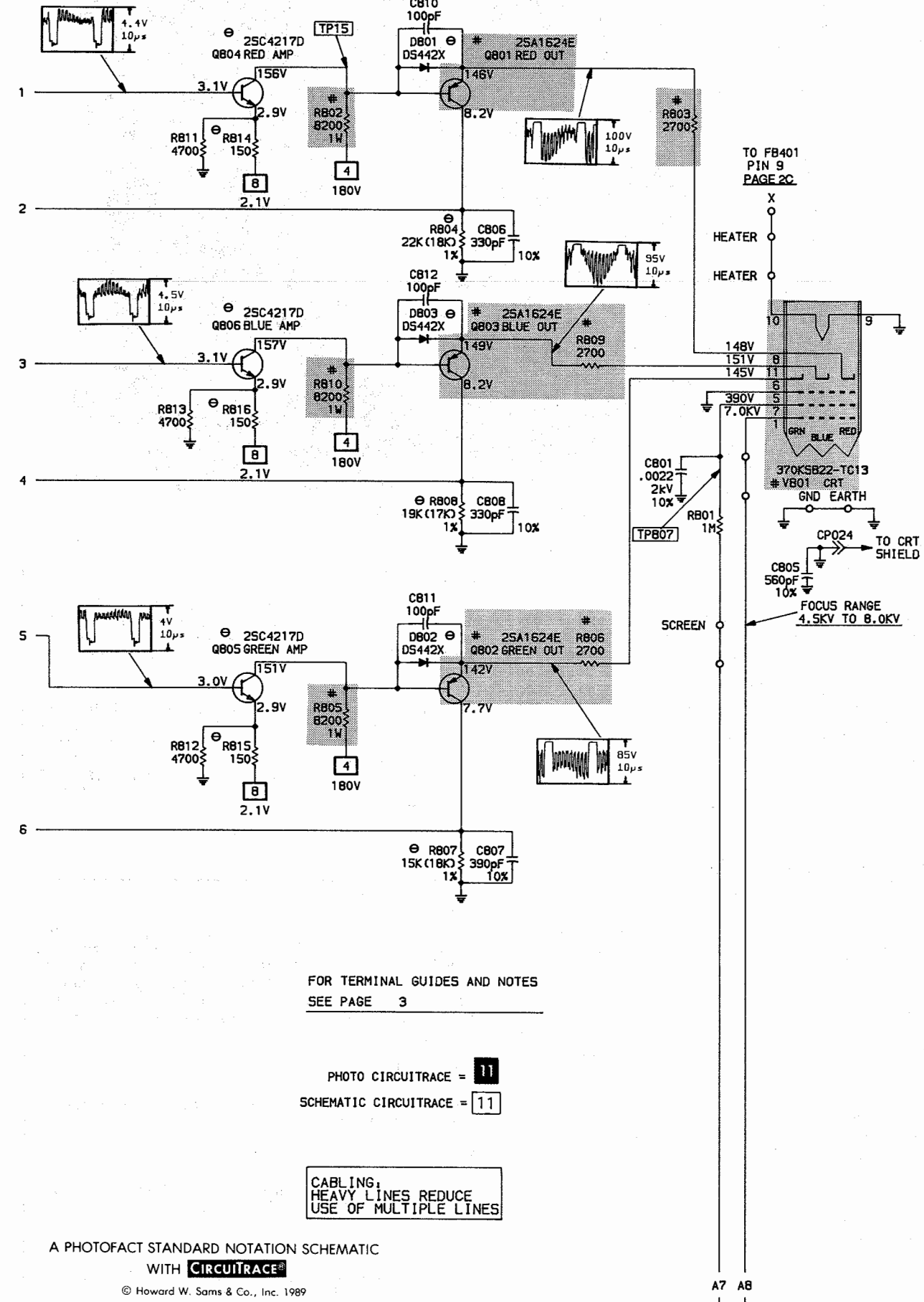


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SCHEMATIC CIRCUITRACE = 11

FOR TERMINAL GUIDES AND NOTES  
SEE PAGE 3

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CRT SCHEMATIC



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  
L204, L205, IF Output Coil.....9440

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 6.5V Bias to TP011.

VIDEO IF ALIGNMENT (SWEEP MARKER GENERATOR)

DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
TP012	TP001	44MHz (10MHz Sweep)	45.75MHz	Adjust L205 to place 45.75MHz marker as high on the response curve as possible without affecting symmetry. See Figure 1.
TP012	TP on Tuner	44MHz (10MHz Sweep)	41.25MHz 42.17MHz 45.75MHz 47.25MHz	Connect a 100 ohm resistor to TP003 and TP004. Adjust Tuner IF Output Coil for Maximum gain and symmetry of response. See Figure 2.

TV ALIGNMENT INSTRUCTIONS (Continued)

VIDEO IF ALIGNMENT (BAR SWEEP GENERATOR)

BAR SWEEP GENERATOR	SCOPE INPUT	REMARKS
Antenna Terminals	TP012	Perform Video IF Adjustments per SWEEP/MARKER GENERATOR instructions. See Figure 3.

AUTOMATIC FINE TUNING ALIGNMENT

Connect as explained in preliminary instructions unless specified otherwise.				
DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
TP06	TP001	44MHz (10MHz Sweep)	45.75MHz	Adjust L204 to place 45.75MHz marker at crossover. See Figure 4.

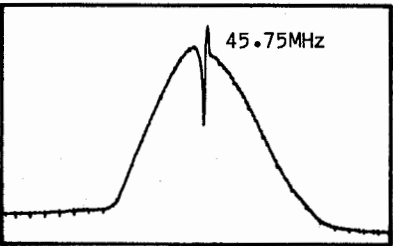


Figure 1

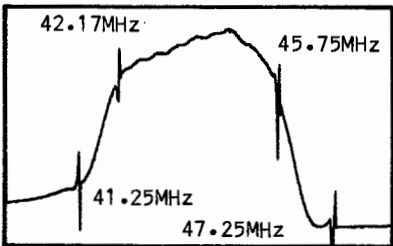


Figure 2



Figure 3

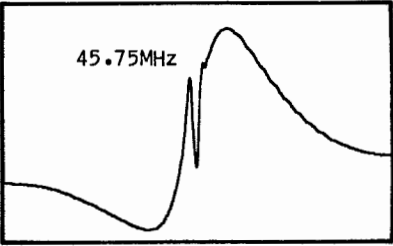


Figure 4

## POWER SUPPLY SCHEMATIC

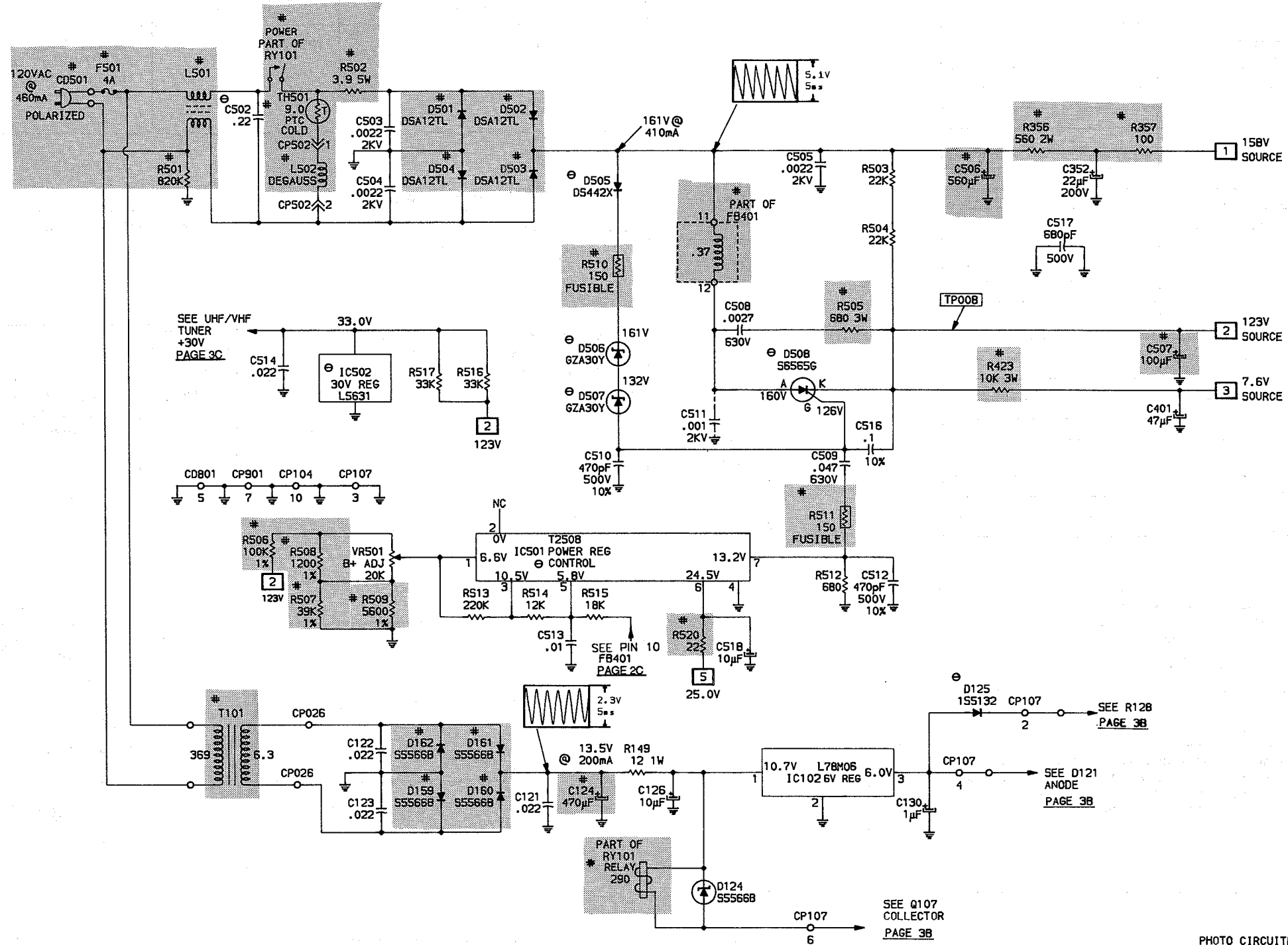


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SCHEMATIC CIRCUITRACE = 11

FOR TERMINAL GUIDES AND NOTES  
SEE PAGE 3

A PHOTOFAC<sup>®</sup> STANDARD NOTATION SCHEMATIC  
WITH **CIRCUITRACE<sup>®</sup>**

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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.

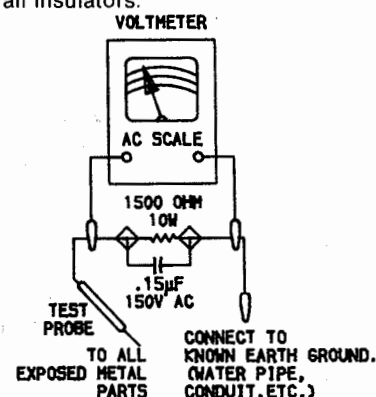
#### Leakage Current Hot Check

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 .15 $\mu$ F 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 (FB401). Refer to "Troubleshooting" Power Supply and Horizontal circuits.

NO PIC, NO SOUND, HAS RASTER: Check IF-AGC and source voltages from Horizontal Output Transformer (FB401). Refer to "Troubleshooting" IF-AGC and Horizontal circuits.

NO PIC, HAS SOUND, NO RASTER: Check Horizontal Output Transformer (FB401) sources 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 (FB401). 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.

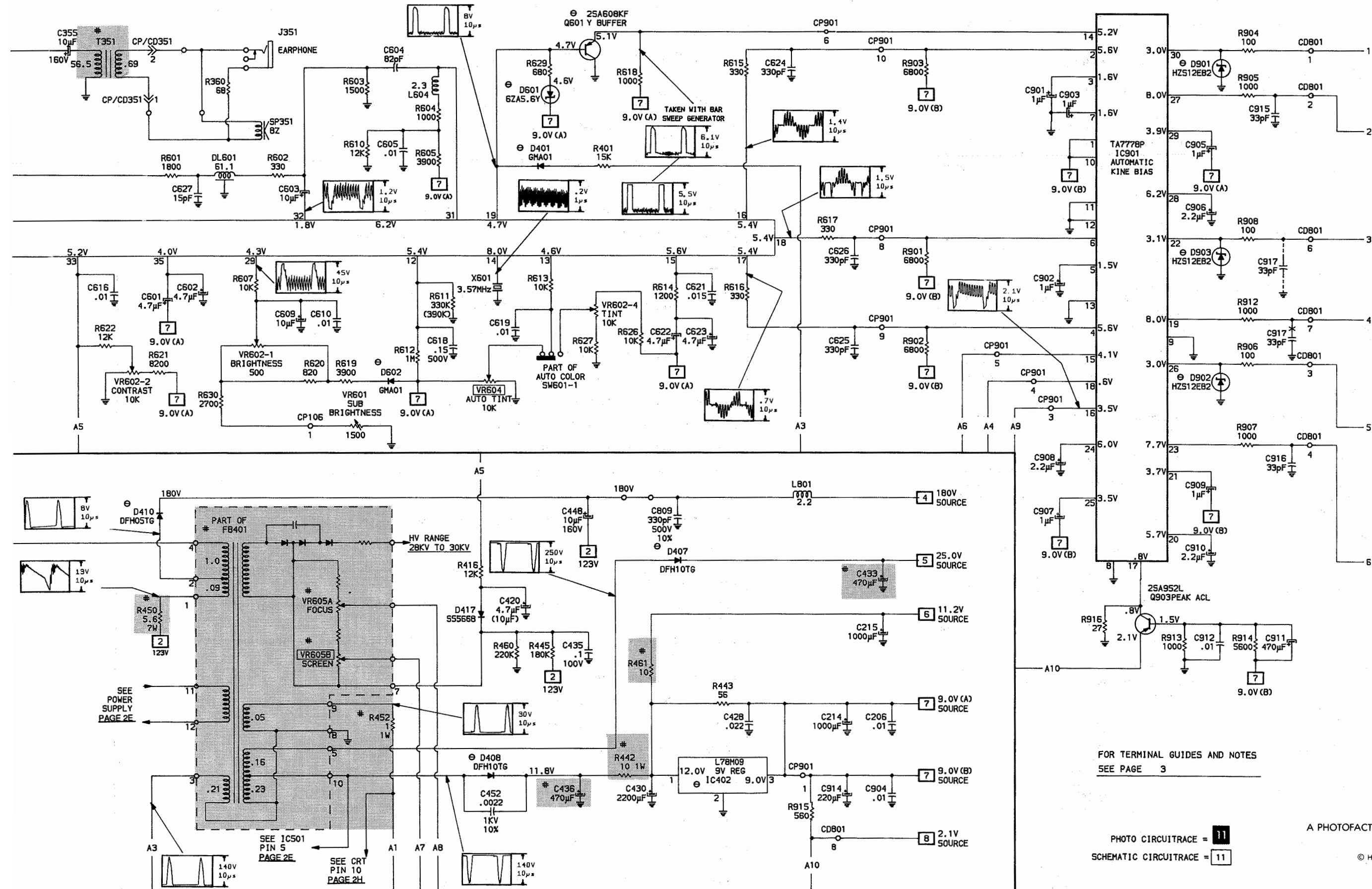
NO RED: Check Chroma and Red Output circuits. Refer to "Troubleshooting" Raster circuit.

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

# TELEVISION SCHEMATIC continued

C

D



## TROUBLESHOOTING

### POWER SUPPLY

Check the AC Fuse (F502). If Fuse F502 is open, check Bridge Rectifier Diodes (D501 thru D504), Capacitors C502 thru C505, Electrolytic C506. Apply 120V AC and check for 161V at the cathode of Diode D502. If this voltage is missing, check Line Filter L501, Power Relay (RY101) and Fuse R502. If 161V is present at cathode of D502, check for 123V at TP008. If this voltage is missing, check the voltages and components associated with SCR D508, Power Regulator IC (IC501) and Horizontal Output Transistor (Q401). If the proper voltage is present at TP008, refer to the "Horizontal" section of this Troubleshooting guide. If the voltage at TP008 fluctuates between 116V thru 150V, accompanied by a ticking sound from the Horizontal Output Transformer (FB401), the TV may be in shutdown, refer to the "Horizontal" and "High Voltage Shutdown" sections of this Troubleshooting guide.

### 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 (Q401). If horizontal deflection is now present, check the voltages, waveforms and components associated with pins 22 thru 25 of VIF/SIF/Chroma/Deflection IC (IC201) and Horizontal Drive Transistor (Q402). If there is no horizontal sweep, check the voltages, waveforms and components associated with Transistor Q401 and Horizontal Output Transformer (FB401). Check the voltages and components associated with Diodes D407, D408, D410 and D411 for defects. The high voltage rectifier is part of Transformer FB401 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 24 and 25 of IC201. Horizontal linearity or foldover problems may be caused by Capacitors C437, C442 thru C444 being defective.

### VERTICAL

Inject a vertical drive signal at pin 27 of VIF/SIF/Chroma/Deflection IC (IC201). If vertical deflection is now present, check the voltages, waveforms and components associated with pins 26 and 27 of IC201. If there is still no vertical sweep, check the voltages, waveforms and components associated with the Vertical Output IC (IC401). Vertical linearity or foldover problems may be caused by vertical feedback and bias circuits, check Electrolytics C414, C417 and C418 for defects.

### HIGH VOLTAGE SHUTDOWN

The high voltage is monitored by Diode D411, rectifying pulses from the Horizontal Output Transformer (FB401). Should the high voltage increase, the rectified voltage at the cathode of Diode D411 will also increase and trigger Zener Diode (D406) into conduction, which shuts down the set. To troubleshoot, short pin 23 of VIF/SIF/Chroma/Deflection IC (IC201) to ground and check the voltage at TP008. If

the voltage is greater than 124V and cannot be adjusted down 124V, troubleshoot in Power Supply. If the voltage at TP008 is less than 124V, troubleshoot the shutdown circuit components D405, D406 and the collector of Horizontal Output Transistor (Q401). Remove short form pin 23 of IC201 to ground. NOTE: Care should be taken in defeating the high voltage shutdown circuit, as this may cause excessive X-radiation and damage to the CRT, Transformer FB401 and associated components. Monitor the high voltage and troubleshoot.

### Voltages Taken with TV in Shutdown

	IC201	
Pin 23		.7V
TP8		150V

### HIGH VOLTAGE SHUTDOWN TEST

Apply 120V AC, turn set On, set all customer controls for normal operation and apply a variable 35V to the cathode of D406 thru an Isolation Diode. Set should loose raster and sound. If set does not loose raster and sound, the shutdown circuit should be repaired. To resume normal operation, remove AC Power and wait 30 seconds then turn set On.

### SYNC

If there is no vertical or horizontal sync, check the voltages, waveforms and components associated with pin 26 of VIF/SIF/Chroma/Deflection IC (IC201). If there is no vertical sync, check the voltages, waveforms and components associated with pin 27 of IC201. If there is no horizontal sync, check the voltages and components associated with pins 22, 24 and 25 of IC201.

### RASTER

Check the CRT and CRT voltages. If there is no Red, check the voltages and components associated with pins 1, 14, 17 and 27 thru 30 of Auto Kine Bias IC (IC901) and Red Output Transistor (Q801). If there is no Green, check the voltages and components associated with pins 1, 14, 17 and 23 thru 26 of IC901 and Green Output Transistor (Q802). If there is no Blue, check the voltages and components associated with pins 1, 14, 17 and 19 thru 22 of IC901 and Blue Output Transistor (Q803). If the raster has a keystone shape, check the Deflection Yoke (DY001). If the raster has height or width problems, refer to the "Vertical", "Horizontal" and "Power" sections of this Troubleshooting guide.

### AUDIO

Select an active TV channel and check for an audio waveform at pin 4 of VIF/SIF/Chroma/Deflection IC (IC201) with volume control at Maximum. If there is no audio, check the voltages, waveforms and components associated with pins 1 thru 5 of IC201. If audio is present at pin 4 of IC201, check the voltages, waveforms and components associated with Sound Output Transistors (Q351 and Q352). Check the voltage at pin 39 of IC201, it should measure 0V at mute and 7.3V at Maximum volume.

## TROUBLESHOOTING (Continued)

### 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 AFC circuits. If there is no video on the CRT, check for a video waveform at TP012. If video is present at TP012, refer to the "Video" section of this Troubleshooting guide. If there is no video at TP012, apply AGC bias to pin 10 of VIF/SIF/Chroma/Deflection IC (IC201). If video is now present at TP012, check the voltages, waveforms and components associated with pins 8 and 10 of IC201. If there is still no video at TP012, check the voltages, waveforms and components associated with pins 5 thru 9 and 36 thru 42 of IC201. 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.

### AGC VOLTAGE CHART

	IC201
Pin 8	5.6V
Pin 10	6.9V
Pin 40	8.2V

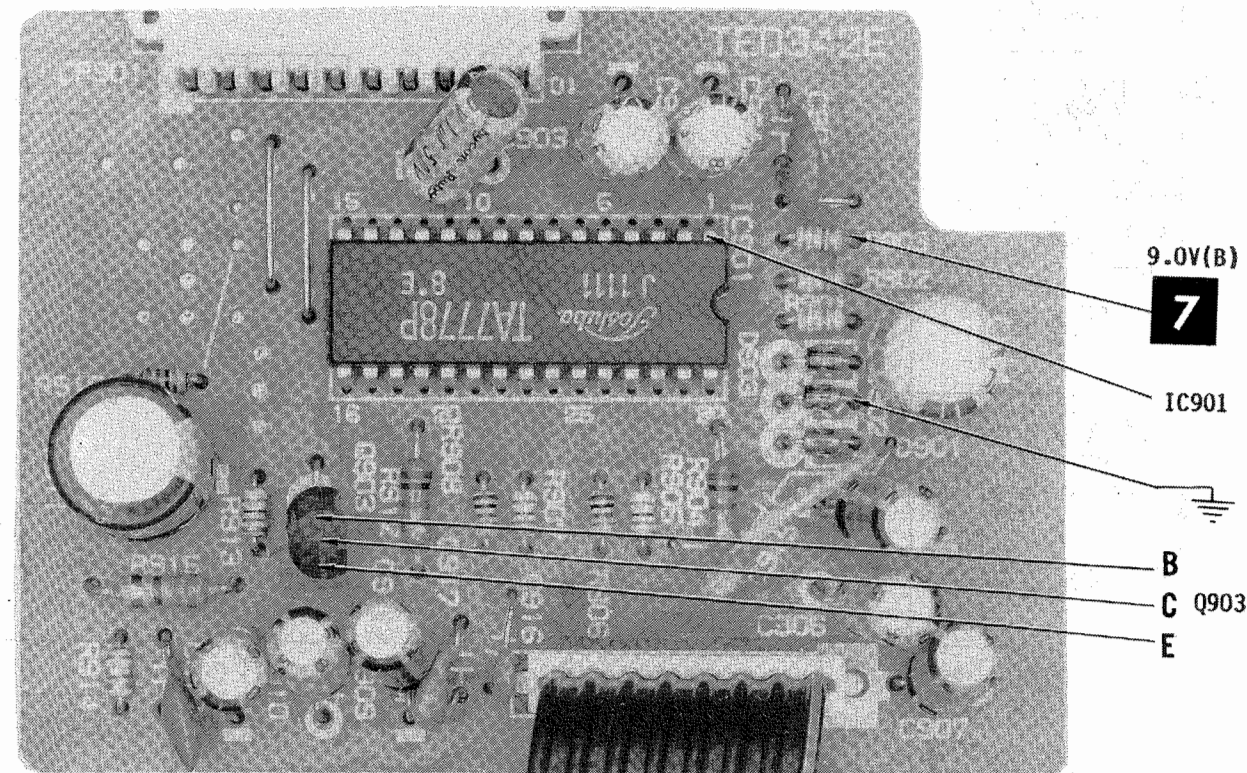
### VIDEO

Inject a video signal at TP012 and check for video on the CRT. If video is present, troubleshoot the "IF-AGC" section of this Troubleshooting guide. If there is no video on the

CRT, check for a video waveform at emitter of Y Buffer Transistor (Q601). If there is no video at emitter of Q601, check the voltages, waveforms and components associated with pins 19, 29 thru 33 of VIF/SIF/Chroma/Deflection IC (IC201) and Transistor Q601. If video is present at emitter of Q601, check the voltages, waveforms and components associated with CRT and Output Transistors Q801 thru Q803. If the brightness is inadequate or cannot be controlled, check the voltages, waveforms and components associated with pin 7 of CRT and pins 29 and 30 of IC201.

### CHROMA

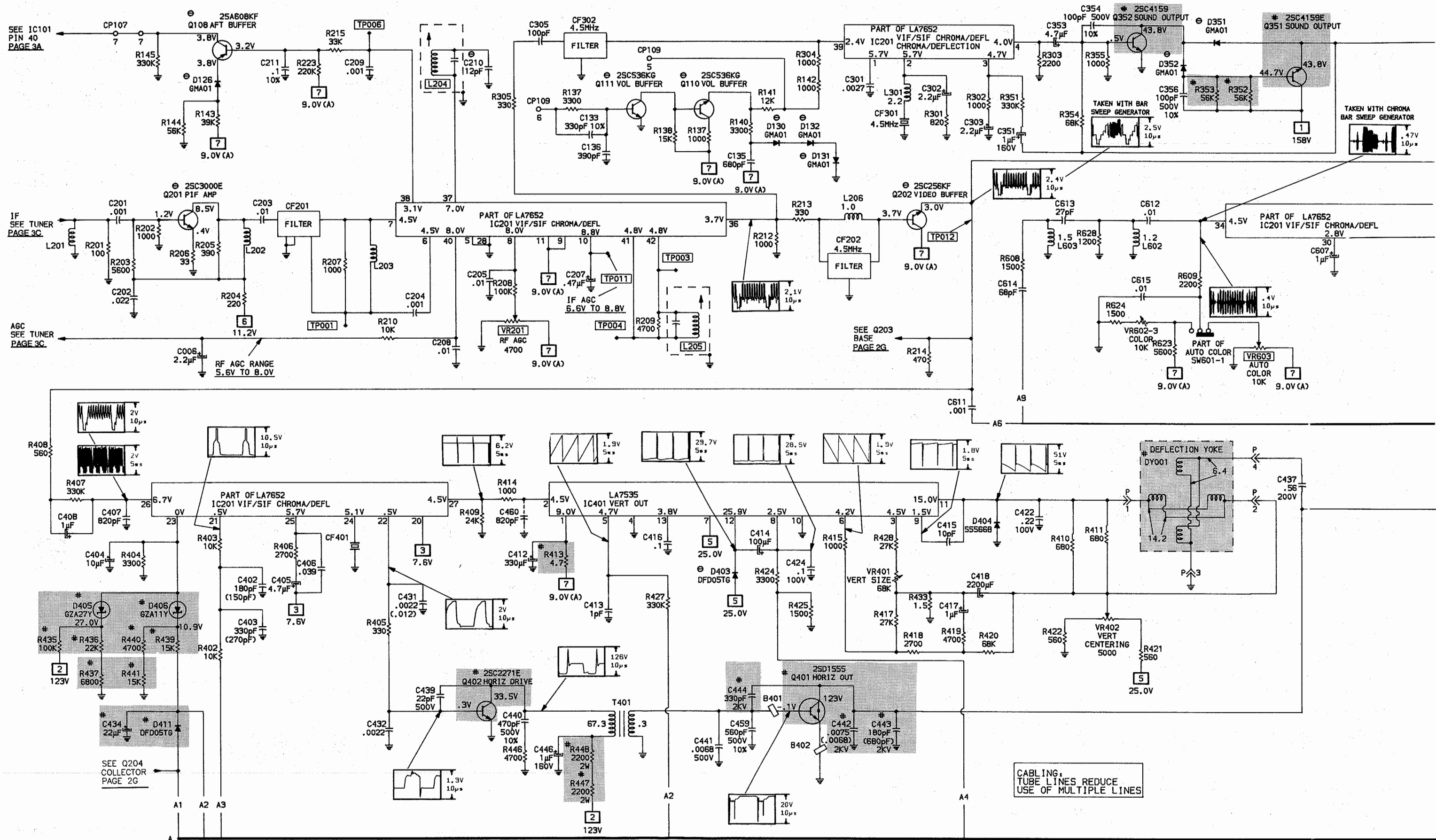
Check for a chroma waveform at pin 34 of VIF/SIF/Chroma/Deflection IC (IC201). If the waveform is missing, check the components associated with pin 34 and pins 1, 15 and 16 of Auto Kine Bias IC (IC901). If a chroma waveform is present at pin 34, check for the proper chroma waveforms at pins 16, 17 and 18 of IC201. If these waveforms are missing, check the voltages, waveforms and components associated with pins 11 thru 19, 34 and 35 of IC201. Check the 3.58MHz oscillator at pin 14 and 15 of IC201. Check the voltages and components associated with the color control and pin 34 of IC201. If there is inadequate tint range, check the voltages, waveforms and components associated with the tint control and pin 13 of IC201. If the proper chroma waveforms are present at pins 16, 17 and 18 of IC201, refer to the "Raster" section of this Troubleshooting guide.



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

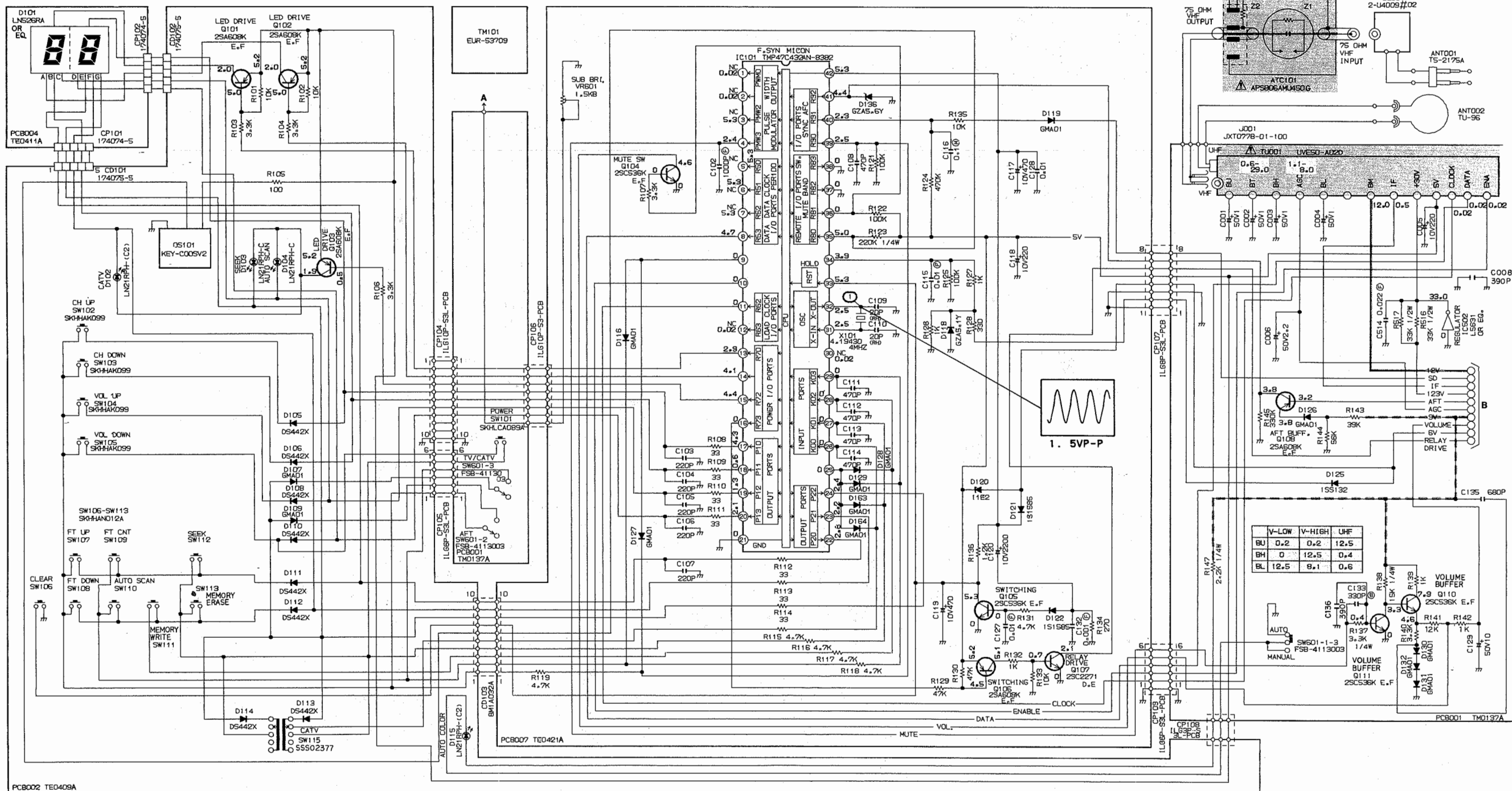


## B

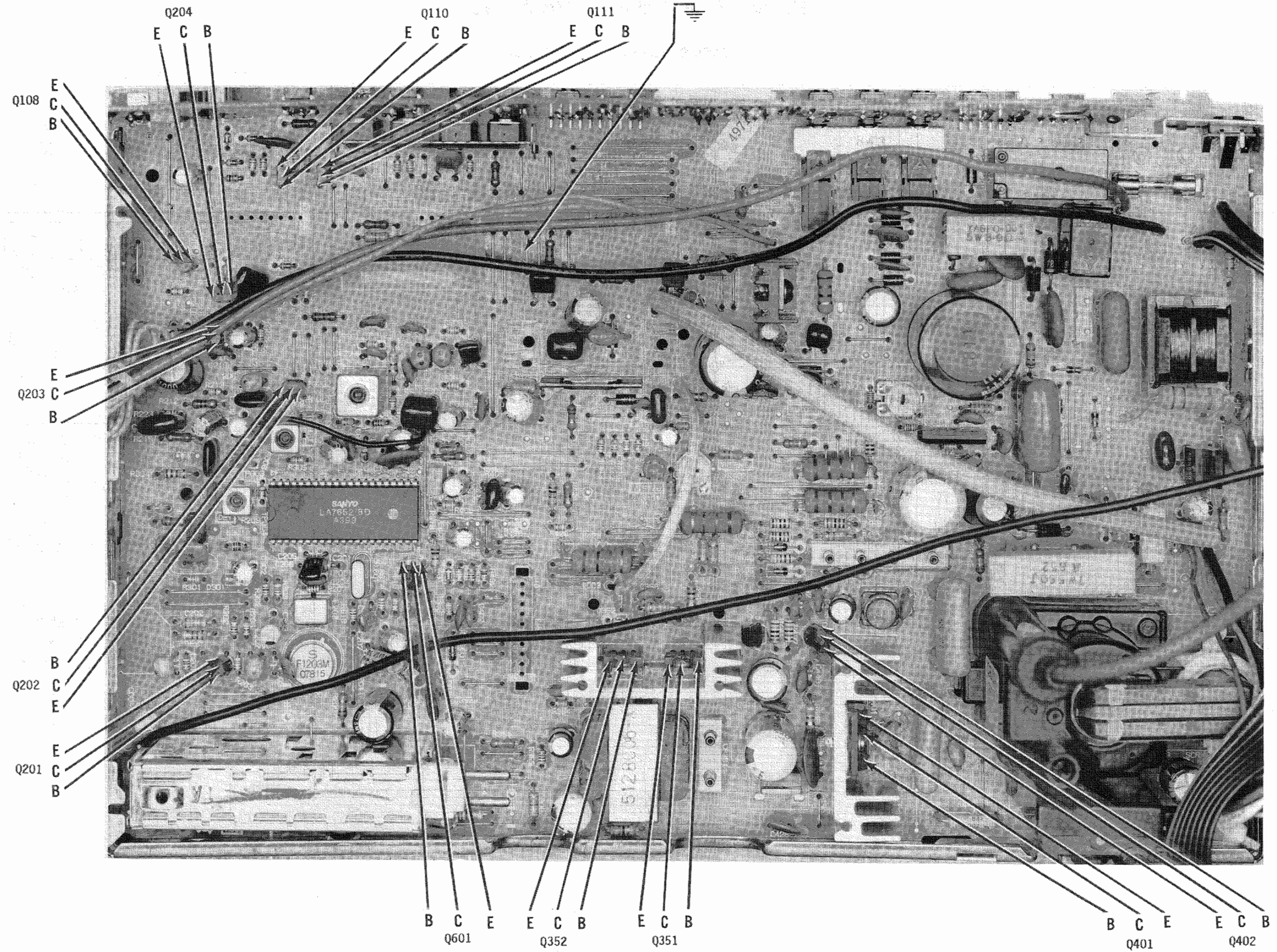




### CHASSIS SCHEMATIC DIAGRAM



### VIF SIGNAL

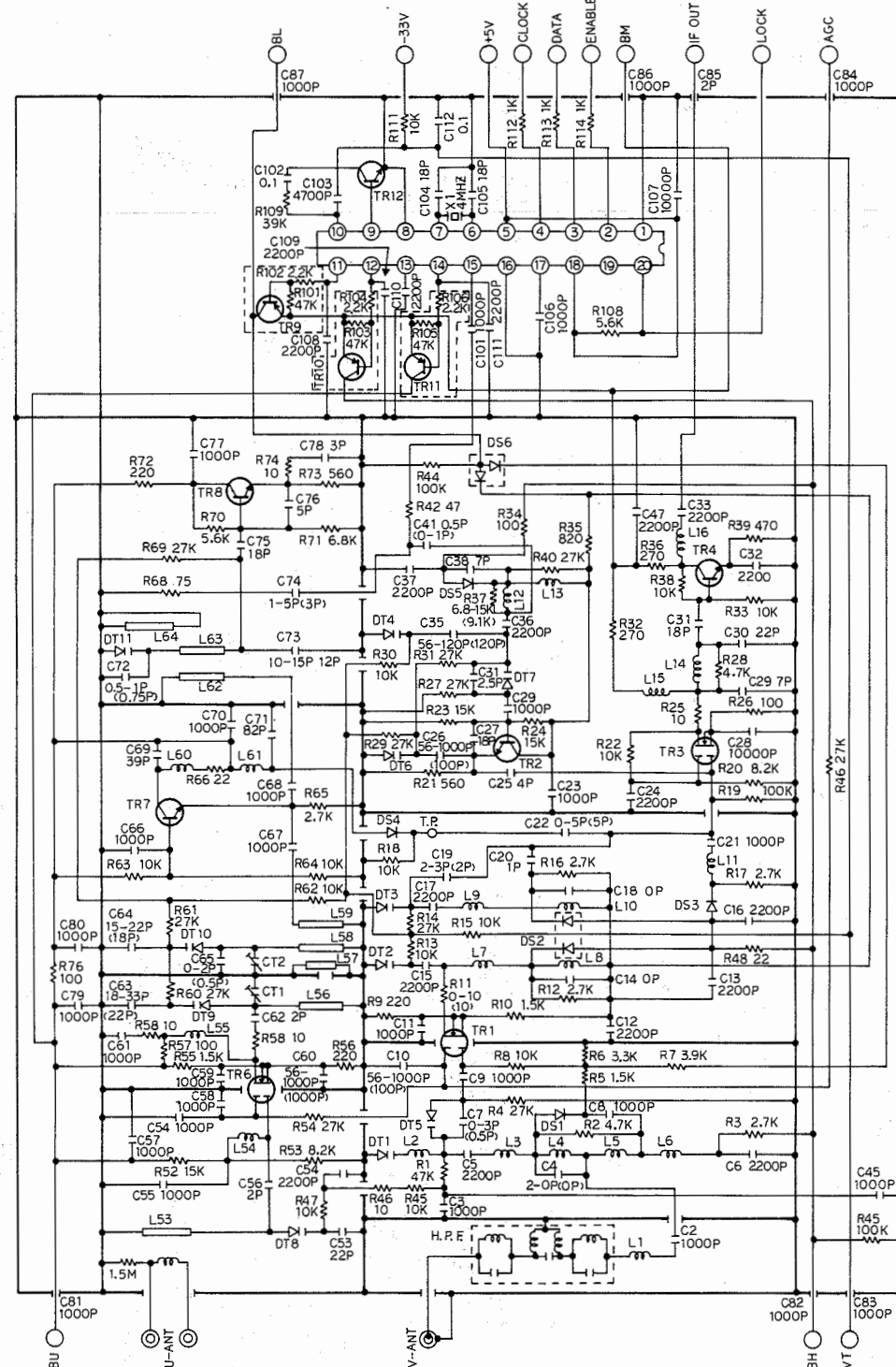




# C

## UHF/VHF TUNER SCHEMATIC

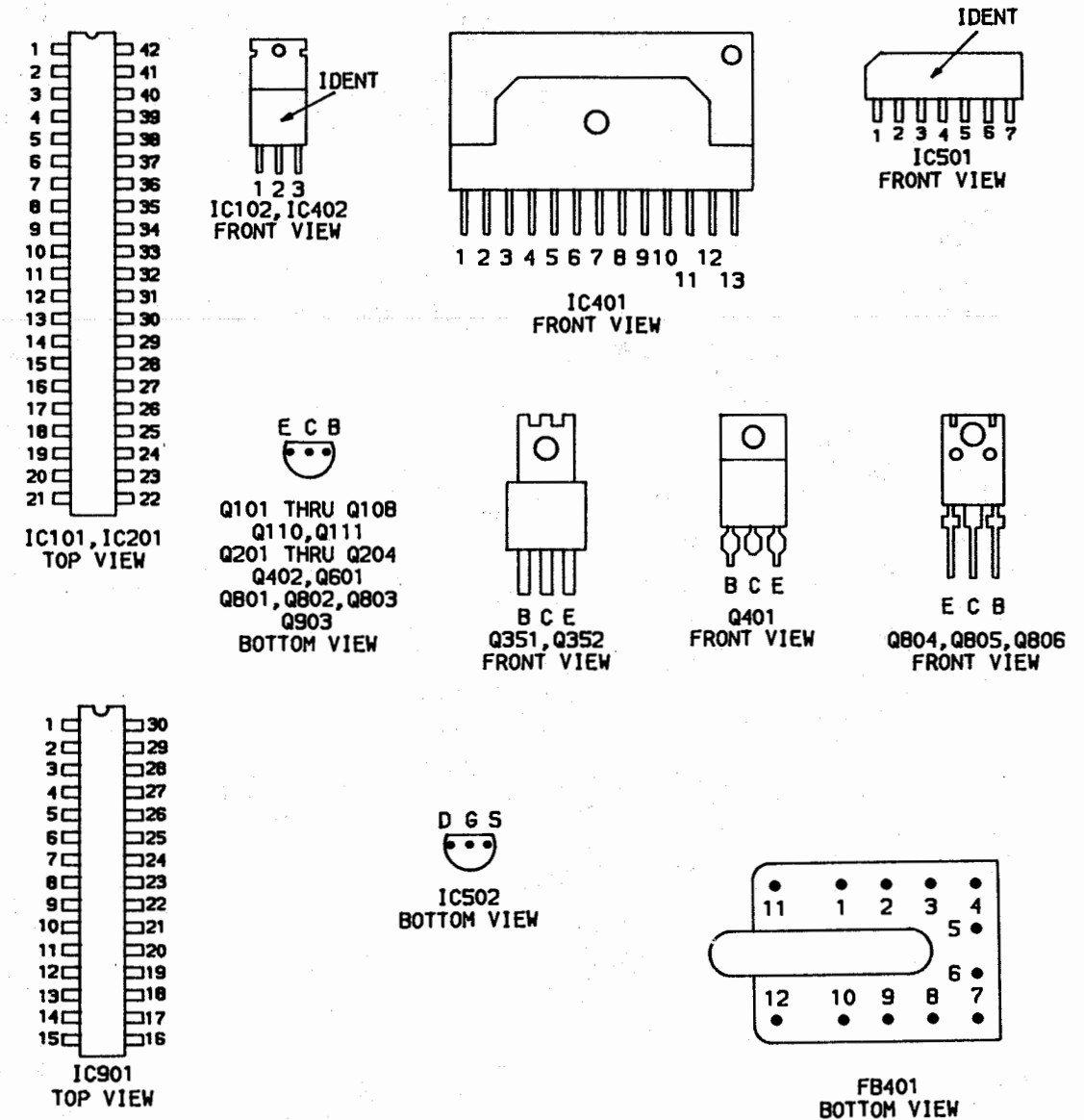
TV TUNER SCHEMATIC DIAGRAM



NOTE: Tuner parts are not available.  
When repairs are required, order a complete replacement tuner.

Courtesy of Manufacturer

### TERMINAL GUIDES



# 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.

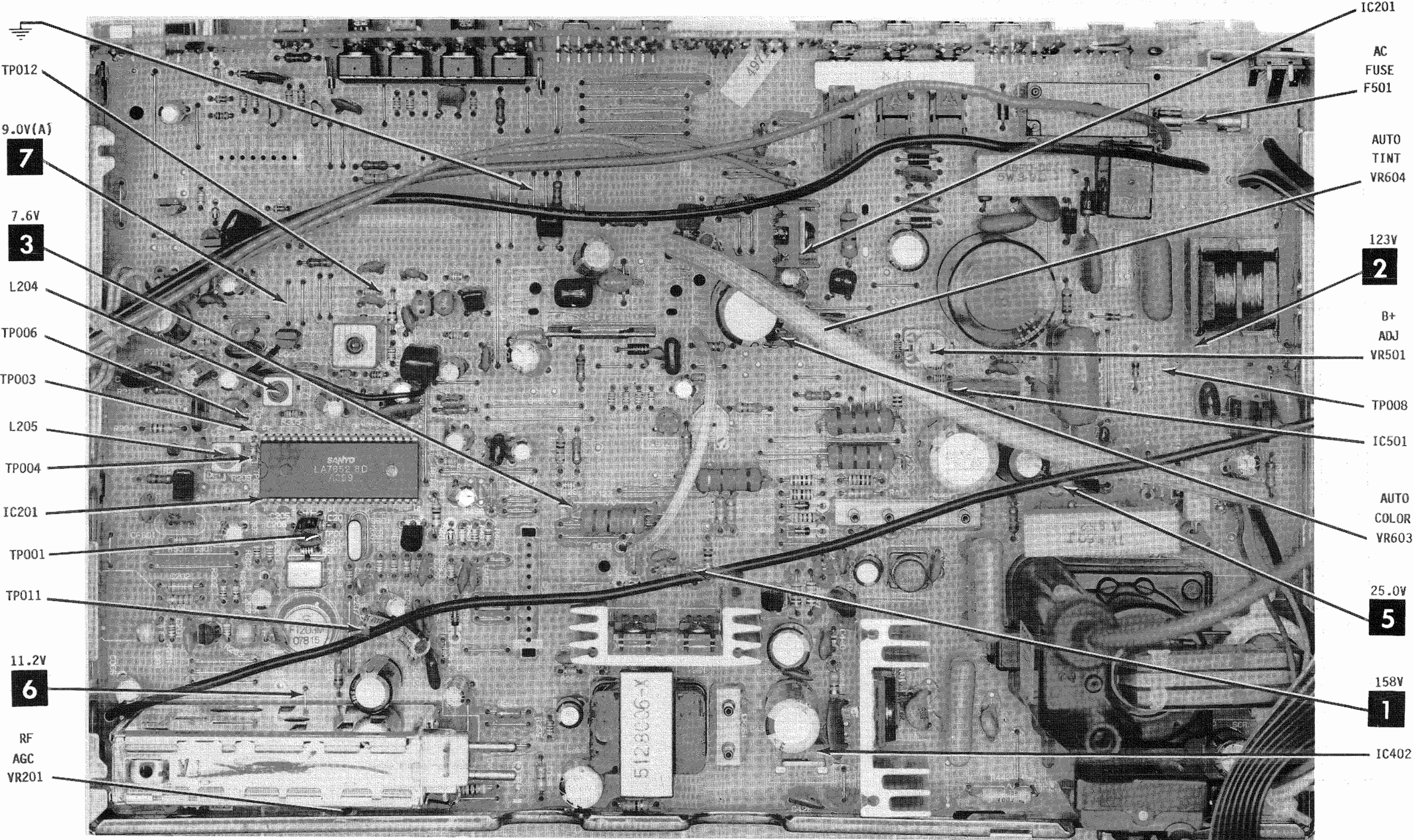
Resistors are 1/2W or less, 5% unless noted.

Value in ( ) used in some versions.

10% unless noted.

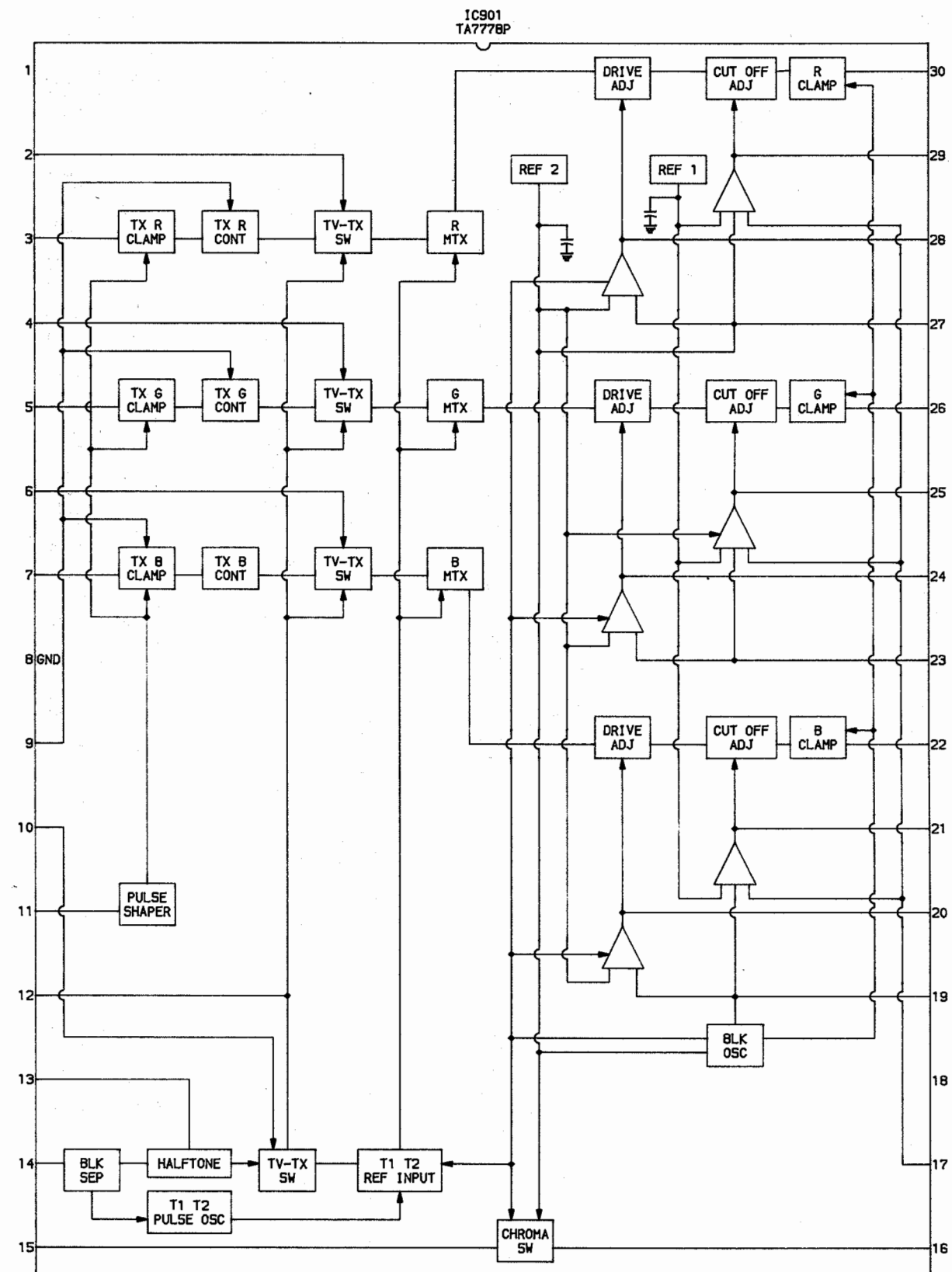
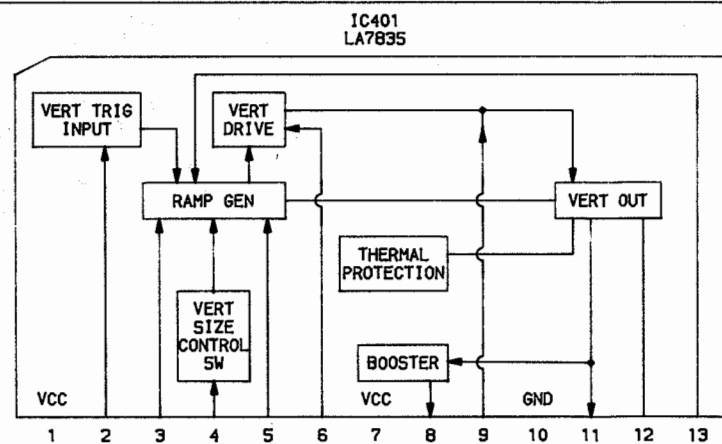
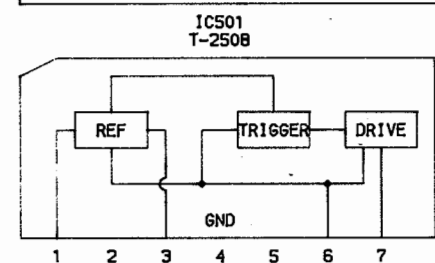
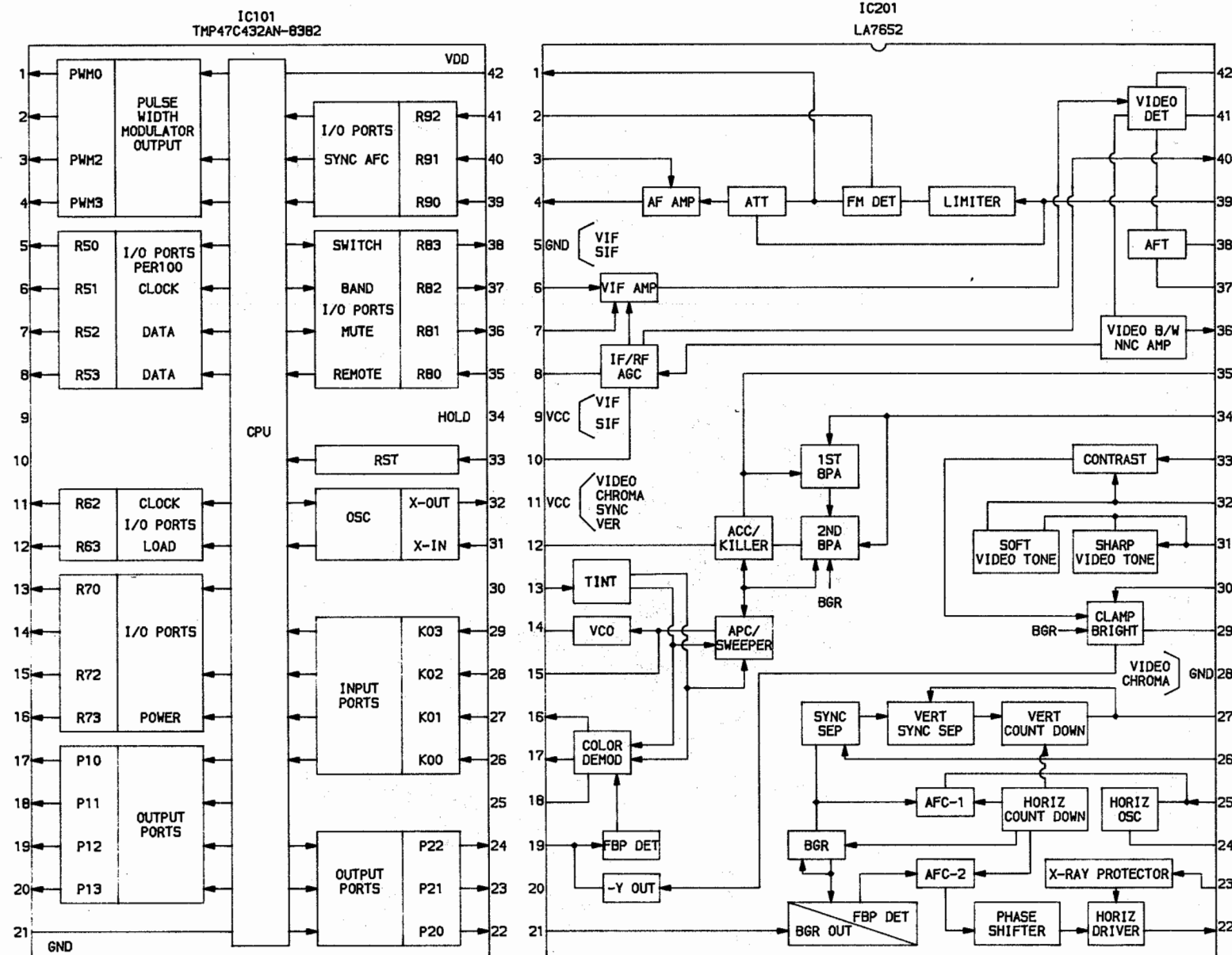
Measurements with switching as shown, unless noted.





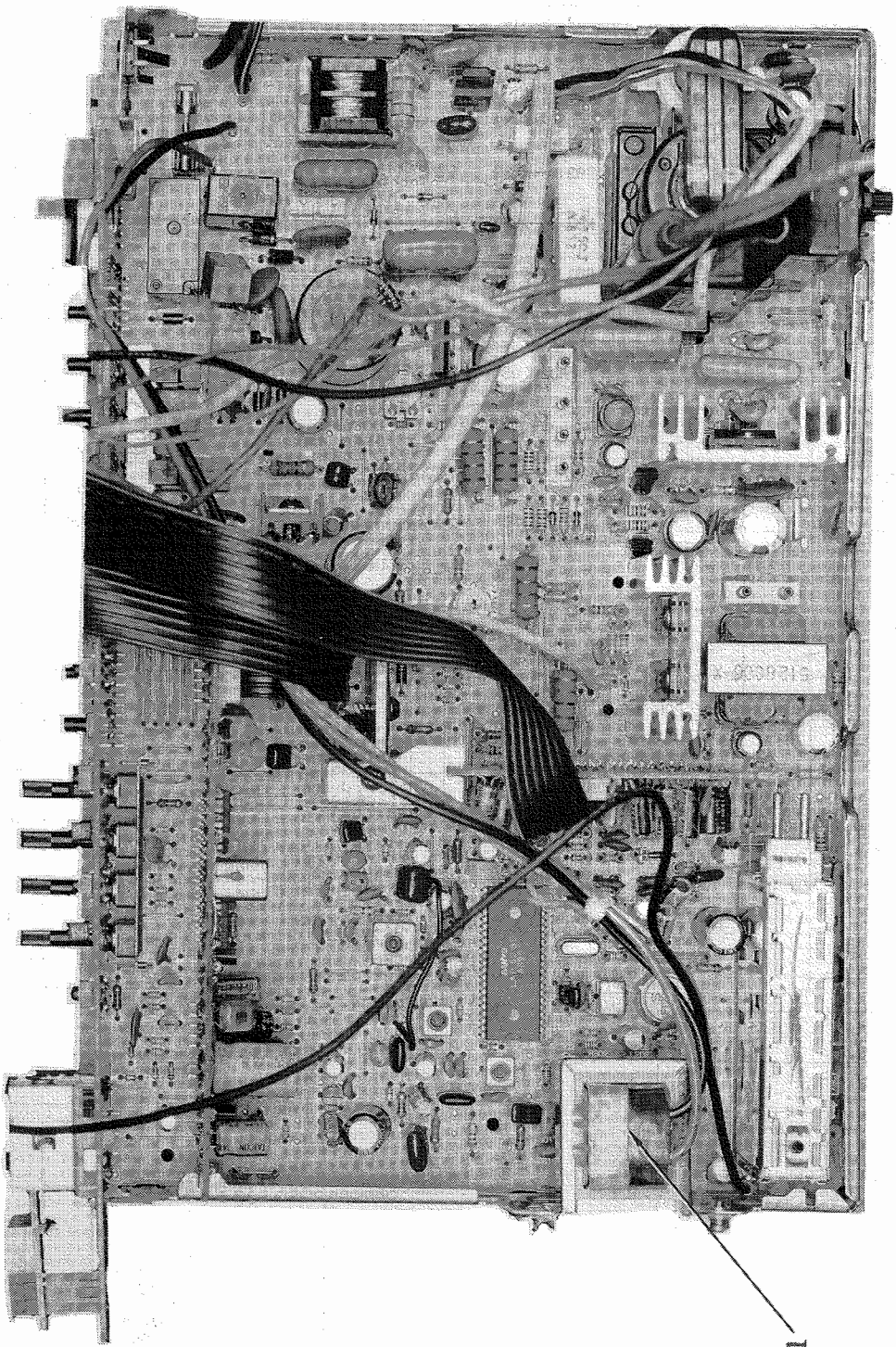
NOTE: ARROWS ON IC'S INDICATE PIN 1 UNLESS NOTED





MAIN BOARD GridTrace LOCATION GUIDE

B401	Q-19	C439	M-18	D408	Q-28	R219	G-2	R514	I-21
B402	P-19	C440	O-17	D410	K-26	R220	E-3	R515	K-28
C001	S-8	C441	Q-18	D411	K-25	R221	E-5	R516	L-15
C002	S-7	C442	P-20	D417	G-17	R222	G-4	R517	L-15
C003	S-7	C443	Q-21	D501	D-22	R223	H-2	R520	J-23
C004	S-5	C444	P-19	D502	D-21	R301	L-3	R601	G-7
C005	P-1	C446	M-18	D503	E-23	R302	M-4	R602	I-6
C006	S-3	C448	K-27	D504	E-23	R303	M-5	R603	H-6
C008	R-11	C452	Q-28	D505	H-24	R304	J-2	R604	I-7
C121	D-20	C459	L-20	D506	G-24	R305	J-5	R605	G-5
C122	C-20	C502	F-25	D507	I-24	R351	P-10	R607	I-8
C123	E-20	C503	E-22	D508	J-27	R352	M-14	R608	F-9
C124	F-19	C504	F-24	D601	N-9	R353	M-14	R609	E-11
C126	F-17	C505	E-22	D602	A-7	R354	O-12	R610	H-7
C129	C-2	C506	Q-21	DEG	F-24	R355	Q-11	R611	O-9
C130	E-15	C507	K-21	DL601	H-7	R356	K-15	R612	O-8
C133	D-7	C508	I-28	F501	C-26	R357	M-15	R613	M-6
C135	B-5	C509	I-23	FB401	O-25	R401	L-9	R614	M-7
C136	B-6	C510	I-22	IC102	F-17	R402	L-10	R615	M-8
C201	O-3	C512	H-21	IC201	K-5	R403	L-9	R616	M-9
C202	M-3	C513	J-24	IC401	H-11	R404	J-9	R617	M-9
C203	O-5	C514	P-17	IC402	Q-17	R405	I-9	R618	L-8
C204	L-6	C516	I-26	IC501	I-20	R406	J-10	R619	A-7
C205	L-5	C517	H-28	IC502	N-16	R407	I-8	R620	A-7
C206	L-6	C518	J-21	L201	O-2	R408	H-9	R621	A-8
C207	N-7	C601	I-3	L202	O-4	R409	K-9	R622	B-8
C208	J-3	C602	I-4	L203	M-6	R410	L-18	R623	A-9
C209	J-4	C603	I-6	L204	I-5	R411	K-18	R624	B-9
C210	I-4	C604	I-6	L205	K-4	R413	H-11	R626	A-10
C211	I-2	C605	G-8	L206	H-4	R414	J-11	R627	C-10
C214	G-2	C607	H-8	L301	L-4	R415	I-12	R628	G-18
C215	P-7	C609	I-9	L501	G-27	R416	E-13	R629	M-9
C217	G-4	C610	H-10	L602	G-8	R417	I-13	R630	B-8
C218	G-2	C611	G-9	L603	G-9	R418	I-13	RY101	C-24
C219	G-3	C612	F-12	L604	I-7	R419	I-13	SW101	A-28
C220	E-4	C613	F-8	Q108	E-2	R420	I-15	SW601-1	C-18
C301	K-3	C614	G-9	Q110	C-5	R421	I-16	SW601-2	C-19
C302	L-4	C615	C-16	Q111	C-6	R422	J-14	SW601-3	C-20
C303	N-5	C616	B-9	Q201	O-3	R423	L-12	T351	Q-13
C305	I-4	C618	O-8	Q202	H-5	R424	J-12	T401	M-19
C351	Q-12	C619	L-2	Q203	G-3	R425	K-11	TH501	D-24
C352	O-17	C621	M-7	Q204	E-3	R426	F-6	TP001	L-6
C353	P-9	C622	N-9	Q351	N-15	R427	I-17	TP003	J-4
C354	O-11	C623	O-8	Q352	N-13	R428	I-12	TP004	K-4
C355	R-12	C624	N-8	Q401	P-19	R433	H-15	TP006	J-4
C356	M-14	C625	N-8	Q402	N-18	R435	K-17	TP008	H-26
C401	K-9	C626	M-9	Q601	L-8	R436	K-17	TP011	O-7
C402	M-9	C627	G-7	R137	D-7	R437	N-17	TP012	G-7
C403	M-9	CF201	O-5	R138	B-5	R439	K-18	VR201	S-6
C404	J-9	CF202	H-4	R139	B-5	R440	L-17	VR401	J-14
C405	J-10	CF301	C-3	R140	B-4	R441	N-17	VR402	J-15
C406	J-10	CF302	I-3	R141	B-4	R442	R-21	VR501	H-20
C407	I-8	CF401	J-8	R142	C-4	R443	S-13	VR602-1	B-7
C408	I-8	CP351	P-15	R143	E-3	R445	L-22	VR602-2	B-8
C412	H-10	CP401	L-18	R144	E-5	R446	P-18	VR602-3	B-9
C413	G-12	D124	C-21	R145	E-5	R447	J-18	VR602-4	B-10
C414	F-12	D125	E-15	R147	A-5	R448	J-18	VR603	H-16
C415	H-13	D126	E-5	R149	E-18	R450	L-24	VR604	H-17
C416	F-13	D130	B-4	R201	O-2	R452	K-26	X601	L-7
C417	I-14	D131	B-4	R202	N-4	R460	H-18		
C418	G-16	D132	B-3	R203	O-4	R461	R-9		
C420	F-15	D159	E-20	R204	N-3	R501	E-28		
C422	H-14	D160	E-20	R205	O-4	R502	D-22		
C423	E-14	D161	D-20	R206	N-4	R503	G-23		
C424	E-11	D162	D-20	R207	M-6	R504	H-23		
C428	R-17	D202	E-3	R208	O-6	R505	H-27		
C430	Q-17	D351	O-12	R209	J-4	R506	I-19		
C431	I-9	D352	M-13	R210	K-2	R507	H-20		
C432	M-17	D401	L-9	R212	H-3	R508	H-19		
C433	K-22	D403	H-13	R213	H-3	R509	I-20		
C434	K-24	D404	G-13	R214	H-5	R510	H-23		
C435	G-18	D405	L-17	R215	I-2	R511	H-22		
C436	Q-27	D406	L-17	R216	G-3	R512	H-22		
C437	N-21	D407	K-23	R218	G-3	R513	I-20		

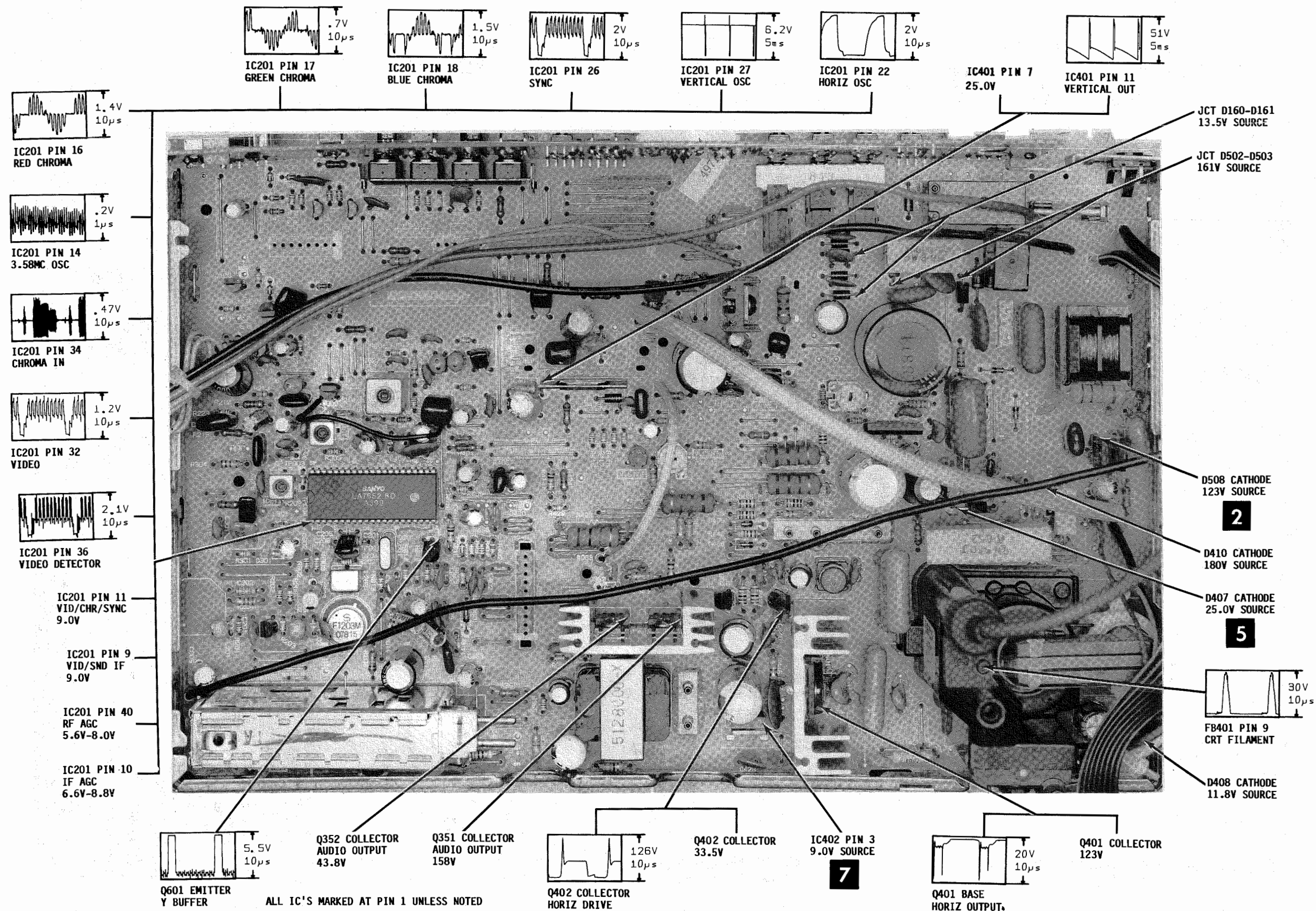


EMERSON

MODELS ECR2100, (SUFFIX A), (SUFFIX B)

MAIN BOARD-OVERALL



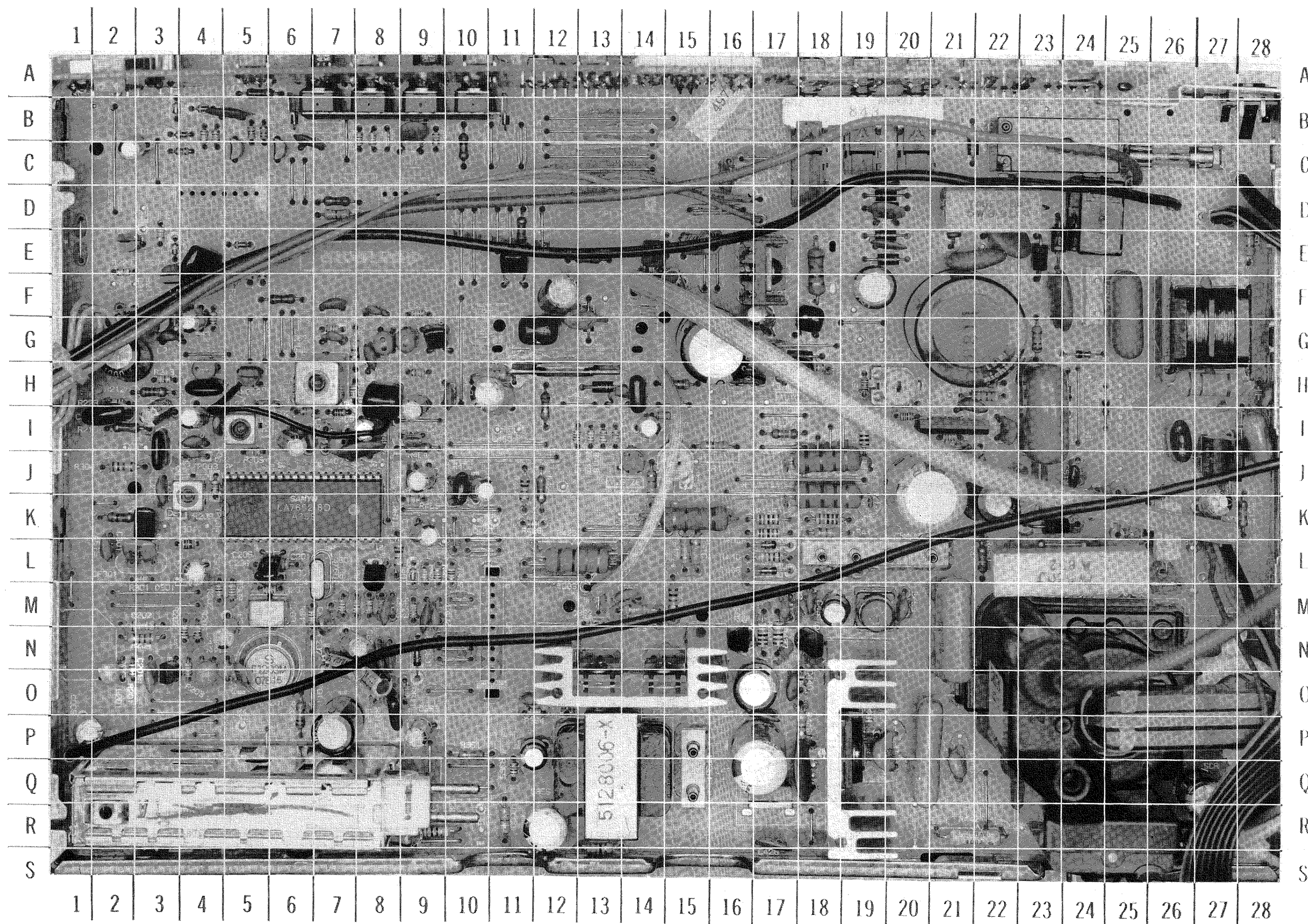


MAIN BOARD

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MAIN BOARD





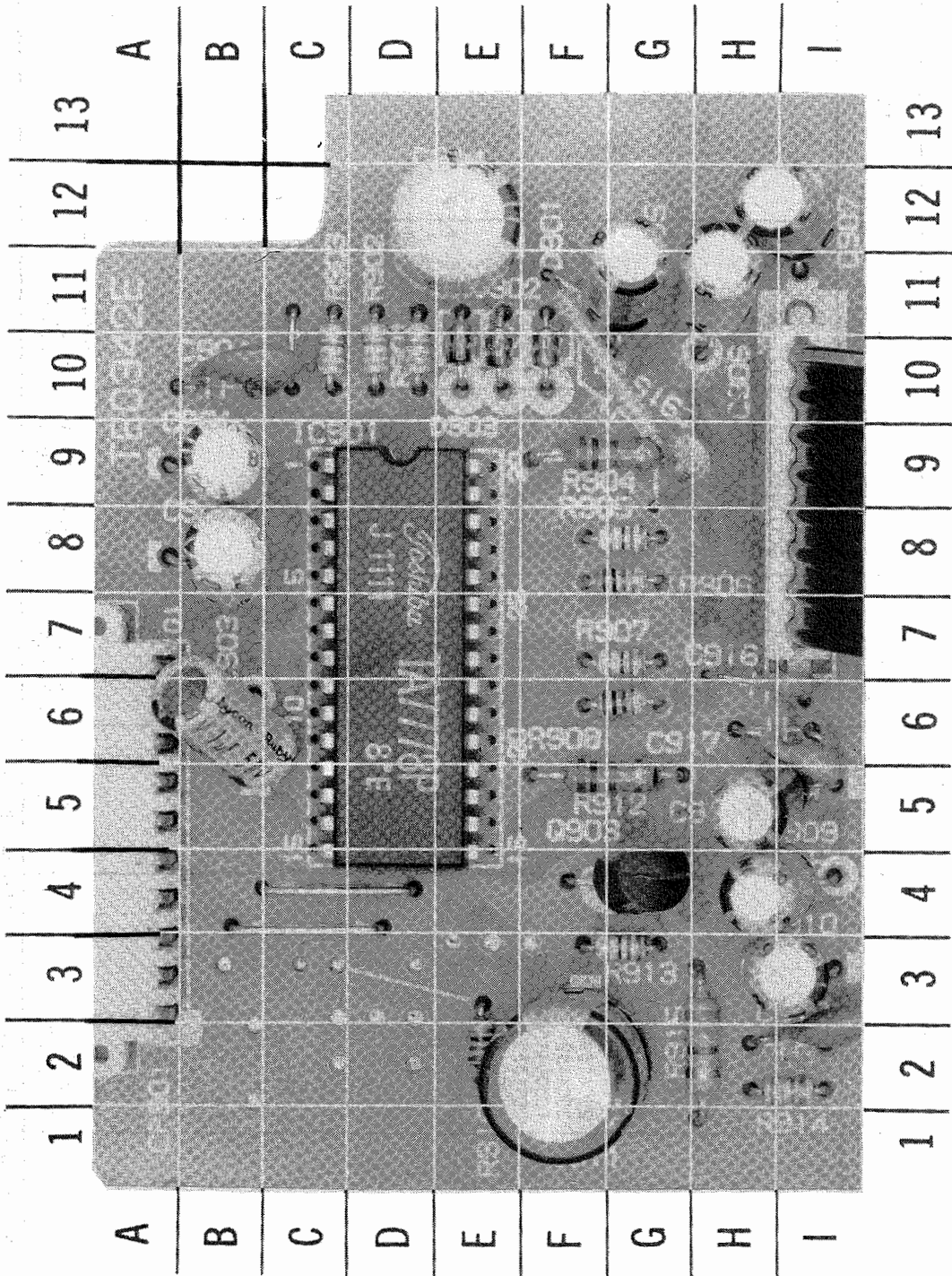
MAIN BOARD

MAIN BOARD



AUTOMATIC  
KINE BIAS  
BOARD-GridTrace  
LOCATION GUIDE

C901	B-9
C902	B-8
C903	B-6
C904	B-10
C905	G-11
C906	H-11
C907	I-12
C908	H-5
C909	H-4
C910	I-3
C911	F-2
C912	I-2
C914	E-12
C915	G-9
C916	H-6
C917	I-6
CP901	A-3
D901	F-10
D902	E-10
D903	E-10
IC901	C-9
Q901	G-4
R901	D-10
R902	D-10
R903	C-10
R904	F-9
R905	G-8
R906	G-8
R907	G-7
R908	G-6
R912	G-5
R913	G-3
R914	I-2
R915	H-2
R916	E-2

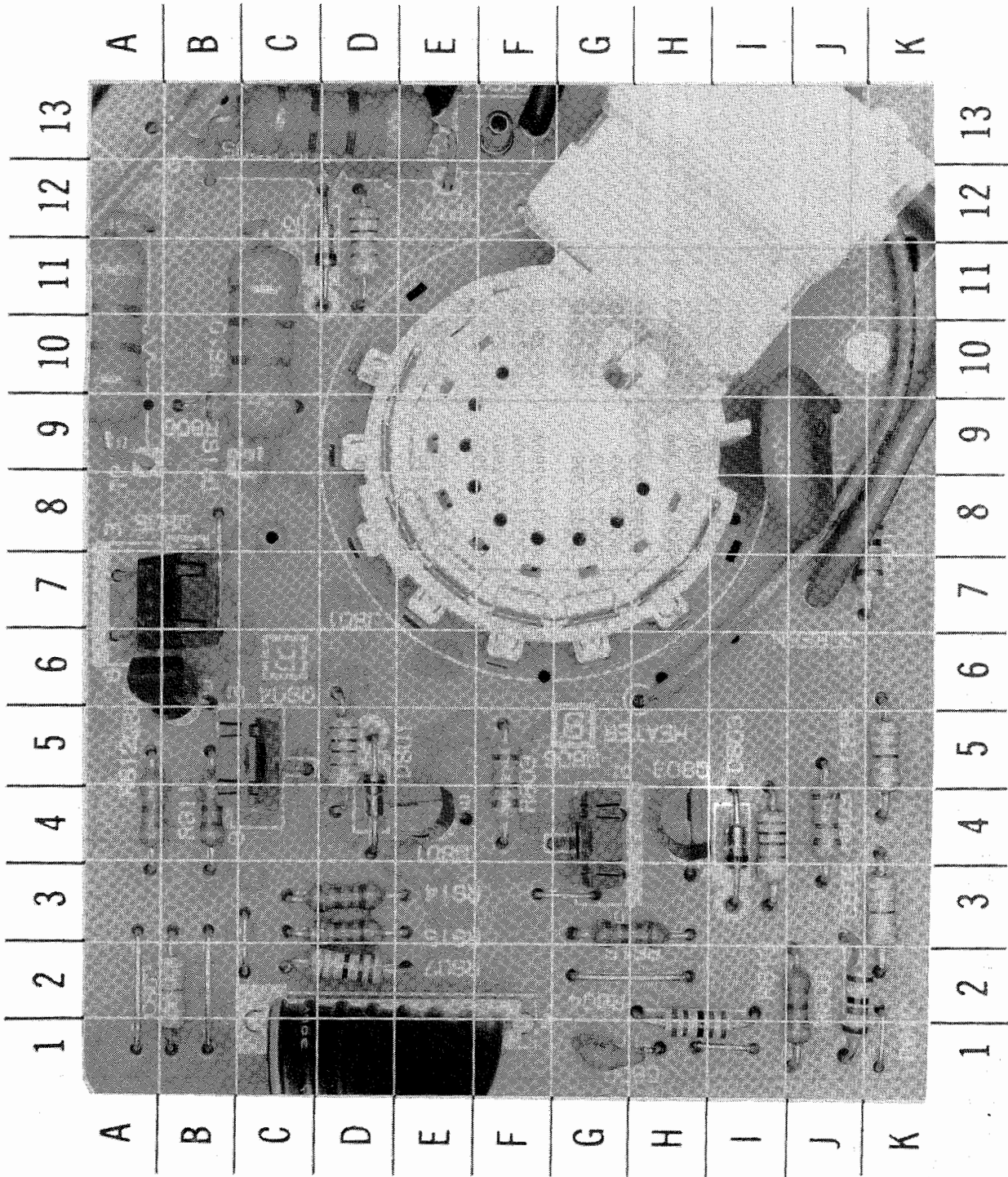


AUTOMATIC KINE BIAS BOARD

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CRT BOARD-  
GridTrace  
LOCATION GUIDE

C801	J-9
C805	K-5
C806	G-1
C807	B-2
C808	K-3
C809	D-13
C810	D-5
C811	D-11
C812	I-4
CP024	F-13
D801	D-4
D802	D-11
D803	I-4
L801	B-13
Q801	E-4
Q802	A-6
Q803	H-4
Q804	C-5
Q805	A-7
Q806	G-4
R801	K-7
R802	A-10
R803	F-5
R804	H-1
R805	D-13
R806	B-9
R807	D-2
R808	J-2
R809	J-4
R810	C-10
R811	B-4
R812	A-4
R813	J-2
R814	D-3
R815	D-3
R816	G-3
TP15	A-9
TP807	J-8



CRT BOARD

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SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	TCE PART No.	ZENITH PART No.	NOTES
Q104,5	2SC536KF	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KE	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KNP-T	NTE85	ECG85	SK3245/199	121-972	*
	TC3T0536K0	NTE85	ECG85	SK3245/199	121-972	*
Q106	2SA608KF	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KE	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KNP-T	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	TA3T0608K0	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q107	2SC2271E	NTE399	ECG399	SK9352/399	121-Z9045	*
	2SC2271D	NTE399	ECG399	SK9352/399	121-Z9045	*
	2SC2271-AE	NTE399	ECG399	SK9352/399	121-Z9045	*
	TC3T022710	NTE399	ECG399	SK9352/399	121-Z9045	*
Q108	2SA608KF	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KE	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KNP-T	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	TA3T0608K0	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q110,11	2SC536KG	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KE	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KF	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KNP-T	NTE85	ECG85	SK3245/199	121-972	*
Q201	TC3T0536K0	NTE85	ECG85	SK3245/199	121-972	*
	2SC3000E	NTE85	ECG85	SK9229/85	921-1114	
	2SC3000	NTE85	ECG85	SK9229/85	921-1114	
	2SC3000-AA	NTE85	ECG85	SK9229/85	921-1114	
Q202	TC3T030000	NTE85	ECG85	SK9229/85	921-1114	
	2SC536KF	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KE	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KNP-T	NTE85	ECG85	SK3245/199	121-972	*
Q203	TC3T0536K0	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KG	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KE	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KF	NTE85	ECG85	SK3245/199	121-972	*

PARTS LIST AND DESCRIPTION (Continued)

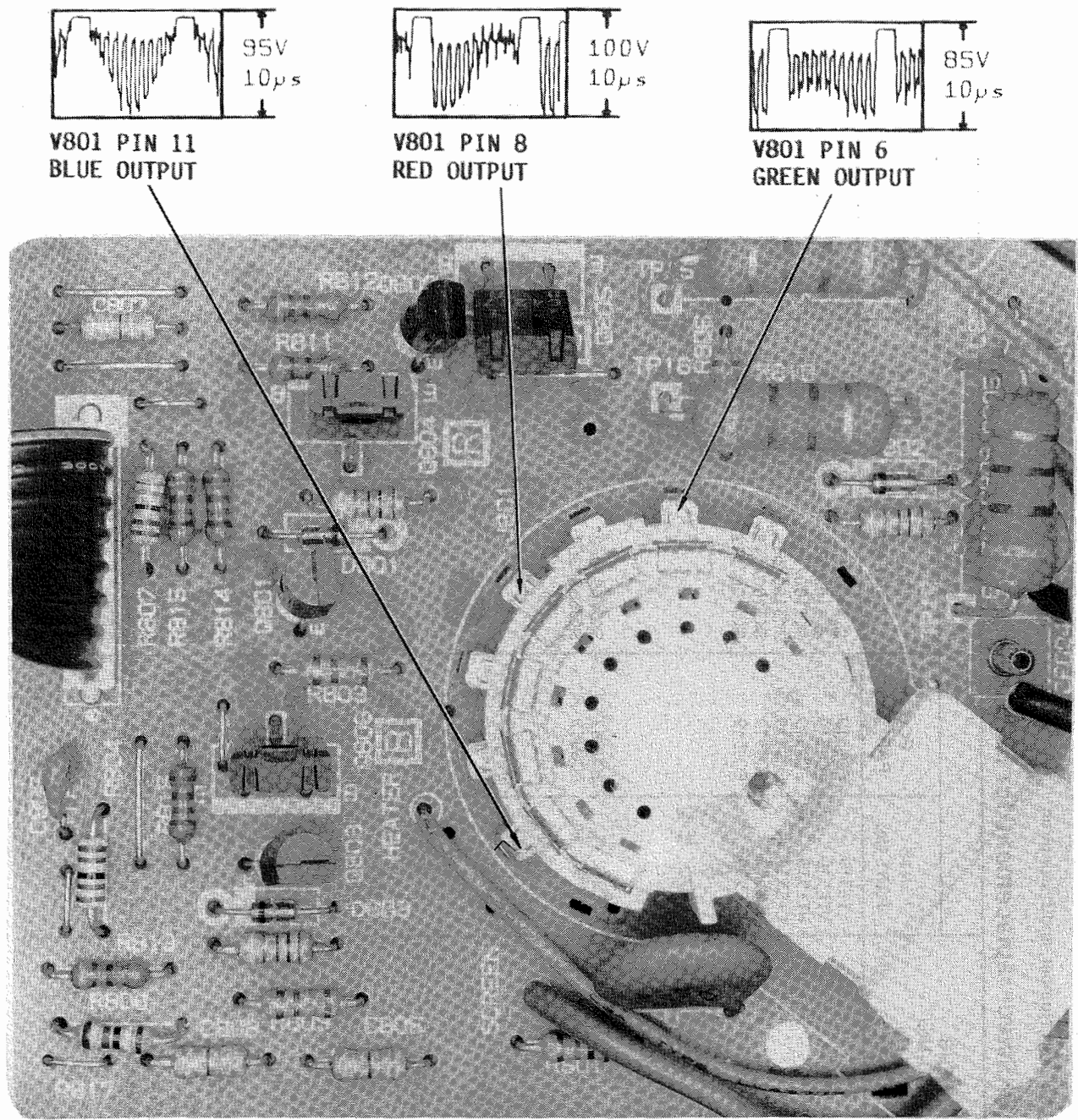
When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	TCE PART No.	ZENITH PART No.	NOTES
Q203	2SA608KF	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KE	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KNP-T	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	TA3T0608K0	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q204	2SC536KG	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KE	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KF	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KNP-T	NTE85	ECG85	SK3245/199	121-972	*
Q351,2	TC3T0536K0	NTE85	ECG85	SK3245/199	121-972	*
	2SC4159E	NTE2302	ECG2302	SK9422	#	
	2SC4159	NTE2302	ECG2302	SK9422	#	
	TC30041590	NTE2302	ECG2302	SK9422	#	
Q401	2SD1555	NTE399	ECG399	SK9352/399	121-Z9045	*
	TD5F015550	NTE399	ECG399	SK9352/399	121-Z9045	*
	2SC2271E	NTE399	ECG399	SK9352/399	121-Z9045	*
	2SC2271D	NTE399	ECG399	SK9352/399	121-Z9045	*
Q402	TC3T022710	NTE399	ECG399	SK9352/399	121-Z9045	*
	2SA608KF	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KE	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA608KNP-T	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q601	TA3T0608K0	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1624E	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1624D	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1624	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q801,2,3	TA3T016240	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SC4217D	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SC4217E	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SC4217-RAC	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q804,5,6	TC3F042170	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA952L	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA952LT	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	TAZT00952L	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q903	2SC536KG	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KE	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KF	NTE85	ECG85	SK3245/199	121-972	*
	2SC536KNP-T	NTE85	ECG85	SK3245/199	121-972	*

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

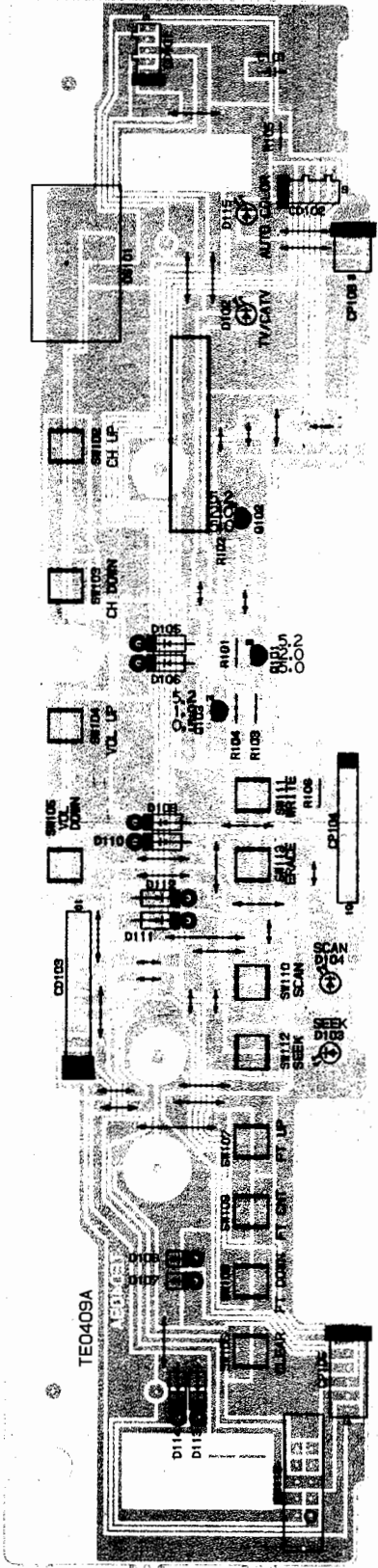




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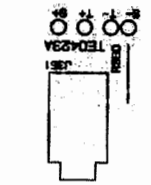
CRT BOARD

CONTROL P.C.BOARD

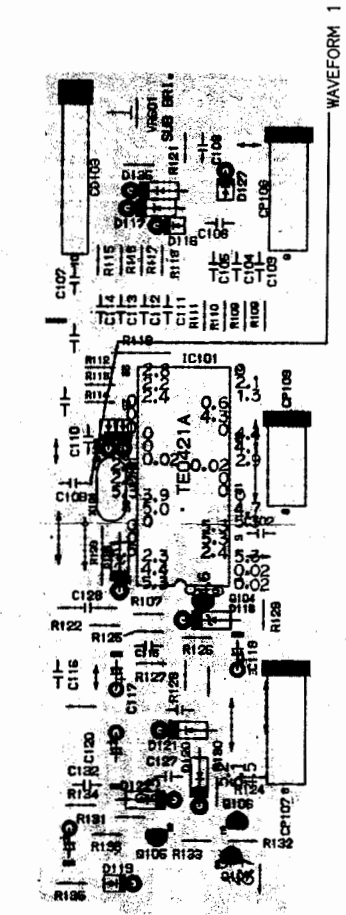


CONTROL, EARPHONE JACK, LED AND REMOTE CONTROL BOARDS

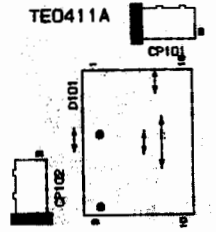
EARPHONE JACK P.C.BOARD



REMOCON P.C. BOARD



LED P.C.BOARD



Courtesy of Manufacturer

PARTS LIST AND DESCRIPTION (Continued)

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

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.	
D406	GZA11Y GZA11-Y-BT D93T01100Y DFH10TG DFH10TG-AT1 D23TFH10TG	NTE5020A NTE5020A NTE5020A NTE552 NTE552 NTE552	ECG5020A ECG5020A ECG5020A ECG552 ECG552 ECG552	SK11A/5020A SK11A/5020A SK11A/5020A SK9000/552 SK9000/552 SK9000/552	103-279-20 103-279-20 103-279-20 103-287 103-287 103-287	#
D410	DFD05TG DFD05TG-BT D23TFD05TG	NTE552 NTE552 NTE552	ECG552 ECG552 ECG552	SK9000/552 SK9000/552 SK9000/552	103-287 103-287 103-287	
D411	DFD05TG DFD05TG-BT D23TFD05TG	NTE552 NTE552 NTE552	ECG552 ECG552 ECG552	SK9000/552 SK9000/552 SK9000/552	103-287 103-287 103-287	#
D417	S5566B D25T5566B0 DSA12TL DSA12EQ DSA12TL-AT1 D23TDSA12T	NTE116 NTE116 NTE156 NTE156 NTE156 NTE156	ECG116 ECG116 ECG156 ECG156 ECG156 ECG156	SK3313/116 SK3313/116 SK3051/156 SK3051/156 SK3051/156 SK3051/156	212-76-02 212-76-02 212-Z9000 212-Z9000 212-Z9000 212-Z9000	# # # #
D505	DS442X DS442X-BT D13TDS442X GZA30Y GZA30-Y-BT D93T03000Y	NTE519 NTE519 NTE519 NTE5035A NTE5035A NTE5035A	ECG519 ECG519 ECG519 ECG5035A ECG5035A ECG5035A	SK3100/519 SK3100/519 SK3100/519 SK30A/5035A SK30A/5035A SK30A/5035A	103-131 103-131 103-131 103-Z9024 103-Z9024 103-Z9024	
D508	S6565G S6565G(LB) S6565G(OEC) TF5Q56565G GZA5.6Y GZA5.6-Y-BT D93T05R60Y					
D601		NTE5011A NTE5011A NTE5011A	ECG5011A ECG5011A ECG5011A	SK5A6/5011A SK5A6/5011A SK5A6/5011A	103-Z9007 103-Z9007 103-Z9007	

PARTS LIST AND DESCRIPTION (Continued)

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

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.		
D602	GMA01 GMA-01-BT D13TGMA010 DS442X DS442X-BT D13TDS442X	NTE519 NTE519 NTE519 NTE519 NTE519 NTE519	ECG519 ECG519 ECG519 ECG519 ECG519 ECG519	SK3100/519 SK3100/519 SK3100/519 SK3100/519 SK3100/519 SK3100/519	103-131 103-131 103-131 103-131 103-131 103-131		
D901,2,3	HZS12EB2 HZS12EB2-T D94TA120B2 TMP47C432AN-8382 I55D083820						
IC101	L78M06 I03A98M060	NTE962 NTE962	ECG962 ECG962	SK3669/962 SK3669/962	221-Z9150 221-Z9150		
IC201	LA7652 I03DE76520						
IC401	LA7835 I03SD78350						
IC402	L78M09 L78M09-SA I03B98M090						
IC501	T2508 T-2508 I05S925080	NTE1751 NTE1751 NTE1751	ECG1751 ECG1751 ECG1751				
IC502	L5631 L5631-AA I031956310	NTE615P NTE615P NTE615P	ECG615A ECG615A ECG615A		905-190 905-190 905-190		
IC901	TA7778P I05DE77780						
Q101,2,3	2SA608KF 2SA608KE 2SA608KNP-T TA3T0608K0	NTE290A NTE290A NTE290A NTE290A	ECG290A ECG290A ECG290A ECG290A	SK3114A/290A SK3114A/290A SK3114A/290A SK3114A/290A	121-Z9003 121-Z9003 121-Z9003 121-Z9003	* * * *	



MISCELLANEOUS ADJUSTMENTS

PRETUNING

Auto Memory

- 1. Momentarily press the Power Button.
- 2. Set TV/CATV Switch to desired position.
- 3. Press the Auto Memory Button on front of set. The set scans through available channels and stores channels in memory.

Add channel

- 1. Momentarily press the Power Button.
- 2. Set TV/CATV Switch to desired position.
- 3. Select channel to add to memory. Use direct channel access.
- 4. Press the Write Button on front of set.
- 5. Repeat steps three and four to add additional channels to memory.

Erase channel

- 1. Momentarily press the Power Button.
- 2. Set TV/CATV Switch to desired position.
- 3. Use channel Up and Down Button to select channel.
- 4. Press the Erase Button on front of set.
- 5. Repeat steps three and four to erase additional channels from memory.

Note: With seek tuning on the set will tune in all available channels, even erased channels.

NOTE: All the following adjustments are made with the following control settings unless otherwise indicated, Color (VR602-3) Normal viewing level, Tint (VR602-4) Normal viewing level, Brightness (VR602-1) Normal viewing level, Contrast (VR602-2) Normal viewing level, TV/CATV Switch (SW601-3) to TV (out), CATV Switch (SW115) to STD, AFT (SW601-2) on, Auto Color (SW601-1) off.

B+ ADJUSTMENT

Tune in a picture. Set Brightness (VR602-1) and Contrast (VR602-2) Controls to MINIMUM. Connect digital DC Voltmeter to TP008 (D508 Cathode), low side to ground. Adjust B+ Adjustment Control (VR501) for 122.4VDC.

RF AGC ADJUSTMENT

Tune in a picture. Adjust RF AGC Control (VR201) Clockwise until snow (noise) appears in picture, then reverse and adjust until snow just disappears.

AUTO COLOR AND AUTO TINT ADJUSTMENT

Tune in a color bar pattern. Connect an oscilloscope to TP15 (Q804C), low side to ground. Set AUTO COLOR Switch (SW601-1) to ON position. Adjust Auto Tint (VR604) so that the second and fourth bars are of equal

amplitude. Adjust Auto Color (VR603) for 80.0V p-p amplitude of full waveform (peak of third bar to bottom of blanking pulse.)

SCREEN ADJUSTMENT

Tune in a color bar pattern. Connect a digital DC Voltmeter to TP807 (V801 pin 7), low side to CRT dag ground. Adjust Screen Control (VR605B) for a reading of 430.0VDC  $\pm$  1VDC.

COLOR TEMPERATURE ADJUSTMENT

This set employs an Auto Kine Bias, there is no adjustment to be performed.

COLOR PURITY ADJUSTMENT

NOTE: Operate the set for 15 minutes to allow warmup of CRT.

Use a degaussing coil to demagnetize the CRT. Turn Contrast (VR602-2) and Brightness (VR602-1) Controls to Maximum, Color (VR602-3) to MINIMUM. Connect a jumper from the Emitter to the Base of Q804 and a jumper from the Emitter to the Base of Q806 to obtain a green raster. Loosen the deflection yoke clamp screw and move it back as far as possible. Adjust purity tabs to center the vertical green band. Slide the Deflection Yoke (DY001) forward to produce a uniform green screen. Tighten the deflection yoke clampscrew.

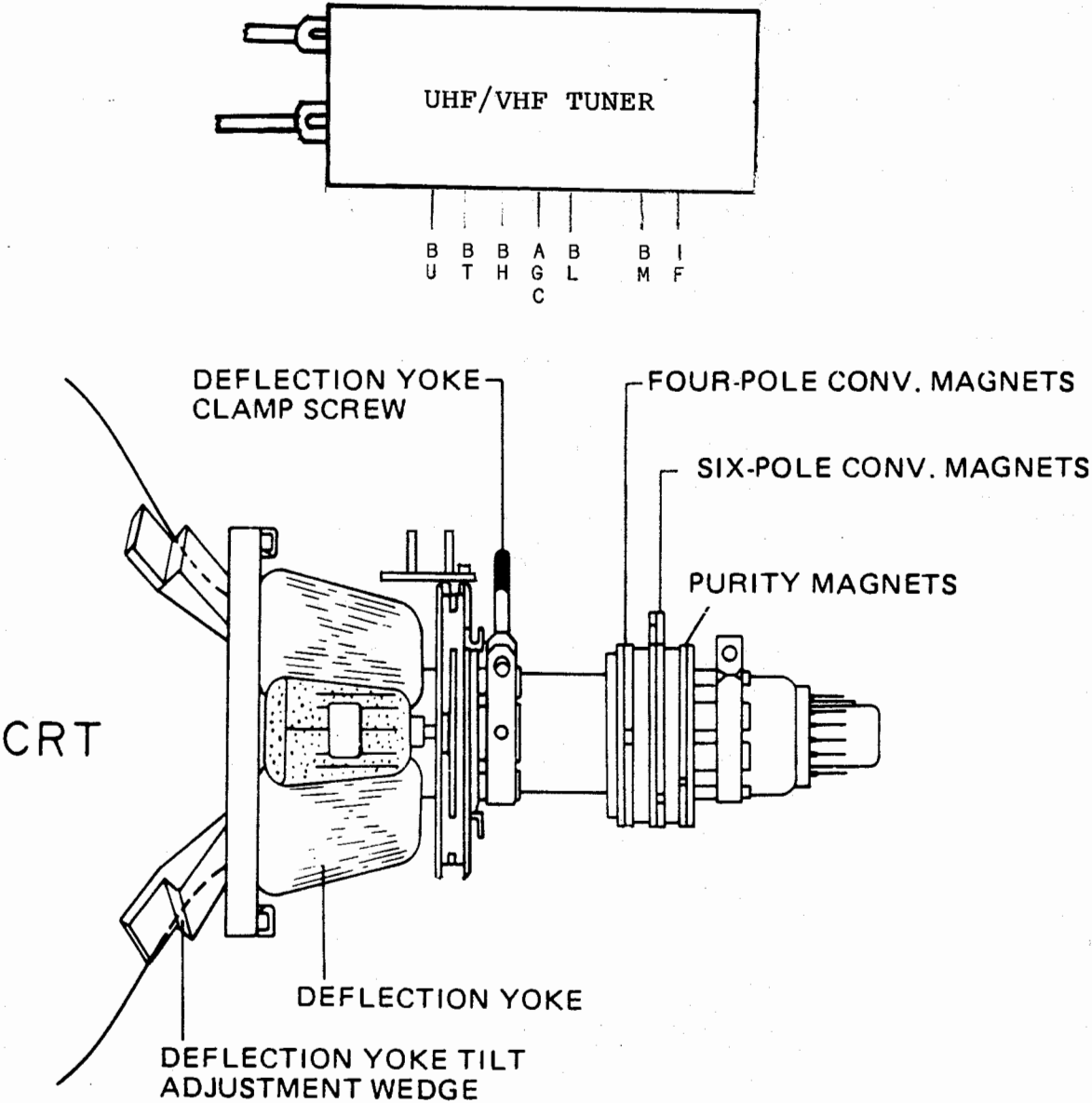
CONVERGENCE ADJUSTMENT

Connect a color bar generator to the antenna terminal and tune in a dot pattern. Adjust the 4 pole magnets to converge the red and blue dots at the center of the screen. Adjust the 6 pole magnets to converge the red/blue dots over the green dots at the center of the screen. NOTE: Rotate the two tabs of each set of magnets equally and opposite to converge vertically and rotate both tabs in the same direction to converge horizontally. 4 and 6 pole magnets interact, repeat adjustment until center convergence is correct. Tune in a crosshatch pattern. Remove the rubber wedges between the Deflection Yoke (DY001) and the CRT. Tilt the deflection yoke up or down to converge the vertical lines at the top and bottom of the screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke to the right or left to converge the horizontal lines at the top and bottom of the screen and the vertical lines at the right and left sides of the screen. Replace the rubber wedges.

TUNER VOLTAGE CHART

	BM	BL	AGC	BH	BT	BU
VHF Low Band	11.2V	11.2V	8.0V	0V	3.7V	0V
VHF High Band	11.2V	0V	8.0V	11.2V	7.9V	0V
UHF Band	11.2V	0V	8.0V	0V	1.2V	11.2V

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



PARTS LIST AND DESCRIPTION (Continued)

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

COILS & TRANSFORMERS

ITEM No.	FUNCTION	MFGR. PART No.	OTHER IDENTIFICATION	NOTES
# DY001	Yoke: 90° Horiz 1.88mh Vert 30.3mh		TDY91906 (1)	
# T101	Power	040135014P	0135014 (1)	
# T351	Sound	045128006C	5128006-X (1)	
# T401	Horizontal Drive	03305Y001C	Y001 (1)	
# FB401	Horizontal Out	04322018W	3220018 (1)	

# For SAFETY use only equivalent replacement part.  
(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP351	4" Square 8 Ohms	070L143003 10P211S-T(1)	4A1Z8	

(1) Number on unit.

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
# ATC101	Isolation	063A300007	Antenna
B401	Ferrite Bead	0246451652	
B402	Ferrite Bead	0246451652	
BL001	Antenna Transformer	063B200015	300-75
# CD501	Cord	120T410315	AC Power, Polarized
CF201	Filter	1028045R73	SAW
	Filter	1027045R72	SAW
CF202	Filter	1011104R51	Trap
CF301	Filter	1012204R54	Discriminator
CF302	Filter	101104R501	
CF401	Oscillator	1002R50303	
D101	Diode	0042122001	LED, LN526RA, Channel Display
D102	Diode	0021121090	LED, LN21RPH-(C2), CATV
D103	Diode	002112A010	LED, LN21RPH-C, Seek
D104	Diode	002112A010	LED, LN21RPH-C, Auto Scan
D115	Diode	0021121090	LED, LN21RPH-(C2), Auto Color
DL601	Delay Line	1036140101	
# F501	Fuse	081DC04003	4 Amp @ 125V AC, Fast Acting
L502	Degaussing Coil	028Y200008	
	Degaussing Coil	028E140008	
# RY101	Relay	0560120107	
SW101	Switch	0504211002	Power
SW102	Switch	0504201016	Channel Up, Channel Down, Volume Up, Volume Down
thru SW105			
SW106	Switch	0504211004	Clear, FT Up, FT Down, FT Control, Auto Scan, Memory Write, Seek, Memory Erase
thru SW113			
SW115	Switch	0510232005	CATV
SW601	Switch	0500103006	Auto Color, AFT, TV/CATV
# V801	CRT	510UEB22-TC13(Y)	Used in model ECR2100 (B)
	CRT	19VMRP22-AT1231/93	Used in model ECR2100
	CRT	5108B22-TC20	Used in model ECR2100(A)
X101	Crystal	10064R19A0	4.19MHz
X601	Crystal	100C357903	3.58MHz

PARTS LIST AND DESCRIPTION (Continued)

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

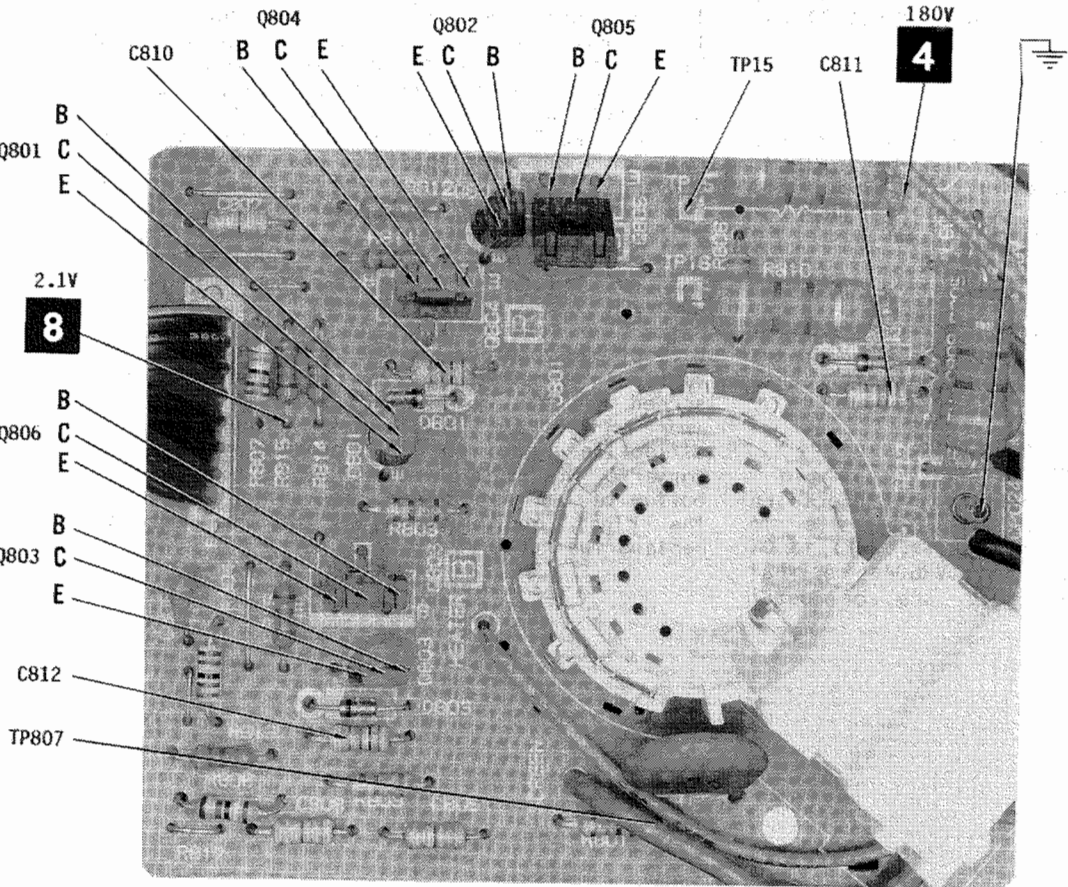
MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
	Antenna, UHF	1251599915	RUSSELL Replacement BOW-4H
	Antenna, VHF	1251110013	RUSSELL Replacement Assembly POR-12H
	Antenna, Rod		RUSSELL Replacement Rod SIM-4H
	Fuse Holder	067H000003	Two (2) used.
	PC Board	A36401011P	Main
	PC Board	A36401031	Control
	PC Board	A36401111	CRT
	PC Board	A36401201	LED
	PC Board	A36401271	Earphone Jack
	PC Board	A36401101	AKB
	PC Board	A36401131	Remocon
	Socket	0662130007	CRT
	Tuner, UHF/VHF	0145700011	UVE50-A02D
	Receiver	077M006004	Remote Control
	Transmitter	076G063001	Remote Control

# For SAFETY use only equivalent replacement part.

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Front Assembly	A36401723	Button, Three (3) used.	735TPA0010
Cabinet, Back	A36401743	Auto Color, AFT, TV/	
Door, Controls	713TPJ0013	CATV	
Button, Seven (7) used.	736TPA0003	Button, Clear	736TPA0008
Write, Erase, Auto		Knob, CATV Mode	733TPA0004
Memory, Seek, FT Up, FT Down, FT Center			



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CRT BOARD



PARTS LIST AND DESCRIPTION (Continued)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFGR. PART No.	ITEM No.	RATING	MFGR. PART No.
# C124	470 25V	E031T3471M	# C506	560 200V	E03MFC561M
# C433	470 35V	E02SG4471M	# C507	100 160V	E025FB101M
# C434	22 63V	E0B7T6220M			

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

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	ITEM No.	RATING	MFGR. PART No.
# C210	12 N220 50V 5%	P4A2FG752J	# C443	180 2KV 10%	COD4BN7U2K
# C442	.0075 2KV 5%	P4A2FG682J		680 2KV 10%	COD4BN7L2K
	.0068 2KV 5%		# C444	330 2KV 10%	COD0BN7L2K
			# C502	.22 125V	P2612A224M

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

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

ITEM NO.	FUNCTION	RESISTANCE	MFGR. PART NO.	NOTES
VR201	RF AGC	10K	V126214B01	
VR401	Vertical Height (Size)	68K	V1263U4B03	
VR402	Vertical Centering	5000	V1G5D53B07	
VR501	B+ Adjust	20K	V1G5D24B07	
VR601	Sub Brightness	1500	V1263E3B01	
VR602-1	Brightness	500	V029400015 (1)	
VR602-2	Contrast	10K	V029400015 (1)	
VR602-3	Color	10K	V029400015 (1)	
VR602-4	Tint	10K	V029400015 (1)	
VR603	Auto Color	10K	V1F5214BF1	
VR604	Auto Tint	10K	V1F5214BF1	
# VR605A	Focus		(2)	
# VR605B	Screen		(2)	

# For SAFETY use only equivalent replacement part.  
(1) Part of Four Section Control Brackett.  
(2) Part of Horizontal Output Transformer Number FB401, Part Number 043220018W.

WIRING DATA

High Voltage Lead .....	Use BELDEN No. 9867 (30 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

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	
# R352	56K 5% 1/2W Metal Film	R412T2563J	HW356	
# R353	56K 5% 1/2W Metal Film	R412T2563J	HW356	
# R356	560 5% 2W Metal Oxide	R3B18A561J	2W156	
# R357	100 5% 1/2W Metal Film	R412T2101J	HW110	
# R413	4.7 5% 1/4W Fuse	R615844R7J		
# R423	10K 5% 2W Metal Oxide	R3B18A103J	2W310	
# R435	100K 1% 1/4W Metal Oxide	R421T4104F		
# R436	22K 1% 1/4W Metal Film	R421T4223F		
# R437	6800 1% 1/4W Metal Film	R425T4682F		
# R439	15K 1% 1/4W Metal Film	R421T4153F		
# R440	4700 1% 1/4W Metal Film	R425T4472F		
# R441	15K 1% 1/4W Metal Film	R421T4153F		
# R442	10 5% 1W Fuse	R61581100J	F1W010	
# R447	2200 5% 2W Metal Oxide	R3B18A222J	2W222	
# R448	2200 5% 2W Metal Oxide	R3B18A222J	2W222	
# R450	5.6 5% 7W WW			
	5.6 10% 7W WW	R5A2CE5R5K		
# R452	1 5% 1W Fuse	R61481010J	F1W1D0	
# R461	10 5% 1/4W Fuse	R61504100J		
# R501	820K 5% 1/2W Metal Film	R412T2824J	HW482	
# R502	3.9 10% 5W WW	R5A2CD3R9K	5W309	
# R505	680 5% 3W Metal Oxide	R3B20B681J	3W168	
# R506	100K 1% 1/4W Metal Film	R421T4104F		
# R507	39K 1% 1/6W Metal Film	R421T6393F		
# R508	1500 1% 1/6W Metal Film	R421T6152F		
# R509	5600 15 1/6W Metal Film	R421T6562F		
# R510	150 5% 1/4W Fuse	R61584151J		
# R511	150 5% 1/4W Fuse	R61584151J		
# R520	22 5% 1/4W Fuse	R61584220J		
# R802	8200 5% 2W Metal Oxide	R3B18A822J	2W282	
# R803	2700 5% 1/2W Metal Oxide	R412T2272J	HW227	
# R804	22K 1% 1/4W Metal Film	R425T4223F		
	18K 1% 1/4W Metal Film	R425T4183F		
	14K 1% 1/4W Metal Film	R425R4143F		
# R805	8200 5% 2W Metal Oxide	R3B18A822J	2W282	
# R806	2700 5% 1/2W Metal Oxide	R412T2272J	HW227	
# R807	15K 1% 1/4W Metal Oxide	R425R4153F		
	18K 1% 1/4W Metal Film	R425T4183F		
R808	19K 1% 1/4W Carbon Film	R425T4193F		
	17K 1% 1/4W Carbon Film	R425R4173F		
	15K 1% 1/4W Metal Film	R425T4153F		
# R809	2700 5% 1/2W Metal Film	R412T2272J	HW227	
# R810	8200 5% 2W Metal Oxide	R3B18A822J	2W282	
R814	150 2% 1/4W Carbon Film		QW115	
R815	150 2% 1/4W Carbon Film		QW115	
R816	150 2% 1/4W Carbon Film		QW115	
TH501	9 Cold PTC	D8100M8R00		

# For SAFETY use only equivalent replacement part.

COILS (RF-IF)

ITEM No.	FUNCTION	MFGR. PART No.	ITEM No.	FUNCTION	MFGR. PART No.
L201	RF Choke (.39uH)	021Z73R39M	L401	Peaking (18uH)	021927180K
L202	Peaking (.68uH)	021Z73R68M		Peaking (18uH)	02106A180M
L203	Peaking (.91uH)	021N05R91K	# L501	Line Filter	0290000022
L204	Video IF	033602011C	L602	RF Choke (22uH)	021Z73220K
L205	Video IF	033602012C	L603	RF Choke (33uH)	021Z73330K
L206	Peaking (15uH)	021Z73150K	L604	RF Choke (100uH)	021Z73101K
L301	RF Choke (22uH)	021JA6220K	L801	RF Choke (100uH)	021Z73101K

# For SAFETY use only equivalent replacement part.