

**SET 1905 FOLDER 2**

**ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9**

# PHOTOFACT® Folder

**with CIRCUITRACE™**

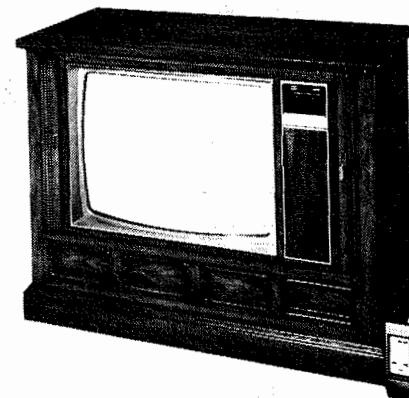
For Supplier Address See PHOTOFACT Index

**ZENITH**

# COLOR TV

## WARNING

**HI VOLTAGE  
MAY EXCEED  
SOME CRT  
OR TEST JIG  
X-RAY RATINGS**



Model SL2523E9

## MODEL

SL2513W, W9  
SL2523E, E9  
SL2525M, M9  
SL2527DE, DE9, P, P9  
SL2529P9  
SL2533PN9  
SL2535X9  
SL2541X, X9  
SL2543E, E9  
SL2545M, M9  
SL2549E, E9  
+SL2561X, X9  
+SL2571P9  
+SL2575E9  
+SL2577P9  
SL2593P9  
SL2595E9  
SL2597P9  
SL4529P9

## REMOTE

[illegible]

+ Models use external audio amplifier.

## SERVICE INFORMATION

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**HOWARD W. SAMS & CO., INC.** Indianapolis, Indiana 46206

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<sup>4</sup> **DATE 5 -80**

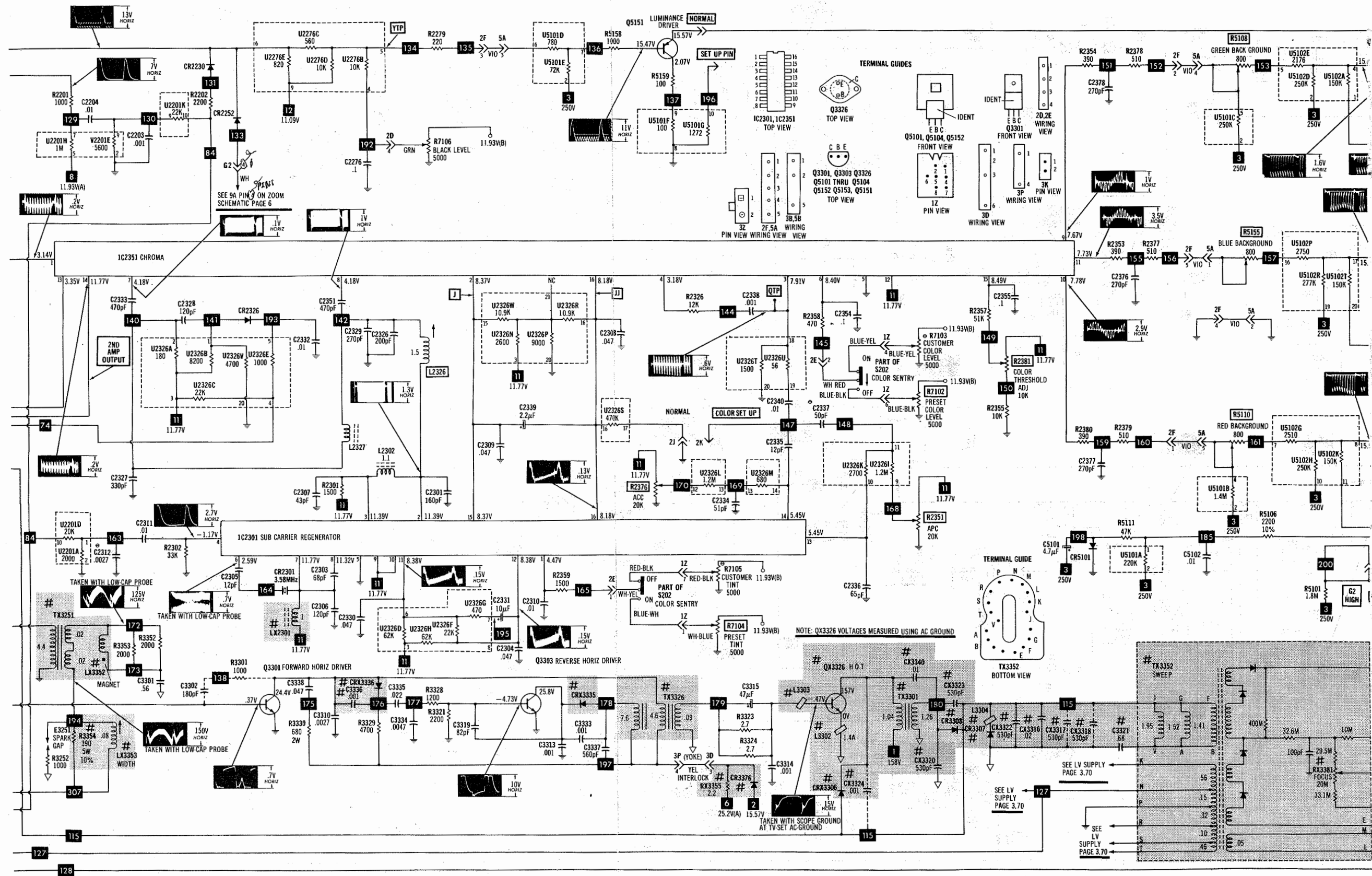
**SET 1905 FOLDER 2**

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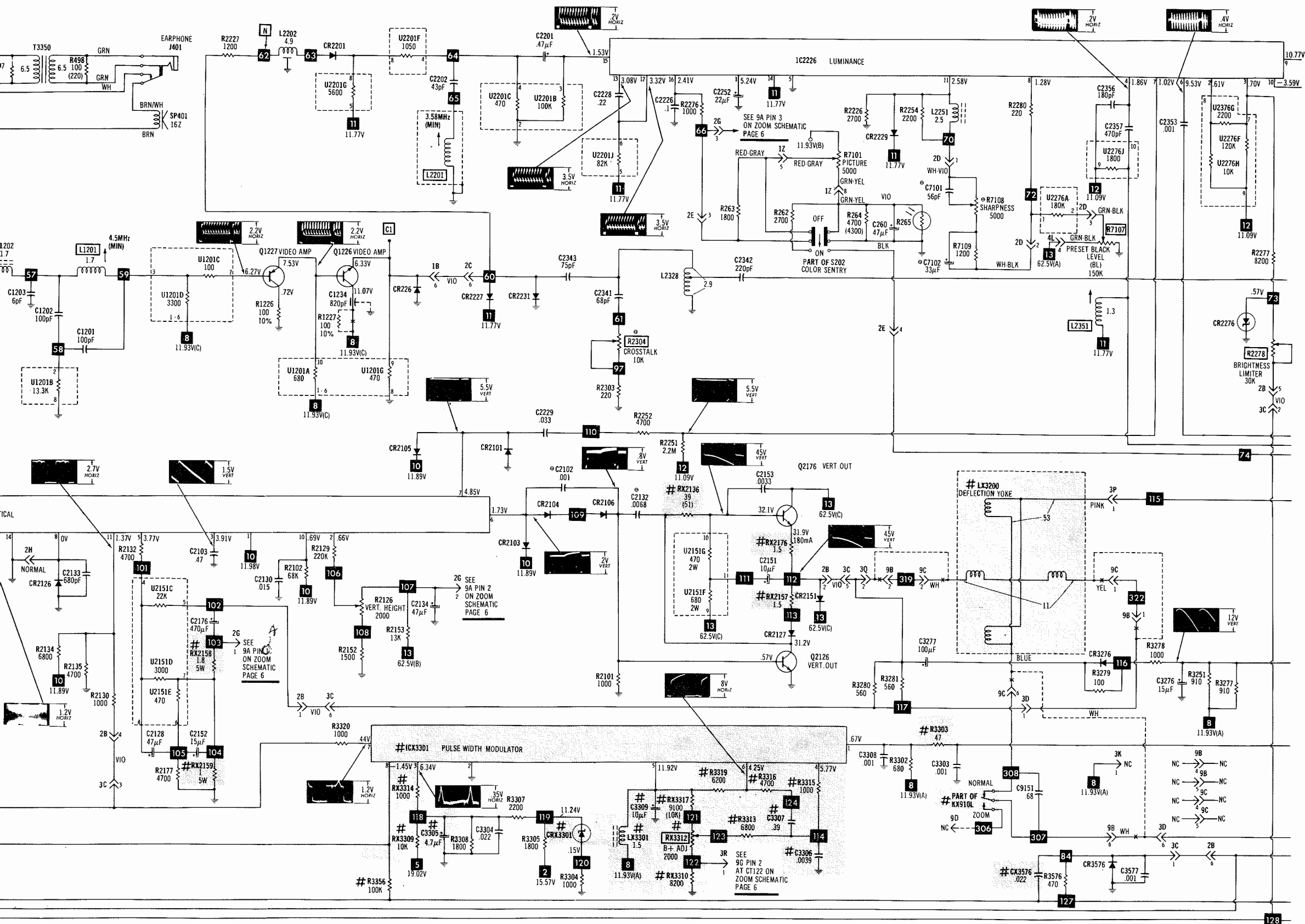












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41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9







## PRODUCT SAFETY SERVICING GUIDELINES FOR COLOR TELEVISION RECEIVERS

**CAUTION:** No modification of any circuit should be attempted. Service work should be performed only after you are thoroughly familiar with all of the following safety checks and servicing guidelines. To do otherwise increases the risk of potential hazards and injury to the user.

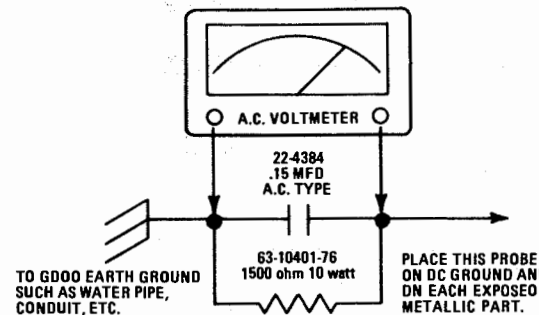
### SAFETY CHECKS

After the original service problem has been corrected, a check should be made of the following:

#### SUBJECT: FIRE & SHOCK HAZARD

1. Be sure that all components are positioned in such a way as to avoid possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the repair shop.
2. Never release a repair unless all protective devices such as insulators, barriers, covers, shields, strain reliefs, and other hardware have been reinstalled per original design.
3. Soldering must be inspected to discover possible cold solder joints, frayed leads, damaged insulation (including AC cord), solder splashes or sharp solder points. Be certain to remove all loose foreign particles.
4. Check the "across-the-line" capacitor and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length and dress.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces must be avoided.
6. All critical components (shaded on the schematic diagram and parts lists) such as fuses, flameproof resistors, capacitors, etc. must be replaced with exact Zenith types. Do not use replacement components other than those specified or make unrecommended circuit modifications.

After re-assembly of the set always perform an AC leakage test at DC ground test point and on all exposed metallic parts of the cabinet, (the channel selector knobs, antenna terminals, handle and screws) to be sure the set is safe to operate without danger of electrical shock. **DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST.** Use an AC voltmeter, having 5000 ohms per volt or more sensitivity, in the following manner: Connect a 1500 ohm 10 watt resistor (63-10401-76), paralleled by a .15 mfd. 150V AC type capacitor (22-4384) between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and .15 mfd. capacitor. Reverse the AC plug and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed .75 volts RMS. This corresponds to 0.5 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



#### SUBJECT: IMPLSION

1. All Zenith picture tubes are equipped with an integral implsion protection system, but care should be taken to avoid damage during installation. Avoid scratching the tube.
2. Use only recommended Zenith replacement tubes.

#### SUBJECT: X-RADIATION

1. Be sure procedures and instructions to all service personnel cover the subject of X-radiation. The only potential source of X-rays in current TV receivers is the picture tube. However, this tube does not emit X-rays when the H.V. is at the factory specified level. It is only when the H.V. is excessive that X-radiation may be generated.

Refer to the X-ray Precaution Label which is located inside each television receiver for the correct high voltage. The proper value is also given in the applicable service manual. Operation at higher voltages may cause a failure of the picture tube or high voltage supply and, under certain circumstances, may produce radiation in excess of desirable levels.

2. Only Zenith specified CRT anode connectors must be used. The degaussing shield also serves as an X-ray shield in color sets, do not defeat its purpose.
3. It is essential that the serviceman has available an accurate and reliable high voltage meter. The calibration of the meter should be checked periodically against a reference standard, such as the one available at your distributor.
4. When the high voltage circuitry is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be run up and down while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly. We suggest that you and your service organization review test procedures so that voltage regulation is always checked as a standard servicing procedure, and that the high voltage reading be recorded on each customer's invoice.
5. When trouble shooting and making test measurements in a receiver with a problem of excessive high voltage, avoid being unnecessarily close to the picture tube and the high voltage compartment. Do not operate the chassis longer than is necessary to locate the cause of excessive voltage.
6. Color transistor sets manufactured after June, 1973 ("E" Line and later), use new type picture tubes specifically designed to withstand higher operating voltages without causing excessive X-radiation. It is strongly recommended that the C.R.T. shop fixture be equipped with the new type tube. Addition of a permanently connected H.V. meter to the H.V. anode of the shop C.R.T. fixture is advisable. The C.R.T.'s in these sets should never be replaced with any other tube types as that may result in excessive X-radiation and possible violation of the law.
7. Starting with late production "E" line color sets, a special four lead damper capacitor was used. Its feature, the interlocking four leads, should not be defeated. However, each time one of these sets is serviced, for whatever reason, the part number of the capacitor should be examined. If it is the 22-7233 type (used in "E" and "F" model lines only), that capacitor must be replaced with an improved recommended type (22-7504-01). Please refer to Zenith Tech Topics (Issue No. 87) for the details. Your distributor will answer any questions, or you may write to Zenith for further details.

#### SUBJECT: TIPS ON PROPER INSTALLATION

1. Never install any receiver in a closed-in recess, cubbyhole or closely fitting shelf space.
2. Never install a receiver over, or close to a heat duct, or in the path of heated air flow.
3. Avoid conditions of high humidity such as; outdoor patio installations where dew is a factor, near steam radiators where steam leakage is a factor, etc.
4. Avoid placement where draperies may obstruct rear venting. The customer should also avoid the use of decorative scarves or other coverings which might obstruct ventilation.
5. Wall and shelf mounted installations using a commercial mounting kit, must follow the factory approved mounting instructions.
6. A receiver mounted to a shelf or platform must retain its original feet (or the equivalent thickness in spacers) to provide adequate air flow across the bottom. Bolts or screws used for fasteners must not touch any parts or wiring. Perform leakage tests on customized installations.
7. Caution customers against the mounting of a receiver on a sloping shelf or in a tilted position, unless the receiver is properly secured.
8. A receiver in a roll-about cart should be stable in its mounting to the cart. Caution the customer on the hazards of trying to roll a cart with small casters across thresholds or deep pile carpets.
9. Caution customers against the use of a cart or stand which has not been listed by Underwriters Laboratories, Inc. for use with their specific model of television receiver.

## HV SHUTDOWN CIRCUIT TESTS

Electronic Power Sentry color TV sets utilize a safety HV shutdown circuit for protection. In the event of a failure involving the M-10 (9-160-03) Module, exchange the Module with a new module or a factory rebuilt module. **DO NOT TRY TO REPAIR IT IN THE CUSTOMER'S HOME.**

A functional test of the HV shutdown circuit must be performed to check for a proper operation if you attempt servicing these receivers in the high voltage deflection, power supply, or in the HV shutdown circuitry.

1. Measure the DC voltage across the Zener diode (CRX3355) cathode to ground. It should be approximately 10VDC. Temporarily connect a 1K Ohm 5%, 1/2w resistor across the Zener diode (CRX3355). The HV should shutdown. This checks out the circuit operation.

A more elaborate test to determine the actual HV value at which HV shutdown will occur can be made as follows:

**CAUTION:** It will normally not be necessary to perform this test unless components in the HV shutdown circuit are replaced or if the operational test described in the previous paragraph was unsuccessful. It should be recognized that significantly elevated HV will be produced during this test and adequate care should be taken to avoid picture tube damage.

2. Adjust the picture and brightness controls to zero. Connect a 40KV HV meter to the HV supply in the set. Temporarily connect (with clip leads) a 1.8Megohm 1/2w 5% resistor between pins 1 and 2 of connector 3R (located near the HV transformer). Observe an increase in HV. Reduce this resistance (using a variable resistor) in small increments while observing the increase in HV until the HV shutdown occurs. **Caution:** To prevent circuit damage do not use less than 470K Ohm. The HV shutdown must be accomplished before the HV reaches 32KV for 9-160-03 and 36KV for 9-160-04. Most sets will shutdown well below these values; however, if no HV shutdown occurs even up to these values the circuit must be repaired.

**CAUTION:** In a receiver where the high voltage shutdown circuit is being activated for any reason, **DO NOT, under any circumstance, disconnect the protective gap device which is used across RX3377.** To do so may create a potential shock hazard and may result in serious damage not only to the M-10 board but to other parts of the receiver.

Courtesy of the Manufacturer

3. In case of shutdown circuit activation, in order to determine if there is a breakdown in the high voltage transformer which is causing the protective gap device to activate the shutdown circuit, the following test can be conducted:

**CAUTION:** Use a line isolation transformer and disconnect all test equipment, including the antenna connections, from the TV set prior to this test because it involves tying together the hot and cold grounds.

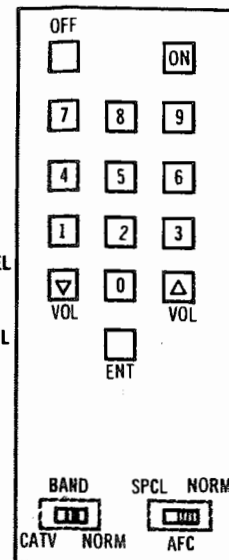
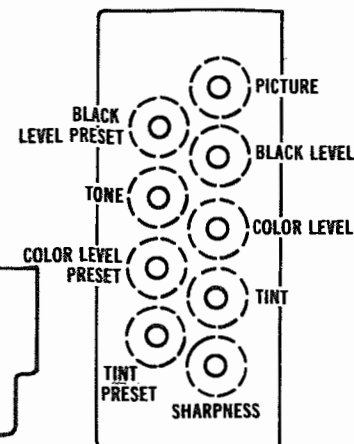
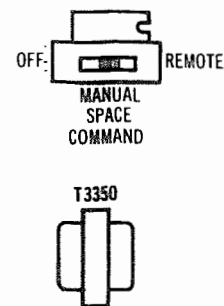
Temporarily connect a jumper wire across RX3377. If the high voltage remains on, most likely the high voltage transformer is breaking down and the board must be replaced. If the shutdown circuit is still activating even with the jumper wire from hot to cold grounds, then the problem is due to either a malfunction in the shutdown circuit or in the high voltage circuit, in which case the high voltage is excessively high and is in turn causing the shutdown circuit to activate. To determine where the fault is do not disconnect the shutdown circuit, as that may cause the high voltage to rise excessively, without first plugging the receiver into a variable AC supply, such as a variac. Adjust the AC supply voltage to zero and after temporarily disconnecting the Zener diode (CRX3355), slowly increase the AC supply variac while monitoring the high voltage with a meter capable of reading at least up to 40KVDC. If HV does not exceed 28KV for 9-160-03 or 32KV for 9-160-04 modules even when the AC supply is at 120VAC, the fault is probably in the HV shutdown circuit and the circuit should be repaired. If the high voltage exceeds the above values by more than two kilovolts, the HV shutdown circuit is functioning as intended and the condition which is making the high voltage excessive should be identified and repaired. Once repairs are made, the HV shutdown circuit must be reconnected and tested per the above outlined functional tests.

**NOTE:** Any board which cannot be repaired to pass the functional tests above or the leakage test described in paragraph 6 of safety checks on the inside front cover of this manual should be returned to Zenith for repair.

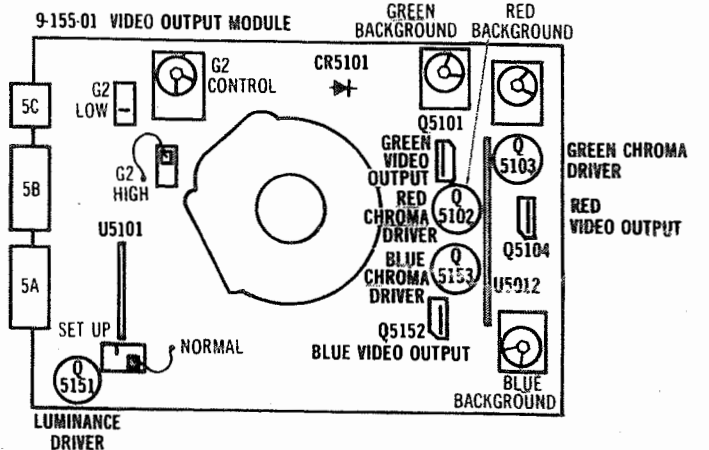
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FOLDER 2

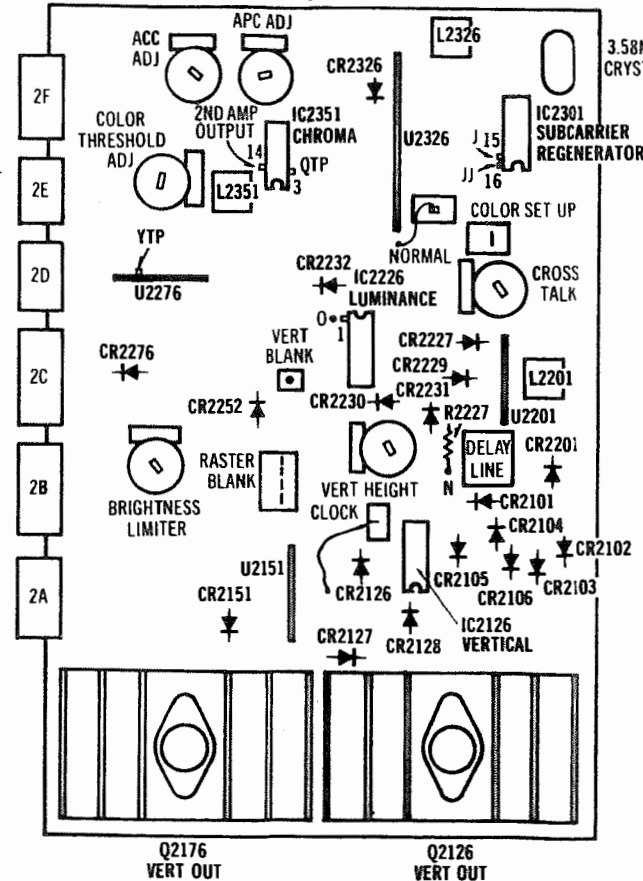




**TOP VIEW**



### 9-152C CHROMA-LUMINANCE MODULE



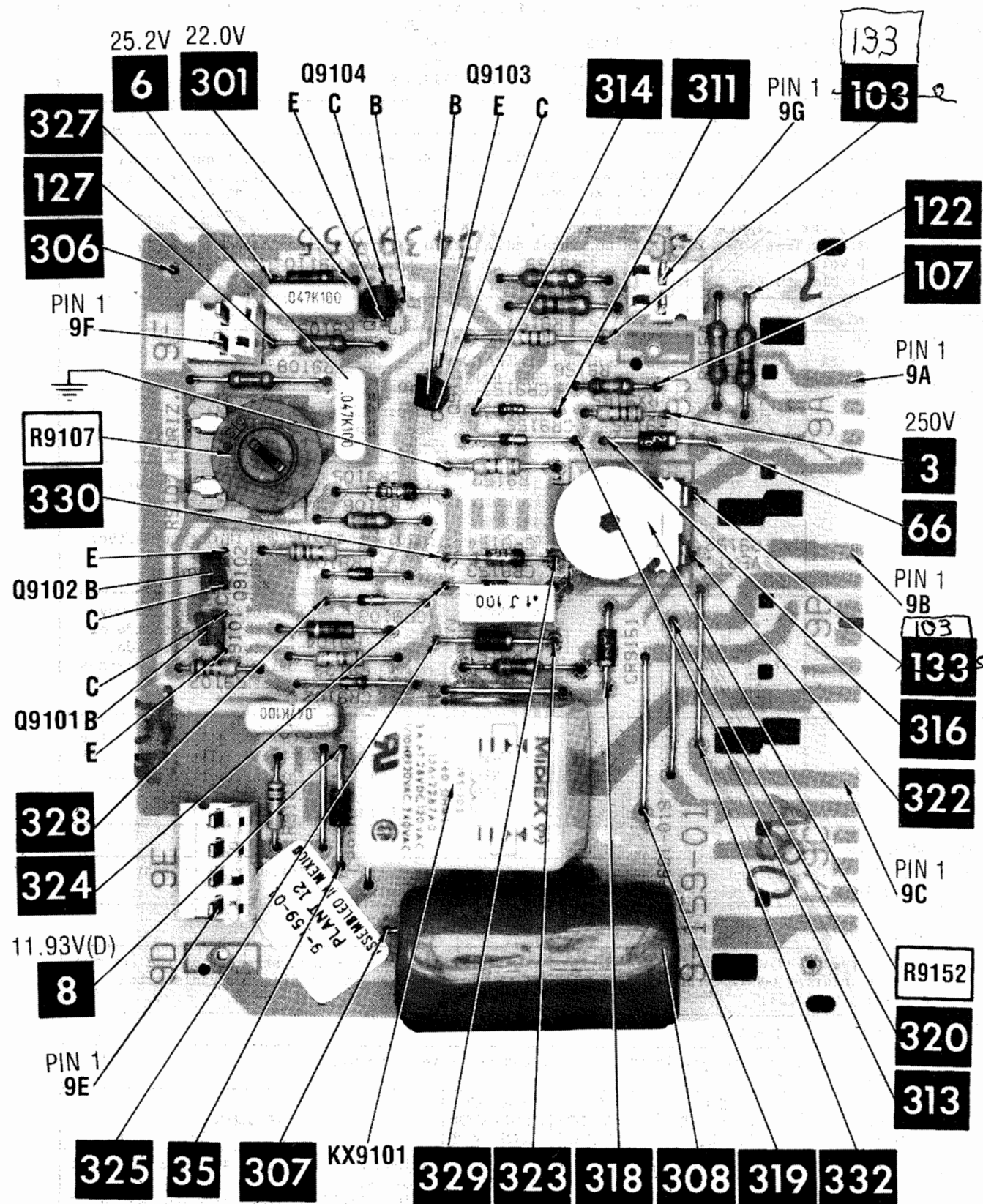
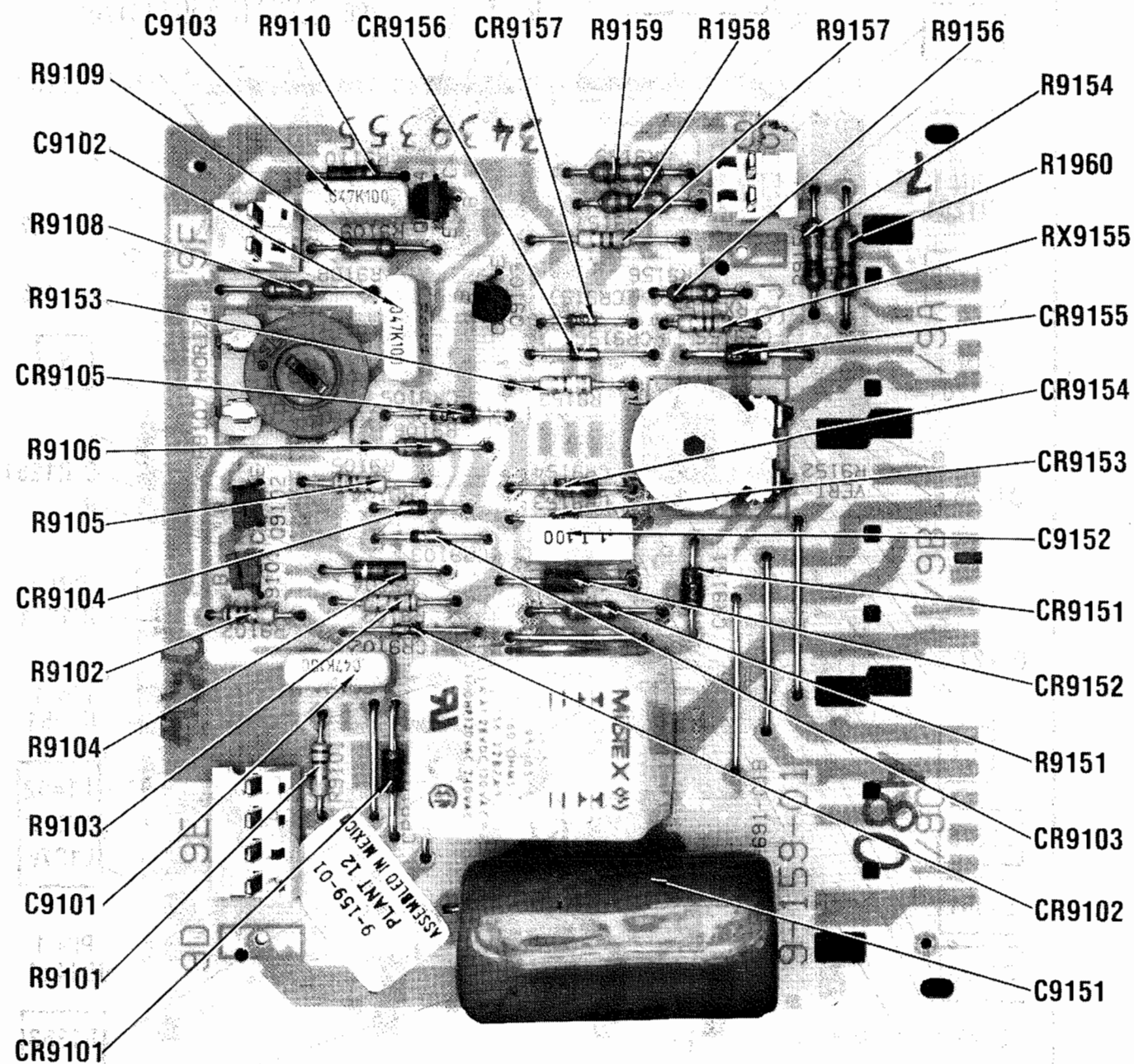
### 9-160-04 POWER SUPPLY & HORIZ SWEEP MODULE

## PLACEMENT CHART









ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2



TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 120VAC. Allow a 20-minute warm-up period for receiver and test equipment.  
Suggested Alignment Tools: GC ELECTRONICS  
L201, L1203, L1204, L1205, L1226, L1228, L1229, L2326.....9296, 9297, 9300  
L1102, (VHF IF Output).....9440  
L1451, L1452.....9293, 9294

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 DC meter to Test Point C1. With no signal adjust Zero Carrier Adjust Control (R1228) for +6.6 volts.  
Connect a +6 volt bias to Test Point (IF AGC).

VIDEO IF ALIGNMENT

DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To Test Point C1.	To Test Point A (mixer input).	44MHz (10MHz Sweep)	41.25MHz	Adjust L1204 for MINIMUM. See Figure 1.
"	"	"	41.25MHz 42.17MHz 44.00MHz 45.75MHz	Adjust L1205 and L1102 (VHF IF Output) for maximum gain and symmetry of response. L1205 and L1102 (VHF IF Output) affect overall response. See Figure 2.
"	"	"	41.25MHz 42.17MHz 44.00MHz 45.75MHz	Adjust Oscillator Coil (L1203) to move the oscillation from the right side of the response curve to the left side. Adjust Limiter Coil (L1229) for maximum gain at 45.75MHz marker. See Figure 3.
"	"	"	41.25MHz 42.17MHz 44.00MHz 45.75MHz	Adjust Oscillator Coil (L1203) to return the oscillation back to its proper position on the right side of the response curve. See Figure 2.

4.5MHz TRAP ALIGNMENT

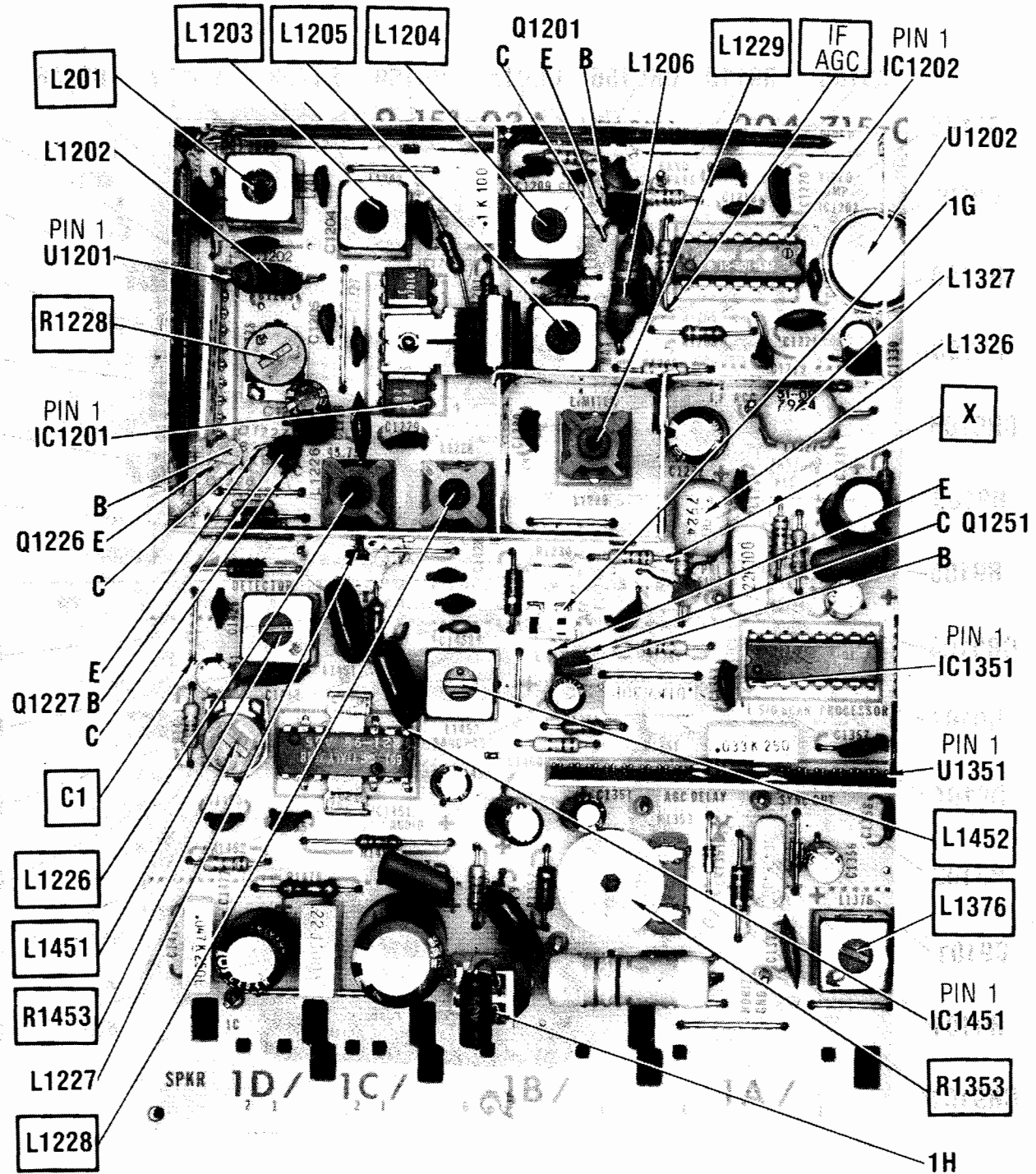
Tune in a strong TV signal and set the contrast at maximum. Adjust the fine tuning until a beat pattern is visible on the screen. Adjust L201 for MINIMUM beat interference.

SOUND IF ALIGNMENT

Tune in a station and adjust L1451 and L1452 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 L1451.

AUTOMATIC FINE TUNING ALIGNMENT

Connect as explained in preliminary instructions unless specified otherwise. Place AFC Switch to Normal position.				
DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To X (AFC Output)	To Test Point A (mixer input).	44.00MHz (10MHz Sweep)	41.25MHz 45.75MHz	Adjust L1226 to place 45.75MHz marker at crossover. Adjust L1228 to place 41.25MHz marker at crossover. See Figure 4.



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FOLDER 2

9-151-03A RF-IF MODULE



# TROUBLESHOOTING CHECK CHART

The following chart lists component failures most likely to produce the indicated symptoms.

## PICTURE or SOUND

NO PIC, NO SOUND, NO RASTER: Fuse,CRX3334, CRX3352,CRX3452,CRX3453,CRX3477 thru CRX3479, CR3451,CR2232,CR3476,CRX3454,12V Reg,Regulator Feedback,32 Volt Current Source.

NO PIC, NO SOUND, HAS RASTER: Tuner,Filter (U1202),Video Amp (IC1202),Sync-Det (IC1201).

NO PIC, NO SOUND, HAS SNOW: Tuner,Sync-Scan Processor (IC1351).

NO PIC, HAS SOUND, NO RASTER: Video Amps,Luminance (IC2226),Luminance Driver,CRT.

NO PIC, HAS SOUND, HAS RASTER: Video Amps, Luminance (IC2226),Luminance Driver,CR2201.

HAS PIC, NO SOUND: Audio (IC1451).  
OVERLOADED PICTURE: Sync-Scan Processor (IC1351).

LOW OR EXCESSIVE BRIGHTNESS: Luminance (IC2226), Luminance Driver,Video Amp.

## SYNC

NO VERT SYNC: Vert (IC2126).  
NO HORIZ SYNC: Pulse Width Mod (ICX3301).  
NO VERT/HORIZ SYNC: Sync (IC1351).

## RASTER

YELLOW (NO BLUE): Chroma (IC2351),Blue Chroma Driver/Video Output,CRT.

CYAN (NO RED): Chroma (IC2351),Red Chroma Driver/Video Output,CRT.

MAGENTA (NO GREEN): Chroma (IC2351),Green Chroma Driver/Video Output,CRT.

## SWEEP

NO RASTER, HAS SOUND: HV Rect (TX2352),CR3306, CRT.

NO RASTER, NO SOUND: Shut Down,Pulse Width Mod (ICX3301),Forward/Reverse Horiz Drivers,Horiz Out,CR3353,CR3355

NO VERT DEFLECTION: Vert (IC2126),CR2103, CR2104,CR2106,Vert Out,CR2127,CR2151.

POOR VERT LIN OR FOLDOVER: Vert Out,CR2103, CR2104,CR2106.

POOR HORIZ LIN OR FOLDOVER: Forward/Reverse Horiz Drivers,Horiz Out.

NARROW PICTURE: Horiz Drivers/Out.  
VERT OFF FREQUENCY: Vert (IC2126).  
HORIZ OFF FREQUENCY: Pulse Width Mod (ICX3301).

## COLOR (B/W operating normally)

NO COLOR: Chroma (IC2351).  
WEAK COLOR: Chroma (IC2351).  
NO COLOR SYNC: Chroma (IC2351),Subcarrier Regenerator (IC2301).

NO GREEN: Chroma (IC2351),Green Chroma Driver/Video Output.

NO BLUE: Chroma (IC2351),Blue Chroma Driver/Video Output.

NO RED: Chroma (IC2351),Red Chroma Driver/Video Output.

INCORRECT HUE (TINT): Chroma (IC2351).

## REMOTE CONTROL RESISTANCE MEASUREMENTS

### MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	PIN 14
IC201	37K	13K	INF	0	122K	109K	96K	110K	111K	95K	137K	137K	137K	INF
IC202	INF	INF	79K	37K	137K	0	0	0	INF	37K	77K	INF	INF	37K
TRANSMITTER														
IC1	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF
RECEIVER														
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q1	15	1M	46K		Q203	0	25K	137K		Q208	0	150K	77K	
Q2	15	1M	43K		Q204	0	25K	137K		Q209	0	INF	37K	
Q3	15	81K	24K		Q205	0	25K	137K		Q210	0	37K	421	
Q201	37K	INF(2)	INF(2)		Q206	0	INF(2)	37K		Q211	0	INF	41K	
Q202	INF	INF	INF		Q207	0	33K	79K		Q212	14K	13K	0	
TRANSMITTER														
Q1	0	4700	INF(2)											

(2) Reading depends upon polarity of meter connections.

## TV ALIGNMENT INSTRUCTIONS (Continued)

### CHROMA BANDPASS ALIGNMENT

Connect as explained in preliminary instructions. Set color control to maximum, tint control to mid-range, and color killer fully counterclockwise. Place Color Alignment Jumper to Color Set-up position.

DETECTOR PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To 2nd Amp Output Test Point.	To Test Point A (mixer input).	44MHz (10MHz Sweep)	3.08MHz 3.58MHz 4.08MHz	Adjust L2351 for maximum gain and symmetry of response. See Figure 5.
			(4.5MHz Trap)	Inability to obtain proper bandpass alignment may be due to misadjustment of the 4.5MHz trap. Adjust L201 for MINIMUM at 4.5MHz.
Return Color Alignment Jumper to Normal position.				

### 3.58MHz TRAP ALIGNMENT

This adjustment is made with the set turned Off. Connect a scope and generator across 3.58MHz Trap (L2201). Set generator for 3.58MHz and adjust L2201 for MINIMUM indication on scope.

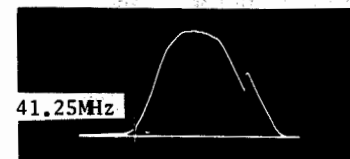


Figure 1.

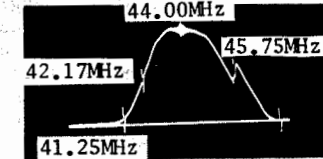


Figure 2.

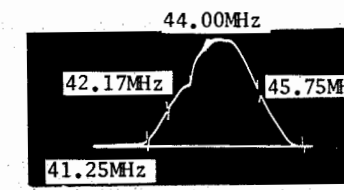


Figure 3.

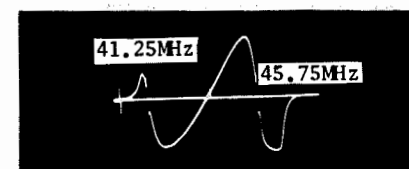


Figure 4.

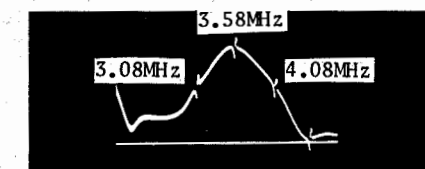


Figure 5.

## REMOTE CONTROL RECEIVER ALIGNMENT

Hold transmitter approximately 10 feet from receiver. While depressing transmitter buttons, adjust Gain Control (R8) for best sensitivity. Trip Point Adjust Control (R224) is factory adjusted.

ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2



## MISCELLANEOUS ADJUSTMENTS

### HORIZONTAL OSCILLATOR (HORIZONTAL & VERTICAL CLOCK) ADJUSTMENT

Tune in a local station and adjust all controls for a normal picture. Adjust Horiz. Osc. Coil (L1376) to a point where it is virtually impossible to lose horizontal or vertical sync while switching from channel to channel.

### ZOOM ADJUSTMENTS

Connect a color bar generator to the antenna terminals and tune in a crosshatch pattern.

Adjust Vertical Width Control (R9152) for approximately a one-half inch overscan at top and bottom of the picture.

Adjust Horizontal Width Control (R9107) for approximately a one-half inch overscan at sides of picture.

### ZERO CARRIER ADJUSTMENT

Tune to an unused channel and disconnect antenna. Connect a DC voltmeter to C1, low side to ground. Adjust Zero Carrier Adjust Control (R1228) for +6.6 volts.

### HIGH VOLTAGE CHECK

Connect high voltage meter to picture-tube anode. High voltage should read 30KV at MINIMUM brightness and 120 volts AC line.

### AGC ADJUSTMENT

To adjust AGC Delay Control (R1353), tune in the weakest station available without snow in the picture. Turn AGC Delay Control to the right until snow appears in the picture, then back until snow just disappears. Check this setting against other weak stations in the area.

### CROSS TALK ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Set AFC Switch to On position. Set the Picture Control to MINIMUM and the Color Level Control to center position. Adjust the Black Level Control until the background changes from black to slightly gray. Adjust the Tint Control to produce a magenta bar. Adjust Cross Talk Control (R2304) for the most uniform magenta color across the bar.

### APC ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Set the Tint Control to center position. Place Color Alignment Jumper to Color Set-up position. Adjust APC Adj. Control (R2351) for MINIMUM movement of the vertical color bars. Return Color Alignment Jumper to Normal position.

### TINT RANGE ADJUSTMENT

Tune in a local station and adjust for a normal color picture. Set the Tint Control to center position. Adjust Tint Center Coil (L2326) for normal skin tones.

### ACC ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Place Color Alignment Jumper to Color Set-up position. Connect a DC meter to Test Point Q, low side to ground. Connect a jumper from Test Point J to Test Point JJ and observe meter reading. Remove jumper from Test Point J to Test Point JJ. Adjust ACC Adj. Control (R2376) for identical reading. Return Color Alignment Jumper to Normal position.

### COLOR SENTRY PRESET ADJUSTMENT

With the Color Sentry Switch in the Off position, tune in a local station. Adjust all controls for a normal color picture. Set the Color Sentry Switch to On position. Adjust Preset Color Level Control (R7102) for normal color saturation. Adjust Preset Tint Control (R7104) for normal skin tones. Adjust Preset Black Level (R7107) for proper brightness.

### COLOR TEMPERATURE ADJUSTMENT

Perform G2 (R5104) Control Adjustment before proceeding to Color Temperature Adjustment. See "Purity Adjustment" for G2 Control Adjustment procedure.

Place the Red (R5110), Green (R5108), and Blue (R5155) Background Controls to MINIMUM. Advance the Black Level Control to obtain a dim raster. The color of the dim raster will depend on which gun has the highest cut-off point. Advance the Background Controls of the two missing colors to produce a dim, white raster.

NOTE: One Background Control should always be in the full counterclockwise position.

### COLOR THRESHOLD ADJUSTMENT

Set VHF tuner to an unused channel and Color Level Control to mid-range. Rotate Color Threshold Control (R2381) clockwise, until color snow appears. Then turn counterclockwise until color snow just disappears.

### BRIGHTNESS LIMITER ADJUSTMENT

Tune in a picture and adjust Picture and Black Level Controls (R7106) for a normal picture. Adjust Brightness Limiter Control (R2278) for a point just before the picture starts to bloom.

### VOLUME (REMOTE-PRESET) ADJUSTMENT

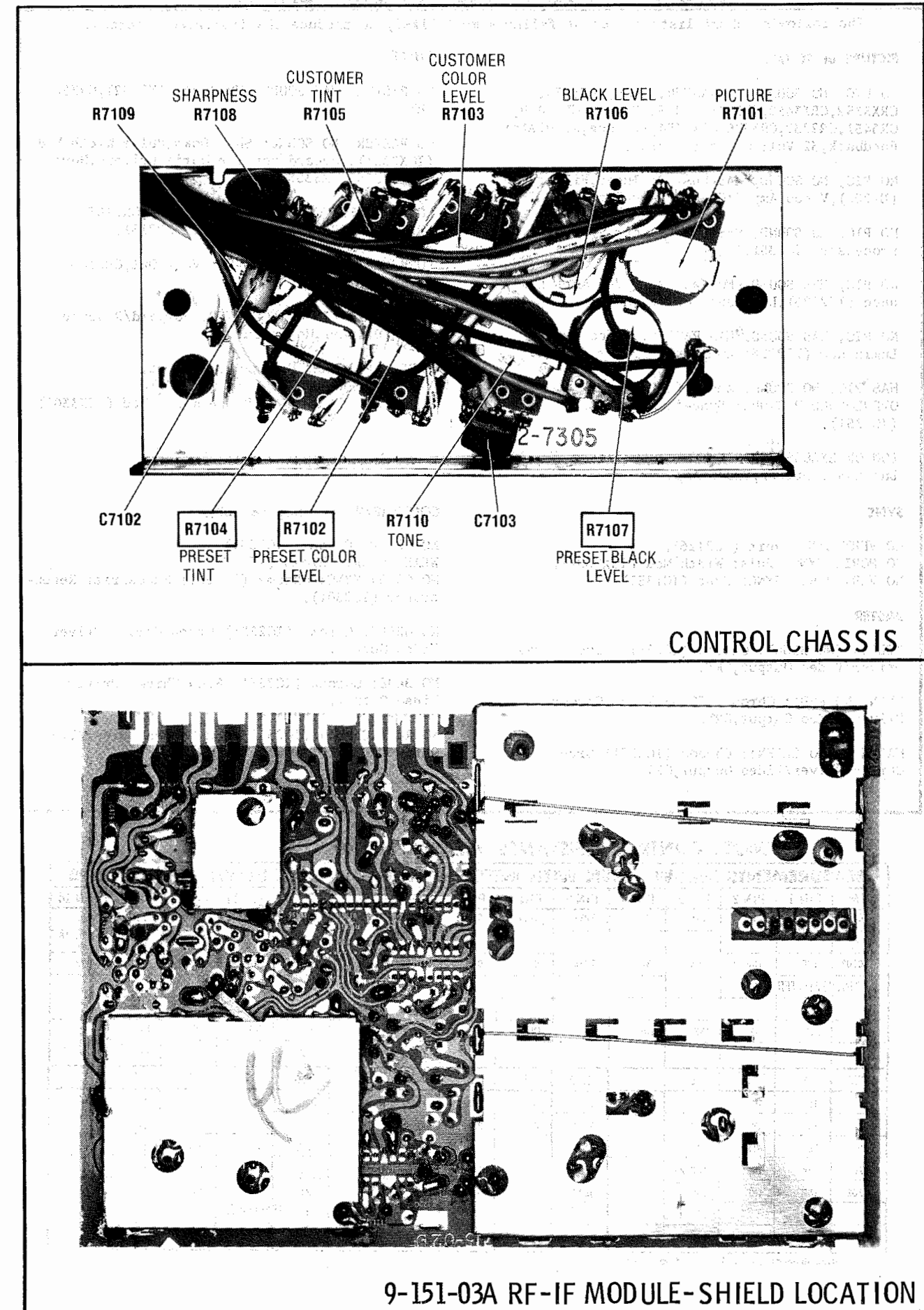
Tune in a picture. While depressing Volume Up Button, adjust Volume (Preset) Control (R1453) for desired volume.

### 12 VOLT B+ ADJUST

B+ Adjust Control (RX3312) is factory adjusted and sealed.

### WIDTH ADJUSTMENT

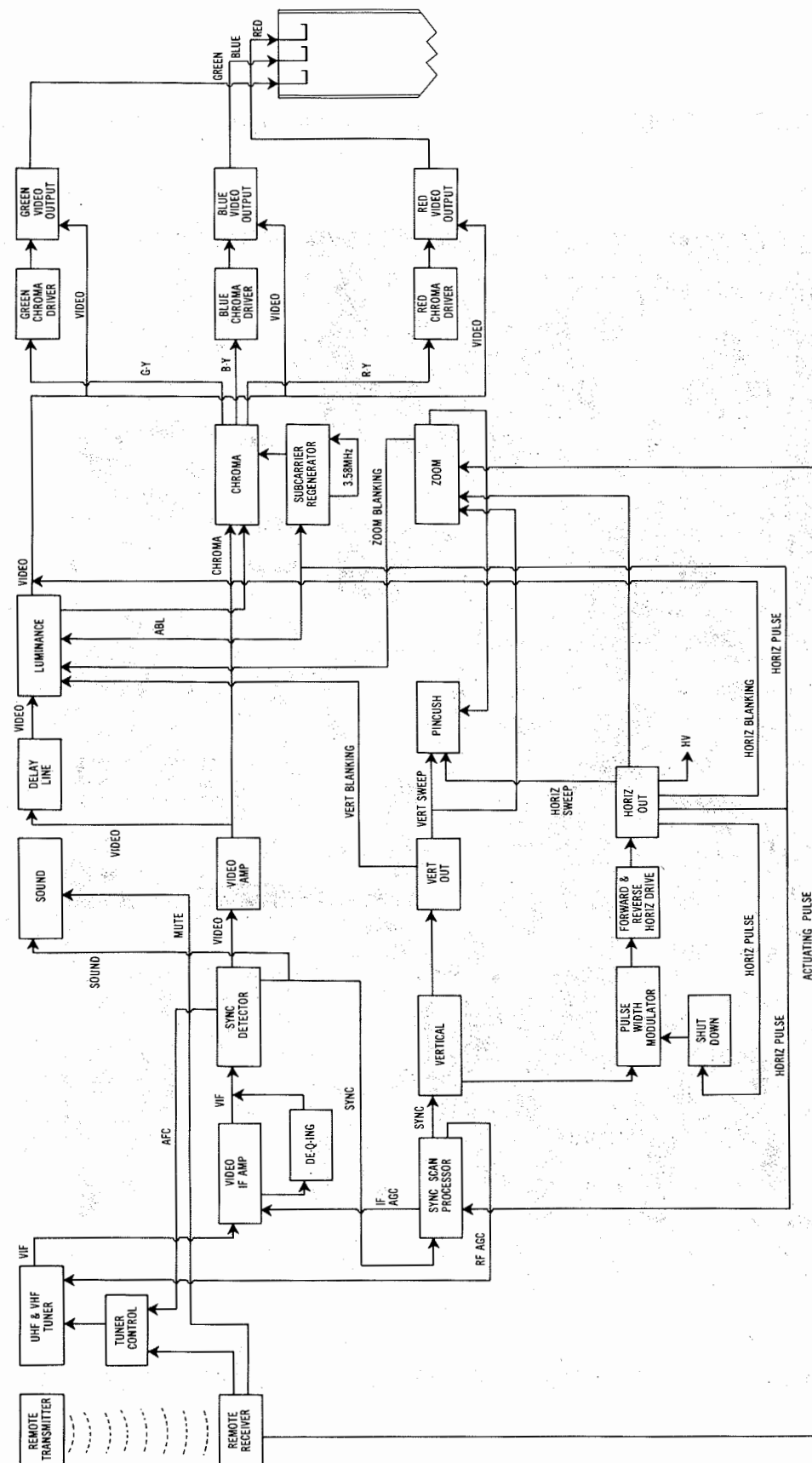
Adjust Width Coil (LX3353) for proper picture width.



ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2





## MISCELLANEOUS ADJUSTMENTS (Continued)

### PURITY ADJUSTMENT

Connect a crosshatch generator to the antenna terminals and tune in a dot pattern. If the picture tube appears to be magnetized use a degaussing coil to demagnetize the picture tube and mounting brackets. If necessary, perform center convergence.

Before proceeding with the Purity Adjustment, the G2 Control (R5104) must be adjusted. Set the Color Level, Black Level, and Picture Controls to MINIMUM. Set the Red (R5110), Green (R5108), and Blue (R5155) Background Controls to MINIMUM. Place the Set-up Jumper to the Set-up position. Advance the G2 Control until a dim raster appears. If the screen remains black with the G2 Control at maximum, move the G2 Range Plug to the High position and adjust the G2 Control for a dim raster. Return the Set-up Jumper to Normal position and leave the G2 Range Plug on High position. Advance the Green Background, Black Level, and Picture Controls to produce a green screen. Move deflection yoke back to produce green stripe. Adjust the Purity tabs to center the green stripe. Turn Green Background Control to MINIMUM. Advance the Red Background Control to produce a red stripe. Slide the deflection yoke forward until a uniform red screen is obtained. If necessary, readjust the Purity tabs to obtain a pure red

screen. Check the purity of all three colors by advancing each Background Control one at a time.

### CONVERGENCE ADJUSTMENT

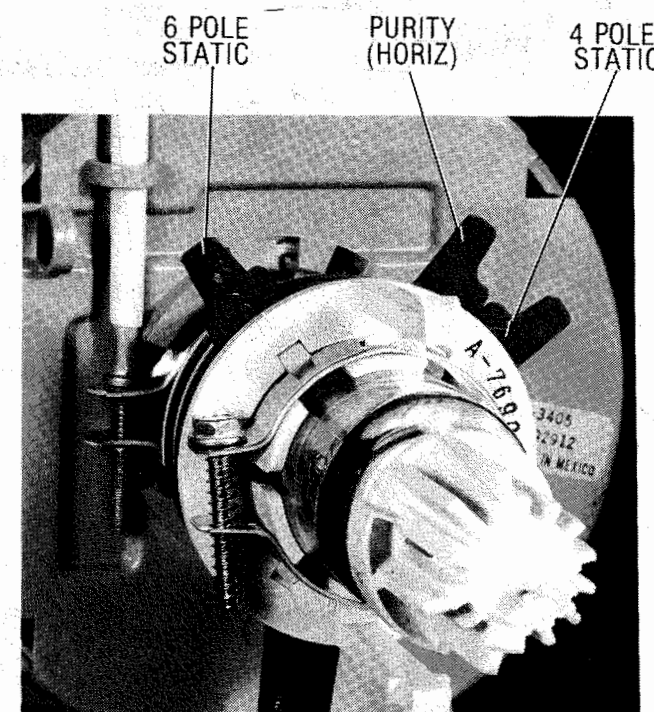
Connect a crosshatch generator to the antenna terminals and tune in a crosshatch pattern. Turn the tabs of the Four Pole Static Magnet to converge the Red and Blue Horizontal Lines. Rotate the tabs of the Four Pole Static Magnet around the neck of the picture tube to converge the Red and Blue Vertical Lines.

Turn the tabs of the Six Pole Static Magnet to converge the Red/Blue and Green Horizontal Lines.

Rotate the tabs of the Six Pole Static Magnet around the neck of the picture tube to converge the Red/Blue and Green Vertical Lines.

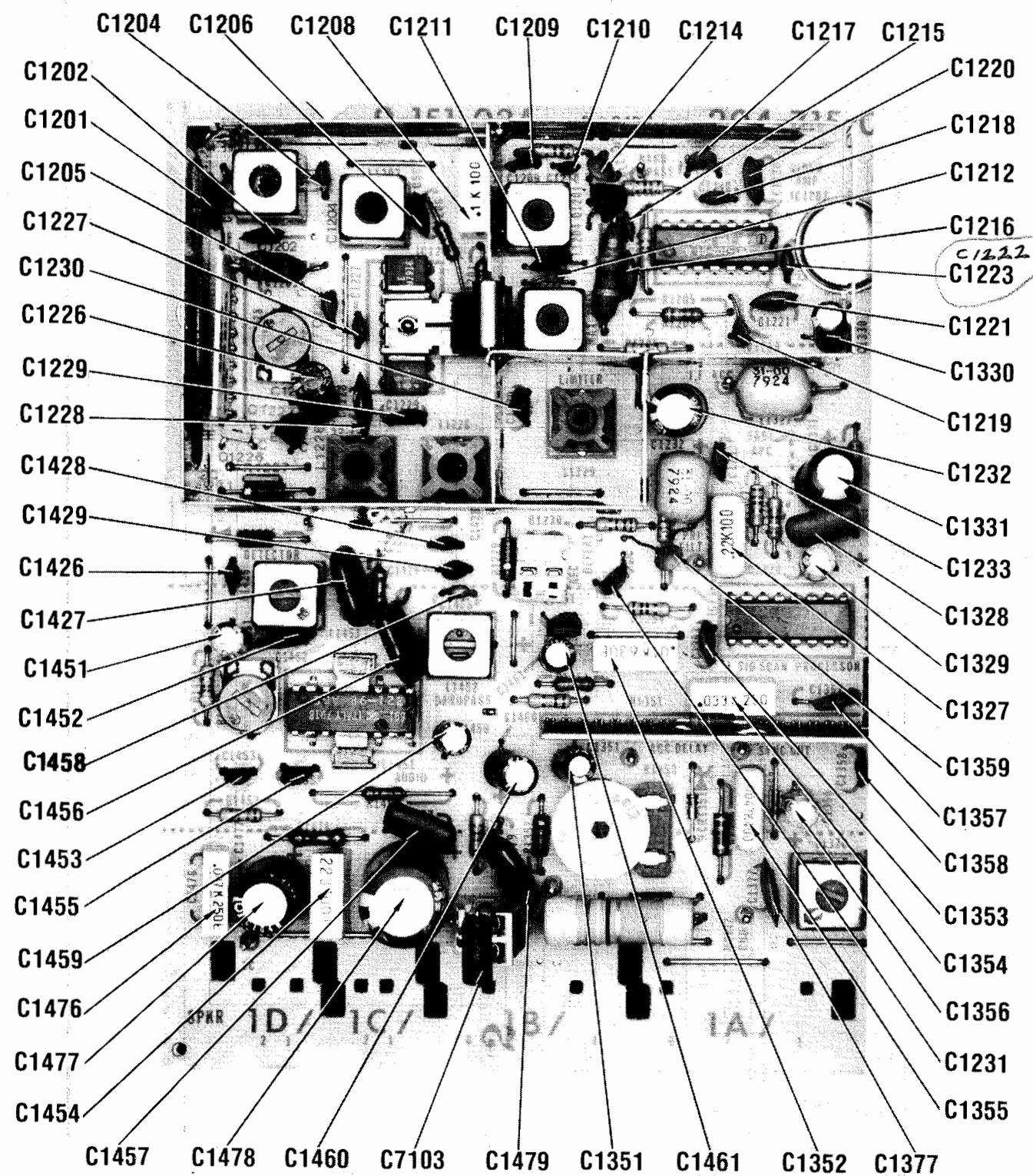
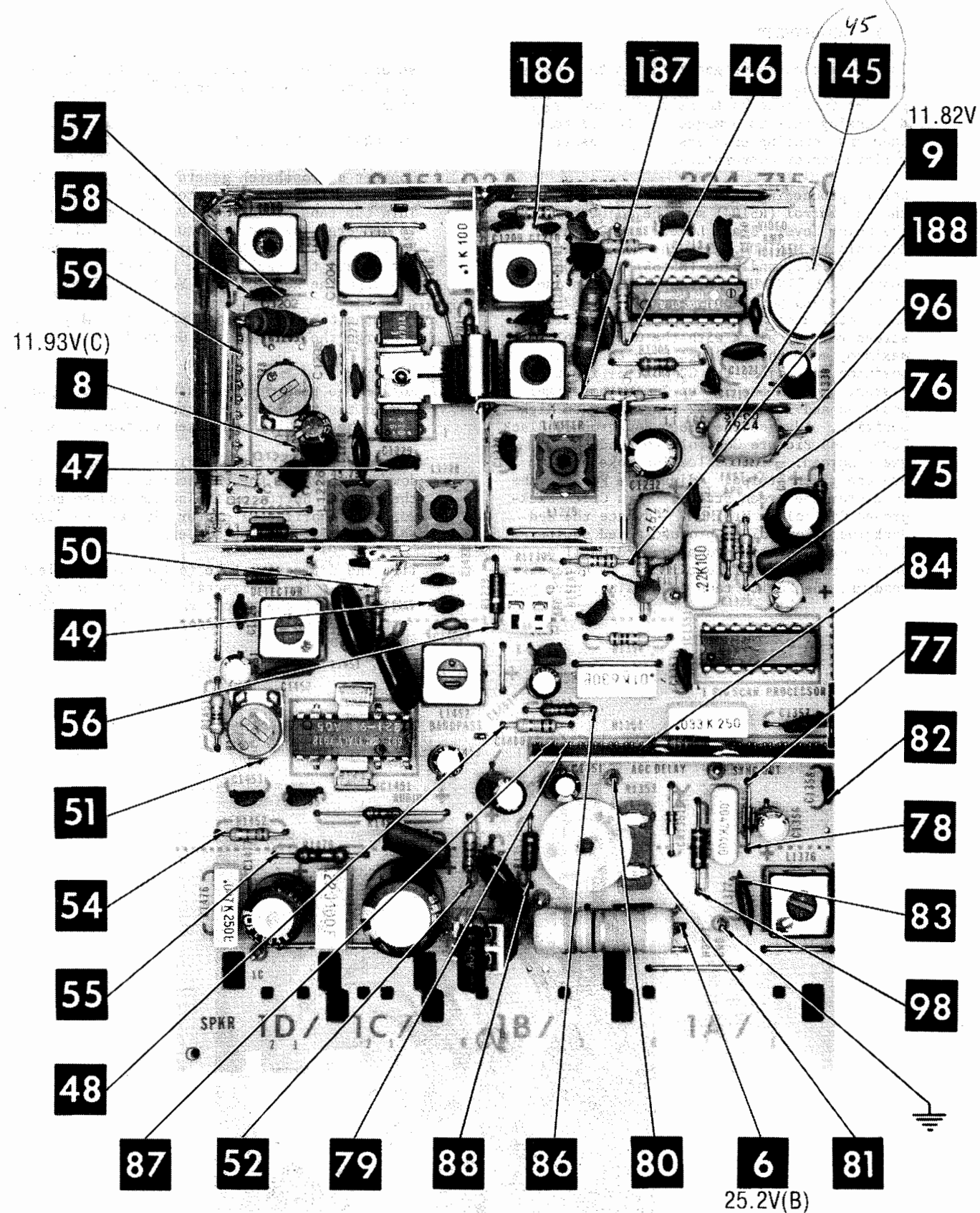
If necessary, tilt the deflection yoke up or down to converge the vertical center line at the top and bottom of the screen and to converge the horizontal center line at the right and left sides of the screen.

Tilt the deflection yoke to the right or left to converge the horizontal lines at the top and bottom of the screen and to converge the vertical lines at the right and left sides of the screen.



ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9





ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

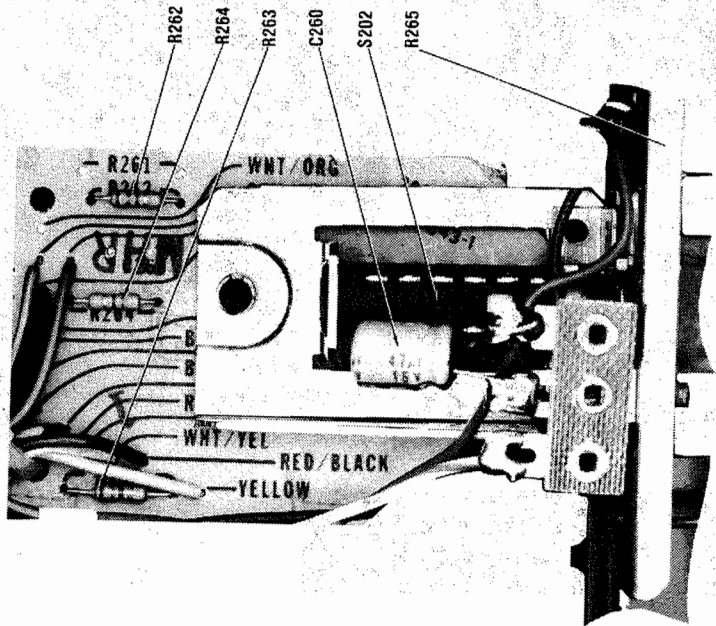
FOLDER 2



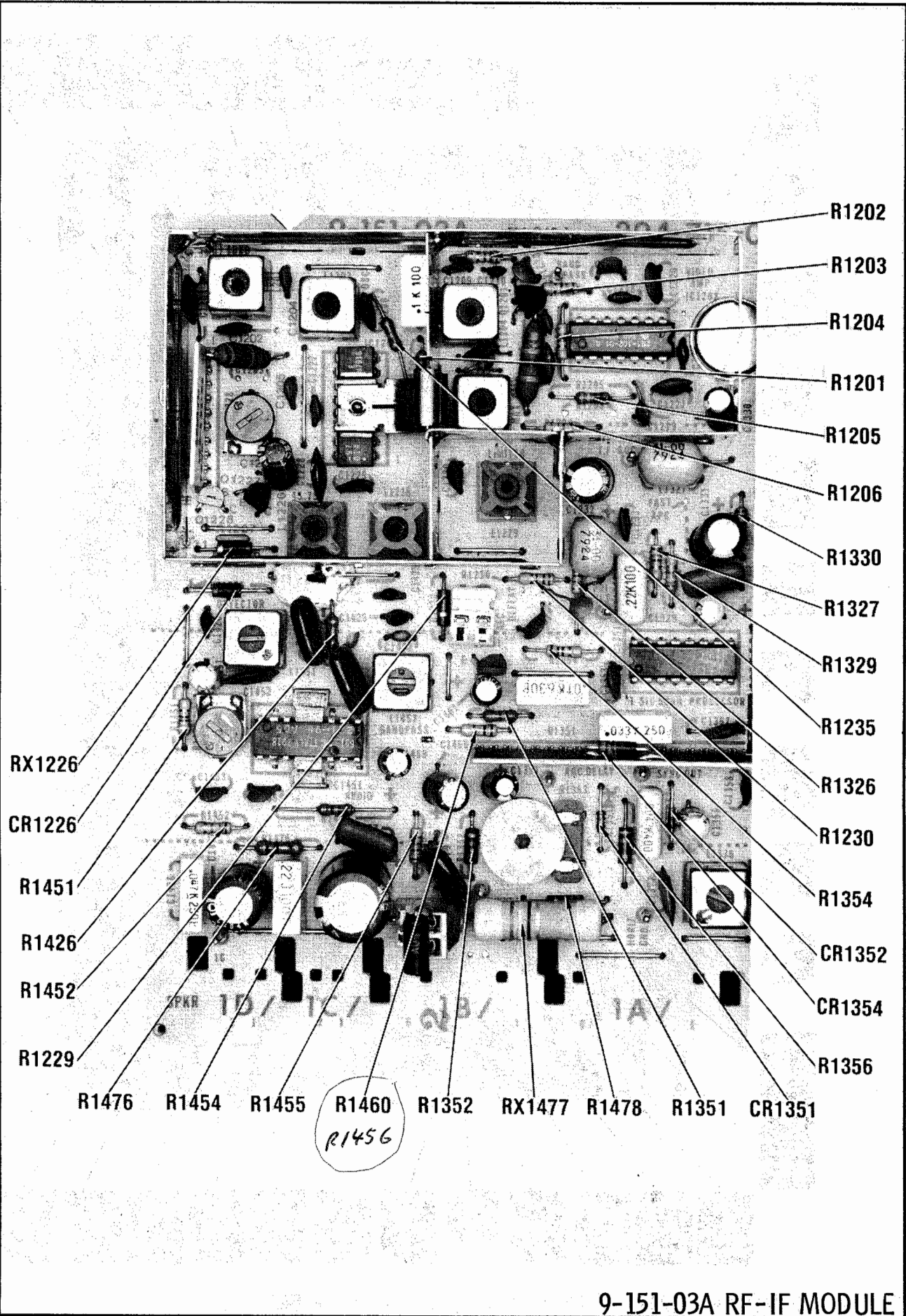
RESISTANCE MEASUREMENTS

MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS														
ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	PIN 14
VX201	INF	NC	INF	NC	NC	NC	FIL	FIL	354K	60K	6M	60K	60K	
IC1201	1265	1265	0	6080	28K	707	707	172	INF	3480	1651	5870	0	3470
													PIN 15 7580	PIN 16 7580
IC1202	8020	6970	0	0	2790	INF	174	174	INF	174	0	503	7000	8040
IC1351	INF	220K	7230	14K	0	11K	10K	1199	174	154K	INF	6100	1992	3530
													PIN 15 INF	PIN 16 11K
IC1451	16K	16K	16K	5060	5060	13K	INF	INF	INF	432	4240	INF		
IC2126	172	220K	INF	2280	7600	1095	9720	0	8090	67K	2790	329K	7990	0
IC2226	5140	7440	8070	6700	0	7260	2.2M	8570	1536	1M	2650	82K	INF	172
													PIN 15 100K	PIN 16 2700
IC2301	2640	333	333	33K	0	6120	172	664	172	172	35K	35K	8800	8800
													PIN 15 13K	PIN 16 13K
IC2351	5830	13K	1485	5790	0	1451	INF	INF	116K	138K	149K	172	7340	174
													PIN 15 53K	PIN 16 13K
ICX3301	843	0	2700	13K	172	6240	4820	97K						
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q1201	1500	INF(2)	855		Q3338	171	1154	2680		Q5151	INF(2)	3820	200	
Q1226	470	850	172		Q3351	292	620	5870		Q5152	INF(2)	200K	76K	
Q1227	850	3580	100		Q3451	0	68	1519		Q5153	200K	180K	560	
Q1251	0	103K	16K		Q3452	171	1217	8000(1)		ZOOM				
Q2126	0	1000	10K(1)		Q3453	2370	8200	7270		Q9101	0	100K	12K	
Q2176	24K(1)	10K(1)	10K(1)		Q5101	INF(2)	200K	66K		Q9102	0	53K(2)	100K	
Q3301	0	890	401		Q5102	200K	180K	560		Q9103	INF(2)	12K	497	
Q3303	0	2200	INF(2)		Q5103	20K	120K	560		Q9104	2600	16K	497	
QX3326△	0	1.5	70K(1)		Q5104	INF(2)	200K	78K						

(1) This reading will vary depending upon the condition of the electrolytic in the circuit.  
(2) Reading depends upon polarity of meter connections.  
△ Measured to AC ground.



COLOR SENTRY BOARD

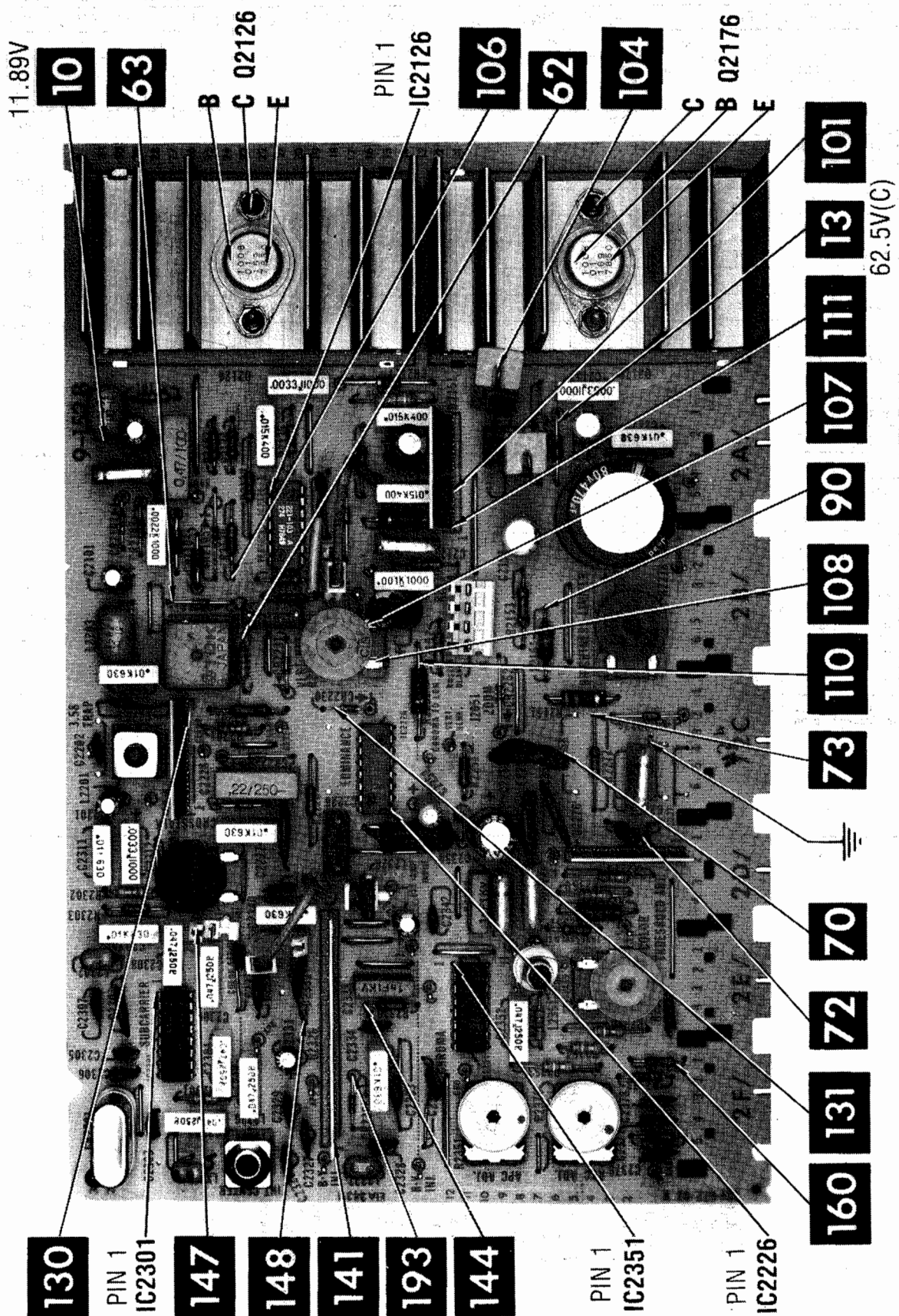
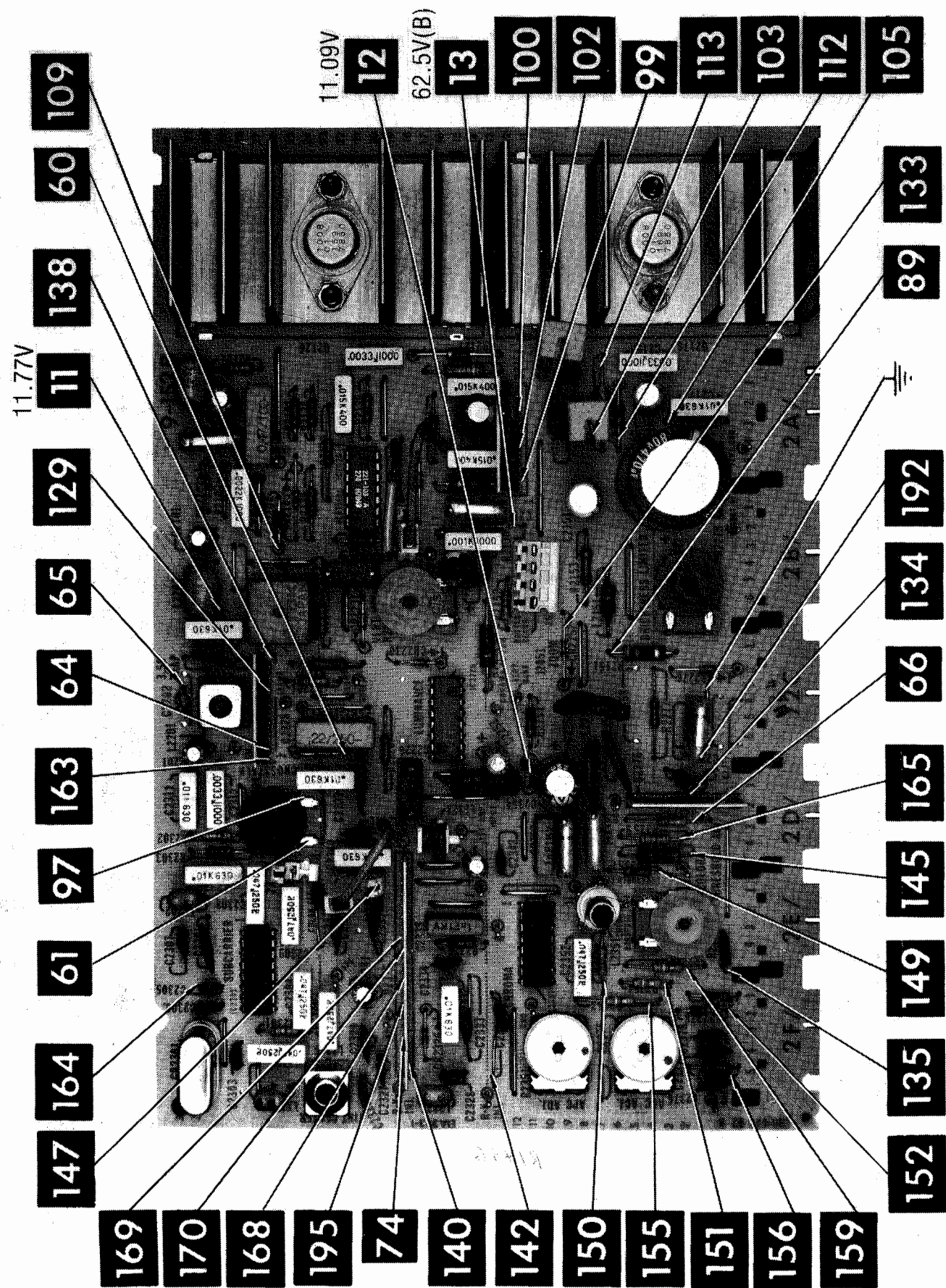


ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2

9-151-03A RF-IF MODULE



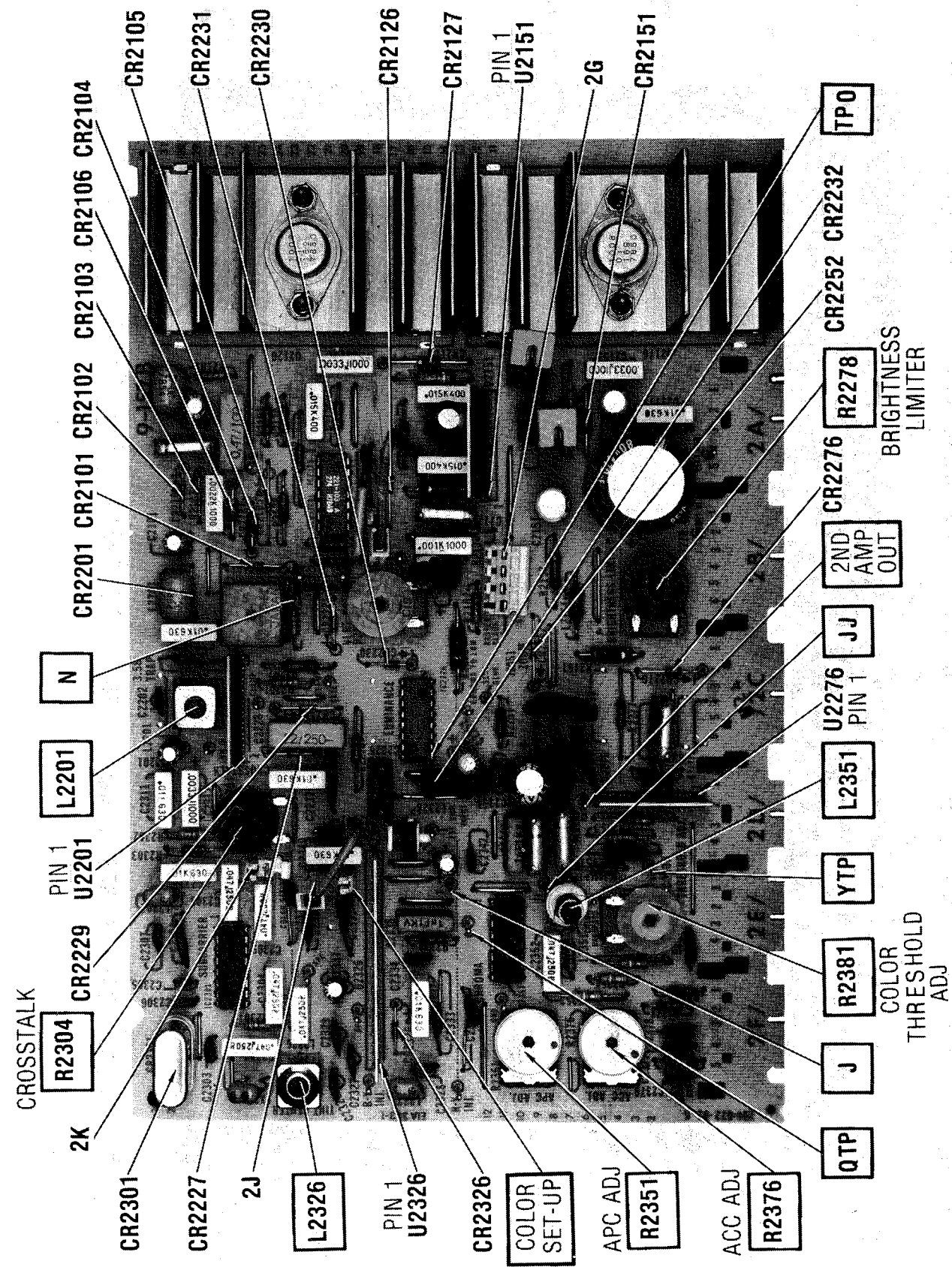




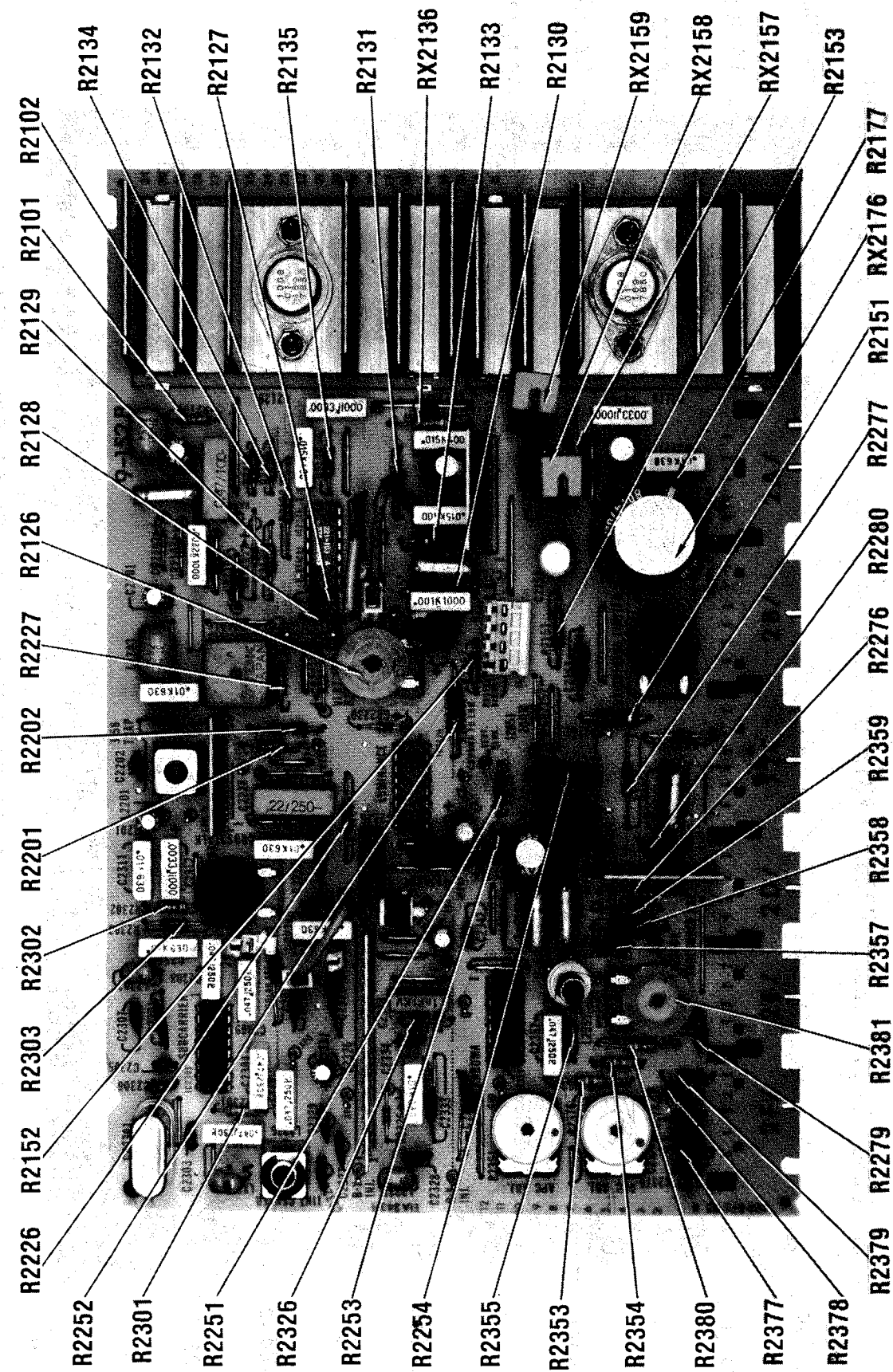




9-152C CHROMA LUMINANCE MODULE

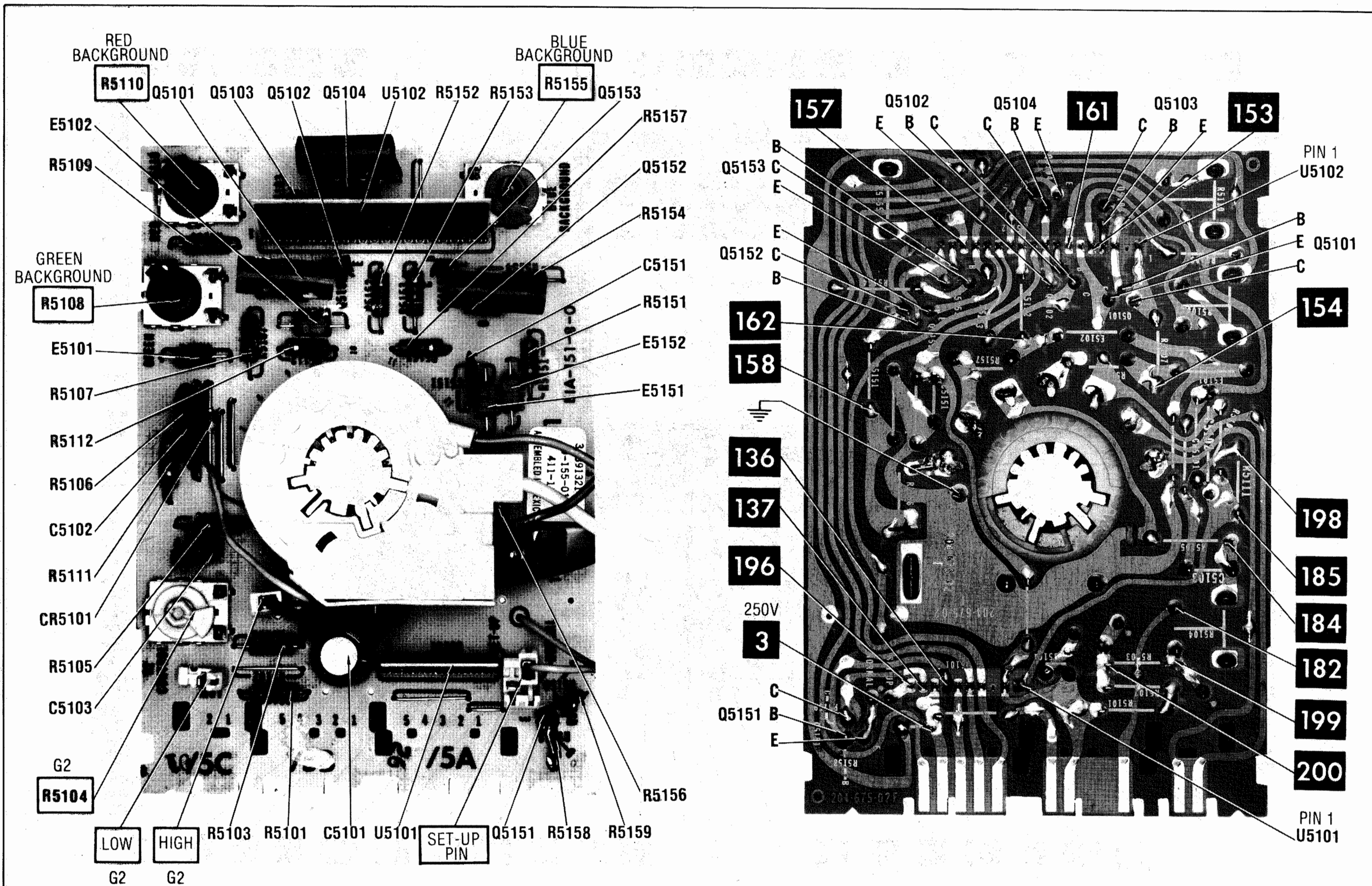


9-152C CHROMA LUMINANCE MODULE



ZENITH MODELS SL2513W9, 23E9, 25M9, 27BE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 83P9, 85E9, 97P9, SL4529P9





9-155-01 VIDEO OUTPUT MODULE

A Howard W. Sams CIRCUITRACE® Photo 9-155-01 VIDEO OUTPUT MODULE

ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2

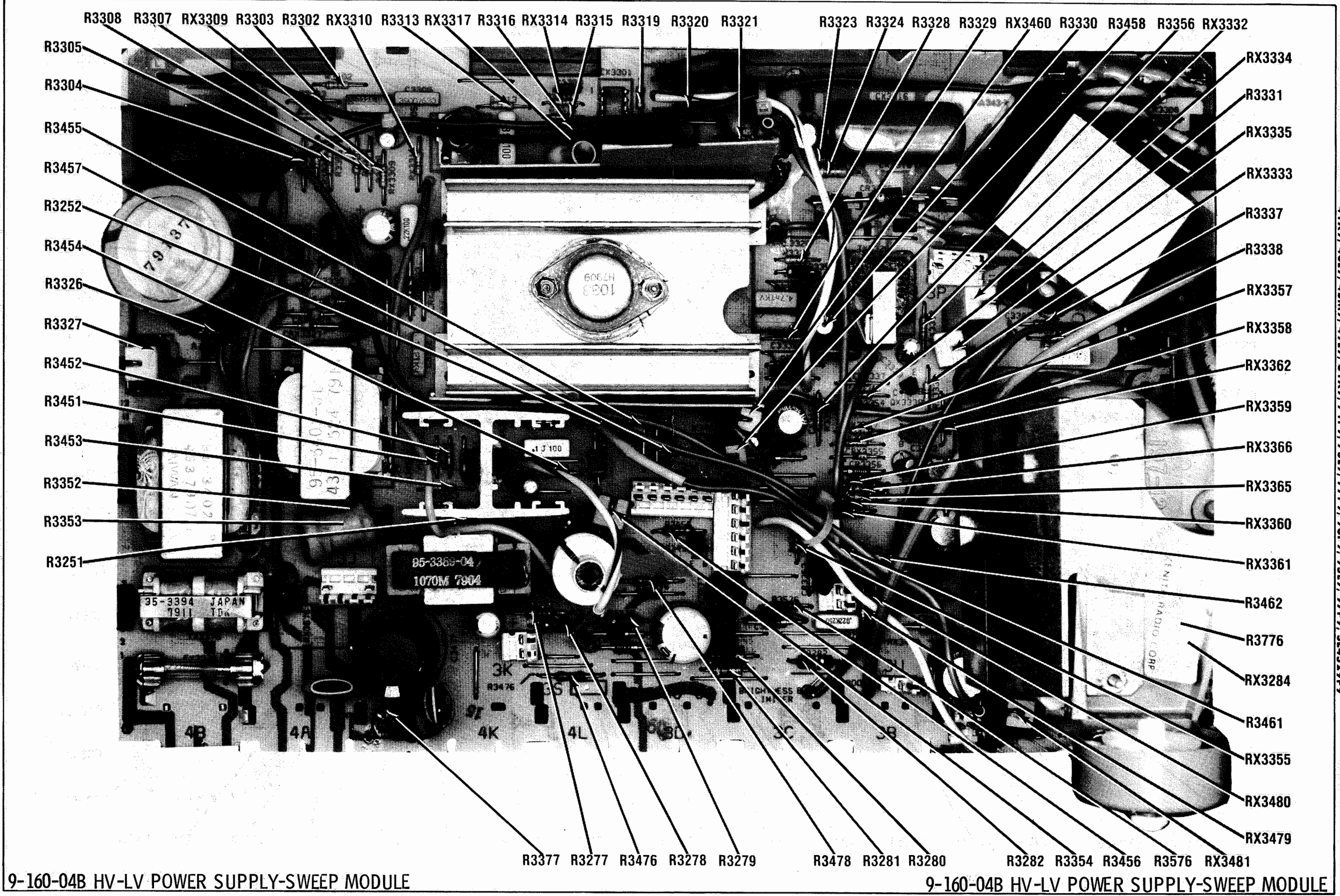








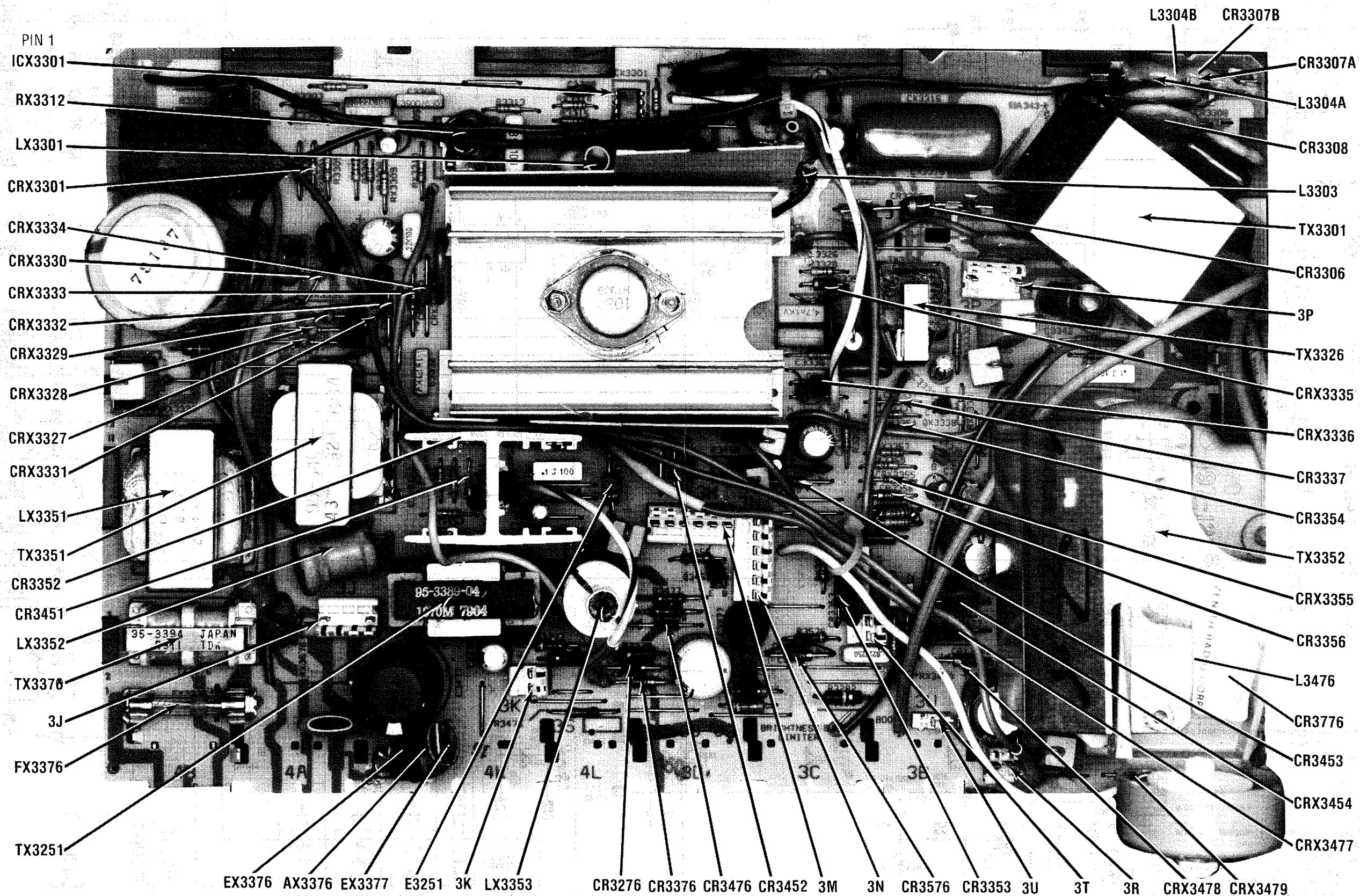




ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2





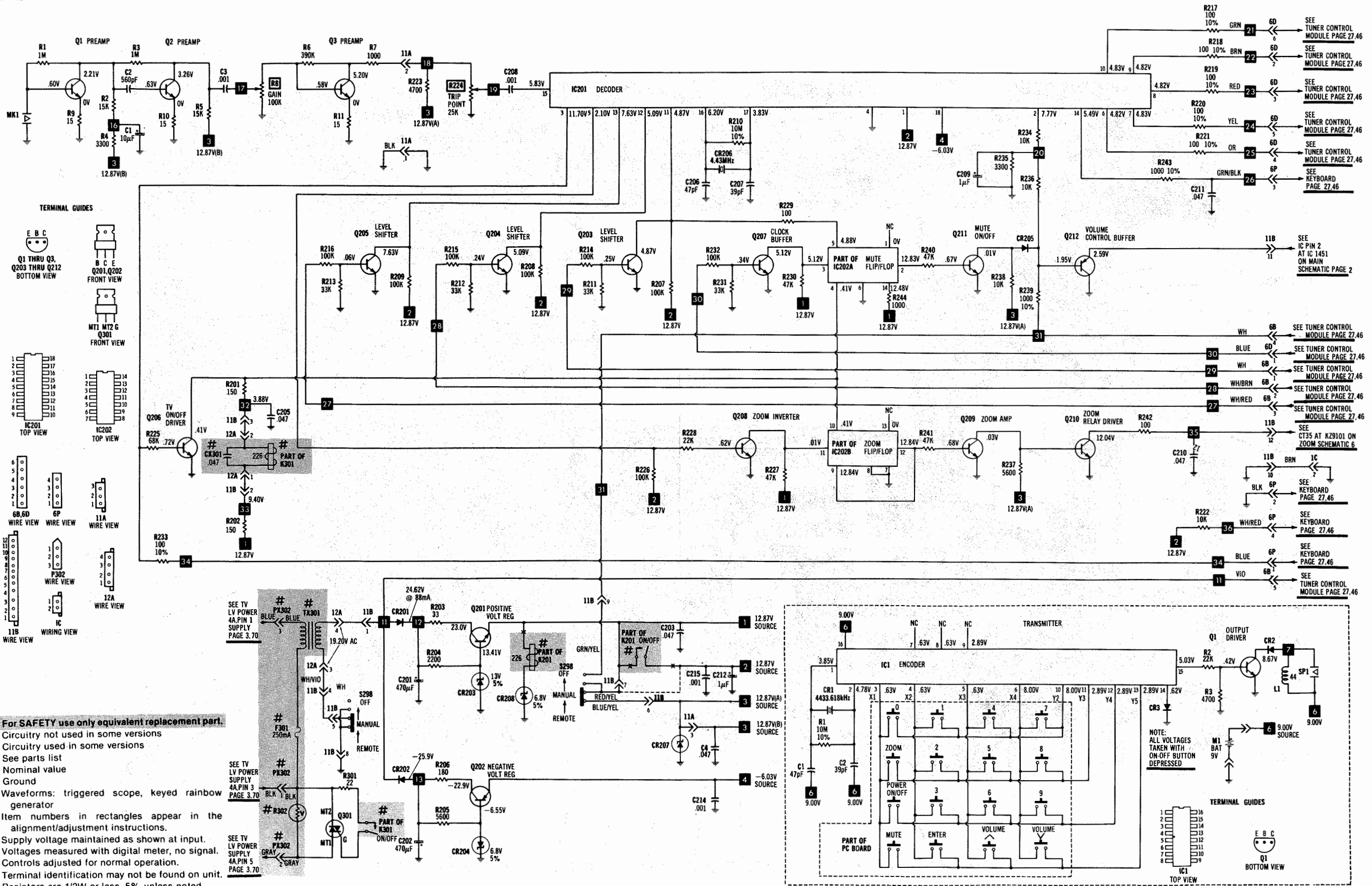
ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2

9-160-04B HV-LV POWER SUPPLY-SWEEP MODULE

9-160-04B HV-LV POWER SUPPLY-SWEEP MODULE





# For SAFETY use only equivalent replacement part.

— Circuitry not used in some versions

- - - Circuitry used in some versions

⊖ See parts list

⊗ Nominal value

⊕ Ground

Waveforms: triggered scope, keyed rainbow generator

Item numbers in rectangles appear in the alignment/adjustment instructions.

Supply voltage 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.

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

Value in ( ) used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH CIRCUITRACE

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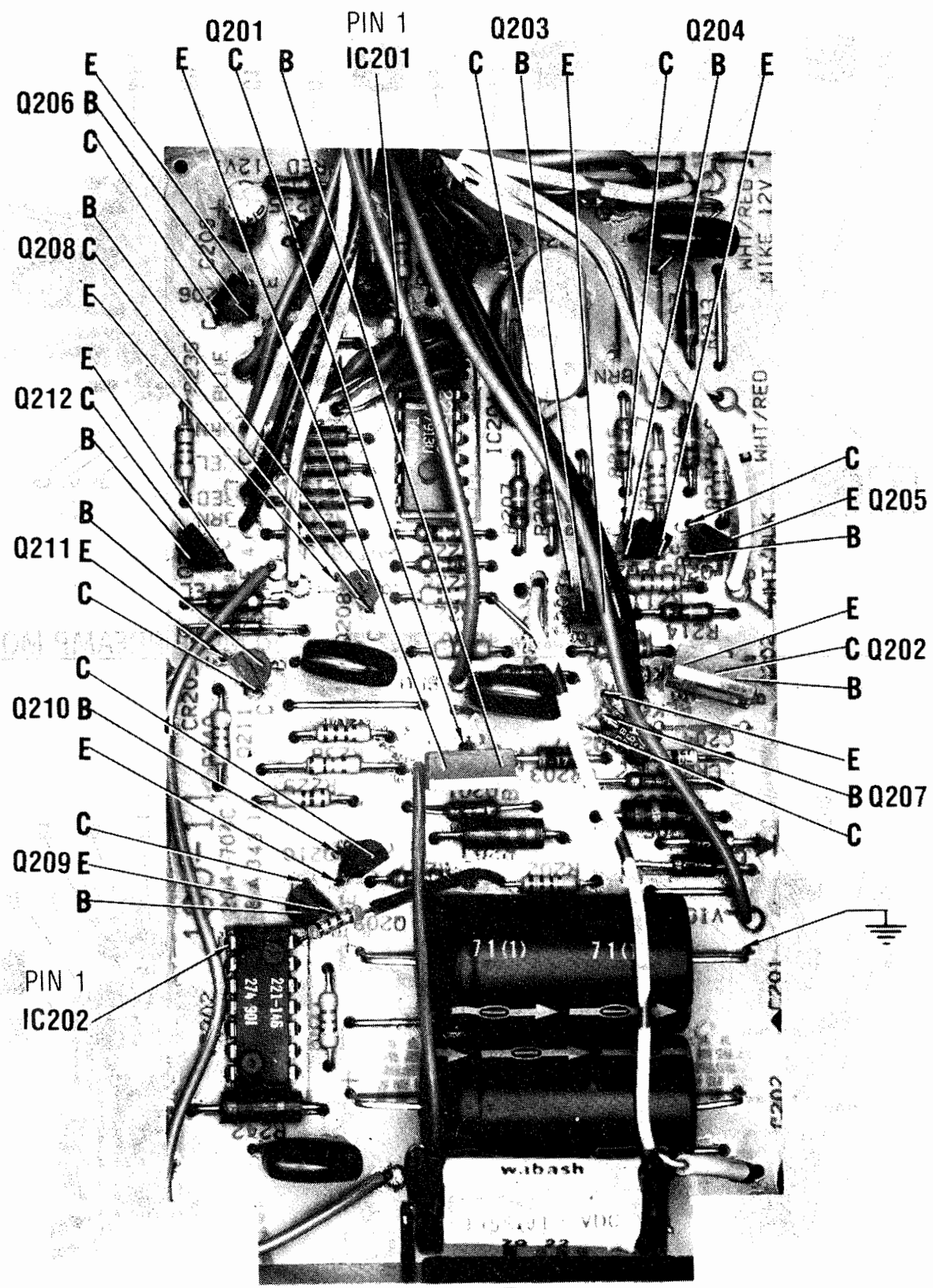
REMOTE

REMOTE

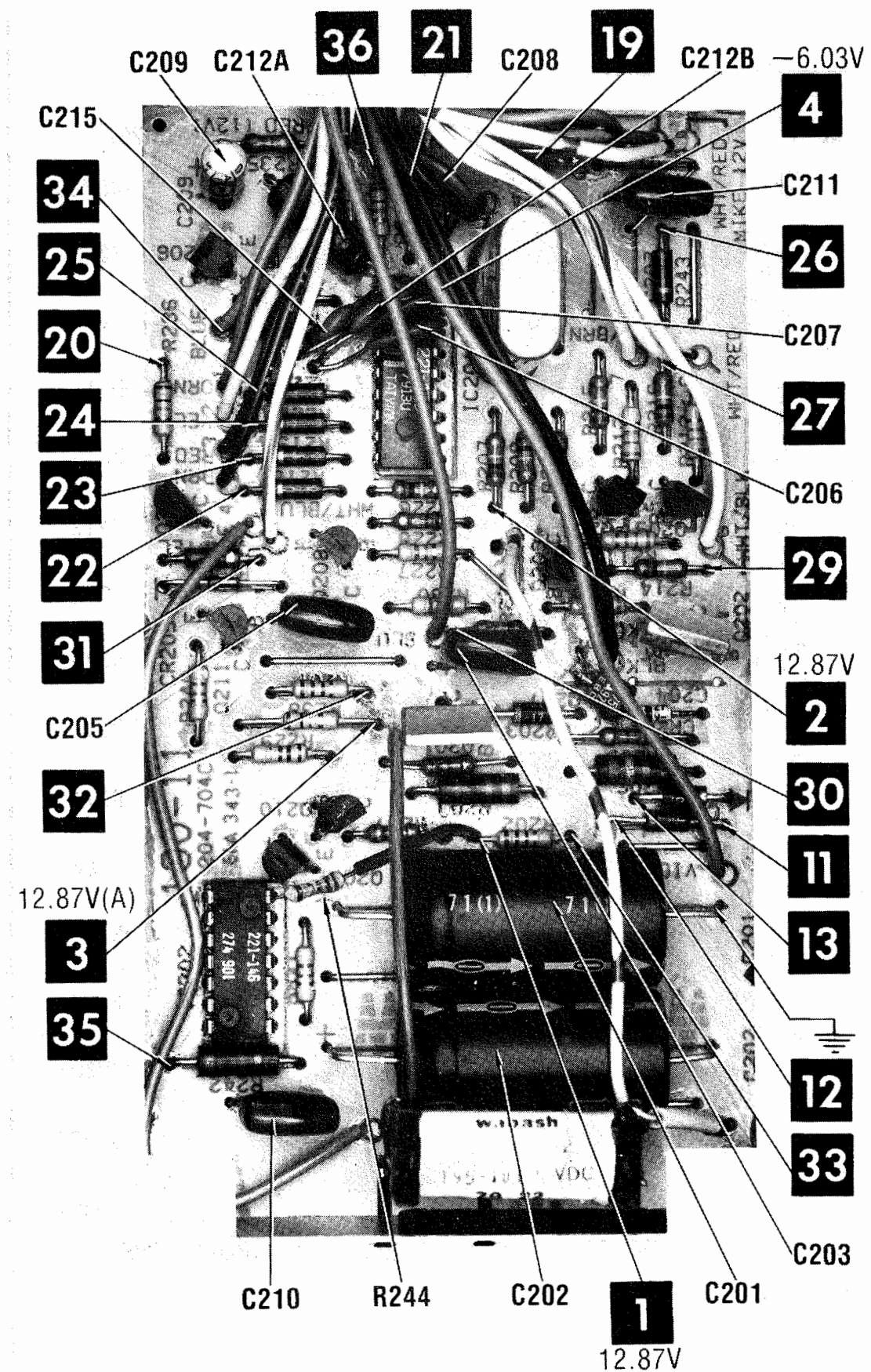
ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2





130-11A REMOTE RECEIVER MODULE



130-11A REMOTE RECEIVER MODULE

A Howard W. Sams CIRCUITRACE® Photo

ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2





## REMOTE TRANSMITTER BOARD

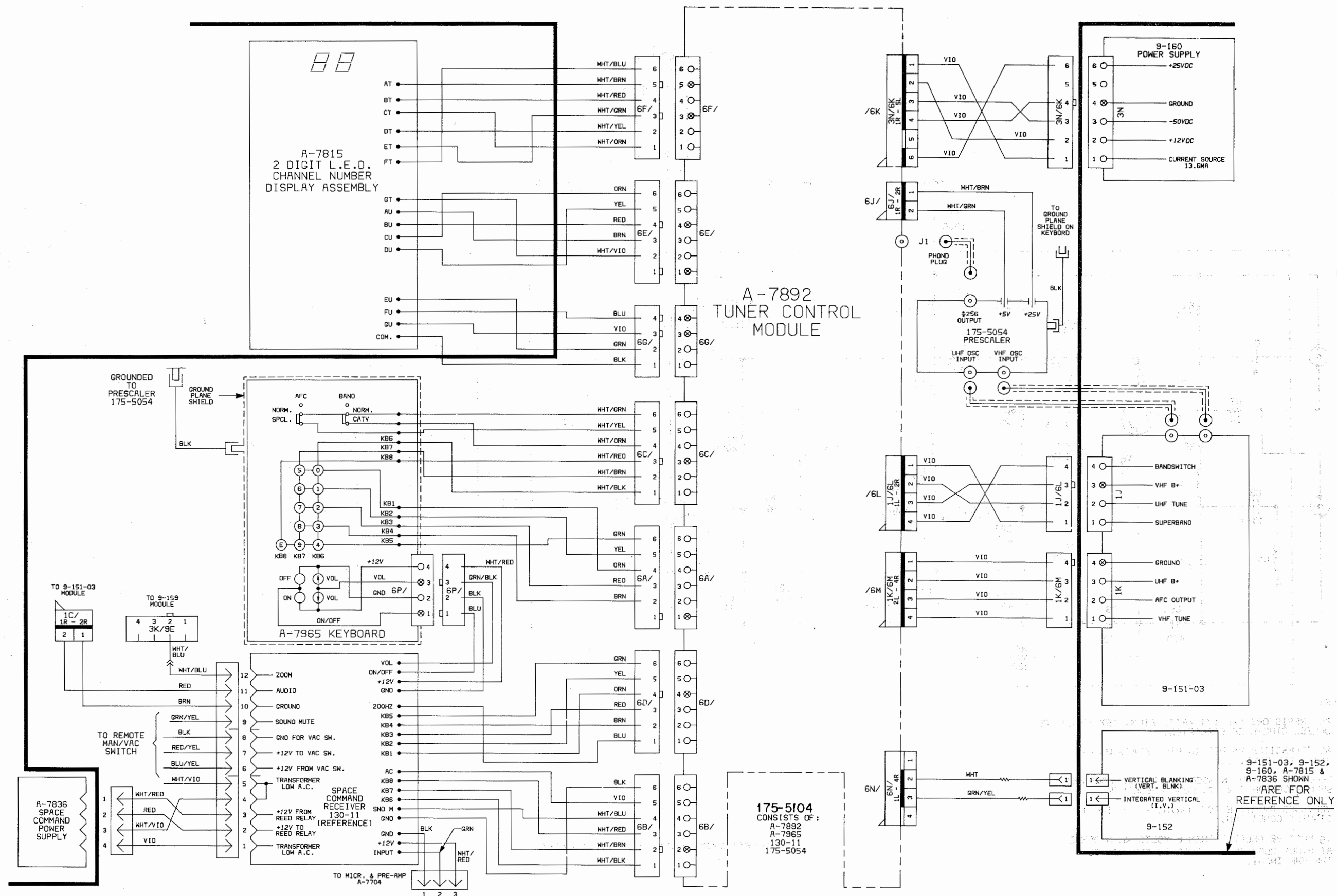
ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

## FOLDER 2









ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2

LAYOUT FOR 175-5104, DIRECT ACCESS MICROPROCESSOR TUNING SYSTEM (REMOTE)

LAYOUT FOR 175-5104, DIRECT ACCESS TUNING SYSTEM

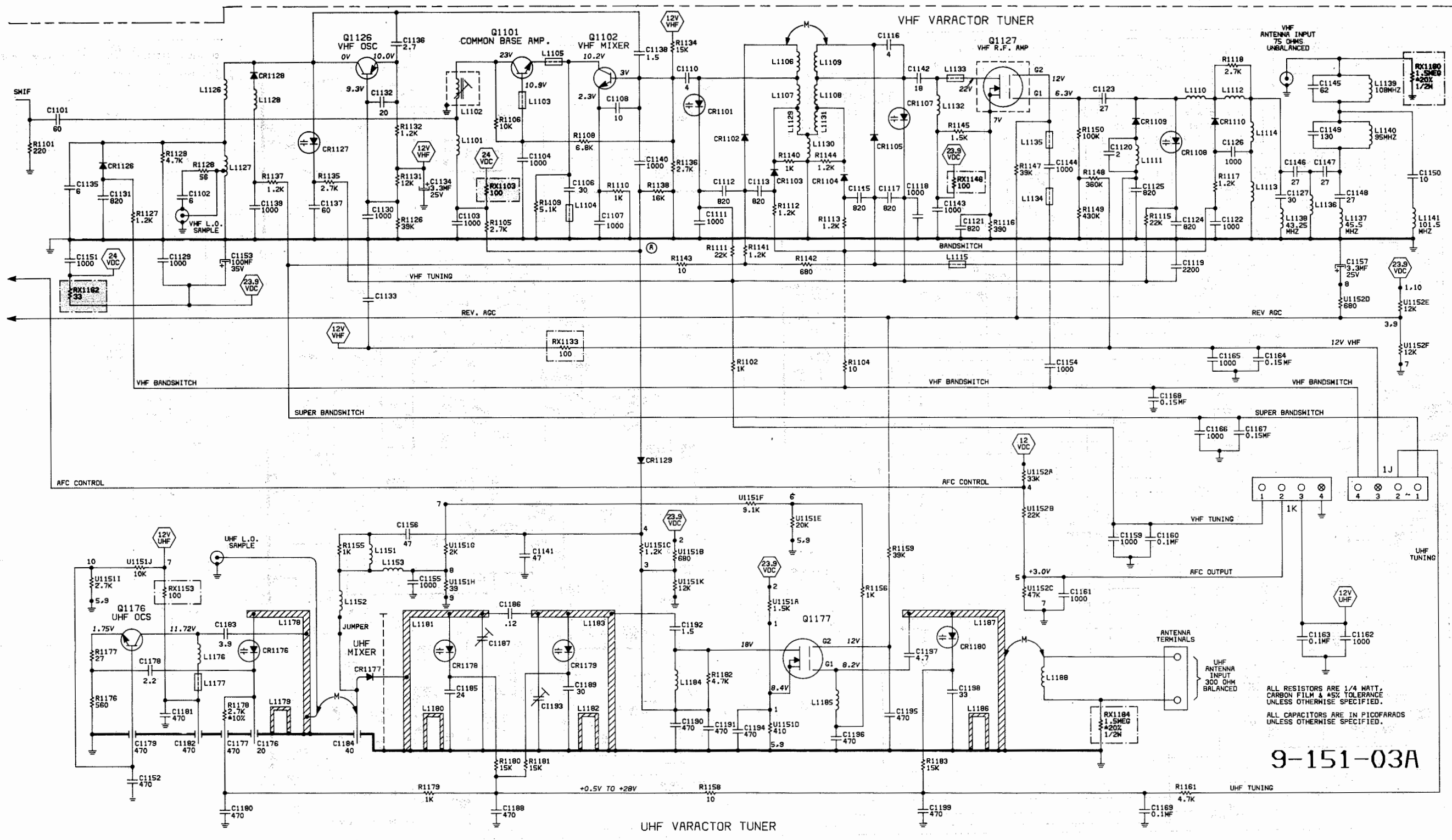
Courtesy of the Manufacturer

LAYOUT FOR 175-5104, DIRECT ACCESS TUNING SYSTEM









ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

9-151-03A

**IMPORTANT SAFETY NOTICE**  
FOR X-RADIATION, FIRE OR SHOCK HAZARD PREVENTION, CERTAIN SPECIAL OR REDUNDANT PARTS ARE USED. USE ONLY EXACT REPLACEMENTS. DO NOT ALTER THE CIRCUIT OR DEFEAT THE FUSES. FAILURE TO COMPLY MAY BE UNLAWFUL.

SCHEMATIC, 9-151-03A MODULE (SECTION B)

Courtesy of the Manufacturer



CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION	CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION	CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION	CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION
C1101	22-7836-28C	CAPACITOR, DISC, 82 PF, .15%, 50V, M220	C1211	22-7821-28	CAPACITOR, DISC, 56 PF, .15%, 50V, MPO	L1101	20-3886	COIL, CONVERTER TAP	R1128	63-9922-10	RESISTOR, FILM, 39K OHM, .1%, 1/4W
C1102	22-7827-05C	CAPACITOR, DISC, 8 PF, .15%, 50V, N80	C1212	22-7821-19	CAPACITOR, DISC, 24 PF, .15%, 50V, MPO	L1102	20-3792	COIL, TUNABLE	R1127	63-9921-74	RESISTOR, FILM, 1.2K OHM, .1%, 1/4W
C1103	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1213			L1103	149-418	CORE, FERRITE SLEEVE	R1126	63-9921-42	RESISTOR, FILM, 56 OHM, .1%, 1/4W
C1104	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1214	22-7813-12	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1104	149-418	CORE, FERRITE SLEEVE	R1125	63-9921-88	RESISTOR, FILM, 4.7K OHM, .1%, 1/4W
C1105			C1215	22-7813-12	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1105	149-417	CORE, FERRITE SLEEVE	R1120		
C1106	22-7835-20	CAPACITOR, DISC, 30 PF, .50%, 50V, N150	C1216	22-7813-200	CAPACITOR, DISC, 4700 PF, .10%, 50V, Z5P	L1106	20-3896	COIL, SUPER CHANNEL MIXER	R1131	63-9921-88	RESISTOR, FILM, 12K OHM, .1%, 1/4W
C1107	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1217	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1107	20-3892	COIL, HIGH CHANNEL MIXER	R1132	63-9921-74	RESISTOR, FILM, 1.2K OHM, .1%, 1/4W
C1108	22-7856-12	CAPACITOR, DISC, 10 PF, .15%, 500V, N150	C1218	22-7813-12	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1108	20-3893	COIL, HIGH CHANNEL, R.F.	R1133	63-9921-48	RESISTOR, FILM, 100 OHM, .1%, 1/4W
C1109			C1219	22-7813-12	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1109	20-3897	COIL, SUPER CHANNEL, R.F.	R1134	63-9922	RESISTOR, FILM, 15K OHM, .1%, 1/4W
C1110	22-8146	CAPACITOR, DISC, 4 PF, 1.25 PF, 500V, N150	C1220	22-7813-200	CAPACITOR, DISC, 4700 PF, .10%, 50V, Z5P	L1110	20-3891	COIL, HIGH CHANNEL ANTENNA	R1135	63-9921-82	RESISTOR, FILM, 2.7K OHM, .1%, 1/4W
C1111	22-4946	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1221	22-7813-20	CAPACITOR, DISC, 4700 PF, .10%, 50V, Z5P	L1111	20-3895	COIL, SUPER CHANNEL ANTENNA	R1136	63-9921-82	RESISTOR, FILM, 2.7K OHM, .1%, 1/4W
C1112	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V	C1222	22-7831-01C	CAPACITOR, DISC, 2 PF, 1.25 PF, 50V, N150	L1112	20-3780	COIL, LOW CHANNEL ANTENNA	R1137	63-9921-74	RESISTOR, FILM, 1.2K OHM, .1%, 1/4W
C1113	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V	C1223			L1113	20-3890	COIL, HIGH CHANNEL ANTENNA PARALLEL	R1138	63-9922-01	RESISTOR, FILM, 18K OHM, .1%, 1/4W
C1114			C1224			L1114	20-3782	COIL, LOW CHANNEL ANTENNA PARALLEL	R1139		
C1115	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V	C1225			L1115	149-417	CORE, FERRITE SLEEVE	R1140	63-9921-72	RESISTOR, FILM, 1K OHM, .1%, 1/4W
C1116	22-7821-04C	CAPACITOR, DISC, 4 PF, 1.25 PF, 50V, MPO	C1226	22-7708-08	CAPACITOR, ELECTROLYTIC, 47 MF, +50-10%, 25V	L1116	20-3884	COIL, HIGH CHANNEL OSCILLATOR	R1141	63-9921-74	RESISTOR, FILM, 1.2K OHM, .1%, 1/4W
C1117	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V	C1227	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1117	20-3781	COIL, LOW CHANNEL OSCILLATOR	R1142	63-9921-86	RESISTOR, FILM, 680 OHM, .1%, 1/4W
C1118	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1228	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1118	20-3785	COIL, SUPER CHANNEL OSCILLATOR	R1143	63-9921-24	RESISTOR, FILM, 10 OHM, .1%, 1/4W
C1119	22-7813-120	CAPACITOR, DISC, 2200 PF, .10%, 50V, Z5P	C1229	22-7813-34C	CAPACITOR, DISC, 100 PF, .15%, 50V, MPO	L1119	20-3484	COIL, LOW CHANNEL MIXER	R1144	63-9921-74	RESISTOR, FILM, 1.2K OHM, .1%, 1/4W
C1120	22-7821-02	CAPACITOR, DISC, 2 PF, 1.25 PF, 50V, NPO	C1230	22-7821-20C	CAPACITOR, DISC, 27 PF, .15%, 50V, MPO	L1120	191-1008-03	WIRE, LOW CHANNEL MUTUAL	R1145	63-9921-74	RESISTOR, FILM, 1.2K OHM, .1%, 1/4W
C1121	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V	C1231	22-7856-29	CAPACITOR, DISC, 2 PF, .15%, 50V, N150	L1121	20-3883	COIL, LOW CHANNEL, R.F.	R1146	63-10886-48	RESISTOR, FILM, 100 OHM, .1%, 1/4W
C1122	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1232	22-7708-09	CAPACITOR, ELECTROLYTIC, 100 MF, +50-10%, 25V	L1122	20-3270	COIL, R.F. CHOKER ASSEMBLY	R1147	63-9922-10	RESISTOR, FILM, 39K OHM, .1%, 1/4W
C1123	22-7847-17C	CAPACITOR, DISC, 27 PF, .15%, 50V, N150	C1233	22-7856-29C	CAPACITOR, DISC, 100 PF, .15%, 50V, N150	L1123	149-418	CORE, FERRITE SLEEVE	R1148	63-9922-33	RESISTOR, FILM, 360K OHM, .1%, 1/4W
C1124	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V	C1234	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V	L1124	149-417	CORE, FERRITE SLEEVE	R1149	63-9922-35	RESISTOR, FILM, 430K OHM, .1%, 1/4W
C1125	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V				L1125	149-418	CORE, FERRITE SLEEVE	R1150	63-9922-20	RESISTOR, FILM, 100K OHM, .1%, 1/4W
C1126	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1327	22-7863-28	CAPACITOR, POLYESTER, 22 MF, .10%, 100V	L1126	20-3819	COIL, I.F. SHUNT			
C1127	22-7833-20C	CAPACITOR, DISC, 30 PF, .15%, 50V, N150	C1328	22-7869-14	CAPACITOR, POLYESTER, 015 MF, .10%, 400V	L1127	20-3888	COIL, I.F. SERIES	R1151	63-9921-46	RESISTOR, FILM, 100 OHM, .1%, 1/4W
C1128			C1329	22-7856-29	CAPACITOR, ELECTROLYTIC, 1 MF, .10%, 25V	L1128	20-3888	COIL, I.F. SERIES	R1152	63-9921-72	RESISTOR, FILM, 1K OHM, .1%, 1/4W
C1129	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1330	22-7708-04	CAPACITOR, ELECTROLYTIC, 4.7 MF, +50-10%, 25V	L1129	20-3478	COIL, F.M. PARALLEL	R1153	63-9921-72	RESISTOR, FILM, 1K OHM, .1%, 1/4W
C1130	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1331	22-7708-09	CAPACITOR, ELECTROLYTIC, 100 MF, +50-10%, 25V	L1130	20-3479	COIL, F.M. SERIES	R1157		
C1131	22-7803-01	CAPACITOR, LEADLESS, 820 PF, +80-20%, 400V				L1131	20-3852	COIL, I.F. OUTPUT	R1158	63-9921-24	RESISTOR, FILM, 10 OHM, .1%, 1/4W
C1132	22-7821-17C	CAPACITOR, DISC, 20 PF, .15%, 50V, MPO	C1351	22-7710-02	CAPACITOR, ELECTROLYTIC, 2.2 MF, +50-10%, 50V	L1132	20-3861	COIL, OSCILLATOR	R1159	63-9922-10	RESISTOR, FILM, 39K OHM, .1%, 1/4W
C1133	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1352	22-7572-12	CAPACITOR, POLYESTER, 01 MF, .10%, 500V	L1133	20-3854	COIL, MIXER, I.F.	R1160	63-9921-86	RESISTOR, CARBON, 1.0 MEGOHM, .20%, 1/2W
C1134	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1353	22-7856-33C	CAPACITOR, DISC, 100 PF, .10%, 50V, N150	L1134	20-3854	COIL, MIXER, I.F.	R1161	63-10181-88	RESISTOR, CARBON, 4.7K OHM, .1%, 1/4W
C1135	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1354	22-7856-116	CAPACITOR, POLYESTER, 033 MF, .10%, 250V	L1135	20-3854	COIL, MIXER, I.F.	R1162	63-9921-26	RESISTOR, FILM, 33 OHM, .1%, 1/4W
C1136	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1355	22-7856-08	CAPACITOR, POLYESTER, 0047 MF, .10%, 400V	L1136	22-8602-04	STAMPING, METAL, UHF/VHF TUNER OSCILLATOR SECTION	R1163	63-9921-86	RESISTOR, FILM, 360 OHM, .1%, 1/4W
C1137	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1356	22-7710-01	CAPACITOR, ELECTROLYTIC, 1 MF, +50-10%, 50V	L1137		TRIMMER, INDUCTANCE (PART OF L1178)	R1177	63-4118	RESISTOR, CARBON, 2T OHM, .1%, 1/4W
C1138	22-4946	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1357	22-7859	CAPACITOR, DISC, 820 PF, .10%, 50V, Z5P	L1138	20-3929	TRIMMER, INDUCTANCE	R1178	63-4203	RESISTOR, CARBON, 2.7K OHM, .10%, 1/4W
C1139	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1358	22-7821-24C	CAPACITOR, DISC, 39 PF, .15%, 50V, NPO	L1139	20-3900-01	COIL, STAMPED METAL, MIXER LINE	R1179	63-9921-72	RESISTOR, FILM, 1K OHM, .1%, 1/4W
C1140	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1359	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	L1140	20-3901-01	COIL, STAMPED METAL, OSCILLATOR	R1180	63-9922	RESISTOR, FILM, 15K OHM, .1%, 1/4W
C1141	22-7856-14	CAPACITOR, DISC, 18 PF, .15%, 500V, N80				L1141	20-3901-01	COIL, STAMPED METAL, OSCILLATOR	R1181	63-9922	RESISTOR, FILM, 15K OHM, .1%, 1/4W
C1142	22-8150	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P				L1142	20-3901-01	COIL, STAMPED METAL, OSCILLATOR	R1182	63-9921-86	RESISTOR, FILM, 4.7K OHM, .1%, 1/4W
C1143	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P				L1143	20-3930	COIL, STAMPED METAL, OSCILLATOR	R1183	63-9922	RESISTOR, FILM, 15K OHM, .1%, 1/4W
C1144	22-4946	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P				L1144	20-3930	COIL, STAMPED METAL, OSCILLATOR	R1184	63-9922	RESISTOR, FILM, 15K OHM, .1%, 1/4W
C1145	22-7835-28C	CAPACITOR, DISC, 82 PF, .15%, 50V, M220				L1145	20-3888	COIL, G1 BOOST	R1185	63-9921-86	RESISTOR, FILM, 560 OHM, .1%, 1/4W
C1146	22-7847-17C	CAPACITOR, DISC, 27 PF, .15%, 50V, N750				L1146	20-3929	TRIMMER, INDUCTANCE	R1201	63-9921-86	RESISTOR, FILM, 560 OHM, .1%, 1/4W
C1147	22-7847-17C	CAPACITOR, DISC, 27 PF, .15%, 50V, N750	C1377	22-7848-47C	CAPACITOR, DISC, 470 PF, .10%, 50V, N750	L1147	20-3902-01	COIL, STAMPED METAL, GATE LINE	R1202	63-9921-76	RESISTOR, FILM, 1.5K OHM, .1%, 1/4W
C1148	22-7847-17C	CAPACITOR, DISC, 27 PF, .15%, 50V, N750				L1148	20-3782-03	COIL, BALUN	R1203	63-9921-82	RESISTOR, FILM, 2.7K OHM, .1%, 1/4W
C1149	22-7847-34C	CAPACITOR, DISC, 130 PF, .15%, 50V, N750				L1149	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP	R1204	63-9921-64	RESISTOR, FILM, 470 OHM, .1%, 1/4W
C1150	22-7831-09C	CAPACITOR, DISC, 10 PF, 1.25 PF, 30V, N150				L1150	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP	R1205	63-9921-60	RESISTOR, FILM, 330 OHM, .1%, 1/4W
C1151	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1426	22-7821-09C	CAPACITOR, DISC, 9 PF, 1.25 PF, 50V, NPO	L1151	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP	R1206	63-9921-68	RESISTOR, FILM, 680 OHM, .1%, 1/4W
C1152	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1427	22-7740-20	CAPACITOR, POLYESTER, .047 MF, .10%, 100V	L1152	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1153	22-7709-09	CAPACITOR, ELECTROLYTIC, 100 MF, +50-10%, 35V	C1428	22-7821-14C	CAPACITOR, DISC, 15 PF, .15%, 50V, NPO	L1153	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1154	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1429	22-7821-14C	CAPACITOR, DISC, 15 PF, .15%, 50V, NPO	L1154	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1155	22-7843-24C	CAPACITOR, DISC, 47 PF, .15%, 50V, N470				L1155	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1156	22-7843-24C	CAPACITOR, DISC, 47 PF, .15%, 50V, N470				L1156	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1157	22-7708-03	CAPACITOR, ELECTROLYTIC, 3.3 MF, +50-10%, 25V	C1451	22-7710-01	CAPACITOR, ELECTROLYTIC, 1 MF, +50-10%, 50V	L1157	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1158			C1452	22-7823-36C	CAPACITOR, DISC, 120 PF, .15%, 50V, N30	L1158	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1159	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1453	22-7813-04D	CAPACITOR, DISC, 220 PF, .10%, 50V, Z5P	L1159	20-3880	COIL, TUNABLE, 4.5 MHz, TRAP			
C1160	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1454	22-7853-28	CAPACITOR, POLYESTER, .22 MF, .10%, 100V						
C1161	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1455	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P						
C1162	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1456	22-7740-20	CAPACITOR, POLYESTER, .047 MF, .10%, 100V						
C1163	22-7853-24	CAPACITOR, POLYESTER, .01 MF, .10%, 100V	C1457	22-7874-04	CAPACITOR, POLYESTER, .0022 MF, .10%, 10V						
C1164	22-7853-26	CAPACITOR, POLYESTER, .15 MF, .10%, 100V	C1458	22-7839-15C	CAPACITOR, DISC, 20 PF, .15%, 50V, N330						
C1165	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1459	22-7708-08	CAPACITOR, ELECTROLYTIC, 22 MF, +50-10%, 25V						
C1166	22-7813-120	CAPACITOR, DISC, 1000 PF, .10%, 50V, Z5P	C1460	22-7708-08	CAPACITOR, ELECTROLYTIC, 47 MF, +50-10%, 25V						
C1167	22-7853-28	CAPACITOR, POLYESTER, .15 MF, .10%, 100V	C1461	22-7152-03	CAPACITOR, ELECTROLYTIC, 4.7 MF, +50-10%, 25V						
C1168	22-7853-28	CAPACITOR, POLYESTER, .15 MF, .10%, 100V									
C1169	22-7853-24	CAPACITOR, POLYESTER, .01 MF, .10%, 100V									
C1170											
C1171											
C1172	22-8227	CAPACITOR, FEED THRU, 20 PF, .15%, 100V	C1476	22-7867-20	CAPACITOR, POLYESTER, .047 MF, .10%, 250V	Q1101	121-855-01	TRANSISTOR, NPN, SILICON	R1226	63-10183-48	RESISTOR, CARBON, 100 OHM, .10%, 1/4W



CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION	CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION	CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION
C6201	22-7564-12	CAPACITOR, POLYESTER, .01 MF, ±20%, 100V	Q6701	121-975	TRANSISTOR, NPN	R6626	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W
C6226	22-7622-29	CAPACITOR, DISC, 62 PF, ±10%, 50V, NP0160	Q6702	121-978	TRANSISTOR, PNP	R6627	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W
C6227		PROVISION						
C6228	22-7620-27	CAPACITOR, DISC, 51 PF, ±10%, 50V, NPO	Q6751	121-975	TRANSISTOR, NPN	R6651	63-9919-80	RESISTOR, FILM, 2.2K OHM, ±2%, 1/4W
C6229	22-7564-12	CAPACITOR, POLYESTER, .01 MF, ±20%, 100V	Q6752	121-975	TRANSISTOR, NPN			
C6401	22-7154-10	CAPACITOR, ELECTROLYTIC, 330 MF, +100-10%, 35V	Q6753	121-975	TRANSISTOR, NPN	R6676	63-9920	RESISTOR, FILM, 15K OHM, ±2%, 1/4W
C6402	22-7564-26	CAPACITOR, POLYESTER, .22 MF, ±20%, 100V	Q6754	121-1042	TRANSISTOR, NPN, DARLINGTON	R6677	63-9920	RESISTOR, FILM, 15K OHM, ±2%, 1/4W
C6403	22-7564-24	CAPACITOR, POLYESTER, 0.1 MF, ±20%, 100V	Q6755	121-975	TRANSISTOR, NPN	R6678	63-9919-80	RESISTOR, FILM, 2.2K OHM, ±2%, 1/4W
C6451	22-7152-08	CAPACITOR, ELECTROLYTIC, 100 MF, +100-10%, 25V	Q6756	121-1042	TRANSISTOR, NPN, DARLINGTON	R6679	63-7827	RESISTOR, CARBON, 10K OHM, ±10%, 1/2W
C6454	22-7564-28	CAPACITOR, POLYESTER, .22 MF, ±20%, 100V	Q6757	121-1042	TRANSISTOR, NPN, DARLINGTON	R6680	63-10183-72	RESISTOR, CARBON, 1K OHM, ±10%, 1/4W
C6455	22-7564-24	CAPACITOR, POLYESTER, 0.1 MF, ±20%, 100V	Q6776	121-978-01	TRANSISTOR, PNP	R6681	63-9919-86	RESISTOR, FILM, 3.9K OHM, ±2%, 1/4W
C6456	22-7564-24	CAPACITOR, POLYESTER, 0.1 MF, ±20%, 100V	Q6777	121-978-01	TRANSISTOR, PNP	R6682	63-9919-86	RESISTOR, FILM, 3.9K OHM, ±2%, 1/4W
C6476	22-7564-24	CAPACITOR, POLYESTER, 0.1 MF, ±20%, 100V	Q6778	121-978	TRANSISTOR, PNP			
C6526	22-7417-01	CAPACITOR, ELECTROLYTIC, 1 MF, ±20%, 25V	Q6779	121-978	TRANSISTOR, PNP	R6701	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W
C6527	22-7622-34	CAPACITOR, DISC, 100 PF, ±10%, 50V				R6702	63-9921-88	RESISTOR, FILM, 4.7K OHM, ±5%, 1/4W
C6528		PROVISION	R6226	63-9922-24	RESISTOR, FILM, 150K OHM, ±5%, 1/4W	R6703	63-9922-08	RESISTOR, FILM, 33K OHM, ±5%, 1/4W
C6529	22-7152-04	CAPACITOR, ELECTROLYTIC, 10 MF, +100-10%, 25V				R6704		PROVISION
C6576	22-7564-24	CAPACITOR, POLYESTER, 0.1 MF, ±20%, 100V	R6326	63-9922-04	RESISTOR, FILM, 22K OHM, ±5%, 1/4W	R6705	63-9922	RESISTOR, FILM, 15K OHM, ±5%, 1/4W
C6577	22-7564-12	CAPACITOR, POLYESTER, 0.1 MF, ±20%, 100V	R6327	63-9922-18	RESISTOR, FILM, 82K OHM, ±5%, 1/4W	R6706		PROVISION
C6701	22-7710-09	CAPACITOR, ELECTROLYTIC, 100 MF, +100-10%, 50V	R6328	63-9922-18	RESISTOR, FILM, 82K OHM, ±5%, 1/4W	R6726	63-10183-72	RESISTOR, CARBON, 1K OHM, ±10%, 1/4W
C6726	22-7704-14	CAPACITOR, POLYPROPYLENE, .015 MF, ±10%, 100V	R6329	63-9922-04	RESISTOR, FILM, 22K OHM, ±5%, 1/4W	R6727	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W
C6727		PROVISION	R6330	63-9922-04	RESISTOR, FILM, 22K OHM, ±5%, 1/4W	R6728	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W
C6728		PROVISION	R6331	63-9922-18	RESISTOR, FILM, 82K OHM, ±5%, 1/4W	R6729	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W
C6751	22-7564-12	CAPACITOR, POLYESTER, .01 MF, ±20%, 100V	R6332	63-9922-04	RESISTOR, FILM, 22K OHM, ±5%, 1/4W	R6730	63-9922-20	RESISTOR, FILM, 100K OHM, ±5%, 1/4W
C6752	22-7704-25	CAPACITOR, POLYPROPYLENE, .12 MF, ±10%, 100V	R6333	63-9922-04	RESISTOR, FILM, 22K OHM, ±5%, 1/4W	R6731	63-9921-98	RESISTOR, FILM, 12K OHM, ±5%, 1/4W
C6776	22-7564-12	CAPACITOR, POLYESTER, .01 MF, ±20%, 100V	R6351	63-9922-18	RESISTOR, FILM, 82K OHM, ±5%, 1/4W	R6732		PROVISION
C6777	22-7564-12	CAPACITOR, POLYESTER, .01 MF, ±20%, 100V	R6352	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W	R6751	63-9922	RESISTOR, FILM, 15K OHM, ±5%, 1/4W
C6778	22-7564-24	CAPACITOR, POLYESTER, 0.1 MF, ±20%, 100V	R6353	63-9922-18	RESISTOR, FILM, 82K OHM, ±5%, 1/4W	R6752	63-9922	RESISTOR, FILM, 15K OHM, ±5%, 1/4W
CR6226	224-11	CRYSTAL, 3.581055 MHz	R6376	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6753	63-9921-88	RESISTOR, FILM, 4.7K OHM, ±5%, 1/4W
CR6401	103-254-01	DIODE, LOW VOLTAGE, SILICON RECTIFIER	R6377	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6754	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W
CR6451		PROVISION	R6378	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6755	63-10807	CONTROL, VARIABLE, 20K OHM, ±30%, STAND UP
CR6452	103-301-28	DIODE, ZENER, 30V, ±5%, 1W	R6379	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6756	63-9921-88	RESISTOR, FILM, 4.7K OHM, ±5%, 1/4W
CR6501	103-254-01	DIODE, LOW VOLTAGE, SILICON RECTIFIER	R6380	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6757	63-9919-96	RESISTOR, FILM, 10K OHM, ±2%, 1/4W
CR6502	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6381	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6758	63-9919-96	RESISTOR, FILM, 10K OHM, ±2%, 1/4W
CR6503	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6382	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6759	63-9919-62	RESISTOR, FILM, 390 OHM, ±2%, 1/4W
CR6504	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6383	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6760	63-9921-88	RESISTOR, FILM, 4.7K OHM, ±5%, 1/4W
CR6526	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6384	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6761	63-9922-18	RESISTOR, FILM, 82K OHM, ±5%, 1/4W
CR6527	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6385	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6762	63-9921-80	RESISTOR, FILM, 2.2K OHM, ±5%, 1/4W
CR6528	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6386	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6763	63-10183-72	RESISTOR, CARBON, 1K OHM, ±10%, 1/4W
CR6529	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6387	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6777	63-9922	RESISTOR, FILM, 15K OHM, ±5%, 1/4W
CR6551	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6388	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6778	63-7726	RESISTOR, CARBON, 39 OHM, ±10%, 1/2W
CR6726	103-279-28	DIODE, ZENER, 19V, ±5%, 500mW	R6389	63-10181-54	RESISTOR, CARBON, 180 OHM, ±5%, 1/4W	R6779	63-9922	RESISTOR, FILM, 15K OHM, ±5%, 1/4W
CR6727	103-254-01	DIODE, LOW VOLTAGE, SILICON RECTIFIER	R6401	63-6028	RESISTOR, CARBON, 100 OHM, ±10%, 1W	R6780	63-9921-88	RESISTOR, FILM, 4.7K OHM, ±5%, 1/4W
CR6751	103-142-01	DIODE, LOW VOLTAGE, GENERAL SILICON	R6451	63-9921-92	RESISTOR, FILM, 6.8K OHM, ±5%, 1/4W	R6781	63-9922-20	RESISTOR, FILM, 100K OHM, ±5%, 1/4W
CR6776	103-254-01	DIODE, LOW VOLTAGE, SILICON RECTIFIER	R6477	63-7767	RESISTOR, CARBON, 390 OHM, ±5%, 1/2W	R6782	63-7729	RESISTOR, CARBON, 47 OHM, ±10%, 1/2W
IC6226	221-144	INTEGRATED CIRCUIT, PHASE LOCKED LOOP	R6478	63-5590	RESISTOR, CARBON, 12 OHM, ±5%, 2W	R6783	63-9921-88	RESISTOR, FILM, 4.7K OHM, ±5%, 1/4W
IC6351	221-142	INTEGRATED CIRCUIT, LATCH, DECODER, 2 DIGIT LED DRIVER	R6501	63-10184-20	RESISTOR, CARBON, 100K OHM, ±10%, 1/4W	R6784	63-9922	RESISTOR, FILM, 15K OHM, ±5%, 1/4W
IC6401	221-111	INTEGRATED CIRCUIT, 5 VOLT REGULATOR, 250 mA	R6502	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W	R6785	63-9922	RESISTOR, FILM, 15K OHM, ±5%, 1/4W
IC6452	221-111-01	INTEGRATED CIRCUIT, 5 VOLT REGULATOR, 500 mA	R6503	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W	R6786	63-9922-20	RESISTOR, FILM, 100K OHM, ±5%, 1/4W
IC6526	221-143	INTEGRATED CIRCUIT, MICROPROCESSOR, TUNING SYSTEM CONTROL	R6504	63-10184-20	RESISTOR, CARBON, 100K OHM, ±10%, 1/4W	R6787	63-9921-74	RESISTOR, FILM, 1.2K OHM, ±5%, 1/4W
IC6676	221-121	INTEGRATED CIRCUIT, QUAD COMPARATOR	R6505	63-10184-20	RESISTOR, CARBON, 100K OHM, ±10%, 1/4W	R6788	63-7743	RESISTOR, CARBON, 100 OHM, ±10%, 1/2W
			R6506	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W	R6789	63-9922-14	RESISTOR, FILM, 56K OHM, ±5%, 1/4W
			R6507	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6508	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6509	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6510	63-10184-20	RESISTOR, CARBON, 100K OHM, ±10%, 1/4W			
			R6511	63-10184-20	RESISTOR, CARBON, 100K OHM, ±10%, 1/4W			
			R6512	63-9922-20	RESISTOR, FILM, 100K OHM, ±5%, 1/4W			
			R6513	63-7743	RESISTOR, CARBON, 100 OHM, ±10%, 1/2W			
			R6514	63-7743	RESISTOR, CARBON, 100 OHM, ±10%, 1/2W			
			R6515	63-7743	RESISTOR, CARBON, 100 OHM, ±10%, 1/2W			
			R6516	63-7743	RESISTOR, CARBON, 100 OHM, ±10%, 1/2W			
			R6517	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W			
			R6518	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6519	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6520	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6521	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6522	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6523	63-10183-96	RESISTOR, CARBON, 10K OHM, ±10%, 1/4W			
			R6526	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W			
			R6527	63-9921-96	RESISTOR, FILM, 10K OHM, ±5%, 1/4W			
			R6528	63-10684-11	CONTROL, VARIABLE, 10K OHM, LAY DOWN, ±30%			
			R6529	63-7743	RESISTOR, CARBON, 100 OHM, ±10%, 1/2W			

TEST POINTS			
NUMBER	DESIGNATION	READING	REMARKS
1	+5 VOLT REGULATOR (1CS)	+4.75 TO +5.25 VDC	
2	200 Hz OUTPUT	APPROXIMATE 200 Hz 5 VOLTS PEAK TO PEAK	
3	COMPARATOR OUTPUT AFC WINDOW	+5 VOLTS (1.1V <sub>AFC</sub> ≤ 4.9) 0 VOLTS (V <sub>AFC</sub> < 0.9 OR V <sub>AFC</sub> > 5.1)	
4	COMPARATOR OUTPUT AFC THRESHOLD	+5 VOLTS (V <sub>AFC</sub> + 2.8 VOLTS) 0 VOLTS (V <sub>AFC</sub> - 3.2 VOLTS)	
5	COMPARATOR OUTPUT VERTICAL SYNC	60 Hz PULSES APPROX. 5 VOLTS PEAK TO PEAK	
6	PNP OUTPUT OF IC3	VARIABLE WIDTH PULSES POSITIVE OR NEGATIVE	1. USE LOW CAPACITANCE PROBE. 2. PULSES WILL VARY, DEPENDING WHETHER CHANNEL IS CAPTURED OR IN PROCESS OF BEING CAPTURED.
7	+5 VOLT REGULATOR (1CS)	+4.5 TO +5.25 VDC	
8	TUNING VOLTAGE OUTPUT	+1 TO +26 VDC	READING DEPENDS ON CHANNEL SELECTED
9			

**NOTES:**

- ALL RESISTORS ARE 1/4 WATT, FILM, ±5% TOLERANCE UNLESS OTHERWISE SPECIFIED.
- ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
- FOR INSTRUCTIONS AND ELECTRICAL SPECIFICATIONS FOR DIRECT ACCESS MICROPROCESSOR TUNING SYSTEM (REMOTE), REFER TO ZENITH SPECIFICATION #28-146 AND 28-146.
- MAXIMUM PERMISSIBLE LEAD LENGTH FROM THE BOTTOM SURFACE OF THE PRINTED WIRING BOARD IS TO .19" UNLESS OTHERWISE SPECIFIED.
- D.C. VOLTAGES MEASURED WITH A VOLTMETER HAVING AN INPUT IMPEDANCE GREATER THAN 10 MEGOHMS.

**CAUTION**

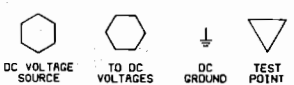
THIS CIRCUIT DIAGRAM MAY OCCASIONALLY DIFFER FROM THE ACTUAL CIRCUIT USED. THIS MAY BE DUE TO THE LATEST SAFETY AND PERFORMANCE IMPROVEMENT CHANGES INTO THE SETS IS NOT DELAYED UNTIL THE NEW SERVICE LITERATURE IS PRINTED.

**CRITICAL SAFETY COMPONENTS:**

THE LETTER "X" IN THE ELECTRICAL SCHEMATIC AND PARTS LIST, DESIGNATES SPECIAL CRITICAL SAFETY COMPONENTS. THESE SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ZENITH PARTS LIST AND SCHEMATIC.

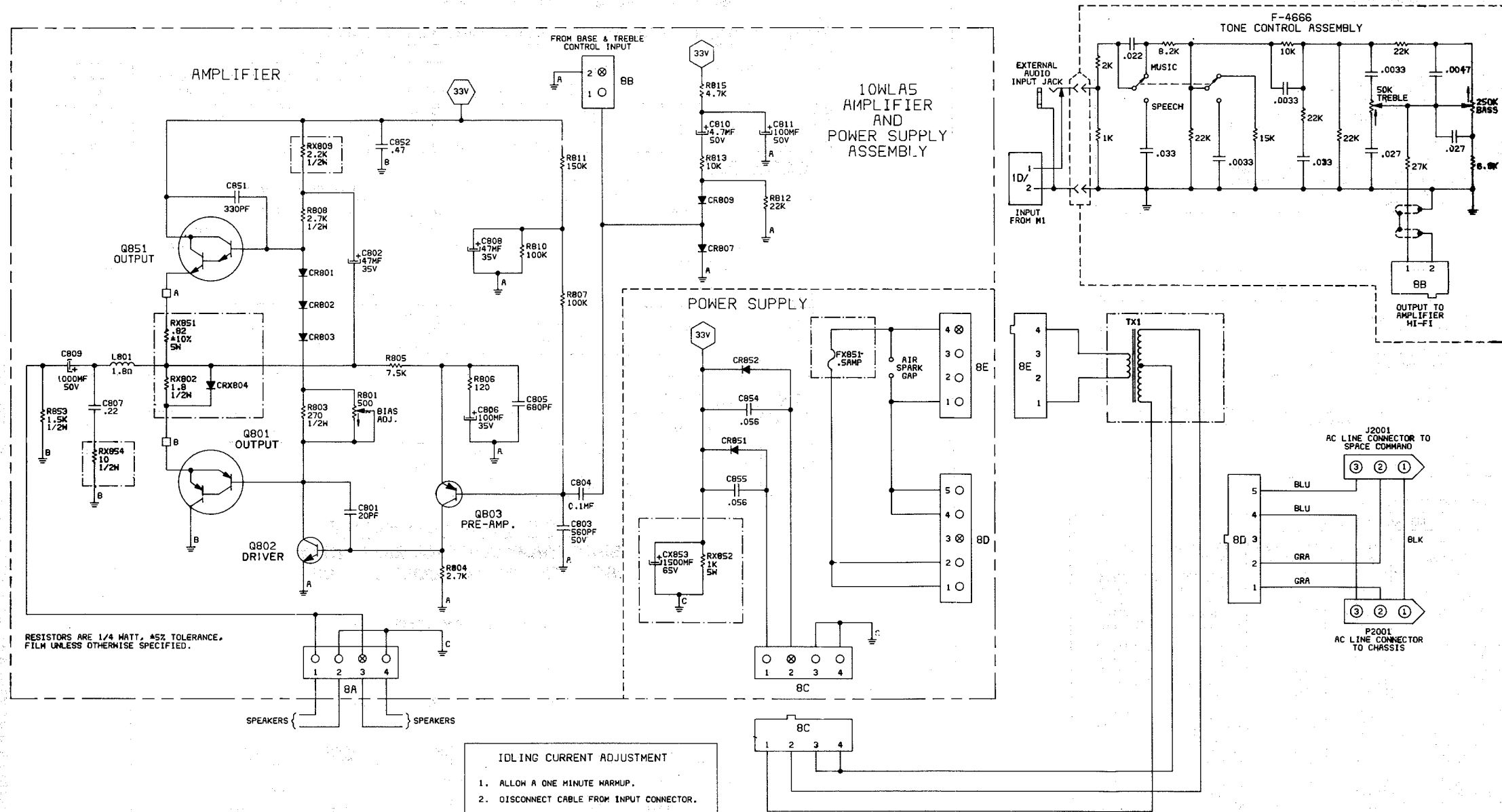
**SPECIAL INSTRUCTIONS:**

THIS SYSTEM USES MOS INTEGRATED CIRCUITS WHICH ARE SUSCEPTIBLE TO DAMAGE FROM STATIC DISCHARGE. PRECAUTIONS SHOULD BE TAKEN WHEN HANDLING THE COMPUTER ASSEMBLY AND INDIVIDUAL COMPONENTS AND WHEN TAKING MEASUREMENTS. THE OPERATOR SHOULD BE GROUNDED AND ANY SOLDERING SHOULD BE DONE WITH A GROUNDED IRON.



TRANSISTOR VOLTAGES															
	LOW VHF (CH. 2 TO 6)			MID BAND CATV (CH. 14 TO 26)			HIGH VHF (CH. 7 TO 13)			SUPER BAND CATV (CH. 27 TO 36)			UHF (CH. 14 TO 83)		
TRANSISTOR	EMITTER	BASE	COLLECTOR	EMITTER	BASE	COLLECTOR	EMITTER	BASE	COLLECTOR	EMITTER	BASE	COLLECTOR	EMITTER	BASE	COLLECTOR
Q6757	+1.2	+2.4	APPROX. 30	+1.2	+2.4	APPROX. 30	+1.2	+2.4	APPROX. 30	+1.2	+2.4	APPROX. 30	+1.2	+2.4	APPROX. 30
Q6756	0	+1.2	-	0	+1.2	-	0	+1.2	-	0	+1.2	-	0	+1.2	-
Q6751 BANDSWITCH DRIVER	0	0	+12	0	+0.6	+0.2	0	+0.6	+0.2	0	+0.6	+0.2	0	+0.6	+0.2
Q6776 BANDSWITCH	+12	+12	-19	+12	+11.4	+11.8	+12	+11.4	+11.8	+12	+11.4	+11.8	+12	+11.4	+11.8
Q6753 B+ DRIVER	0	+0.6	0.2	0	+0.6	+0.2	0	+0.6	+0.2	0	+0.6	+0.2	0	0	+12
Q6778 VHF B+	+12	+11.4	+11.8	+12	+11.4	+11.8	+12	+11.4	+11.8	+12	+11.4	+11.8	+12	+12	<1
Q6779 UHF B+	+12	+11.8	0	+12	+11.8	0	+12	+11.8	0	+12	+11.8	0	+12	+11.4	+11.8
Q6752 CATV SWITCH DRIVER	0	0	+12	0	0	+12	0	0	+12	0	+0.6	+0.2	0	0	+12
Q6777 CATV SWITCH	+12	+12	-19	+12	+12	-19	+12	+12	-19	+12	+11.4	+11.8	+12	+12	-19
Q6701 BLANKING DRIVER	0	0 +0.6 *	+5 +0.2	0	0 +0.6 *	+5 +0.2	0	0 +0.6 *	+5 +0.2	0	0 +0.6 *	+5 +0.2	0	0 +0.6 *	+5 +0.2
Q6702 MUTE DRIVER	+5	+2 +4.4 *	0 +4.8	+5	+5 +4.4 *	0 +4.8	+5	+5 +4.4	0 +4.8	+5	+5 +4.4	0 +4.8	+5	+5 +4.4 *	0 +4.8 *
Q6754 VOLTAGE FOLLOWER	+1 TO +10 **	+2.2 TO +11.2 **	+30	+2.5 TO 11 **	+3.7 TO +12.2	+30	10 TO 23 **	11.2 TO 24.2	+30	7 TO 23 **	+8.2 TO +24.2	+30	1 TO 26 **	+2.2 TO 27.2	+30
Q6755 CLAMP SWITCH	0	0	0	0	0	+4.3	0	0	+4.3	0	0	+4.3	0	0.6	0.2





CIRCUIT REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION
R801	63-10651	CONTROL, ROTARY, 500 OHM, BIAS ADJUST
R802	63-9946-06	RESISTOR, FILM, 1.8 OHM, 1/2W
R803	63-9946-58	RESISTOR, FILM, 270 OHM, 1/2W
R804	63-9921-92	RESISTOR, FILM, 2.7K OHM, 1/4W
R805	63-9921-93	RESISTOR, FILM, 7.5K OHM, 1/4W
R806	63-9921-50	RESISTOR, FILM, 120 OHM, 1/4W
R807	63-9922-20	RESISTOR, FILM, 100K OHM, 1/4W
R808	63-9946-82	RESISTOR, FILM, 2.7K OHM, 1/2W
R809	63-9946-80	RESISTOR, FILM, 2.2K OHM, 1/2W
R810	63-9922-20	RESISTOR, FILM, 100K OHM, 1/4W
R811	63-9922-24	RESISTOR, FILM, 150K OHM, 1/4W
R812	63-9922-04	RESISTOR, FILM, 22K OHM, 1/4W
R813	63-9921-96	RESISTOR, FILM, 10K OHM, 1/4W
R815	63-9946-88	RESISTOR, FILM, 4.7K OHM, 1/2W
R851	63-10444-22	RESISTOR, WIREWOUND, .02 OHM, 10W, 5W
R852	63-10442-96	RESISTOR, WIREWOUND, 1K OHM, 1/2W
R853	63-9946-76	RESISTOR, FILM, 1.5K OHM, 1/2W
R854	63-10565-24	RESISTOR, FILM, 10 OHM, 1/2W
T1	95-3411	TRANSFORMER, POWER
8A	58-381-03	CONNECTOR, MALE, 4 CONTACT (KEY 3)
8B	58-380-02	CONNECTOR, MALE, 2 CONTACT (KEY 2)
8C	58-381-02	CONNECTOR, MALE, 4 CONTACT (KEY 2)
8D	58-384-03	CONNECTOR, MALE, 5 CONTACT (KEY 3)
8E	58-385-04	CONNECTOR, MALE, 2 CONTACT (KEY 4)
R801	63-10651	CONTROL, ROTARY, 500 OHM, BIAS ADJUST
R802	63-9946-06	RESISTOR, FILM, 1.8 OHM, 1/2W
R803	63-9946-58	RESISTOR, FILM, 270 OHM, 1/2W
R804	63-9921-92	RESISTOR, FILM, 2.7K OHM, 1/4W
R805	63-9921-93	RESISTOR, FILM, 7.5K OHM, 1/4W
R806	63-9921-50	RESISTOR, FILM, 120 OHM, 1/4W
R807	63-9922-20	RESISTOR, FILM, 100K OHM, 1/4W
R808	63-9946-82	RESISTOR, FILM, 2.7K OHM, 1/2W
R809	63-9946-80	RESISTOR, FILM, 2.2K OHM, 1/2W
R810	63-9922-20	RESISTOR, FILM, 100K OHM, 1/4W
R811	63-9922-24	RESISTOR, FILM, 150K OHM, 1/4W
R812	63-9922-04	RESISTOR, FILM, 22K OHM, 1/4W
R813	63-9921-96	RESISTOR, FILM, 10K OHM, 1/4W
R815	63-9946-88	RESISTOR, FILM, 4.7K OHM, 1/2W
R851	63-10444-22	RESISTOR, WIREWOUND, .02 OHM, 10W, 5W
R852	63-10442-96	RESISTOR, WIREWOUND, 1K OHM, 1/2W
R853	63-9946-76	RESISTOR, FILM, 1.5K OHM, 1/2W
R854	63-10565-24	RESISTOR, FILM, 10 OHM, 1/2W
T1	95-3411	TRANSFORMER, POWER
8A	58-381-03	CONNECTOR, MALE, 4 CONTACT (KEY 3)
8B	58-380-02	CONNECTOR, MALE, 2 CONTACT (KEY 2)
8C	58-381-02	CONNECTOR, MALE, 4 CONTACT (KEY 2)
8D	58-384-03	CONNECTOR, MALE, 5 CONTACT (KEY 3)
8E	58-385-04	CONNECTOR, MALE, 2 CONTACT (KEY 4)

**CRITICAL SAFETY COMPONENTS:**  
THE LETTER "X" IN THE ELECTRICAL SCHEMATIC AND PARTS LIST, DESIGNATES SPECIAL CRITICAL SAFETY COMPONENTS. THESE SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ZENITH PARTS LIST AND SCHEMATIC.

**IMPORTANT SAFETY NOTICE**  
FOR X-RADIATION, FIRE OR SHOCK HAZARD PREVENTION, CERTAIN SPECIAL OR REDUNDANT PARTS ARE USED. USE ONLY EXACT REPLACEMENTS. DO NOT ALTER THE CIRCUIT OR DEFEAT THE FUSES. FAILURE TO COMPLY MAY BE UNLAWFUL.

SCHEMATIC AND LEGEND, 10WLA5 AMPLIFIER POWER SUPPLY

Courtesy of the Manufacturer



PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

WIRING DATA

High Voltage Lead .....	Use BELDEN No. 9865 (50 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. 8528 (Solid) Available in 13 Colors 8522 (Stranded) Available in 13 Colors
300-Ohm Tuner Input Lead .....	Use BELDEN No. 8225
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

MODULES/PLUG-IN BOARDS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
	Module	9-151-03A	RF-IF (IF-Tuners)
	Module	9-152C	Chroma Luminance
	Module	9-155-01	Video Output
	Module	9-159-01	Zoom
	Module	9-160-04B	HV-LV Power Supply-Horiz Sweep
	Module	9-160-04	HV-LV Power Supply-Horiz Sweep
	Module	A-7892A	Direct Access Microprocessor (Remote)
	Module	A-7965-01	Keyboard
	Module	175-5054	Prescaler
	Module	175-5104	Channel Selector (Includes Keyboard A-7965, Tuner Control A-7892, Prescaler 175-5054, Remote Receiver 130-11A)
	Module	7-124-14	Transmitter
	Module	124-14	Transmitter
	Module	130-11A	Remote Receiver
	Module	A-7815A	Channel Number Display (LED)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA						
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
CR1226		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR1351		103-279-13A	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-279-13A
CR1352		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR1354		103-279-31	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-279-31
CR2101		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2102		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2103		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2104		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR2105		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2106		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR2126		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2127		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR2128		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2151		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR2201		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2227		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2229		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2230		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2231		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2232		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2252		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR2276		103-140A	GEZD-6.8	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-140A
CR326		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR3276		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR3306		103-316-04	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-316-04
CR3307A		103-305	GE-530	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-305
CR3308		103-305	GE-530	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-305
CR3337		103-312	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-312
CR3352		103-142-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR3353		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR3354		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR3356		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR3376		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR3451		103-309-01A	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-309-01A
CR3452		103-279-16A	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-279-16A
CR3453		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR3476		103-279-28A	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-279-28A
CR3576		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR3776		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR5101		103-287A	GE-511	PTC216	SK3843/506	ECG506	TM506	WEP172/506	103-287A
CR9101		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR9102		103-295-01A	GE-504A	PTC201	SK3311	ECG116	TM116	WEP158/116	103-295-01A
CR9103		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR9104		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR9105		103-23-01	1N34AS	PTC207	SK3087	ECG109	TM109	WEP134/109	103-23-01
CR9151		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01

REMOTE CONTROL TRANSMITTER PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA						
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
CR2		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
CR3		103-142-01	GE-300	PTC214	SK3313/116	ECG116	TM116	WEP158/116	103-142-01
IC1		221-148	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	221-148
Q1		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-975

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA	
			MALLORY PART No.	SPRAGUE PART No.
C1	47 N75 500V 5%	22-2467	*	10TCN-Q47
C2	39 NPO 500V 5%		CN0439	10TCC-Q39

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	RF Choke	20-3722			

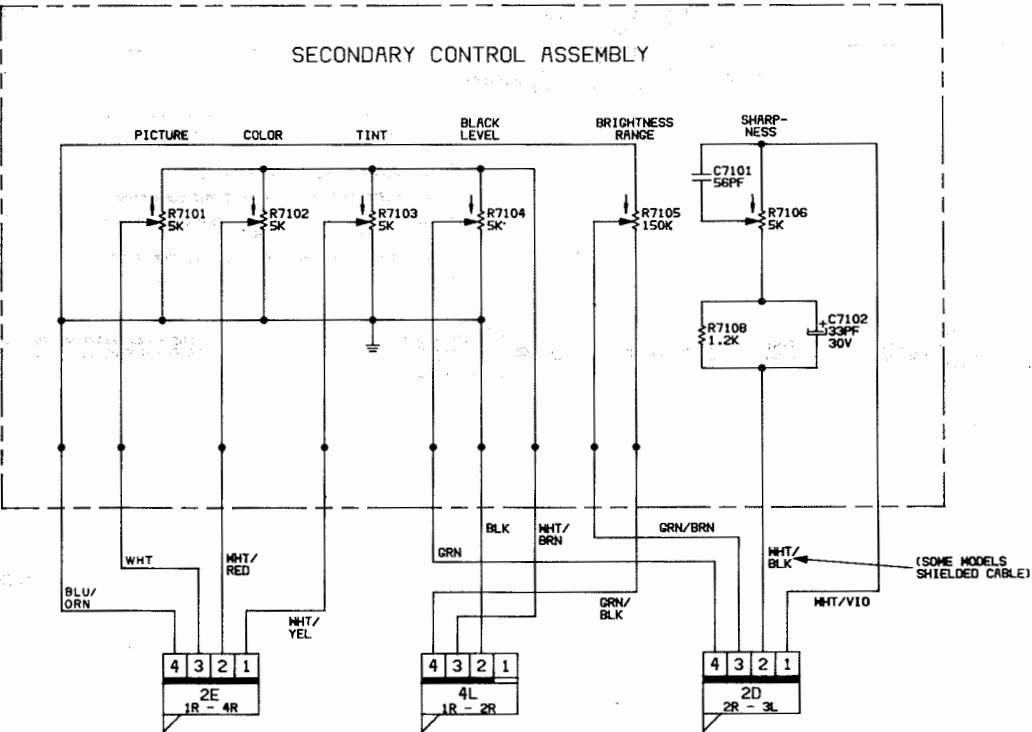
MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CR1	Crystal	224-12	4433.618kHz
M1	Battery	5-115	9V Single Cell
SP1	Transducer	49-1267-04	Ultrasonic
	P.C. Board	204-703C	16 Function Transmitter

IMPORTANT SAFETY NOTICE

SECONDARY CONTROL BRACKET IS ISOLATED FROM DC (COLD) GROUND.

SECONDARY CONTROLS



Courtesy of the Manufacturer

SECONDARY CONTROLS

ZENITH MODELS 5L2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33P9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, 5L4529P9

FOLDER 2



REMOTE CONTROL RECEIVER PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA						
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
CR9152		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR9153		103-142-01	GE-300	PTC214	SK3175/177	ECG177	TM177	WEP1062/177	103-142-01
CR9154		103-23-01	1N34AS	PTC207	SK3087	ECG109	TM109	WEP134/109	103-23-01
CR9155		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CR9156		103-142-01	GE-300	PTC214	SK3175/177	ECG177	TM177	WEP1062/177	103-142-01
CR9157		103-142-01	GE-300	PTC214	SK3175/177	ECG177	TM177	WEP1062/177	103-142-01
CRX3301		103-279-21A	GE-504A	ZM12B	SK3787/5021A	ECG5021A	TM177	WEP1423/5021	103-279-21A
CRX3327		103-315-03A	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-315-03A
		212-76-02	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	212-76-02
CRX3328		103-315-03A	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-315-03A
		212-76-02	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	212-76-02
CRX3329		103-315-03A	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-315-03A
		212-76-02	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	212-76-02
CRX3330		103-315-03A	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-315-03A
		212-76-02	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	212-76-02
CRX3331		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CRX3332		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CRX3333		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CRX3334		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116	103-254-01
CRX3335		103-284A	GE-510	PTC205	SK3318	ECG552	TM552	WEP170/125	103-284A
CRX3336		103-284A	GE-510	PTC205	SK3318	ECG552	TM552	WEP170/125	103-284A
CRX3355		103-308A	GE-510	ZM12B	SK3787/5021A	ECG5021A	TM552	WEP1423/5021	103-308A
CRX3454		103-298-05A	GE-504A	PTC202	SK3318	ECG552	TM552	WEP158/116	103-298-05A
CRX3477		103-284A	GE-510	PTC205	SK3318	ECG552	TM552	WEP170/125	103-284A
CRX3478		103-284A	GE-510	PTC205	SK3318	ECG552	TM552	WEP170/125	103-284A
CRX3479		103-284A	GE-510	PTC205	SK3318	ECG552	TM552	WEP170/125	103-284A
IC1201		221-97-01							221-97-01
IC1202		221-102-01							221-102-01
IC1351		221-105							221-105
IC1451		221-98							221-98
IC2126		221-103							221-103
IC2226		221-96							221-96
IC2301		221-104							221-104
IC2351		221-106							221-106
ICX3301		221-132							221-132
Q1201		121-503	GE-61	PTC132	SK3246/229	ECG319*	TM319*	WEP924/319*	121-503
Q1226		121-895	GE-20	PTC132*	SK3716/161*	ECG123AP	TM123AP	WEP63/161*	121-895
Q1227		121-986	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-986
Q1251		121-973	GE-21	PTC103	SK3466/159	ECG129	TM129	WEP60/129	121-973
Q2126		121-1008-01	GE-233	PTC112	SK3440/291	ECG291	TM291	WEP780/291	121-1008-01
Q2176		121-1008-01	GE-233	PTC112	SK3440/291	ECG291	TM291	WEP780/291	121-1008-01
Q3301		121-1037	GE-27		SK3201/171	ECG171	TM171	WEP702/171	121-1037
Q3303		121-1040	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-1040
Q3451		121-499-01	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-499-01
Q3452		121-966-01	GE-66	PTC110	SK3893/152	ECG152	TM152	WEP745/152	121-966-01
Q3453		121-1043	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-1043
Q5101		121-868-01	GE-27		SK3201/171	ECG171	TM171	WEP702/171	121-868-01
Q5102		121-986	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-986
Q5103		121-986	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-986
Q5104		121-868-01	GE-27		SK3201/171	ECG171	TM171	WEP702/171	121-868-01
Q5151		121-1019	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-1019
Q5152		121-868-01	GE-27		SK3201/171	ECG171	TM171	WEP702/171	121-868-01
Q5153		121-986	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-986
Q9101		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-975
Q9102		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-975
Q9103		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-975
Q9104		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-975
QX3326		121-1033	GE-259	PTC146	SK3710/238	ECG238	TM238	WEP764/238	121-1033
QX3338		121-1029	GE-259	PTC146	SK3710/238	ECG238	TM238	WEP764/238	121-1029
QX3351		121-973	GE-21	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-973
		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A	121-975

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFRG. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C260	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C1226	47 25V	22-7708-08	PC50-25	VTT47E25	QV1-77	EV-1426.1
C1232	100 25V	22-7708-09	PC100-25	VTT100G25	QV1-97	EV-1331
C1329	1 25V	22-7389-02	PC1-50	VTT1A50	QV1-11	EV-1615
C1330	4.7 25V	22-7708-04	PC5-50	VTT47B50	QV1-31	EV-1619.1
C1331	100 25V	22-7708-09	PC100-25	VTT100G25	QV1-97	EV-1331
C1351	2.2 50V	22-7710-02	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C1356	1 50V	22-7710-01	PC1-50	VTT1A50	QV1-11	EV-1615
C1451	1 50V	22-7710-01	PC1-50	VTT1A50	QV1-11	EV-1615
C1459	22 25V	22-7708-06	PC25-25	VTT22D25		EV-1424
C1460	47 25V	22-7708-08	PC50-25	VTT47E25	QV1-77	EV-1426.1
C1461	4.7 25V	22-7152-03	PC5-50	VTT47B50	QV1-31	EV-1619.1
C1477	220 25V	22-7708-10	PC250-25	VTT220K25	QV1-119	EV-1340
C1478	470 35V	22-7709-12	WBR500-35*	VTT470M35	QV1-157	EV-1451
C2101	1 50V	22-7710-01A	PC1-50	VTT1A50	QV1-11	EV-1615

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C1	10 25V	22-7152-04	PC10-25	VTT10B25	QV1-157	EV-1422
C201	470 35V	22-7144-11	WBR500-35*	VTT470M35	QV1-157	EV-1451
C202	470 35V	22-7144-11	WBR500-35*	VTT470M35	QV1-11	EV-1615
C209	1 50V	22-7153	PC1-50	VTT1A50	QV1-11	EV-1615
C212A	1 50V	22-7143	WBR1-50	TT50X1	QV1-11	TVA-1300
C213	2200 16V	22-7141-13	WBR2000-16	TC1520C	QV1-643	TVA-1175.3

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA		
			MALLORY PART No.	SPRAGUE PART No.	
				Q-LINE	GENERAL LINE
C2	560 500V 10%		GP356		10TS-T56
C3	.001 50V 10%		EWFA1210	QF1-1	1PB-D10
C4	.047 100V 10%		EWFA1A147	QF1-171	1PB-S47
C203	.047 100V 10%		EWFA1A147	QF1-171	1PB-S47
C205	.047 100V 10%		EWFA1A147	QF1-171	1PB-S47
C206	47 N75 500V 5%	22-2467	*		10TCN-Q47
C207	39 NPO 500V 5%		CN0439		10TCC-Q39
C208	.001 1KV		GP210	QCT2-41	10TS-D10
C210	.047 100V 10%		EWFA1A147	QF1-171	1PB-S47
C211	.047 100V 10%		EWFA1A147	QF1-171	1PB-S47
C214	.001 50V 10%		GP210	QCT2-41	10TS-D10
C215	.001 50V 10%		GP210	QCT2-41	10TS-D10
CX301	.047 100V	22-6447-01	EWFA1A147	QF1-171	1PB-S47

#For SAFETY use only equivalent replacement part.  
\*Not normally in distributor's stock. Available thru distributor on order to manufacturer.

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA		
			MFR. PART No.	MALLORY PART No.	TRW PART No.
R8	Gain Adjust (Range)	100K	63-9228-06	MTCL5L1	X201R104B
R224	Trip Point Adjust	25K	63-9228-01	MTCL5L1	X201R253B

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MFR. PART No.	WORKMAN PART No.			MFR. PART No.	WORKMAN PART No.
R301	22 5% 1/4W Carbon Film	63-10559-32	22-1056	R302	Varistor	63-10507	FR1050

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
TX301	120VAC @ .08AAC	18.7VAC @ .087ADC	95-3398 95-3398-01(1)			# For SAFETY use only equivalent replacement part. (1) Number on unit.

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA			
		PART No.		BUSS PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER
F301	.25A @ 125V Slow-Blow Pigtail	136-117-10			

#For SAFETY use only equivalent replacement part.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CR206	Crystal	103-147	4.43MHz
# K201	Relay	195-101	Reed
# K301	Relay	195-101	Reed
# MK1	Microphone	S-95039	
PX302	Cable Assembly	A-8030	3 Conductor
S298	Switch	85-1451-03	Remote/Manual/Off
	Assembly	A-7704	Mic Preamp
	Receiver	130-11A	Complete
	P.C. Board	204-551-03	Power Supply



PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C2104	47 16V	22-7707-08A	PC50-16	VTT47D16	QV1-73	EV-1226
C2128	47 35V	22-7713-018	PC50-50	VTT47E35	QV1-77	EV-1426.1
C2134	47 35V	22-7709-08A	PC50-50	VTT47E35	QV1-77	EV-1426.1
C2151	10 100V	22-7712-058	WBR10-150*	VTT10G100		TVA-1337*
C2152	15 35V	22-7713A	PC20-50	VTT22G63	QV1-51	EV-1523
C2176	470 80V	22-7587	WBR500-150	TC10501A		TVA-1376
C2201	.47 50V	22-7710A	PC1-50	VTT47A63	QV1-3	EV-1610
C2251	470 16V	22-7707-12	PC500-16	VTT470K16	QV1-151	EV-1251
C2252	22 25V	22-7708-068	PC25-25	VTT22025		EV-1424
C2331	10 25V	22-7708-05A	PC10-25	VTT10B25		EV-1422
C2339	2.2 50V	22-7710-02A	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C3276	15 25V	22-7389-04	PC20-50	VTT22D25		EV-1323.1
C3277	100 100V	22-7157-08	WBR100-150	TC10101B		TVA-1346
C3305	4.7 25V	22-7708-04	PC5-50	VTT4R7850	QV1-31	EV-1619.1
	1 50V	22-7153	PC1-50	VTT1A50	QV1-11	EV-1615
C3309	10 16V	22-7151-04	PC10-25	VTT10B25	QV1-41	EV-1222
C3315	47 16V	22-7680	PC50-16	VTT47D16	QV1-73	EV-1226
C3339	2.2 50V	22-7390-01	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C3342	22 16V HP	22-7404-06		TCN3520*		TVAH-1652*
C3352	2.2 50V	22-7390-01	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C3451	1 50V	22-7153	PC1-50	VTT1A50	QV1-11	EV-1615
C3453	10 16V	22-7151-04	PC10-25	VTT10B25	QV1-41	EV-1222
C3477	1000 80V	22-7688-01		TC708*		TVA-1703*
C5101	4.7 315V	22-7603	WBR5-450*	VTT33025	QV1-63	EV-1325
C7102	33 16V		PC30-25	FP216-9		
CX3326	300 180V	22-7735				
	300 180V					
CX3330	100 25V	22-7526	PC100-25	VTT100G25	QV1-97	EV-1331
CX3341	1 50V	22-7153	PC1-50	VTT1A50	QV1-11	EV-1615
CX3454	330 25V	22-7708-11	WBR300-35*	VTT330L25	QV1-135	EV-1345
CX3456	47 35V	22-7709-08	PC50-50	VTT47E35	QV1-77	EV-1426.1
CX3457	470 35V	22-7709-12	WBR500-35*	VTT470M35	QV1-157	EV-1451
CX3481	10 315V	22-7603-01				

# For SAFETY use only equivalent replacement part.  
\* Axial replacement for radial device.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA	
			MALLORY PART No.	SPRAGUE PART No.
				Q-LINE GENERAL LINE
C1201	100 NPO 50V	22-7621-06C	CN0310	10TCC-T10
C1202	100 NPO 50V		CN0310	10TCC-T10
C1203	6pF NPO 50V +.25		CN0560	
C1204	.001 50V 10%		GP210	QCT2-41
C1205	.001 50V 10%		GP210	QCT2-41
C1206	51 NPO 50V 10%		CN0450	10TCC-Q50
C1208	.1 100V 10%		EWFA1A010	1PB-P10
C1209	39 NPO 50V 5%		CN0439	10TCC-Q39
C1210	4pF NPO 50V +.25		CN0547	
C1211	56 NPO 50V 5%		CN0456	10TCC-Q56
C1212	24 NPO 50V 5%	22-7621-04	CN0425	10TCC-Q25
C1214	.001 50V 10%		GP210	10TS-D10
C1215	.001 50V 10%		GP210	10TS-D10
C1216	.0047 50V 10%		M192P4729R8	192P4729R8
C1217	.001 50V 10%		GP210	10TS-D10
C1218	.001 50V 10%		GP210	10TS-D10
C1219	.001 50V 10%		GP210	10TS-D10
C1220	.0047 50V 10%		M192P4729R8	192P4729R8
C1221	.0047 50V 10%		M192P4729R8	192P4729R8
C1222	2pF N150 50V +.25	22-7631-01C		
C1227	.001 50V		GP210	QCT2-41
C1228	100 50V		CN0310	10TCC-T10
C1229	100 NPO 50V 5%		CN0310	10TCC-T10
C1230	27 NPO 50V		CN0427	10TCC-Q27
C1231	100 N1500 50V 5%		CN15-310	10TCW-T10
C1233	100 N1500 50V 5%		CN15-310	10TCW-T10
C1234	820pF Feedthru 400V	22-7503-01		
C1327	.22 100V 10%		EWFA1A022	QF1-253
C1328	.015 400V 10%		EWFA115	
C1352	.01 600V 10%		EWFA110	QF1-97
C1353	150 N1500 50V 5%			
C1354	.033 250V 10%		EWFA1133	
C1355	.0047 400V 10%		EWFA1133	
C1357	620 500V 10%		SX362	QF1-63
C1358	39 NPO 50V 5%		CN0439	
C1359	.001 50V 10%		GP210	QCT2-41
C1377	470 N750 50V 5%	22-7621-09C		
C1426	9pF NPO 50V +.25			
C1427	.047 100V 10%		EWFA1A147	QF1-171
C1428	15 NPO 50V 5%		CN0415	
C1429	1pF NPO 50V +.25		CN0510	
C1452	120 N30 50V 5%	22-7623-36C	*	
C1453	220 50V 10%			
C1454	.22 100V 10%		EWFA1A022	QF1-253
C1455	.001 50V 10%		GP210	QCT2-41
C1456	.047 100V 10%		EWFA1A147	QF1-171
C1457	.0022 1KV		GP222	QCT2-46
C1458	20 N330 50V 10%		*	
C1476	.047 250V 10%		EWFA147	QF1-171
C1479	.047 100V 10%		EWFA1A147	

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

MISCELLANEOUS (cont)

ITEM No.	PART NAME	PART No.	NOTES
3D/9B	Connector Housing	43-1592	6 Pins
3J	Connector Housing	43-1604	4 Pins
3K	Connector Housing		2 Pins
3M	Connector Housing	43-1606	6 Pins
3N	Connector Housing	43-1606	6 Pins
3P	Connector Housing	43-1604	4 Pins
3R	Connector Housing	43-1602	2 Pins
3T	Connector Housing	43-1602	2 Pins
4A	Connector Housing	43-1592	6 Pins
4B	Connector Housing	43-1593	5 Pins
6E	Connector Housing	43-1588	6 Pins
6F	Connector Housing	43-1588	6 Pins
6G	Connector Housing	43-1590	4 Pins
6J	Connector Housing		2 Pins
6K	Connector Housing	43-1592	6 Pins
6L	Connector Housing	43-1590	4 Pins
6M	Connector Housing	43-1590	4 Pins
6N	Connector Housing	43-1590	4 Pins
6P	Connector Housing	43-1604	4 Pins
9A	Connector Housing	43-1590	4 Pins
9C	Connector Housing	43-1592	6 Pins
9E	Connector Housing	43-1604	4 Pins
9F	Connector Housing	43-1602	2 Pins
9G	Connector Housing	43-1602	2 Pins
	Color Sentry	F-4168	Assembly
	Control Chassis	F-4092	Secondary Controls
	Magnet	A-7690-01	Static and Convergence
	P.C. Board	A-5995	Color Sentry
	UHF Antenna	S-86924-01	Models: SL2513W, SL2513W9
	VHF Antenna	1-224	RUSSELL Replacement Loop 80W-1H
			Models: SL2513W, SL2513W9

# For SAFETY use only equivalent replacement part.

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

ITEM	PART No.	PART No.	PART No.	PART No.	PART No.
Models	SL2513W	SL2513W9	SL2523E	SL2523E9	SL2525M
Cabinet Back	2-3884	2-3884	2-3889	2-3889	2-3888
Escutcheon CRT	57-8933-56	57-8933-56	57-8933-57	57-8933-57	57-8933-58
Control Cover Assembly	A-8479	A-8479	A-8479-01	A-8479-01	A-8479-02
Knob-Control with Hex Shaft	46-10059-06	46-10059-06	46-10059-06	46-10059-06	46-10059-06
Models	SL2525M9	SL25270E	SL2527DE9	SL2527P	SL2527P9
Cabinet Back	2-3888	2-3889	2-3889	2-3889	2-3889
Escutcheon CRT	57-8933-58	57-8933-59	57-8933-59	57-8933-79	57-8933-79
Control Cover Assembly	A-8479-03	A-8479-03	A-8479-03	A-8480	A-8480
Knob-Control with Hex Shaft	46-10059-06	46-10059-06	46-10059-06	46-10059-06	46-10059-06
Models	SL2541X	SL2541X9	SL2543E	SL2543E9	SL2545M
Cabinet Back	14-11301	14-11301	2-3894	2-3894	2-3894
Escutcheon CRT	57-8919-56	57-8919-56	57-8919-57	57-8919-58	57-8919-58
Knob-Control Focus	56-10059-03	56-10059-03			
Knob-Control with Hex Shaft	46-10059-03	46-10059-06	46-10059-06	46-10059-06	46-10059-06
Models	SL2545M9	SL2549E	SL2549E9	SL2561K9	
Cabinet Back	2-3894	2-3894	2-3894	2-3882	
Escutcheon	57-8919-58	57-8919-57	57-8919-57	57-8919-69	
Knob-Control with Hex Shaft	46-10059-06	46-10059-06	46-10059-06	46-10059-06	

REMOTE CONTROL RECEIVER PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA					
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.
CR201		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116
CR202		103-254-01	GE-504A	PTC202	SK3313/116	ECG116	TM116	WEP158/116
CR203		103-301-17A	GEZD-13	ZB13B	SK3750/143A	ECG143A	TM143	WEP1158/143A
CR204		103-279-14A	ZM6.8B	PTC214	SK3780/5014A	ECG5014A		WEP1415/5014
CR205		103-142-01	GE-300	PTC214	SK3175/177	ECG177	TM177	WEP1062/177
CR207		103-279-31	GEZD-24	ZB24B	SK3151/5081A	ECG5081A	TM5081	WEP1164/5081A
CR208		103-301-09	GEZD-6.8	ZB6.8B	SK3334/5071A	ECG5071A	TM5071	WEP1106/5071A
IC201		221-149						
IC202		221-146						
Q1		121-675	GE-20	PTC123	SK3444/123A	ECG123AP	TM123AP	WEP736/123A
Q2		121-677	GE-20	PTC123	SK3444/123A	ECG123AP	TM123AP	WEP736/123A
Q3		121-677	GE-20	PTC123	SK3444/123A	ECG123AP	TM123AP	WEP736/123A
Q201		121-992			SK3440/291	ECG291	TM291	WEP780/291
Q202		121-994			SK3441/292	ECG292	TM292	WEP781/292
Q203		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q204		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q205		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q206		121-433	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q207		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q208		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q209		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q210		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q211		121-975	GE-20	PTC136	SK3854/123AP	ECG123AP	TM123AP	WEP736/123A
Q212		121-699	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159
Q301		185-9-01		PTC664	SK3533/5635	ECG5634		

ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33P9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9



PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.  
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
# TX 3376	.82A AC	.22	7mH	95-3394			

# For SAFETY use only equivalent replacement part.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T3350	10	16	95-3383 95-3383-02 (1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP401	5" PM 16 Ohms	49-1234-04	5A1216	Models: SL2523F, SL2523E9, SL2513W, SL2513W9, SL2525M, SL2525M9, SL2527DE, SL2527DE9, SL2527P, SL2527P9
	2" PM	49-1298		Models: SL2541X, SL2541X9, SL2543E, SL2543E9, SL2545M, SL2545M9, SL2549E, SL2549E9, SL2561X9 (2 used)
	5" X 7" PM	49-1301		Model: SL2561X9
	5" X 7" PM 8 Ohms	49-1274-02		Models: SL2541X, SL2541X9
	6" X 9" PM	49-1196-03		Models: SL2543E, SL2543E9, SL2545M, SL2545M9, SL2549E, SL2549E9

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA				
		PART No.		BUSS PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
# FX3376	2A @ 250V Slow-Blow	136-123-01		MDL2	1A1907-02	

# For SAFETY use only equivalent replacement part.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
# AX3376	Component Combination	105-146	Resistor Capacitor Network
CR2301	Crystal	103-152-01	3.58MHz
E3251	Spark Gap	52-2240-08	
E5101	Spark Gap	52-2240-06	
E5102	Spark Gap	52-2240-06	
E5151	Spark Gap	52-2240-06	
E5152	Spark Gap	52-2240-02	
EX3376	Spark Gap	52-2240-02	
EX3377	Spark Gap	52-2240-02	
J401	Jack	78-2239	
	Jack	78-2284	
# KX9101	Relay	195-105	
L1227	Ferrite Bead	149-417	
# L3302	Ferrite Bead	149-454	
# L3303	Ferrite Bead	149-454	
# L3304	Ferrite Bead	149-454	
L3399	Degaussing Coil	20-3918-01	
		20-3918-05	
# P3301	AC Cord	A-7670	Used in Model SL2561X9
PL9101	Lamp	100-642	Zoom
S202	Switch	85-1291-32	Color Sentry
S298	Switch	85-1451-03	Off-Manual-Remote
U1202	Filter	224-13	Ceramic
U1351	Component Combination	A-8000	Resistor Network and Diodes
# VX201	CRT	25VFCP22	
1A	Connector Housing	43-1592	6 Pins
1B/2C	Connector Housing	43-1592	6 Pins
1C	Connector Housing	43-1602	2 Pins
1D	Connector Housing	43-1588	2 Pins
1J	Connector Housing	43-1604	4 Pins
1K	Connector Housing	43-1604	4 Pins
2A/4K	Connector Housing	43-1595	5 Pins
2B/3C	Connector Housing	43-1592	6 Pins
2D	Connector Housing	43-1590	4 Pins
2E	Connector Housing	43-1590	4 Pins
2F/5A	Connector Housing	43-1595	5 Pins
2G	Connector Housing	43-1604	4 Pins
3B/5B	Connector Housing	43-1595	5 Pins

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.  
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA		
			MALLORY PART No.	SPRAGUE PART No.	
				Q-LINE	GENERAL LINE
C2102	.001 600V 10%		EW6210	QF1-7	6PS-D10
C2103	.47 100V 5%		EW61A047	QF1-287	1PB-P47
C2105	.1 100V 10%		EW61A010	QF1-215	1PB-P10
C2126	.001 100V 10%		EW61A210	QF1-1	1PB-D10
C2127	.1 100V 10%		EW61A010	QF1-215	1PB-P10
C2129	.015 400V 10%		EW61115		4PB-S15
C2130	.015 400V 10%		EW61115		4PB-S15
C2131	.015 400V 10%		EW61115		4PB-S15
C2132	.0068 400V 10%		EW6268		6PS-D68
C2133	680 500V 10%		GP368		10TS-T68
C2153	.0033 600V 10%		EW6233		6PS-D33
C2177	.01 600V 10%		EW61110	QF1-97	6PS-S10
C2202	43 NP0 50V 5%		CN0447	QCC2-26	10TCC-Q47
C2203	.001 500V 10%		GP210	QCT2-41	10TS-D10
C2204	.01 600V 10%		EW61110	QF1-97	6PS-S10
C2226	.1 100V		EW61A010	QF1-215	1PB-P10
C2227	.01 600V 10%		EW61110	QF1-97	6PS-S10
C2228	.22 250V 10%		EW61110		6PS-P22
C2229	.033 250V 10%		EW6133		6PS-S33
C2250	.047 50V		EW61A147	QF1-171	1PB-S47
C2276	.1 100V 10%		EW61A010	QF1-215	1PB-P10
C2301	160 N750 500V 5%				10TCU-T18
C2302	.047 100V 10%		EW61A147	QF1-171	1PB-S47
C2303	68 N750 50V 5%		CN7468		10TCU-Q68
C2304	.047 100V		EW61A147	QF1-171	1PB-S47
C2305	12 N750 50V 5%		CN7412		10TCU-Q12
C2306	120 N750 50V 5%				10TCU-T12
C2307	43 NP0 50V 5%		CN0447	QCC2-26	10TCC-Q47
C2308	.047 100V		EW61A147	QF1-171	1PB-S47
C2309	.047 100V		EW61A147	QF1-171	1PB-S47
C2310	.01 600V 10%		EW61110	QF1-97	6PS-S10
C2311	.01 600V 10%		EW61110	QF1-97	6PS-S10
C2312	.0027 250V 10%		PVC6227		6PS-D27
C2326	200 N750 50V 5%				10TCU-T20
C2327	330 N750 50V 5%				10TCU-T33
C2328	120 N750 50V 5%		CN7333		10TCU-T12
C2329	270 N750 50V 5%				10TCU-T27
C2330	.047 100V		CN7327	QF1-171	1PB-S47
C2332	.01 600V 10%		EW61110	QF1-97	6PS-S10
C2333	470 1KV 10%		GP347	QCT2-35	10TS-T47
C2334	51 NP0 50V 5%	22-2379	CN0450		10TCC-Q50
C2335	12 N75 500V 5%		*		10TCU-Q12
C2336	65 N1500 500V 5%		CN15-468		10TCU-Q68
C2337	50 NP0 100V 5%		CN0450		10TCC-Q50
C2338	.001 600V 10%		EW61110	QF1-97	6PS-S10
C2340	.01 600V 10%		PVC1611		16PS-S10
C2341	68 NP0 50V 5%		CN0468		10TCC-Q68
C2342	220 50V 10%				10TCC-T22
C2343	75 NP0 500V 5%				10TCC-Q75
C2351	470 1KV 10%		CN0475	QCT2-35	10TS-T47
C2352	.047 100V		GP347	QF1-171	1PB-S47
C2353	.001 600V 10%		EW61A147	QF1-7	6PS-D10
C2354	.1 100V 10%		EW6210	QF1-215	1PB-P10
C2355	.1 100V 10%		EW61A010	QF1-215	1PB-P10
C2356	180 N330 500V 5%	22-7394	*		10TCS-T18
C2357	470 N1500 500V 5%		CN15-347		10TCU-T47
C2376	270 N750 50V 10%		CN7327		10TCU-T27
C2377	270 N750 50V 10%		CN7327		10TCU-T27
C2378	270 N750 50V 10%		CN7327		10TCU-T27
C3278	.1 250V 10%		EW64010		4PB-P10
C3301	.56 200V 10%	22-7683			
C3302	180 500V 10%				
C3303	.001 500V 10%		GP210	QCT2-41	10TS-D10
C3304	.022 100V 10%		EW61A122	QF1-127	1PB-S22
C3306	.0039 100V 10%	22-7563-07	EW61A239		1PB-D39
C3307	.39 100V 10%	22-7563-31	EW61A039		1PB-P39
C3308	.001 500V 10%		GP210	QCT2-41	10TS-D10
C3310	.0027 500V 10%		GP227		10TS-D27
C3313	.001 500V 10%		GP210	QCT2-41	10TS-D10
C3314	.001 500V 10%		GP210	QCT2-41	10TS-D10
C3319	82 500V		CN0482		10TCC-Q82
C3321	.68 200V 10%	22-7128	EW62068		2PB-P68
C3327	.001 1KV	22-7431-04	GP210	QCT2-41	10TS-D10
C3328	.001 1KV	22-7431-04	GP210	QCT2-41	10TS-D10
C3329	.001 1KV	22-7431-04	GP210	QCT2-41	10TS-D10
C3331	.22 100V 10%	22-7563-28	EW61A022	QF1-253	1PB-P22
C3332	.001 500V		GP210	QCT2-41	10TS-D10
C3333	.001 500V 10%		GP210	QCT2-41	10TS-D10
C3334	.0047 100V 10%		EW61A247	QF1-57	1PB-D47
C3335	.022 100V 10%		EW61A122	QF1-127	1PB-S22
C3336	.001 500V 10%	22-5688	GP210	QCT2-41	10TS-D10
C3337	560 500V 10%		GP356		10TS-T56
C3338	.047 200V 10%		EW6147		4PB-S47
C3343	.1 100V 10%		EW61A010	QF1-215	1PB-P10
C3351	.1 100V 10%	22-7563-24	EW61A010	QF1-215	1PB-P10
C3353	180 500V 10%	22-7394			10TCC-T18
C3452	.1 100V 10%				1PB-P10
C3458	.001 1KV 10%	22-3748	EW61A010	QF1-215	10TS-D10
C3478	.001 1KV 10%	22-3748	GP210	QCT2-41	10TS-D10
C3480	.001 1KV 10%	22-3748	GP210	QCT2-41	10TS-D10
C3482	.001 500V 10%	22-5688	GP210	QCT2-41	10TS-D10
C3577	.001 1KV 10%		GP210	QCT2-41	10TS-D10
C3776	.0047 500V 10%		EW6247	QF1-63	6PS-D47
C5102	.01 1.5KV		PVC1611		16PS-S10

ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2



PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA		
			MALLORY PART No.	SPRAGUE PART No.	
				Q-LINE	GENERAL LINE
C5103	.001 2KV 10%		PVC2X21		20PS-D10
C5151	.01 500V		GP110	QC1-149	56A-S10
C7101	56 500V 5%		CN0456		10TCC-Q56
C7103	.047 50V 10%		EWFA1A47	QF1-171	1PB-S47
C9101	.047 100V 10%		EWFA1A47	QF1-171	1PB-S47
C9102	.047 100V 10%		EWFA1A47	QF1-171	1PB-S47
C9103	.047 100V 10%		EWFA1A47	QF1-171	1PB-S47
C9151	.68 200V 10%	22-7683-01	EWFA1A47		2PB-P68
C9152	.1 100V 10%		EWFA1A47	QF1-215	1PB-P10
CX3311	.01 2KV	22-7431-07			30GA-S10
CX3312	.01 2KV	22-7431-07			30GA-S10
CX3316	.02 1.6KV	22-7672-04			
CX3317	530 3KV 10%	22-6466			
CX3318	530 3KV 10%	22-6466			
CX3320	530 3KV 10%	22-6466			
CX3322	530 3KV 10%	22-6466			
CX3323	530 3KV 10%	22-6466			
CX3324	.001 2KV 10%	22-7523	PVC2X21		20PS-D10
CX3340	.01 2KV	22-7523-01			30GA-S10
CX3376	.0047 2KV	22-7431-06	3HV247		30GA-D47
CX3455	.001 1KV 10%	22-3748	GP210	QCT2-41	10TS-D10
CX3576	.022 250V 10%	22-7566-16	EWFA122	QF1-133	6PS-S22

# For SAFETY use only equivalent replacement part.  
\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA		
			MFR. PART No.	MALLORY PART No.	TRW PART No.
R1228	Volume	15K	(18)	RVA0911H103	U260R103B
R1353	Zero Carrier Adjust	10K	63-10651-04	MTC13L4	U201R102B
R1453	AGC Delay	1000	63-9697-25	RVA0911H502	U260R502B
R2126	Volume (Preset Remote)	5000	63-10651-03	MTC23L4	U201R252B
R2278	Vert Height	2000	63-10585	MTC253L4	U201R253B
R2304	Brightness Limiter	30K	63-9697-32		
R2351	Cross Talk	10K	63-10684-10		
R2376	APC	20K	63-9697-14	MTC24L4	U201R253B
R2381	ACC	20K	63-9697-14	MTC24L4	U201R253B
RX3312	Color Threshold	10K	63-9697-30	MTC14L4	U201R103B
	12 Volt B+ Adjust	2000	63-10684-06		
		(Factory Sealed)			
RX3381	Focus	20Meg	63-10652		
R5104	G2	4Meg	63-10670-02	MTC355L4	
R5108	Green Background	800	63-10794-04	MTC13L4	U201R102B
R5110	Red Background	800	63-10794-03	MTC13L4	U201R102B
R5155	Blue Background	800	63-10794-05	MTC13L4	U201R102B
R7101	Picture	5000	63-10769-01		
R7102	Preset Color Level	5000	63-10770-01		
R7103	Color Level	5000	63-10770		
R7104	Preset Tint	5000	63-10770-01		
R7105	Tint	5000	63-10770		
R7106	Black Level	5000	63-10768-02		
R7107	Preset Black Level	150K	63-10770-02		
R7108	Sharpness	5000	63-10768-01		
R7110	Tone	30K	63-10771	MTC33L4	X201R302B (3)
R9107	Horiz Width (Zoom)	3000	63-9697-01	MTC14L4	U201R103B
R9152	Vert Width (Zoom)	10K	63-9697-30		

# For SAFETY use only equivalent replacement part.  
(3) For horizontal mounting, bend the two outside terminals to fit P.C. board. Use jumper to connect center terminal to P.C. board.  
(18) Used in new remote models.

COILS & TRANSFORMERS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA				
		MFR. PART No.	OTHER IDENTIFICATION	MILLER PART No.	THORDARSON PART No.	TRIAD PART No.
L1376	Horiz Osc	20-3849				
LX3200	Yoke Horiz .67mH	95-3406				
	100° Vert 20mH					
LX3352	Horiz Linearity	20-3675				
LX3353	Horiz Width	20-3885-01				
TX3251	Pincushion	95-3389-04				
TX3301	Feedback	95-3427-01				
TX3326	Horiz Driver	95-3344	95-3347-01			
TX3351	Start-Up	95-3403-01				
TX3352	Horiz Output	95-3381-04				
	Horiz Output	95-3381-05				

# For SAFETY use only equivalent replacement part.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
LX 3351	420mA	4.2	78mH	95-3400			

# For SAFETY use only equivalent replacement part.

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L201	4.5MHz Trap	20-3880			
L1202	Peaking (27uH)	20-2707		72F275AP	
L1203	Oscillator	20-3875			
L1204	41.25MHz Trap	20-3872			
L1205	Video IF	20-3877			
L1206	Peaking (27uH)	20-2707		72F275AP	
L1226	45.75MHz (AFC)	20-3924			
L1228	41.25MHz	20-3923			
L1229	45.75MHz	20-3922			
L1326	Peaking (663uH)	20-3831			
L1327	Peaking (663uH)	20-3831			
L1451	Quadrature (4.5MHz)	20-3800			
L1452	4.5MHz Input	95-3333			
L2101	Peaking (663uH)	20-3831			
L2151	RF Choke (27uH)	20-3907-17A			
L2201	3.58MHz Trap	20-3869			
L2202	Delay Line	20-3828			
L2203	Peaking (663uH)	20-3831			
L2251	Peaking (47uH)	20-3907-20A			
	Component Combination	F-4202			
L2302	Peaking (47uH)	20-3887-20D			
L2326	RF Choke (18uH)	20-3904			
L2327	Peaking (6.8uH)	20-3887-10D			
L2328	Chroma Take-Off	95-3080			
L2351	RF Choke (15uH)	20-3867-01			
L3476	Peaking (100uH)	20-3907-24A			
LX2301	Peaking (18uH)	20-3887-15D			
LX3301	Peaking (663uH)	20-3831-01		72F684AP	

# For SAFETY use only equivalent replacement part.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MFR. PART No.	WORKMAN PART No.			MFR. PART No.	WORKMAN PART No.
R265	LDR			RX3317	9100 5% 1/4W Film		
R3303	47 5% 1/4W Carbon Film	63-9921-40	22-1064	RX3326	10K 5% 1/4W Film	63-9921-96	22-1120
R3313	6800 5% 1/4W Carbon Film	63-9921-92	22-1116	RX3327	100K 5% 1/2W Film	63-9947-20	22-2144
R3315	1000 5% 1/4W Carbon Film	63-9921-72	22-1096	RX3332	4 10% 10W WW	63-8246	24-4021
R3316	4700 5% 1/4W Carbon Film	63-9921-88	22-1112	RX3332	1000 5% 1/4W Film	63-9921-72	22-1096
R3319	6200 5% 1/4W Carbon Film	63-9921-91		RX3333	4700 5% 1/4W Film	63-9921-88	22-1112
R3331	27K 5% 1/4W Carbon Film	63-9922-06	22-1130	RX3334	1500 10% 7W WW	63-1045-2	
R3354	390 10% 5W WW	63-10271		RX3335	270 5% 5W WW	63-10442-82	
R3356	100K 5% 1/4W Carbon Film	63-9922-20	22-1144	RX3355	2.2 5% 1/2W Film	63-9946-08	
R3454	820 5% 1/2W Carbon Film	63-9946-70	22-2094	RX3357	22 5% 1/4W Film	63-9921-32	22-1056
R3455	2 10% 2W WW Fusible	63-10714		RX3358	2200 5% 1/4W Carbon	63-9921-80	22-1104
R3458	2 10% 2W WW Fusible	63-10714		RX3359	1100 1% 1/2W Carbon	63-10810	
R3462	2 10% 2W WW Fusible	63-10714		RX3360	2740 1% 1/2W Carbon	63-10810-01	
R3476	22K 5% 1/2W Carbon Film	63-9947-04	22-2128	RX3361	1100 1% 1/2W Carbon	63-10810	
R5107	3300 5% 1/2W Carbon	63-7805	22-2108	RX3362	620 5% 1/4W Carbon	63-9921-67	
R5151	3300 5% 1/2W Carbon	63-7805	22-2108	RX3363	20K 5% 1/4W Carbon	63-9922-03	
R5152	3300 5% 1/2W Carbon	63-7805	22-2108	RX3364	22K 5% 1/4W Carbon	63-9922-04	22-1128
RX1477	39 10% 3W Film	63-8360		RX3365	51K 5% 1/4W Film	63-9922-13	
RX2136	39 5% 1/2W Carbon		22-2062	RX3366	56K 5% 1/4W Film	63-9922-14	22-1138
	51 5% 1/2W Film	63-10565-41		RX3377	1.2Meg 20% 1/2W Carbon	63-10526-03	22-2170
RX2157	1.5 5% 1/2W Film	63-10565-04		RX3460	1 5% 2W Film	63-10420-24	
RX2158	1.8 5% 5W WW	63-10442-30		RX3461	33 5% 1/2W Film	63-9946-36	22-2060
RX2159	1 5% 5W WW	63-10442-24		RX3479	3.3 5% 1/2W Film	63-10565-12	22-2036
RX2176	1.5 5% 1/2W Film	63-10565-04		RX3480	3.3 5% 1/2W Film	63-10565-12	20-2036
RX3284	.62 5% 2W WW	63-10742-03		RX3481	47 10% 3W WW	63-10430-64	
RX3309	10K 5% 1/4W Film	63-9921-96	22-1120	RX3676	12 Cold PTC	63-10710	FR605
RX3310	8200 5% 1/4W Film	63-9921-94	22-1118	RX9155	3000 5% 1/4W Film	63-9921-83	
RX3314	1000 5% 1/4W Film	63-9921-72	22-1096	U1201	Resistor Network	105-131-01	
				U2151	Resistor Network	105-132	
				U2201	Resistor Network	105-134	
				U2276	Resistor Network	105-149-01	
				U2326	Resistor Network	105-158	
				U5101	Resistor Network	105-130-01	
				U5102	Resistor Network	105-316	

# For SAFETY use only equivalent replacement part.

ZENITH MODELS SL2513W9, 23E9, 25M9, 27DE9, 27P9, 29P9, 33PN9, 35X9, 41X9, 43E9, 45M9, 49E9, 61X9, 71P9, 75E9, 77P9, 93P9, 95E9, 97P9, SL4529P9

FOLDER 2