

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. Remove two screws holding Tuner and Tuner Control assembly to cabinet bottom and remove assembly from cabinet. Remove one retainer holding Stereo/SAP/Audio Amp board to cabinet bottom and slide board from cabinet. Slide Main board assembly from cabinet. Remove three screws holding Customer Control board assembly to cabinet front and remove assembly from cabinet. Remove two screws holding LED board to cabinet front and remove board from

cabinet. Remove two screws holding Programming Control board assembly to cabinet front and remove assembly from cabinet. Remove two screws holding Power/Volume/Channel Selector board assembly to cabinet front and remove 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 the neck.

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING

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

remote transmitter) are provided for one or two digit entry direct access channel selection. Fine tuning is automatic.

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.)

FUSE DEVICES

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

CHANNEL TUNING

Channel Up and Down buttons are provided for channel scanning. Ten numbered buttons (on

SET 2596 FOLDER 1

SAMS

PHOTOFACT

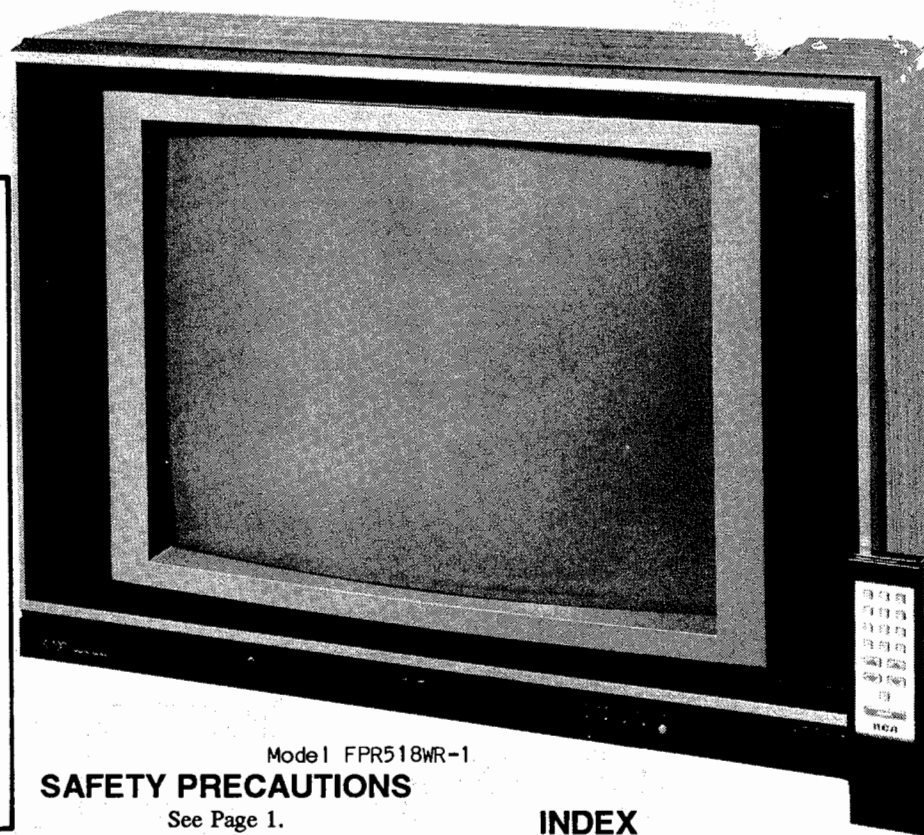
For Supplier Address See PHOTOFACT Index

RCA

CHASSIS CTC136D/G/J/P, CTC136AA

MODEL CHASSIS

FPR472TR-1 CTC136D
FPR472TR-2 CTC136P
FPR474BR-1 CTC136D
FPR474BR-2 CTC136P
FPR476DR-1 CTC136D
FPR476DR-2 CTC136P
FPR478ER-1 CTC136D
FPR478ER-2 CTC136P
FPR483ER-1 CTC136G
FPR485BR-1 CTC136G
FPR485WR-1 CTC136G
FPR487WR-1 CTC136G
FPR510WR-1 CTC136D
FPR510WR-2 CTC136P
FPR515WR-1 CTC136D
FPR515WR-2 CTC136P
FPR518WR-1 CTC136G
FXR469WR-1 CTC136J
FXR469WR-2 CTC136AA



Model FPR518WR-1

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. 10 9 8 7 6 0 4 3 2 1

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SET 2596 FOLDER 1

RCA
CHASSIS CTC136D/G/J/P, CTC136AA

SET 2596 FOLDER 1

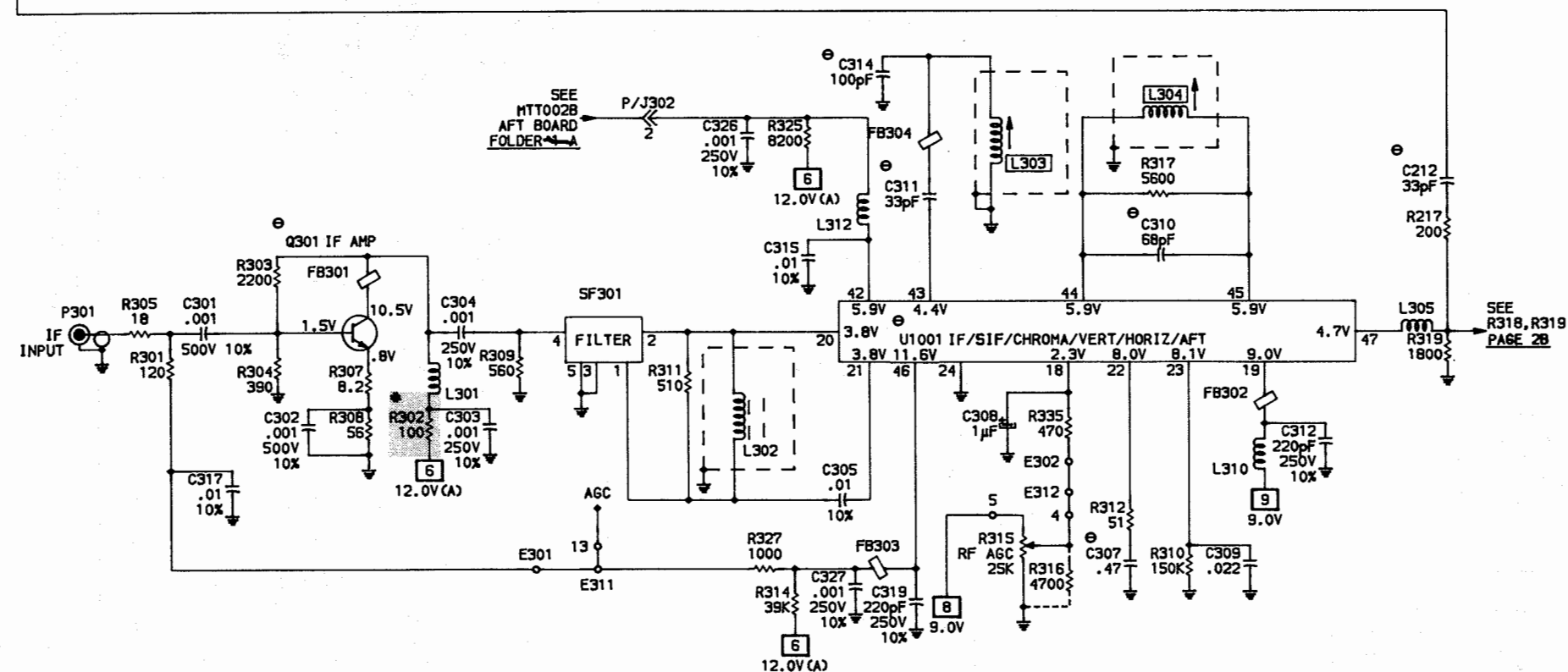


PHOTO CIRCUITRACE = 11
SCHEMATIC CIRCUITRACE = 11

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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 No.	SENCORE No.
Oscilloscope	1541A, 2120, 2125, 2160, 2190, 2522	SC61
Generators		
RGB	1249A, 1260	RG67
Multiburst Signal	1251, 1260	VA62A
Color Bar	1211A, 1249A, 1251, 1260	VA62A, CG25, NT64
TV Stereo	2009	ST65, ST66
Analog VOM	114, 117, 177, 214	
Digital VOM	377, 388HD, 2700 Series, 2831A 2860, 2900 Series	DVM37, DVM56A, SC61
Frequency Meter	1803A, 1804A, 1805, 1822, 1851, 1855	FC71, SC61
Hi-Voltage Probe	HV-44	HP200
VOM/DMM		TP212
Accessory probes	PR-28(HV)	
Isolation Transformer	TR110, 1604,1653,1655	PR57
Capacitance Analyzer	810A, 815, 820, 830	LC76, LC101, LC102
CRT Analyzer	480, 490	CR70
Temperature Probe	TP-28, TP-30	
AC Leakage Tester	1655	PR57
Logic Probe	DP21, DP51	
Logic Pulser	DP31, DP101	
Inductance Analyzer	875A	LC76, LC101, LC102
Flyback Yoke Tester	875A	VA62A, LC76, LC101, LC102
TV Stereo Power Monitor		SR68
Field Strength Meter		FS73, FS74
Transistor Tester	510, 520B, 530	TF46
Video Analyzer		VA62A
Modulator/Converter	1201	

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 L201, L303, L304, L308.....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 5.0V Bias to TP305.
Disconnect IF Cable from Tuner.

VIDEO IF ALIGNMENT (SWEEP MARKER GENERATOR)

DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To TP307	To TP303	44MHz (10MHz Sweep)	45.75MHz	Adjust L304 for Maximum 45.75MHz. See Figure 1. NOTE: Reconnect IF Cable to Tuner after adjustment.

TV ALIGNMENT INSTRUCTIONS (Continued)

VIDEO IF ALIGNMENT (BAR SWEEP GENERATOR)

BAR SWEEP GENERATOR	SCOPE INPUT	REMARKS
To Antenna Terminals	To TP307	Perform Video IF Adjustments per SWEEP/MARKER GENERATOR Instructions above. See Figure 2.

SOUND IF ALIGNMENT

Tune in a station and adjust L201 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 L308.

AUTOMATIC FINE TUNING ALIGNMENT

Connect as explained in preliminary instructions unless specified otherwise. Disconnect sweep generator from TP303. Connect 4.0V Bias to TP305. Connect Digital Voltmeter to TP342 (pin 2 of J302). Adjust AFT Balance Control (R323) for 6.5V reading on voltmeter. Connect Generator to TP303. Increase Bias to 5.0V at TP305.				
DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To TP342 (Pin 2 of J302)	To TP303	44MHz (10MHz Sweep)	45.75MHz	Adjust L303 to place 45.75MHz marker at crossover. See Figure 3. NOTE: Reconnect IF Cable to tuner after adjustment.

RCA CHASSIS CTC136D/G/J/P, CTC136AA

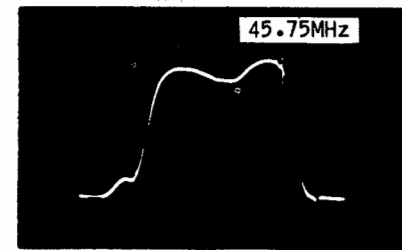


Figure 1

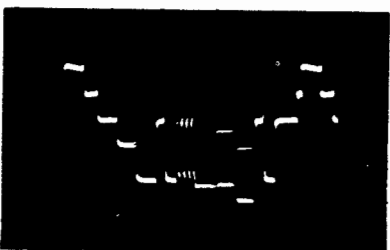


Figure 2

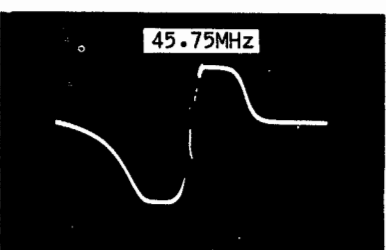


Figure 3



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.

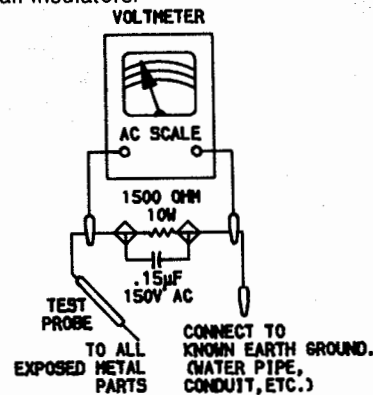
Leakage Current Hot Check

- 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 (T402). Refer to "Troubleshooting" Power Supply and Horizontal circuits.

NO PIC, NO SOUND, HAS RASTER: Check IF-AGC and source voltages from Horizontal Output Transformer (T402). Refer to "Troubleshooting" IF-AGC and Horizontal circuits.

NO PIC, HAS SOUND, NO RASTER: Check Horizontal Output Transformer (T402) 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 (T402). 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.

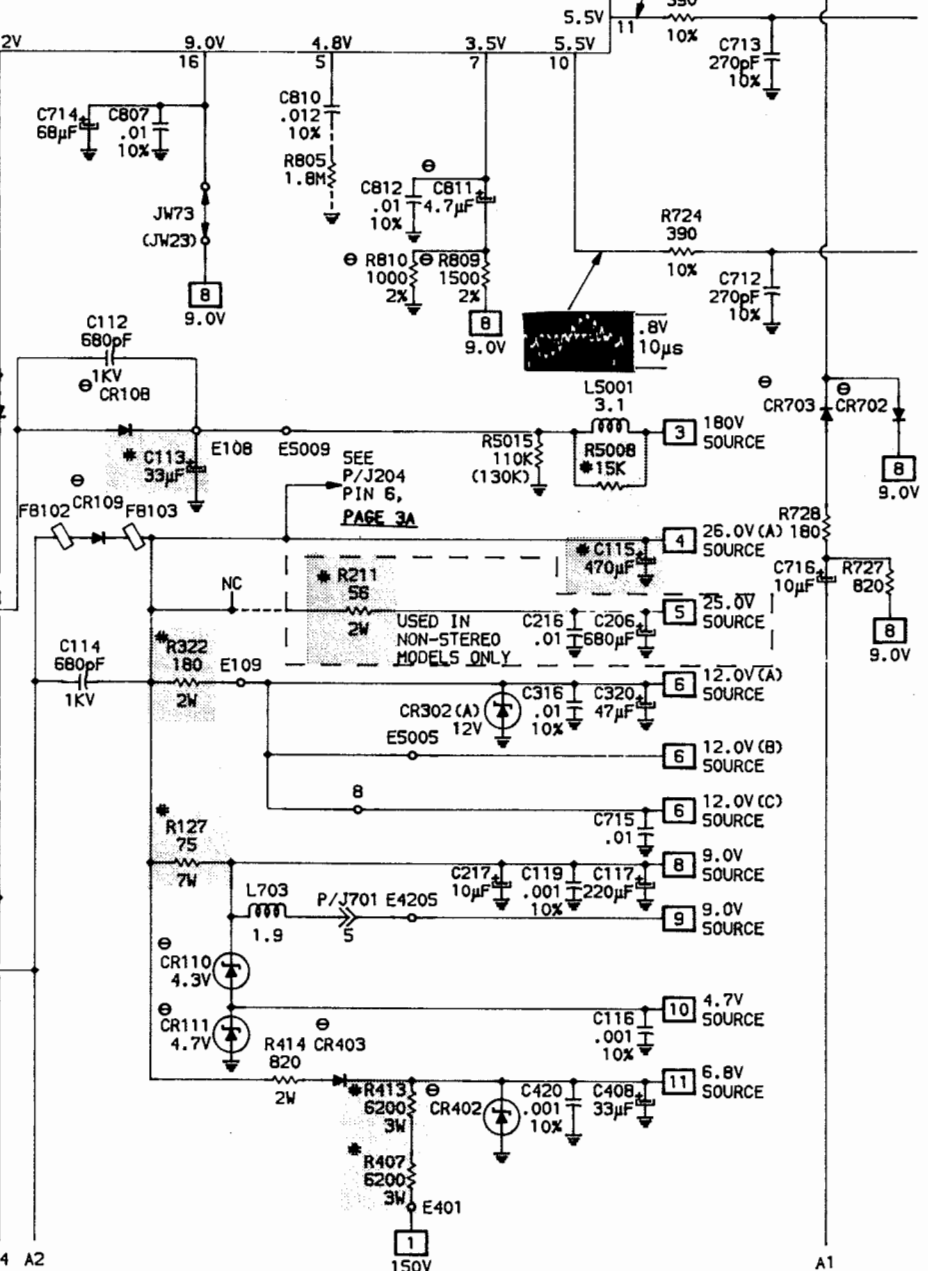


PHOTO CIRCUITRACE = 11
SCHEMATIC CIRCUITRACE = 11

TEST JIG HOOKUP

FUNCTION	Chek-A-Color ADAPTER NO.	RCA / TeleMatic ADAPTER NO.	
CRT YOKE YOKE SETTING	B243 D4142(1) YP2A Focus Tap	10J667 10J767 Horiz 1.9 Vert 14 FVS-3950 Focus Voltage Supply	

(1) If Vertical or Horizontal Sweep is reversed, Rotate
respection Plug 180°.

TROUBLESHOOTING

POWER SUPPLY

Check AC Fuse (F101). If fuse is open, check Bridge Rectifier Diodes CR101 thru CR104, Capacitors C101 thru C105, Electrolytic C106, Horizontal Output Transistor (Q402) Regulator SCR (SCR101). Apply 120 VAC and check for 150V at the cathode of Diode CR103. If this voltage is missing, check voltages and components associated with Line Filter (L101) and Resistor (R101). If 150V is present at the cathode of Diode CR103, depress power switch and check for 120V at the cathode of SCR (SCR101). If this voltage is missing, check voltages, waveforms and components associated with SCR101, Transistor Q402, Pulse Regulator Transistor (Q104) and Regulator Transistors (Q101, Q102, Q103), Start Transistor (Q931) on (PW REM-1A Board), Power On/Off Transistor (Q601) on (Tuner Control Board) and Diode CR115. If a pulsing sound is heard coming from the set and the voltage at the cathode of SCR101 fluctuates between 115V and 150V the set may be in shutdown, refer to the "Horizontal" and "High Voltage Shutdown" sections of this Troubleshooting guide.

HORIZONTAL

Determine if TV is in shutdown, refer to "High Voltage Shutdown" section of this Troubleshooting guide. If TV is not in shutdown, inject a horizontal signal at base of Horizontal Output Transistor (Q402) and depress power switch. If horizontal sweep is now present, check voltages, waveforms and components associated with Horizontal Drive Transistor (Q401) and pins 1 and 58 thru 64 of IF/SIF/Video/Chroma/Vert/Horiz/AFT IC (U1001). If there is still no horizontal deflection, check voltages and components associated with Transistor Q402, Regulator Transistors (Q101, Q102, Q103), Pulse Regulator Transistor (Q104) and Regulator SCR (SCR101). Check Horizontal Output Transformer (T402), Diodes CR108, CR109, CR403 and associated components for defects. The high voltage rectifier is part of Transformer T402, and if defective, will affect the operation of horizontal circuits. Horizontal linearity or width problems may be

caused by Capacitors C416, C417 and Horizontal Linearity Coil (L402) being defective.

HIGH VOLTAGE SHUTDOWN

When set is in shutdown, the voltage at the cathode of SCR101 will fluctuate between 115V and 150V and a pulsing sound will be heard coming from the set. The high voltage is monitored by Diode CR401 rectifying pulses from Horizontal Output Transformer (T402). Should the high voltage increase, the voltage at the cathode of Diode CR401 will also increase and trigger Zener Diode CR404 into conduction, which throws the set into shutdown. To troubleshoot, remove Diode CR401 from the circuit and use a variable AC power supply. Start at 90V AC and increase voltage as necessary to locate defect. Return Diode CR401 to the circuit.

NOTE: Care should be taken in defeating the high voltage shutdown circuit, as this may cause excessive X-ray radiation and damage to the CRT, Transformer T402 and associated components. Monitor the high voltage and troubleshoot.

IF-AGC

Inject a video IF signal at the IF Input TP303 and check for video on CRT. If video is present, check Tuner and Tuner Control circuits. If there is no video on the CRT, check for a video waveform at TP307. If a video waveform is present at TP307, refer to "Video" section of this Troubleshooting guide. If there is no video at TP307, apply AGC bias to pin 23 of IF/SIF/Video/Chroma/Vert/Horiz/AFT IC (U1001). If video is now present at TP307, check voltages, waveforms and components associated with AGC circuit at pins 18, 22, 23 and 46 of IC U1001. If there is still no video at TP307, check voltages, waveforms and component associated with pins 19, 20, 21 and 42 thru 47 of IC U1001 and IF Amp Transistor (Q301). A defective AGC circuit can cause a overloaded picture, excessive snow or loss of audio and video. See AGC Voltage Chart for voltages with signal.

AGC VOLTAGE CHART		
U1001		
Pin 22		5.2V
Pin 23		5.2V
Pin 46		7.7V

TROUBLESHOOTING (Continued)

MONO VERSION AUDIO

Inject an audio signal at pin 26 of IF/SIF/Video/Chroma/Vert/Horiz/Vert/AFT IC (U1001) and check for audio at speaker. If there is no audio, check voltages, waveforms and components associated with Audio Output Transistors (Q201, Q202, Q203). If audio is present at the speaker, check voltages, waveforms and components associated with pins 25 thru 41 of IC U1001. Check voltage at pin 30 of IC U1001, it should measure 1.5V at mute and 4.8V at Maximum volume.

STEREO VERSION

Select an active channel and check for an waveform at pin 34 of IF/SIF/Chroma/Vert/Horiz/AFT IC (U1001). If there is no audio, check voltages, waveforms and components associated with pins 25 thru 27, and 31 thru 41 of U1001. If audio is present at pin 34 of U1001, select a station that is transmitting a stereo signal and check for 0.67V at pin 29 and an audio waveform at pins 8 and 16 of TV Sound/MPX Demodulator IC (U600). If waveforms and proper voltage are missing, check voltages, waveforms and components associated with pin 8, 15, 16, and 18 thru 29 of (U600). If waveforms are present and proper voltage is missing, check voltages, waveforms and components associated with pin 21 thru 29 of (U600). If audio waveforms are present at pin 8 and 16 and proper voltage at pin 29 of (U600), check voltages, waveforms and components associated with pins 3 and 12 of TV Sound DBX Decoder IC (U601). If there is no audio, check voltages, waveforms and components associated with pins 3 and 12 of U601 and 15KHz Filters (FL1602 and FL1603). If there is audio at pins 3 and 12 of U601, check for audio at pins 15 and 16 of U601. If proper waveforms are present at pin 15 and 16 of U601, select Stereo mode and check for audio at pins 13 and 14 of U600. If there is no audio, check voltages, waveforms and components associated with pins 9 thru 14 and 17 of U600. Select a station that is transmitting a SAP signal, select SAP mode and check for SAP signal, select SAP mode and check for SAP audio at pin 13 and 14 and 0.67V at pin 30 of U600. If there is no audio and the voltage is improper, check voltages, waveforms and components associated with pin 1 thru 7 and 30 of U600. If there is audio at pins 13 and 14 of U600 in Mono/Stereo/SAP, check for audio in any mode at pins 6 and 11 of T/V/B Control IC (U800). If audio is present at pins 6 and 11 of U800, check voltages, waveforms and components associated with Sound Output IC (U900). If audio is not present at pins 6 and 11 of U800, check voltages, waveforms and components associated with pins 2, 5, 6, 8, 11, 12 and 15 of U800. Check voltage at pin 8 of U800, it should measure 0.28V at mute and 5.6V at Maximum volume.

VIDEO

Inject a video signal at TP307 and check for video on CRT. If video is present, refer to "IF-AGC" section of this Troubleshooting guide. If there is no CRT, check for a video waveform at TP705. If there is no video, check voltages, waveforms and components associated with pins 8, 13 thru 17, 51, 52 and

53 of IF/SIF/Video/Chroma/Vert/Horiz/ AFT IC (U1001). If a video waveform is present at TP705, associated with Luminance Buffer Transistor (Q5007), Red, Green, Blue Driver Transistor (Q5004, Q5005, Q5006), Red Green, Blue Transistors (Q5001, Q5002, Q5003) and the CRT. If brightness is inadequate or cannot be controlled, check voltages and components associated with pins 8, 14 and 15 of IC (U1001) and pin 8 of the CRT.

VERTICAL

Inject a vertical drive signal at TP504. If vertical sweep is now present, check voltages, waveforms and components associate with pins 54 and 55 of IF/SIF/Video/Chroma/Vert/Horiz/ AFT IC (U1001). If there is still no vertical deflection, check voltages, waveforms and components associated with Vertical Output IC (U501) and the deflection yoke. Vertical linearity or height problems may be caused by Electrolytics C501, C503, C505, C510 and C511 being defective.

SYNC

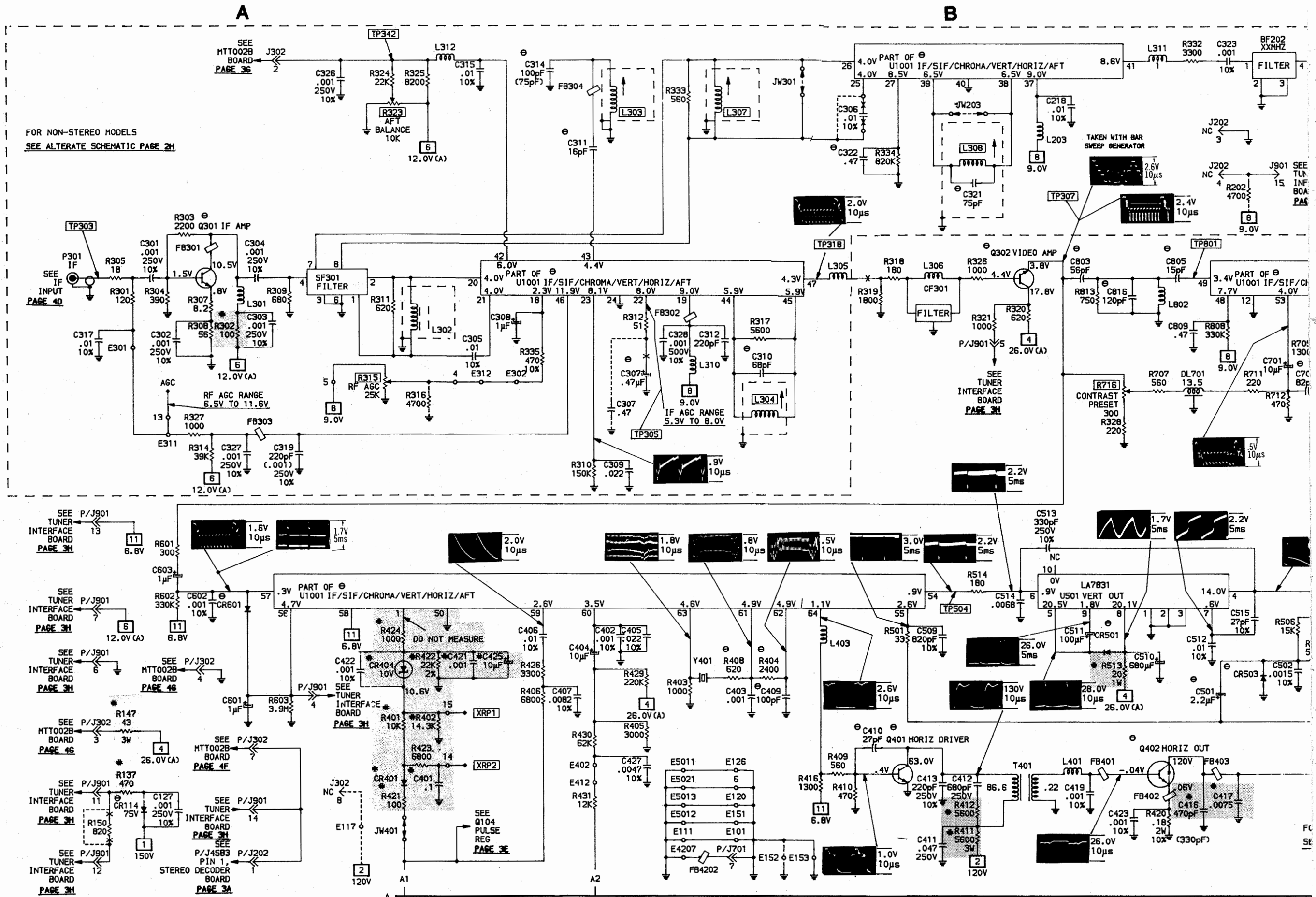
If there is no vertical or horizontal sync, check voltages, waveforms and components associated with pins 56 and 57 of IF/SIF/Chroma/Vert/Horiz/AFT IC (U1001). If the proper waveforms are present at pins 56 and 57 of IC U1001, check for the proper vertical waveforms at pins 54 and 55 of IC U1001 and horizontal waveform at pin 64 of IC U1001.

RASTER

Check the CRT and CRT voltages. If there is no Red, check voltages and components associated with pin 9 of IF/SIF/Chroma/Vert/Horiz/AFT IC (U1001), and Red Driver Transistor (Q5004) and Red Output Transistor (Q5001). If there is no Green, check voltages and components associated with pin 10 of IC U1001, Green Driver Transistor (Q5005) and Green Output Transistor (Q5002). If there is no Blue, check voltages and components associated with pin 11 of IC U1001, Blue Driver Transistor (Q5006) and Blue Output Transistor (Q5003). If raster has a keystone shape, check deflection yoke. If raster has height or width problems, refer to the "Vertical" "Horizontal" and "Power Supply" sections of this Troubleshooting guide.

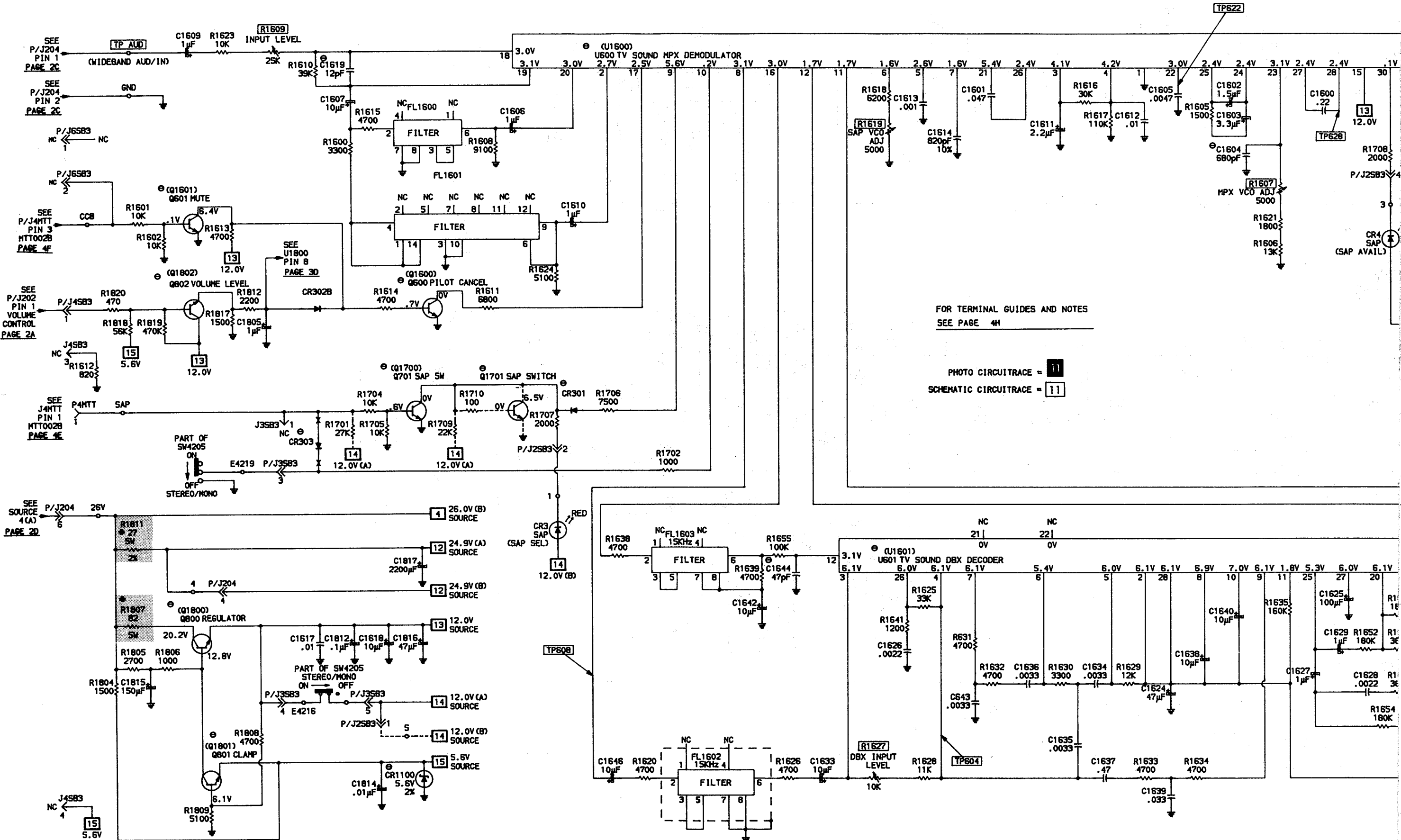
CHROMA

Check for a chroma waveform at TP801. If the waveform is missing, check the components associated with TP801. If a chroma waveform is present at TP801, check for the proper chroma waveforms at pins 9, 10, 11 of IF/SIF/Video/Chroma/Vert/Horiz/AFT IC (U1001). If the waveforms are missing, check voltages, waveforms and components associated with pins 2 thru 7, 9, 10, 11, 48 and 49 of IC U1001. Check the 3.58MHz oscillator at pins 4 and 6 of IC U1001. Check voltages, waveforms and components associated with pin 2 of IC and Tint Control. If proper chroma waveforms are present at pins 9, 10 and 11 of IC U1001, refer to the "Raster" section of this Troubleshooting guide.



A

B

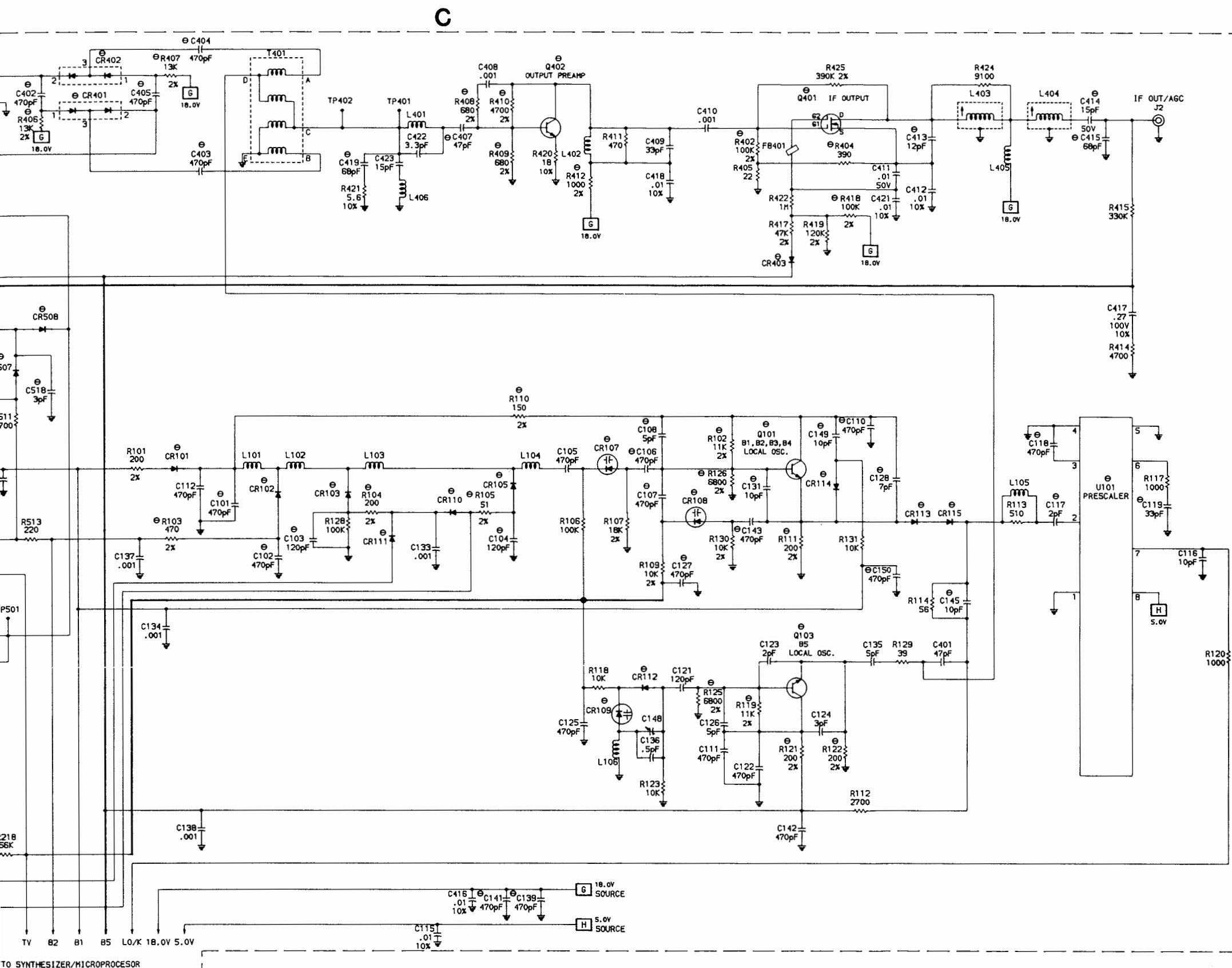


FOR TERMINAL GUIDES AND NOTES
SEE PAGE 4H

PHOTO CIRCUITRACE = 11
SCHEMATIC CIRCUITRACE = 11

A PHOTOFACIT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE

SOUND BOARD (PWSB003)



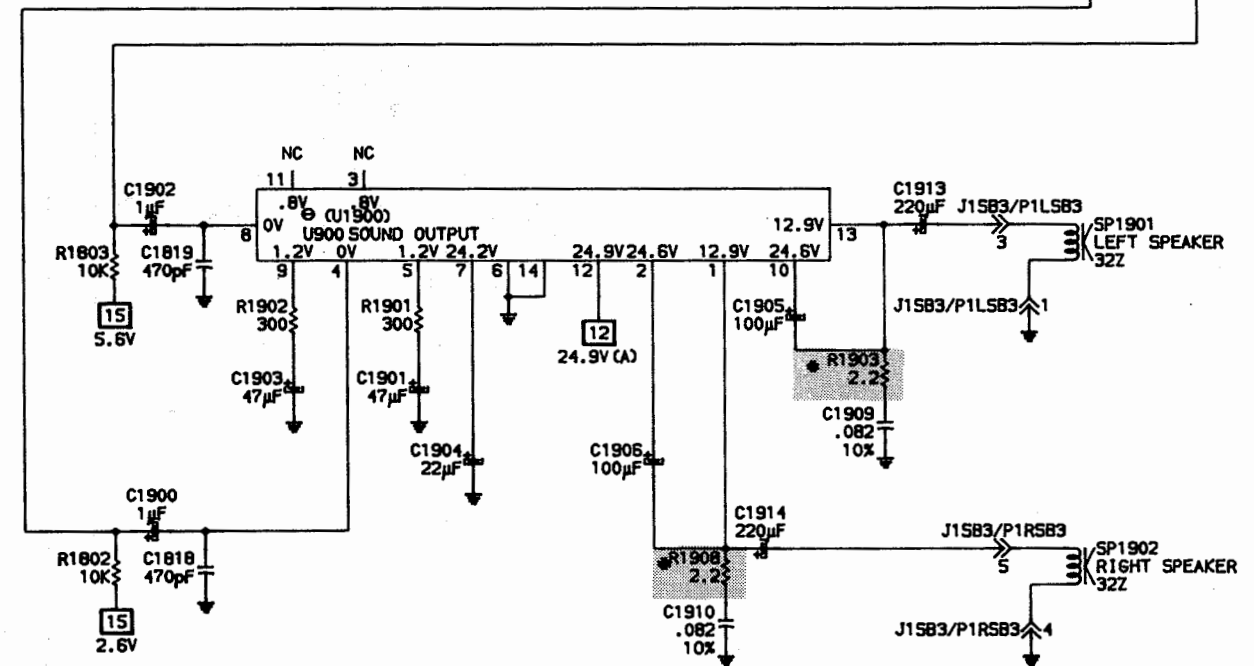
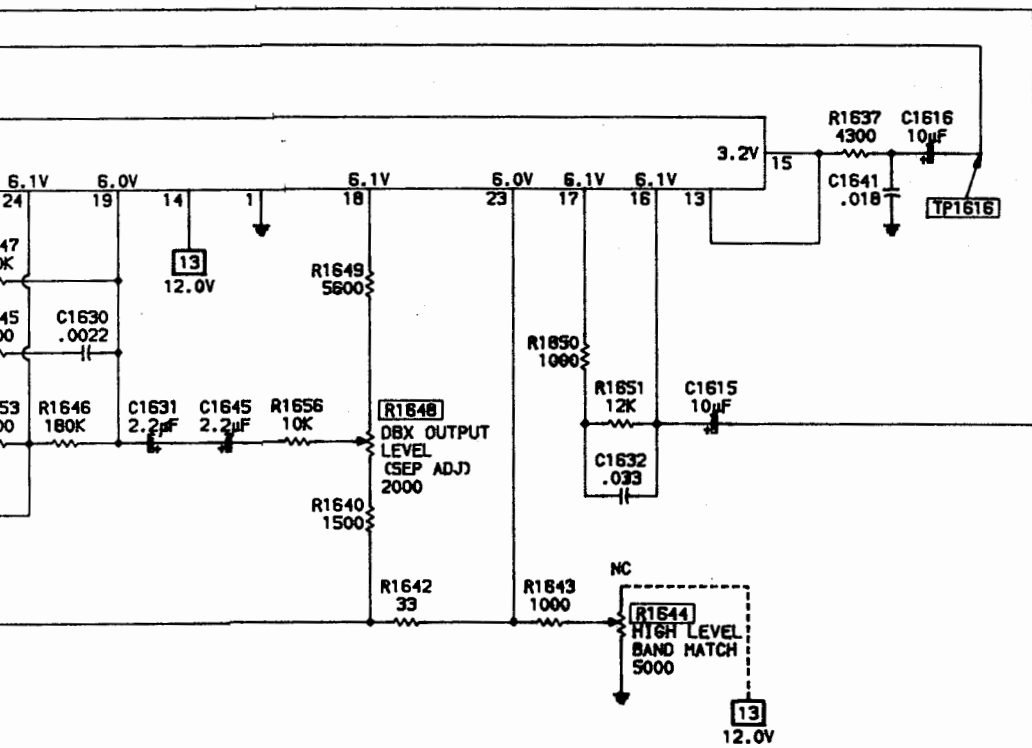
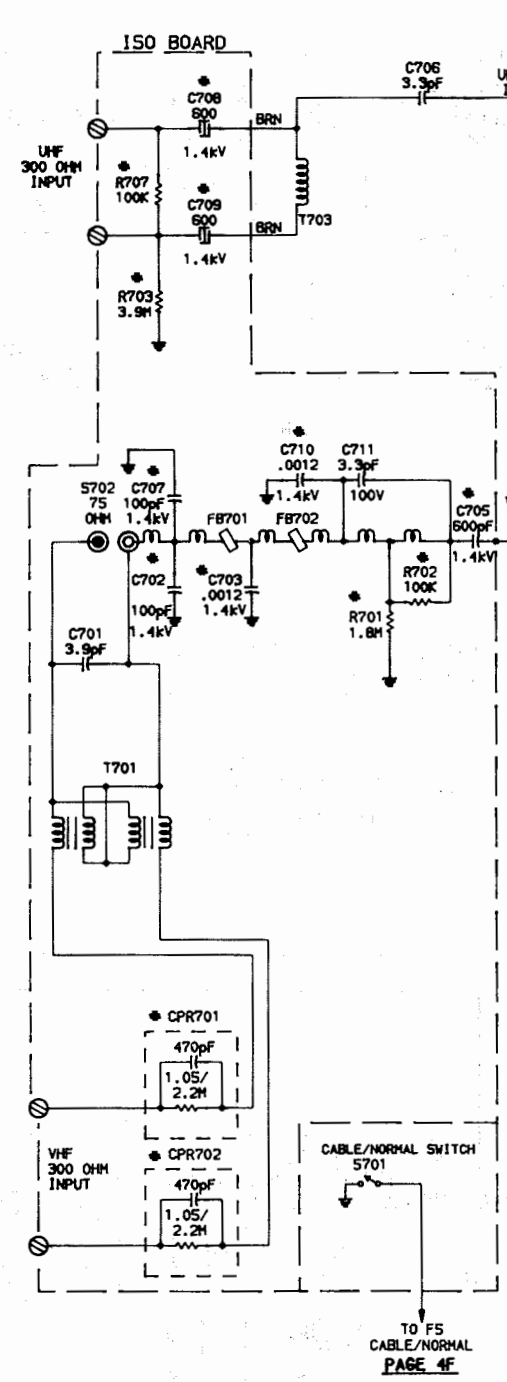


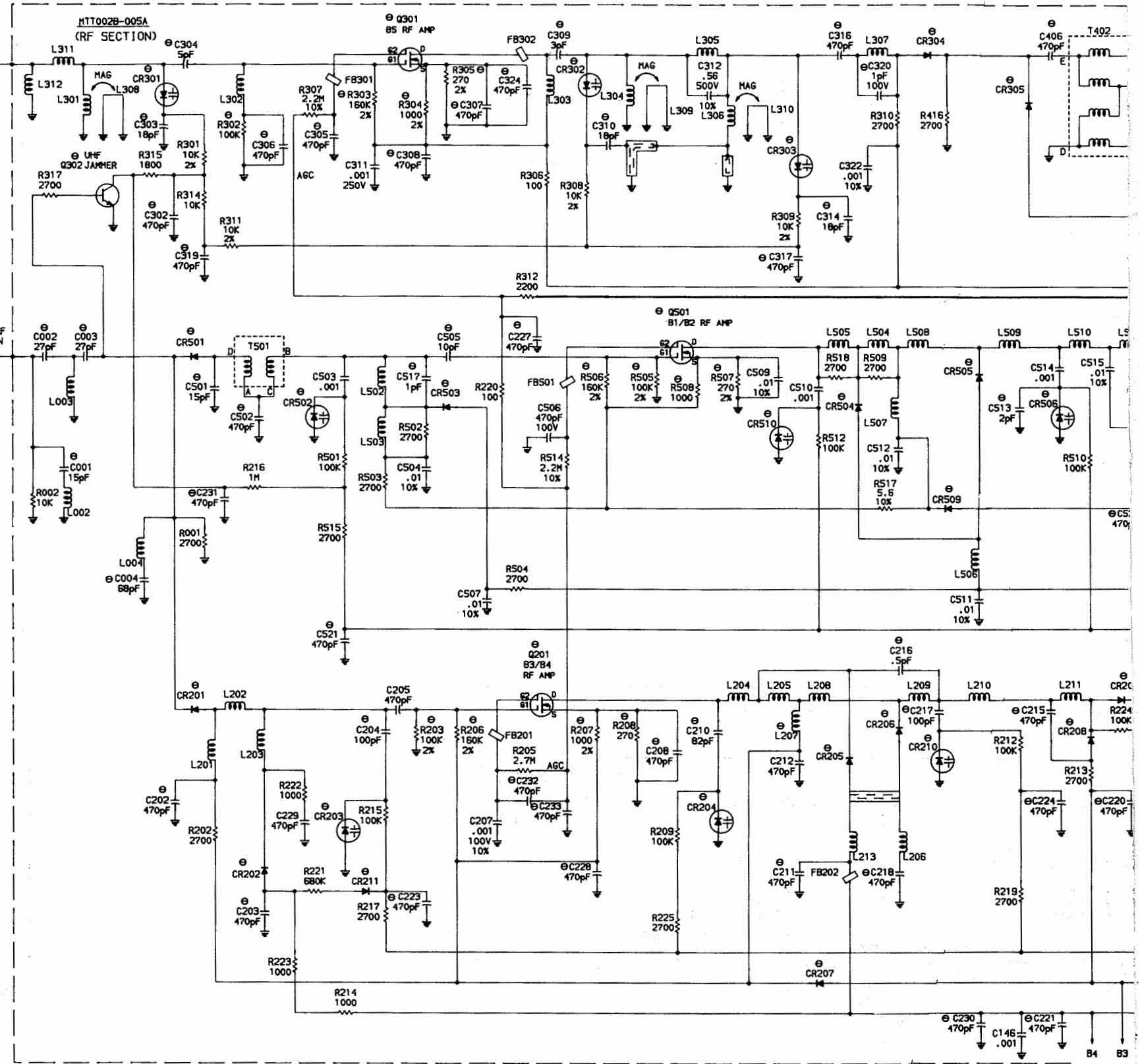
PHOTO CIRCUITRACE - 11
SCHEMATIC CIRCUITRACE - 11

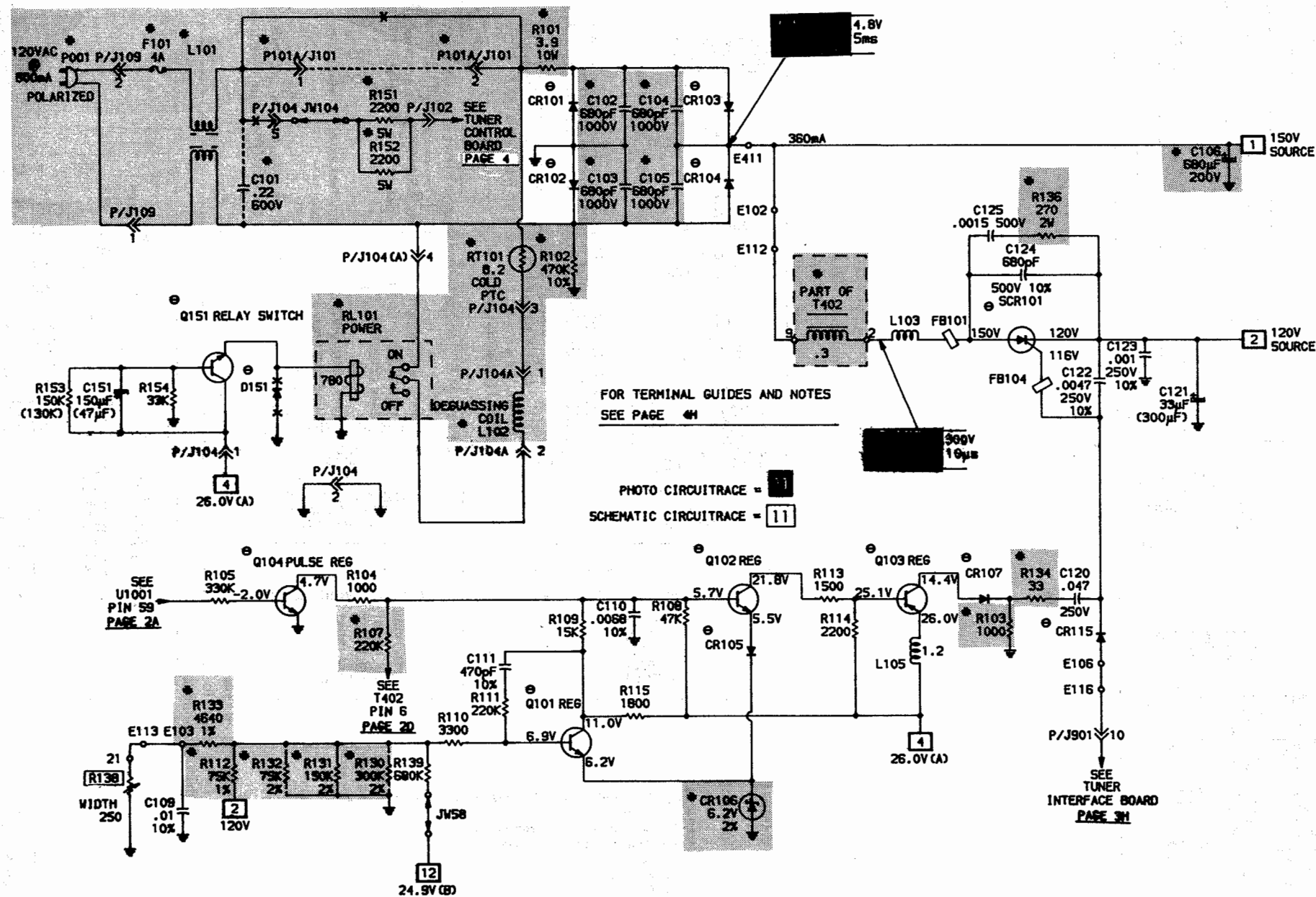
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A



B



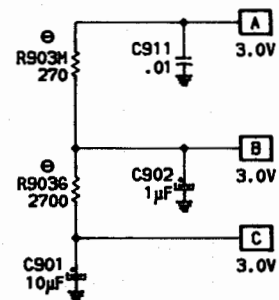


A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH [REDACTED]
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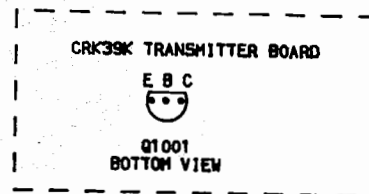
POWER SUPPLY



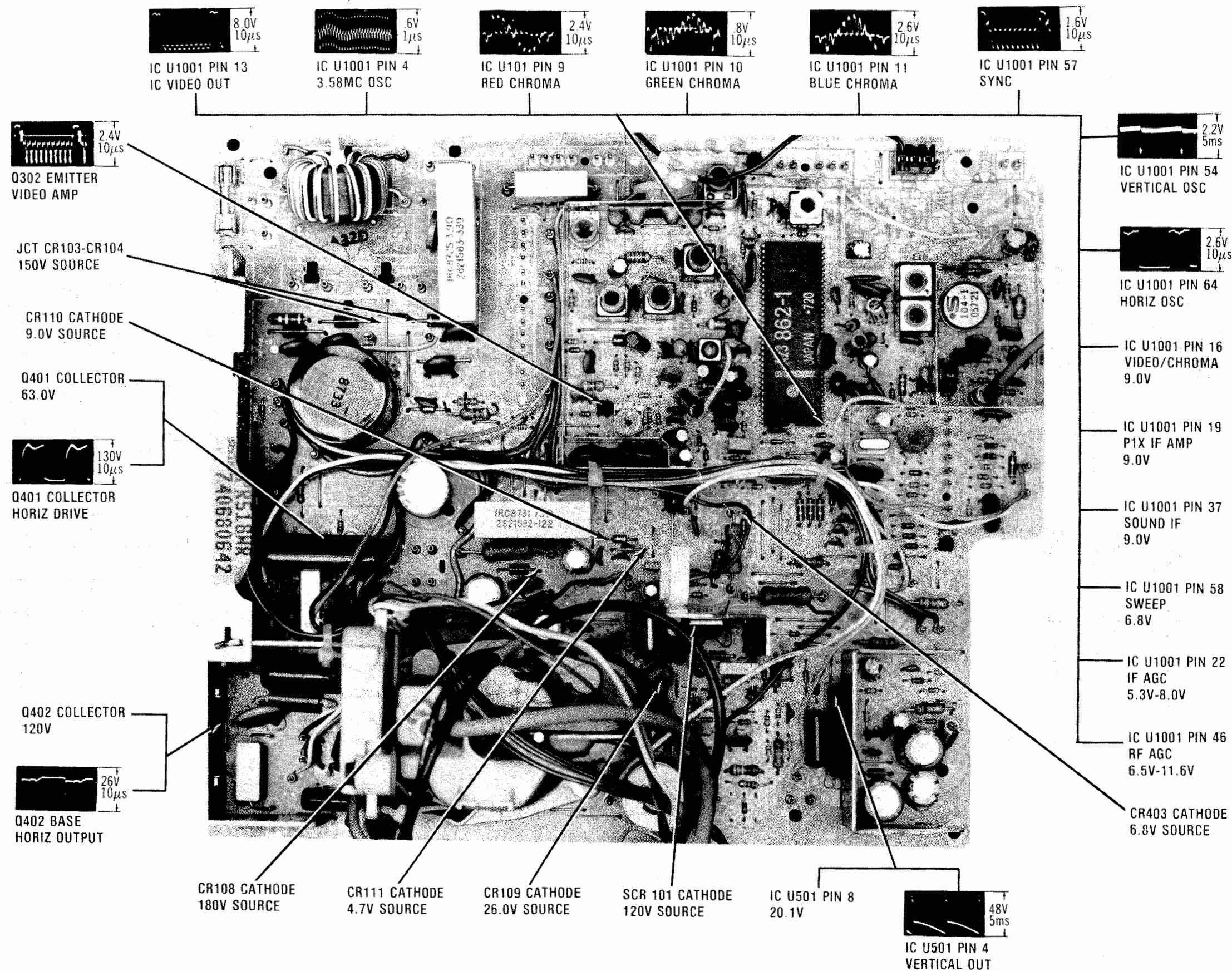
Page 4



MCY005A REMOTE PREAMP



CRK39K REMOTE TRANSMITTER

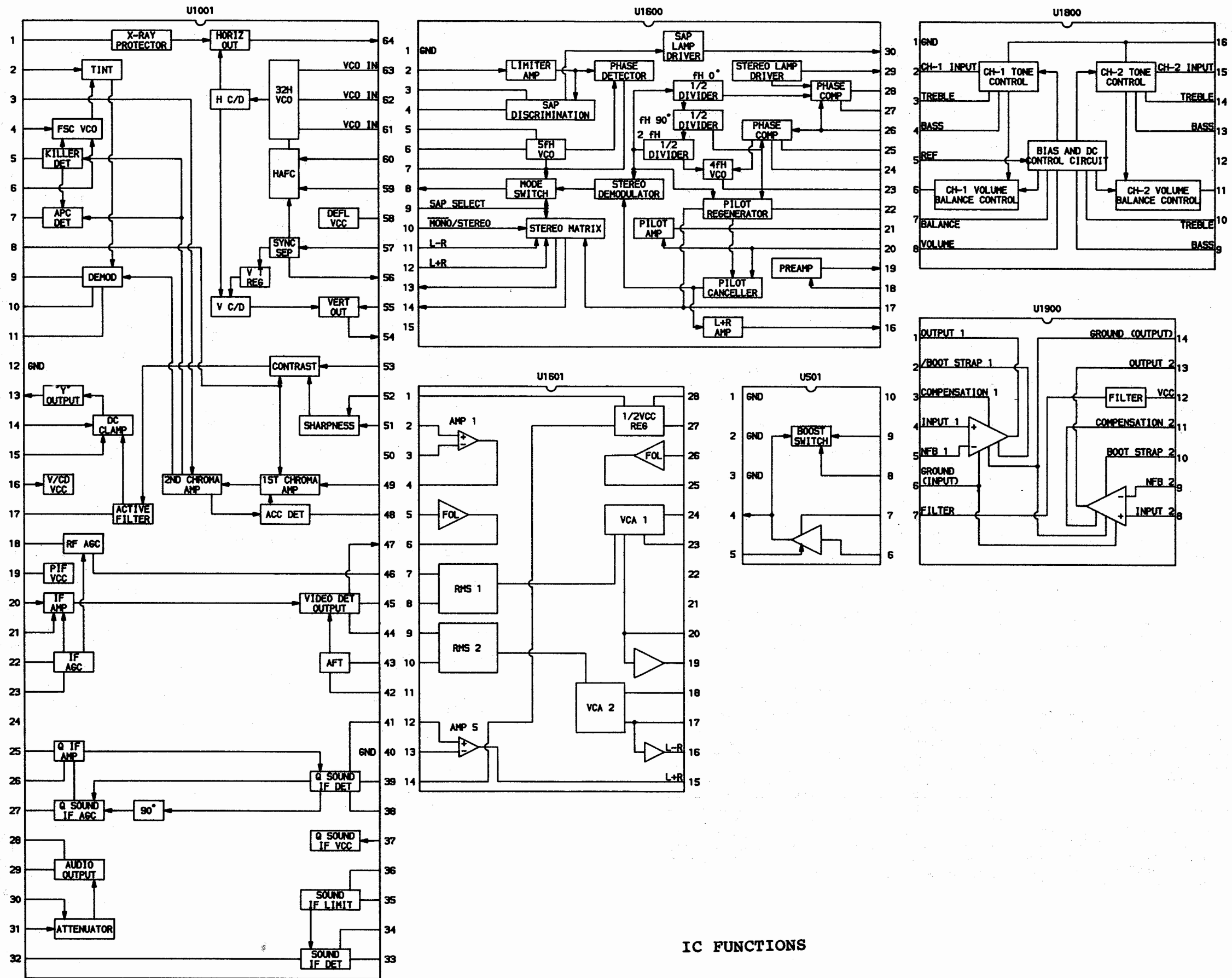


MAIN BOARD

CHEMATIC

A 3.0W

B 3.0W



IC FUNCTIONS

MISCELLANEOUS ADJUSTMENTSPRETUNINGAUTOMATIC PROGRAMMING

1. Momentarily depress Power Button.
2. Set TV/CATV Switch to desired position.
3. Press and release AUTO PROG Button.

MANUAL PROGRAMMINGADDING CHANNELS

1. Momentarily depress Power Button.
2. Set TV/CATV Switch to desired position.
3. Using the 0-9 buttons on Remote Control, select desired channel.
4. Press ADD button to add this channel to memory.
5. Repeat steps 3 and 4 for all desired channels.

ERASING CHANNELS

1. Momentarily depress Power Button.
2. Use the CHANNEL UP and DOWN buttons to switch to desired channel.
3. Press ERASE Button to delete this channel from memory.
4. Repeat steps 2 and 3 to delete all unwanted channels from memory.

NOTE: If power is remove from the set, all programming will be lost.

RF AGC ADJUSTMENT

Tune in a station and allow a 15-minute warm-up time. Adjust RF AGC Control (R315) counterclockwise until snow (noise) appears in picture and then clockwise until snow just disappears.

WIDTH ADJUSTMENT

Tune in a crosshatch pattern and allow a 15-minute warm-up time. Adjust Width Adjust Control (R138) for a very limited width adjustment.

CONTRAST PRESET ADJUSTMENT

Tune in a station and allow a 15-minute warm-up time. Turn Color Control to MINIMUM. Picture Control to Maximum (fully clockwise) and Black Level to MINIMUM (fully counterclockwise). Adjust Contrast Preset Control (R716) for sufficient white highlights.

COLOR TEMPERATURE ADJUSTMENT

Tune in a station and allow a 15-minute warm-up time. Set Color Control to MINIMUM and Black Level and Picture Controls to midrange. Set Red (R5033), Green (R5034) and Blue (R5035) Bias Controls and Screen Control

(R4210B) to MINIMUM (fully counterclockwise). Set Red/Blue (R5025) and Green (R5026) Drive Controls to Maximum (fully clockwise). Place a jumper from SS1 to SS2 located on rear control board. Advance Screen Control (R4210B) until a dim line of one color just appears. Adjust Bias Controls of remaining two colors to produce a dim white line. Remove jumper from SS1 to SS2. Set Black Level Control to Maximum (fully clockwise) and Picture Control to MINIMUM (fully counterclockwise). Adjust Red/Blue (R5025) and Green (R5026) Drive Controls to produce a good black and white picture. Check tracking from low light to high light conditions and readjust as necessary.

PURITY ADJUSTMENT

NOTE: Magnetic Tape (Beam Bender) is not adjustable and is not reusable. If CRT is replaced or adjustment is necessary, an adjustable type beam bender is required, RCA Part No. 158699.

If the CRT appears to be magnetized, use a degaussing coil to demagnetize the CRT. Perform Center Convergence. Obtain a white raster by placing a jumper across R712. Adjust Bias Controls to produce a green raster. Advance Screen Control if necessary for a visible raster. Remove the rubber wedges and slide the deflection yoke back against the bell on the CRT. Spread and rotate the purity magnets to center the green bar on the CRT. Slide the deflection yoke forward to produce a uniform green screen. Check red and blue purity by adjusting the Bias Controls to produce red and blue fields. Perform Color Temperature and Convergence Adjustments.

CONVERGENCE ADJUSTMENT

NOTE: Magentic tape (beam bender) is not adjustable and is not reusable. If CRT is replaced or adjustment is necessary, an adjustable type beam bender is required, RCA Part No. 158699.

Connect a color bar generator to the antenna terminals and tune in a crosshatch pattern. Loosen the locking ring on beam bender assembly so that magnets can be moved without binding. Spread and rotate the 4-pole magnets to converge the red and blue vertical and horizontal lines at the center of the screen. Spread and rotate the 6-pole magnets to converge the red/blue lines over the green lines at center of the screen. Loosen the deflection yoke and remove the rubber wedges. Tilt the deflection yoke vertically and horizontally to converge the edges of the screen. Replace rubber wedges and perform Color Temperature Adjustment.

MISCELLANEOUS ADJUSTMENTS (Continued)X-RADIATION PROTECTION SHUTDOWN CHECK

When service has been performed on horizontal deflection, high voltage, regulator B+ systems, the X-radiation protection circuit should be tested for proper operation as follows:

1. Apply 120V AC input voltage.
2. Allow for warm-up and adjust customer controls for normal operation.
3. Locate stakes labeled XRP1 and XRP2 on the Rear Control circuit board.

4. Short Stake XRP1 to Stake XRP2, when stakes are shorted instrument should shut down, may try to restart and shut down. In some, set should stay shut down.

5. Remove 120V AC, remove short, wait about 20 seconds, turn set On and test for normal operation.

NOTE: If the set does not go into shutdown, refer to the "High Voltage Shutdown" sections of the Troubleshooting guide.

STEREO ADJUSTMENTSSTEREO ADJUSTMENTS

NOTE: Adjustment were made using B&K Model 2009 MTS TV/Stereo Generator. Equivalent generator may be used. Connect generator to antenna terminals.

VOLUME PRESET ADJUST

Select 300Hz, L+R signal. Pilot Switch Off, SAP Switch Off. Connect Digital Voltmeter to TP"AUD" on Stereo Board. Adjust Volume Preset Control (R222) (On Main Board) for 35mv rms +/-1mv.

INPUT LEVEL ADJUST

Select 300Hz L+R signal. Pilot Switch Off, SAP Switch Off. Connect Digital Voltmeter to TP616, negative lead of C1616. Adjust Input Level Control (R1609) for 54mv rms +/-mv.

MPX VCO ADJUSTMENT

NOTE: Adjustment is made with generator disconnected or with Pilot, SAP, and Modulating Signal switches set to Off.

Connect a 51K ohm resistor from TP628, pin 28 of IC (U1600) to ground. Connect a 10-μF capacitor from TP"AUD" to ground. Connect a frequency counter to TP622, pin 22 of IC (U1600). Adjust MPX VCO Adjust Control (R1607) for 15735KHz +/-60Hz. Remove resistor and capacitor.

SAP VCO ADJUSTMENT

Set Pilot Switch to Off, SAP Switch to On. Modulating Signal to Off position. Set SAP/

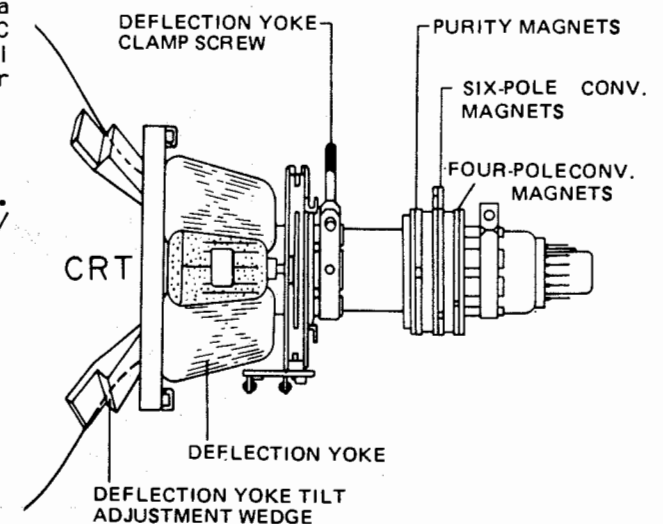
MONO selector on TV to MONO position. Connect Digital DC Voltmeter to TP608, pin 8 of IC (U1600). Note voltage at this time. Set SAP/MONO selector on TV to SAP position. Select L-R Modulating Signal on generator. Adjust SAP VCO Control (R1619) for the same voltage at TP608 as previously noted.

dbx INPUT LEVEL ADJUST

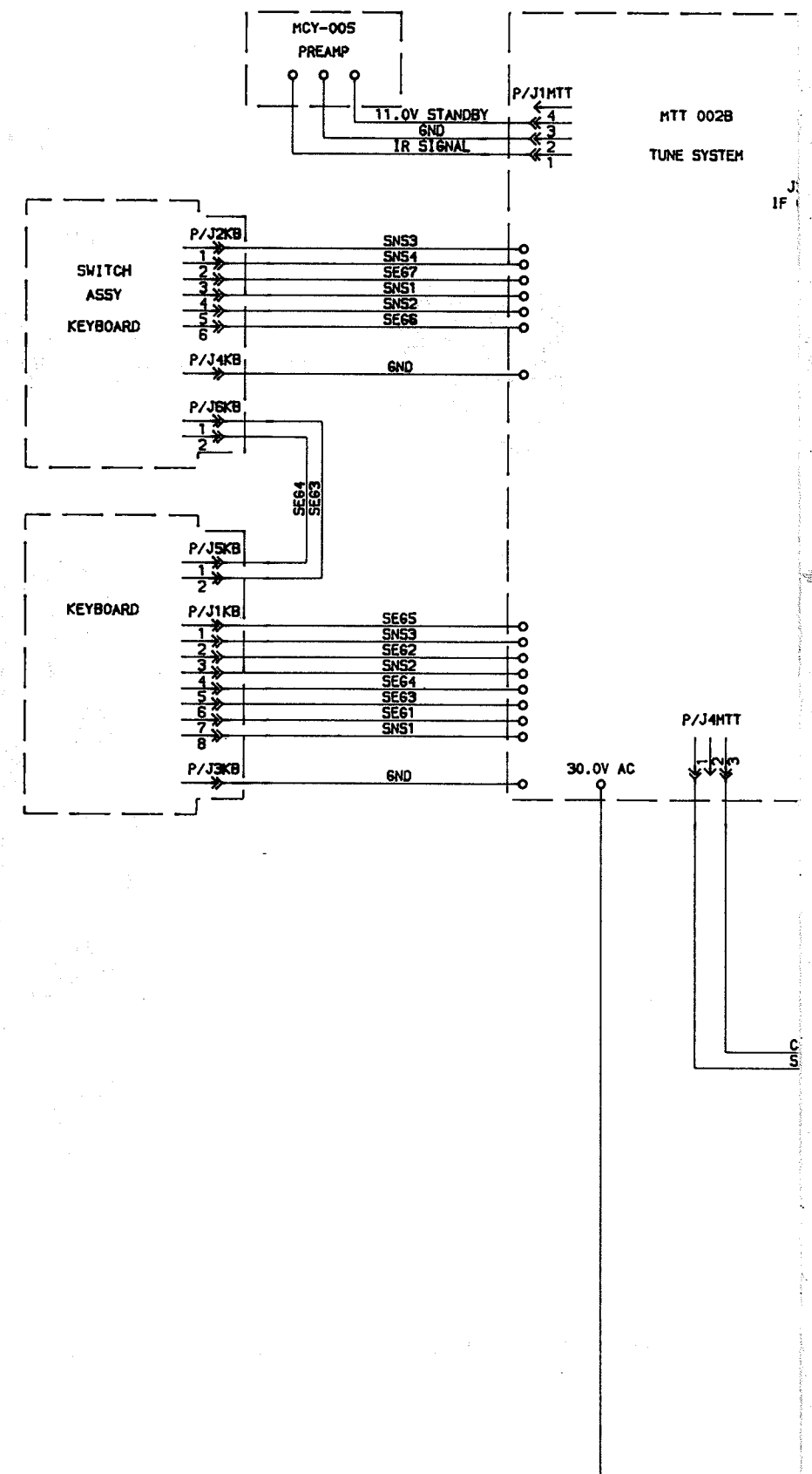
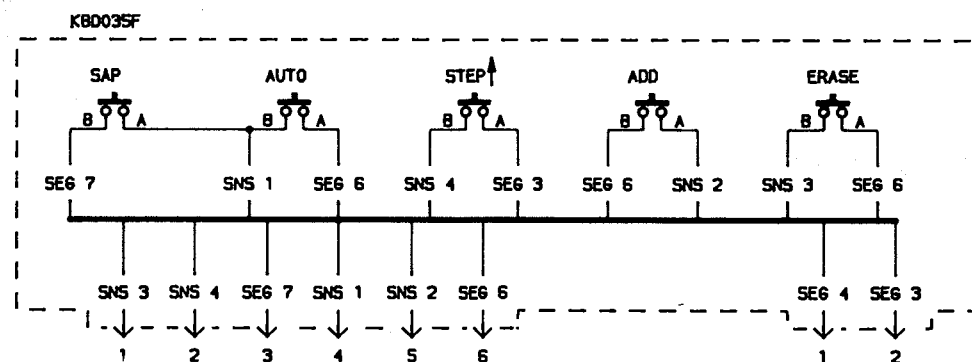
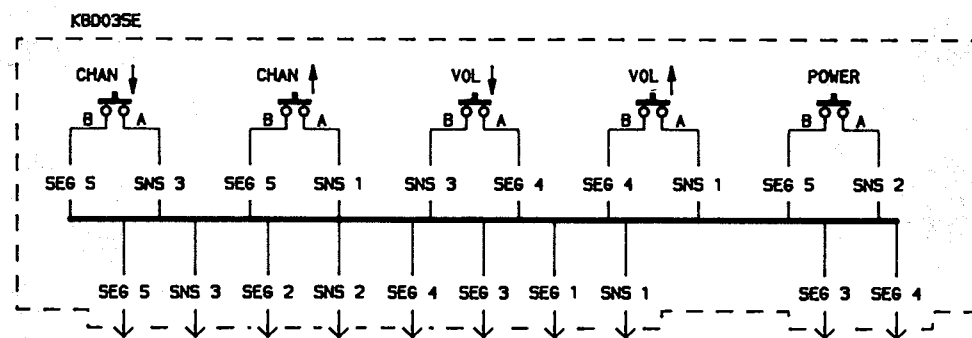
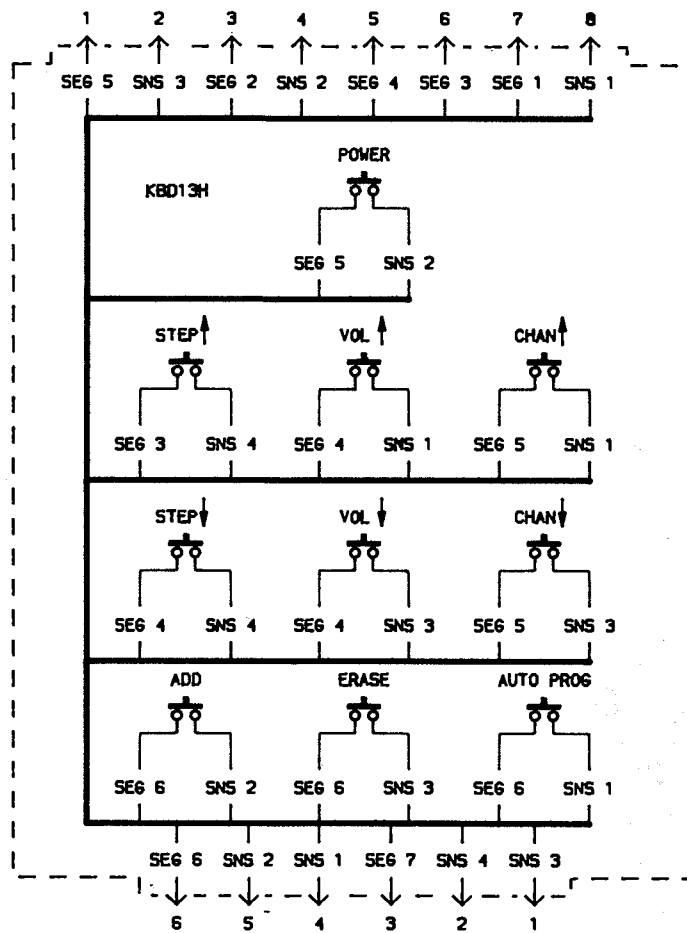
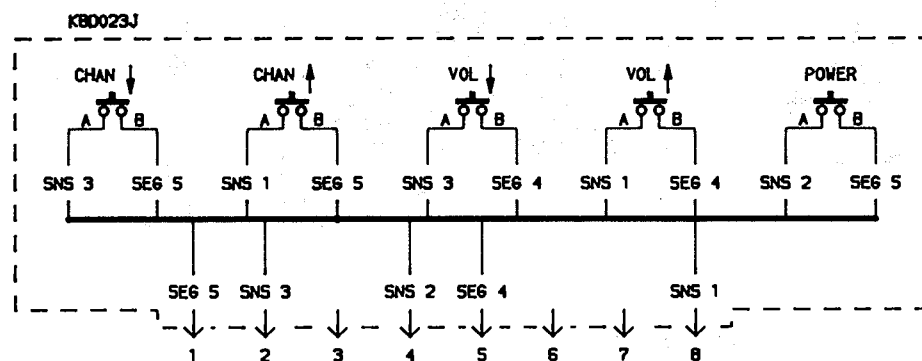
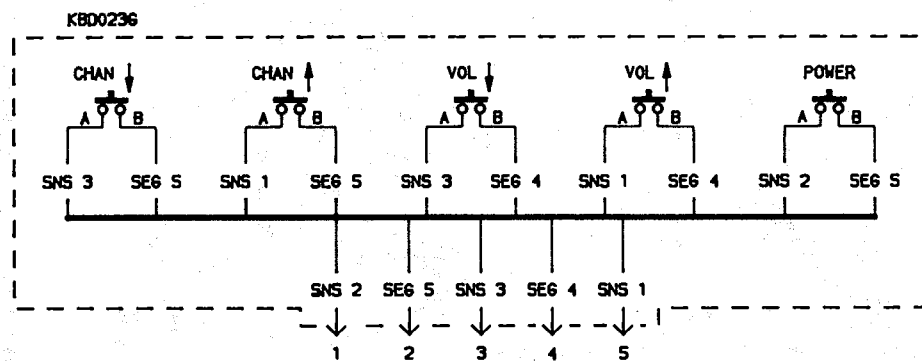
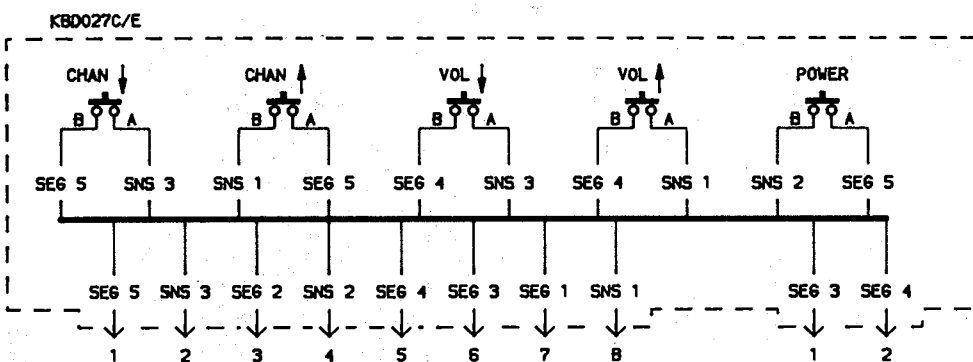
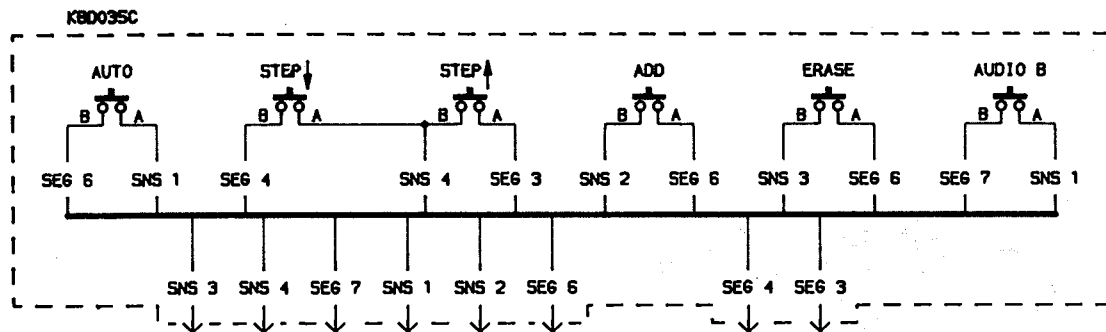
Set Pilot Switch to On. SAP Off, 300Hz audio frequency, "L" Modulating Signal. Connect a Digital Voltmeter to TP604, pin 4 of IC (U1601). Adjust dbx Input Level Control (R1627) for 94.4mv rms +/-3mv.

SEPARATION ADJUST

Set Pilot Switch to On, SAP Off, 300Hz audio frequency, "L" Modulating Signal. Set High Level Band Match Control (R1644 to midrange, connect a scope to TP815, pin 15 of U800. Adjust dbx Output Level Control (R1648) for MINIMUM indication on scope. Change Audio Frequency to 8KHz. Adjust High Level Band Match Control (R1644) for MINIMUM indication on scope. Repeat Adjustments as necessary for MINIMUM indication at both Audio Frequency's.



CRT NECK ASSEMBLY



A PHOTOFACIT STANDARD NOTATION SCHEMATIC

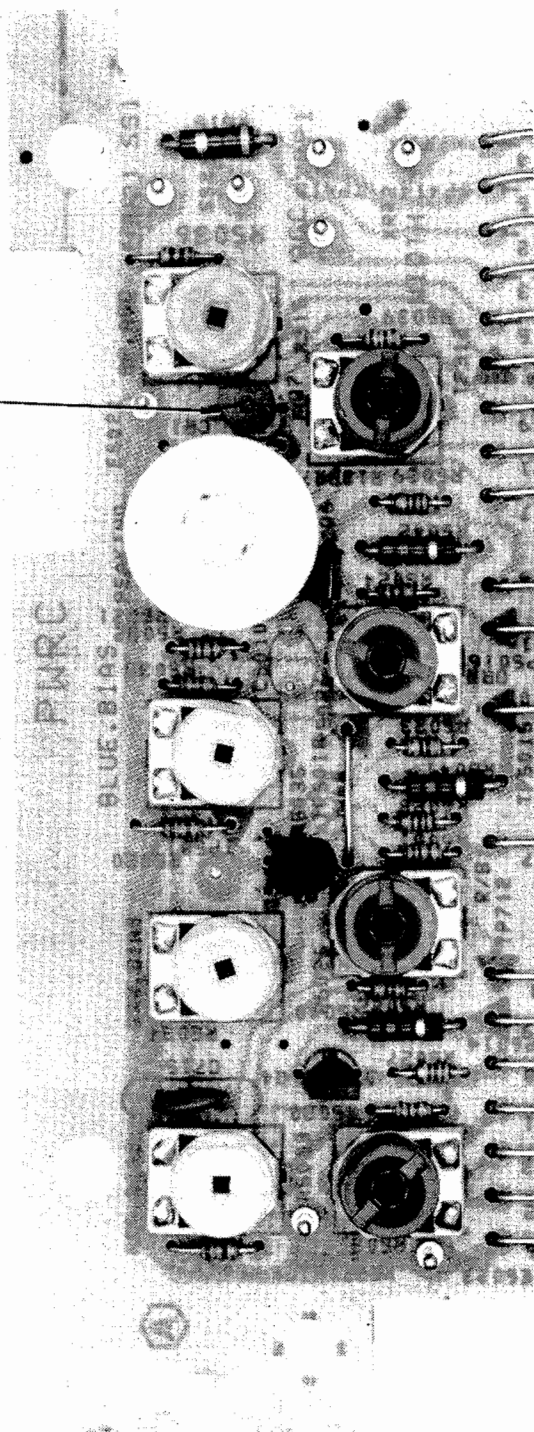
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KEYBOARDS

WIRING DIAGRAM

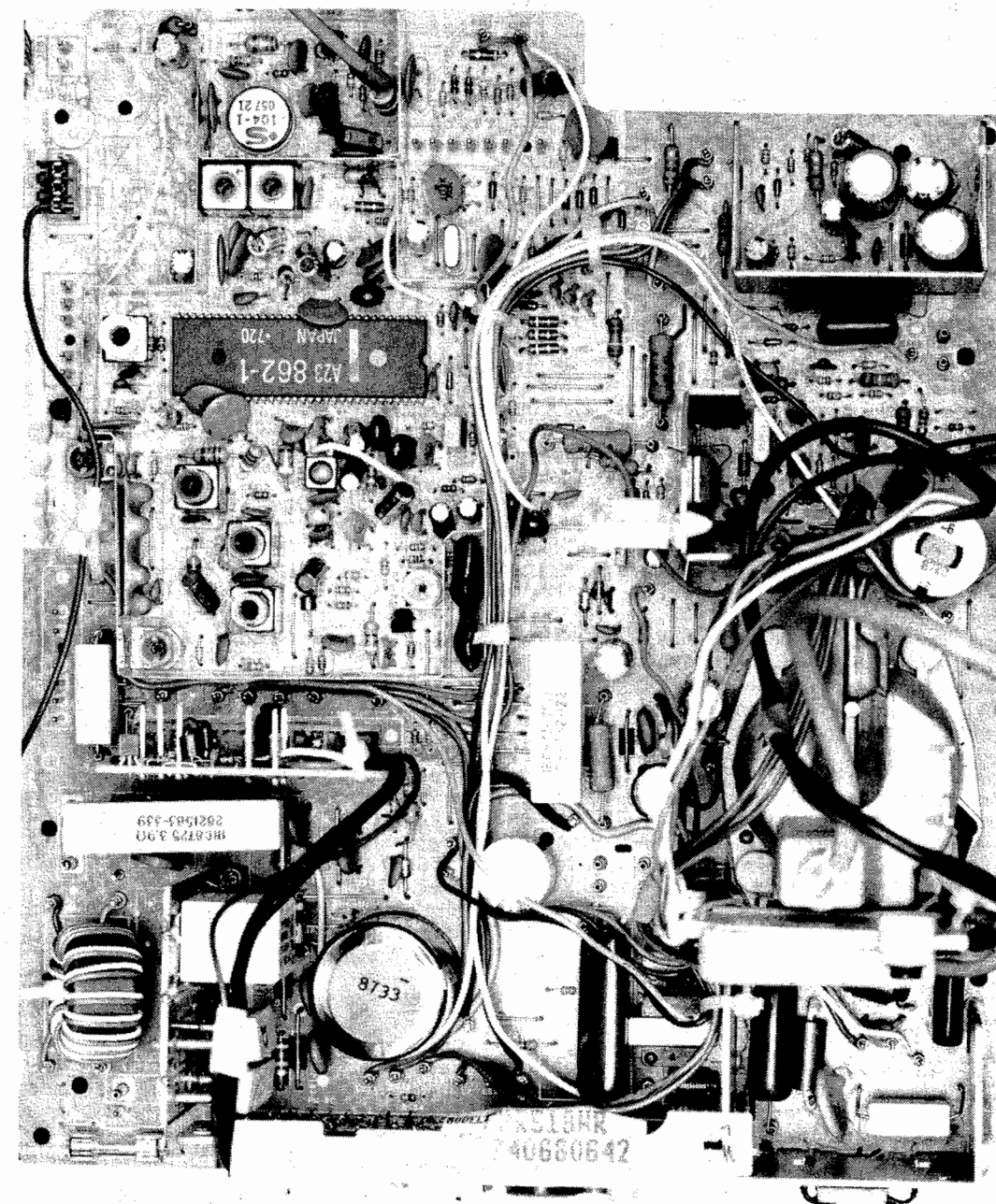


Q5007 EMITTER
VIDEO



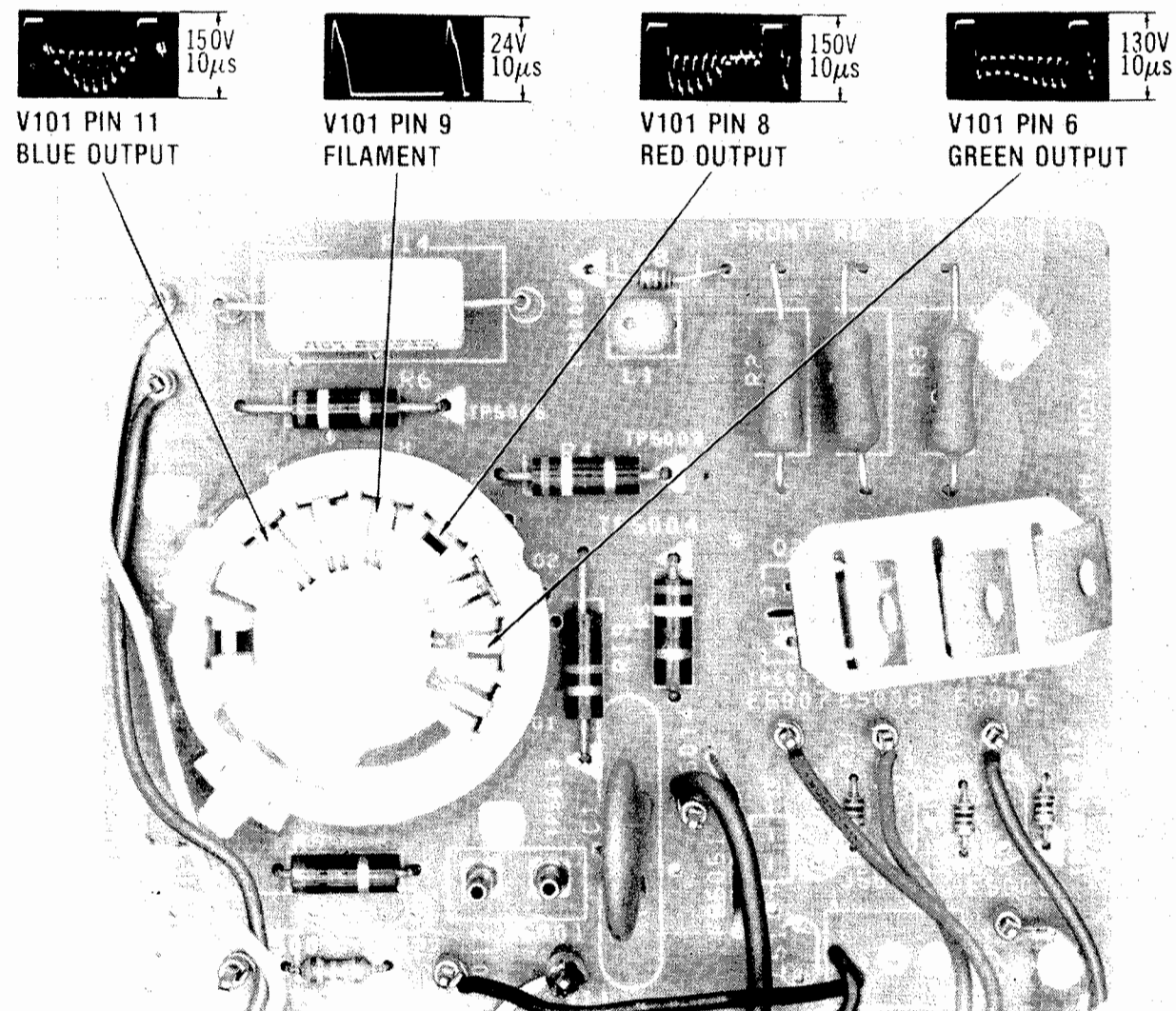
REAR CONTROL BOARD (PWRC)

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



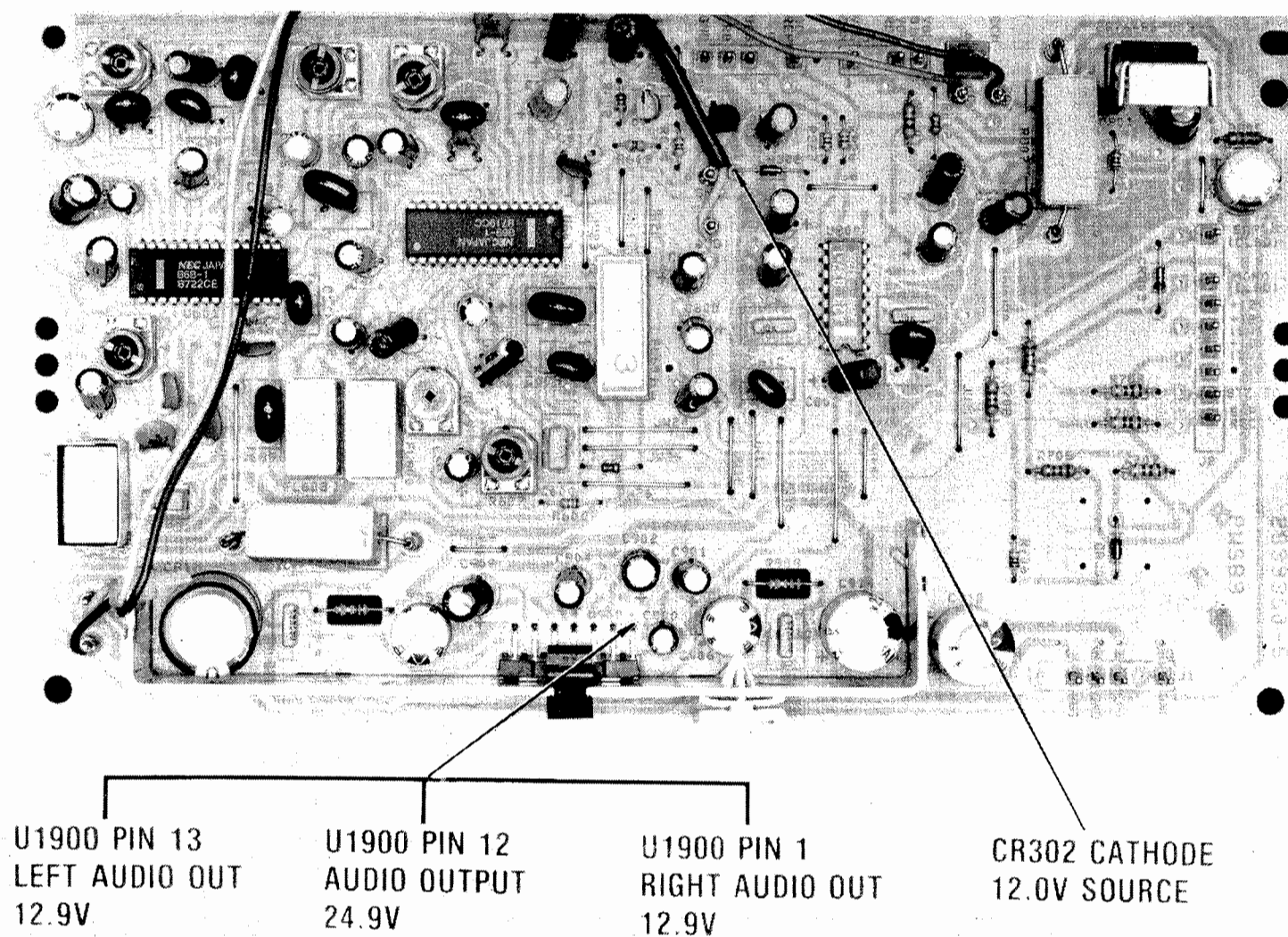
MAIN BOARD

RCA
CHASSIS CTC136D/G/J/P, CTC136AA



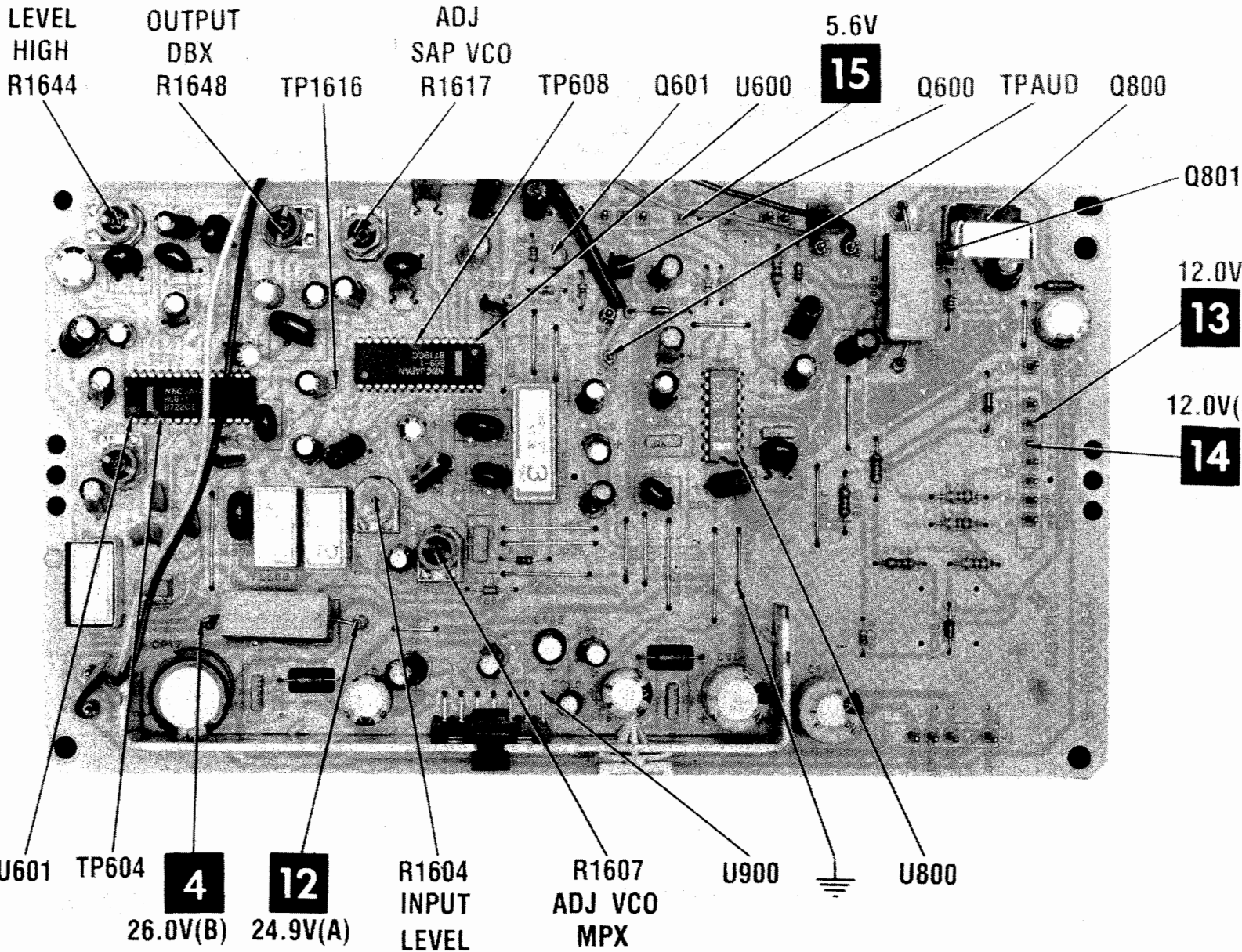
CRT BOARD (PW5000)

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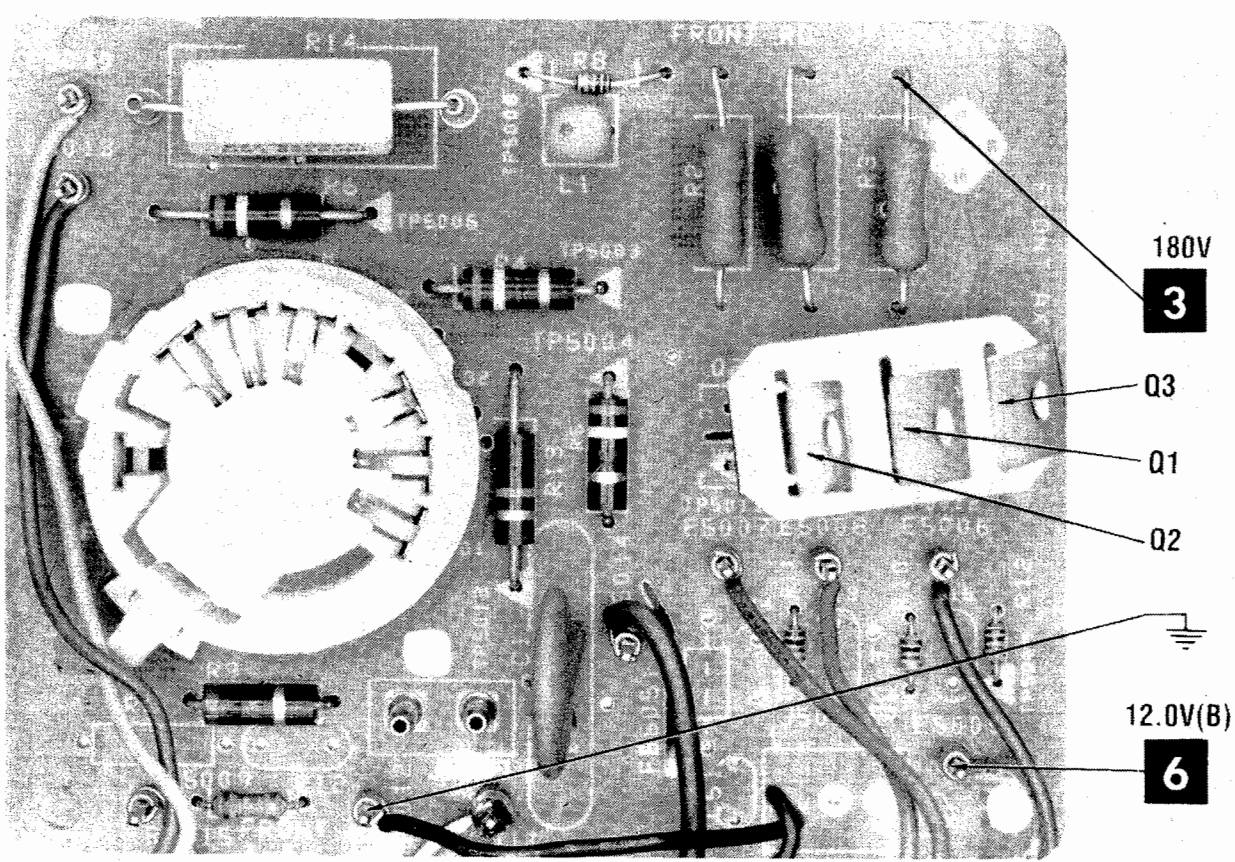
SOUND BOARD (PWSB003)

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SOUND BOARD (PWSB003)

A Howard W. Sams CIRCUITRACE Photo



CRT BOARD (PW5000)

A Howard W. Sams CIRCUITRACE Photo

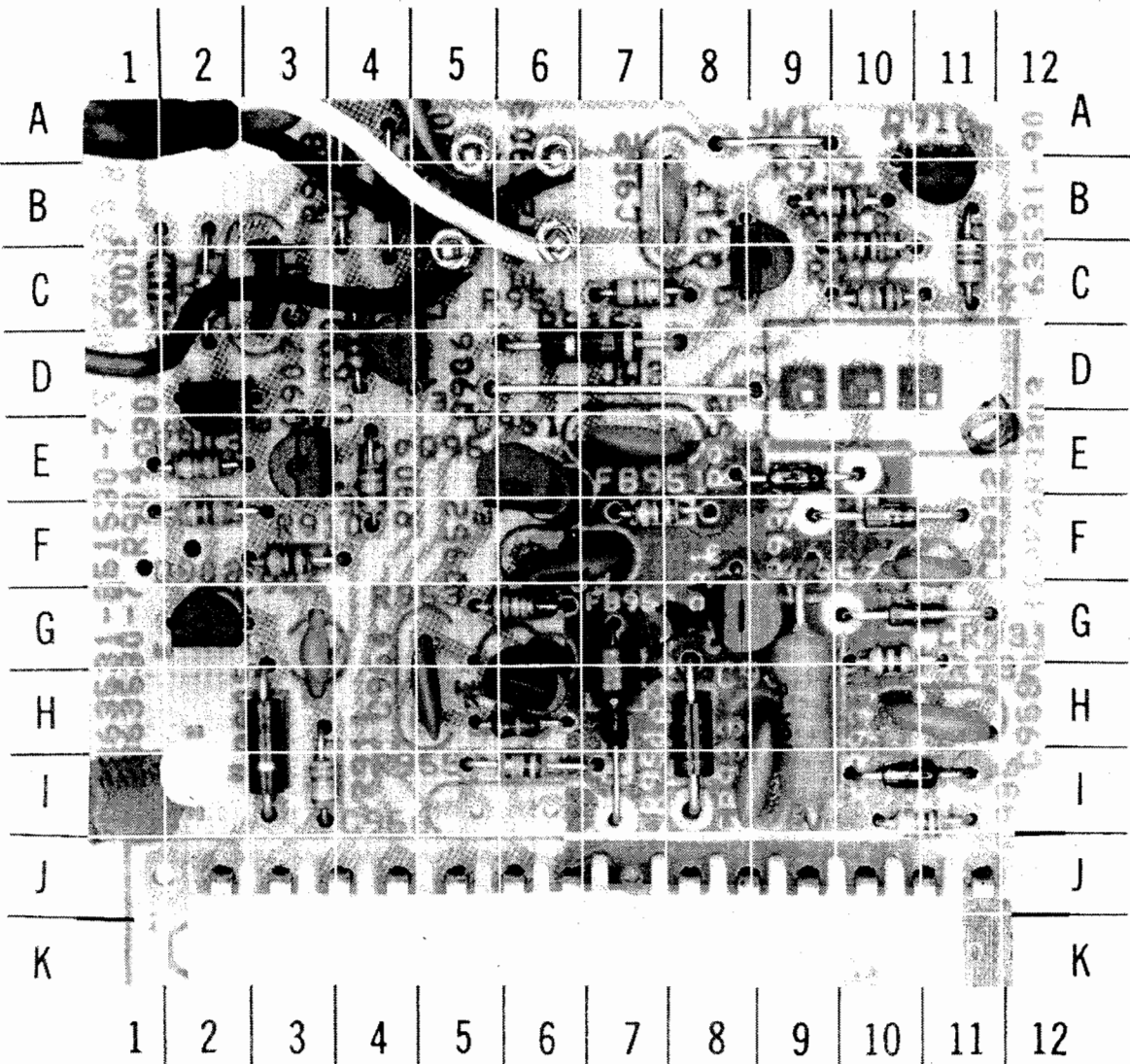
R505 P-20
R506 O-20
R507 P-18
R508 P-20
R509 P-21
R512 Q-17
R513 N-19
R514 P-18
R601 I-12
R602 G-12
R603 G-13
R701 J-15
R705 G-13
R706 I-21
R707 I-11
R708 J-19
R709 I-21
R710 K-20
R711 H-13
R712 G-12
R713 J-19
R714 J-21
R715 N-16
R716 H-12
R717 M-20
R718 J-21
R720 G-20
R721 J-21
R722 J-17
R724 J-17
R726 J-16
R727 J-18
R728 K-18
R729 G-19
R807 G-18
R808 G-12
R809 H-19
R810 G-19
R811 H-18
R812 I-19
R813 E-13
R814 J-18
R4210 P-5
RT101 C-6
SCR101 N-14
SF301 E-20
T401 M-3
T402 P-8
TP303 G-21
TP305 E-18
TP307 H-11
TP342 A-9
TP504 P-18
TP705 G-19
TP801 F-15
TP802 E-15
XRP1 D-15
XRP2 E-16
U101 F-16
U501 P-18
Y401 I-15
Y801 P-18

REAR CONTROL BOARD
(PWRC)-GridTrace
LOCATION GUIDE

C715	C-4
D110	C-10
D140	E-5
Q104	D-4
Q105	D-7
Q106	D-10
Q107	C-12
R140	E-5
R515	C-15
R730	C-11
R4209	C-10
R5015	C-13
R5019	C-3
R5020	B-20
R5021	C-10
R5022	E-5
R5023	E-8
R5024	E-10
R5025	E-6
R5026	E-9
R5027	E-5
R5028	E-5
R5029	E-11
R5030	E-4
R5031	E-5
R5032	C-9
R5033	E-3
R5034	C-6
R5035	C-8
R5036	B-13
R5038	C-9
R5039	E-13
R5041	E-8
SS1	C-14
SS2	C-14
XRP1	D-15
XRP2	D-15

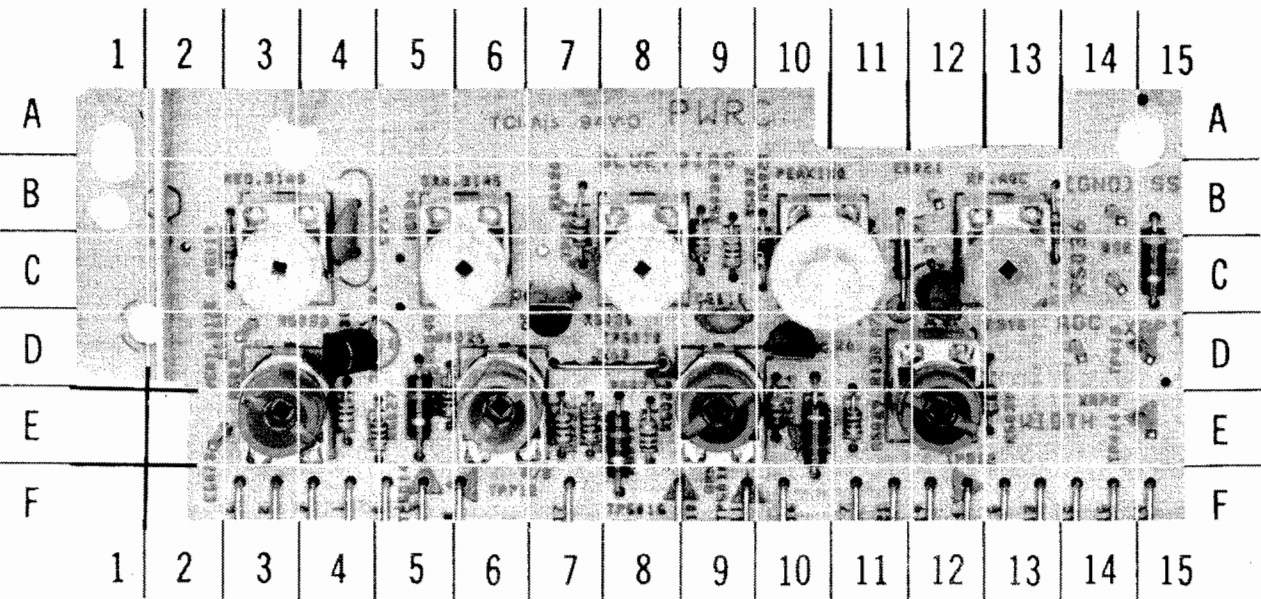
TUNING INTERFACE (REM001A)-
GridTrace LOCATION GUIDE

C901	C-3	R902	C-2
C906	G-3	R903	E-2
C931	H-11	R904	F-2
C951	E-7	R905	H-2
C952	B-8	R906	B-4
C953	F-6	R907	D-4
C954	H-4	R908	B-4
C957	F-11	R909	E-4
CR931	E-9	R910	F-3
CR932	G-10	R911	I-3
CR933	H-8	R915	D-7
CR934	H-10	R916	C-11
CR951	H-7	R917	C-10
FB901	H-6	R918	D-10
FB952	H-6	R919	D-10
FB953	H-7	R931	H-9
J303	D-10	R932	G-10
Q901	D-2	R935	I-11
Q902	G-2	R951	C-7
Q906	E-3	R952	F-7
Q916	B-11	R953	G-6
Q917	C-9	R954	H-6
Q931	G-9	R955	I-6
Q951	E-6	R958	E-9
Q952	H-6		
R901	C-2		



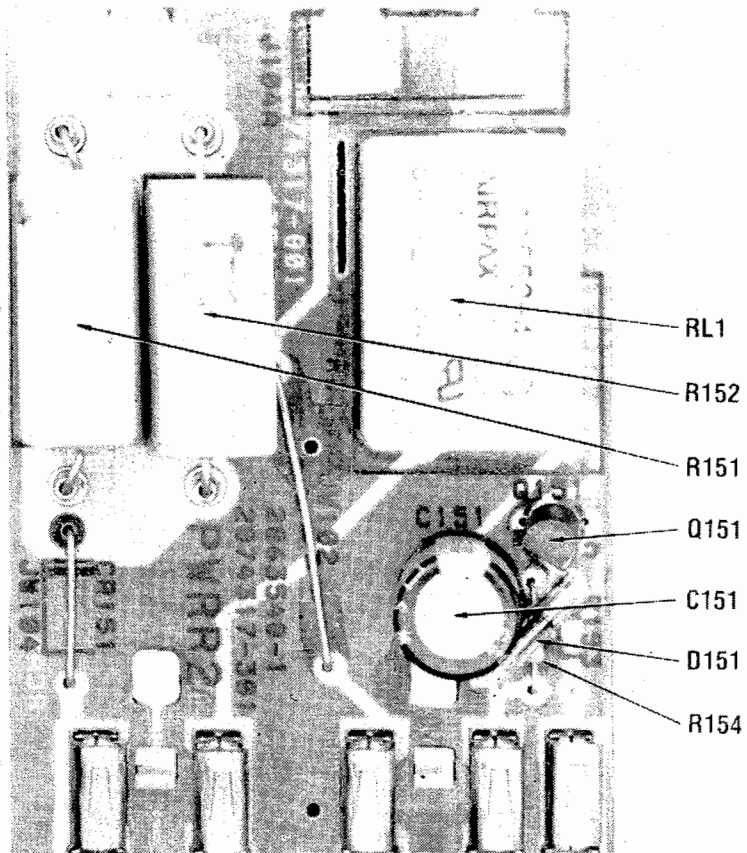
TUNING INTERFACE (REM001A)

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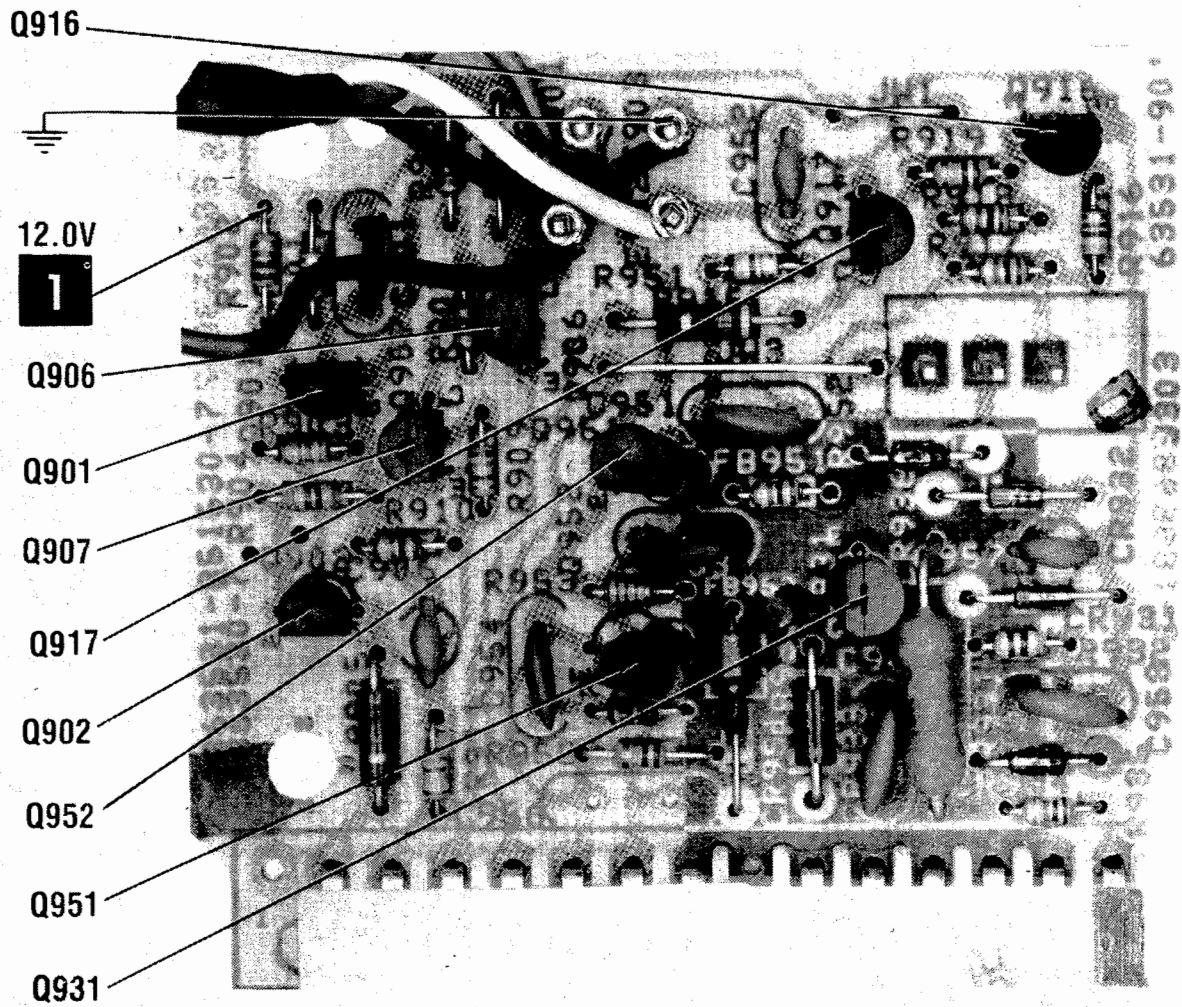


REAR CONTROL BOARD (PWRC)

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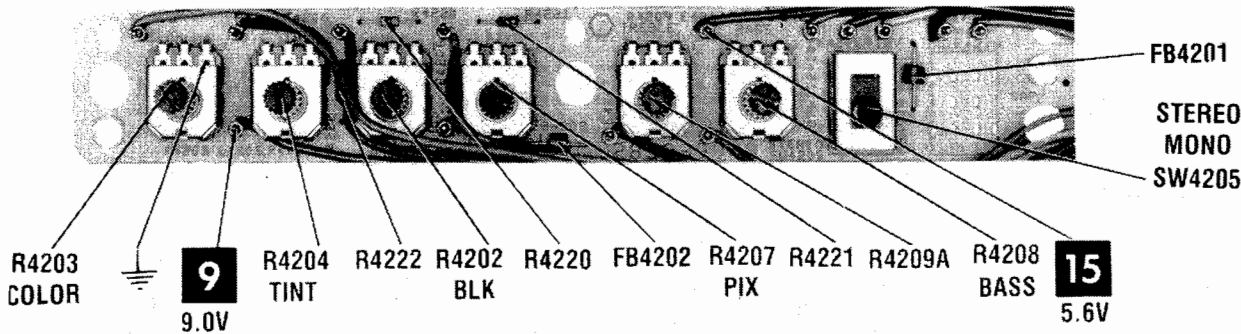


RELAY BOARD (PWR002D/E)



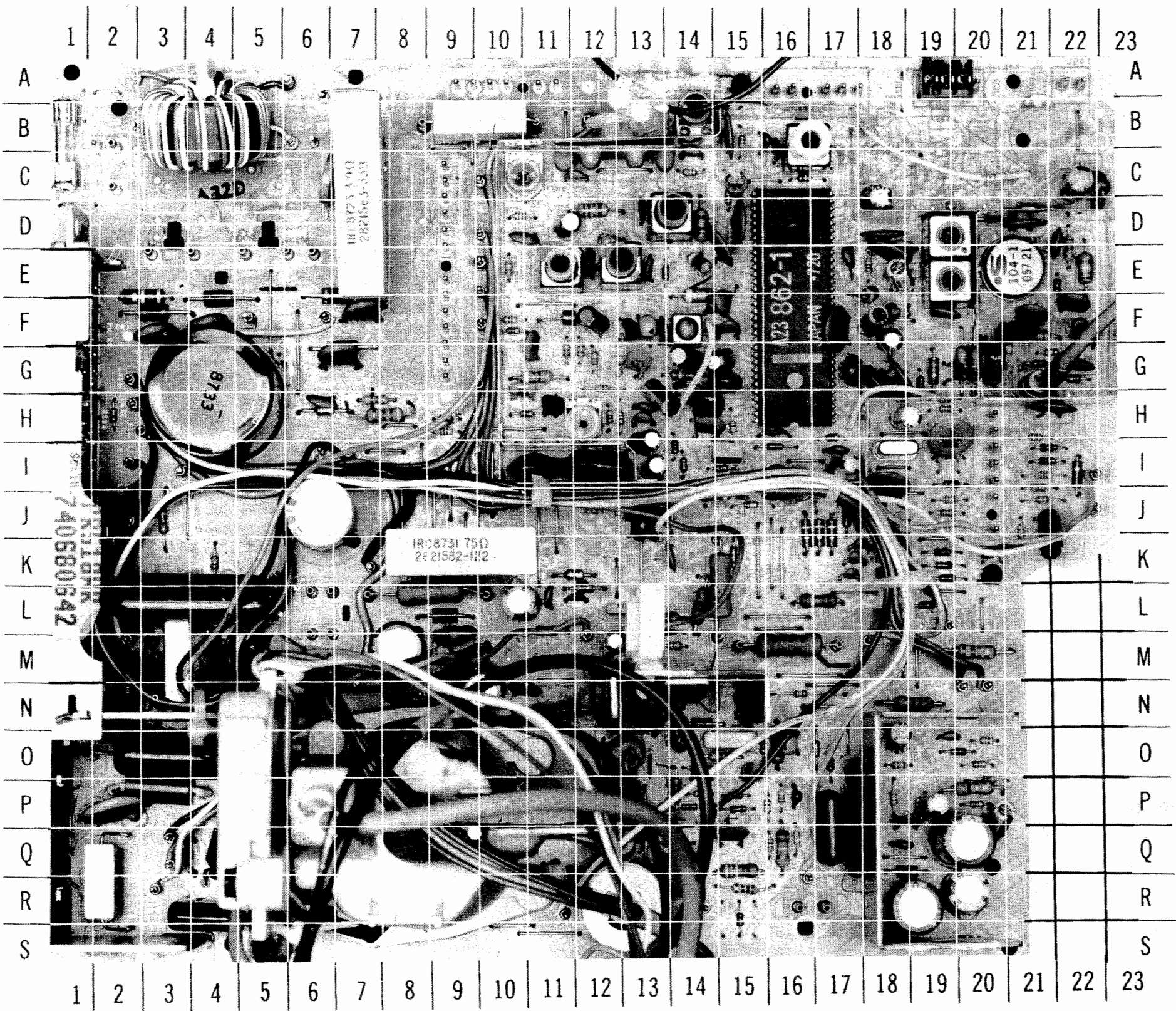
TUNING INTERFACE (REM001A)

A Howard W. Sams CIRCUITRACE Photo



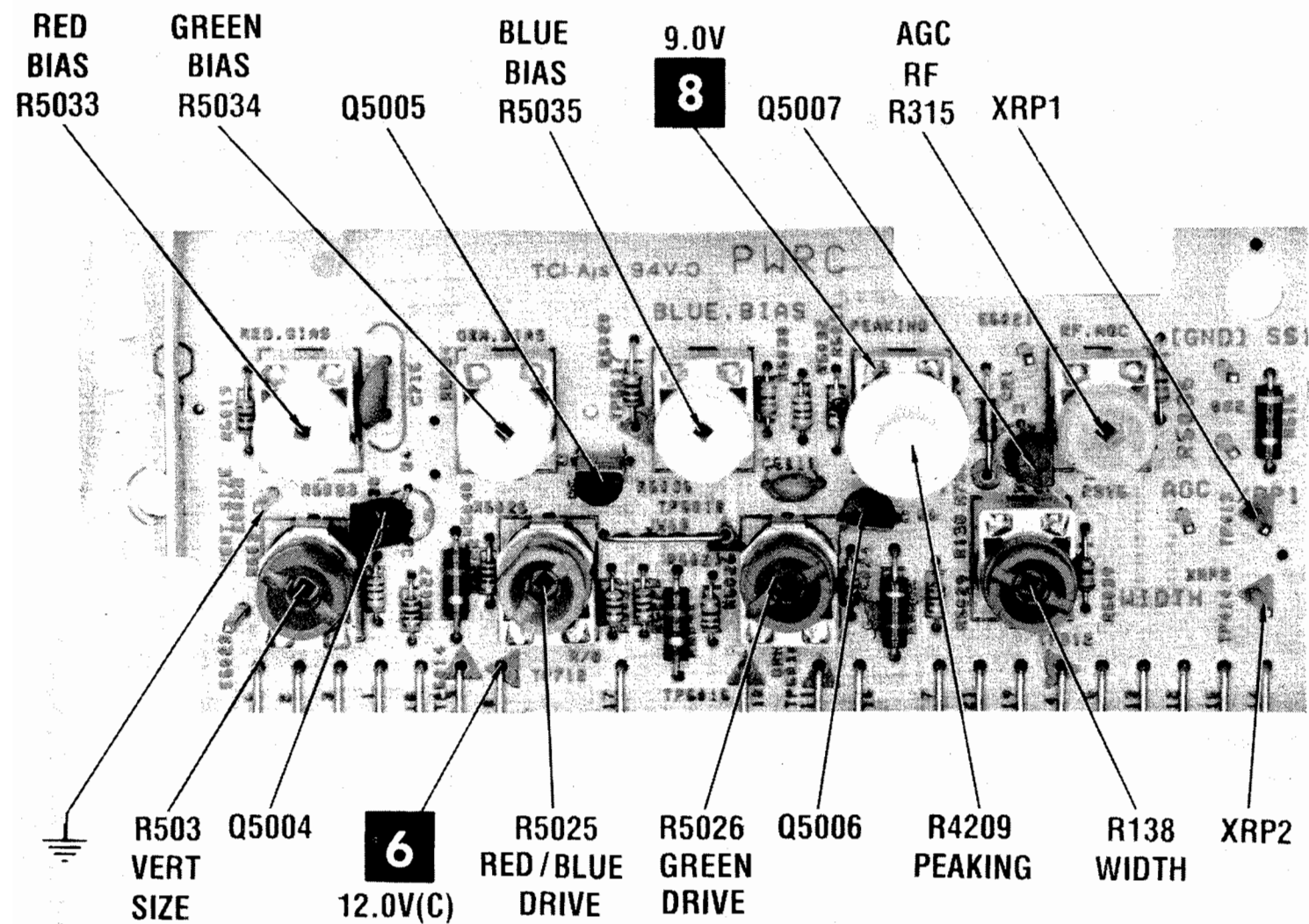
AUX CONTROL BOARD

A Howard W. Sams CIRCUITRACE Photo



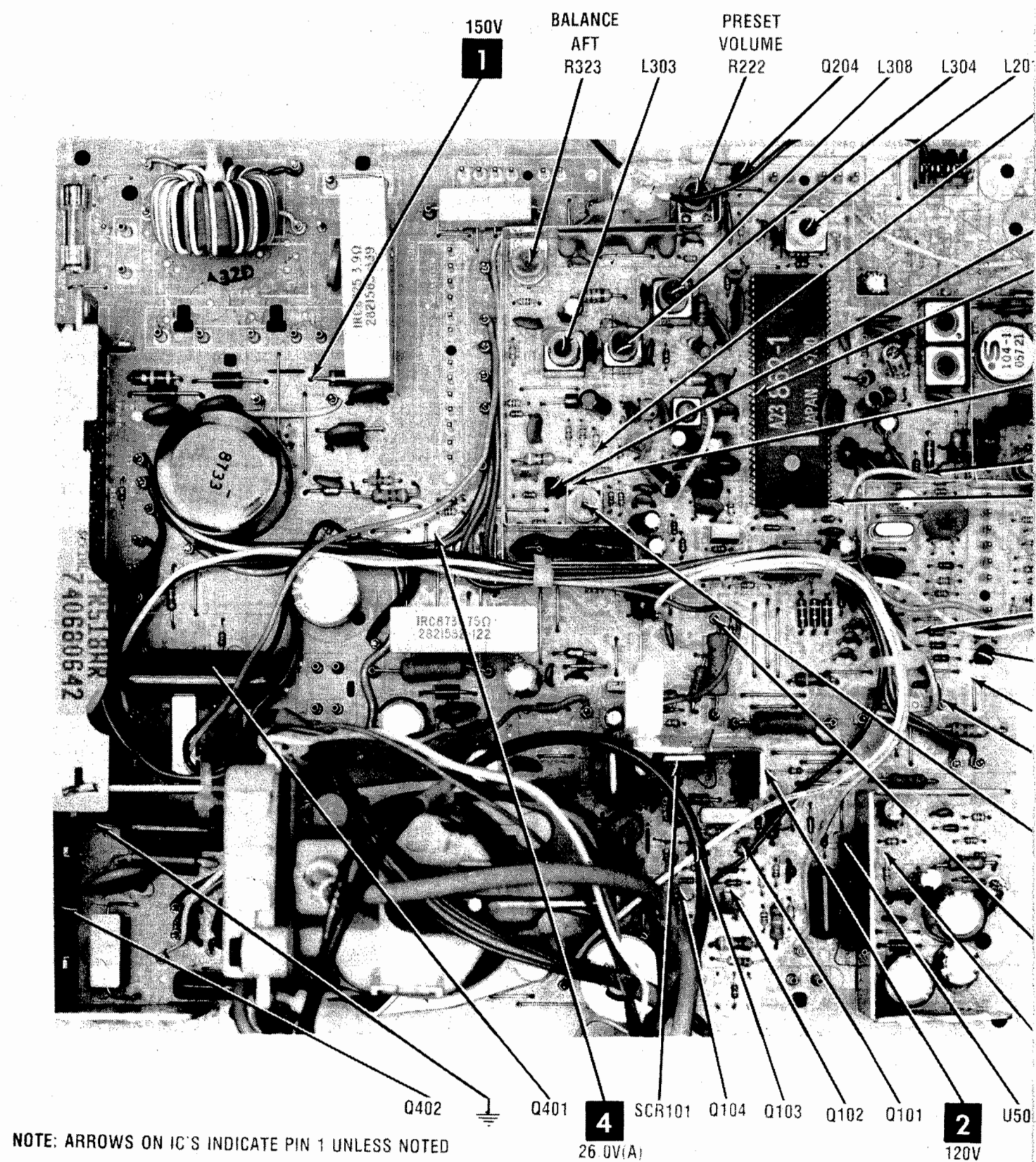
MAIN BOARD-GridTrace LOCATION GUIDE

BF202	C-12	C422	J-17	CR703	L-19	R127	K-9
C102	G-7	C423	R-2	CR704	K-18	R129	Q-4
C103	F-3	C425	I-17	CR705	I-21	R131	R-15
C104	F-7	C427	K-14	CR706	I-22	R134	O-15
C105	F-4	C501	O-18	CR707	K-19	R136	N-11
C106	G-4	C502	O-19	CR708	K-19	R137	H-8
C109	Q-14	C503	P-20	DL701	I-12	R139	Q-16
C110	Q-14	C504	P-19	FB101	Q-14	R144	N-9
C111	P-16	C505	R-19	FB102	Q-12	R147	B-10
C112	L-9	C506	Q-17	FB103	O-13	R150	H-7
C113	N-10	C509	I-16	FB104	N-14	R201	B-15
C114	O-12	C510	Q-20	FB301	E-22	R215	C-16
C115	M-18	C511	R-20	FB302	E-18	R216	C-15
C116	N-12	C512	Q-18	FB303	F-11	R222	B-14
C117	L-10	C513	P-18	FB304	D-12	R301	G-22
C118	Q-3	C514	P-18	FB401	P-3	R302	D-22
C119	L-11	C515	Q-17	FB402	R-2	R303	E-22
C120	O-15	C601	H-13	FB403	O-2	R304	G-22
C121	J-6	C602	H-13	J104	E-5	R305	F-14
C122	N-14	C603	I-13	J109	C-2	R306	I-12
C123	N-10	C701	G-12	J201	A-22	R307	E-21
C124	N-3	C702	G-18	J204	A-17	R308	E-22
C125	N-3	C703	K-20	J302	A-10	R309	E-22
C126	R-4	C704	J-22	J401	L-6	R310	D-18
C127	H-6	C705	G-20	J501	R-16	R311	E-20
C201	B-16	C706	G-20	J701	I-20	R312	E-18
C210	B-16	C707	J-16	L101	B-4	R314	E-10
C211	B-15	C708	E-15	L103	R-13	R316	J-2
C217	D-11	C709	G-14	L104	Q-4	R317	E-13
C218	D-18	C710	K-20	L105	O-15	R318	J-12
C222	C-15	C711	K-18	L201	B-16	R319	J-12
C301	G-22	C712	K-17	L203	D-12	R320	H-9
C302	E-22	C713	K-17	L301	E-22	R321	H-9
C303	D-22	C714	E-18	L302	G-20	R322	C-23
C304	E-22	C715	M-12	L303	E-11	R323	C-11
C305	E-18	C716	M-12	L304	E-13	R324	D-10
C306	D-18	C717	G-20	L305	G-11	R325	C-12
C307	E-18	C803	F-13	L306	G-11	R326	H-11
C308	E-21	C805	E-14	L307	D-19	R327	F-10
C309	D-18	C807	E-17	L308	D-14	R328	H-12
C310	E-13	C808	I-18	L310	F-8	R332	C-14
C311	D-12	C809	F-12	L312	E-14	R333	D-20
C312	E-17	C810	G-17	L401	N-2	R334	C-18
C314	E-12	C811	H-19	L402	M-5	R335	I-22
C315	D-15	C812	G-18	L403	J-14	R401	L-15
C316	D-21	C813	I-18	L701	F-14	R402	L-17
C317	H-22	C814	I-19	L703	G-20	R403	I-15
C319	E-15	C815	E-18	L802	F-13	R404	H-15
C320	C-22	C816	F-13	Q101	O-15	R405	I-14
C321	D-13	CF301	G-10	Q102	P-15	R406	L-11
C322	C-18	CR101	G-7	Q103	O-14	R407	M-16
C323	C-14	CR102	F-3	Q104	P-14	R408	H-4
C325	C-12	CR103	E-7	Q204	A-15	R409	K-4
C326	D-10	CR104	F-4	Q301	E-22	R410	K-3
C327	G-11	CR105	P-14	Q302	H-11	R411	L-9
C328	E-19	CR106	P-15	Q401	L-4	R412	M-4
C401	L-13	CR107	O-14	Q402	Q-1	R413	L-15
C402	H-13	CR108	L-9	Q701	K-20	R414	L-14
C403	H-14	CR109	P-13	Q702	K-22	R415	M-6
C404	I-13	CR110	K-12	R101	D-7	R416	I-15
C405	J-13	CR111	N-12	R102	F-3	R420	R-20
C406	G-15	CR114	H-6	R103	P-14	R421	R-15
C407	J-13	CR115	N-14	R104	Q-15	R422	J-14
C408	G-15	CR302	D-22	R105	Q-14	R423	M-14
C409	H-14	CR401	M-13	R107	Q-16	R424	H-7
C410	L-5	CR402	I-16	R108	P-15	R426	J-13
C411	M-5	CR403	K-15	R109	P-16	R429	J-12
C413	L-3	CR404	J-14	R110	P-16	R430	I-14
C415	L-4	CR501	R-18	R111	P-16	R431	R-11
C416	P-2	CR502	O-17	R112	O-16	R501	O-17
C417	O-3	CR503	O-20	R113	P-13	R502	O-20
C419	O-3	CR601	G-14	R114	G-14	R503	P-20
C420	H-16	CR701	K-19	R115	O-15	R504	H-2
C421	I-17	CR702	I-19	R125	Q-4		



REAR CONTROL BOARD (PWRC)

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MAIN BOARD

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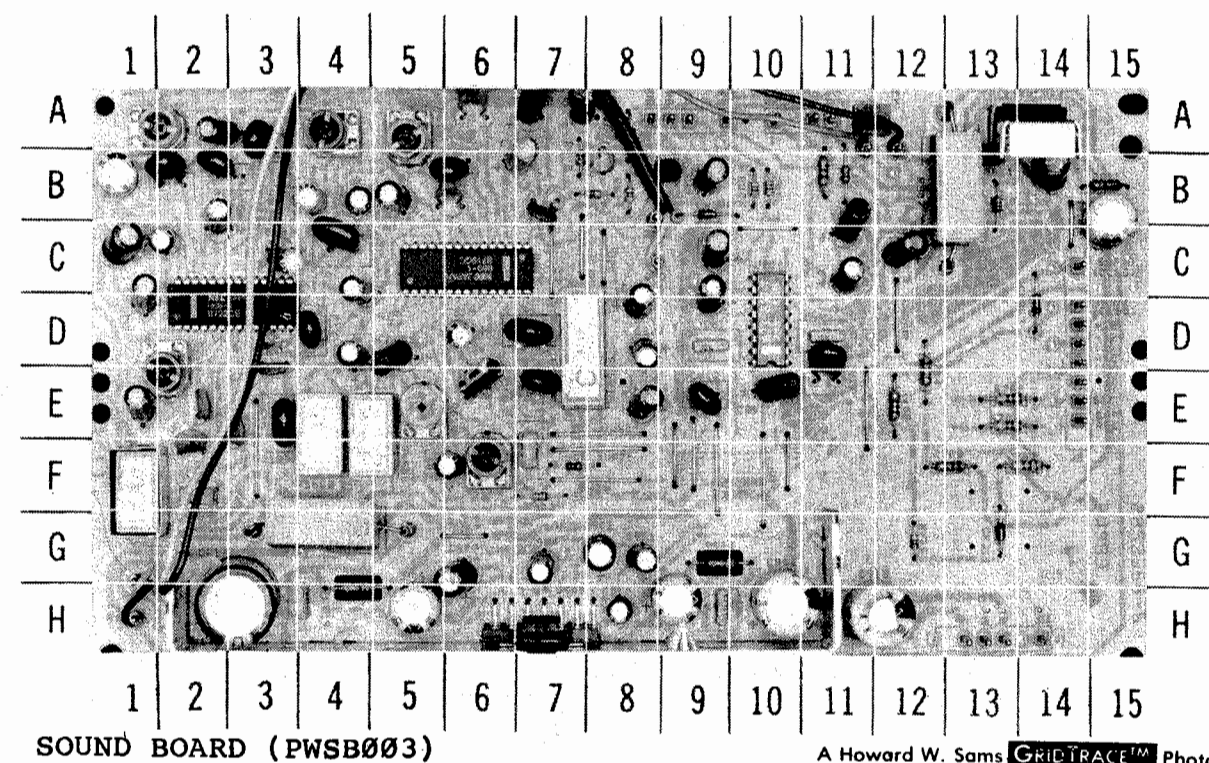
LOCATION GUIDE

SOUND BOARD-GridTrace LOCATION GUIDE

DD-7	R651	EE-8
DD-6	R654	HH-10
EE-6	R655	JJ-10
EE-6	R663	JJ-11
FF-6	R664	KK-11
HH-9	R667	HH-11
DD-12	R668	LL-11
HH-13	R671	BB-14
HH-13	R672	BB-13
KK-12	R673	BB-13
HH-6	T501	BB-6
JJ-4	U101	KK-4
CC-4	U1601	CC-11
CC-1	U602	CC-9
AA-3	Y601	AA-10
LL-2		
KK-3		
CC-7		
DD-9		
JJ-13		
DD-13		
KK-13		
HH-13		
BB-14		
KK-6		
KK-6		
KK-6		
HH-6		
JJ-3		
HH-4		
JJ-4		
HH-6		
CC-5		
BB-6		
DD-5		
CC-4		
CC-2		
CC-2		
CC-2		
BB-2		
DD-3		
AA-2		
FF-2		
LL-3		
HH-1		
HH-1		
FF-3		
HH-2		
LL-1		
CC-2		
CC-7		
CC-7		
CC-7		
CC-6		
BB-13		
BB-13		
BB-12		
BB-12		
BB-2		
BB-11		
BB-11		
BB-11		
BB-11		
BB-10		
CC-9		
CC-9		
DD-9		
FF-14		
DD-13		
CC-14		
CC-8		

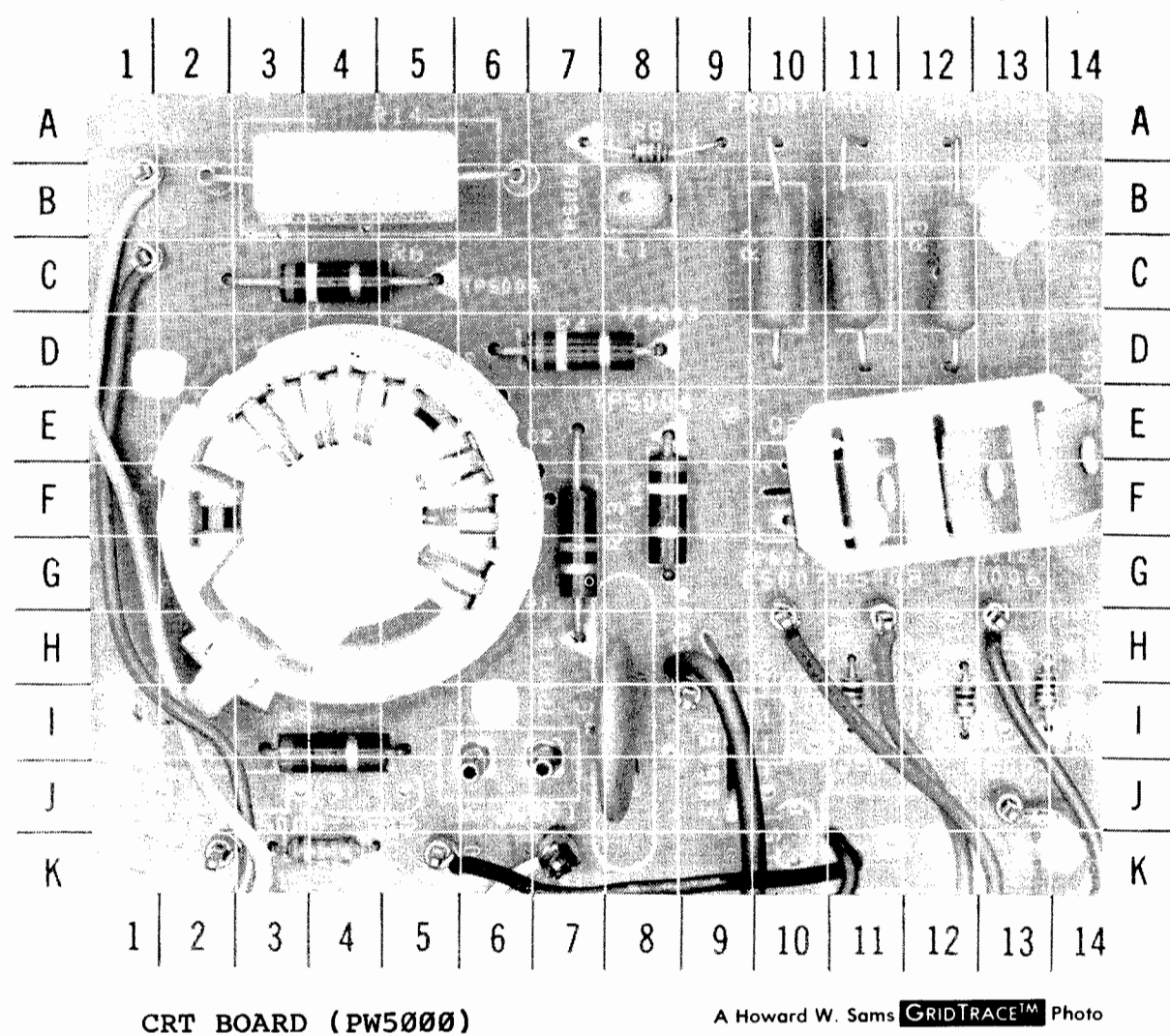
C1601	D-7	C1811	B-9
C1602	D-6	C1812	C-9
C1603	D-6	C1814	C-12
C1605	E-7	C1815	B-15
C1606	D-5	C1816	B-14
C1607	F-6	C1817	H-3
C1610	A-7	C1900	H-8
C1611	A-7	C1901	F-8
C1612	A-6	C1902	F-8
C1613	B-6	C1903	G-6
C1614	B-6	C1904	G-7
C1615	B-5	C1905	H-10
C1616	C-4	C1906	H-9
C1617	B-7	C1909	H-4
C1618	A-7	C1910	H-10
C1624	C-1	C1913	H-12
C1625	B-1	C1914	H-10
C1626	B-2	CR301	G-13
C1627	B-2	CR303	B-9
C1628	B-2	CR1100	B-13
C1629	A-2	CR1703	D-14
C1630	A-3	FL1600	E-4
C1631	C-3	FL1601	D-7
C1632	C-4	FL1603	E-4
C1633	E-1	J1	H-13
C1634	E-2	J2	E-2
C1635	F-2	J3	C-14
C1636	E-3	J4	A-11
C1637	F-2	J5	A-9
C1638	C-1	J6	A-7
C1639	E-3	Q600	B-9
C1640	C-2	Q601	B-8
C1641	D-2	Q800	A-14
C1642	D-4	Q801	A-13
C1643	E-4	R1600	F-7
C1645	B-4	R1601	A-8
C1646	E-4	R1602	B-7
C1706	F-7	R1607	E-5
C1800	D-8	R1609	E-5
C1801	E-8	R1612	B-11
C1802	E-8	R1613	B-8
C1804	D-11	R1614	B-8
C1805	C-11	R1615	A-5
C1806	D-9	R1627	E-2
C1807	B-11	R1655	E-12
C1808	B-11	R1702	E-12
C1809	C-9	R1704	E-12
C1810	D-9	R1705	F-13

R1706	G-12	R1908	G-12
R1707	F-14	TPAUD	C-8
R1709	E-13	TP604	D-2
R1804	B-13	TP608	C-6
R1805	B-15	TP616	C-5
R1807	B-13	TP622	C-6
R1809	B-13	TP628	C-7
R1811	G-4	U1600	C-6
R1820	B-11	U1601	D-3
R1826	B-10	U1800	D-10
R1827	B-7	U1900	H-7
R1903	H-3		

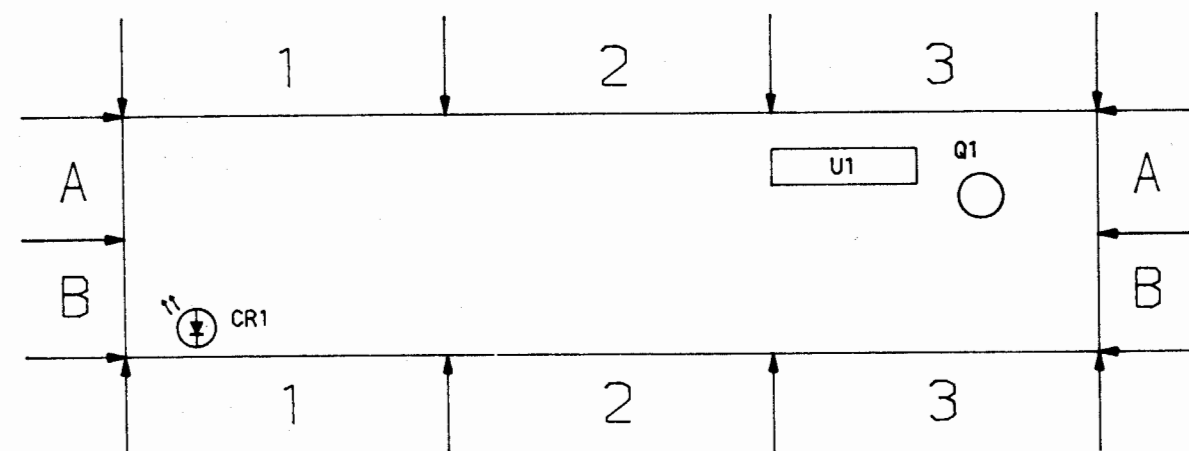
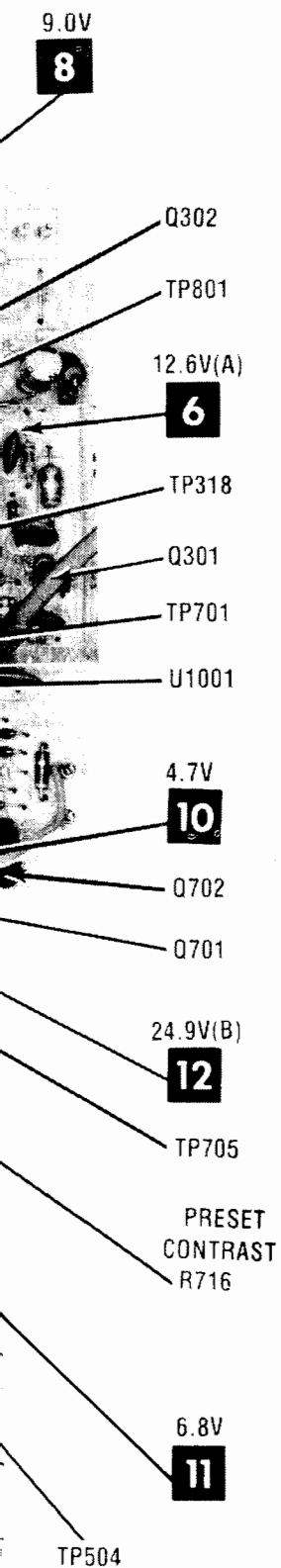


CRT BOARD (PW5000)- GridTrace LOCATION GUIDE

C5001	I-8
L5001	D-8
Q5001	F-12
Q5002	F-11
Q5003	F-14
R5001	C-11
R5002	C-10
R5003	C-12
R5004	D-7
R5005	F-8
R5006	C-4
R5008	A-8
R5009	I-4
R5010	I-12
R5011	I-11
R5012	I-12
R5013	F-7
R5014	B-4
R5015	K-4



RCA
CHASSIS CTC136D/G/J/P, CTC136AA



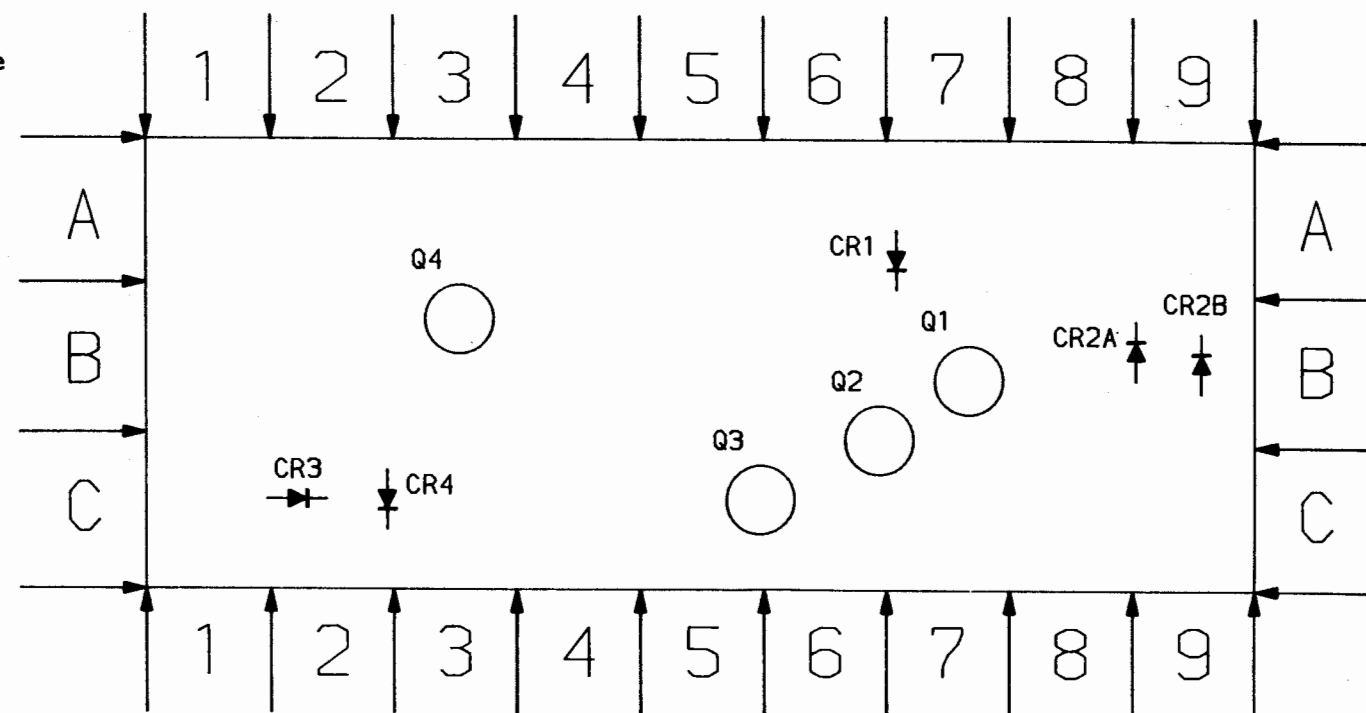
CRK39K REMOTE TRANSMITTER- GridTrace LOCATION

C1001	A-3	VOL. DOWN	B-2
C1002	A-3	VOL. UP	B-2
C1003	A-3	Y1001	A-3
CR1001	B-1	0	A-2
CH. DOWN	A-2	1	B-1
CH. UP	A-2	2	A-1
DISPLAY	A-2	3	A-1
MUTE	B-2	4	B-1
PC	A-2	5	A-1
POWER	B-2	6	A-1
Q1001	A-3	7	B-1
U1001	A-3	8	B-1
		9	A-1

CRK39K REMOTE TRANSMITTER

MCY005A REMOTE PREAMP-GridTrace LOCATION GUIDE

C901	A-9
C902	B-4
C903	B-1
C904	B-8
C905	B-5
C906	B-1
C907	C-9
C908	C-5
C909	C-3
C910	C-3
C911	A-1
CR901	B-7
CR902	B-9
CR903	C-2
CR904	C-2
L901	C-4
Q901	B-7
Q902	C-7
Q903	C-5
Q904	B-3
R901	E-7
R902	C-6
R903	A-5
R904	B-2



MCY005A REMOTE PREAMP



SOUND BOARD

GridTrace LOCATION GUIDE

C1604	F-10	R1639	D-12
C1609	D-8	R1640	A-12
C1619	E-11	R1641	B-14
C1644	F-13	R1642	B-15
C1818	D-9	R1643	A-14
C1819	D-9	R1644	A-2
Q71	F-2	R1645	B-13
Q1802	B-4	R1646	B-14
R1605	B-10	R1647	C-13
R1606	F-7	R1648	A-4
R1608	D-11	R1649	B-13
R1615	F-11	R1650	C-13
R1616	B-10	R1651	C-13
R1617	A-10	R1652	B-13
R1618	B-10	R1653	B-14
R1620	E-13	R1654	B-15
R1621	F-10	R1656	A-12
R1623	C-11	R1800	D-6
R1624	A-9	R1801	D-6
R1625	C-14	R1802	C-6
R1626	E-14	R1803	C-6
R1628	D-14	R1806	A-2
R1629	C-14	R1808	B-3
R1630	E-14	R1812	C-5
R1631	D-13	R1813	B-6
R1632	D-13	R1818	B-4
R1633	F-14	R1819	B-4
R1634	D-13	R1820	C-5
R1635	C-14	R1821	C-7
R1637	C-12	R1823	B-7
R1638	D-11	R1901	G-9
		R1902	G-10

RCA
CHASSIS CTC136D/G/J/P, CTC136AA

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PARTS LIST AND DESCRIPTION

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.	RCA PART No.	ZENITH PART No.	
MAIN BOARD						
CR101 THRU CR104	147993	NTE125	ECG125	SK3033A	903-334	
CR105	164717	NTE519	ECG519	SK3100/519	103-131	
CR106	178581					
CR107	139706	NTE177	ECG177	SK9091/177	103-131	
CR108	176296	NTE552	ECG552	SK9000/552	103-287	
CR109	153672	NTE552	ECG552	SK9000/552	103-287	
	156317	NTE552	ECG552	SK9000/552	103-287	
CR110	164547	NTE134A	ECG134A	SK3V6/134A	103-Z9005	
CR111	161995	NTE5069A	ECG5069A	SK4V7/5069A	103-Z9006	
CR114	174285	NTE5046A	ECG5046A	SK75A/5046A		
CR115	147015	NTE125	ECG125	SK5010A/117A	212-Z9000	
CR201,2	164874	NTE177	ECG177	SK9091/177	103-131	
CR302	141873	NTE5021A	ECG5021A	SK12A/5021A	103-279-21	
CR401	157301	NTE177	ECG177	SK9091/177	103-131	
CR402	132616	NTE5071A	ECG5071A	SK6V8/5071A	103-Z9020	
CR403	164717	NTE519	ECG519	SK3100/519	103-131	
CR404	159429	NTE5019T1	ECG5019T1			
CR501	147015	NTE125	ECG125	SK5010A/117A	212-Z9000	
CR502,3	164717	NTE519	ECG519	SK3100/519	103-131	
CR601	164717	NTE519	ECG519	SK3100/519	103-131	
CR701 THRU CR708	164717	NTE519	ECG519	SK3100/519	103-131	
Q101						USE CR106 REG KIT 178581
Q102	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A	*
Q103	143803	NTE159	ECG159	SK3466/159	121-Z9003	
Q104	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A	*
Q201	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A	*
Q202	177788	NTE31	ECG31	SK3866A/31		*
Q203	177789	NTE32	ECG32	SK3867A/32		*
Q204	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A	*
Q301	146848	NTE229	ECG229	SK3246A/229	121-Z9021	*
Q302	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A	*
Q401	146851	NTE287	ECG287	SK3433/287	121-Z9045	
Q402	177791	NTE2302	ECG2302	SK9422		
Q701,2	143806	NTE159	ECG159	SK3466/159	121-Z9003	
SCR101	159430	NTE5424	ECG5424			
U501	LA7831					
U1001	176853					
	176854					
PW5000 CRT BOARD						
Q1,2,3	141295	NTE171	ECG171	SK3201/171	121-822	
[Q5001,2,3]						
PWRC DRIVE BOARD						
CR1	130044	NTE140A	ECG140A	SK10V/140A	103-Z9010	
[CR5001]						
Q4,5,6	176363	NTE229	ECG229	SK3246A/229	121-Z9021	
[Q5004,5,6]						
Q7	143806	NTE159	ECG159	SK3466/159	121-Z9003	
[Q5007]						
PWRR2 RELAY BOARD						
D151		NTE519	ECG519	SK3100/519	103-131	
Q151	148907	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A	*

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.					
		NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
PWSB3 STEREO/SAP BOARD						
CR100	161081	NTE5011T1	ECG5011T1			
[CR1100]						
CR301,3	164717	NTE519	ECG519	SK3100/519	103-131	
Q600,1	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A *	
[Q1600,11]						
Q701	179740					
[Q1700]						
Q800	146849	NTE210	ECG210	SK3202/210	121-Z9055	
[Q1800]						
Q801	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A *	
[Q1801]						
Q802	179740					
[Q1802]						
Q1701	179740					
U600	176223					
[U1600]						
U601	176224					
[U1601]						
U800	176226	NTE1576	ECG1576	SK7672/1576		
[U1800]						
U900	181836					
[U1900]						
MCY005A PREAMP						
CR901,3,4	164874	NTE177	ECG177	SK9091/177	103-131	
Q901	148070	NTE451	ECG451	SK9164/451		
Q902	145410	NTE159	ECG159	SK3466/159	121-Z9003	
Q903,4	148061					
CRK39K TRANSMITTER REMOTE						
Q1001	148996	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A *	
U1001	173219					
MTT002B TUNING SYSTEM						
CR101	164717	NTE519	ECG519	SK3100/519	103-131	
CR102,3	174378					
CR105	129095	NTE553	ECG553	SK3322		
CR107	174449					
CR108						MATCHED SET INCLUDES CR108, CR203,4,CR210 CR502,6,CR510
CR109	174450					USED CR107 MATCHED SET DIODE MATCHED SET INCLUDES CR112, CR301,2,3
CR110,11						
CR112	164717	NTE519	ECG519	SK3100/519	103-131	USE CR109 MATCHED SET
CR113,4,5	129095	NTE553	ECG553	SK3322		
CR201,2	129095	NTE553	ECG553	SK3322		USE CR107 MATCHED SET
CR203,4						
CR205,6	129095	NTE553	ECG553	SK3322		
CR207	164717	NTE519	ECG519	SK3100/519	103-131	USE CR107 MATCHED SET
CR208,9	129095	NTE553	ECG553	SK3322		
CR210						
CR211	164717	NTE519	ECG519	SK3100/519	103-131	USE CR109 MATCHED SET
CR301,2,3						
CR304,5	174378					
CR401,2	174381	NTE519	ECG519	SK3100/519	103-131	
CR403	164717					

COILS & TRANSFORMERS

ITEM No.	FUNCTION	MFGR. PART No.	OTHER IDENTIFICATION	NOTES
# DY501	Yoke Horiz 2.71mH 90° Vert 23.4mH	174455(3)	2842017-503	
# T201	Yoke	180305(4)		
# T401	Audio Output	184940	2821709-1	
# T402	Horiz Drive	179266	1455882-50	
	Horiz Output	175297(1)		
	Horiz Output	185134(2)		

For SAFETY use only equivalent replacement part.
(1) Used in Chassis CTC136D/E/F/G/J/M/N.
(2) Used in Chassis CTC136R/T/U/W/AA.
(3) Used with Picture Tube A51ACG10X with one yoke.
(4) Used in Models FXR469WR-1/WR-2, Picture Tube A48JUE68X.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	2" X 4" PM 32 Ohm	164001		Used in Models: FPR483ER-1, FPR485BR-1, FPR487WR-1, FPR518WR-1, FXR518WR-1/WR-2
	3" PM 32 Ohm	173250		Used in Models: FPR510WR-1/WR-2
	2 1/4 X 3" 32 Ohms	175295		Used in Models: FPR472TR, FPR474BR, PR478ER, FPR515WR, FXR469WR-1/WR-2

MODULES (PLUG-IN BOARDS)

ITEM No.	PART NAME	REPLACEMENT DATA		NOTES
		MFGR. PART No.	PTS PART No.	
PW5000	CRT Socket	179460		Complete
PWRC	Rear Control Panel	179461		Complete
PWRR002C	Relay Board	177741		Used in Chassis: CTC136D/G/J/M/N/P/U/W/AA
PWRR002D	Relay Board	180996		Used in Chassis: CTC136F/T
PWRR002E	Relay Board	177757		Used in Chassis: CTC136E/R
REM001A	Tuning Interface	177846		Used in Chassis: CTC136D/G/P
REM001B	Tuning Interface	177847		Used in Chassis: CTC136E/R
REM001C	Tuning Interface	185132		Used in Chassis: CTC136M/U
REM001E	Tuning Interface	185133		Used in Chassis: CTC136N/W
PWSB003	Sound Assembly	181839		Complete
MTT002B	Tuning System	178558		Complete
MTT005A	Tuning System	176343		Complete
MTT006A	Tuning System	176904		Complete
KRK234AU	Tuner Assembly (UHF)	173564		Complete
KRK234FAU	Tuner Assembly (UHF)	173568		Complete
KRK234SAU	Tuner Assembly (UHF)	173567		Complete
KRK252B	Tuner VHF	173565		Complete
KRK252FA	Tuner VHF	173569		Complete
KRK252SA	Tuner VHF	173566		Complete
TMA012	Tuner Mounting Assembly			
TMA012F	Tuner Mounting Assembly			
MCY005A	Remote Control Assembly	156387		Complete
MCR026A	Remote Receiver	177510		Complete
CRK39K	Remote Transmitter			
	Aux Control Circuit	177759		Used in Models: FPR472TR-1/TR-2, FPR474BR-1/BR-2, FPR476DR-1/DR-2, FPRS10WR, FPR515WR-1/WR-2
	Aux Control Circuit	181247		Used in Models: FPR483ER-1, FPR485BR-1, FPR487WR-1, FPR518WR-1
	Aux Control Circuit	177539		Used in Chassis: FXR469WR-1/WR-2

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
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

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFR. PART No./ TYPE No.	MTT002B TUNING SYSTEM				NOTES
		NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	
CR501 CR502	129095	NTE553	ECG553	SK3322		USE CR107 MATCHED SET
CR503,4,5 CR506	129095	NTE553	ECG553	SK3322		
CR507,8 CR509 CR510	129095 164717	NTE553 NTE519	ECG553 ECG519	SK3322 SK3100/519	103-131	USE CR107 MATCHED SET
CR602	164874	NTE177	ECG177	SK9091/177	103-131	
CR603 THRU CR608 CR609,10,11	164717 164874	NTE519 NTE177	ECG519 ECG177	SK3100/519 SK9091/177	103-131 103-131	212-76-02
CR612	137652	NTE116	ECG116	SK3313/116		
CR613	174431					103-131
CR614,15	139706	NTE177	ECG177	SK9091/177		
CR616 CR617	156313 174370	NTE5141A	ECG5141A	SK30X/5141A		103-Z9006 103-131
CR618	164594	NTE5069A	ECG5069A	SK4V7/5069A		
CR619 THRU CR622 CR623	164717 142417	NTE519 NTE5077A	ECG519 ECG5077A	SK3100/519 SK18V/5077A	103-Z9022	103-131
CR624 Q101	164717 174373	NTE519	ECG519	SK3100/519		
Q103	174374					121-Z9000A *
Q201	174372					
Q301	174372					121-Z9000A *
Q302	143794	NTE123AP	ECG123AP	SK3854/123AP		
Q401	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A *	121-826
Q402	148085	NTE222	ECG222	SK3065/222		
Q501	148085	NTE222	ECG222	SK3065/222	121-826	121-Z9000A *
Q601	146847	NTE123AP	ECG123AP	SK3854/123AP		
Q602	143802	NTE159	ECG159	SK3466/159	121-Z9003	121-Z9000A *
Q603	146847	NTE123AP	ECG123AP	SK3854/123AP		
Q604	145410	NTE159	ECG159	SK3466/159	121-Z9003	121-Z9000A *
Q605	146847	NTE123AP	ECG123AP	SK3854/123AP		
Q606	157808	NTE159	ECG159	SK3466/159	121-Z9003	121-Z9000A *
U101	174377					
U601	180223					121-Z9000A *
U602	174376					
PW REM-1A TUNING	INTERFACE BOARD					
CR931,2 CR933	159434 147015	NTE146A NTE125	ECG146A ECG125	SK27V/146A SK5010A/117A	103-Z9014 212-Z9000	103-131
CR934,6 CR951	164717 164717	NTE519 NTE519	ECG519 ECG519	SK3100/519 SK3100/519		
Q901,2,6,7 Q916,17	146847 146847	NTE123AP NTE123AP	ECG123AP ECG123AP	SK3854/123AP SK3854/123AP	121-Z9000A *	121-Z9000A *
Q931	146851	NTE287	ECG287	SK3433/287	121-Z9045	
Q951,2	146847	NTE123AP	ECG123AP	SK3854/123AP	121-Z9000A *	

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFR. PART No.
C106	680 200V	175442
C113	33 100V	179225
C115	470 35V	175827
C121	33 180V	179554
	100 175V	153313
C307	.47 50V 10%	179206

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

ITEM No.	RATING	MFR. PART No.
C322	.47 50V 10%	179206
C425	10 50V	179229
C501	2.2 50V 10%	176494
C503	2.2 50V 10%	176494
C504	1 50V 10%	176473
C811	4.7 25V 10%	179230

CAPACITORS

ITEM No.	RATING	MFR. PART No.
C101	.22 600V 20%	175604(1)
C102	680 1KV 20%	160131
C103	680 1KV 20%	160131
C104	680 1KV 20%	160131
C105	680 1KV 20%	160131
C210	47 NPO 50V 5%	
	91 NPO 50V 5%	146254
C212	33 NPO 50V 5%	146833(1)
C214	18 NPO 50V 5%	146538(1)
C220	3.3pF NPO 50V 5%	
	33 NPO 50V 5%	146833
C222	3.3 NPO 50V 5%	
C310	68 NPO 50V 5%	145676
C311	16 NPO 250V 5%	147628
	22 NPO 50V 5%	157199
C314	100 NPO 50V 5%	143871
	75 NPO 50V 5%	149150
C321	75 NPO 50V 5%	149150
C401	.1 50V 10%	159640
C409	100 NPO 50V 5%	143871

For SAFETY use only equivalent replacement part.
Items Not Listed Are Normally Available At Local Distributors.
(1) Found in CTC136D,E,F,J,M,N,P,R,T,U,W,AA.
(2) Found in CTC136D,E,F,G,M,N,P,R,T,U,W.
(3) Found in CTC136J,AA.
(4) May be used in some versions.
(5) Maybe found in CTC136D,E,F,G,M,N.
(6) Maybe found in CTC136G.
(7) Maybe found in CTC136P,R,T,U,W.
(8) Maybe found in CTC136AA.

CAPACITORS

ITEM No.	RATING	MFR. PART No.
	PW REM 001A/B	
C901	68 NPO 50V 20%	145676
C951	68 NPO 50V 20%	145676

ITEM No.	RATING	MFR. PART No.
C953	150 NPO 50V 20%	143874
C954	68 NPO 50V 10%	145676
	330 50V 10%	

Items Not Listed Are Normally Available At Local Distributors.

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.	WORKMAN PART No.
# R931	PW REM 001/A/B 15K 2% 2Q Flameproof Metal Film	179236	2W315	22-4124

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	WORKMAN PART No.
# R1001 R1004	CRK39K 12 5% 1/8W Carbon 10 5% 1/4W Flameproof Metal Film 5.1 5% 1/4W Flameproof Metal Film	829010 829A51	EW012 QW010	

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	WORKMAN PART No.
R903	MCY005A REMOTE PREAMP Resistor Network	157643		

COILS (RF-IF)

ITEM No.	FUNCTION	MFGR. PART No.	ITEM No.	FUNCTION	MFGR. PART No.
DL701	Delay Line	177795	L304	Video IF (.165uH)	151251
L101	AC Line Choke	177794	L305	Peaking (1.8uH)	160143
L103	RF Choke (Reg)	179269	L306	Peaking (8.2uH)	160144
L104	RF Choke (68uH)	146157	L307	RF Choke	183186(2)
L105	RF Choke (22uH)	149176	L308	RF Choke	151251(2)
L201	Sound Detector	179232(1)	L310	RF Choke (2.2uH)	143893
	Sound Detector	183188(2)	L311	RF Choke (2.2uH)	143893(2)
L202	Peaking	161245(1)	L312	Peaking (2.2uH)	143893
L203	RF Choke (2.2uH)	143893	L401	RF Choke (3.8uH)	153986
L301	RF Choke	148420(1)	L402	Horiz Linearity	179233
	RF Choke	161246(2)	L403	RF Choke (6.8uH)	175869
L302	Video IF	149733(1)	L701	RF Choke (68uH)	149167
	Video IF	183187(2)	L703	RF Choke (3.9uH)	151249
L303	AFT (.165uH)	151251	L802	Peaking (8.2uH)	149170
	AFT (.122uH)	179555	L5001	RF Choke (180uH)	157307

For SAFETY use only equivalent replacement part.
(1) Used in Chassis CTC136D/E/F/J/M/N/P/R/T/U/W/AA.
(2) Used in Chassis CTC136G.

COILS (RF-IF)

ITEM No.	FUNCTION	MFGR. PART No.	ITEM No.	FUNCTION	MFGR. PART No.
L901	MCY005A RF Choke (3mH)	157642			

CAPACITORS

ITEM No.	RATING	MFGR. PART No.
	MTT002B TUNING SYSTEM	
C101	470 NPO 50V 10%	174416
C102	470 NPO 50V 10%	174416
C103	120 NPO 50V 5%	174414
C104	120 NPO 50V 5%	174414
C105	470 NPO 50V 10%	174416
C106	470 NPO 50V 10%	174416
C107	470 NPO 50B 10%	174416
C108	5 N750 50V ±.25pF	174400
C110	470 NPO 50V 10%	174416
C111	470 NPO 50V 10%	174416
C112	470 NPO 50V 10%	174416
C116	10 NPO 50V ±1%	174402
C117	22 NPO 50V 5%	174406
	2pF NPO 50V 5%	174396
C118	470 NPO 50V 10%	174416
C119	33 NPO 50V 10%	174408
C121	120 NPO 50V 5%	174414
C122	470 NPO 50V 10%	174416
C123	2pF NPO 50V ±.25pF	174396
C124	3pF N750 50V ±.25pF	174398
C125	470 NPO 50V 10%	174416
C126	5pF N750 50V ±.25pF	174400
C127	470 NPO 50V 10%	174416
C128	7pF NPO 50V ±.5pF	174401
C131	10 NPO 50V ±1%	174402
C135	5pF NPO 50V ±.25pF	174399
C136	.5pF NPO 50V ±.25pF	174395
C139	470 NPO 50V 10%	174416
C141	470 NPO 50V 10%	174416
C142	470 NPO 50V 10%	174416
C143	470 NPO 50V 10%	174416
C145	10 NPO 50V ±.1%	174402
C148	Trimmer Cap	
C149	10 NPO 50V ±.25pF	174402
C150	470 NPO 50V 10%	174416
C202	470 NPO 50V 10%	174416
C203	470 NPO 50V 10%	174416
C205	470 NPO 50V 10%	174416
C208	470 NPO 50V 10%	174416
C210	82 NPO 50V 10%	174411
C211	470 NPO 50V 10%	174416
C212	470 NPO 50V 10%	174416
C215	470 NPO 50V 10%	174416
C216	.5pF NPO 50V ±.25pF	174395
C218	470 NPO 50V 10%	174416
C220	470 NPO 50V 10%	174416
C221	470 NPO 50V 10%	174416
C223	470 NPO 50V 10%	174416
C224	470 NPO 50V 10%	174416
C227	470 NPO 50V 10%	174416
C228	470 NPO 50V 10%	174416

Items Not Listed Are Normally Available At Local Distributors.

ITEM No.	RATING	MFGR. PART No.
C229	470 NPO 50V 10%	174416
C230	470 NPO 50V 10%	174416
C232	470 NPO 50V 10%	174416
C233	470 NPO 50V 10%	174416
C302	470 NPO 50V 10%	174416
C303	18 NPO 50V 5%	174405
C304	470 NPO 50V 10%	174399
C305	470 NPO 50V 10%	174416
C306	470 NPO 50V 10%	174416
C307	470 NPO 50V 10%	174416
C308	470 NPO 50V 10%	174416
C309	3pF NPO 50V ±.25pF	174397
C310	18 NPO 50V 5%	174405
C314	18 NPO 50V 5%	174405
C316	470 NPO 50V 10%	174416
C317	470 NPO 50V 10%	174416
C319	470 NPO 50V 10%	174416
C320	1pF NPO 100V ±.25pF	134437
C324	470 NPO 50V 10%	174416
C401	470 NPO 50V 5%	174409
C402	470 NPO 50V 10%	174416
C403	470 NPO 50V 10%	174416
C404	470 NPO 50V 10%	174416
C405	470 NPO 50V 10%	174416
C406	470 NPO 50V 10%	174416
C407	470 NPO 50V 10%	174409
C409	33 NPO 50V 5%	174408
C413	12 NPO 50V 5%	174403
C414	15 NPO 50V ±1%	146768
	15 N470 100V 5%	160654
C415	68 NPO 50V 5%	174410
C419	68 NPO 50V 5%	174410
C422	4.7pF NPO 50V ±.5pF	199406
	3.3pF NPO 100V ±.25pF	119402
C423	22 NPO 50V 5%	174406
	3.3pF NPO 100V ±.25	119402
C423	22 NPO 50V 5%	174406
	15 NPO 50V 5%	174404
C501	15 NPO 50V 5%	174404
C502	470 NPO 50V 10%	174416
C505	10 NPO 50V 1%	174402
C513	2pF NPO 50V ±.25pF	174396
C517	1pF NPO 50V ±.25pF	174391
C518	3 NPO 50V ±.25pF	174397
C520	470 NPO 50V 10%	174416
C521	470 NPO 50V 10%	174416
C615	33 NPO 50V 5%	174408
C616	120 NPO 50V 5%	174414
C623	68 NPO 50V 5%	174410
C625	120 NPO 50V 5%	174414
C637	100 NPO 50V 5%	174412
C664	33 NPO 50V 5%	174408
C706	3.3pF NPO 500V 5%	130571

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	
# R101	3.9 5% 10W WW	177796	10W3D9	
# R102	470K 10% 1/2W Carbon Comp	180243	HW447	
# R103	1000 5% 1/2W Carbon Film	175350	HW210	
# R107	220K 5% 1/2W Flameproof Metal Film	830422	HW422	
# R112	75K 1% 1/2W Metal Film	(1)		
# R125	1 5% 1/4W Flameproof Metal Film	829A10	QW1D0	
# R127	75 5% 7W WW	179235		
# R129	10K 10% 1W Carbon Comp		1W310	
	8200 10% 1/2W Carbon Comp		HW282	
	4700 10% 1/2W Carbon Comp	143574		
	12K 5% 1W Carbon Comp	180841		
# R130	300K 2% 1/8W Carbon Film	(1)	EW430	
# R131	150K 2% 1/8W Carbon Film	(1)	EW415	
# R132	75K 2% 1/8W Carbon Film	(1)	EW375	
# R133	4640 1% 1/2W Metal Film	(1)		
# R134	33 5% 1/4W Flameproof Carbon Film	829033	QW033	
# R136	270 5% 2W Flameproof Metal Film		2W127	
	270 5% 2W Metal Film	179240(2)		
# R137	470 2% 1/2W Metal Film	830147	HW147	
# R144	4.7 5% 1W Flameproof Metal Film	180430	1W4D7	
	4.7 5% 1/2W Flameproof Carbon Film	820A47	HW4D7	
# R147	43 5% 3W WW	176279		
# R151	2200 5% 5W WW		5W222	
	2200 5% 5W Flameproof Metal Film	177742		
# R152	2200 5% 5W WW		5W222	
	2200 Flameproof Metal Film	177742		

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

ITEM NO.	FUNCTION	RESISTANCE	MFGR. PART NO.	NOTES
R138	Width	250	(4)	
R222	Volume Preset	1000	183184	
R315	RF AGC	25K	179244	
R323	AFT Balance	10K	179246	
R503	Vert Size	150	179255	
R716	Contrast Preset	300	179258	
R1607	MPX VCO	5000	181841	
R1609	Input Level	25K	181842	
R1619	SAP VCO	5000	181841	
R1627	dbx Input Level	10K	181114	
	Adjust			
R1644	High Level	5000	181841	
	Switching			
R1648	dbx Output	2000	181176	
R4201	Volume	10K	177809(1)	
R4202	Black Level	20K	177543	
	(Brightness)			
R4203	Color	10K	177544	
R4204	Tint	10K	177544	
R4207	Picture (Contrast)	10K	177545	
R4208	Bass	50K	176612	
R4209	Treble	50K	176612	
R4209A	Peaking Sharpness	10K	179260(3)	
# R4210	Focus/Screen		161560(2)	
	Focus/Screen		177997(2)	
R5025	Red/Blue Drive	100	179263	
R5026	Green Drive	100	179263	
R5033	Red Bias	4500	178099	
R5034	Green Bias	4500	178099	
R5035	Blue Bias	4500	178009	

For SAFETY use only equivalent replacement part.
(1) Used in Models FPR471, FPR473, FPR477, FPR505.
(2) Part of Focus Pack.
(3) Part of Rear Control Panel (RC).
(4) Part of CR106 B+ Regulator Kit, Part Number 178581.

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

ITEM	PART No.	PART No.	PART No.	PART No.
MODELS	FPR472TR-1/TR-2	FPR474BR-1/BR-2	FPR476DR-1/DR-2	FPR478ER-1/ER-2
# Cabinet Back	BK0422	BK0422	BK0422	BK0422
Door-Aux Controls	180828	180829	177753	179301
# Cabinet Front (Mask)	MK0580	MK0582	MK0650	MK0584
Knob-On/Volume	177808	177808	177808	177808
Knob-Sharpness	176606	176606	176606	176606
Window-IR	177755	177755	177755	177755
MODELS	FPR483ER-1	FPR485BR-1	FPR485WR-1	FPR487WR-1
# Cabinet Back	BK0596	BK0596	BK0596	BK0596
Door-Aux Controls	181397	181397	181397	182254
# Cabinet-Front (Mask)	MK0648	MK0597	MK0597	MK0649
Knob-Sharpness	176606	176606	176606	176606
Window-Tuning	181399	181399	181399	181399

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

ITEM	PART No.	PART No.	PART No.	PART No.
MODELS	FPR510WR-1/WR-2	FPR515WR-1/WR-2	FPR518WR-1	FXR469WR-1/WR-2
# Cabinet Back	BK0416	BK0422	BK0594	BK0603
Cabinet-Front (Mask)	MK0589	MK0586	MK0595	MK0608
Door-Aux Controls	180844	177753	181249	181249
Knob-On/Volume		177808		
Knob-Sharpness	176606	176606	176606	176606
Window-IR	177541	177755		
Window-Tuning			181250	181510
# Door-Latch (Velcro)				174281
# Door-Hinge				150190
# Door-Latch			161908	

RCA
CHASSIS CTC136D/G/J/P, CTC136AA

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	
# R205	180 5% 1/4W Flameproof Metal Film	829118	QW118	
R206	4700 2% 1/4W Carbon Film	175413	QW247	
# R211	56 5% 2W Flameproof Metal Film	179243	2W056	
R213	47K 2% 1/4W Carbon Film	175322	QW347	
# R302	100 5% 1/4W Flameproof Carbon Film	829110	QW110	
# R322	180 5% 2W Flameproof Metal Film	179245	2W118	
# R401	10K 1% 1/2W Metal Film	160155		
# R402	14.3K 1% 1/2W Metal Film	179247		
R404	2400 2% 1/8W Carbon Film	161222	EW224	
# R407	6200 5% 3W Flameproof Metal Film	179252	3W262	
R408	620 2% 1/8W Carbon Film	179250	EW162	
# R411	5600 5% 3W Flameproof Metal Film	179251	3W256	
# R412	5600 5% 1/2W Carbon Film	175369	HW256	
# R413	6200 5% 3W Flameproof Metal Film	179252	3W262	
# R415	1200 5% 1W Flameproof Metal Film	179782	1W212	
	1000 5% 1/2W Metal Film	830210	HW210	
# R421	100 5% 1/2W Carbon Film	176796	HW110	
# R422	22K 2% 1/4W Carbon Film	175054	QW322	
# R423	6800 5% 1/4W Carbon Film	176634	QW268	
# R424	1000 5% 1/4W Carbon Film	175055	QW210	
# R505	3 5% 1W Flameproof Metal Film	179256	1W3D0	
# R513	20 5% 1W Flameproof Metal Film	179257	1W020	
R706	9100 2% 1/8W Carbon Film	177744	EW291	
	10K 2% 1/8W Carbon Film	157336(2)	EW310	
R708	27K 2% 1/8W Carbon Film	159641	EW327	
R713	51K 2% 1/8W Carbon Film	162425	EW351	
R715	100K 2% 1/4W Carbon Film	175044	QW410	
	110K 2% 1/4W Carbon Film		QW411	
# R717	22K 5% 1W Flameproof Metal Film	179259	1W322	
R721	18K 2% 1/8W Carbon Film	161047	EW318	
R809	1500 2% 1/8W Carbon Film	161041	EW215	
R810	1000 2% 1/8W Carbon Film	161223	EW210	
# R1807	82 5% 5W WW	141243	5W082	
# R1811	24 5% 5W WW	181838		
# R1903	2.2 5% 1/4W Flameproof Carbon Film	829A22	QW2D2	
# R1908	2.2 5% 1/4W Flameproof Carbon Film	829A22	QW2D2	
R4220	4700 2% 1/4W Carbon Film		EW247	
	4700 2% 1/8W Carbon Film	157379	EW247	
R4221	2700 2% 1/4W Carbon Film		EW227	
	2700 2% 1/8W Carbon Film	157995	EW227	
# R5001	10K 5% 2W Flameproof Metal Film	176656	2W310	
# R5002	10K 5% 2W Flameproof Metal Film	176656	2W310	
# R5003	10K 5% 2W Flameproof Metal Film	176656	2W310	
# R5008	15K 5% 1/8W Carbon Film	173926	EW315	
# RT101	8.2 Cold PTC	149680		

For SAFETY use only equivalent replacement.
(1) Part of CR106 B+ Regulator Kit, Part Number 178581.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	NTE PART No.	
MTT002B	TUNING SYSTEM			
R101	390 2% 1/8W Carbon Film	157378	EW139	
R102	11K 2% 1/8W Chip Metal Film	178277	EW311	
R103	470 2% 1/8W Chip Metal Film	178278	EW147	
R104	200 2% 1/8W Carbon Film	161048	EW120	
R105	51 2% 1/8W Carbon Film	178279	EW051	
R110	150 2% 1/4W Carbon Film	829115	QW115	
R111	200 2% 1/8W Chip Metal Film	178280	QW120	
R119	11K 2% 1/8W Chip Metal Film	178277	EW311	
R121	200 2% 1/4W Carbon Film	829120	QW120	
R122	200 2% 1/4W Chip Metal Film	178280	QW120	
R125	6800 2% 1/8W Chip Metal Film	178281	EW268	
R126	6800 2% 1/8W Chip Metal Film	178281	EW268	
R203	100K 2% 1/8W Chip Metal Film	176816	EW410	
R206	160K 2% 1/8W Chip Metal Film	176815	EW416	
R207	1000 2% 1/4W Carbon Film	175055	QW210	
R208	270 2% 1/4W Carbon Film	178282	QW127	
R302	100K 2% 1/8W Chip Metal Film	176816	EW410	
R303	160K 2% 1/8W Chip Metal Film	176815	EW416	
R304	1000 2% 1/4W Carbon Film	175055	QW210	
R305	270 2% 1/4W Carbon Film	178282	QW127	
R402	100K 2% 1/8W Chip Metal Film	176816	EW410	
R404	390 2% 1/8W Chip Metal Film	178284	EW139	
R406	13K 2% 1/8W Chip Metal Film	178285	EW313	
R407	13K 2% 1/8W Carbon Film	157334	EW313	
R408	680 2% 1/8W Chip Metal Film	178286	EW168	
R409	680 2% 1/8W Chip Metal Film	178286	EW168	
R410	4700 2% 1/8W Chip Metal Film	178287	EW247	
R412	1000 2% 1/4W Carbon Film	829210	QW210	
R417	47K 2% 1/8W Chip Metal Film	179378	EW347	
R418	100K 2% 1/8W Chip Metal Film	176816	EW410	
R419	120K 2% 1/4W Carbon Film	829412	QW412	
R425	390K 2% 1/8W Chip Metal Film	178290	EW439	
R505	100K 2% 1/8W Chip Metal Film	176816	EW410	
R506	160K 2% 1/8W Chip Metal Film		EW416	
R507	270 2% 1/4W Carbon Film	178282	QW127	
R508	1000 5% 1/4W Carbon Film	175055	QW210	
R605	22K 2% 1/8W Chip Metal Film	174367	EW322	
R606	22K 2% 1/8W Chip Metal Film	174367	EW322	
R607	22K 2% 1/8W Chip Metal Film	174367	EW322	
R608	22K 2% 1/8W Chip Metal Film	174367	EW322	
R631	10K 2% 1/8W Chip Metal Film	174364	EW310	
R652	36K 2% 1/8W Chip Metal Film	174369	EW336	
R654	1500 5% 2W Flameproof Metal Film	174938	2W215	
R655	18 5% 2W Flameproof Metal Film	174939	2W018	
R660	22K 2% 1/8W Chip Metal Film	174367	EW322	
R661	10K 2% 1/8W Chip Metal Film	174364	EW310	
R662	12K 2% 1/8W Chip Metal Film	174365	EW312	

For SAFETY use only equivalent replacement part.

RCA
CHASSIS CTC136D/G/J/P, CTC136AA

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
BF202	Filter Bandpass	179745	Used In Chassis: CTC136D/E/F/J/M/N/P/R/T/U/W/AA
CF201	Ceramic Filter	160139	
CF301	Ceramic Filter	160140	
# CPR1	Component Combination	147687	
# CPR21	Component Combination	147687	
# F101	AC Fuse	177793	
FB101	Ferrite Bead	154052	
FB102	Ferrite Bead	154322	
FB103	Ferrite Bead	154322	
FB104	Ferrite Bead	154042	
FB301	Ferrite Bead	152103	4 Amp @ 125V Slow Blow AC
FB302	Ferrite Bead	154052	
FB303	Ferrite Bead	152103	
FB304	Ferrite Bead	152103	
FB401	Ferrite Bead	154052	
FB402	Ferrite Bead	154052	
FB403	Ferrite Bead	154053	
FB4201	Ferrite Bead	157346	
FL1600	Filter Low Pass	177053	
FL1601	Filter Bandpass	177052	
FL1602	Filter Low Pass	177054	50KHz
FL1603	Filter Low Pass	177054	
# L102	Degaussing Coll	177762	15KHz
# RL101	Relay	179285	
SF301	SAW Filter	176852	Used In Chassis: CTC136G
	SAW Filter	183189	
SG5001	Spark Gap	179265	Without Yoke (2819334-001)
# V101	Picture Tube	A51ACG10X	
	Picture Tube	179464	Picture Tube and Yoke
	Picture Tube	A48JUE68K	
Y401	Ceramic Osc	179267	Used In Models: FXR469WR-1/WR-2
Y801	Crystal	161235	
#	AC Power Cord	176595	3.58MHz
#	AC Power Cord	179450	
	Antenna UHF	10E0113	USA
	Antenna VHF	156265	
#	CRT Socket	156263	Canada
	Fuse Clips	176642	
			RUSSELL, Replacement Assembly BOW-2H
			RUSSELL, Replacement Assembly POR-12H
			RUSSELL, Replacement Rod SIM-4H

For SAFETY use only equivalent replacement part.

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
	REM001A		
FB951	Ferrite Bead	152102	4 Pin REM001A
FB952	Ferrite Bead	152102	
FB953	Ferrite Bead	152103	
# P3MTT	Connector	173563	
# P4MTT	Connector	174265	
# P901	Connector	185135	
P901A	Connector	179308	
# P901B	Connector	179309	
	PC Board	177846	
	PC Board	177847	
	PC Board	185132	3 Pin REM001B/C/E
	PC Board	185133	
			11 Pin REM001B/C/E
			14 Pin REM001A
			7 Pin REM001B
			REM001A CTC136D/G/P
			REM001B CTC136E/R
			REM001C CTC136M/U
			REM001E CTC136N/W

For SAFETY use only equivalent replacement part.

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
	(Transmitter CRK39K)		
CR1002	Diode LED	148056	Complete (Transmitter CRK39K)
PW1000	PC Board	176833	
Y1001	Crystal	151804	
	Buttons	176834	
	Case, Bottom & Door	176837	
	Case, Top & Lens	176838	
	Door, Battery	176836	
	Overlay, Keyboard	176835	
	Pad, Anti Skid	153348	
	Spring Ground	174162	
	Contact, Dual Battery	173214	
	Contact, Neg Battery	173215	
	Contact, Pos Battery	173216	

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
	MCY005A Remote		
CR902	Photo Diode	150711	Assembly Complete
MCY005A	Remote Control	156387	
P4MSC	Connector 4 Pin	175703	
	Cover, Front	148063	
	Cover, Rear	157640	